Praise for *Policy Design for Large Systems*

To effectively address the complex policy challenges facing society—in health, the economy, education, social justice and more—we need to think both in terms of large, interconnected systems, and in terms of leadership to change them. When I was early in my career, I was influenced by Walter McClure's approach to analyzing health systems. His theory Large System Architecture and concept of macrosystem design laid out in these essays are important contributions and provide valuable guides for this work.

—Julio Frenk
President, University of Miami

In the 1970's a group of health system reformers met regularly in Jackson Hole, Wyoming. It became known as "The Jackson Hole Group," and was a place where a diverse group of researchers, policy makers, and medical leaders came to discuss issues and new approaches to reform of the American healthcare system. As part of that group, and in the wider health reform movement Walt kept us focused on the essential role of competition, properly structured, as a tool of incentives. This book is a major contribution to thinking about system reform—health systems and beyond.

—Alain Enthoven
Marriner S. Eccles Professor of Public and Private Management, Emeritus; Stanford University Graduate School of Business

Walt was right before most people knew what the question was. He understood the only way to get providers to be more efficient was to connect performance to patient volume. He focused on engaging the patient as consumer, and setting up a system of competing providers. Before quality and cost measurement was developed, Walt saw its essential role and began developing the measures himself to create pilots. In these essays Walt describes the underlying thought processes that led him to be consistently ahead of the curve in health system reform, and shows how the views apply to other socially important and complex problems like economic inequality.

—Bryan Dowd
Professor, University of Minnesota School of Public Health

It is time to think big! Sick of never-ending incremental "solutions" that lead nowhere while things keep getting worse? Read Walter McClure. He thinks systems: when everything and everyone seems to be behaving badly, stop blaming them, and start looking for the larger, self-reinforcing, system-wide incentives that reward this behavior. And rather radically, he argues that even massive systems and their incentives can be changed. When the effect of most efforts "come a cropper," it is time to change the rules. Decide what outcomes society wants. Then ensure that those behaving well win rather than lose. Think health care is frighteningly expensive, variable in quality, and unevenly distributed—pay people for the outcomes they achieve rather than for simply creating more services. Unhappy with education outcomes—reward good ones. Worry about inequality —reshape market incentives. He has the genius to show how real transformation can be achieved with the right tools for thinking comprehensively, and then plotting the steps that lead to the land we keep promising our children.

—David T. Ellwood
Isabelle and Scott Black Professor of Political Economy
Former Dean, Harvard Kennedy School

Walter McClure is absolutely right that an effort to deal seriously with the problems of a major public system must get down to causes, to the fundamentals that shape the incentives, opportunities and constraints of the organizations operating within it. . . . Over the years I've often summarized the idea and its implied strategy for change by saying: "Organizations tend to behave the way they're structured and rewarded to behave. If you don't like the way they're behaving, you probably ought to change the way they're structured and rewarded."

—Ted Kolderie
Senior Fellow, Center for Policy Design
(from the Foreword)

Policy Design for Large Social Systems

TOWARD A MORE SYSTEMATIC APPROACH TO POLICY ANALYSIS AND DESIGN

An introduction to
the theory and methods of Large System Architecture
with applications to system reform of health care,
public education, the economy, and more.

Selected Writings of Walter McClure

CENTER FOR POLICY DESIGN PRESS

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To my beloved wife, Nancy, without whom neither I nor this book would be here.

Appreciation

My deepest gratitude to John Billings, executive director of the Hartford Foundation in the early 1980s, without whom there would be no Center for Policy Design nor likely the ideas in this book. For two years I was desperately searching in vain among academic and independent policy programs for a position that would allow me to work on what is now Large System Architecture. John was the first and only person with the understanding of my ideas and confidence in me to provide the long-term core support from the Hartford Foundation that, with his encouragement, allowed me to start the Center in 1981. I am no natural risk-taker, and it was John with both financial and moral support that saw us through. My deep thanks to the Hartford Foundation for this crucial support; I hope they are pleased and proud of the many results that have flowed from their investment, if a little later than we all wished.

Also my deep gratitude to Brent Roehrs (dec), senior grant manager at the Pew Foundation in the early 1980s. She also developed confidence in the Center's work and made Pew the second major source of vital long-term core support, without which little of the work described herein would have been possible. My deep thanks to the Pew Foundation for its support; I hope they are pleased and proud of the many results that have flowed from their investment, if a little later than we all wished.

The ideas in this book could not have been developed on project or client money. Most project grants and client contracts are for interests very immediate and specific. Having only an intuitive, if promising, conception when the Center was started, we would not have known how to frame a grant request, nor would any client know or have interest to ask. If grantors wish to forward the kind of innovative basic policy research found in this book, you must seek out creative policy professionals with a promising vision ... don't wait for them to come to you ... ask how you can help, and provide them long-term core support, continued as long as you feel progress is being made. John and Brent had the vision to see this. They are why this work got done. And I am grateful.

Walter McClure

Walter McClure received a BA in philosophy and physics from Yale in 1959 and a PhD in theoretical physics from Florida State in 1967. His dissertation research, on nuclear cluster theory, was performed at the University of Tübingen in Germany, and he co-authored a book on the subject with his professor, Karl Wildermuth.

In 1969 he switched from physics to health care reform policy for reasons, he says, having to do with "relevance." He worked at InterStudy under Paul Ellwood's leadership from 1969 to 1981, at which time he left to start the Center for Policy Studies (now the Center for Policy Design). He directed the Center until his retirement for medical reasons in 1990. At InterStudy he worked with colleagues on the HMO strategy for health care reform, among other tasks drafting much of the Federal legislation.

At the Center he developed Large System Architecture, which is a general theory of why organizations do what they do, and a set of methods to strategically redirect their behavior toward the goals society desires of them. With these methods he and his colleagues at the Center developed a health care system reform strategy to get better care for less, and developed a National Health Insurance proposal consonant with this strategy. He assisted Medicare, Pennsylvania and Cleveland to implement the first step of the strategy, severity-adjusted outcomes assessment of providers, before his reluctant retirement.

He remains chair of the board of the Center but for many years was no longer active in its professional work or management. Recently he resumed some of his professional work.

JUNE 2020

Contents

Editors' Notes xiii
Foreword xv
Preface 1

1 Architecting Large Social Systems 7
2 Two Lectures on Large System Architecture 41
3 Redesign the Economy or Lose the Republic 99
4 The Pope, Poverty and Adam Smith 161
5 Structure and Incentive Problems in Economic Regulation of Medical Care 183

Center for Policy Design 221
Center for Policy Design Press 222
Index 223

Editors' Note on References:

Many portions of this book are essentially works in progress, which the author and editors recognize would benefit from fuller citations to the professional literature. The current volume represents a decision between adequate referencing on the one hand and the competing desire to circulate this volume in a timely fashion. Given our sense of the importance of Large System Architecture theory and methods to the urgent major challenges faced by contemporary society's large complex systems, we decided in favor of earlier publication. This decision helps free the author to continue work on completing further important works in progress, which the Center looks forward to publishing in the near future. We hope once readers have taken in the utility of the many rich ideas presented, they will agree with our sense of urgency and put them to work. And we apologize to any who may feel slighted by the lack of adequate citations. Readers will find more fully annotated articles and books on these topics at the Center's website: www.centerforpolicy.org.

Editors' Notes

Tim McDonald, Editor

It has been a privilege to see this volume take shape, and to play a small role helping to make Walt McClure's important writing available to a wider audience. While Walt published important and influential papers during his active career, his more recent work has mostly not appeared in the published literature.

Accordingly, we wanted to collect selections of his works in one place, in this volume as well as on the Center for Policy Design website, so they are widely accessible. We believe this work critically necessary for effective policy today and for the development of leaders in policymaking and design. The constraints and incentives of day-to-day work in research, government, and political leadership often squeeze out the ability to think or act in such broad terms.

Beginning in 2011 Walt began presenting his work, his first public speaking in nearly two decades, to civic discussion groups and a bi-partisan group of legislators in the Minnesota legislature. He refined his essays and kept writing, moving from the methods into different applications including prescient analysis of the economic problems facing our country.

Walt has been, and remains, a principal mentor and now colleague for me, and his ideas have completely altered the way I see and approach policy analysis and design. And as I enter into professional life, I've met leaders in industry, academics, and public policy who recount Walt's influence on them, usually in the years prior to his untimely retirement. Most recently in 2017 Walt was a guest at the RAND Corporation and the Pardee RAND Graduate School. He gave two talks to researchers (both included in this volume) and met over dinner with students. His talks ignited many discussions, and effects from his visit continue to reverberate through the organization.

Those of us that have the privilege of being close with Walt now have resolved to help get this work out so that he can influence new generations of policy leaders. The time is right for release of this volume. We hope you enjoy his work and it influences you as it has us.

—Tim McDonald, Editor

Jeff Johnson, Associate Editor

Editing Walt McClure's writings offers both a rare privilege and a unique challenge. It wonderfully requires close reading of one of the most insightful social analysts and articulate commentators of our time. It also means attending to his occasional idiosyncratic style. In all, it can sometimes feel to the editor like an imagined attempt to tell Picasso not only how to frame his paintings but that this one or that might be improved by reducing the color blue and perhaps softening at least some of those angles.

In editing this volume, we preserved McClure's distinctive phrasing and overall writing style. His word choice is nearly always technically correct while perhaps at times striking oddly in some ears. The reader will encounter, for example, the word "due" used in notable ways (e.g. " ... due positive capitalism ... " and " ... runaway inequality due the incumbency ... "). But one does not mess with Picasso.

The pieces selected for this initial volume—there are additional planned—were chosen for three main reasons. First there is the substance of McClure's thinking. As he states in his prologue, "The seminal concept that underlies all this work is that the behavior of organizations and individuals in large societal systems ... by which I mean large systems that serve a definable purpose for society, like heath care, education, the economy, etc., (let's call them 'macrosystems' for short) ... is not governed by their innards but by their "outtards", the structure of the larger system in which they operate, and the constraints and incentives it places on them."

Second, we hope to give the reader some sense of the evolution of McClure's thinking and writing over time. His is a long career of deep creative thinking on how large systems work, and it is fascinating to glimpse its unfolding.

Third, and most importantly, there is the educational message—in the case of these writings the warnings and calls to action—that McClure is giving and that the Center for Policy Design seeks to carry out as fundamental to its mission. This editor feels both privileged and inspired to have contributed to the effort.

—Jeff Johnson, Associate Editor

Foreword

Walter McClure is absolutely right that an effort to deal seriously with the problems of a major public system must get down to causes, to the fundamentals that shape the incentives, opportunities and constraints of the organizations operating within it.

He explores that idea fully in this collection of his writings, as you'll see. Over the years I've often summarized the idea and its implied strategy for change by saying: "Organizations tend to behave the way they're structured and rewarded to behave. If you don't like the way they're behaving, you probably ought to change the way they're structured and rewarded."

It's a wisdom you see also in what Jean Monnet did to get people to see the need for new institutions in postwar Europe. His way of explaining the problem, his biographer wrote, was to say intractable problems cannot be settled in the context in which they are conventionally framed; that solutions require 'changing the context'. In his Memoirs Monnet wrote: "I had come to see that it was often useless to make a frontal attack on problems, since they have not arisen by themselves but are the product of circumstances. . . . Only by modifying the circumstances can one disperse the difficulties they create, (changing) whatever element in its environment was causing the block."

My work on public services redesign, at what's now the University of Minnesota's Humphrey School of Public Affairs, benefited greatly from Walt's 1981 paper on the problems of the economic regulation of medical care. There is market failure in that industry, he wrote, but the proper response is not regulation; it is market reform, because there is regulatory failure, too, and regulatory failure is worse because so much harder to correct. This removes the nonsense about markets always being 'free'; clarifies that markets are a policy construct; which means that organizations can be encouraged to behave well—for example, to innovate—by changing the structure of the system in which they operate.

That way of seeing problems and thinking about action—redesigning the system-context in which organizations operate—should be in high demand if our country now seriously means to change

the behavior of organizations in our major systems: public safety, health care, public education, transportation—and the system of governance itself.

In the private sector, open to innovation, new technology and new business models force change from the outside. Especially through the Internet; as, for example, Google disrupting the print advertising that supported such 'old media' as the newspapers. It is an old story in transportation: Railroads changed life for the canal boats and aviation changed life for the railroads; streetcars replaced horse-drawn carriages and automobiles replaced streetcars.

In the public sector, where the needed dynamics often have to be introduced by policy, changing the system 'givens' is harder. Often the initial impulse is precisely to "make a frontal attack" on problems; removing the people in office, legislating against bad-behavior and for good-behavior. Unfortunately that leaves in place the incentives that lie on the organization, which helps explain why 'reform' is so often disappointed.

* * *

Essential though it is, the effort to approach the problems in our public systems through what McClure calls "large system architecture" is under threat. Success with system change requires a civic system structured and rewarded to do this difficult work. There have to be organizations and individuals able and willing to think about problems and solutions in system terms; comfortable with the abstractions involved.

And these fundamentals are severely challenged today. Redesign takes time. It requires experience with the institutions of public life. There has to be sustaining financial support for those doing this work. The need to 'change the context' and get down to causes has to be broadly accepted. The process asks a lot of policymakers and of our policymaking institutions.

Today, as we see system-organizations not performing well, there is a commendable desire to act quickly. Typically that produces a discussion that consists almost entirely of restating problems and reaffirming goals—as if being-concerned and caring-a-lot by itself makes things happen. No. Action comes from thinking out the 'how'.

And it is harder now to get good thinking and a good discussion. The institutions that earlier involved themselves in questions of structure and incentives are fewer today. Newspapers used to force tough questions; they now have other concerns. Discussion groups that used to debate these issues have dwindled or disappeared. So has the financing that had supported this work. Business firms no longer provide sustaining contributions for such activity, and foundations, as before, make grants mainly for projects.

This is serious. It is not in the nature of organizations to call into question the fundamentals of the system in which they operate. It is essential to have those voices from the outside, asking the unwelcome questions.

And hopefully those voices will reappear. Today's politics reflect a desire for meaningful, radical, change—in medical/hospital care, in education, in transportation, in other public and quasi-public services, and in public institutions generally.

That should lead citizens to want to know how to reshape the systems responsible. In 2020 it might have led people to see, for example, that to get appropriate behavior from the police in Minneapolis it might have been desirable, even necessary, to restructure city governance. Or that to produce a less divisive and more constructive politics it might now be necessary to change the system of voting; the 'rules of the game' about who can get on the ballot to stand for office.

It will take some time to develop the experience, the patience and the willingness to think in terms of institutions and incentives necessary to succeed with the 'how' of system redesign; to understand that ideas often matter most. It will help, also, to get beyond the notion that 'the common good' emerges from a consensus among the vested interests: an admirable notion, but unfortunately not very realistic.

Much will depend on private philanthropy being willing to support the organizations and individuals outside the system that are challenging 'the givens'; doing the analysis, shaping the redesign and advocating for the proposals.

Walter McClure's work is a guidebook along this road.

—Ted Kolderie

Preface

I want to thank my colleagues Dan Loritz, Jeff Johnson, and Tim McDonald at the Center for Policy Design for this compilation of what I believe my more important contributions to the field of policy research, analysis, and design. Without them this book would never have happened. Having lost 20 years to major clinical depression (I had no reason to be depressed, just the wrong genes and stress), most of this work remains unpublished. At this late stage in my career, I am simply trying to get onto paper the ideas in my head. I must leave to others to disseminate them and, if as useful as I think, put them to work.

The seminal concept that underlies all this work is that the behavior of organizations and individuals in large societal systems . . . by which I mean large systems that serve a definable purpose for society, like heath care, education, the economy, etc., (let's call them 'macrosystems' for short) . . . is not governed by their innards but by their "outtards", the structure of the larger system in which they operate, and the constraints and incentives that structure places on them. In other words, the Darwinian idea that organisms must adapt to their environment or perish is simply extended to organizations: they must adapt to the larger system's incentives . . . which on their own they cannot alter much . . . or perish.

If the organizations in a macrosystem are chronically malperforming . . . not performing as society wants . . . it is almost always because the fundamental system structure is flawed and rewards the undesired performance and punishes the desired performance. Difficult as it is, there is no enduring remedy except to restructure the larger system ("macrosystem redesign") so that it rewards the desired performance and punishes the undesired performance.

The policy discipline to accomplish this I term Large System Architecture (LSA), the idea being that if you wish a system to perform well for society, you must intentionally architect it to do so rather than let the system develop by topsy and historical happenstance. Most of these principles grew out of the Center's work in the 1980's on health care and coverage reform . . . to design and help implement a strategy of universal care and coverage for the United States that would halt and reduce the soaring cost of care, improve quality of

care and coverage, and be affordable both to all individuals and the nation. But it turned out the principles are, amazingly, quite general. They apply to most (but not all) macrosystems.

The first paper in the book, Chapter 1, *Architecting Large Systems*, formally sets out the general theory, the methods, and two example applications of Large System Architecture, the only formal article on the general subject I have managed to get on paper so far. From my own experience working with LSA, the subject deserves a book, but I am presently too engaged in specific lengthy policy design projects that it is unlikely I will ever be able to write that book. Others will have to do so as they gain experience with the discipline.

It takes much time (some years) to arrive at a feasible new model for a malperforming macrosystem that has proper structure and incentives. But far more difficult and time-consuming is implementation of the proposed new model politically. To many policymakers and analysts, macrosystem redesign therefore seems an infeasible pipe dream . . . too long-term, too politically unlikely. So they fall for short-term symptom-curing . . . call it omnibus tinkering . . . instead of redesign.

Such short-term measures may look good politically, as though policymakers are doing something. Yet because they do not fundamentally alter the faulty underlying incentives, these endless measures consume enormous policy time and effort, tie up organizations in ever-increasing and expensive red tape, yet accomplish little: the symptoms persist and keep coming back. Consider health care and coverage: 50 years of omnibus tinkering has failed to slow its soaring costs, maintain medical or insurance quality, or make coverage affordable to all. (Compared to other countries spending much less, life expectancy here is falling, chronic disease is rising, medical error is the 3rd leading cause of death, and growing millions are being priced out of adequate coverage). Another 50 years of this and we get a complete disaster: an enormously expensive system that few patients can afford. It is time for system redesign. With sufficient political will, that should be possible in 15 years or less.

Macrosystem redesign is only lengthy and difficult, not impossible. As I and my colleagues labored on intentional redesign of the health care system in the ‘80s, one turned to me in frustration, “Walt, you can’t change the world”. Maybe, I said, but Adam Smith did, and the

founders of this nation did. They intentionally redesigned the structure and incentives of an economy and a government to align them with the performance society wished. In other words they engaged in macrosystem redesign. My only contribution has been to recognize that what they did has general application and can be systematized. They have proven the feasibility of LSA and its profound benefit. The only issue is, can we be equally clever technically and politically with our malperforming macrosystems of today.

Chapter 2 presents two lectures I gave at RAND in 2017 . . . the first public speaking I have done in 25 years . . . attempting to sell the nation's preeminent think-tank in their never-ending search for more powerful methods, on LSA as part of the answer. The first lecture, *Toward a More Systematic Approach to Policy Design*, gives an informal, light touch, personal account of how the theory and methods of LSA came about and their application to health care and education. The second, *Does the Nation's Economy Need Redesign*, is meant to show by example how the theory and methods are applied in practice, and presents a novel first application of LSA to a new macrosystem, the economy. (One of the wonderful virtues of semi-retirement is I no longer have to beg uncomprehending foundations for money, and am also able to apply LSA to other issues than health care, the focus of most of my career.)

This LSA analysis of our economic system persuades me that if we do not redesign our flawed economy to stop so lavishly rewarding runaway inequality without limit, it will drive the nation into tyranny. I am quite serious; you can check the reasoning and evidence for this dire conclusion for yourself; it seems to me quite solid. We need a redesign which can fix inequality at a desirable level, else liberty will perish. Chapter 3, *Redesign the Economy or Lose the Republic*, is an unfinished working draft, my homework on which the second RAND lecture was based, and illustrates the analytical methods by which LSA arrives at the diagnosis of the faulty underlying structure and incentives of a malperforming system. To save the nation from despotism is surely the most urgent priority the nation faces, yet is little appreciated.

But neither this unfinished draft nor the RAND lectures offer a redesign strategy to correct the flawed economy, because at the time I hadn't arrived at one. Three years later I have now arrived at such a

redesign, which is why this working draft in Chapter 3, still useful and informative, remains unfinished. Instead, I am now putting the finishing touches on a new paper, *The War on Liberty: How Capitalists Can Save Us*, that lays out my present proposal for a major technical redesign to correct the present flawed economy, and a political strategy to implement it. Unfortunately, this paper will not be ready in time for this little book. When finished, the new paper will be posted on our website and appear in a subsequent edition.

To many people, LSA comes as a kind of epiphany, rather obvious in retrospect. It helps them see the world and policy problems in a new and more constructive light. But many economists say to me, ho hum, we know all that, nothing new here. If that is true, then why is the nation's economy hellbent on this fatal path of runaway inequality? Because unlike LSA, economics does not spend sufficient thought determining policy goals. (It also remains aloof to political strategy for implementation.) LSA is a discipline of political economy that provides a larger integrated framework and vision of what is needed for effective policy design and implementation than more narrow academic disciplines allow, yet allows each of the relevant disciplines . . . economics, political science, policy analysis, law, negotiation, etc. . . . to deploy their particular skills on the fundamental problems and goals which LSA so clearly delineates.

LSA arose out of political gridlock, liberals demanding more government controls to make malperforming organizations (e.g. "greedy" health care providers and insurers; or "poor" schools and teachers; etc.) straighten up and fly right, and conservatives demanding government get out and let the market work. Both turn out staunch recipes for failure. Chapter 5, *Structure and Incentive Problems In Regulation of Health Care*, helps show why. While addressed to health care here, you will soon see it is applicable to regulation in general, and addresses this gridlock.

On the one hand, it reviews the considerable research literature on the structure and incentives of "command regulation" . . . where government regulatory agencies attempt to micromanage organizations into good performance. The literature shows that no matter how brilliant and dedicated the regulators, all the incentives are stacked against them. Because command regulation simply escalates

red tape with little improvement in performance, this liberal strategy is largely wishful.

On the other hand, conservatives fail to realize that malperformance in the private sector stems from market failure: the incentives in the unsound market reward producers for the undesired behavior. And per Adam Smith, and contrary to myth, unsound markets do not self-correct! They are missing the required rules for a market to be sound (such as no monopolies, free entry, etc.) and can only be corrected by government installing and enforcing these necessary sound market rules. Hence this conservative strategy, "get government out", is equally wishful. Indeed, letting an unsound market continue is a surefire way to guarantee continuing, escalating malperformance.

Learning this fundamental result in 1981 . . . that, surprisingly, both these ideological strategies of the day were and are dead-ends . . . urgently raised the question: what strategies then could be effective? LSA grew out of this pressing quest. The eventual answer: government must get in, not to impose command regulation on organizations, but simply to install and enforce the necessary market rules. More generally LSA emerged as a strategy for government policy to get the structure and incentives right in both market and non-market macrosystems by redesign, and let the organizations prosper in their own interest without government interference, by performing well under these new proper incentives. (The Decentralization Theorem . . . Appendix 1 in the Architecting Large Systems paper comprising Chapter 1 . . . delves more deeply into this question.)

The article comprising Chapter 4, *The Pope, Poverty and Adam Smith*, addresses a further gridlock: social policy. Liberals want to spend more, conservatives want to spend less, even gut many social programs. (Ironically, in recent decades conservatives, once known for fiscal prudence, have proven far bigger spenders and borrowers than liberals ever were, just not on social policy.) This article first makes the point that, despite incessant right-wing propaganda claiming government is a parasite, in fact the public sector produces on the order of half the wealth and wellbeing of the nation. "Collective goods" . . . those we cannot buy individually but must buy as a society, such as an educated workforce or disease control or basic research or safe food, water and transportation, or justice, etc. etc. . . . are as important producers of wealth, wellbeing and job-creation in our

economy as are “individual goods” . . . those we can buy by ourselves, like cars, computers, and medical care. The private sector is good at individual goods but cannot provide collective goods, and so we rely on the public sector to produce them. Thus mindlessly demanding smaller government budgets simply starves the nation of vital needed collective services. Where the private sector is behaving badly, would anyone propose that cutting private sector spending is the answer? If the public sector or private sector are performing inefficiently or badly, improve them don’t starve them. As Adam Smith pointed out, a market economy requires a healthy, well-performing public and private sector, both. Both are equally vital to the wellbeing of the nation and its citizens.

The second point is that liberals often fail to grasp that there are far more good things to do for people than the nation can afford. They want to spend too much on well-intended programs that simply drain the public purse. We must limit such worthy programs to just those few with overwhelming public support. But equally, conservatives fail to grasp that done well, many social expenditures are investments that pay back to the economy far more than they cost in taxes. (As an instance, consider the GI Bill.) To stint on investment in these social programs is foolishly short-sighted; it cuts the nation’s throat. Thus both liberals and conservatives ought scrutinize what social and other expenditures, done well, return more than they cost, unite to enact them, and then oversee they do get done well. The article proposes a number of social welfare and other macrosystem redesign opportunities that appear to return far more than they cost.

All of these points and proposals seem to me crucial to the wellbeing and life of the nation, but I have been unable to get them much attention. My colleagues’ efforts with this book are a start, and I am grateful. I hope you will find them useful and put them to work. And if you do find them useful, I hope you will help the book go viral. We need a lot more people thinking this way.

—Walter McClure
Chair, Center for Policy Design

CHAPTER 1

Architecting Large Social Systems

Toward a More Systematic Approach to Policy Design: Summary of a Theory and Methods to Redesign Large Systems

December 2020

TABLE OF CONTENTS

Overview 8

Text

A. Large System Architecture Theory 11

B. Large System Architecture Design Methods 14

C. Large System Architecture Change Methods 17

D. Fostering System Redesign 20

Application 1: Informed Consumer Choice 25
Better Care at Less Cost: A Strategy for Health Care System Redesign

Application 2: Public School Choice 28
The Missing Ingredient in Public Education Reform: A Strategy for Public Education System Redesign

Appendix 1. The Decentralization Theorem 33

Appendix 2. On Societal Goals and Policy 35

Appendix 3. The Role of Large System Architecture 36

Appendix 4. LSA and Economics 38

Overview

States and the nation face a seeming double-bind: either raise taxes or cut important programs. The resulting political squabbling back and forth has been interminable. But a third alternative exists and is finally getting some currency, namely: redesign our important large social systems—education, health care, criminal justice, welfare, etc.—to get more for less. In fact, redesign has suddenly become a buzzword in some quarters, and many people using the term have only a vague notion of what it means. In this brief article I will try to bring some precision and practicality to this third alternative, defining what system redesign is, and suggesting some key ideas on how to pursue it.

I think we all have intuitive notions about what system redesign consists of, but I would like to sharpen our ideas and make the term quite precise. There are in fact two rather distinct ways of trying to better the performance of a large system, and for clarity I propose to limit the term "redesign" solely for the second, more difficult way. The first, and simpler, approach is "continuous system improvement," also sometimes lovingly known as "omnibus tinkering": simply look for every place that improvements, big and small, seem possible to raise system performance or reduce its cost. System improvement allows continuous fine tuning, and in some cases, over time, can achieve quite worthwhile savings and performance improvements. Disadvantages include that often such efficiencies tend to be small and one-time only. Worse, the system frequently requires continual policy surveillance and intervention: i.e., the system is not itself hunting for these improvements and efficiencies (if it were, outside intervention wouldn't be necessary). Often as soon as external vigilance is relaxed, a system may begin to return to its less efficient ways. In the worst cases, organizations in a seriously malperforming system simply seem to resist all external private and public attempts to improve their performance. For example, despite decades of tinkering in education and health care, the two largest items in state budgets, the organizations—schools and school districts in the one, providers in the other—have largely evaded, distorted, or diluted to tokenism, all policy measures intended to seriously improve performance. None of the improvements have taken hold in any substantive

way. These systems have remained stubbornly resistant to change, so that policies based on more of the same old remedies—only harder and better this time!—seem fruitless. So what's missing, and what can be done about these more intractable systems?

Which brings us to the second and more difficult approach, system redesign. And this approach requires that I introduce the notion of Large System Architecture: Large System Architecture comprises two components: (1) a theory of why organizations do what they do; and (2) if they are not performing as society wishes, methods for designing and executing policy strategies to alter their behavior to the desired performance. I will discuss three things: the theory first, next the methods, and finally some of the ingredients that seem to me necessary for those who seek to lead in system redesign.

Let me start with the theory—why organizations behave the way they do. Let's hold the formalities for the moment and begin with a little insight-building. How often have you heard that the problems of various poorly performing large systems are due the moral failings or corruption or incompetence of the organizations and people in the system? Take, say, the health care system: its variable quality and access but especially its runaway cost escalation are variously ascribed to greedy providers or the big bad for-profit insurers or the unhealthy-living, over-utilizing patients. Let's examine such explanations with a counter-example: a really well-performing system—say, the auto industry or computer industry. The world simply couldn't make better cars for the money in the variety that people want than the auto industry does today, and its productivity keeps rising; it keeps doing better for less. The same is true of the computer industry. Now, does anyone think this is due the virtue, altruism and purity of auto executives? Or computer executives? Further note: both are for-profit industries. And both have as much greed (and as much altruism) as any other large group of human beings. So it can't be greed or profits that stops a system from performing well. In the auto industry if a company can't make a car that people want for the money, that company is out of business—ask General Motors, whose incompetent leaders over several decades ran this great company into the ground, requiring a government bail-out and overhaul to save it—giving new meaning to the term 'welfare capitalism'. Clearly, the motives of the people in a car company make no difference. Whatever their motives,

whether altruistic or greedy, if their company can't make a good car for the money, they are not around very long. The companies that survive and prosper in this industry must perform well. The same is true of the computer industry: no matter your motives, if you can't make a better computer for less, you aren't around long.

Surprising to many people, the flip side is equally true, as we shall see shortly. In a malperforming system, no matter how dedicated or selfish the people in an organization may be, if the organization does not malperform in the way observed in that system, it is not around very long, and soon the only organizations that survive and prosper are the malperforming ones.

So what determines why organizations in good systems perform well and organizations in bad systems perform badly? That is what the theory is supposed to tell us, because if we understand that, then we know what to change to make the system perform the way we want.

Let me again hold the formalism and jump ahead and put the conclusion in a nutshell. The reason organizations do what they do is not because of their "innards." It is because of their "outtards." Any organization is part of a larger system . . . the auto industry say, or the health care system, etc. This larger system—call it a macrosystem for brevity—places powerful incentives on the organizations within it that determine what they must do to survive and prosper, and they have no choice about it. The innards of any particular organization merely determine whether that organization can adapt to these incentives or, if it cannot, will perish. This is an enormous simplification for policy. We do not have to beat up on the thousands of organizations in one of these malperforming large systems. We "only" need to architect—i.e. intentionally redesign and restructure—the large system so that its incentives reward the organizations within it for doing what society wants them to do. This is what I define as system redesign, and it is a quite precise notion.

Policy has yet to really become aware of the presence and power of these underlying incentives. The great error in much policy effort to date has been to order organizations to act counter to the incentives of the large system they are in. Organizations cannot seriously comply with such orders or the macrosystem will hurt or kill them, which is why many malperforming macrosystems have so strongly resisted and evaded decades of policy attempts to improve them.

Unfortunately, hard experience suggests effective redesign strategies for intractable systems cannot be put together in a legislature or citizens committee. If they could, these systems would not still be a problem after so many decades. It appears to require professionals who can immerse themselves full-time with a given system and become expert, and they may need some years to arrive at an effective strategy and even more years to implement it. So to pursue redesign successfully, policymakers may want to foster policy analysis groups specializing in system redesign (let's call them large system architects) as a new tool to whom policymakers can turn—reserving, of course, final say on any strategy not to these architects but to policymakers. Continuous system improvement does not stop while waiting for such architects to propose a true system redesign strategy; quite the contrary, there is no other choice in the short-term. But setting up such a long-term parallel effort seems a promising way, maybe the only way, to eventually break out of the endless, expensive, frustrating, time-consuming annual policymaking cycle of continuous improvement efforts bringing only meager success in these more intractable systems.

A. The Theory of Large System Architecture

Let's now lay out the theory more formally.[1] We begin with three empirical observations which make up the starting assumptions (postulates) of the theory, from which we will be able to explain and predict the behavior of organizations in large systems.

Observation 1.

Organizations exist in a larger system—for brevity call it a macrosystem—whose structure they cannot alter by their own action alone. Thus schools and districts exist in a larger macrosystem we

1. As this article hopes to inform a popular as well as professional audience, those who prefer to see and assess practical system redesign strategies derived using the theory and methods here before taking time to look into the formalism itself, may turn immediately to the Applications sections for summaries of two such system redesign proposals. Otherwise, please forgive this fiercely didactic formalism; it is how our approach and our system redesign strategies came to be, and why they are novel compared to usual policy proposals. We believe the theory and methods deserve wider understanding, application and support by policymakers, analysts and the public.

call the public education system, which has a very definite structure. And health care providers exist in a larger macrosystem we call the health care system, which also has a definite structure (quite different than the education system's). If you doubt these large macrosystems have a definite structure, you haven't tried to change it.

Observation 2.

The structure of this larger macrosystem creates powerful incentives and restraints upon the organizations within it, powerful enough to punish or kill organizations the more they act counter to them, and to make organizations prosper the more they act consonant with them.

Now, if a macrosystem's incentives reward the organizations within it for performing as society wishes, and punish them when they stray, then we have a well-performing system. As noted earlier, the auto industry is one such macrosystem, the computer industry another. Organizations in such a macrosystem do what society wants; they do it of their own volition; and they do it far better and more innovatively than policy outsiders could ever order them to do so. And if they do not, they are not around long. In this felicitous situation the only policy task is oversight: to make sure that the structure of that macrosystem remains sound and is not inadvertently (or deliberately) altered.

But of course in the less happy situation, the converse is equally true: if the incentives of a macrosystem punish the organizations within it for the performance society wishes, and reward them for some other behavior undesired by society, then we have a malperforming macrosystem. No matter how well-intentioned the organizations within it, they survive and prosper only if they engage in the undesired rewarded behavior, and if they do not, they are not around very long. In such a case the policy task is much more demanding: It requires system redesign as defined above: i.e. restructuring that macrosystem to alter its incentives and align them with the goals society has for that system. And thus arises the notion of Large System Architecture (LSA): we must architect unsound macrosystems—that is, we must first: (A) come up with a future design for the structure of the macrosystem that, could we wave our magic wand and have it replace the

present structure, would place stringent incentives for the desired performance on the organizations within it; and second (B), since we lack any such magic wand, we must come up with a practical strategy to leverage the system from here to there. In short, we must first know exactly where we want to go, and then devise a way to get there.

Which brings us to the third observation:

Observation 3.

The structure of a macrosystem can be altered by sufficient collective action.

In other words, while one organization alone within a macrosystem cannot alter that macrosystem by its own actions, if enough organizations within and without it act collectively, it can be restructured. Organizations already know this whether policy-makers do or not. You will note that virtually all macrosystems are rife with multiple trade associations of the organizations within them. And one of the chief aims and activities of such collective activity is to alter the structure of their macrosystem in ways favorable to the organizations; these may or may not be favorable to the public. Public policy must be given the tools to assure that all collective action, including its own, is brought to bear for the public interest.

A theory is nothing but a small set of postulates (initial presuppositions) from which by deduction one can explain and predict a large number of empirically observed effects. These three observations, whose empirical truth (and limits) the reader can see for him or herself, constitute the postulates of Large System Architecture theory. By examining the structure of a macrosystem, we are able to discern the particular incentives and restraints that it exerts on the organizations within it, and from those incentives we can predict the performance of those organizations for good or ill. (An example deducing one particularly important prediction, The Decentralization Principle, is in appendix 1.)

Once you look through the lens of this theory, you no longer need blame the malperformance of any macrosystem on moral failings, stupidity, incompetence or corruption of the organizations and individuals within it. You do them grave injustice if you do, and

you haven't a prayer of altering their behavior because you are looking in entirely the wrong place for a solution. No large group of human beings has a monopoly on the virtues or vices of the race. There are quite as many brilliant, competent and highly motivated people in the education system and health care system as in the auto and computer industries, and just as many incompetents and miscreants. The difference is not the people, it is the incentives of the macrosystem structure they operate in: what performance it rewards, and what it punishes. You cannot change human nature, but you can change the incentives of a macrosystem and then the same people and their organizations will act differently.

B. Methods of Large System Architecture:

I. Designing a Future Model

In addressing a malperforming macrosystem, the large system architect has two main tasks. The first is to come up with a 'future model': a design for the macrosystem's structure that will place stringent incentives for the desired performance on the organizations within it. The second task is a strategy to implement the future model: to devise a 'change strategy' to move the present system to the new future model, and then to assist all those in position to help make this happen. I'll start with methods for devising the future model, and address the methods to devise change strategy later below.

To devise a future model, the architect must (1) determine the problem behaviors of the organizations in the system and then(2) identify the underlying cause of these behaviors, namely: i) the underlying incentives selecting for the problem behavior, and ii) the macrosystem structural elements that give rise to these incentives. [Using a medical analogy, before we can prescribe a therapy Rx we must identify the symptoms Sx and determine the diagnosis Dx.] This faulty underlying structure is what must be altered in the future model in order to correct the performance of the system.

A macrosystem may be defined as the set of all organizations which interact strongly to accomplish a definable purpose for society. That purpose is spelled out by the performance goals society desires

for that system. The goals then determine more precisely the macrosystem itself, namely: the set of all organizations and individuals (termed elements) and all their relationships and interactions (termed structure) necessary to accomplish the goals. A problem may then be defined precisely as a discrepancy between goals and actual performance. Problems are what cause societal pain and motivate policy action. This means that before we can accurately determine the problems (symptoms) of a macrosystem, we must first determine the goals society desires of that system. Then we can seek performance measures to see how well the system is doing against the desired goals. Therefore the first step for the architect is to identify a complete set of societal goals for the system; it must be complete if it is to capture all problems. (A crucial question is: how and by whom are societal goals determined? See appendix 2.)

Having a complete set of all goals is even more important when we begin devising a future model with correct incentives. Politicians are always eager to work on the easy and more popular goals and defer on the politically more difficult goals, thinking they can be added later and become someone else's headache. This is usually a recipe for failure in system redesign. Because goals often conflict and require trade-offs, it is usually impossible to tack on additional goals to a completed future model design aimed at only one or two of the desired goals.

An effective design must incorporate incentives for all goals simultaneously. In this sense macrosystem design is a bit like rocket science. If you have a rocket design, and afterward decide you want to double the payload or range, you cannot just tack on a fix. You must redo the entire design because all parts depend on all other parts. Macrosystem design appears similarly complex. Empirically it has been found that despite year after year of time-consuming effort, legislatures and citizen panels have seldom proven able to produce effective system redesigns in intractable macrosystems—nor can they be expected to, given the many demands on their time, any more than they could design a rocket or automobile. Identifying and rethinking the structure and incentives in these systems seems to require full-time study and experience. What legislatures and citizen groups can do is express what they think are the goals society desires, and then, as one more tool, set up a long-term effort on the side with system architects to see if these professionals can eventually bring back to policymakers

a promising system redesign proposal for them to approve, reject, or request further work. Note, this is much what Congress did when it created NASA; it did not try to design a rocket itself in committee. Because lay groups have more familiarity with macrosystems than rockets, they usually assume, with unfortunate results, that they can cobble together a system redesign strategy themselves. That is one reason we have made so little progress on our most difficult systems like health care and public education despite decades of effort. Akin to NASA, I believe a small profession of "large system architects" is needed—policy analysts and researchers who specialize in study and development of system redesign strategies for each particular problem macrosystem—to whom this specialized work can be assigned. Setting the goal and final approval remain, as it should, not with these architects but with established legitimate public and private decision makers.

Note, setting up an architect group is simply one more tool in the policy arsenal. It should be done without hoopla, nor does it mean everybody else stops their own efforts. To the contrary, they cannot and mustn't; a problem macrosystem has to be continually dealt with. Setting up an architect group in addition to continuing short-term efforts simply means that leadership has seen the wisdom of also investing in a parallel, longer-term effort with one or more skilled policy groups to look at the possibility for genuine system redesign to finally cure the problem system. In the meantime everybody else must continue strenuous improvement efforts to achieve what good they can.

In sum, system redesign (like all policy design) starts with societal goals. To arrive at a proposed redesign, the large system architect has four principal tasks: (1.) identify a complete set of societal performance goals for the system; (2.) identify system problems, comparing actual performance against goals; (3.) determine the underlying cause of system problems, meaning the incentives that drive actual performance and the structural elements that generate these incentives; and (4.) devise a future model: come up with a new design for the system structure aligning incentives with goals. While it might seem in principle that these steps would be carried out sequentially, in practice this is found not the case. Experience shows that as one proceeds, what is learned in one task influences the others. Completing the tasks thus requires constant iteration among them; the architect

winds up working at each of the tasks simultaneously, going back and forth among them to make progress on each.

As just one instance of the demands of system redesign, simply arriving at a complete set of workable goals and measures may require months of full-time work, iterating between problem analysis, incentive diagnosis, and potential future model designs, before resolving into a practical set of goals. In practice, in many cases we must settle for proxy goals and measures. Moreover, society seldom speaks with a uniform, let alone informed, voice, and each special interest group has its own notions about what the goals should be. The architect must arrive at his own best formulation of the goals he believes society has expressed desire for, goals that serve the public interest rather than some particular special interests. Indeed, clarifying goals is often one of the more useful tasks of the architect. But the architect has only the power to propose, not to decide; and his proposal will be merely one among many suggested policy options. He or she can simply state that if society wishes the goals he has set out, here is a proposed future model design likely to achieve them. Legislatures and citizens groups can then select amongst rival designs for the one that best reflects their opinion about the goals and seems most likely to work in practice.

Like any design exercise—be it rockets, cars, computers, or macrosystems—there is no recipe for devising a future model. Once the goals, problems and underlying causes have all been identified, one only has knowledge of what needs altering to eliminate the existing perverse incentives, and knowledge of all performance goals that the new incentives must select for, as well as all relevant research. Arriving at a future model that entrenches stringent new incentives for these goals then depends on the skill, imagination and experience of the architect.

C. Methods of Large System Architecture:

II. Devising Change Strategy

Future model design follows a fairly definite iterative procedure—identifying goals, problems, underlying causes, and then design—all of which proceeds more or less as a research and analysis project. But change strategy—to move the present system to the future model—

puts us immediately in the world of action; it is much more of a moving target and may require shifting gears frequently. Nevertheless certain principles appear to offer useful guidance.

The first rule is to have the future model design in hand at the start. All parties involved in facilitating the change must know with precision where we are trying to move the present system. Thus we can constantly monitor if actions are leading in the right direction, and alter course when they are not.

The second rule is always work on the front log in the jam. We may liken the task of change strategy to breaking up a log jam. Working on a back log does nothing to unstick the jam. We must find the front log and move that one. By "front log" I mean the step or action most likely to unbalance the status quo holding the macrosystem in its present form and produce the most response in the direction of the future model.

"Working" on the front log means finding and persuading those parties of interest with the power and motivation to take the needed action. Parties of interest may include public and private interest groups and various levels of government or its agencies. This usually requires a lot of educational work, diplomacy and consulting assistance, to show the advantage to a party of interest of taking the action, and the disadvantages of not taking it, and then to help them actually take the action. If successful, and the action is taken, the log jam shifts, sometimes predictably but often not. The shift usually brings a new log to the front of the jam. Again the architect must identify this new front log and then identify the coalition of interested parties with the power and motivation to move it. Those parties interested and capable of moving the new front log may be the same or a completely different coalition of parties as took action on the first front log.

The architect is now chasing a fluid situation, attempting to identify each new front log as it comes to the fore; then identifying the interested parties that might move it or fortify the action; continually monitoring and assessing whether the resulting movement is in the right direction toward the future model or has resulted in a reversal of progress; and altering and adapting course to keep the change strategy moving and homing on the future model.

Note that depending on the nature of the problem macrosystem and the desired future model, government may play a more useful role by leadership than by legislation. Legislation tends to reduce flexibility. Often a coalition of public and private leadership can produce better, faster, more agile progress. But also, in some cases, legislation done well can help or be crucial.

The architect and advocacy groups working for the redesign must also always work steadily on the rhetoric battle. Rhetoric addressing all relevant parties as well as the general public must be created to build understanding and support for the proposed system redesign. Every special interest will attempt to capture the rhetoric and try to put its own spin on it to favor itself and oppose change threatening to it. Interest groups may expend considerable effort and money on propaganda and disinformation to muddy the waters. The forces advocating for system redesign must be prepared to counter such efforts with equally frequent and skillful informative rhetoric.

Finally, to the extent feasible, it is best that change strategy be staged. As much as possible, one would like to create discrete local demonstrations of any proposed new future model and test and refine it before scaling up to more widespread implementation. One does not build a new moon rocket and load the nation on board on the first launch; one runs tests and gradually scales up as the design is refined and proves out. For the same reason, given the complexity of a macrosystem design, we would prefer, to the extent possible, to establish limited test beds first to assess and refine a proposed future model, and then gradually implement it more widely, always monitoring and refining it along the way if and as problems emerge.

LSA theory and methods do not obviate the formidable task of implementing major reform in a society's large systems. That task was accurately spelled out almost 500 years ago:

> *There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things. For the reformer has enemies in all those who profit by the old order, and only lukewarm defenders in all those who would profit by the new order, this lukewarmness arising partly from fear of their adversaries, who have the laws in their favour; and partly from the incredulity of mankind, who do not truly believe in anything new until they have had actual experience of it.*
>
> *—Niccolo Machiavelli, The Prince, 1532*

Machiavelli's observation is eternally true. The only thing that changes is the old order and those who profit from it (and thus accrue power to stall change). These slowly evolve, each age producing its own—those of today, for example, wholly different than those in Machiavelli's own era. What LSA can do is improve the likelihood of success: inform and arm reform advocates with the ability to identify and attack the underlying cause of a troubled system's problems—to address the diagnosis, rather than, as so many do today, the symptoms. Symptom-curing without eliminating the underlying cause means only that the symptoms endlessly return, diverting and wasting the effort of advocates in ineffective action, playing into the hands of the old order.

D. Fostering System Redesign

Because public and private policymakers have too many responsibilities to devote several years full-time to a single macrosystem, they must think like executives: not how will I solve this problem, but rather, who will I get to solve this problem. System redesign requires a system redesign group: a long-term group of LSA architects for each poorly performing macrosystem of interest. Thus, for instance, if a state wishes to be in the forefront of system redesign, then public, private, and/or foundation leaders in that state should see to setting up and supplying long-term core support of system redesign groups in the state (or contracting with outside redesign groups). Foundations and public and private agencies at the national level can do the same, fostering one or more LSA groups for the poorly performing national macrosystems in which they take interest. The Center for Policy Design is such an LSA group and has developed and assisted interested parties across the nation with proposed redesign strategies for each of the two largest items in state budgets: public education and health care (brief descriptions of these strategies may be found in the Applications sections below). Thus my discussion is not some ivory tower exercise; for three decades we have been doing in the real world what I have described here. We are the only group I'm aware of specializing

in the kind of system redesign work described here. Should leaders wish to foster system redesign groups, it may help if I briefly describe our experience and try to draw from it suggestions about what such groups may need in order to succeed.

The Center has two principal projects, one on public education system redesign, and one on health care system redesign. Our senior fellow Ted Kolderie has led our Education|Evolving group on public education system redesign. He began in 1982 and he and his colleagues are still at it, working on change strategy to move our proposed future model for public education into being, here and around the country. Minnesota's state government and private leaders recognized early on, the promise of this redesign strategy and have been bringing it into being with our assistance. Minnesota was thus the test bed for this strategy (an example of staging), and it has been continually refined and improved with our growing experience. An important part of this strategy involves state-authorized chartered public schools, and we have assisted many states in enacting chartering legislation based on the Minnesota model. We have also developed many tools to assist charterers and organizers of such schools. We have monitored progress and note gross distortions from our proposed strategy in many states by various special interests.

I led the Center's health care system redesign efforts. I started on the problem in 1969 at Inter-Study under Paul Ellwood's leadership and then left to start the Center in 1981. Our first big initiative at InterStudy was HMOs, new prepaid integrated health care organizations to compete with the traditional fragmented provider system. I wrote the enabling legislation for Medicare and the HMO Act in the early 70s. Later, at the Center, I was finally able to crystallize Large System Architecture theory, and realized that introducing new actors like HMOs, even if they had better "innards", into the larger health care system with the same old perverse incentives was not going to solve the problem. In retrospect our HMO work was a good thing that I now feel was a false start. Thus a new redesign strategy (at the time tagged with the unlovely name Buy Right and now renamed Informed Consumer Choice) was developed to alter the perverse incentives in health care, to reward providers for better care for less cost. During the '80s we got the first step (the "front log"), severity-

adjusted health outcomes assessment, implemented in three places: Medicare, Pennsylvania, and Cleveland. The remaining two steps, cost assessment and consumer insurance incentives, were not taken because I fell prey to serious major clinical depression in 1986 (I had nothing to be depressed about except that I had it) and was knocked out of the saddle by 1990 and progress ground to a halt. Remarkably, a remnant effort continues in Pennsylvania, but Medicare and Cleveland abandoned outcomes assessment under industry pressure.

What can we conclude from this experience? First, some macrosystems have obvious redesigns, or an excellent redesign design has already been demonstrated elsewhere. For example, the British have shown how to reduce prison violence while virtually eliminating the barbarous practice of solitary confinement, producing better performance for fewer prison dollars. These easier cases we can move on right away. On the other hand, in our experience, developing and implementing a workable system redesign from scratch for a really difficult macrosystem can take years, with not always much to show for it for some time. And one can expect some false starts—though we now have theory that may reduce such occurrences. Thus we will need both architects and knowledgeable funding support, both willing to stay the course. And, as with the moonshot, we will need leaders with the vision to set goals and launch initiatives that may take beyond their tenure to complete, proud to set the course and claim the future results as legacy.

Second, the difficult macrosystems clearly require full-time immersion and a team. Redesign architects starting on a new system have to get up to speed and develop expertise not yet existent. In our experience the best team combines a creative system redesign architect with an experienced veteran professional of the system, an insider who knows how it really works, along with a 'go to' guy with diplomatic, executive, and political savvy, to assist with the consulting and change strategy. These people will need adequate staff, all of whom will need considerable on-the-job training.

Third, large system architects seem to need an independent home. It doesn't work well when housed in conventional academia, though it might if housed in a separate institute which includes graduate dissertation candidates only after all course requirements are complete. The time demands of change strategy are heavy and irregular

and cannot accommodate teaching schedules and faculty committee meetings and academic overhead. Moreover, if effective, the work can be controversial, making a university skittish. (Ted tried a university base for a few years and then, to our good fortune, asked if the Center might want to give him a home—it certainly did.) For similar reasons, an architect group is not well-housed as a sidebar in some larger organization, be it government or private, with a different operational mission, particularly one in the macrosystem under study. Talented staff, particularly in government, get pulled from long-term redesign work into all the pressing short-term firefights, the urgent trumps the important; and a host organization with special interest will bias redesign work to favor that interest.

Fourth, a group doing large system architecture needs steady core funding. They have great trouble with capricious support that is big on them one year and on to something else the next. They do not need, say, a million dollars for a year, they need a hundred thousand annually for ten years. This has three effects: It provides support for the kind of basic research and design spadework that no one else will pay for; it allows them to hire and train staff without fear such staff will have to be laid off after short-term grants expire whose renewal is problematic (an enormous loss of investment to the group); finally, the group can spin up the core grant, often effectively doubling it, with project contracts when a client is found who wants assistance acting on the redesign strategy. But the presence of core support allows the group to choose only projects that move the strategy. One is not left scrambling for irrelevant projects just to cover payroll, nor figuring out who to charge when you go to the restroom.

We pioneers of this profession have had a demanding time. We had to come up with the ideas, a time-consuming exercise; we had to seek and educate potential clients (those who could move the front log) all over the country; we had to conduct consulting projects assisting them to implement our redesign ideas; we had to run a small non-profit, non-profitable organization; and we had to beg for core money all over the country from a largely uninformed foundation community to support ideas considered controversial. A knowledgeable community of government and private leaders and foundations could provide long-term support and assure a much stronger, vibrant set of system architect groups, who could work

both locally and nationally. And I would recommend the use of foundation funding rather than the rigidities and political exigencies of public funding.

In the final analysis I believe the key ingredient in any redesign group is the lead architect. I had the intention for the Center, as soon as I knew it might survive, to add education and welfare as program areas along with the health care program I was laboring on, since Large System Architecture theory, which arose out of the health care work, seemed generally applicable to many macrosystems. I envisioned the Center as a place to train up new architects, letting them learn on the job from experienced architects who were actually engaged in redesign work. But to start, say, an education program, what I needed first was not money or staff or a proposal, but the person—one with imagination and experience, a committed person of vision with a visible track record. This is what you are looking for in a system architect. So when Ted Kolderie approached me looking for a home, I gladly accepted. I knew I had my architect, the man I was looking for, with vision and a track record and thereby the solid basis, the only solid basis, for the Center's new education redesign program.

In conclusion I suggest to everyone concerned—public, private and voluntary leaders and citizens who wish to foster system redesign in our several problem macrosystems in a state or nationally—you need to foster and support one or more system architect groups to work on each. (Perhaps government should have, besides a council of economic advisors, a council of such large system architect advisors.) You need to build public understanding and support for such work. To build such a group, bet on the person, not a proposal. This person will think about redesign of macrosystem X for five years, eventually leading the way from thought to action, and keep you abreast of his or her progress; that's what you're betting on, so seek this right kind of person. What's his or her track record of innovative thought, deep and lasting commitment, and accomplishment; if it's there, that person is worth a bet. Find that person—they are rare—and help them build a group and give them their head; stay informed of progress and, as long as you see promise there, provide steady core support. I venture if you build several such capable groups around proven, imaginative lead architects to work on system redesign for problem systems, they will cross-pollinate and keep you ahead for years.

Application 1: Informed Consumer Choice

Better Care at Less Cost: A national, state and local strategy for health care system redesign

A front-page article in the Wall Street Journal in 2009 (Oct 6) reported on Pennsylvania's admirable agency, initiated in the mid '80s, that compares hospitals on severity-adjusted health outcomes. What may not be obvious from the article is that outcomes assessment, such as that in Pennsylvania, is likely the key to cost-containment in any sound plan for universal coverage, if we wish a plan that won't eat the country out of house and home, and that will actually improve quality of care as it seriously reigns in cost escalation.

To date, all the noise and hysteria in the federal health care debate appear to be over side issues. The central issue on which all else depends, the gorilla in the room if you will, is cost containment. And it is being missed by the entire debate. Everything we want to do depends on how well this gorilla can be tamed. Put more precisely, the gorilla is: How to significantly control health care cost (that is, lower the rate of cost escalation down to the rest of the economy) but without compromising quality, efficiency and access.

Why enact universal coverage? Because it is not just good but smart. Beyond promoting the general welfare, universal health care coverage, like universal public education, it creates a notably more productive, longer-lived and less costly workforce. Do the math. If you wish to out-compete a billion Chinese, you better have a smarter and healthier workforce than anyone else. And that starts not at work age but at birth if you want it at the least cost and greatest benefit. Why do other countries have a healthier workforce at less cost: a big reason is that they cover everyone. They start at birth and reap the benefits: better health maintenance and its attendant lower costs. Universal coverage is no more bleeding-heart charity than universal public education, it is a crucial high-return public investment that the nation is shortsighted not to make.

But if we simply extend coverage to everybody and ignore cost-containment, we will be pouring gasoline on an already runaway fire—a fire making our private sector less competitive abroad, and devouring every dollar for public social expenditures at home,

starving other domestic programs far more vital to the nation's well-being than more medical care.

To see why outcomes assessment is so critical to cost containment, we must appreciate the root cause of why the health care system malperforms—what causes its variable quality and access and, above all, its runaway cost. It is not greed, it is not profits, it is not insurers. The fundamental cause is the powerful perverse incentives our present system places on providers. They cannot do other than what they are doing or these incentives punish them. Any provider who raises costs prospers. Any provider who tries to be maximally efficient goes broke. The more efficient a provider (i.e., better patient health outcomes for less cost), the more severely the incentives punish him. He earns that much less per patient and does not gain a single additional patient for his pains. Nobody has any advantage to choose him over costly providers. Worse, nobody, not even providers, knows who he is.

The good news is that the best, most efficient providers today achieve outstanding patient outcomes for 20 percent less cost than the national average, and they aren't even pressed. If all providers could be led to similar performance—and most could—the nation could eventually retire 20 percent of its doctors and hospitals by attrition: an enormous savings. And quality would improve. The bad news is, with few exceptions nobody knows who these good efficient providers are, and patients have reason only to choose for quality, not efficiency, even if they did know the true quality and efficiency of every provider.

Put simply then, the gorilla in the room is: how will you reverse the present powerful cost-raising incentives on providers? Until you reverse these incentives, any cost controls will be spitting into the wind. Providers will be forced by the perverse incentives to fight you, to game the controls and beat you. Until the incentives are reversed, cost control strategies will fail or else brutalize quality, efficiency and access to care.

Too many on the left have a mystical belief that if the government gains control, cost will be magically contained. (The code word is single payer.) The facts are 180 degrees opposite. We have a single payer program, Medicare, and for 50 years it has been the most inflationary payer of all (not by much: private insurance has done little better). For instance, the Twin Cities of Minnesota with their notably

superior outcomes cost Medicare half as much per elder as notoriously over-doctored Miami. Their reward: Medicare pays Miami twice as much per elder as the Twin Cities! The more you raise cost, the more it pays. Is it any wonder costs escalate?

And that's where Pennsylvania's effort is key. It began as part of a strategy (nicknamed Buy Right then, recently renamed Informed Consumer Choice) directly aimed at reversing the perverse incentives. Informed Consumer Choice aims to reward providers the better and more efficient they are over providers who are less good and less efficient. Unfortunately, Pennsylvania only managed to take Step 1 of the strategy. A fine start, but Steps 2 and 3 are perhaps even more difficult, and the incentives will not be adequately reversed until they are also taken.

In a nutshell: if all three steps are taken, then patients will receive information identifying (Step 1) the quality and (Step 2) the efficiency of each and all providers, based on severity-adjusted patient health outcomes and patient satisfaction. They will know which providers are better for less. And (Step 3) they will have proportional rewards—discounted premiums and co-pays, extra benefits, and the like—in their insurance to pick those who are better-for-less over the more costly. The best, most efficient providers then get the patients. The less good and less efficient lose patients; they either shape up, or fold up shop. The result should be sound incentives on providers to maximize quality, efficiency, and productivity gain.

The way to sound cost containment without harm to quality and access is incentives on all providers to steadily improve productivity (better outcomes with fewer resources), not to browbeat them with crude draconian cost chops gutting quality of care, eligibility and coverage . . . bureaucrats second-guessing and micromanaging doctors, denying services, slashing fees and miring the system in ever-greater red tape. Productivity gain comes from sound incentives, not from top-down prescriptive government controls. Get the incentives right and I believe American providers will solve the quality and cost problem for us better than any controls we can devise.

The proper reward for an efficient provider is more patients at the expense of less efficient providers, not some kind of bonus payments which have nowhere been shown to contain cost. Bonus payments raise cost by paying efficient providers more than they ask. Patient-shift

through properly informed and incented consumers is the simplest, most powerful incentive to reward provider quality and economy, and is the force behind Informed Consumer Choice.

And the best (and probably only) way to win politically on serious cost containment is to lead with quality. If you cannot assess quality first, providers will claim any effective cost controls undercut quality, and the public will support them. If the Informed Consumer Choice strategy above does not appeal or proves insufficient alone, this does not change the diagnosis. The nation must come up with a supplementary or alternative strategy to reverse the distorted incentives. And no matter what that strategy turns out to be, outcomes assessment will clearly have to be an essential part of it. Which means the nation should not wait to get started on outcomes assessment. It should start now.

In short, outcomes assessment is not just some worthwhile thing to do sometime. It is essential not just for quality improvement, it is the key to serious health care cost control without harm to health care. If cost is to be controlled, outcomes assessment cannot be left to meager hit and miss efforts about the country. It must become a central well-designed thrust of national and state health care policy. All the more so with advent of universal coverage.

Application 2: Public School Choice

The Missing Ingredient in Public Education Reform Thinking: A national, state and local strategy for public education system redesign

In this discussion please distinguish between charter schools—shorthand for state-authorized chartered public schools—and the Public School Choice strategy (PSC) for system redesign of the nation's public elementary and secondary education system. The point—the goal—of this strategy is not charter schools; it is to foster good public schools, be they charter or district schools. PSC demands charter schools be public schools, fully satisfying the state definition of a public school (PSC excludes private, religious, or for-profit schools). They are simply one essential part of the PSC strategy to broaden the public school system, opening the door wide to create new, innovative public schools. We do not believe that charter public schools

are intrinsically superior to district public schools. The differences between the two types are dwarfed by the differences within each type. Some of each type are superior, others are unacceptably poor.

The trouble in our present district systems is that good schools don't spread and bad schools don't change or go out of business. Equally troublesome is the rigid monoform pedagogy and schedules of present district school systems. Districts appear locked into the standard lecture/test method—this despite the growing cognitive research showing that different children learn in different ways requiring different educational methods. Many fail to progress under the standard pedagogy and lose interest, morale and motivation, the heart of successful learning. They drop out, many in spirit even when not in body. And most districts are locked into standardized daily schedules. Many children face circumstances—work, home conditions, teen motherhood, etc.—that require far more flexibility than these rigid schedules allow. They, too, drop out. Despite decades of effort and spending, present district school systems have found it difficult if not impossible to break out of their rigid pedagogy and schedules in more than token fashion.

It is not that there aren't good and great district schools. The majority are. But just as there are inferior charter schools, there are all too many inferior district schools. The principal difference, unfortunately, is that in the present system poor district schools do not go out of business. They are propped up and allowed to go on year after year short-changing students—a captive group with no escape—by their inability to motivate and help children learn.

We must face the fact that decades of trying to improve poor district schools—by all the good things being recommended today: more public and private leverage, more money, better personnel, better training, better method, etc., imposed on schools and districts top-down—have all notably failed. Why? What's been missing . . . people have not asked themselves that question. Those now advocating these things (only, now, bigger and better and harder) must explain why they will work this time. The failure is not due to lack of skilled, innovative educators and teachers; the system is loaded with them. They know what needs done and don't need outside lay policymakers to tell them. Rather, in the present system poor districts and poor schools have a culture and circumstances that resist change and frustrate innovative educators at every turn. Worse, under the present system these schools

are monopolies with no real inherent incentive to change. Since massive policy interventions cannot be sustained long-term, it seems likely that when all the present policy attention and hoopla get redirected to the next national crisis, the present education system will revert to business as usual, just as it always has in the past. An effective strategy must introduce changes that will be sustained after the interventions have been accomplished. There is only one type of strategy likely to do this: system redesign—i.e., fundamental structural change in the larger education system that alters the incentives on schools. Yet it is the one strategy overlooked, the one strategy all but ignored. We believe it the missing ingredient in education reform thinking, and without it our present well-meant efforts have little better prospect than our decades of past well-meant efforts.

What is genuine system redesign? It is not telling schools what to do. It is "incenting" them what to do. It is changing the structure of the education system to place powerful incentives on schools and districts rewarding good performance and penalizing poor performance. Consider the incentives in the present district monopoly school system. When children do not learn, who loses their job? Who goes out of business? When a school succeeds in motivating children to learn, are more students allowed to go there? There is neither penalty nor reward, whether children learn or not. Unless these incentives are altered, why will schools improve? Institutions, public or private, without performance incentives tend increasingly to serve themselves, not their mission.

Done right with proper incentives, system redesign will bring about all the good things above, heretofore recommended and tried for years without taking hold; but schools will now do them on their own in their own interest, and do them far better and more economically than anything any massive, centralized external policy effort can impose on them.[2] In education, the needed system change must by its design implant strong new built-in incentives rewarding school performance. It must allow bad schools that will not improve to be put out of business and replaced with new and better

2 Note, this is true of all large systems—education, health care, etc.: policy cannot order organizations to act counter to the powerful incentives placed on them by the larger system in which they operate; they have no choice but to ignore or resist, else they will be hurt. The correct policy approach, too frequently overlooked, is to appropriately redesign the larger system to replace its bad incentives with good incentives.

schools—with schools that give innovators much more free rein to innovate better learning methods and school cultures. All this is exactly what the PSC strategy is designed to accomplish. It is the one strategy that is not simply more of the same—the same things that have not worked in the past—as seems so in vogue today.

The basic redesign idea of PSC is to end the present district monopoly and introduce a variety of competing public schools, some authorized by local districts as at present, and others by state-authorized charterers, with freedom for all these public schools to enter and leave the field depending on their success. State-authorized chartered public schools add two critical virtues missing in the present education system of solely district monopolies. First, chartered schools have a flexibility, largely unavailable to present district schools, to innovate or specialize in new learning methods likely to reach and motivate students poorly served at present by the monoform lecture/test pedagogy of our district schools. Thus instead of continuing the decades-long failed strategy of trying to reform poor district schools directly, innovation and flexibility can be introduced via entirely new schools free of district rigidities. Thereby PSC provides innovative teachers and educators unparalleled opportunities to introduce a variety of new learning methods and schedules frustratingly difficult if not impossible in their present standardized district school systems. Indeed, increasingly, new charter schools are being teacher designed and operated exactly by such innovative teachers and educators, because they finally provide them the freedom and opportunity they have sought and needed for so long.

We emphasize: research has established that not all children learn in the same way or at the same speed; Albert Einstein and Michael Jordan do not learn in the same way. In particular, many children (Einstein famously so) do not learn well by the lecture/test methodology that dominates present district school systems. Because different children learn in different ways, some flourish under certain learning methods but not under others. New chartered schools that base themselves on methods neglected or difficult to implement in standard district schools can thereby provide learning opportunities for a whole class of presently poorly served students. By adding a variety of such chartered schools to our district schools, all these different classes of neglected learners should find a school, district

or charter, appropriate to motivate their learning progress. With far fewer drop-outs and far more learners, 'no child left behind' should become more than an empty phrase.

The second and equally vital virtue of adding chartered schools is that good charter schools grow and bad charter schools go out of business! Some critics protest that charter school failures are a terrible thing, an intolerable weakness. The opposite is true; it is a virtue that schools that cannot attract students or are poorly run do not continue. If a State does its regulatory job well, assuring the initial capability of a proposed charter school, and that it meets the requirements for a public school in its curriculum (non-sectarian, non-ideological, etc.), it can minimize such failures. But it likely cannot eliminate all. These poor chartered schools should be allowed to fail. Students can be moved to other schools of the parents' choice. The idea in PSC is to protect students, not schools.

The other side of this virtue is that good charter schools grow and draw students from poor district schools as well as poor charter schools. So under PSC poor district schools will now also be put out of business—not by public fiat (almost impossible politically), but for lack of students. Parents of children in poor schools, district or chartered, or whose children are failing to learn under the standard lecture/test method will have alternatives. They will not be told that waiting lists for district magnet or special schools, if any, are full. They will be able to send their children to whichever public schools, district or charter, they find best for their children. And since districts cannot stop the entry of charter public schools into their area, we expect district schools to develop much more flexibility and variety in the future to meet the competition from charter schools. The point is to reward school excellence, district or charter, with students. Thus the net, and devoutly to be desired, effect of PSC redesign should be that good public schools, whether district or charter, flourish and grow at the expense of poor public schools, whether district or charter.

In conclusion, to assess PSC by simply comparing the averaged performance of present district public schools with that of charter public schools misses the entire point. On average neither sector is superior. It is a misdirected static snapshot when what is being attempted under PSC is to put in place new system-wide incentives on schools, incentives that introduce an entirely new dynamic in public education

where, over time, good public schools, whether district or charter, take students from poor public schools, which either improve or close. This dynamic will not bear full fruit in a year or two, but given the strong new incentives, in a decade or two the public education system should be much less rigid and centralized, much more properly varied in learning methods and schedules, much more innovative, and much more responsive and effective for all students. We urge people to understand PSC, the Public School Choice strategy for system redesign of public education, and help it happen.

Appendix 1

The Decentralization Principle

A number of theorems useful for policy can be deduced from the postulates of Large System Architecture (LSA) theory. To illustrate, this appendix will provide one example, but a particularly important one for policy: when is it safe to decentralize control of a macrosystem?

When an industry or other macrosystem is performing poorly, there is often a rush by some policymakers (particularly progressives) to "command and control regulation": i.e., by using strong, top-down regulatory controls over the industry's decisions, government is supposed to make the industry straighten up and fly right. Unfortunately, this strategy seldom works as well as its advocates hope, and there is an extensive literature[3] as to why: how the structure and incentives of command regulated macrosystems are stacked against the regulators, no matter how competent and dedicated. For insight, consider just one such obstacle among the many raised in this literature. In command and control regulation all critical regulatory decisions must go to the top and be decided by a small panel of central regulators. But the theory tells us an industry performs badly because the incentives of the system strongly reward bad performance and punish good performance. No matter how brilliant and hard-working, these regulators simply do not have the staff and time to nimbly process all the myriad decisions necessary to stay on top of an industry, particularly an industry with strong incentives to end-run them. And they are badly outnumbered by all the

3 Note: A review of this considerable literature may be found in Chapter 5.

brilliant people in the industry who know its business better than the regulators and continually invent ways to evade the controls. And because only the few most important decisions can be made with limited staff and time, command regulatory decisions tend to be blunt weapons not easily changed, so a command-regulated industry often not only continues to perform badly but rigidifies and loses both effectiveness and responsiveness.

Of course other policymakers (particularly conservatives) push to deregulate, get government off the industry's back and decentralize decisions back to the industry, so that all the thousands of competent private individuals and organizations in the industry can use their creativity and skill to drive the system aright. But this strategy seldom works well either, despite its advocates' hopes. It is indeed the case that thousands of industry people familiar with the system can bring to bear far more brainpower, expertise, imagination and agility than a small group of outside regulators, so the capacity to decentralize authority is devoutly to be desired. But these advocates overlook that decentralization presupposes that the industry is properly structured with incentives rewarding the desired performance, which the theory tells us is exactly what doesn't obtain in a badly performing system. Therefore these thousands of industry people will use all their brainpower, expertise, and imagination to excel at performing badly in exactly the way the bad incentives reward them to do, and punish them to do otherwise. Hence in a poorly performing system with bad incentives, neither command regulation nor decentralization solve the problem. Decentralized control is far more effective and nimble than command regulation for the reasons observed above, but it will only work in the public interest if the system is made sound, i.e., if the system's structure is re-architected to align system incentives with goals.

Hence follows the following theorem on how and when to decentralize:

> ***Decentralization Principle:*** *It is only safe to decentralize control in a macrosystem when its incentives are aligned with societal goals.*

If policy will implement such structural redesign in a poorly performing system—not a simple task—then regulators can decentralize, leaving operating decisions to the autonomous organizations and individuals in the system, and limit regulatory purview just to maintaining the integrity of the new system structure (termed "system

oversight regulation" and much less intrusive than "command and control regulation"). This is but one of many useful policy principles and insights that can be derived from LSA theory.

Appendix 2

On Societal Goals, Policy, and the Role of Large System Architects

The purpose of policy is to achieve societal goals. But what is meant by a societal goal for a macrosystem? And how and by whom are such goals specified? In practice, societal goals are specified by those holding the political power to decide them. In a despotism for example, goals will reflect the ambitions and values of the leadership cadre in power. They will reflect the interests and values of the cadre for the society, not necessarily the interests and values of the society. The cadre would then use LSA to incent the macrosystems of the society to accomplish its despotic goals.

In a democratic society, goals will reflect the aspirations and values of the elected leaders for the society which, depending on the fairness of the election process, are more likely to correspond to the aspirations and values of the citizens of the society. Ideally all citizens would share common aspirations and values, but no large society achieves such perfect unanimity. Moreover many of the aspirations and values of a society are in conflict with each other, so that a balance acceptable to the citizens must be struck by any realistic policy. Such a balance will never satisfy all factions perfectly; some will be more happy with any given balance than others. A spirit of compromise for the good of the greater society over special interest or ideology is essential to any well-functioning democratic society. (When one or more factions, in self-interest or self-righteousness, set their prized goal above all others and refuse compromise, such crippling factionalism paralyzes democracy. In their refusal to recognize any other interests than their own, such obstinate factions act more like despots than democrats.)

Desirably each societal goal in a republic, provided that it does not infringe the basic human rights guaranteed by the republic to all citizens (protecting the minority from the tyranny of the majority, and vice versa), should have the support of the great majority of the citizenry. The greater the percentage of support, the more legitimate a proposed societal goal would appear to be. A goal supported by a bare majority of citizens would more aptly be called a goal of the majority party rather than a societal goal. But goals supported by three-fourths or more of the electorate would seem legitimately termed societal goals.

Consider now the role of the large system architect: he can only propose societal goals, he has no power to decide. Just as a home architect can propose a house design to a client, it is the client, not the architect, who makes all final decisions—to approve, reject, or modify. Just so, the power to decide societal goals (and any proposed system redesign strategy to achieve them) rests with those holding legitimate authority to decide—in a democracy, its elected officials. They may approve or reject any set of proposed goals or request modification. Independently, they may accept or reject any proposed system redesign or request modification. In proposing a complete set of goals the LSA architect certainly tries to anticipate and help clarify the goals that society and its legitimate decision-makers have for the macrosystem in question. In eventually bringing his proposal to society and its leaders, he says to them in effect: 'Here is a set of proposed system goals; if you agree with them, then here is a proposed redesign strategy to accomplish them; but if you do not share these goals, then this is the wrong strategy.' And then, like a home architect whose house design is rejected or modifications requested, it's back to the drawing board for the LSA architect, to devise a more acceptable set of goals and a new redesign strategy to accomplish them.

Appendix 3

On The Role of Large System Architecture

The purpose of policy is to accomplish societal goals. This profound point is so obvious that it often seems overlooked, but it has consequences for effective policy design, also often over-looked:

good design must start with setting out the relevant societal goals. A society's goals not only include practical needs such as productivity increase and efficient allocation of resources, they are where a society expresses its values: its sense of fairness, compassion and respect for the wellbeing of its members. A society's goals are often carried out by macrosystems—large systems of organizations and individuals, such as the health care or education systems, etc. It is usually better, when feasible, that government itself not operate the organizations. But it is the function of government to see that all macrosystems and their organizations pursue desired goals. Designing policy to improve macrosystem performance is presently in many cases a grab-bag of ad-hoc methods specific to a particular macrosystem. The purpose of Large System Architecture (LSA) is to provide a more systematic approach to policy design across macrosystems generally, incorporating all relevant disciplines. LSA provides a general theory and practical set of methods to help policymakers properly assess and, when necessary, improve macrosystem performance. LSA theory predicts that macrosystems will only perform well when their incentives are aligned with the desired societal goals, otherwise organizations will be rewarded for undesired behavior. Perhaps the most important and distinguishing property of the LSA method, its particular advantage over more common approaches, is that, as emphasized above, it starts directly with explicitly identifying society's desired goals for any given macrosystem. (In this it differs somewhat from standard disciplines such as economics, law, political science, etc., which often focus on disciplinary objectives more than overall societal goals for the system; LSA then incorporates all standard disciplines relevant to a problem macrosystem, concerting them to focus on the desired goals and on so-called "system redesign" strategies to achieve those goals.) Its basic predictive insight, that organizations must follow the incentives placed on them by the larger system they are in, is often overlooked by usual policy strategies that take the basic system structure for granted and attempt to regulate or fix its failures while ignoring its unsound incentives. In contrast, when LSA architects identify a macrosystem with incentives not aligned with goals, they use LSA's methods to (1) propose ways to redesign the system structure to align incentives with goals—termed "system redesign"—and present these to policymakers. If the redesign is approved, they (2) assist policymakers to implement the

redesign. LSA thus offers a superior alternative to either government controls, which stifle organizations, or no controls, whereupon organizations soon stray from desired goals. Rather, government oversees that correct macrosystem incentives are put in place and properly maintained, allowing the organizations within full freedom as each sees best, to follow the incentives rewarding them to maximize on goals. Societies who wish their macrosystems to perform steadily better for less would do well to encourage the new discipline and its practitioners.

Appendix 4

Large System Architecture and Economics

Because economics also deals with system structure and incentives, many economists might not readily see that LSA adds much to their discipline. This appendix will suggest it does. While LSA uses methods from economics and all other disciplines relevant to a problem at hand, it is in fact a discipline of political economy and policy development. It begins by identifying a complete set of policy goals for a given macrosystem, and then designs and helps implement policies to maximize the performance of that system on those goals. An example may make the distinction clear, comparing the difference in how these two disciplines, economics and LSA, approach economic policy. The economy is a macrosystem for the production and distribution of material wealth. Economics, more particularly macroeconomics, is a powerful discipline to explain and manage the economy on a broad set of economic objectives: GNP growing at a satisfactory rate, unemployment down to acceptable levels, inflation under control. Economists use a set of disciplinary methods to accomplish these objectives, on the private sector side using regulation to assure efficient markets and stable financial institutions, and on the public sector side, using monetary and fiscal policy as stimuli and controls to keep business and employment up and inflation down. Presently these methods appear to be succeeding, if slowly and uncertainly, the main outstanding concern of economic managers being the risk that the volatility of the financial sector still poses to the larger economy, threatening repeat of the 2008 crash. In contrast, LSA looks beyond these disciplinary objectives, indeed beyond any given discipline's

objectives, seeking the actual primary policy goals desired by society. For the economy it finds these to be two of the stated goals in the Preamble of the Constitution: promoting the general welfare and liberty. By these the Constitution clearly means the general wellbeing and liberty of all Americans, not the individual wellbeing and liberty of some segment or segments of Americans to the neglect or at the expense of the remainder. LSA regards the purpose of the economy (and every other macrosystem) to maximize Constitutional goals. It therefore regards all the other economists' performance objectives as means rather than ends—as instrumental goals subordinate to helping accomplish the two primary goals—because these instrumental goals, unlike the general welfare and liberty, are not explicitly stated goals in the Constitution and therefore not themselves Constitutionally obligate. If the present economy is not achieving these two Constitutional goals, then these instrumental means, and any others necessary, must be redeployed in ways so that it does. LSA's concern is that all these economic measures mentioned above can appear satisfactory, yet miss that the economy may be failing to promote the general wellbeing or general liberty, indeed can even be putting one or both at serious risk. Therefore LSA assesses performance of the economy directly on these two Constitutionally obligate goals. If the present economy is acceptably increasing the wellbeing and liberty of the general population, then LSA would regard the present economy as sound. But if on the contrary the general wellbeing or general liberty are stagnant or slipping, or the individual wellbeing or liberty of particular segments of the population are disproportionately increasing to the neglect or expense of the majority, then—no matter how satisfactory such measures as GNP growth, employment, inflation, and stability of financial institutions, etc.—LSA would regard the present economy as falling short on its stated primary goals and therefore unsound; it would conclude its current structure and incentives require modification or redesign to acceptably promote wellbeing and liberty more generally. To my knowledge these two goals do not usually arise explicitly or as primary within the present discipline of economics. People may unthinkingly presume that the general welfare is being promoted if the instrumental economic objectives above appear well met, but as just noted, this can be untrue. Unless measures of the general wellbeing itself are directly monitored there is no way to know. Judging from the actions of the present managers

of our economy, promoting the general welfare would appear at best only one of many objectives, even a minor objective, rather than the primary goal. And the second primary goal, promoting the general liberty, is presently not usually considered part of economics, yet it is obviously a critical part of managing the economy: unduly excessive concentration of the nation's wealth in too few hands is a dire threat to the general liberty. Thus LSA's effort to first identify fundamental goals makes a substantial difference in policy design, and the utility of macroeconomics would appear strengthened as a tool for economic policy development were it augmented with LSA methods. In sum, the distinction between LSA and other disciplines is that, as in this example, LSA is first concerned to identify the fundamental goals society desires of any particular macrosystem, and then design and implement policies, drawing upon all relevant disciplines, to maximize performance on these goals; it is not limited to the objectives, methods and viewpoint of any one discipline.

CHAPTER 2

Two Lectures on Large System Architecture

Presented at the RAND Corporation
System Analysis Methods Seminar Series, *April 2017*

EDITED TRANSCRIPT

On Large System Architecture

Toward a more systematic discipline for policy design and analysis of large social systems

Friday, April 27, 2017

Does the American Economy Need Redesign?

An example of LSA analysis applied to the economy

Saturday, April 28, 2017

On Large System Architecture

Toward a more systematic discipline for policy design and analysis of large social systems

Friday, April 27, 2017

Summary

Dr. McClure will outline a general theory and systematic methodology, Large System Architecture (LSA), for analyzing, designing and politically implementing policy to improve the performance of large social systems such as e.g. education, health care, the economy, etc. The products of LSA methods are "system redesign" policy strategies to align the structure and incentives of a large system with society's goals for that system. He applies LSA methods to two example systems, the health care system and the economic system, to demonstrate LSA's power to generate novel promising policy strategies largely missed by our current amalgam of policy analytic tools. Dr. McClure will pose LSA as possibly foundational to forming a discipline of policy analysis and action adequate to address increasingly complex large-scale challenges and opportunities.

Speaker

Walter McClure received a BA in philosophy and physics from Yale in 1959 and a PhD in theoretical physics from Florida State in 1967. In 1969 he switched from physics to health care reform policy. He worked at InterStudy under Paul Ellwood's leadership from 1969 to 1981, at which time he left to start the Center for Policy Studies (now the Center for Policy Design). At InterStudy he worked with colleagues on the HMO strategy for health care reform, among other tasks drafting much of the Federal legislation. At the Center he developed Large System Architecture, which is a general theory of why organizations do what they do, and a set of methods to strategically redirect their behavior toward the goals society desires of them. With these methods he and his colleagues at the Center developed a health care system reform strategy to get better care for less, and developed a National Health Insurance proposal consonant with this strategy. The Center's education leadership also developed leading public school system redesign strategies including a set of reforms known as public school choice, and most notably the process for creating chartered public schools.

Presentation

Hello to all of you here in Santa Monica and to our phone audience in Washington, Boston, Pittsburgh . . . from coast to coast and all the ships at sea. I'm very delighted and honored to be with all of you. I have admired RAND seemingly forever, starting with Herman Kahn on thermonuclear war. And I've worked with and learned from some of your distinguished alumni like Alain Enthoven and Joe Newhouse. And so it's just very nice to be here and share ideas with you.

I hope to learn as much as I share. But full disclosure, I am here on a mission. I am a few months shy of 80 years old, and I have a half a lifetime of work, most of it unpublished for reasons I'll explain shortly, which I would like to share with you. Because what possibly better audience could I have for this stuff, the smartest folks in the field, powerful and connected. If you buy this stuff it might see the light of day and be put to work. So I was pretty excited last night thinking of today. Your media folks might title this video "Sleepless in Santa Monica".

So I come to your door like a raggedy itinerant peddler with my carpet bag full of shiny wares to show you, and hope that you will see the promise in this stuff. I know none of you have read the handouts because you are very busy people, and what I hope is to show you so much promise and possibility that you will be too busy not to read them when I'm finished.

Okay, so let's see what is the first thing I've got in my carpet bag? Ladies and gentlemen step right up, I have this handy dandy universal health care and coverage proposal. It's called *Informed Consumer Choice*. What with the hot debate over replacing Obamacare, what could be more timely? Except it dates from 1985 and was called "Buy Right" back then. From the moment I backed out of theoretical physics to do something I thought might be more useful for the country—we had enough natural science and we needed a lot more social engineering—and found myself unexpectedly in health care, all I wanted to do is figure out how can we have national health insurance with high-quality care and coverage that won't eat us out of house and home.

I think I have an answer, and it's different than anything out there in the conventional health policy conversation. And so I hope you'll

take a look at it. And if you like it, it needs some detail engineering, and most of all it needs a bill. So if you like what you see, please pile on. We'll need all the help we can get.

Second in my bag of tricks, I have a public education reform strategy. It's called *Public School Choice*. You may have heard of it, it was developed by my brilliant colleague Ted Kolderie, and it introduced to the nation the concept of chartered public schools—public schools chartered by the State to compete with district public schools, so that by parents exercising choice, good public schools, chartered or district, could draw students away from poor public schools, chartered or district, which could then be closed. This strategy too needs some refining, and particularly needs marketing. You probably have heard of charter schools . . . that's all off our boiler plate from the Center. That's where it came from.

I'll speak a little bit more about it in a moment, but the point I make now is that every special interest that can claw its way into a statehouse has twisted this strategy into its own hobby-horse, and in many states it has very little to do with what we recommended. Charter schools are public schools—not private, not profit, not religious, not for breaking teacher unions, not for resegregating schools—they are public schools chartered by the state instead of districts. And after we have talked about the theory of policy design we use at the Center, I'll tell you why we came up with this particular education reform strategy.

Third, I have for you a start on a strategy to redesign the economy, which, given the stakes, is the most important thing I'm doing. One of the pleasures of nominal retirement is I don't have to confine my work to health care anymore, and can apply the Center's theory and methods to other large systems. But if my analysis of the economy is correct, if we do not redesign this flawed economy, we're going to lose the Republic. I'm very serious. Read the handout, and we will spend tomorrow's lecture on it . . . I mean it's too important to rely on just my own analysis. I desperately need peer review on this, so check me out. Also this is the first time I've publicly circulated anything or spoken on economic redesign, so this is an exclusive for you here.

I do not expect to even complete the design before I sink gracefully into senescence, and certainly not the implementation. But maybe I can get the diagnosis delineated clearly enough that we can see our way through to a new design and its implementation. So, graduate

students, beyond the diagnosis that's your homework assignment for the next 10 to 50 years. People say, "what, you think you can redesign the economy?" Why not? Adam Smith did. I'm just sitting at the feet of the master. As you can see, we make no small plans at the Center for Policy Design.

Finally, fourth, and the most important thing we'll talk about today is I want to share with you a very general formal theory and set of methods for analyzing, designing and implementing policy strategies to improve the performance of large systems—large systems like healthcare, like education, like the criminal justice system, like the finance industry, like the economy, and on and on. I call it Large System Architecture (LSA for short). It's a very general theory; I'm quite delighted with it. I understand that RAND is very aggressively looking for the next generation of policy analysis tools to deal with complex issues. And I'm thinking that this might be part of what you're looking for.

Everything I have pulled from my carpet bag today, and what makes each of them different than everything else you find in the conventional policy conversation on these issues, springs from this theory and methods. It is the best way we have found to think about policy strategy for large systems; we use it constantly at the Center and hope others may find it equally fruitful and improve on it.

Spoiler alert: I know there are a lot of card-carrying economists in the audience. And so I need to warn you that every non-economist I have shared this theory and methods with has found it a kind of revelation, an epiphany that makes them see the world differently and more clearly. But every economist I've shown it to finds it a big yawn . . . nothing new here, we already know all this, we're already doing this. So one of the more important things in our discussion while I'm here is that you can persuade me that LSA is merely old wine in new bottles, and maybe not very new bottles at that, or I can persuade you that maybe LSA is new wine, not only new wine but very good wine. And you can help me make it better.

The only place I have written up this theory is the unpublished paper I've given you in the handouts. Unless you've been there, the paper has much more content than a casual reading may suggest. The subject really demands a book. But I don't think I'll live long enough to write that book, I got a lot of other stuff on my plate too.

I think people only grasp the full power of LSA by seeing how it's developed and applied in real cases. I'll try to touch on a bit of that today, but I can only do enough to whet your appetite. Let me give you a quick example of how LSA jumps the track of conventional thinking. Two weeks ago the Opinion Section in the New York Sunday Times had an article by a very nice education professor lambasting Education Secretary Betsy De Vos for dismissing public schools as being too slow and difficult to reform and recommending more nimble schools like charters and vouchers and so on. The professor's rebuttal consisted of describing this extraordinary school district in Tulsa, Union School District, which is doing everything you want a school district to do. It's in a high-minority, low-income neighborhood, and its schools and students are performing well above the national average on any metric you care to measure with, and on a per-student budget well below. It was a very informative article. Union sounds like the Finns: they put the kid first and the curriculum second. They've turned their schools into community centers, all-day hangouts essentially, they're even helping the parents get jobs. And every kid is known to somebody on the staff . . . their personal home situation, their progress in school, and so on. What more could you want from a public school district?

The good professor cites a few other exemplars in a few other states around the country. But he doesn't think to ask if I walk next door why aren't they doing the same thing in the next district? Why isn't all of Tulsa doing at least as good or better than this district which has been doing this for 20 years? The professor titled his article "What An Ordinary Public School Can Do." Perhaps a more apt title might be "What An Ordinary Public School Can Do, But Most Don't."

The same thing is true of Secretary DeVos. She says, well we've got to get these better, more nimble schools like charters, religious schools, and so on. Well maybe they can be more nimble. But there's no guarantee they will be. You have to hunt just as far to find one of these fantastic charters and religious schools as you do for one of these fantastic district schools. Both the professor and the Secretary see the problem as poor schools and the solution as better schools.

And that's where LSA thinking is so different. When you use the lens of LSA and see a large system like public education, or health care or whatever, where most of the organizations seem to be sub-perform-

ing on important goals, you don't ask what's the matter with the organizations. You ask what's the matter with the system.

Okay, because usually in large systems with problem performance, people don't ask this, they ask what's wrong with the organizations. What isn't obvious to most people is that organizations operate in a larger system, which I call a macrosystem, a large system that serves a definable purpose for society and consists of all the strongly interacting organizations and people necessary to accomplish that purpose.

When most people say health system or education system or criminal justice system, they aren't thinking like systems engineers. It's just the plural word they use for all doctors or all criminal justice institutions or all educators. They don't see the system in the technical sense, "system" is just a vernacular plural term they use for all organizations and people in the system. But when you start thinking about these large systems as formal systems in the systems engineering sense, you suddenly realize what a large formidable system they are.

Every large system has all these very formal and informal rules of strong interaction that the organizations must obey. And most importantly, these systems place incentives on the organizations within them: if they follow the incentives they prosper, if they don't, they suffer or even go out of business. And that's the heart of Large System Architecture. It's a very obvious idea in retrospect. It's apparently a rather unobvious idea in prospect: it certainly took me some years to get there, and not many other policy designers seem to think this way yet. My poster boy for ideas obvious in retrospect but not in prospect, is the arch. How many years did people build in stone before the arch was discovered? Maybe3000? Once you see one it's obvious. But until you see one, it's not obvious at all. The Egyptians built in stone for thousands of years and never found it. The Greeks never found it. The Mesoamericans and Incans never found it. The Romans finally saw it, and if you aren't an inheritor of the Romans, you still don't have the arch. This whole idea of macrosystems likewise seems to be unobvious to people. And somehow, I fell into it by the way I got educated realizing the HMO strategy for health care system reform, of which I was one of the assistant architects, had failed. I now realize I was using LSA intuitively for several years to come up with a new strategy for health care reform . . . the Informed Consumer Choice strategy I mentioned earlier. But once I finally saw

how to formalize it explicitly, oh joy, it had nothing to do with health care per se, it applies generally to a broad class of macrosystems.

So, the LSA idea is this: when you see some macrosystem where most of the organizations are not performing well on important objectives, don't start trying to treat the organizations or their bad performance directly. Look underneath at the structure of the macrosystem itself and the incentives it places on the organizations. It is this structure and its incentives that reward and drive the observed performance of the organizations. And almost always when most organizations are thriving by performing badly, the bad performance is due a deeper underlying cause: a flawed macrosystem structure and incentives enabling and rewarding the undesired performance. Think of the bad performance as symptoms and the unsound system structure and incentives as the diagnosis. And if you wish to cure the symptoms, you've got to address the diagnosis. Unless you cure the diagnosis, the symptoms will keep coming back no matter what you do. So policy must aim at correcting the unsound structure and incentives in those systems where most organizations are chronically performing poorly.

When you have a good system where most organizations are performing as society wishes, you will find that the underlying macrosystem structure and incentives are sound: they enable and reward the organizations for the desired performance. I mean we have some wonderful macrosystems. Look at the car industry, look at the computer industry. You can't make better cars and computers that consumers want for the money than they're doing today. It's extraordinary. (Of course, many complain that cars should among other things use less fossil fuel. But with current technology such cars cost more and perform less well, and without incentives Americans don't want them and they don't sell. In Europe high gas taxes give strong incentive for people to buy such cars and drive less, and these taxes can be used to maintain infrastructure.) Of course economists say we know all about that. Markets and all that. Adam Smith and his unseen hand, blah blah blah. Now look at macrosystems that aren't doing so good. Do people say Adam Smith and the "invisible hand"? Not so much.

Take the health care system, for 50 years steadily eating up more and more extraordinary amounts of GNP and nothing stops it. And every time there's a statistical fluctuation where it doesn't go up quite

as much as last year, there is much self-congratulation that some tinkering policy has contained cost. For example, there was a brief claim that the Affordable Health Care Act was containing cost. No it hasn't. And before that DRGs, a hospital payment reform was claimed to be containing cost. No it hasn't. The incentives haven't been changed. Cost will just keep marching up until we change those incentives. But do people blame the incentives? No, they say greedy doctors, for-profit insurers, unhealthy consumer lifestyles.

Okay, how about the finance industry? It crashes the economy, twice now and getting worse. How about education? It seems like our schools cannot educate a substantial number of our children adequately let alone well. And it's been happening for 50 years. So what's wrong? The finance industry is the result of 30 years of bad decisions eroding sound structure and incentives, very bad policy design ignoring unsound incentives. And education and health care we've been working on for 50 years and not curing the problems. Why? Because policies are aimed at symptom curing, not going after the diagnosis. They've consistently ignored correcting the unsound structure and incentives of these systems.

When I say the diagnosis is unsound structure and incentives, by unsound I mean they're not aligned with the goals that society wants for that system. And until we change that, nothing will change. It's just like medical care: when you symptom-cure, the symptoms keep coming back. Until you can figure out the diagnosis and address that, that's when you finally cure the illness.

Now the cure for an unsound system is system redesign: designing and implementing a new, sound structure with sound incentives for the system which enable and reward the performance society desires. Tinkering policies trying to improve symptoms are easy but usually have little lasting effect. System redesign policy is very hard. But the logic says that's the cure. And so if you're politically unwilling to undertake it, prepare for another 50 years of seeing your GNP eaten up by medical care, and more collapses in your economy as this finance industry goes off on its next tear. So it's very obvious in retrospect now, what policy has to do to correct these malperforming macrosystems. LSA theory tells us that. We need to convey that to policymakers.

Just a couple other insight points. Notice what people ascribe the bad behavior of poorly performing systems to. It's not the system.

On the left, they blame the people or organizations in the system. They say the health care system's problems are due the greedy doctors and the for-profit insurance companies. In education it's, oh, those teachers are incompetent or lazy and we need to select and train them better, or oh, it's those teacher unions and so on. And left-oriented policies aim at government commanding the people and organizations to perform properly . . . make them straighten up and fly right. On the other side, you have the right saying, oh it's all that government interference that's making the problems. Right-oriented policies aim to get government out. They assume the system is fine, and it will work fine if they can just get the left to stop all this government meddling. They fail to recognize the system is unsound, and that only proper policy can make it sound. For example, they assume private markets are self-correcting, even though Adam Smith taught us they were not. Markets behave well only if government assures they have sound structure and incentives. The moment government doesn't do its job of keeping the structure and incentives of markets sound, they quickly become unsound, as Smith observed, and serve the interests of producers instead of the public.

So the right kind of government interference, maintaining sound structure and incentives, is indispensable. The wrong kind of government interference is what the left wants to do: which is the moment that they see an industry performing poorly, they want the government to step in and use strong regulation to order the industry to perform as society desires. This is termed 'command and control' regulation. Well, we've known ever since Charles Schulz that that such command regulation never works nearly as well as its advocates hope or assume. And look at the reason: in a badly performing system the incentives reward the bad behavior and punish the desired behavior. So command regulation is trying to order organizations to behave in ways that the system punishes. And if organizations fight or evade the regulation successfully they prosper, and if they don't, they lose money or even go out of business. So they fight and evade, and there starts an endless cycle where government tries to strengthen its controls and micromanage, and organizations up their resistance and evasion, and you just add increasing red-tape, rigidity and expense without curing the problem behavior.

For example, government wants providers to be efficient, that means get good health results but earn less on each patient. Well, if every provider did that, 20-30% of them would be out of business, and the most efficient would be the first to go. They don't get any more patients; indeed patients don't know who they are, nor have any way to find out, nor have any incentive to switch to them if they did. So providers simply resist, tokenize and evade command regulation ordering them to be efficient. So such command regulation is trying to spit into the wind and it doesn't work. And so they lay on more command rules and more red tape. And now you're into exactly the kind of interference that conservatives rightly worry about, you stultify the system with red tape.

The current euphemism for government command and control in health care is 'single payer'. Well we've had a single payer system for 50 years. It's called Medicare, and it's the most inflationary program in the system (not that the unsound private market has done much better if at all). It's got an absolute lock on the senior market, which is 50 percent of medical care cost. What have they been doing with all this authority? . . . trying to order a system against its incentives instead of trying to change those incentives.

And here's the conservatives and their policy is: get the government out. Read their proposals. Now health care is a terribly unsound market and violates all the structural conditions that economists have set up for sound markets. And you would hope we have learned from Adam Smith that unsound markets don't self-correct; the government has to correct them. That's why we have an FTC. Except it's made up of too many lawyers and they think they can sue their way to a sound market; markets have other structural problems than monopoly, and you can't fix them by suing, you have to legislate and enforce the necessary structural conditions. So by getting government out instead of legislating and enforcing the required market conditions, you leave the health care system in the same unsound cost-escalating mess it's been for 50 years. Now that's a poster boy example of what happens when policy designers and policy makers don't realize that the diagnosis is the unsound system not the individual organizations and people.

I mean does anybody think that the car industry works, that the computer industry works, because of the virtue of auto executives?

There's just as many greedy and profit-seeking people in those industries as any other. Okay? And yet those industries work well. So the point is, that in any large system of people you have just as many saints and sinners, just as many dunces and geniuses, just as many in health care as in the computer industry or the car industry or education, and in one system it all works well. And in another it doesn't. Why?

Because of the incentives. If the structure and incentives are aligned with the society's goals, then the right people do the right things for the right reasons and they prosper, and the wrong people do the right things for the wrong reason—it's the only way to prosper. But no matter their motives, right or wrong, they all do the right things or they're out of business. And that's why system redesign is the cure for chronically malperforming large systems.

The alternative to system redesign in these malperforming macrosystems is what we've been doing in policy for 50 years: symptom-curing, which the estimable Lewis Butler satirically labeled 'omnibus tinkering'. So LSA tells us policy design for large systems comes down to omnibus tinkering versus system redesign.

Okay, so if all this is so wonderful—and I'll lay out the postulates and the methods of LSA in a moment—if it's all so wonderful, why isn't it published? And the answer is that in 1986 I ran into a little problem called major depression, and my wife, whose father had it, recognized it and wouldn't leave me and saved my life. And after some soap opera I was carried off against my will in a squad car to a psych ward, where three weeks of electroshock brought me back to sanity for awhile.

Unfortunately it didn't hold very long. But for the six months to a year that it did, this theory got done. I mean I was brimming with optimism and energy and creativity. Maybe the electroshock is responsible but I don't recommend it. Ask me about it sometime.

At any rate so my life was saved by our medical profession, and not just from depression. I have had two major heart attacks, and in the second, my heart stopped on the table and I was brought back from death's door by very skilled dedicated people. Further, my oldest son was brought back from death's door in Hawaii. He had been wading in a stream, cut his toe and by next morning was virtually unconscious with this raging lethal tropical infection. We rushed him to the Hospital in Hilo who saved his life. And my youngest son was

born with an open palate, and with the help of some extraordinary surgery and speech therapy is now good as new; you'd never know. So I owe our health care system a lot. And so by addressing its problems, I'm trying to repay the favor, though the patient . . . that is, our health care system . . . isn't necessarily happy about it.

Well, how did I get going again? I started coming out of this15-20 years later, in 2004 when they finally found an antidepressant that would work. It was many months before I realized it was working, because remission is just as insidious as onset. I mean I had nothing to be depressed about except that I had it . . . just the wrong genes and a lot of stress, which is well-known to provoke it. To underline the point about stress, I can tell you, trying to run a little nonprofit think tank with the incentives in health care and in the grantmaking community stacked against you is stressful. You've got to have ideas, you've got to sell the ideas to people who can act on them, you've got to manage a little organization, you've got to kiss a lot of well-meaning butts for money from people who don't understand what you are doing and want immediate results. I believe we need some system redesign in the nation's voluntary grantmaking system, but I won't take that out of my carpet bag today, maybe in tomorrow's seminar, because I'm sure RAND has the same problems. I stayed away from any professional work for five years. Particularly my wife was on me, no pressure she said or you'll go right back into the pit again. So I became a champion fritterer for five years. In retrospect I realize I've been a moderate depressive all my life, and suddenly I found myself waking up happy. This must be the way normal people feel; I was amazed.

So how did I get back (maybe say relapse back) into professional work. Well, Tim McDonald, your fellow graduate student, showed up. He was an intern in the Center working on education for my colleague Ted Kolderie, and had started staffing our board meetings. I scarcely knew him from Adam. I didn't do any work then, I just chaired board meetings and signed checks, and hired a marvelous guy, Dan Loritz, a retired senior vice president of Hamline University to be our CEO, just trying to make it easier for the people doing the actual work. I told Dan the privilege of being the Center's CEO is now you get to raise your own money if you want any. Neither of us has stopped working really, because we love what we do, we just

don't bother getting paid. If you love it, that's part of the stress: you can never do enough. And now I no longer try.

So Tim comes up to me after one of these board meetings and says, what is this theory you keep talking about in board meetings, where can I read up on it? And I said, well I never wrote it down. He says, well how I can learn it? I say, let's have lunch. So after a couple of lunches Dan tells me he is reassigning Tim to me. He needs some broadening, Dan says; he knows education very well, and has written a book on it. Now you teach him large system architecture and health care so he learns about more than one system.

So Tim and I had lunch every week for two years. And I immediately put him to work because 80 percent of your job as a large system architect is implementation—design is only 20 percent—and you learn implementation by doing it with a mentor. And if you're not teaching implementation here at Pardee, you better. Because very few academic policy schools are teaching policy analysis students how to implement. You don't learn implementation skills doing research, you learn them doing implementation.

I certainly didn't find the key idea of large system architecture myself, which is incentives. The importance of incentives I learned from my previous boss, Paul Ellwood. I found myself working, quite by happenstance, in health care policy research for Paul after I backed out of physics. It seemed to me the dullest of subjects. I can assure you nobody wants a used physicist, and Paul was the first guy who took a chance on me. So that's how I wound up in health care in 1969, not by aiming for it but because nobody else would take me. As it turns out, it has been far more fascinating than I ever expected, the perfect field for a hard-nosed theory guy, and LSA has been the climax.

Paul was the head of a very distinguished rehab hospital, the Sister Kenny hospital in Minneapolis, and he had this high-paid, well-respected job, but had started this health care policy research office on the side. The reason, he said, was the faster we get a kid through rehab the less money we make; that's a terrible incentive to be inefficient that we've got to somehow turn around. And what did he do: working with his little research group, he ginned up something we called the HMO strategy. The research literature showed that in prepaid group practice, the faster and cheaper you get patients back to health, the more the prepaid group practice earns. So Paul asks

how can we stimulate these prepaid comprehensive care organization throughout the nation. So we started working on that. Now, I didn't learn a thing from Ellwood about research. He doesn't think like a researcher and has no training in research, he's a brilliant intuitive. What I really learned, and what's hard to get in academia, is how to find ideas, how to have ideas, and how to boldly put ideas into action.

There would be no Center for Policy Design if I had not seen Paul Ellwood walk away from his high-level job as hospital CEO, walk right off the plank, to turn our small policy research group into an independent little think tank called InterStudy. That is real risk-taking. And real dedication, to the larger and insecure mission of health care reform rather than the security, remuneration and prestige of running a conventional health care institution. And that's the kind of thing I'm watching and learning from Paul. Are you graduate students in policy getting that training here at RAND? It's invaluable.

The HMO strategy attracted some extraordinary talent, like Alain Enthoven and Clark Havighurst. And so there we were a doctor, a lawyer, an economist, and a theoretical physicist. We didn't have an Indian chief but that might have helped too. And the strategy caught the attention of Lewis Butler who was then Assistant Secretary for Planning and Evaluation of HEW, charged with policy development in general and coming up with a remedy for soaring Medicare costs in particular. Any of you who know Lew know what a sensational guy he is . . . a great mind and bulldog determination for the public interest. You don't hear about him because he doesn't demand credit for the many things he has made happen. And suddenly our little group is working for Lew, and I found myself in 1970 designing and drafting the HMO amendments for Medicare and later the HMO Assistance Act.

I thought I had thrown away, you know, five years of graduate education when I got out of physics. But in fact what I learned to do that most people don't, is: when you have a problem you've got to find a theory or you don't know what to fix. So I was riding on Paul Ellwood's theory that if you could stimulate HMOs to compete with fee-for-service, it would reverse the cost-raising incentives in the health care system. But by 1980 it was clear to me HMOs were going nowhere and having no impact: health care costs were marching right up. The HMO strategy was failing.

That's okay. I'm a theoretical physicist by training. I did a two-year stint in rocket science (really not as a real rocket scientist myself but as an assistant to them), and rocket scientists know that the first rocket on the pad blows up. (For comparison, if you're a large system architect working on designing a government, think Articles of Confederation.) And while the press goes into hysteria that American science is failing, the rocket scientists go back to work. The engineers expect it to blow up . . . you can't make a million parts work perfectly together the first time . . . so they go all over it, find out what failed, blow up a few more rockets along the way, and then we go to the moon. Same way in LSA. You can hope but not expect your first system redesign strategy to work. Then you go back to the drawing board and try again.

Okay, so now I've come up with this new handy dandy strategy, *Informed Consumer Choice*, that I think might take us to the moon . . . a health care system redesign that might work, get everybody high-quality care and coverage at a cost the individual and the nation can afford. And I have a way of staging it so we don't load the whole United States on the rocket ship and fire it off untried, okay. It's always a good thing in implementation to try to stage your implementation, and make your course corrections before you scale up, so you aren't experimenting with the whole country. Like every other strategy I've mentioned in my carpet bag today, it is a product of LSA theory and methods.

So, like Tim asked, what is this theory I keep mentioning. Before I get to the formal postulates and theorems, let me do some more insight building and talk a moment about the fact that we know sound markets work not because of private or for-profit competitors, nor because of unseen fairies with invisible hands. Neither do other sound large systems that aren't markets. They all work, market and non-market alike, because there's a formal structure, a set of structural rules that create the right incentives. Adam Smith's invisible hand isn't invisible at all; you can make it quite visible just by analyzing the structure and incentives of your system. And if they're aligned with the goals society desires of that system, we call it a sound system and you're in good shape. You can tell policymakers to protect that structure, you don't want that structure changed accidentally or intentionally. Every special interest will be

trying to twist it to serve their own ends rather than the public good. Conversely, if the incentives are not aligned with goals, we call it an unsound system, and you've got to redesign its structure to produce the desired, properly aligned incentives.

But economists say what we know all about sound and unsound markets. But we are way beyond just markets, we are talking about a discipline for political economy that I believe larger than economics: Adam Smith's "science of the statesman" to design large systems that perform in the public interest as society desires. Let me give you some examples.

The federal government is not a market. Yet it is one of the most extraordinary large system architectural designs in history, with ingenious structure and incentives to prevent government from tyrannizing the majority, and the majority from tyrannizing the minority, and to produce laws responsive to the will of the governed. And you can credit the architects: our founding fathers.

Or take market economies. A market economy is not a market, it is an economic system. Only half of it is markets, the private sector. The other half is the public sector. And what most people don't seem to grasp is that at least half, and from the standpoint of the public wellbeing the most important half, of the wealth produced in a market economy (including the American economy) is produced by that public sector. In America you might not know that, due the perpetual deafening false propaganda that the public sector is a parasite. But if you have any doubts, read the handout piece on Adam Smith. The market economy is one of the finest examples of large system architecture in history. You can credit the architect, the extraordinary Mr. Smith, for that.

And so I am not the first large system architect in history, my stumbling efforts are dwarfed by these giants. I'm just the first one to think of himself that way, because I stumbled into a way to think about macrosystems generally. Like me working on health care, these guys were working on a specific system, on a design for a government or for an economy, and didn't think about the generality of it. Nor did I until much later, when I finally was able to formalize LSA theory. So I'm not the first or the best large system architect, I'm just the first to realize, hey there's a theory here that can help us all when we're engaged in trying to do this kind of large system redesign.

My last example is the basic research system. It's a particularly telling example because it's a fine piece of large system architecture and it doesn't use financial incentives much at all. It uses cultural incentives. Scientists aren't working to get rich, even though many certainly deserve it from the standpoint of the wealth they create. It sometimes happens . . . think Craig Venter as one example. But most of us are in there for serving the public interest and our curiosity and all that, but very much also for stature . . . show we're smarter than that other guy over there, make the bigger contribution. We're all trying to outsmart each other and we advance the field doing that. And in many ways the grantmaking process is working well: research money generally if hardly perfectly flows to the people who contribute most (as I mentioned earlier, we'll talk about the imperfectly part tomorrow), and dries up for people who don't contribute enough and they leave the field and do something else.

America leads the world in science and technology because we publicly invested more in basic research than anybody else. But when we turned things like Bell Labs, and RAND, over to client money, that's the end of long-term thinking and research. Clients don't want long-term thinking. They want a solution; this little immediate problem of theirs right now. You can't do long-term analysis and research on client money. How are you going to do a long-term thinking and research whose results and success you can't predict often for years, unless you have long-term core support?

Alright, enough about LSA as a discipline for political economy. Let's get to the actual formal theory. This theory is the mountain top of my career. Remember I'd been using this theory intuitively for years but specific to health care. And being a well-schooled hard science theoretician, I've been trying to formalize it all this time. And the dog just wouldn't sit down. And then here I am six months out of electroshock. The first month I didn't even know what I did for a living or where. They had to lead me to our offices and give me my papers to read. I didn't remember or recognize it was my writing for a month (I must confess during that time I was very impressed by the author, say I humbly). Gradually it came back to me and I gained more energy and understanding. And suddenly the dog sits down. I see the basic postulates and am amazed: it has nothing specific to do with healthcare, it covers many macrosystems.

I'm ecstatic, you realize. I'm a theoretician, a real theoretician ... I have discovered a theory. So my cup ran over.

Here's the postulates and, like the sublime Charles Darwin and very much in debt to his example, they are qualitative, not quantitative. I'll take just a moment to chide those economists who keep chasing the siren song of physics with its quantitative predictions, and have been narrowing their field out of applicability to the real world. I am the last guy to disparage trying to be quantitative, but you mustn't sacrifice reality to do it. Realize that the greatest book in science history, *On The Origin Of Species*, didn't have a single formula. And the greatest policy analyst of the last century, Jean Monnet, father of the Common Market, never produced a formula. We could hardly do better than if we could teach our policy students to think as deeply as Monnet.

The formal theory comes in three easy postulates:

> **Postulate 1.** All organizations operate in a larger system, called the macrosystem, whose structure and incentives they cannot alter by their own efforts alone.
>
> **Postulate 2.** The structure of a macrosystem places various enabling and restrictive constraints as well as creates various incentives of varying strength on the organizations within it, some sufficient to cripple or kill the organizations that try to oppose them, and others that will lead them to prosper the more they adapt to follow those incentives.
>
> **Postulate 3.** (and the one that gives us hope): While no organization by its own efforts can change a macrosystem, organizations or society can do that by collective action.

And if society isn't doing it by intelligent policy, remember every trade association is a large group of organizations using collective action to try to change their macrosystem in their favor. That's what they are all doing. So okay, Congress, forewarned is fore-armed. Except sometimes it seems this Congress is trying to help them.

So that's it, that's the theory. See what I mean: dog just sat down, and not a word about health care. Applies far more broadly. Very obvious in retrospect, took a while to see it in prospect. And you can derive a lot of theorems from it useful for analysis and redesign of a problem system; you can find examples and applications in the handout piece on LSA.

The theory is not universal. The postulates are true by inspection, and for any large system that violates the postulates to some degree, to that degree the theory will not be valid; it will produce incorrect predictions for such systems. For example, any macrosystem with an organization that can alter that macrosystem by its own actions alone violates the first postulate, and LSA does not apply. However, it appears that quite a broad class of macrosystems do satisfy the LSA postulates rather well, and for all these LSA will be valid. And even when a problem macrosystem violates the postulates, you can sometimes come up with a redesign for the system that satisfies them and installs sound incentives.

Now I said at the outset that LSA is not only a theory but a set of methods for applying them to analysis, design and implementation of system redesign policy strategies. So here come the methods. They divide into two kinds, those for analysis and design, and those for implementation. I'll start with the analysis and design methods, and touch on implementation methods if I have time. But you can read an outline of them all in the handout on LSA.

The analysis and design methods are based on a very profound idea. It's not mine, I read it in a book in 1970 and it's stuck with me ever since. It was a wonderful book on the methods that were used by NASA for the moonshot. I wish I could remember the title, but it seems to have permanently left me, but I've been using many of those methods ever since. NASA did not invent new engineering technology, indeed the genius administrator, James Webb, ordered a freeze and declared they would go with existing scientific and engineering technology. Webb saw their biggest problem as to bring it all together, the most massive domestic project in human history. To accomplish that, what NASA really invented, pioneered, was a whole new management technology: PERT charts, Delta estimation, etc.—which I have found very useful. And one of the most useful things I learned was the definition of a problem.

Think about the following crisp definition and compare it with the usual muddling way we usually think about what constitutes a problem. A problem is crisply defined in systems engineering as a discrepancy between performance and goals. And what makes that so profound for macrosystems is: until you've properly identified your goals, you don't know what your problems are! You see all these

people talking about policy problems, and the list soon grows voluminous and incomprehensible. They haven't thought about what the goals are, nor agreed on goals, and usually there are folks in various parts of the system who have their own idea of the goals, very different than the public interest.

So you as a large system architect, it's your job to figure out proper goals for the system, indeed it's the first task on the list. If you don't know the goals, you don't know the problems. You can't proceed sensibly. You can't assess whether the system's performance is discrepant or not, nor can you diagnose why any discrepant performance arises if you don't know what it is. So the first task is to arrive at proper goals.

Let me list the three steps of how LSA analyzes a large system, then make a few comments on each:

1. Identify a complete set of goals for the system
2. Assess the actual performance of the system on each of the goals.
3. Analyze the underlying system structure and incentives which drive the observed performance.

Once this analysis is complete, you know the actual problems of the system, all performance unacceptably discrepant from goals. You also know the faulty structure and incentives that drive this unacceptable performance. That is what will have to be altered and corrected by any proposed redesign for the system. Conversely, if the system is performing well on all goals, it also tells you the structure and incentives are sound, i.e., aligned with goals, and policy should protect this sound structure to assure the good performance is maintained, and not allow it to erode either by intention or inattention. Policy must maintain constant proper oversight of all large systems to protect and maintain structure and incentives that are sound, and redesign and correct them when unsound.

It may appear that these analytical tasks should be carried out in logical sequence, but I assure you in practice this is not so. They are constantly iterated, going back and forth, and slowly gaining insight and refining the results of each step. And it may take months to years, especially when you add in the fourth step: coming up with a sound redesign. The analysis does not tell you how to redesign the system to produce good performance; like all design, that is a matter

of talent and experience. The analysis does tell you what the desired performance goals are, and what underlying unsound structure and incentives must be altered, but you will have to invent the new sound structure with sound incentives yourself that will reward the desired performance.

I could talk a ton on each of those steps, but given our limited time let me make a couple key comments on each. The first step is goal setting. You must ask yourself:

What are a reasonably complete and proper set of goals for this system?

a. what performance goals does the public want for this system, but also

b. what goals should the public want if they are not to unknowingly undermine their general welfare.

I will begin with a very crucial point about goals. Then I'll give you a couple examples to show how bad it is when you don't get them complete or right. But bottom line, your first task as an architect is to help the public clarify what the goals of the system should be to improve the system's performance in the public interest.

Perhaps the most crucial point on goal setting is this: you as LSA architect have no power to decide the goals, you only have the power to propose. It's just like a house architect. He doesn't decide, the client decides. Similarly, if you're a large system architect, then those with the legitimate authority to decide . . . your "clients" so to speak . . . are the relevant elected and appointed officials. They are the ones who should and do decide. Now, you can help them by clarifying goals and clarifying what the problems are and clarifying what the structure and incentives are that need to be changed. You can then recommend what you think the goals should be, and tell them, that if they agree, you also have this handy dandy redesign strategy for them which you think will achieve these goals. And they can accept or reject your proposed goals and, independently, accept or reject your proposed redesign strategy, and/or send you back to the drawing board on any part of either. And that's why marketing is so important. You have to persuade them.

Now special interests in any large system hire marketing and propaganda geniuses often to misinform the public and distort proposals to

their own advantage rather than the public interest, so LSA architects must develop the same skill if they wish to counter them successfully. I call this the rhetoric battle. Al Franken, our Democratic Senator from Minnesota, made a crack about the Democrats poor skill at marketing: the Republican bumper sticker just says "no", our bumper sticker says "blah blah blah, to be continued on next bumper sticker". So LSA architects, like Democrats, have to become much better at marketing if we want to see our proposals accepted and implemented intact by both Republicans and Democrats.

All right let's talk about some examples of poor goal specification. The first is an example of the damage done by an incomplete set of goals. Medicare and Obamacare considered only the goals of (1.) high-quality coverage and (2.) affordability to the individual. Neglected were the goals of (3.) quality of care and (4.) affordability to the nation. There was no mechanism to assess quality of care, nor was there a single incentive on either patient or provider for economy. In fact, the incentives were the opposite, rewarding cost independent of quality . . . i.e., rewarding provision of ever more, and more expensive, medical services even if they had little or negative impact on health. As a consequence, "medical error" is now the third leading cause of death, and a bloated health care system is eating the nation out of house and home, depriving of funding all other social programs that would have substantially greater impact on improving the nation's wellbeing, including its health, than more superfluous medical services.

Now because goals interact in any complicated system, it is usually difficult to tack on a major new goal after the fact. The entire system must usually be redesigned to accommodate any such new goals. For example, if you wish to double the payload of a rocket, you can't just double the size of the rocket, it has to be redesigned; the same is true of macrosystems. Thus in 50 years Medicare has not been able to tack on either quality or cost control in any more than token fashion. The beneficiaries are happy with these programs because they get medical services freely and affordably, a veritable free lunch, and do not see their ever-ballooning true cost: namely, the damage it is doing the federal budget, lagging health levels, and other needed social programs much more valuable to health and wellbeing. It will likely prove politically difficult to redesign these programs because the free lunch must be replaced with an affordable but properly

incented lunch, and voters do not like losing a free lunch. But it must be done if we are to end this disaster. It is this kind of damage that prompts LSA to start with a complete set of all the important goals for any given system.

My second example of bad goal specification concerns the consequences of misidentifying the proper goals. I'll use the economy as my example macrosystem, so we'll get a jump on tomorrow where I have promised to do an illustrative LSA analysis using the economy as my example. Okay, what are the goals for the economy? Now if you talk to the economists and the bankers who are managing our economy, they have a bunch of goals, and a bunch of tools . . . fiscal and monetary policy . . . to manipulate the economy to achieve those goals.

The goals include such performance objectives as: is GNP growing adequately; is inflation suitably low and under control; is unemployment suitably low and under control; are markets, particularly financial markets, suitably sound?

Okay, so if you ignore the era before the great crash of 2008, where it is clear the economy, particularly our financial markets, was grossly mismanaged, and you look at the era since the crash, then measuring against those goals sour economic managers appear to be doing a slow but creditable job. That's a notable achievement, good if not great. So everything would seem hunky-dory except for one thing: I contend those aren't the real goals . . . maybe for some other country, but not the proper goals for the economy of the United States of America.

Here's this complicated macrosystem to create and distribute wealth. What does society want, or what should society . . . American society . . . want, of the economy? Well, the United States has a very clear statement of goals, and these goals are what fundamentally make us a great nation. I believe it the noblest, tersest, and most moral expression of national goals in history. It's called the Preamble to the Constitution of the United States (although we must not overlook the goals at the beginning of the Declaration of Independence, too). And the two goals in the Preamble of relevance here are (1) to promote the general welfare and (2) to secure the blessings of liberty to ourselves and our posterity.

So now how are we doing on these, the real goals? When we measure our economic performance against those goals it is a totally different story. When you measure against the general welfare, we're not doing

well at all. By virtually any measure used, it has been almost flat for several decades. And when you measure general liberty, by any number of qualitative measures it appears to be actually gradually declining. And if you then do your LSA analysis of the structure and incentives in our present economy, you find the structure and incentives are perverse, highly destructive of the general welfare and liberty without any natural or built-in check. If this flawed economy is not redesigned, the Republic is headed for disaster. I will elaborate on all this tomorrow, and you can also read about it in the handout tonight if you are as concerned as me and can't stand the suspense.

Okay, remember I have no power to decide, only to propose. So who besides me thinks these are the goals? Apparently very few managers of the economy. Apparently few think that the general welfare is a goal. They pay some attention to it, but apparently they don't think it a major priority, let alone the priority: one of the two Constitutionally-obligate priorities for the economy (and all other aspects of American life) to which all other non-Constitutional economic goals are subordinate. Had our economic managers treated raising the general welfare as the overriding Constitutionally-obligate economic priority that it is, we wouldn't have the current president.

How about the general liberty? I don't know a single manager of our economy concerned about managing the economy for liberty, do you? They all appear to think ... not my job. Well if we don't think about liberty and redesign this economy, we're going to lose it.

Now notice, you don't have to agree with me on these goals. I am a LSA architect, all we architects can do is propose, not decide. I have to persuade you these are the proper goals that we should worry about with our economy. And if they are, we desperately need to redesign it. If you disagree, if our elected officials disagree, I lose. Except unless you can show me where my analysis in tomorrow's seminar, or more fully in the hand-out, is wrong, I think America loses . . . disastrously. Which means I've got a marketing job on my hand. And I never give up.

Thanks. Oh and thanks for the Pardee ball cap. I did wear a coat and tie just as proof of age. But now to show you how hip I am [... puts on gift Pardee ball cap with brim backwards.]

Does the American Economy Need Redesign?

An example of LSA analysis applied to the economy

Saturday, April 28, 2017

Summary

Dr. McClure will present an analysis of the economy using standard Large System Architecture theory and methods. He will (1) identify the goals of the economy, (2) assess its performance against these goals, and (3) explore the structure and incentives of the economy driving the observed performance. He finds the structure and incentives of the present system severely flawed, enabling and highly rewarding runaway concentration of ever more of the nation's income-producing assets in ever fewer hands, unappointed and unelected, with neither built-in nor natural constraint. He explores redesign considerations for such constraint. Is this analysis correct? We can debate any particular level of inequality; but steady unlimited runaway inequality, if true and if left unchecked, is not debatable. It will finally destroy liberty and reduce the Republic to a small self-perpetuating de facto aristocracy and despotism.

Speaker

Walter McClure received a BA in philosophy and physics from Yale in 1959 and a PhD in theoretical physics from Florida State in 1967. In 1969 he switched from physics to health care reform policy. He worked at InterStudy under Paul Ellwood's leadership from 1969 to 1981, at which time he left to start the Center for Policy Studies (now the Center for Policy Design). At InterStudy he worked with colleagues on the HMO strategy for health care reform, among other tasks drafting much of the Federal legislation. At the Center he developed Large System Architecture, which is a general theory of why organizations do what they do, and a set of methods to strategically redirect their behavior toward the goals society desires of them. With these methods he and his colleagues at the Center developed a health care system reform strategy to get better care for less, and developed a National Health Insurance proposal consonant with this strategy. The Center's education leadership also developed leading public school system redesign strategies including a set of reforms known as public school choice, and most notably the process for creating chartered public schools.

Presentation

I think of my two talks here as a kind of one-two punch . . . yesterday about a general theory and methods which I call Large System Architecture (LSA for short) for how to think about designing policy for a broad class of large systems; and today an example application of that theory and methods to one particular system, namely the economy, the economic system.

For those who weren't present yesterday, most of the work of society is done by "macrosystems"—large systems of organizations and people, like health care and public education and the economy and so on, that interact strongly to accomplish a definable purpose for society. So they are intensive objects of policy. People don't think of them as systems technically; it's just a popular plural term for everybody in the system. We will design much better policy to improve their performance if we start looking at and treating them as systems technically.

When they perform poorly on one or more important goals, policy habitually tries to improve the bad performance by improving the organizations ...cajoling, or assisting, or ordering the organizations to perform better. I call this omnibus tinkering. Our policy success using tinkering on large systems that have been chronically performing poorly on important goals for decades—systems like health care with its runaway cost, or public education with its inability to educate a substantial proportion of our children adequately let alone well—has been modest at best.

With LSA when you see a large system where most of the organizations are performing poorly, you don't ask what's wrong with the organizations, you ask what's wrong with the system. You regard the bad performance of the organizations as symptoms. The diagnosis, the underlying cause of the malperformance, lies in the structure and incentives of the larger macrosystem in which they operate. So ask does the structure of that macrosystem and the incentives it places on the organizations within it enable and reward them for the desired performance, or does it impede and punish the desired performance while enabling and rewarding them for the malperformance that is observed? Invariably in chronically poorly performing systems it is the latter. The organizations are malperforming exactly as the unsound

structure and incentives of the larger system reward them, and if they do not, if they try to perform in ways opposed to those incentives, the incentives punish and ultimately kill them if they persist.

The only cure is system redesign. You must "re-architect" the faulty system: intentionally think up a new design for its structure and incentives that aligns them with the performance society desires, and then come up with a policy strategy to implement the redesign. Policy can do omnibus tinkering on the bad performance forever, but until you address the diagnosis ... the faulty structure and incentives of the system that drive the malperformance ... the symptoms will only continue and likely worsen.

In any large system there are very powerful incentives. If they are aligned with the goals that society wants, then everybody in the system is striving to accomplish what society wants. Look at the car industry. You can't make better cars for the money than the world does today. Policy doesn't have to order carmakers to do that. In that system, if you can't make a better car for the money, you're out of business.

But look at the education system. Despite shining exceptions, all too many schools and school districts are persistently doing an inadequate job educating the kids for whom they are responsible. Thinking the LSA way, don't ask what's the matter with the schools, ask what's the matter with the school system. What are the incentives on schools and districts. If kids aren't learning, who loses their job, who goes out of business? Nobody. Good schools don't grow and poor schools don't fail. Look at the health care system. The more inefficient you are—the more costly you treat each patient independent of the quality of the result—the more you prosper. The more efficient you are—getting great health outcomes at less and less cost per patient—the less you earn. Indeed if all providers were as efficient as we know how to be today, inventing nothing new—got top quality at the least cost for each patient—20% or more of them would be out of business, the system is that bloated. And the most efficient would be the first to go.

So that's been going on for 50 years, and will continue for another 50 if policy doesn't wake up and learn to address faulty system structure and incentives. But policy doesn't think that way yet. The left tries to cajole, assist or order the badly performing organizations into submission, blithely overlooking the underlying incentives that

will kill the organizations if they comply. So of course, they evade and tokenize compliance. The right says get the government out, let the market work, blithely overlooking that the market is unsound and rewarding exactly the observed malperformance that neither they nor anybody else wants, failing to realize that, as Adam Smith taught us, unsound markets don't self-correct, and it is precisely up to government to correct and keep them sound if we want the desired good performance.

System redesign is a lot more formidable than omnibus tinkering... longer and harder to come up with a promising redesign model, longer and harder to implement... but look at the logic. It's the only way out, the only way to finally cure the bad performance. Look for example at all the decades and time-consuming policy effort and expense we have wasted on health care reform and education reform—two of our most important and expensive systems that we know have extremely faulty structure and incentives—with such meager results because we tinkered rather than redesigned for sound structure and incentives. We can waste another 50 years to equal effect—see health care eat up another hefty chunk of GNP with no improvement in health, see education leave another couple of generations of kids inadequately prepared, or we can re-architect these systems properly.

So how do we go about redesigning a macrosystem so that its structure and incentives align with the performance goals society desires? LSA provides a set of systematic methods for that. And our topic for today is to offer an example demonstrating how to apply those methods.

We have two different sets of methods. One set is design and analysis methods which help us design a proposed model for the future system with structure and incentives properly aligned with goals. The second set is implementation methods. How can you implement the proposed redesign, how do you get from here to there, from the present system to the redesigned system? Assisting policymakers with implementation is an equally important part of being a large system architect (that's what I call policy analysts who apply LSA to large systems). Indeed it is the largest part of the work: only 20% of the work is analysis and design, at least 80% of LSA work is implementation . . . how do you make it happen?

Because we have but an hour I shall limit my example application solely to analysis and design methods. But first a word from our sponsors . . . really a word of thanks to our enablers. One was Alex who arranged all the video of yesterday's talk, which I'm titling "Sleepless in Santa Monica". Another was "Tess" Cooper, who took care of me like she was my mother. And of course Tim McDonald who organized this series of talks. So I would just like to acknowledge that if you enjoyed these presentations, it took all these folks too and more to make it happen.

Also I had a nice dinner with a few of the graduate students last night, and we talked about one of the items I didn't pull out of my itinerant peddler's pack yesterday . . . that our nation is relapsing into a legislated state religion. States are legislating doctrines of a minority group of very good and sincere conservative Christians, with which the majority of Americans—including the majority of our Christians, equally devout—disagree. Our forefathers, many of whom fled here for freedom from state-imposed faiths, set up our courts and legislatures to protect us from any such state-imposed religious doctrines, and our courts and legislators are doing a poor job and need to step up. These are good people on all sides of these religious issues, all trying to do their best for God and country. Our Constitution says you have an absolute right to advocate and proselytize for your religious beliefs, which I absolutely respect and support, but you are equally absolutely banned from legislating them, and I absolutely support that too. Discussing this issue with the students gave me useful ideas that I didn't have before our dinner. So I thank the students for our enlightening discussion.

Now before turning to the economy, I want to begin with an illustrative digression. I'd like to talk about redesign of the grantmaking system in this nation, another item I left in my peddler's carpet bag yesterday. (My bag is quite full of system redesign things.) This will provide a brief example of LSA implementation methods discussed in the Architecting Large Systems paper in your handouts. Let's talk about implementing a reformed grantmaking system. Step 1 of our implementation methodology is to have your proposed redesign model in hand. You have to know where you are trying to get to. Not all roads lead to Rome, but if you don't know you're trying to get to Rome, any road will do.

Okay what's the matter with grantmaking? RAND knows this quite as well as we at my organization, the Center for Policy Design. There is something terribly wrong with a system where the nation's most competent researchers and thinkers spend 40% of their time writing proposals, usually to far less expert people, instead of engaged in research and thought. This is especially true for those in long-term basic research and thought of uncertain outcome, but on which ultimately, as experience has amply and steadily proven, the wellbeing of all our society, public and private, depends. The performance problem is that this is precisely the area where funding support is unwisely shrinking. Short-changing basic research and policy analysis is like smoking, it takes awhile before you realize it is killing you. And our policymakers and grantmakers seem to be suffering that myopia.

Grantmaking is a way of supporting the production of certain kinds of public goods. By public goods I mean those we must buy collectively as opposed to private goods which we buy individually. Over half the wealth of this country is created by producers of public goods, mainly government, which is supported by taxes. But we also have a voluntary sector of largely non-profit public goods producers, and these are supported by gifts, grants and contracts. Consider there are three kinds of public goods. There are (1) public consumption goods, outright charity where we take money contributed by haves and give it to needy or suffering have-nots. But there is also public investment goods, where we gift money from haves to causes that we expect that, along with promoting the general welfare, will eventually return far more to the economy than the original gift. Much of this is (2) specifically targeted investment giving, such as rehab programs for addicts and training programs for the structural poor . . . human capital development . . . that will bring them into the work force and paying taxes and reduce welfare and criminal justice costs well beyond the cost of these programs. But the third type is (3) broadly targeted investment gifting for long-term basic research and policy analysis in some specified field, whose outcome we cannot predict, but which, competently directed to competent performers, has proven over and over again the greatest source of public wealth creation in history. And this terribly critical area is where funding is short-sightedly declining.

To illustrate the consequences of this performance problem in the grantmaking system, consider the demise of one of the most prolific and

extraordinary of these basic research programs, Bell Labs. Almost the entire private sector still runs on the public goods created by Bell Labs during its decades of productivity. When AT&T went for-profit, it spun off Bell Labs and set it adrift to survive on for-profit client revenue, whereupon it promptly went bankrupt. Instead of government or some foundation collaborative picking up this extraordinary national asset, and putting it on a firm basis of long-term core grant support, we stupidly, shortsightedly, profoundly unwisely for American technical leadership in the world—so much of it owed Bell Labs—let it disintegrate. Can we, government and foundations, not see this loss and learn from it?

You cannot do productive long-term basic research and thinking on client money. Clients are not interested in the long-term public interest, they are interested in short-term solutions to their immediate problems. Large System Architecture would never have come about on client contract money. Who would have asked for it? How could we even know we would come up with such a general theory and methodology? I believe if it achieves widespread use it will produce enormous wealth . . . for society, not the Center. If our health care proposal, Informed Consumer Choice, is ever implemented and saves the nation the billions of dollars I believe it will, not one dime will come back to the Center. That is the nature of voluntary public goods. It requires core support.

The Center cannot do its mission of system redesign on client money. Nor can we use a one-year grant of $1 million dollars. What we can use is a ten-year grant of $100,000 a year. That's what I mean by core support. On that we can hire and train staff and not worry that we will lose them, and our substantial investment in them, at the end of the year when the money runs out. On that we can accept just those project contracts related to implementing our mission and proposals, and spin up our core grants by double. We can refuse any contracts not related to our mission and proposed strategies, contracts we would be forced to accept to cover staff had we no core grants and had to figure out who to charge when we go to the john. On client money solely, you are off-mission immediately.

So we need a grantmaking system that recognizes the need: that long-term basic research and thought needs long-term core support grants to productive individuals and organizations, that this deserves

a high priority among all the other worthy things they are supporting. The redesign model I propose is they need to stop betting on proposals and start betting on people and organizations with a productive track record. They should not wait for a proposal, but go to these organizations and say what are your plans and how can we help. They should then have them do progress reports, not proposals when they need to alter direction, and as long as progress seems productive, maintain core support.

Now the first step of LSA implementation methods is to have in hand the design you are proposing for the given macrosystem. And that is why I just outlined it. And now you have to make it happen. So the second step in LSA implementation is to identify the front log, the action that would start the system moving in the right direction, meaning in the direction of the proposed redesign. If you work on back logs, the log jam doesn't move, but if you identify the front log, the jam will move and shift. I think the front log is core-support grantmaking. I think Michael Rich's idea, to try to use the Pardee school for long-term policy thinking amazingly brilliant. But it's a stop-gap, a brilliant stopgap, and it's limited to organizations with a graduate school. It doesn't change the grantmaking system.

Step three of LSA implementation is to identify who has the power and the motive to move that front log. Well, both government and foundations have that power, but at the moment government is led by those who, ignorant of Edmund Burke's wisdom, confuse economy with parsimony, and present a poor target. The big voluntary foundations on the other hand have the power, and have the motive if they can be wakened to it. So step four, the architect wanting to implement the redesign must go market the idea to them, devising persuasive arguments about the benefits of moving the log and the detriments of not doing so, using every forum and vehicle to reach them.

Now I cannot think of a person with greater stature for such a mission than your admirable CEO, Michael Rich. And with RAND's ability to round up further individuals of similar stature (probably could do it just with your distinguished board and alumni, but I'm sure many others of equal eminence would join you), you could go to foundations to make this case: long-term core support for organizations with a track record, betting on the track record not the proposal, and assessing results by progress reports.

So have any of you talked to Michael about this idea? Everyone in the field of long-term research and policy design would be grateful, and the nation would be the beneficiary, though they would not know it anymore than about Bell Labs. I have not met Mr. Rich but I suspect many of you know him. Or you can at least get the word to him, or you can send this tape to him. I shall leave that as an assignment to the audience.

OK. Now I want to turn to the economy. It's a very big macrosystem and I want to show how we apply standard LSA methods of analysis by using it as an example. Yesterday we got a start on it. I gather many of you weren't there, so let's reprise a bit.

LSA analyzes macrosystems in three highly iterative steps: (1) identify the goals that society desires of the system; (2) identify the system's problems by assessing the discrepancy between performance and goals, and finally (3) identify the underlying macrosystem structure and incentives driving the system's performance and determine whether they are aligned or anti-aligned with the goals. LSA theory predicts that when most organizations in a system are chronically malperforming on important goals, it is because the system structure and incentives are anti-aligned with the desired goals, and are perversely enabling and rewarding the organizations for the observed malperformance. It predicts that until policies redesign the faulty structure and incentives to align them with goals, the malperformance will persist despite superficial, ameliorative policies.

LSA adamantly starts with goals, because we define a macrosystem problem as a discrepancy between performance and goals. So you do not know what your problems are until you have properly identified the goals society wants for the system.

So let us start with step one, what are the goals of the economy? The function of the economy is to create and distribute wealth, but that is the function, not the goals for that function. If you listen to the economists and bankers who manage the economy, they list standard disciplinary goals from macroeconomics. Oh, we've got to have GDP growing adequately. We've got to have inflation down and under control. We've got to have unemployment down and under control, we've got to have sound markets, we've got to have adequate balance of trade, and so on.

On that score, comparing performance against goals since the Great Crash of 2008, we look rather good if not great. The Great Crash was a total performance failure of our economic managers, who failed to keep the finance markets sound. They've done a notable job since then, at least on those stated goals, managing the economy's recovery.

But I argue those aren't the real goals that society wants at all, or should want. As a large system architect your job is to figure out what society wants or what it should want.

I also remind you a large system architect has no power to decide the goals, only to propose. Decisions are made by policymakers with the legitimate authority of the electorate, not system architects. Just as with a house architect, it is the client who decides, the architect can only propose. But it is an important function of architects, both house architects and large system architects, to help clients clarify their goals and show them what is possible and its advantages.

And we in this country have the advantage of having explicitly written goals that we're supposed to achieve as a nation. The goals are written down—I still marvel every time I think of them—in the opening words of our Declaration of Independence and the Preamble of our Constitution. All men are endowed by their Creator with certain inalienable rights. All. And we have steadily broadened that to include all mankind regardless of gender, race, ethnicity, religion and economic circumstance. It took a civil war and great political strife to accomplish that broadening in the law in principle, and in practice it notably remains a work in progress. I do not fault the noble gentlemen, our founding fathers, for failing to recognize the more than half the population who were women and slaves; they were so far ahead of their time with just the phrase all men. It remains for every generation to finish that task: all mankind.

The two goals that specifically apply to the economy are those last mentioned in the Preamble: (1) To promote the General Welfare and (2) secure the Blessings of Liberty. Not just for ourselves but also for our posterity. These are, I contend, the principal goals for the economy—indeed for all aspects of American life—that our society would and should desire if it were well informed.

Because LSA defines a performance problem as a discrepancy between performance and proper goals, you actually do not know

your real problems until you have first specified those goals properly. And if you mis-specify the goals, you will then mis-specify your performance problems, and mis-direct your policy strategies.

The macroeconomics goals that our economic managers are using, I contend, are the wrong goals. They are instrumental goals subservient to the correct principal goals above, and may only be used to the extent that they advance the principal goals, and must yield otherwise.

Measured against the first of these principal goals, promoting the general welfare, the economy is doing poorly. By most measures the general welfare has been stagnant for some decades and took a disastrous hit during the Great Crash.

On the other measure, securing the general liberty, if my analysis of the flawed structure and incentives of the economy, which I shall shortly present, is correct—and this is far too important an analysis to be left to my judgment alone, I need all the peer review help I can get—the nation is on a disastrous course, which if not corrected by redesign, and soon, will lead to the destruction of liberty and descent into despotism by a de facto hereditary privileged few. I am deadly serious, so I will want your attention and critique of this analysis.

I know very few managers of the economy who think promoting the general welfare is a priority, let alone *the* priority. Most unthinkingly assume that by promoting their macro-economic goals they are promoting the general welfare, but the moment they seriously measure, it is clear they are mistaken. Had promoting the general welfare been the true priority, the current President would not be President.

I know no economic managers who think protecting and promoting the general liberty is part of their job. And that is why I believe us headed for disaster of the magnitude I shall try to spell out.

By any number of measures, a lot of hardworking Americans, those below the median income, are working harder than ever, yet still falling behind, losing homes and adequately paying jobs . . . this whole class of people that the Democrats forgot and the Republicans never really cared about except to convince them it was the Democrats fault. Where is the American dream they were promised, that if you worked hard, you would get ahead? These people wanted answers. And here came a maverick, brilliant con man who could spot a huge crowd of victims that both parties were too blind to see, who told

them he had the answer: it's those immigrants, those Mexicans and Muslims sneaking into our country bringing drugs, crime and terrorism and taking our jobs, and we'll build a wall and bar the new ones and throw the illegal ones out and torture the terrorists and that will make America great. Well, we've seen that talk before in history; all demagogues use the same formulas.

And how is the nation performing on promoting the general liberty? Here is an important warning about assessing performance. On many goals, including liberty, performance is hard to measure quantitatively. One must use performance measures that actually reflect the performance you are trying to assess. I quote the sociologist Cameron's warning: not everything that counts can be counted, and not everything that can be counted counts. So use quantitative measures wherever you can, but only if they meaningfully reflect the performance you are trying to assess; if they don't, don't use them just because you can measure them. Rather, use qualitative measures when you must if they meaningfully reflect the performance you are trying to assess. The *Incumbency* paper in the handouts spends considerable time on performance measures for the general welfare and for liberty.

One illustrative little quantitative proxy for liberty is social mobility. It used to be America was the land of opportunity. Europe was a caste system where you could seldom climb above the status and income of your parents, America was the land of Horatio Alger where the poor lad could rise to success and the log cabin child could become President. But now, if you measure, many European countries have greater social mobility than the United States. In America the less-talented children of the rich are more likely to go to prestigious universities and land high-paying jobs than the talented children of the poor. Neither Europeans nor Americans are very aware of this reversal of affairs, but it means shrinkage of the general liberty in America. We are not the land of opportunity we once were. This is only one little proxy and of course adequate assessment demands many more, but they all paint the same picture, decline in the general liberty of the many, particularly the poor, and increase in the individual liberty of the privileged.

After identifying goals, and comparing performance against goals, we now turn to the third step, a structure and incentive analysis of

the American economy. We investigate, does our economy structurally enable and reward economic activity that promotes the identified goals: the general welfare and liberty for ourselves and our posterity? And I'm going to start by telling you my conclusion, which is so appalling I fear I have a credibility problem.

I find the structure and incentives incredibly stacked against the general welfare and liberty. They reward just the opposite. Indeed, our problem is not inequality. We can constructively argue about the proper level of inequality to maximize the general welfare and liberty. Indeed, I have developed a theorem to prove that you need a certain amount of inequality in order to maximize the general welfare and liberty. Too little is bad. Too much is bad. There's a sweet spot. And that's where you want to keep your economy. So *our problem is not inequality*. We can rationally discuss what that level of inequality is and what it ought to be. *Our problem is runaway inequality.*

If my analysis is correct, our problem is a seriously flawed economy that is driving inequality slowly and relentlessly upward with neither natural nor built-in constraint. It is promoting without limit the ever-increasing concentration of more and more and more of the nation's income-producing assets in ever fewer hands, neither elected nor appointed—not answerable to the public in any serious way.

Inequality we can debate; runaway inequality, if true, is not debatable. Long before any natural limit sets in, the United States will have fallen into the hands of a small de facto hereditary financial aristocracy, and government of the people by the people and for the people will have long since perished from this nation.

And more than that, we may be reaching a tipping point. There are strong signs that this process is accelerating, and if we do not redesign the economy to be consonant with the Constitution soon, runaway inequality may grow beyond the power of the Constitution to contain. At that point we will not be able to accomplish and implement redesign without bloodshed. That is why I say this is the most important thing I'm working on.

I fear this conclusion appears so drastic that people will not take it seriously: Come on, Chicken Little, the sky is not going to fall. That can't happen here in the United States of America.

To address this credibility problem, I wish to point out that this would not be the first epic disaster to liberty, it would be the second. Exactly what I am predicting has already happened to mankind once, and the results were catastrophic. And the forces that drove this first catastrophe appear to me so similar to those I find presently driving us toward a repeat of this disaster that I make the prediction with, unfortunately, considerable confidence. So let me take you back to that first epic disaster and show you what we can learn that night help avert a repeat.

I am going to take you back to pre-history, to our hunter-gatherer ancestors. Adam Smith meet Margaret Mead . . . or more accurately Marshall Sahlins and other anthropologists who study modern hunter-gathering groups—the few that remain—and Mark Cohen and other paleoanthropologists and archaeologists who study the prehistoric evidence on ancient hunter-gathering groups.

And contrary to Thomas Hobbes, the research finds their lives are not solitary, poor, nasty, brutish and short . . . a war of all against all. It turns out these people were bigger and stronger and healthier and longer lived and less hard-working than their agrarian descendants. I was amazed, this was all news to me. We can look at the fossils and see they were bigger and better built and less disease-ridden than later agrarian populations. Even today they do not face the infectious diseases and famines that killed and continues to kill millions of agrarians, unless they make close contact with them. If you survive childhood—their childhood mortality is the same as agrarians: high—and aren't killed by violence: about 25 percent of men and 5 percent of women (their biggest enemy is other groups)—you live longer than your agrarian descendants.

Most hunter-gathering groups work fewer hours and less hard than agrarian people, indeed than most modern people, to meet all their needs, and spend the rest of their time in socializing and pastimes. One anthropologist wag termed them 'the original affluent society' because they have so much leisure compared to us. And their work, hunting and gathering and making necessities, is sociable and pleasurable compared to the grinding toil of farming. The men form hunting parties, and the women go out and gather and chatter away. Kids don't work, old people don't work, even some adult men never hunt. Yet all food is shared, everyone gets fed and it is unthinkable

that anybody go hungry. There's no formal education. Kids learn by watching and doing, and don't begin hunting or gathering until they choose to.

I find it fascinating that the culture of hunter-gatherers appears to follow the structure and incentives set by their natural environment. There's two kinds of hunter-gatherers; and presumably at the beginning most of them were of the first kind, but as the world begins to fill up with people we get more and more of the second. The first kind are called immediate-return hunter-gatherers. These go out and get what they need as they need it, every day or every week. The second kind are delayed-return hunter-gatherers. These people manage, nurture and harvest certain wild crops and game and preserve them for year-round use: you harvest mongongo nuts when ripe and store them, and harvest the smelt run and smoke them, that sort of thing. Watch how the structure and incentives of their natural environment shape and differentiate the behavior and attitudes of these two kinds of cultures.

The most striking feature of immediate-return people is their egalitarianism, the most egalitarian societies ever found. It is not, oh let's be tolerant and nice to each other. They are fiercely and aggressively egalitarian. If you try to act superior or compel others, you are brought quickly back into line by the entire group, by shaming, shunning or as a last resort execution. As one psychologist said, the most frustrated people in immediate-return societies are megalomaniacs. There is no coercive hierarchy, nobody can order another person what to do. Leaders lead only by persuasion and earned respect. And in many of these societies, this equality extends to women, no man tells a woman what to do . . . not all, many develop some degree of gender bias, but many do not.

As population pressure forces groups toward delayed-return hunter-gathering . . . to more fully exploit their territory by husbanding and preserving resources . . . there comes the necessity to guard and ration those resources, not only from insect and animal pests and members of your own band, but especially from other marauding hunter-gatherer groups. And groups begin to fight over richer territories which provide more resources. If you have a good territory, and unfriendly neighbors show up because they need more resources, you've got to defend your territory. And we know that a great deal

of many hunter-gather groups' time was spent on war. For example, a convict, William Buckley, back in the days when England was first moving into Australia escaped and lived with an Aboriginal group for 30 years. There was no agriculture because Australia held no domesticable crops, so for 60,000 years virtually all Aboriginals lived as hunter-gatherers. It is fascinating to read Buckley's account. He loved the people but reports these hunter-gathering groups constantly finding grievances against neighboring groups and either defending or planning attacks avenging themselves on the neighbors. Mortality in any one of these battles was usually quite low, one or two casualties often sufficed to end the battle, but sustained cumulatively over a lifetime, these constant skirmishes made mortality from violence high. Note, there appear many examples, modern and ancient, where groups found ways to keep rather sustained peace with their neighbors, but also many where they did not.

Thus because these delayed-return circumstances require more organization, leadership and direction for groups to survive, egalitarianism declines and hierarchy in power rises, ranging from mild to moderate, in these societies, the more and the longer they depend on delayed-return resources. But such hierarchical inequality in power, often accompanied by hierarchy in personal possessions, even among highly delayed-return groups appears trivial compared to later agrarian societies. There are no massive subject populations and slavery was virtually unknown. (The only exception to my knowledge were the Northwest Pacific Indians of North America whose territory was so rich, they lived in permanent settlements which developed very stratified classes of power and wealth, including slaves.)

Even when population pressure first made deliberate agriculture necessary, the homes in the earliest known settled agricultural towns, such as Jericho and Catul Hayuk, show some differences in material possessions but no indications of different classes—estates and palaces are not found—nor is there evidence yet of social distinctions between men and women. Planting and guarding and defense require leadership and cooperation, but apparently leaders while heeded and respected were not accorded notable differences in material status and wealth.

It does not appear that hunter-gatherers were, or are, looking for agriculture, nor grateful if compelled to it by exigency. It is far more time-consuming and demanding, and given a choice most happily

retreat to their foraging life. One poster-boy example were the Tierra del Fuegians. Thomas Malthus along with Charles Darwin and Beagle captain Robert Fitzroy thought them the sorriest people on Earth. So Fitzroy took three volunteer Fuegians back to England, had them taught Christianity and farming to enlighten them about "progress" as conceived by Europeans, then transported them back to Tierra del Fuego on a subsequent voyage and set them up with huts, garden plots and farming tools. Almost before the ships were out of sight, the Fuegians abandoned them for their former life. Later asked why and if he would like to go back to England, one replied he "had not the least wish to go back", he was "happy and contented"; "plenty fruit, plenty fish, plenty birdies," said he.

So why did we go to agriculture? Because with hunter-gathering only about 1 percent of the wild plants and animals in a given territory are edible or useful resources, whereas in agriculture, by replacing them with domesticated plants and animals up to 90 percent become useful. You can support 10 to 100 times more people on a given piece of land by agriculture compared to hunter-gathering. So as populations expand and the neighbors press in, and/or the climate becomes less favorable, you have to exploit your territory harder and you're forced into agriculture. And it's a one-way deal, because settled women are much more fertile than foraging women, the birth rate explodes and you can't go back.

While it is impossible to go back to hunter-gathering, this way of life explodes a lot of the assumptions we entertain, particularly in the West, about human nature. It certainly opens the mind to the distinction between wellbeing and wealth. For example, the rational economic man we talk about, his wants are many and resources few: hunter-gathering peoples have limited wants and seemingly ample resources to satisfy them; they lived, and continue to live, in high wellbeing with little wealth. And many accomplished amazing feats without much coercive, privileged hierarchy. For example, the earliest, most monumental megalithic structure we know, Gobekli Tepe in southeast Turkey, predates Stonehenge by 6000 years and makes it look like kindergarten. It was active from the 10thto the 8thmillennium BCE and involved hunter-gathering-groups, some increasingly dabbling in or adopting agriculture, which was beginning to develop here and there, sometimes abandoned but reverted

to again. It appears from artifacts to have involved hunter-gatherer societies from Egypt to Mesopotamia continually and peacefully cooperating to regularly elaborate the structure. It dwarfs all other later megalith sites known. There obviously had to be strong leadership and peaceable arrangements between these various groups. Yet there are few indications of rank or class or material exploitation; they still retained much of the values of their hunter-gathering past.

So now let's strike to the bottom line: Pre-agriculture: The great majority of people lived in relatively high wellbeing and liberty and low material wealth. Post-agriculture: Within a few centuries the mass of mankind lived in grinding poverty and servitude, and high material wealth in the hands of a very privileged few. Within just a few centuries after agriculture developed, extreme inequality of power, wealth and status between these privileged few and the exploited many.

This was a tragedy to human wellbeing and liberty of catastrophic proportions! And almost nobody seems to realize it. But almost nobody seems to know that it happened or why! And as these are the very two goals promised in our Preamble that we hold for our economy, it very much behooves us to learn why.

First grasp the scope—the magnitude, the recentness and the longevity—of this tragedy. Think about it. This disaster is less than 10,000 years old, yet still persists in much of the world. Realize, mankind lived as hunter-gatherers for millennia: homo sapiens is perhaps a million years old, modern homo sapiens 300,000 years old. Civilization and written history . . . it's less than 10,000 years old. So over 95 percent of our history, mankind lives as hunter-gatherers with uneven but relative equality, liberty and wellbeing, then suddenly less than 10,000 years ago appear monarchies, aristocracies, mass subservient peasant populations, mass slavery. Extravagant inequality of power, wealth and status of the very few over the many. One small set of people elevated superior to the rest of mankind. I mean, amazing.

Contrary to conventional notions, these are all new, novel institutions . . . things like monarchy, aristocracy, peasantry, slaves that seen through the bias of written history seem to have always been with us. And these tyrannical institutions are still with us in much of the world, they have endured for millennia. They're not eternal, not

ineluctable, not divinely ordained. They were not at all in any way an inheritance from our hunter-gathering ancestors. And yet they happened. And the question is why. How could so great a tragedy have befallen us?

It's also important to realize this particular form of tyranny has finally been overturned in parts of the world starting less than 300 years ago. Starting with our own nation, the first to find a way to harness the ideals of the Enlightenment, and those who have copied us, this tyranny of organized force has been overthrown . . . further proof that it is not ineluctable or naturally ordained, that mankind can end tyranny if we have the courage and, even more crucially (mankind has never lacked for courage), the wisdom and understanding of how it arose and how it was stopped, so that we can prevent a repeat that endures another several millennia.

Because I contend from my analysis, a repeat is brewing and rapidly. It's the same thing that I contend is going to happen due our economy. And so there's a lot of parallels and lessons. And the most important concept I'm going to introduce, common to the first tragedy and today, is what I call incumbency. I believe incumbency a root cause of the first tragic destruction of liberty, and now at work in our economy driving us, unless stopped, straight toward a second.

Incumbency is a property of sources of power. Most sources of power don't have it. But when they do, everything changes. Incumbency is the "increasing ability of people who hold such power—the incumbents—to gain more of that power, the more of that power they gain. It's a runaway positive feedback loop.

So what happened when agriculture arrived was that it conferred incumbency power on organized force. Organized force did not have incumbency power among hunter-gathers (indeed in their skirmishes and battles against neighboring groups, their use of force could hardly be called organized). But under agriculture it only took about 50 or 70 percent of a group to feed the rest which means the rest could specialize in various occupations like the crafts, religion, administration and the military.

This is a very important phenomenon, this ability of a group where formerly every member did everything for themselves, but now learns to specialize members at various tasks in which they become much

more expert, and to suppress free riders, i.e. members who loaf and parasite on the work of others. If the group can organize and specialize its members cleverly and suppress free riders adequately, it will take over from groups that don't. This is a rare evolutionary phenomenon that has occurred a few times in nature, first in organisms and then in social species like ants and humans. Every time biological or social evolution has stumbled on this, the new organized group takes over from non-specialized rivals.

Consider the first instance, multicellular organisms. Unlike protozoa or sponges where the cells have no specialized roles, multicellular organisms like you and me develop specialized organs and take over ecological niches from non-specialized organisms. Sometimes these organisms, like you and me, are unable to suppress free riders, cells that parasite off the others without contributing to the reproductive success of the organism: they are called cancers. Similarly, the social ants are insects that evolved the ability to specialize and suppress free riders. And since then, they have taken over from non-social ants and many other species, and today the social ants constitute 15 percent of the world's total terrestrial animal biomass, 25 percent in the tropics. With the advent of agriculture, humans socially evolved into organized societies with people specialized at various occupations, and various social devices to suppress free riders. And these organized societies have simply taken over from hunter-gatherers, who have less or no specialization and pushed them to the brink of extinction, and indeed are now taking over the Earth and pushing many species to extinction, including perhaps ourselves.

The last and most recently evolved example, which will very much feature in the developments of our flawed economy, is the big corporation. It's what I call "the new size". Businesses have recently learned how to aggregate ever larger numbers of employees in ever more specialized tasks needed by the corporation and largely rid themselves of free riders. Some of these mega-firms straddle continents and dwarf national economies. And as we would predict from every time this phenomenon has evolved in the history of the world, they are rapidly expanding their share of, and influence on, the economy at the expense of all rivals, smaller businesses and the general public. I shall come back to this.

So one of the first tasks of an agrarian society is protecting its crops from marauders, such as non-farming hunter-gathering groups outgrowing the resources of their territory. And a second task is your population is expanding and soon too big (estimated beyond roughly 150 persons) for inter-personal social pressure to maintain order. For the first time in human history groups become so big that there are people in the same group who are strangers to each other, and now comes the necessity for laws and courts to maintain order. The earliest societies, attempting to maintain some degree of egalitarianism appointed judges to make rules, adjudicate disputes, and organize and lead defense. But the larger and more successful the society, the less adequate the system of judges proved to decide and enforce the rules and defense.

Then came the invention of physically coercive leadership—authoritarian chiefs and organized force, professional armed men. Either the group appointed a leader for the purpose or some skillful individual gathered a gang and strong-armed himself into a warlord position. The longer such authoritarian leaders and their personal retainers persisted, and passed power to their own descendants, the more they became de facto and then de jure hereditary aristocracies. These societies with an authoritarian leader and an army of professionals were overwhelmingly superior to their less organized neighbors, essentially at their mercy. Such strong organization was particularly valuable where irrigation was required, and agrarian societies spread down the Tigris and Euphrates and soon became little feuding city-states, each with their own monarchs, aristocracy and army.

You can see this transition in the Bible. The Israelites were latecomers, pastoralists led by judges, compared to their neighbors. In the book of Samuel you see the Israelites insist that their judge Samuel appoint a king, despite all his admonitions against it. It is clear that Samuel had observed how kings in the neighboring societies operated. This king will take your sons for his army, Samuel warned, and your daughters for his household, and 10 or 15 percent of your crops and income for his upkeep. Why would the Israelites want that and be so insistent on a king. Well, the Bible has its own take on it, but if you look back in the Book of Judges you find that a neighboring king came in with his army and drove the Israelites into the hills starving for almost a decade before leaving, and they did not want a repeat

ever again and saw how helpless they had been. So they decided to join the arms race.

Agriculture developed independently in several areas of the world and in each one you see this invention, this evolution, of kings, aristocracies and armies independently soon after. Agriculture permits specialization, requires defense of stored resources and maintaining order. People start inventing organized force, professionally trained with professional leadership by aristocrats. It's overwhelmingly superior to societies where every guy puts down his hoe and picks up his spear or bow and goes off to fight under some judge who has only rudimentary knowledge of tactics and little more than respect to enforce directives. Which is the way that hunter-gatherers and the earliest agrarians fought with their neighbors when peace mechanisms failed. Unorganized force cannot compete with trained, disciplined organized force.

But that's not where it stops. Once you have organized force, the megalomaniac and egocentric kings begin to try to take over their neighbors. They start to eat each other up. The successful ones can now mount a bigger army and take over smaller ones. In other words, organized force suddenly has acquired incumbent power: the increasing ability of people who hold organized force—the incumbents—to gain more organized force, the more organized force they gain.

It's not that every king or tribe wants to, but some do and it's another one-way process. All over the world, following the development of agriculture come little city-states and kingdoms that get taken over and annexed into burgeoning empires. Some greedy brilliant guy figures out how to run the army better and eat the others up. A Pharaoh takes over all the little city states along the Nile. Philip invents the phalanx and takes over Greece, and son Alexander takes over his known world. The Chinese take over theirs. A thousand years later the Khmers, the Incas, the Aztecs take over theirs.

And where does it stop? It doesn't. Until there's some natural or technical limit. The empires grew as large as they could grow with the communication technology in hand. And we, mankind, lived in servitude to these few fortunate privileged. For thousands of years. And because incumbency is on the loose again in our flawed economy, conferred upon a different source of power, if we don't redesign it, we will again.

The first great tragedy to liberty is a dramatic lesson to mankind that new technology and social arrangements can quite covertly confer incumbency on some unsuspected source of power and destroy liberty for millennia if not caught early. It is an ever-lurking danger of progress that wise lovers of liberty should be constantly on the alert for.

How was this incumbency of organized force ended? If we are to prevent incumbency it is crucial to know. It was tamed by a group of large system architects . . . called our founding fathers. They took institutions which everybody at the time, indeed everybody for millennia, thought were natural, ineluctable, divinely ordained. Theologians declared them so. The privileged assumed their natural superiority without a second thought. The non-privileged resented bad treatment but did not question the idea of hierarchy. Every-body said well you can't have a society without a king, how are you going to keep order.

But then along came avant garde Enlightenment philosophers who came up with the idea of human rights. And a group of Americans decided to intentionally redesign their government based on these principles. They did not re-establish these millennia-old institutions after the Revolution here on American soil, they daringly overturned them. People who today with 200 years experience take the founding fathers' redesign for granted fail to grasp how radical it was. Skeptics thought them dreamers. All Europe expected the "impractical" new nation to self-destruct. And the fathers did not make it on the first try—first rocket on the pad blows up, an engineering adage I mentioned in yesterday's talk—not until the second.

Their goal was a government where no minority could tyrannize the majority, nor the majority tyrannize any minority. And they set about redesigning government and other institutions with new structure and incentives to achieve this goal. They abolished aristocracy, the idea of a class of naturally superior people entitled to hereditary privileges. They abolished monarchy, the idea of an authoritarian leader not answerable to the citizenry. They replaced them with representative democracy and a tri-partite government with checks and balances. They professionalized the Army: officers were no longer the monopoly privilege of the aristocracy, but trained from ordinary citizens and placed under civilian control. And they separated reli-

gion, which along with government had been the second great source of tyranny, from the state. So presumably now neither church nor state could tyrannize the majority or minority.

As large system architects redesigning a government and other relevant institutions they did a remarkably good job. It has worked rather well, with glaring exceptions, for over 200 years. And everywhere our Constitution has been copied or improved on, there has been an end to tyranny. Why? Because they broke the power of incumbency that agriculture once conferred on organized force. We still have agriculture, it has saved the world from starvation, but it no longer confers incumbency power on organized force. We still have organized force, it is necessary for our national defense and internal order. But those who control it can no longer tyrannize the citizenry. The incumbency power of organized force was broken by very deliberate, very deliberated, redesign of a large system that no one thought could be redesigned nor, many thought, should be.

We should not overlook our luck in being a small unimportant country far from Europe, nor the fortunate confluence of so many extraordinary leaders, not only able but thoughtful. When France tried the same revolution, the leadership was not equally wise, and more interested in vengeance than constructing a capable government; the chaos was ended by a self-appointed authoritarian conqueror, and he was ended by the monarchies of Europe uniting to end this threat to the established order whose institutions protected hereditary privilege and tyranny. Fortunately they were not on our doorstep, as they were on France's. But it was not luck that produced our redesign, it was intelligence. But it required both intelligence and considerable luck that it got implemented and has been maintained.

I have now summarized the first tragedy to human liberty, a product of incumbency resulting in millennia of tyranny to the great majority of mankind by a privileged few, and ended only by redesign of government to remove the power of incumbency from organized force.

And I now fear we are about to lose it again. A flawed market economy is now conferring incumbency power on a new source of power: capital. Capital held little incumbency power in the agrarian world; it was subject to organized force. It is the invention of the market economy now that organized force has been tamed that has suddenly conferred incumbency power on capital: the increasing

power of the holders of capital—the incumbents—to acquire more capital, the more capital they acquire. The incumbency power of capital is not the only performance problem with our flawed economy, but it is by far the most serious because, unchecked, it will be fatal to liberty.

So let us now inquire into the structure and incentives of our economic system. Remember the goals are (1) promoting the general welfare and (2) securing the general liberty for ourselves and our posterity. This means in a perfectly designed economy, economic activity that raised the general welfare and general liberty would be enabled and rewarded by the structure and incentives, and conversely, economic activity that lowered the general welfare or general liberty, or benefitted the welfare and liberty of any few at the expense of the many, would be impeded and penalized.

What does the present economy reward? It enables and rewards exactly what you observe: economic activity that promotes the welfare and liberty of the holders of capital, irrespective of whether it promotes the general welfare and general liberty of the public. The incentives are predominantly misaligned with goals. It is not that economic activity benefitting the general welfare and liberty doesn't occur, a lot of it does, but the data show it far from the predominant economic activity in our economy. There is also substantial evidence of great wealth being accumulated by harming the general welfare and liberty.

Here's a poster-boy example of a fortune made by harming the public. You all know there is an opioid epidemic in this country, ruining lives and killing people. Do you know where it came from? You can thank the three top executives of the pharmaceutical firm Purdue Pharma. (You can google up this story.) The nation has a drug system which amazingly allows pharmaceutical companies to market and pretty much say anything about their product they want to, including suppressing unfavorable studies and side-effects. And around 1995 Purdue Pharma was selling opioid pain-killers like Oxycontin used for terminal cancer patients, and decided to run a marketing campaign to expand use and sales of the drug. And they mounted a diabolical marketing campaign worthy of a military invasion. They lied to the FDA and trained an army of reps, who knew only what they were told, to repeat these lies to doctors. They lied that Oxycontin was less than 1

percent addictive (it is over 30 percent addictive) and that it lasted for 12 hours (it lasted 4 hours). To add to this drumbeat, they set up and financed phony non-profit fronts touting the mantra that good care should be pain-free. No tolerance for pain they cried, and it became like you weren't doing good medicine if your patients had pain. They gathered big data statistics on every doctor's prescribing habits of pain-killers and targeted the biggest prescribers with their reps. It was a disciplined, brilliant, marketing strategy: lie, lie big, lie often.

So what happened? Purdue Pharma went from a minor firm with revenues of perhaps $500M a year to a major firm earning $3 billion a year. And what happened to patients? They woke in pain at 4 hours and took more Oxycontin and became addicted. Purdue made bigger pills to last 12 hours, and they became more addicted. As you see regularly in the news, lives are still being ruined and lost to overdose, the most celebrated death being the rock star Prince. Even conservative radio jock Rush Limbaugh . . . he of the three strikes and you're out for drug addicts . . . became severely addicted.

Fortunately if belatedly, NIH runs this system where doctors who suspect side effects of a drug can report in. And after a couple years sufficient reports of the addictive nature of these opioids were accumulated that the FDA held clinical trials and found Purdue Pharma had lied. The evidence was turned over to the legal department, which went after Purdue Pharma. But Purdue Pharma has a nice big legal department of its own (remember what was said about big corporations and specialization) that dragged things on for several years. Purdue Pharma was finally convicted of deceit around 2007. And what was the penalty? The company was fined $600M, the largest ever levied against a pharmaceutical firm. $600M on continuing annual revenues of $3B (and still, even now, $2B a year)!? Pocket change! The top three officers pleaded guilty and were individually fined a total of $34M. Again, pocket change. Poor babies won't be able to buy their new Bugatti this year. These are crimes against humanity, these guys should be sent to The Hague. Our economy has rewarded them richly.

Now an opposite poster-boy anecdote of under-rewarded economic activity greatly promoting the public welfare. Who has saved more lives than anyone else on Earth? A good case could be made for Norm Borlaug, distinguished professor of agriculture at Texas A&M university, the "father of the Green Revolution". His reward was a

Nobel Prize. He has not accumulated any degree of wealth from his staggering accomplishments. Isn't there something wrong with an economy which enriches the authors of an orchestrated fraud harming more than 2,000,000 people, including killing upwards of 30,000 in the last 15 years, and only smacks their fingers when caught, while on the other hand merely conferring a Swedish gold star—not riches, a medal—on the savior of up to a billion people around the world.

These are simply anecdotal examples illustrating perverse incentives in our economy anti-aligned with goals. But we can make some more systematic generalities from the data: First of all, public goods, goods and services made or arranged by the public sector, constitute at least half the wealth produced by this nation, but they are highly under-rewarded relative to private goods. Secondly, within the private sector, labor is under-rewarded relative to capital. Were the rewards more fairly distributed relative to contribution to the nation's wealth, or more desirably, contribution to wellbeing, the general welfare would not be so stagnant and the general liberty in such decline and jeopardy.

Let us look more carefully at the issue of labor and capital, because here is where the devastating problem of incumbency starts. Adam Smith noted 200 years ago " . . . the rise of wages operates as simple interest does, the rise of profit operates like compound interest." That is an astute qualitative observation by Smith which has not been controverted since. And now it has been quantitatively confirmed recently by Piketty.[4]

Now think about what that observation means. It means that our capitalists, working no harder, will capture an ever-greater share of the nation's wealth. And labor, working no less hard—and American labor works longer and harder than any other advanced country—will be rewarded by an ever-declining share of the nation's wealth. So in our flawed market economy more and more of the wealth produced is going to the holders of capital, and less and less to labor.

You can make any economic arguments you want to justify this or not, but the Constitution is not interested in economic arguments,

4 See Picketty, Thomas, 1971-. Capital In the Twenty-First Century. Cambridge Massachusetts: The Belknap Press of Harvard University Press, 2014.

only the general welfare and liberty. The general welfare is not being rewarded, and without redesign will continue not to be, and the economy will fail on its Constitutional obligation. But it doesn't stop there. Now we add on top of Adam's observation, the second step: incumbency. The holders of capital do not sit content with their disproportionate return relative to labor, they become discontent with their return relative to other holders of capital and start to eat each other up. It is exactly parallel to the holders of organized force in the days of agrarian empire-building, when holders of more organized force ate up holders of less. Just so, holders of more capital are now eating up holders of less. It is all around you, everywhere you turn, mergers and growth into ever-more huge corporate and financial entities. It is "the new size". Remember the early observations about big corporations and their ability to specialize and suppress free riders, and how this confers ever more disproportionate power to take over or drive extinct smaller rivals. So now because of the incumbency power conferred on capital in our present market economy, more and more of the nation's income-producing assets are being concentrated in ever fewer hands, the people at the top who control these business and financial mega-firms, unelected, unappointed, none answerable to the public.

And it is very clear that they are using their extreme wealth to influence government, the media and public opinion to further increase their power and wealth at the expense of the public welfare. It's the "new propaganda". For example, the public is being systematically misinformed on scientific and political issues by a propaganda machine of deliberate disinformation funded by wealthy special interests hiding behind deceptive fronts they set up and finance. And by owners at the top ordering major news media what to say. Whenever scientific results or the public interest threaten the leaders of these mega special interests, their propaganda disinformation machine goes into action. The distinguished theologian, Michael Novak, at the American Enterprise Institute once observed, you can judge the morality of a society by the number of people paid to lie. On that standard, we are not doing so well morally in our country.

Regarding government, because of the influence of big money in elections, it is increasingly taking steps favorable to big business and finance at the expense of the public welfare. It's "the new bribery". And unlike the old bribery, it's not illegal. In the old illegal bribery

you gave officeholders money for favors; in the new legal bribery, you make elections so expensive, office seekers can't get elected without campaign contributions from big money; then if the favors aren't forthcoming, you dry up your campaign contributions.

As just one anecdote, the Great Crash of 2008 was directly the result of special interest financial influence to weaken vital regulation of the finance industry (which continues even against the pathetic new Dodd-Frank reform regulation today). And it was clear that criminal as well as under-handed legal foreclosure of homes was going on. Yet Congress could not fall over itself fast enough to exempt the industry from prosecution for its crimes, and bail out the failing banks and insurers without penalty. Yet it provided no financial relief to the homeowners to save their homes, whether lost by legal or illegal swindle. Would government free of undue special interest financing have behaved this way? I think not.

In other words, an extraordinary threat to the general liberty is rising rapidly due our flawed economy conferring incumbency power on capital, with neither natural nor any designed built-in limit . . . at least no effective restraint that I can ascertain; I ask you to check me and point out any adequate restraints that I have missed. Indeed in the last three decades we seem bent on removing any of the impediments that might have been present earlier. We appear to be suffering not inequality but runaway inequality. And that will be the end of liberty. The managers of our economy appear oblivious. They seem oblivious that the general liberty is even a goal that is part of their job, let alone that it is under dire threat. The public appears totally unaware. What will happen? What else but what happened in the first great incumbency: the slow inexorable death of liberty for millennia.

What can we do about this? The same thing as did the founding fathers: redesign. Adam Smith redesigned the economy, so can we. And like the founding fathers, we must add in any other institutions necessary (for their problem, they redesigned the army and religious power as well as government) to break the present incumbent power of capital. Capital, like organized force, is indispensable. But we need it stripped of incumbency power, as we did organized force200 years ago. And we need to do it before the power of the incumbents of capital to resist grows beyond the power of the Constitution to contain.

Well, there's two parts to any redesign solution: the technical problem and the political problem. Technically how do you design an economy that tames incumbency of capital, yet still maintains adequate access to capital and sufficient inequality to provide fair incentives (as Adam Smith taught us) for contribution, effort and risk-taking. And politically, how do you implement your redesigned model for the economy? The technical problem is tough but likely adequately soluble. The political problem will be much tougher.

And what you see in my handout is a starting draft of my thinking in the middle of this redesign process, trying to think through these two problems. I remind you how iterative it all is. You see me wandering from goals, to measuring performance, to structure/incentive analysis, to design considerations and back again. Because it doesn't happen sequentially. You just go back and forth, make a little progress here, a little there. But it's all the same kind of thinking: Large System Architecture theory and methods. I stumbled into this way of thinking after ten years working on health care reform and found it much more general, applying to a very broad class of macrosystems, and I'm trying to get policymakers and analysts to adopt this way of thinking every time we have policy problems with a macrosystem.

I'll just give you a quick summary of a few of the thoughts from the handout that seem important. The first is to get rid of the idea of the divine right of markets. The divine right of kings has been replaced by some mystical divine right of markets and worse by the divine right of free markets. OK, that's Frederick Hayek, who made the correct observation that a little panel of central planners cannot outthink all the creative expert people in an entire industry, and then drew all the wrong conclusions from it. I am for free enterprise. It's one of the great inventions; thank you, Adam Smith. But I'm against free markets, i.e. unregulated, government hands-off, markets; again thank you, Adam Smith. Adam was aghast at the idea of unregulated markets. He was aghast at the idea that greed is what serves markets; he called it rust in the machine that would destroy it.

So call them 'sound markets' when they have all the right structural rules that Adam and his successors have recommended. They're a great invention. But it's the rules, and only if they are enforced, that makes markets sound, i.e. have incentives to perform well the way the public

wants. And unsound markets don't self-correct. The only reason we have any sound markets is because government maintains them.

In other words, the job of government is not to micromanage the firms in a market . . . that's the central planning model that Hayek properly decries. But Hayek forgets, unregulated firms left to their own devices, as Adam Smith observed, will rapidly make their market unsound so that it rewards malperformance in the firms' interest at the expense of public's. The duty of government is therefore to design and enforce rules setting up the structure and incentives of each market (and any other macrosystem), so that it rewards firms for the performance society desires of that market. Then the firms will perform that way in their own interest far better than any planners could coercively micromanage them. Markets are means, contrivances, not ends, and if they are not serving the ends society seeks, they should be redesigned so that they do.

The second idea is that some inequality is necessary to maximize the general welfare and liberty. I show empirically and prove theoretically in the handout that too little inequality is just as dangerous to the general welfare and liberty as too much. Empirically we find countries that try to excessively level inequality fail both economically and politically; they become tyrannies. Likewise those with too extreme inequality become tyrannies run by and for the benefit of the few who control the lion's share of the wealth. And these empirical observations are supported by good theory. You can read it in the handout.

And so in between there's a sweet spot, a range of inequality that maximizes the general welfare and liberty. Well, how do we determine that sweet spot? And here is a third important idea. Since we don't have a theory to predict a safe range of inequality that best maximizes the general welfare and liberty, we can do it empirically. We can look at inequality around the world and examine the level of inequality in thriving economies that appear to have high wellbeing and liberty. Since inequality is a political decision, not a divine revelation of economies (which are contrived macrosystems), we know we can design and operate a thriving economy with high wellbeing and liberty in the range we observe in these countries.

Let us use the GINI index to measure inequality in countries. (You can google up the definition if unfamiliar.) It's 100 if one guy has all

the wealth and zero if everybody has equal wealth. So a higher GINI means greater inequality, a lower GINI means less inequality. I am using GINI figures compiled by the CIA. The highest GINI in the world is Lesotho at 63. The lowest is Sweden at 23. Notice how far the lowest is from zero.

Our own country, the United States, has the highest inequality of the developed nations. Our GINI presently stands at 45, and it has been steadily rising from a low of 35 in the '70s for the past three decades. LSA theory says this is not a one-time fluctuation; the incentives in our economy predict this rise and predict in the absence of redesign it will continue unabated without limit at least its present pace. Our inequality is marginally higher or equal to Russia, a kleptocracy of the worst order, whose GINI is reported as 44. (We should assume an error bar of 10 percent due inaccuracies in national statistical systems.)

The average GINI for the European Union is 30. The Germans are 27. The Czechs and Danes are around 25, and the Swedes, as mentioned, are at 23. These are reasonably thriving economies with high wellbeing and liberty. So if we decided to set inequality in the United States at our previous 35, or closer to Europe at 30, we know we can run a very successful economy promoting the general welfare and securing the blessings of liberty. We would have to design redistributive mechanisms that promote and do not compromise fair incentives for enterprise, effort and contribution to the general welfare. And these mechanisms could be tuned to hold inequality where we desire as a society: strengthened if inequality rises above the specified target goal, moderated if it sinks below.

Regarding implementation of a redesigned economy, I will simply say we will need the help of the privileged as well as the grass roots, just as in our Revolution over 200 years ago. We will need their leadership, political and financial support if redesign is ever to be implemented. If not enough answer the call, it is my opinion from this LSA analysis that the Republic is doomed. I invite your peer review.

I am going to end this talk on applying LSA theory and methods to the economy with a quote from an unlikely source, Niccolo Machiavelli, almost 500 years ago. Though it applies equally to the redesign of any important macrosystem, it will especially hold true for the economy.

> *"There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things. For the reformer has enemies in all those who profit by the old order, and only lukewarm defenders in all those who would profit by the new order, this lukewarmness arising partly from fear of their adversaries, who have the laws in their favour; and partly from the incredulity of mankind, who do not truly believe in anything new until they have had actual experience of it."*
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> *—Niccolo Machiavelli, The Prince, 1532*

This is the task of the Large System Architect and I hope you will make it yours.

CHAPTER 3

Redesign the Economy or Lose the Republic:

Inequality, Incumbency and The War on Liberty

How the language of liberty and economics is being used to undermine liberty, and what might be done about it.

Working Paper

2016

Prolegomena (2020)

For those wishing to observe an LSA application in progress, and the kind of time and work involved, an unfinished working draft, *Redesign the Economy or Lose the Republic*, has been included as Chapter 3. This draft was my homework, parts of which later provided the content for my RAND lecture in Chapter 2, *Does the Economy Need Redesign.*

Recall from Chapter 1, *Architecting Large Systems*, that the LSA methods for designing a future model proceed by iteration through four steps: Goals, Symptoms, Diagnosis, and Future Model. The first three steps tell you what your problem macrosystem should be doing (goals), what it is doing instead (symptoms), and why it is doing that instead of what it should (diagnosis). At that point we have a complete set of goals. So we know what the redesigned future model of the problem macrosystem should do, as well as the flawed structure and incentives that must be changed to make it do that. These three crucial steps are fairly straightforward research and analysis, and this is what you observe in this draft and the subsequent RAND lecture.

Unfortunately, there is nothing straightforward about the fourth step, coming up with a practical future model. Knowing the flaws in a system's structure and incentives does not tell you how to redesign them to create powerful stringent incentives for the desired goals. That requires experience, imagination and disciplined perseverance to light up the dark.

My LSA analysis of the economy was prompted in 2015 by the frightening steadily rising inequality in the economy. Americans below the median income were suffering increasing hardship, and at the opposite end a very few Americans at the top of the income ladder were unduly influencing elections to their own advantage. This was fracturing the nation politically into warring factions. (Research shows this a common result of undue inequality in most societies.) Clearly one essential goal for an economy in a liberal democracy pledged to the general welfare and liberty, is that inequality be held to some optimal level. But what is that level, and how is that compatible with a market economy, or with proper incentives for risk-taking, creativity,

and diligence; or with other more conventional economic goals like growth, productivity, low inflation, and high employment?

So I began a serious LSA analysis to determine a full set of goals for the economy, how it was actually performing on those goals, and a diagnosis of why it was so badly malperorming on inequality even while it was doing fairly well on the more conventional economic goals. My 2017 RAND lecture in Chapter 2 was a progress report on what I had found after two year of work on the first three steps, and the dire consequences of not moving on redesign. But you will note I offered there no future model. After two years I still had no firm progress yet on how to design a new model of the economy that would meet all goals, particularly that would allow policy to hold inequality at a specified level.

Three years later, 2020, as mentioned in the preface, I am just completing a proposed answer to appear in a new paper, *The War on Liberty; How Our Capitalists Can Save Us*, posted on our website. You will be able to see the final steps of LSA policy design methods in this paper . . . both a technical future model and a political change strategy to implement it. More importantly you will see a strategy to halt America's unconstrained runaway inequality, a stampede that can only end in economic tyranny. I hope you will act on it.

So five years was spent simply arriving at a future model that could end the march to economic tyranny. And, even assuming sufficient numbers of people with the necessary political clout are willing to step up to the plate (no sure thing), the political strategy for its implementation will surely take two to four decades, about the same time-frame the founding fathers required to end political tyranny.

It will be up to others with the requisite technical and political skills to assess the goodness of this redesign strategy, and strengthen it or send it back to the drawing boards, and to still others with a complex amalgam of skill sets to mobilize the implementation strategy. Given the expected time frame, I doubt I will be around to know the outcome. But even if I do not live to see it, I will be satisfied that I have spent my career . . . perhaps in vain, perhaps not . . . on an overwhelmingly worthy goal for my country and mankind. And I encourage you to do the same.

Introduction

This message is addressed to all who believe themselves good Americans, who deeply subscribe to our stated Constitutional obligations to "promote the general welfare" and "secure the blessings of liberty" for "we the people" . . . all of us and our descendants. Who therefore believe Americans forever pledged by both our history and founding documents to prevent any privileged few from gaining sufficient liberty, power and wealth, no matter how legitimately won, to threaten, restrict or tyrannize the wellbeing and liberty of the many, to aggrandize their own welfare and liberty at the expense of the general welfare and liberty. It matters not who the few are or how they accumulate such power, the nation is pledged by both its Declaration and Constitution to tame the power of any such few should they arise, sufficient to reestablish promoting the wellbeing, rights, and liberty of all.

Our forefathers fought a Revolution to secure and guarantee Americans these rights . . . freedom from tyranny by the few and the blessings of liberty to the many. Successive generations have fought and died to defend and extend those blessings to include us all. If you hold these principles sacred, as I do, principles this nation pioneered; if you believe it is these principles that have made this nation great and are what make it exceptional; then be forewarned. For our turn to defend them has arrived: I believe the general welfare and liberty of this nation in grave and growing peril still scarcely visible to most of us.

Some think the problem is inequality, currently a hot button of the day. We see inequality rising, and that has raised controversy. Debate rages whether our current level of inequality is too high or not. I believe this debate misses the point. We can quibble forever over whether any specific level of inequality gives too much power to the few or is simply a proper incentive for enterprise and the just rewards for talent, effort, and contribution, prompting envy by the have-nots. It seems to me the growing peril arises not from inequality itself. Indeed, I shall show a certain level of inequality is necessary to optimally promote the general welfare and liberty.

The threat, I fear, is much graver and deeper. We see the rise in inequality but what we do not see and appreciate is that this is not a one-time or random fluctuation. The rise is now being driven by a structur-

ally flawed economy and there are no built-in brakes. We are in the midst of steadily rising inequality which the current economy not only encourages but against which it offers within itself no check. I will show that it structurally *under*-rewards economic activity that promotes the general welfare, and substantially *over*-rewards economic activity that gradually and endlessly concentrates ever more of the nation's wealth—and the power of that wealth—in ever fewer hands at the expense of the general welfare. And I can find within it no damping or limiting mechanisms that will stem the rise. Largely unplanned, unintended and almost unseen, the nation has drifted into an unsound economic structure that will slowly and inexorably concentrate ever more wealth and power in ever fewer hands *without limit*. Without correction, the current economy guarantees a steady and unlimited rise of inequality.

Thus the threat is not static, it is dynamic. We can debate what is a fair and just level of inequality that optimally promotes the general welfare and liberty while preserving and fairly rewarding individual initiative, risk and effort. But there can be scant argument against taming its present runaway character, because there can be no debate that undue, extreme concentration of the nation's wealth and power in the hands of too few, no matter how legitimately acquired, is not liberty, it is despotism, it is tyranny. It must be restrained.

Moreover, the threat is immediate. Even though the endgame—extreme concentration that would in fact have long since extinguished liberty de facto—may take one or two centuries, there are strong signs, as I will demonstrate, that we are rapidly approaching a tipping point beyond the power of the Constitution to contain. In the absence of firm countermeasures, by the time it becomes apparent to all, this slow runaway concentration will be an unstoppable juggernaut to despotism. Without urgent, adequate countermeasures, the slide into tyranny may soon be irrecoverable short of armed rebellion. If we do not act shortly to honor and firmly exercise our Constitutional pledge by institutionalizing acceptable restraining mechanisms in the economy and any other necessary institutions, mechanisms limiting, not wealth, but rather, undue concentration of wealth and financial power, we will lose the Republic.

While I have no simple solution how the economy and any other necessary institutions ought be redesigned to best tame runaway

inequality of wealth and power, I will suggest what I think a starting point and hope all will join in until we arrive at an adequate solution that we can act on.

I suggest the first and most important point is that the nation's level of inequality is a political decision, not some magical outcome of the market. The economy can, in fact, be designed, intentionally, to set and maintain whatever specified level of inequality the nation deems best promotes its Constitutional goals. Markets and the economic system are means, not ends: an economy that promotes the nation's goals is sound and should be kept in good repair; an economy that obstructs or defeats the nation's goals is unsound and should be redesigned.

Perhaps the second most important point is that proper redesign of the economy will be less a technical than a political problem. The technical problem will be difficult but soluble, the nation has ample technical talent up to the task. But to put in place this technically sound, redesigned economy—one sufficient to save the Republic from eroding into despotism—will require political leadership and organization that must come from both the privileged and the grassroots, the same combination that carried the day in the original American Revolution. Without the participation of both, implementation is unlikely to succeed politically, sentencing the nation to the death of liberty.

In other words, we must ask the privileged to join in establishing means that appropriately restrain their personal liberty and welfare in the interests of protecting the general welfare and liberty, just as in their time George Washington and many other privileged Americans did; to join with, indeed lead, the grassroots to come up with and permanently institutionalize acceptable mechanisms sufficient to prevent undue concentration of wealth and power and protect the nation and its commitment to the liberty and wellbeing of all. We will need their ability, leadership and influence to succeed.

This may all sound wild and alarmist to those who haven't looked deeply into the matter—such a dire endpoint could never happen here, you may say. But I have looked deeply and ask you to follow the logic and evidence. I will show such a dire endpoint not only possible but probable: it has happened before under the same runaway forces. And it plunged the world into tyranny for millennia from

which only the West has now begun to recover and even that only in the last couple centuries. I may be wrong and would be delighted if I were. But if the argument is correct, as I believe, then there is grave peril of a second descent into tyranny. Let us not have another "Pearl Harbor" where in indecision and denial we slept ... and slept and slept ... till dawn and catastrophe.

Summary

Data and research to support the many assertions in this summary are presented in the body of the text, but for clarity let us first see the forest before beginning the slog through the many trees.

The first great catastrophe to human liberty

Some ten thousand years ago the greatest disaster to liberty in history befell mankind, provoked by the rise of agriculture. Prior to agriculture—and contrary to much popular belief that human life was "solitary, poor, nasty, brutish and short . . . a war of all against all" as Thomas Hobbes would have it—solid research evidence suggests that most of our hunter-gathering ancestors were substantially bigger, healthier and, if not killed by injury or conflict, longer-lived than their post-agricultural descendants, who did not begin to catch up until a century or two ago. Most of these bands worked less long and hard for their livelihood and had more leisure than agricultural and modern societies—one expert wittily termed them the original affluent society! And most of those who lived in so-called immediate-return bands (acquiring wild resources as needed) as opposed to delayed-return bands (using wild resources requiring husbandry or storage), lived in fiercely egalitarian, sharing groups with no coercive hierarchy. Leaders in these bands had persuasive but not coercive power, leading by influence and social consent not physical force. While research has not settled on the degree of conflict between bands of our earliest pre-agricultural hunter-gathering ancestors, it is indicative from present immediate-return hunter-gathering groups, particularly those not in contact with agricultural or pastoral peoples, that most of these groups, certainly not all, arrived at social mechanisms to minimize violence not only within their own band but with other bands. While delayed-return hunter-gatherers had, to varying degrees, less liberty and equality and more conflict

than immediate-return bands, none approached anywhere near the disastrous lot of most of their agricultural descendants: grinding labor, grinding poverty, diminished health and longevity, and unprecedented inequality: utter servitude to a small overclass having inordinately superior rank, power and wealth. In short:

- Much of pre-agricultural mankind lived for hundreds of thousands of years in high liberty, high wellbeing, and low material wealth.

Contrast this with their descendants a few centuries after the rise of agriculture:

- The vast majority of post-agricultural mankind lived in poverty and servitude and high material wealth … but in the hands of very few.

This unprecedented new order, tyranny by the few over the many, was unknown to mankind in the previous hundreds of thousands of years of our hunter-gathering existence. Absolute monarchs, aristocracies, empires, slavery, abject massive peasantries scarcely at subsistence . . . all these were utterly new institutions under the human sun, not some ineluctable natural state nor an inheritance from our pre-agricultural ancestors. This tyranny arose independently all over the world everywhere that agriculture did, and everywhere entrenched itself within just a few centuries. It has now lasted millennia and still holds sway in most of the world! Only in the last four centuries has it begun to be tamed by radical steps taken in the West, initiated in practice in great part by our new republic, the United States.

Few people today are aware of this great tragedy nor grasp its magnitude. Despotic hierarchical tyranny is so commonplace in recorded history it is not only *not* considered odd (which it certainly is compared with prehistory), it does not even occur to people that it could be any other way. Think of the enormous loss to human wellbeing. How could such a calamity to the liberty and wellbeing of virtually all mankind even occur? How did such a catastrophe come about and why does it continue? More dire, it may not be the last: mankind appears on the verge of a second such catastrophe that will sweep the world including the West, undoing the great good of the last four centuries.

The rapidly rising threat of a repeat catastrophe

I believe we now understand enough of the forces behind this first historic catastrophe to see how it happened. Worse, I believe we now understand enough about them to advance an argument, which unfortunately I am finding more and more persuasive, that we are likely on the threshold of a second, equally great collapse of human liberty. I will introduce a concept I term incumbency to explain why this may be so:

> Incumbency power *is the increasing power of those who hold power—the incumbents—to acquire more power, the more power they acquire. It is an escalating, runaway phenomenon.*

Incumbency is the fatal enemy of liberty. Unless brought under permanent institutionalized check by advocates of liberty, it ends in tyranny, the more extreme the longer allowed to persist.

Agriculture was not the problem; indeed, it saved mankind from an overpopulation crisis beyond the capacity of hunter-gathering societies to support. Rather the problem was the incumbency power unleashed by agriculture. The capacity of agriculture to produce a surplus in large settled populations conferred incumbent power upon *organized physical force* not possible in small mobile foraging bands.

> Incumbency of organized force *is the increasing power of those who control organized force—the incumbents—to acquire more force, the more force they acquire.*

One sees the beginnings in any leader with the skill to organize a group of thugs who can forcibly expropriate the produce of others for themselves . . . gang leaders, warlords, petty tyrants, etc. Anyone who can deny you necessary resources has power over you; you must do what they say to get what you need to live. By using their ability to organize and control physical force and use it to take control of the distribution of resources, such leaders assumed power. Independently wherever agriculture emerged in the world, within a couple or so centuries there followed city-states with aristocracies (self-declared by laws they themselves decreed and enforced), and ultimately rulers, organizing and controlling the use of force in their polity. This became a runaway phenomenon as these incumbents of organized force ate each other up in orgies of conquest, forcibly amalgamating city-states into kingdoms and kingdoms into empires, concentrating

control of ever more organized force in ever fewer hands, eventually into tiny hereditary aristocracies exercising tyranny over the mass of mankind. This tyranny has lasted millennia, finally broken only when the incumbent power of organized force was tamed in the West by careful and unprecedented redesign of age-old institutions. In societies that maintain these redesigned institutional arrangements, the surplus produced by agriculture and industry no longer confers incumbent power upon organized force.

Now I have come to believe we are presently on a second threshold where incumbency power is again being unleashed, but from a different source. The source this time is the rise of market economies. Again, no more than agriculture, it is not free enterprise and market economies that are the problem. They have been the solution again, this time to reducing poverty beyond the capacity of agrarian societies to support. Rather, the problem again is incumbency. Poorly structured market economies are conferring *incumbent power*, not upon organized force as previously, but this time *upon capital*:

> Incumbent power upon capital *is the increasing power of the holders of capital—the incumbents—to acquire more capital, the more capital they acquire.*

Again this appears to be an uncontrolled runaway phenomenon, concentrating ever more of the nation's (and world's) capital in ever fewer hands, and with it, the ever-greater attendant financial power and control over others. And, again, I believe the solution to stem this fall into tyranny will be similar to the previous one: namely, taking the steps necessary to redesign whatever institutional arrangements are necessary to rein in and permanently curb the incumbent power of capital—I emphasize, not curb capital itself, vital to a dynamic economy, but rather curb its growing incumbent power—so that that power will be held in check by well-structured market economies. I believe failure to recognize the threat and take adequate steps will again ultimately consign the mass of mankind to increasing poverty and servitude to an ever smaller, ever more privileged few, again perhaps for centuries as the previous catastrophe demonstrates, requiring another armed revolution to bring to heel.

I ask that you follow the logic and evidence to assess how sound the argument is, that this is not some extremist or alarmist conclusion. If as sound as I think it, then Americans loyal to the founding prin-

ciples of this great nation, whether rich or poor, have a huge task ahead: to save the Republic from falling into permanent tyranny and rescue its commitment to liberty and justice for all.

The nature of the threat

An economy is a large societal system for creating and distributing wealth. Economies are not created by God or nature, they are created by a society—either intentionally (e.g. Adam Smith) or more usually by topsy and special interest. My reading of the economic evidence suggests the design of our present economy is fundamentally and fatally structured to feed the incumbency of capital, undermining liberty and the general welfare: that without major intervention to redesign this economy, it will gradually and ineluctably concentrate more and more of the nation's wealth in fewer and fewer hands, the longer it persists as presently structured. This analysis, presented in the main text below, should be carefully examined to check that such a dire conclusion is warranted.

I emphasize that the enemy to liberty and the general welfare is not inequality per se (indeed a healthy degree of inequality is necessary in a sound market economy, as I shall show), nor is it capital. It is not wealth, not markets, not free enterprise, not entrepreneurs, not making a fortune. All of these in a *properly structured* market economy can promote liberty and the general welfare. The enemy is incumbency: the present incumbent power of capital unceasingly driving an ever-greater concentration of the nation's wealth into ever fewer hands, where those few increasingly become in a position to use that wealth to shape the media, public information, the economy, and the government to their own ends at the expense of the general public.

Constraining inequality from rising without limit will require taming the incumbency power conferred on capital by the present economy. Failure to do so will destroy the Republic. The threat is not abstract or academic. There appear more and more signs, which I offer later for your assessment, that the threat to liberty from undue rising inequality is already well underway, is serious, and is accelerating.

The nature of a remedy

A possible start on a remedy to restrain and remove incumbency

power from capital may be to take a page from the founding fathers, who tamed the first great tyranny, the incumbent power of organized force. The founders drew the fangs from the first great tyranny by a process most of us now look back on as matter of course and obvious, but which was in fact almost wholly unprecedented at the time and still is. With great courage they took age-old institutions—(1) government, (2) religion, (3) the military, and (4) the aristocracy—institutions which the orthodoxy of the time thought natural, necessary, even divinely established; and thus ineluctable—and intentionally redesigned them. They designed them specifically to achieve the goal they sought: a well-functioning system of governance for the nation, responsive to its citizenry, where the few could never again tyrannize the many or vice versa.

- They stripped the aristocracy of political power and replaced them with an elected Constitutional republic, with checks and balances to protect the rights of any minority from the majority, and the rights of all from the government itself; so that the many could not tyrannize the few, nor the few the many.
- They separated religion from political power so no faith (or state atheism, as in some countries today) could politically impose its power or beliefs upon those of other faiths or no faith.
- They stripped the military from the aristocracy and professionalized it, thereby breaking the aristocratic monopoly on organized force, and placed it firmly under civilian control.
- They abolished aristocracy itself.[5]

5 Unfortunately, the founders only did away with a legal overclass, not a legal underclass. Sadly, they did not grant equal rights to women, nor, worse, abolish slavery, so that the majority of Americans still remained legally denied their inalienable rights. It did not occur to these otherwise laudable gentlemen to question the millenniums-old belief in the presumed superiority of their own gender and race which—though clearly outrageous to modern thought—was taken for granted by even the most eminent thinkers of the time. We should not hold it against them. They were already challenging so much age-old conviction at such great risk—the idea that all men had inalienable rights was such a radical advance—we should be grateful for the extraordinary progress they bequeathed us. Going beyond them has been posterity's task. Legal rights for women have since been gained by long hard political struggle, but abolition proved beyond the political process in America and required bloody civil war—we were the only nation that could not eliminate this evil peacefully. While equal rights for women and all races are now law of the land at great cost, they are far from resolved in practice. The task now falls to us.

We must appreciate how radical and fearsome these actions. Many feared that a society based on such unheard-of institutions with no king would descend into chaos if not outright incur divine wrath.

I believe much the same must be done today: certain institutions, most notably the present economy, *must be deliberately and foundationally redesigned*. No more than government, nor aristocracy, nor the powers of the military nor any religion . . . there is no particular form of market economy that is natural, or necessary, or divinely ordained. Like all institutions a market economy is a product of human action. And like all institutions, if it is not accomplishing the goals society desires of it—in particular promoting the general welfare and liberty—a market economy can be redesigned by human action to do so.

In short:

- The present economy appears pathologically structured against liberty and the general welfare in favor of concentrating more and more capital in the hands of ever fewer holders, whose financial power is now rising beyond the power of the Constitution to contain.
- In the same way that the Constitution was a redesign of government to prevent the tyranny of the few over the many, the present economy and any other necessary institutions must now be redesigned to the same end, to complement and support the Constitution and its foundational goals of securing liberty and the general welfare.

Constitutional amendment may be required to implement, preserve and protect these redesigned institutions.

Accomplishing the technical task

There are two main tasks involved: the technical task of redesigning our market economy and any other necessary institutions to protect the general welfare and liberty; and the political task to implement the new designs. Neither will be easy, but the political task will be much the more formidable.

The technical task is complicated because not only must it prevent undue concentration of wealth at the top, it must also do so without

compromising proper incentives. As Adam Smith has taught us, in a market economy there must be adequate incentives—financial and cultural—fairly and justly rewarding effort, successful innovation, and entrepreneurial risk-taking, and discouraging shirking, free-riding and other economic activity undermining the general welfare. The safety net in the redesigned economy must offer no permanent dole for the able-bodied, and any public assistance for dependents and the vulnerable must include incentives at their level of ability, as well as include incentives for their caretakers and providers, to exercise prudence and economy with the taxpayers' dollars. And equally, neither may the redesigned economy promote the welfare of the privileged at the expense of the taxpayers and the public. Despite this technical complexity, the necessary expertise seems in hand among the relevant technical fields, and competing teams of specialists can be set to work to provide options for our elected decision-makers. It is those with the authority of the electorate, not any technical experts, who must make all final decisions.

Accomplishing the political task

Some barons of concentrated wealth may strongly resist any attempt to curb their continued acquisition of more and more wealth and power, claiming they are doing nothing wrong, that this is infringement on their rights and liberty guaranteed in the Constitution, and it is simply the envy of the masses trying to level them down to the herd. Since they already appear to possess formidable and steadily increasing influence and power over the media, public opinion, the economy and government, their resistance may prove overpowering.

A great problem is that too many of the privileged unthinkingly equate their individual liberty to the general liberty. That equation is fallacious; these are two very distinct concepts. The distinction is important because both are goals and they can conflict, and society must find a way to strike an acceptable balance. I point out that the Pledge of Allegiance, drawing on the stated goals and principles of the Declaration and Constitution, promises "liberty and justice for all" not just the few. Thus *one cannot conflate one's personal liberty and welfare with the general liberty and welfare.* It is the latter that the Constitution guarantees, not the former. Liberty according to

America's founding principles and documents means the liberty of the general public. Therefore, to protect the general liberty, personal liberty cannot be unlimited.

> Individual liberty has limits: *If and to the extent that the personal liberty of one or a few threaten the general liberty of the many, then, to that extent and only to that extent, curbs must be placed on the personal liberty of any such few.*

When any person or group's individual liberty begins to threaten the general liberty, it is no longer liberty, it is becoming despotism. Liberty must protect itself and we cannot allow sloppy use of the language of liberty, whether unintended or (often) deliberate, to undermine liberty. Indeed, a deliberate effort to conflate, confuse, and equate the general liberty with unlimited personal liberty is presently the goal of an extraordinary, relentless, lavishly financed propaganda campaign by a small group of the very rich. Even a majority of the Supreme Court seem confused and unable to make the distinction.

Curbs on extreme concentrated wealth are hardly curbs that any normal person would regard hardship to any individual's liberty or welfare. The nation had no compunction about restricting the over-vast liberty of the King . . . (himself every bit as incensed as any current financial baron might be at this abridgment of "his" liberty and "his" rights). And the nation had every right and responsibility to do so, to protect its stated goal of the general liberty and wellbeing. So I would admonish such affronted barons, if you and any few peers of extreme wealth increasingly accrue concentrated power collectively approximating a king, it makes no difference whether you are a good king or a bad king, whether you have achieved this power legitimately or otherwise, your rights and privileges must be appropriately abridged. You have the right to liberty but not license. You cannot scream about your rights and liberty if they have become de facto so great as to erode the rights and liberty of the general public. They have grown beyond liberty into tyranny.

On the other hand, I believe there are many honorable, quite wealthy barons in business and finance who have neither awareness nor intention of undermining the nation's goals of liberty and justice for all. They are doing what they have always done, and done very well, and simply have no idea there might be anything wrong with this. Indeed they may unthinkingly equate their activities with promoting

the general welfare and liberty, indeed the best way ever found to do so. But if they grasp and concur that an undue and ever-increasing concentration of wealth at the top is undermining liberty and leading toward tyranny, they may decide that their allegiance to the nation and its founding principles demands that such excessive concentration be appropriately curbed, that the preservation of liberty trumps personal self-interest, and they have a responsibility as leaders in the nation to take action to preserve the Republic and its values.

Taking such action would hardly mean great financial sacrifice; they certainly have no great need personally for more wealth and power—at their level, isn't it little more than pride in doing what they do so well, and ego-rivalry with peers? And how proud could they be of a legacy of being the leaders who allowed—or abetted—the nation to drift into despotism? Might they not rather leave an honored legacy of leading a new generation, a founding second generation, to preserve the Republic?

One must hope there will be many. They would not be the first to place permanent curbs on their power and wealth in pursuit of liberty for all. Taking again a page from the original taming of the first tyranny, the founding fathers included some of the most wealthy and powerful men in the colonies. They pledged their lives, fortunes and sacred honor to secure the blessings of liberty, not just for themselves but for all their countrymen and for us, their posterity. Little could have succeeded without them. John Adams estimated a third stepped up to the cause, a third vigorously opposed, and a third sat out on the fence. We must hope Adams' estimates still prevail today among the most privileged as well as the most ordinary Americans. Just as surely as two and a half centuries ago, I believe the daunting task ahead will not be successfully accomplished without both. [Hope is not a plan. . . . but if it is not alive, then how do we redesign national policy? I see no Plan B if not enough of the wealthy and powerful join the cause. That's why I am spending all these words to awaken and motivate them. Do you have something better?]

Consider George Washington, perhaps the wealthiest man in the colonies. He is justly called father of his country not simply because he served as commander of the Continental Army and first President, but because of his extraordinary formal restraint on his own personal power. During his entire period of military command, he regarded

himself subordinate to the Continental Congress, constantly soliciting and pressing them on the needs of the War, acting only when he felt he had secured their consent. He restrained himself though he likely had the stature and influence to proceed without their official approval. Why such restraint? Because he deeply believed this the proper role of a commanding officer in a republic. And realizing his symbolic stature, he wished to model it as a powerful precedent. Later as President, admiration was so universal he could have held the office for life. Not only did he refuse the urging of Alexander Hamilton to formally become emperor of the United States, he voluntarily stepped down after two terms, again to deliberately set a powerful precedent for what he believed proper for the head of any republic based on the liberty and consent of the governed. His model of restraint on his own power and privilege, restraint that he so deeply felt necessary for our Republic, stunned the aristocracy and intelligentsia of Europe. Indeed, it made the idea of government without a monarch more than a philosophical fancy. It is this personal restraint for the good of the Republic in the face of potentially unlimited power and privilege, perhaps more than any of his other extraordinary accomplishments in shepherding the nation into being, that makes him so especially deserving of the title father of his country. And he was not alone. Many men of comparable power, wealth and stature joined him in similar risk, personal expense and personal restraint for the sake of accomplishing a Republic with liberty and justice for all. We most hope this precious combination of eminence with character is still alive and well in the Republic.

I do not believe the kind of fundamental redesign of the economy and other institutions needed today will be possible without men (and now, at last, women) of similar power, wealth and ability. Grassroots support is vital. But it cannot likely be accomplished by a grassroots movement alone without powerful, able, well-financed leadership, any more than could have the American Revolution and founding of the nation. Both those of high and ordinary station were necessary then, and will be necessary today. It is well that presently many wealthy citizens actively fund and support worthy charities—education, the arts, the fight against dread disease, here and abroad. But when the nation shows alarming signs of drifting into tyranny, those causes are trumped. We now desperately need this leadership, talent, support and funds in the cause of preserving the liberty that our founders gave so

fully of themselves to bequeath us. Without it, we will likely lose the Republic. With it, this Republic with liberty and justice for all may be saved for ourselves and handed on to our own posterity.

Here endeth this somber summary, and I turn to the task of elaborating and supporting the many points offered.

Part I. Assessing and Controlling Inequality

On Assessing Inequality

There has been much discussion of our high and still rising inequality in the United States, of the increasing concentration of wealth at the top while median income remains flat, and whether this should be a matter of concern. We now have the highest inequality among the industrial nations and it continues to rise. Some see this as unfairness and injustice, a consequence of the greed of the rich, giving them too much influence. Others dismiss this as envy. They see inequality as simply a natural and just consequence of liberty and talent, and see attempts to reduce it as class warfare by the have-nots infringing on the rights and liberty of the wealthy. Still others suggest inequality a side issue best left to benign neglect, that the real issue is the decline in social mobility, which has fallen behind Europe and continues to fall; we are no longer the land of equal opportunity we once were. While all these views have their merits, I believe they all substantially miss the point and its gravity. To assess whether inequality is of concern we must assess its impact against accepted national goals.

It is crucial that any nation with a set of specified national goals—and the United States has in its foundational documents one of the noblest sets of specified goals ever devised—structure its institutions so that their incentives, financial and cultural, strongly reward those goals preferentially over other less desirable behavior contrary to goals. A nation that does not will see its institutions drifting further and further away from its desired goals, following the actual existing unsound incentives. Should such malperforming institutions, enriched by the unsound rewards, become powerful enough, they may begin to influence and corrupt the statement or interpretation of the desired goals to their own advantage at the expense of the public interest. The goals desired by that nation will slowly evaporate in

favor of the corrupted goals favoring the malperforming institutions. Such a careless nation may take a dark turn.

By institutions I explicitly mean here not individual organizations, but rather those large societal systems comprising many organizations and people, that serve a definable purpose for society: think government, the economy, the health care system, the business system, the public education system, the basic science system, etc., all examples of such large systems. (The technical term I use for these large systems is *macrosystem*, but I shall use it sparingly because of its unfamiliarity.) Many of these large systems are largely accidents of history with only familiarity to recommend them, but this need not be so. Policies intentionally designing these large systems to align their structure and incentives with the societal goals desired of them I shall term *large system architecture*. America invented large system architecture; its first practitioners—our first 'large system architects'—were the founding fathers and they did an exceptional job. To skeptics who think a nation's large systems cannot be deliberately designed, even those systems long entrenched or thought ineluctable, the founding fathers are a resounding refutation.

In fairness, I should say Americans co-invented large system architecture. Equal credit must be given Adam Smith, the inventor of free enterprise, who fundamentally redesigned the economy of his country. His new market economy became a model for the world quite as our model of government did, again refuting skeptics that an economy cannot be fundamentally rethought and redesigned.

Hence my point about properly assessing inequality: If the level of inequality is found to be promoting the nation's goals, then the job of policy must be to safeguard the structure and incentives of the economy producing it, so that this level of inequality will be maintained. Conversely, if the level of inequality is undermining the nation's goals, then the job of policy is to redesign the economy, and any other necessary institutions, so that its structure and incentives produce and sustain a level of inequality that does promote national goals.

On the Stated Intentions of the Founding Fathers: the Nation's Explicit Goals

Policy design begins with goals. Policy is not to be confused with politics, which too often begin with means because policymakers cannot

agree on goals. Fortunately, the United States has a very explicit set of national goals, set down in writing, on which virtually all Americans agree. At its inception the nation's founders set out their intentions clearly in a remarkable set of goals for the nation, enshrined in its foundational documents. Those who argue for "originalism"—that the nation should follow the original intentions of the founders—need only study the goal statements set forth by the founders in our Declaration and Constitution. While means are always a matter of great debate, and subject to ever-changing circumstance over time, the founders' original intentions for the ultimate ends for this nation are not ambiguous. With the passage of time and the continuing proof of their lasting worth they have become rightly set in historic stone.

Therefore, let us begin by reminding ourselves of the founding aims and principles of the United States. It is these goals against which inequality must be assessed—indeed *they are the ultimate measure against which every aspect of our national life and activity must be assessed*. If the level of inequality is supportive of these goals, then all is well, the more supportive the better. But if the level of inequality is compromising or, worse, undermining the nation's goals, then it is undue and corrective action is needed . . . the greater the threat, the stronger and more urgent the needed correction.

From The Declaration of Independence of the United States:

> *We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness. —That to secure these rights, Governments are instituted among Men, deriving their just powers from the consent of the governed.*

The Preamble of the Constitution of the United States:

> *We the People of the United States, in Order to form a more perfect Union, establish Justice, insure domestic Tranquility, provide for the common defense, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Posterity, do ordain and establish this Constitution for the United States of America.*

The Declaration and Constitution are two of the great moral documents of history, extending liberty and human rights equally to

all humankind instead of a privileged few—human rights explicitly spelled out originally in a Bill of Rights, and then clarified and broadened in subsequent amendments to include all races, both sexes and at all levels of government. With a generosity of spirit unknown to previous governments, perhaps no more succinct and noble list of societal goals has ever been set out than our Declaration and Preamble. And unlike so many moral documents, the Constitution has proven brilliantly practical and a model for many successors. I believe true 'originalism' means that every passage of the Constitution and American law ought be read and interpreted through the lens of these goals set out by the founders. While the particulars of means, events, knowledge, technology and moral progress steadily evolve and now go far beyond what the founders could have imagined or meant in their own time, the goals they set out for the nation appear timeless, the truest statement of their ultimate intentions.

In the discussion below, although all the Preamble's goals will eventually enter, I shall be most immediately concerned with the impact of inequality on the last two:

- *promote the general welfare*
- *secure the blessings of liberty to ourselves and our posterity.*

If we wish to follow the intent of the founders, what possible notion, let alone intention, could the founders have had regarding, say, regulation of the airwaves or net neutrality, etc.? Simply that whatever policies are enacted regarding these or any other issues, new or old, if they are to pass through the lens of the founders' intentions, they must promote the general welfare and liberty. That is real "originalism". Moreover, had the founders expected slavish obedience to their contemporary ideas, they would not have included the Amendment process, on which they lavished such careful attention. Yet even here Americans have largely followed their intent: most of our Amendments have simply broadened their original goals to be more inclusive and more just.

A Proposition on Inequality and the Nation's Goals

Neither equality nor inequality of material wealth is a stated goal of the nation's founding documents. Thus they are a means not an end. I will now suggest that to maximally support the two stated goals,

promoting the liberty and welfare of all, inequality must be neither too low nor too high. I will outline my conclusions here and then build the argument.

- There is a broad sweet spot, a safe range of inequality, which maximizes the general welfare and liberty.
- If inequality falls unduly below this range, it becomes an increasing threat to the general welfare and liberty.
- If inequality rises unduly above this range, it again becomes an increasing threat to the general welfare and liberty.
- In other words, both undue equality and undue inequality, as they become extreme, are a lethal threat to the goals and principles of our Declaration and Constitution.

We need, first, to support why this is so. We need, second, to arrive at both an understanding and a practical measure of when inequality is "unduly low" and "unduly high". By undue I shall mean threatening to the goals. We must inquire what is the range of inequality that appears reasonably safe, promoting the goals, and how can such a safe range be determined in practice with some assurance? Finally, we need to examine practical means for the nation to maintain inequality within this safe range.

The Argument for a Safe Range for Inequality

The argument for the existence of a safe range for inequality, promoting and protecting liberty and the general welfare, follows easily from examining the extremes at either end.

The Argument for a Lower Limit on Inequality. There have been movements and nations that have tried to eliminate inequality, to reduce it to zero so that all citizens have approximately equal material wealth. This cause has inspired everything from small idealistic colonies up to mass movements and revolutions to install economic systems such as socialism and communism in which government controls all means of production and wages to accomplish this egalitarian ideal.

Worthy as such an ideal of equality may appear to some, the sad fact is that *empirically* all these attempts have done increasingly poorly on the two stated goals the closer they have come to equality, especially the larger their scale and the longer they have persisted. Their econ-

omy becomes increasingly stagnant and unresponsive to consumer needs and wishes, and uncompetitive in the world, undermining the general welfare. And when things get bad enough, this low a level of inequality ultimately can only be maintained further by tyranny, undermining the goal of liberty for all and our posterity. Democratic regimes have backed away from socialism, and despotic communist regimes have collapsed economically if they too did not back away. Hence one can posit from the empirical evidence alone that excessively low inequality, the closer it attempts to achieve equality, promotes neither liberty nor the general welfare.

The empirical experience with unduly low inequality appears not to be an accident but follows from logical cause. There is good *theory* explaining why large societies with such low inequality fail. Their failure cannot be explained away solely or even mainly by supposing them undermined by a self-seeking privileged class. (Eventually this certainly happens with great frequency in large-scale purportedly egalitarian economies, but less so in small-scale colonies which prove no more durable.) In economies of populous societies these systems simply do not accommodate the breadth of human nature nor of administrative reality. As Adam Smith taught us, there must be incentives on individuals and organizations that *reward activity productive of the general welfare and discourage activity unproductive of it*. Incentives mean there must be inequality, that productive organizations and individuals will receive more material wealth and status, unproductive ones less. This does not say how great inequality must be to allow adequate incentives maximally promoting the goals, only that it must be enough. How much might be enough will be taken up shortly.

Because equality entails the absence of incentives, the state has only idealism, ideological enthusiasm and public acclamation to motivate productive activity, and coercion and punishment to discourage shirking and other unproductive activity. Because any large group of humans contains as many sinners as saints (and most of us a mongrel mix of both), these means are simply too weak and transient to motivate and sustain for any substantial length of time a large dynamic economy workable across the vast variety of human nature. Equally bad, in the absence of adequate incentives the state cannot adequately decentralize economic initiative and must assume

excessive *top-down command and control* over economic activity. A large dynamic economy simply demands too many myriad, rapid, specialized, expert decisions for any small body of planners at the top to process expeditiously, let alone well—no matter how brilliant, well-intentioned, public-minded and industrious they may be. Hence economies with too low inequality tend, as is observed, to become slow, ponderous, unresponsive and stagnant, and uncompetitive with market economies having appropriate incentives.

<u>The Argument for an Upper Limit on Inequality</u>. Now consider the opposite case: extreme high inequality. The most extreme would be where one individual possesses all material wealth except what he deigns to allot as subsistence and expenses to the remaining population to maximize his own welfare and power. (And a part of his expenses beyond maintaining a sufficient legal administration will be an armed 'Praetorian guard' to protect himself, and armed troops to suppress revolt and exercise dominion.) This is complete despotism, exemplified ranging from gang leaders and warlords to dictators and absolute monarchs.

Back off the extreme a bit to a few thousands of individuals holding the bulk of the society's income and assets, acting formally or in collusion to the same end: maximizing their power and wealth at the expense of the many. This certainly describes hereditary aristocracies, a form of de jure despotism that has obtained for millennia, and from which this nation freed ourselves some 250 years ago. But such despotism by the few does not require legally designated aristocrats. Quite independently of how they got there, any such collusive group that has clawed its way to this degree of power and wealth is simply de facto despotism rather than *de jure*, and is equally incompatible with the general welfare and liberty. This becomes all the more so if the few have garnered sufficient power to effectively pass their power and wealth to their offspring; it then becomes a de facto hereditary despotism by these privileged few. (Note, empirically we observe that usually a de facto hereditary despotism that persists for any length of time eventually enacts laws that make it a de jure hereditary despotism.) As we easily see around the world, such de facto despotic cabals, many of them de facto hereditary, can easily sustain their wealth, power and control even while maintaining a façade of democracy (if they even bother),

controlling which candidates can run for office, controlling public information and the media, and manipulating voting eligibility and counts. Such control need not be de jure, merely de facto by the imbalance of financing, economic control, organization and influence the privileged cabal can mobilize compared to any opponents. Thus a privileged group, the smaller it is and the greater its privilege in wealth and power relative to the unprivileged population—i.e., the more *concentrated* its power—approaches quite as great tyranny as any absolute despot. Conversely, the larger, broader and more dispersed a privileged class and the less its privilege in wealth and power relative to the remaining population, the less despotic it can be. The question is how much must wealth and power be dispersed before we can declare liberty and wellbeing of the general population adequately promoted, and thus that this level of inequality is no longer undue. While the answer to this 'lower limit on unduly high inequality' (or equivalently, 'upper limit on the safe range') will be a matter of judgment and degree, there is no uncertainty that too much concentration of power and wealth constitutes tyranny at the expense of the general welfare and liberty. At the high extreme there is only unduly high inequality undermining the nation's stated goals.

Hence there is a limit on how great inequality may be without harm to the general welfare and liberty, a limit where inequality no longer promotes liberty or the general welfare and begins to erode it. This does not say what such an upper limit on inequality is or should be, only that it exists at some point.

The more extreme the inequality, the more greatly the liberty and welfare of the privileged exceeds the liberty and welfare of the rest of the citizens. In a society with extreme inequality it is hard to defend that such a society has been truly or adequately promoting the general welfare and liberty rather than acquiescing to—or (as is usually observed empirically) abetting—promotion of the welfare and liberty of this fortunate few. In other words, at this extreme the goal of promoting the general welfare has either been neglected, or has been sacrificed, to promotion of the welfare of the few. Empirically it would appear no society of such extreme inequality has ever been accomplished merely by neglect of the general public, it has been accomplished on their back, where the holders of such financial power have used the leverage of their wealth and power to

influence, if not essentially dictate, wages, working conditions, and governance to their advantage at the expense of the general public. The theory for why this happens has been adequately advanced by Lord Acton ("power corrupts, and absolute power corrupts absolutely"), though I will have more to say on this in the later discussion of incumbency.

<u>The Argument for a Safe Range</u>. Hence I conclude, because neither extreme equality nor extreme inequality are conducive to liberty and the general welfare, that there exists a mid-range which is optimal, a mid-range which includes both adequate room for appropriate incentives but not so much financial power in so few hands as to allow those few to exert excessive power maximizing their own liberty and welfare at the expense of the liberty and welfare of the many.

Note that what I call a safe range exists only for a society with our stated goals: promoting the liberty and welfare of all. A society not respecting those goals will be indifferent to inequality. Nor have I yet explored what the actual limits of such a safe range for inequality might be, merely asserted that the low and high extremes of inequality are unsafe for liberty and the general welfare, the more extreme they are. We now need explore what might be the considerations and practical limits likely to keep the nation in a safe optimal range.

On the Conflict between Individual Liberty and General Liberty

One of the great threats to the nation's liberty is failure to distinguish between individual liberty and general liberty. Therefore one of the most important considerations to keep inequality in the safe range is to understand and make this distinction. These are two distinct concepts and they can conflict at times, often seriously. People who fail to make the distinction can easily equate their personal liberty to the general liberty. They then assume that if they find their personal liberty constrained, then the nation's general liberty is being lost. This can sometimes be true; but it can also sometimes be quite false: the general liberty is independent of the personal liberty of any one individual or group of individuals, and must be measured independently of, not equated to, the personal liberty of any particular individual or group. In some cases it may be necessary to place

certain constraints on the personal liberty of some individuals in order to protect and promote the general liberty; removing these constraints would threaten the general liberty. That individuals so often confuse and equate their personal liberty with the general liberty, particularly leaders of business and finance, not to mention apparently a majority of the Supreme Court, places the nation's liberty in great peril because it allows sloppy use of the language of liberty to undermine liberty itself, as I will now show.

In any reasonably complete list of a society's goals for any particular one of its large systems (macrosystems), many stated goals will conflict with one another. The Preamble is not an exception. Where goals conflict, policy must arrive at a workable compromise and balance among the goals that reflect the society's values.

For the United States one of the most important conflicts requiring practical resolution is that between general and individual liberty. It is clear that by liberty in the phrases of the Declaration and Preamble, the founders are speaking of the welfare and liberty of all citizens, including posterity, as a whole, which we may term for short the *general welfare* and *general liberty*. But implicit in the notion of the general welfare and general liberty is the notion of the personal welfare and liberty of each individual, which we may term *individual welfare* and *individual liberty*. We have already seen one example of such serious conflict in the proof of an upper limit on inequality. When these situations arise where individual and general liberty conflict, how should they be reconciled?

The Constitution itself provides some guidance how to resolve certain kinds of conflicts among national goals, including the one between individual and general liberty. I will explicate this partial guidance and provide practical examples and precedents of its use:

The general welfare and liberty are two of the explicitly stated goals of the Constitution. Individual liberty is not, it is only an unstated implied goal. Therefore, the bounds of individual liberty for any person or persons may be implied as only to the degree that it does not unduly conflict with defending or promoting any of the stated goals. This will be true generally: any unstated goal, be it implied or instrumental, is subordinate and must give way if conflict arises at some point to any of the explicitly stated goals in the Constitution or Declaration. For example, sound markets are not a stated goal of

the Constitution. They are an instrumental societal goal deemed to advance two stated goals, namely promoting the general welfare and liberty. Under the right conditions this is true, at times spectacularly true, which is why we advocate their use; but under the wrong conditions it may not be true. Hence the conditions for the use and design of sound markets must be modified whenever and to the extent that they are found to be eroding the general welfare and liberty. In other words, we may advance the following general principle:

> The General Principle of Limitation regarding Implied or Instrumental Societal Goals: *In general, when any implied or instrumental societal goal not explicitly stated in the Declaration or Constitution comes in clear and present conflict with any explicitly stated goal of the Declaration or Constitution, to that extent that goal must yield to the stated goal.*

Note that this Principle provides guidance only between stated and implied goals. It does not provide much help when stated goals themselves conflict, which they often do (for example, the current raging debate between the Declaration's guarantee of universal human rights and the Preamble's goal of providing for the national defense). But between stated and unstated goals the above General Principle of Limitation seems unimpeachable. It is readily applied to the implied goal of individual liberty:

> Principle for Permissible Limitation of Individual Liberty: *Individual liberty cannot be unlimited. Whenever the individual liberty of one or more persons, be they few or many, conflicts with defending or carrying out any explicitly stated goal of the Declaration or Constitution, to that extent, and only to that extent, the individual liberty of that person or persons can and must be constrained.*

There is ample precedent in American law where this principle has been applied. I will give two examples—precedents—where the Principle has been applied to appropriately abridge individual liberty, and two examples where, given these precedents, it ought be applied.

The first example is the conflict between individual liberty and the explicitly stated goal in the Preamble of providing for the national defense. Here the precedent to apply the Principle is firmly entrenched in law and judicial decisions. (It may be noted that the national defense,

like so many of the other stated goals, is instrumental to defending the general welfare and liberty of the nation and its posterity. This is why in this entire discussion I have so emphasized these two particular stated goals out of the several in the Preamble.) When the general liberty and wellbeing have been threatened by external armed force, the nation has not hesitated, whenever necessary, to conscript hundreds of thousands of its young men into the military—a most emphatic restriction of their individual liberty. Conscription has been employed by the Federal Government in four conflicts: the Civil War; World War I; World War II; and during the Cold War (including the Korean and Vietnam Wars). A very few exceptions were made for proven conscientious objectors, showing the nation's exceptional regard for individual liberty and freedom of conscience even in the face of dire extremity; yet out of fairness even objectors' individual liberty was abridged: they had to provide a comparable period of mandatory community service. The distinction between individual and general liberty was clear to all, including the courts, and the individual liberty of huge numbers of Americans was duly and—proportionate to the threat—strongly restricted in defense of the general welfare and liberty.

A second example where there is ample legal and judicial precedent applying the Principle, is our anti-trust laws. The Constitution obligates the nation to defend the general welfare and liberty from internal threat quite as vigilantly as from external threat. Except in special circumstances, monopolies, oligopolies and collusion are legally proscribed in markets because these devices allow producers ('the few') to fix prices above what would occur naturally in a sound market, and thereby extract undue wealth from consumers ('the many'). The law and courts deem use of these devices to conflict with and erode the general liberty and wellbeing. But let us be clear and blunt: such a legal doctrine is in fact a specific limitation on the individual liberty and wellbeing of successful businessmen. Anti-trust law restrains, in this specific way, their individual liberty, otherwise unfettered, to increase their business success and their control of the market to their advantage without limit. Their individual liberty and wellbeing are restrained because it is deemed by use of these devices their individual liberty would otherwise allow them to enrich themselves at the undue expense of the liberty and wellbeing of the rest of society generally. Their right to individual liberty is constrained in

this particular manner and degree, because it is an implied right that conflicts with the stated goal to guarantee and promote the right of the general public to welfare and liberty.

I now offer a third example of conflict between individual liberty and the general welfare where the Principle of Limitation ought to be applied, but the nation appears to be confused and waffling. That example is vaccination. The nation acts hesitant currently seemingly because it is confusing and conflating the two kinds of liberty. This example shows how failure to adequately distinguish between individual and general wellbeing and liberty may allow individual liberty to undermine the general wellbeing and liberty. I will argue that the distinction should be explicitly made and, wherever necessary, the Principle firmly applied in order to protect the general wellbeing and liberty. This particular example is of interest because it involves a conflict between the few and the many having nothing to do with economic inequality. The few in this case are those exercising their individual liberty to refuse vaccination of their children and perhaps also themselves. Probably most of us today are as alive and well as we are because of the marvel of vaccination. Before vaccination whole populations, especially children and elders, were decimated by contagious disease; all too often parents would see all their children sicken and die in the frequent outbreaks. Vaccination itself does present small risks that a very few individuals may sicken or even more rarely die from it. But this must be compared to the mass epidemic death that did and will recur without it. To keep fatal contagion from gaining a foothold, vaccination levels in a population must be high, and in the past, cooperation with mass vaccination has seldom been a problem. But recently hysteria has developed, almost all of it without scientific basis, about the dangers of vaccination, causing many parents to refuse vaccination of their children. In many communities enough have now refused, that vaccination levels have fallen below the safe limit; outbreaks are occurring which can infect even the vulnerable vaccinated as well as the unvaccinated. Legislatures and courts have been tolerating, in the name of "liberty", individuals' prerogative to refuse vaccination. I believe they make a grave error contradicting our Constitutional obligations. They have not been distinguishing that this is in fact an exercise only of individual liberty, not general liberty, and in

fact in areas of unsafe vaccination levels the individual liberty and wellbeing of these few who refuse vaccination now threatens the general wellbeing and liberty of the entire area: the general right to live in a safe community and not have one's self or elders or children exposed by the actions of a few to avoidable dread disease. The failure of legislators and courts to limit a person's individual liberty to refuse vaccination beyond the point where it presents an ever more clear and present danger to the public health and safety violates the Constitutional responsibility to promote the general wellbeing and liberty. In areas threatened by low vaccination levels I believe the Constitution demands that individual liberty to refuse vaccination must yield: it must be enjoined in favor of mandatory vaccination to protect the general welfare. (I might add the opinion that because mass vaccination is a public good required of the citizenry, that any who do suffer iatrogenic consequences should be cared for at public expense, quite as much as our wounded and fallen soldiers and their families should be adequately cared for at public expense, which the present Congress, after sending them into war, seems shamefully laggard to assure.) This and the previous example exemplify that the general welfare and liberty must be protected as vigilantly from any internal threat as from any external, and that whenever necessary for this purpose, and only to the extent necessary, individual liberty must be subordinated and abridged.

My final example is directly germane to the inequality issue, showing when and how I believe the Principle ought be applied, if and when necessary, to reconcile conflict between individual and general liberty. Putting the anti-trust example slightly differently in order to generalize: to achieve the goal of sound markets, the law has followed the counsel of economists to proscribe monopolies, oligopolies, and collusion—all being means of concentrating undue financial power over competitors and consumers in a market. These must be prevented or broken up by adequate policy mechanisms curtailing individual liberty of businesses and their owners. But sound markets are only means, not ends. The stated goal of the United States is not sound markets (economists sometimes forget this), it is the general welfare and liberty. These words are not fine-sounding empty rhetoric, they are stated Constitutional commitments to be taken with utmost seriousness and priority by public

policy and the courts. Therefore, as with devices like monopolies for the lesser, instrumental goal of sound markets—and for analogous reasons—the Constitutional goals of the general welfare and liberty require that policy must put in place adequate mechanisms, which may involve abridging individual liberty to the degree necessary (and only to the degree necessary), that consistently assure that undue concentrations of wealth and financial power sufficient to erode the general wellbeing and liberty, not just in markets but in all cases, are prevented or broken up. This limitation of individual liberty in order to protect the general welfare and liberty is as clear and justified as in the previous examples; it is simply generalization of a proven, already accepted principle.

A serious problem arises when influential wealthy persons, genuinely or disingenuously, conflate their personal liberty with the general liberty, and use their influence and wealth to mount noisy campaigns to policymakers and the public that the nation is losing its freedom to government interference and controls. To people unable to make the distinction (which seems at times to include legislators and judges), this campaign may appear persuasive, when in fact the language of liberty is being misused (sometimes intentionally) to attack and undermine actual protection of the nation's general liberty and wellbeing. Unless people are educated to the distinction, this sloppy use of the language of liberty by those with powerful vested interests can imperil protecting the nation's Constitutional commitment to the general liberty and wellbeing.

The Principle appears clear: government has both the right and obligation to abridge individual liberty and wellbeing of persons as necessary, and only as necessary, to adequately protect the general liberty and wellbeing from internal or external threat. This includes abridging the individual liberty and wellbeing of holders of unduly concentrated wealth when, but only when, necessary to protect the general welfare and liberty. The issue, in this and every other situation, is always to decide if there is genuine threat to the general welfare and liberty, and how much. Threat is a continuum with no sharp dividing line, and because Americans prize their individual freedom, any threat must be clear and significant. It is in every case a matter of judgment that policy and the courts must decide. Below I shall offer a practical empirical criterion for such decisions.

Setting a Practical Societal Goal for Inequality Empirically

The distribution of income and assets is a political decision. There is both myth and, in certain schools of economics, dogma (not science) that markets have mystical powers to divine the proper true and just value of goods and services, and further to divine the just and beneficial distribution of income and assets. This is easily disproven nonsense (see *Toward an Economics of Wellbeing*, later below). The distribution of income and assets are not an ineluctable consequence of some idealized markets or anything else. Markets are means, not ends. In every economy, including market economies, a society is free to decide what its goal for the distribution of income and assets shall be, and then arrange its markets and public services to pursue that goal. This is amply demonstrated by the fact that by changing its tax laws over the past 40 years—a political decision—the United States has drastically altered and substantially increased, and continues to increase, economic inequality in the nation.

If the nation decides that the rise to its current level of inequality has strengthened promoting the general welfare and liberty, then this has been good policy. If it decides that the rise to its current level of inequality is compromising promoting the general welfare and liberty, it is perfectly free (indeed, Constitutionally obligated), and able by policies and political decisions redesigning the economy and any other necessary institutions, to alter the current level of inequality to any level, higher or lower, that it believes maximizes promoting these goals. For example, reversing those tax changes, equally a political decision, would largely return inequality to its prior levels, if this were deemed to better forward the goals. Additional deliberate policies designed for the purpose could further reduce inequality if desired. (But, as noted, such policies must not erode proper incentives rewarding activities and individuals that promote the general welfare, nor must they reduce inequality to unduly low levels that weaken such incentives to ineffectiveness; for, as already shown, that will also be destructive of liberty and the general welfare.) This point does not say what level of inequality the nation should aim for, just that it has both the technical ability and the power to politically set and maintain any desired level of inequality.

Setting inequality within the safe range. The Constitutional obligation of policy is to maintain inequality within the safe range: (a.)

high enough to assure adequate incentives proportionately and fairly rewarding all according to their contribution to the general welfare and liberty, including proportionately penalizing and discouraging free riding, cheating or otherwise siphoning wealth from the general welfare to benefit particular individuals or special interests; but (b.) not so high as to concentrate so much wealth in so few hands as to threaten the general welfare and liberty. Ideally the economy would be structured to maintain whatever is the specific optimal combination of inequality and effective incentives that maximizes promoting the general welfare and liberty. But we lack any adequate theory to determine with any precision any such optimal point a priori. Lacking such theory and precision, it is perfectly possible to proceed empirically, and, over time, use experience to refine and home in on what combination of inequality and incentives perform best on the goals.

Determining a safe range empirically. To bring these considerations down to practicality, one way to set a national goal for distribution of income and assets with plenty of room for effective incentives is empirically: examine the range of inequality of economically successful market nations to determine safe upper and lower limits for inequality.

Let us observe how various economically successful capitalist countries range on inequality of income (see Chart below). In order of lowest inequality to highest, Germany ranks 12th among 141 nations; even lower are the Czech Republic (6th) and Sweden (1st). Note that all these nations, even Sweden, are far from zero inequality, but such nations show how low inequality can be in the real world and still not compromise economic effectiveness. In contrast the United States ranks 101 on inequality among these 141 nations. It has the highest inequality among the developed nations, roughly the same if not higher than even Russia, a despotic kleptocracy not a capitalist market nation. If policy decides that our present level of inequality has begun to undermine the general welfare and liberty—and I shall argue later below there is strong evidence that it has—a safe path would be for the nation to set an inequality goal closer to, say, Germany's. This would leave more than ample room for Smith's effective economic incentives while reducing the concentration of wealth to safer levels. Later below I shall offer considerations that may help specify a more optimal safe upper limit on inequality maximizing the general welfare and liberty. Here I simply mean to demonstrate

that it is possible to set a lower and upper limit empirically and keep inequality within that range.

For specificity, a common numerical measure of inequality is the so-called GINI index, which is zero if everyone in a nation has equal income and 100 if one person has all the nation's income. [An explanation of the GINI index and GINI rankings by country is easily found on the Internet.] Our source of rankings is the CIA World Fact Book (see Chart below). The margin of error for any given nation will vary with the accuracy of its statistics system, more reliable the more advanced the nation. The worst observed GINI index is 63, for Lesotho. At the other end, the average GINI index for the entire European Union is 31, Germany stands at 27, the Czech Republic at 25, and Sweden ranks lowest at 23. The United States GINI index presently stands at 45, nominally (allow for error levels of at least 10 percent) above Russia at 42 and virtually twice Sweden. Our index has moved well up from its value in the 1970s, which lay in the mid-30s, and continues to rise steadily. Thus the United States might set as its goal for acceptably promoting the general welfare and liberty a GINI index of, say, the mid-30s or less, because the concentration of wealth and power, and stagnation of median income, did not seem nearly as undue in that era. Or it might look at the growth in general wellbeing of Germany and the Czech Republic and decide inequality best promoting the general welfare would be better if set closer to 30 or below.

Note that setting such a goal does not mean that government will decide what each individual person earns. Absolutely not, no more than in Germany, the Czech Republic or any other market economy. Personal incomes will be determined just as now, by the incentives of the (now redesigned) market economy as usual. Rather, government will simply design redistributive policies that more equitably redistribute income and assets in ways that do not compromise effective economic incentives, and which direct wealth to activities that raise median income along with any rise in GNP. That nations with quite successful economies have even lower inequality than 30 shows this eminently feasible. Such policies could include progressive income tax rates, progressive estate tax rates, progressive subsidies, etc., adjusting these as needed to meet the target GINI index goal, maintaining it neither much higher nor lower; strengthening redistribution if the nation's GINI soars unduly above the goal, reducing such redistribution if it sinks unduly below. To assure fair and effective incentives,

CHART: GINI INDEX OF INEQUALITY BY NATION

1.	Sweden	23.0	38.	United Kingdom	32.3
2.	Slovenia	23.7	39.	Tajikistan	32.6
3.	Montenegro	24.3	40.	Nepal	32.8
4.	Hungary	24.7	41.	Ethiopia	33.0
5.	Denmark	24.8 est.	42.	Moldova	33.0
6.	Czech Republic	24.9	43.	Kyrgyzstan	33.4
7.	Norway	25.0	44.	Azerbaijan	33.7
8.	Luxembourg	26.0	45.	Ireland	33.9
9.	Slovakia	26.0	46.	Niger	34.0
10.	Austria	26.3	47.	Poland	34.1
11.	Finland	26.8	48.	Taiwan	34.2
12.	Germany	27.0	49.	Greece	34.3 est.
13.	Malta	27.1	50.	Albania	34.5
14.	Belarus	27.2	51.	Macau	35.0
15.	Romania	27.4	52.	Latvia	35.2
16.	Iceland	28.0	53.	Algeria	35.3
17.	Belgium	28.0	54.	Lithuania	35.5
18.	Ukraine	28.2	55.	Bosnia and Herzegovina	36.2
19.	Switzerland	28.7 est.	56.	New Zealand	36.2
20.	Kazakhstan	28.9	57.	Benin	36.5
21.	Kosovo	30.0 FY05/06	58.	Mongolia	36.5
22.	Australia	30.3	59.	Laos	36.7
23.	Pakistan	30.6 FY07/08	60.	Indonesia	36.8
24.	European Union	30.6 est.	61.	Uzbekistan	36.8
25.	France	30.6	62.	India	36.8
26.	Egypt	30.8	63.	Maldives	37.4
27.	Netherlands	30.9	64.	Vietnam	37.6
28.	Armenia	30.9	65.	Tanzania	37.6
29.	Cyprus	31.0 est.	66.	Japan	37.6
30.	Korea, South	31.1 est.	67.	Israel	37.6
31.	Estonia	31. 3	68.	Yemen	37.7
32.	Timor-Leste	31.9 est.	69.	Cambodia	37.9 est.
33.	Italy	31.9 est.	70.	Serbia	38.0 est.
34.	Croatia	32.0	71.	Portugal	38.5
35.	Spain	32.0	72.	Bhutan	38.7
36.	Bangladesh	32.1	73.	Mauritius	39.0 est.
37.	Canada	32.1	74.	Malawi	39.0

Rank	Country	Value	Rank	Country	Value
75.	Venezuela	39.0	109.	Malaysia	46.2
76.	Mauritania	39.0	110.	Singapore	46.3
77.	Macedonia	39.2	111.	Rwanda	46.8
78.	Thailand	39.4	112.	El Salvador	46.9
79.	Guinea	39.4	113.	Bolivia	47.0
80.	Ghana	39.4	114.	Dominican Republic	47.2 est.
81.	Burkina Faso	39.5	115.	China	47.3
82.	Jordan	39.7	116.	Madagascar	47.5
83.	Tunisia	40.0 est.	117.	Peru	48.1
84.	Mali	40.1	118.	Mexico	48.3
85.	Turkey	40.2	119.	Ecuador	48.5
86.	Nicaragua	40.5	120.	Sri Lanka	49.0
87.	Turkmenistan	40.8	121.	Zimbabwe	50.1
88.	Morocco	40.9 est.	122.	Gambia, The	50.2
89.	Djibouti	40.9	123.	Costa Rica	50.3
90.	Senegal	41.3	124.	Swaziland	50.4
91.	Cote d'Ivoire	41.5	125.	Papua New Guinea	50.9
92.	Russia	42.0	126.	Brazil	51.9
93.	Burundi	42.4	127.	Panama	51.9 est.
94.	Kenya	42.5 est.	128.	Chile	52.1
95.	Nigeria	43.7	129.	Paraguay	53.2
96.	Uganda	44.3	130.	Hong Kong	53.7
97.	Iran	44.5	131.	Guatemala	55.1
98.	Guyana	44.6	132.	Colombia	55.9
99.	Cameroon	44.6	133.	Zambia	57.5
100.	Philippines	44.8	134.	Honduras	57.7
101.	United States	45.0	135.	Haiti	59.2
102.	Uruguay	45.3	136.	Namibia	59.7
103.	Bulgaria	45.3	137.	Ctrl Afr Rep	61.3
104.	Jamaica	45.5	138.	Sierra Leone	62.9
105.	Mozambique	45.6	139.	Botswana	63.0
106.	Argentina	45.8	140.	South Africa	63.1
107.	South Sudan	46.0 est.	141.	Lesotho	63.2
108.	Georgia	46.0			

Source: CIA World Factbook
www.cia.gov/library/publications/the-world-factbook/fields/2172.html

such taxes would not be used for doles and subsidies encouraging free riding—i.e., “takers” living off “makers”, including takers at both ends of the income spectrum—but rather for public goods and investments that increase the general prosperity of all, e.g. education, science, environment, infrastructure, human capital development, etc.

In this way the nation can set its inequality at any desired target level. If it suspects a higher or lower level would better promote the general welfare and liberty, it could move its target level the desired amount, adjust its redistribution measures accordingly and then see empirically after a few years whether the new target was having the desired effect. Short of more adequate theory, this empirical approach allows the nation to assess and set inequality as best serves its Constitutional goals.

Assessing Performance of the Economy: Rising Inequality, Flat General Welfare

Assessing the Performance of Large Systems

As mentioned earlier a “*macrosystem*” is defined as a large social system of organizations and individuals with both a definable function and definable goals. For example, the function of the healthcare and coverage system is to deliver personal health care services and health insurance protection to individuals, and we can set out four performance goals for this system that the public has sought for several decades: (1) high-quality health care and coverage (2) for all at (3) a cost both the individual and (4) the nation can afford. Here our interest will be the economic system. Its function is to create and distribute material wealth, and its goals are specified by the Constitution: to promote the general welfare and liberty. (It is a policy problem that economics currently does not include these Constitutional goals in its discipline, and includes many considerations (Pareto optimality, etc.) not mentioned in the Constitution (which by the earlier mentioned Principle of Limitation are therefore means not ends in themselves), thus limiting the relevance of current economics for policy. Perhaps academia needs to revive Adam Smith’s original discipline of political economy.)

A performance problem in any large system is defined as a discrepancy between performance and goals. Therefore one cannot assess

the performance of any large system, such as the economy as we are about to do here, until one has in hand a reasonably complete set of the important goals society desires of it. Hence the first step in performance assessment is to identify the goals society desires of that system. Once goals are in hand, the second step is to devise as accurate practical performance measure(s) as possible for each goal to determine how well the system is performing on that goal. In this way a performance profile for the system is obtain informing policymakers where the system is performing well and where less well and how seriously.

We may think of performance problems as symptoms of the system, because they are what cause the public pain and suffering. When a system is seriously underperforming on any particular important goal, usually a large number of the public are being hurt, and this is what causes them to bring pressure on policymakers to solve the problem.

However, it is well for policymakers to remember that symptoms—particularly if they have been serious and chronic, persistently resisting all policy efforts to ameliorate them—may have an underlying cause: a faulty system structure that allows and rewards the undesired performance, and is indifferent to or penalizes the desired performance. If this is the case, then symptom-curing will at best only lessen the problem temporarily. It will chronically and stubbornly persist until the system structure is redesigned to enable and reward the desired performance and to impede and penalize the undesired performance. In other words, we may think of this underlying cause—faulty system structure and incentives—as the diagnosis, and to achieve sustained satisfactory system performance, policy must address the diagnosis, not the symptoms. Here, I examine performance of the present economy on the stated goal of promoting the general welfare, and in the next Section start to explore a diagnosis. I will examine performance on securing the general liberty and other Constitutionally obligate goals in later Parts.

Defining the General Welfare

Let me begin by trying to achieve some degree of precision about the term *the general welfare.* From the language of the Declaration and Constitution I believe it clear that by welfare the founders are

referring to what we understand today under the term *wellbeing*, and I shall use these two terms as synonymous. At present the term welfare has taken on the unfortunate connotation of public charity to the poor, which from their language is clearly not the meaning used by the founders. So I will never use the term welfare in this sense of public largesse to the poor but rather only in the founders' sense as synonymous with wellbeing. I believe it equally clear from their language that the founders mean by the term *general* the public as a whole. An improvement in the wellbeing of one sector of the population at the expense of another is not promoting the general wellbeing any more than a decline in the wellbeing of the entire public as a whole.

Now let us turn to devising measures of the general welfare. Performance measures should preferably be quantitative wherever possible, but we must guard against using quantitative measures that eviscerate or distort the meaning of what we are trying to measure merely for the sake of being quantitative; such inadequate quantitative measures may produce a completely false or misleading picture of the actual performance and should be avoided. As Cameron remarked, "Not everything that can be counted counts, and not everything that counts can be counted." Where no adequate quantitative metric is possible or available, it is far better to turn to qualitative measures—greater, smaller, more, less, etc.—that better and more accurately capture the performance we seek to measure.

Human wellbeing is a complex notion with many components, some easy, some difficult to measure. Wellbeing goes far beyond material wealth, and indeed material wealth may be the least important factor in any individual's sense of wellbeing. At a minimum, wellbeing includes physical and mental health, longevity, security, and satisfying work, working conditions and social life, quite as much or more than material wealth. And beyond these, individual mental wellbeing includes such intangible dimensions as individual liberty, justice, fairness, dignity and respect, opportunity, and the larger sense of being a member of a well-knit family, community, society and nation that values human rights, loyalty and responsibility for all its members. As the moral philosopher who founded economics and invented market economies observed:

> *How selfish so ever man may be supposed, there are evidently some principles in his nature, which interest him in the fortune of others, and render their happiness necessary to him, though he derives nothing from it, except the pleasure of seeing it.*
>
> —*Adam Smith*

While a small percentage of humans—research suggests roughly 1 percent—are born with no feeling for others, the remainder have varying degrees of compassion from small to great; they feel their own wellbeing diminished to that extent to live in a society that only inadequately promotes for others what they also desire for themselves. Indeed, it is to that widespread feeling of empathy and responsibility that we owe the founding of this nation: how does one measure such things, where any number of humans will risk life and material fortune to secure crucial components of wellbeing—life, liberty, the pursuit of happiness—not only for themselves but their society and its posterity.[6] Thus such intangibles are worth more to the great majority of mankind than any private goods and services we can put a market price on, and to the extent they are compromised, we feel our wellbeing reduced.

Measuring the Economy's Performance on Promoting the General Welfare

Having given all these important components of wellbeing due consideration, I shall now drastically simplify for the time being by approximating the general welfare with simply one of them, namely real median income: the income which half the population is below and the other half above. In other words by use of this proxy measure I am assuming that if real median income is rising or falling, that the general welfare is increasing or decreasing approximately commensurately. I justify this simplification as not too distorted under most conditions because I suspect that individual material income correlates at least to some degree with most of the individual components mentioned above. (For example we know that longevity and health for males of low income is declining.) I choose income rather than income plus assets, because accurate asset data

6 [Holds only for mankind in Enlightenment societies; the mass of non-Enlightenment mankind may not even conceive such things are possible let alone desirable.]

(particularly for international comparisons) are less easy to come by, and also because assets (though of far greater economic influence) suffer far greater inequality than income and it seems better to be conservative at this point. Were material assets added to the income proxy, inequality would appear substantially more extreme. I choose median income over average income because averages skew high or low if the distribution averaged (here income) is skewed high or low. Real income is used to remove the effect of inflation, allowing purchasing power to be compared over time; in other words, the actual proxy measure of the general welfare that I am using is median material purchasing power (exclusive of assets) over time. Much more complex and precise measures are possible, but I believe this simple proxy has sufficient accuracy not to mislead, and it is quantitative and practical, and the data to calculate it are readily available. While not perfect or complete, it seems reasonably adequate as a start for the purpose here.

As noted above, inequality in the United States has been increasing steadily, rising from a low in the late 1970s of GINI around 35 to more than 45 today. According to census data, in the past four decades real mean income (i.e., adjusted for inflation so as to measure actual purchasing power) has increased roughly a respectable if modest 20%. But this increase has gone very disproportionately to the well-off. The higher the income of individuals the more steeply it has increased, whereas the lower the income of individuals the flatter their real income has been, In the four decades from 1975 to 2015, the lowest 20% of the population by income saw only a 5 percent in their average income to roughly $12,500, whereas the top 20% doubled their average income to over $200,000.

But income differences do not readily reveal the truly runaway character of inequality in this country. A better measure is what share of the nation's aggregate income goes to what fraction of the population (see Table 1), and what share of the nation's wealth is held by what fraction of the population (see Table 2), and how these are changing over time. Aggregate total income is the sum of all income earned by every person in the nation; and aggregate total wealth is the sum of the net worth (assets) of every person.

Using census data, Table 1 shows that over the past four decades the share of aggregate total national income earned by the bottom 20%

of the population with lowest incomes fell 28% from a meager 4.3% to even more meager 3.1%. Even the share of the top 20% with highest incomes fell 6% from 25% to 23%. On the other hand the top 5% increased their share of the nation's aggregate income by 33%, the top 1% by 175%, and the top 0.01% by an astronomical 900%. This shows how rapidly income is concentrating at the top, at the expense of the rest of the public.

Even more stark is the growing concentration of wealth at the top. Wealth represents far more power than income because it is pure capital, and capital has incumbency power. Using Pew Foundation numbers, Table 2 shows that the lowest 30% of Americans by income, lost more than half their share of the nation's assets over the past four decades, and even the middle class . . . half of all Americans . . . lost almost half their share! And who acquired this share of the nation's total assets: the upper class. Were data available to look separately at the share of assets of the top 5%, 1% and 0.01% of the population by income, likely the same steadily growing concentration at the top the wealthier one is, seen in income in Table 1/Figure 1, would likely hold here for assets, perhaps even more strongly.

Because the rise in the economy has gone disproportionately to the top the wealthier the individual, while below the median the rise in income has been meager and the loss of assets stark, the poorer the individual, the nation's present economy has not been promoting the general welfare. It has been promoting rather the welfare of the well-off the more well-off they are. Unless there are mitigating factors it is failing badly on this Constitutional obligation.

Because real median income has remained stagnant for three decades while incomes above the median have increased substantially the higher the income, the nation's economy has not been promoting the general welfare, it has been promoting rather the welfare of the well-off the more well-off they are. Unless there are mitigating factors, the nation is failing badly on this Constitutional obligation.

One important mitigating factor would be fairness, another would be incentives. If a nation pledges itself to promote the general welfare, then its cultural and economic incentives should be fair: they should proportionately reward those who best promote the general welfare. And these rewards should be at the best strength, neither higher nor lower, to stimulate economic activity that maximizes promotion of the

general welfare. Does rising inequality then simply mean (1) that the economy is adjusting income to reflect more fairly and justly than previously each individual's respective contribution to the nation's general welfare: to reward, more proportionate to their contribution, those who contribute to the general welfare and discipline those who do not? Or does it mean that the economy is unfairly directing disproportionate income to certain individuals and activities independent of their contribution, positive or negative, to the general welfare at the expense of others, independent of their contribution, positive or negative? In other words, is the distribution strongly correlated with contribution to the general welfare or is the correlation weak at best?

TABLE 1: RUNAWAY INCOME INEQUALITY

Share of total U.S. aggregate income by income level

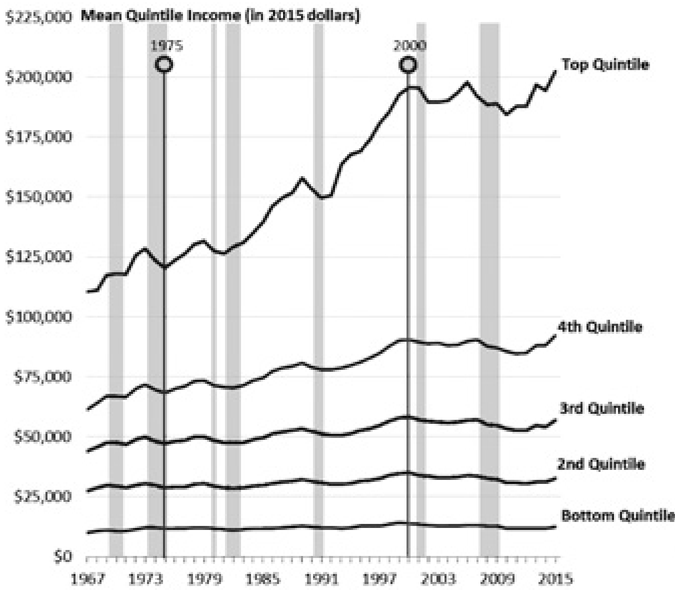
INCOME PERCENTILE	1973	2015	% INCREASE
20%	4.3%	3.1%	- 28%
40%	10.4%	8.2%	- 21%
60%	17%	14.3%	- 16%
80%	24.7%	23.2%	- 6%
95% (top 5%)	16.5%	22.1%	+ 34%
99% (top 1%)	~ 8%	~ 22%	+ 175%
99.99% (top 0.01%)	~ 0.5%	~ 5%	+ 900%

TABLE 2: RUNAWAY WEALTH INEQUALITY 1983–2016

Share of total U.S. aggregate wealth by income class

INCOME CLASS	% OF THE POPULATION	1983	2016	% INCREASE
upper class	~ top 20%	60%	79%	+ 32%
middle class	~ middle 50%	32%	17%	- 47%
lower class	~ bottom 30%	7%	4%	- 57%

FIGURE 1

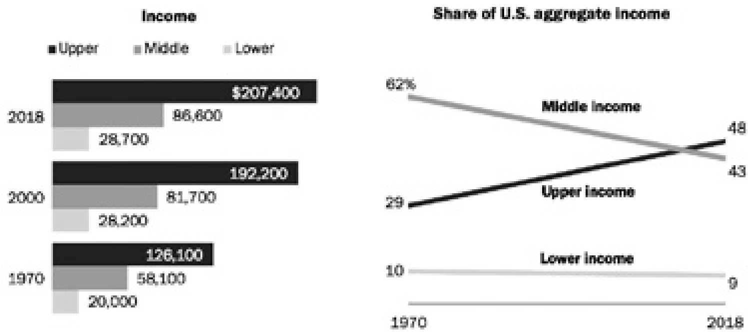


Source: Donovan, Sarah A. et al. The U.S. Income Distribution: Trends and Issues. *Congressional Research Service*. 7-5700 R444705. 2016.

FIGURE 2

The gaps in income between upper-income and middle- and lower-income households are rising, and the share held by middle-income households is falling

Median household income, in 2018 dollars, and share of U.S. aggregate household income, by income tier



Source: Horowitz, Juliana M. et al. Trends in Income and Wealth Inequality. *Pew Research Center Social & Demographic Trends*. January 2020.

Alternatively (2), independent of strict fairness, is rising inequality providing valuable stronger incentives for economic activity promoting the general welfare, or is it simply generating superfluous excessive incentives adding little or no impact on the general welfare?

In Part IV, *Toward an Economics of Wellbeing*, I shall argue in detail that the distribution of income produced by the present economy of the United States has only weak connection with individuals' contribution, positive or negative, to the nation's general wellbeing and liberty. This is why I term the present economy malstructured and in need of redesign. Yes, thank heaven, it is generously rewarding some individuals and activities that contribute greatly, and they are reinvesting those rewards to contribute even more. But it is not rewarding many other individuals and activities that contribute equally greatly; and it is greatly over-rewarding others who contribute little. Worst, it is munificently over-rewarding some individuals and activities utterly destructive of the general wellbeing. Relative to their contribution to the general welfare, I will argue that public goods in general, though at least half the wealth produced by the nation, appear under-rewarded relative to private goods; within private goods, labor appears under-rewarded relative to capital, and business under-rewarded relative to finance. And within these broad categories there is even greater variation among over-rewarded and under-rewarded activities relative to contribution to the general welfare and liberty.

Some analysts say the present distribution of income simply reflects the workings of the market, as though this justifies that distribution. It does not justify them. It merely explains how the workings of the present economy produce the observed distribution of income over time, but in no way does it justify either the wisdom or fairness of either that distribution or the present economy producing it. A differently designed economy would produce a different distribution of income. That its design is different explains but in no way justifies its different income distribution, any more than our present design does. Economic system designs and their results are not self-justifying. The only justification of any design for an economy (or any other macrosystem) is how well it performs on desired societal goals. If the present economy doesn't do that, then that justifies redesigning that economy, not accepting whatever distribution of income it produces.

We may ask if there any reason to believe that the top earners of today are any more productive of the general welfare than their counterparts of 40 years ago when inequality was substantially lower. I have seen no studies to suggest this. In fact I have seen studies suggesting the opposite, for example, that firms with excessively compensated CEOs perform less well. I have seen studies that corporations committed to all stakeholders—shareholders, customers, employees, their communities and the public interest—are more productive than corporations focused solely on maximizing return to shareholders only. The top earners of yesterday appear quite as talented as those today and worked equally hard—and apparently more productively for the general welfare—for less compensation than their present counterparts, suggesting that their lower compensation was more than adequate incentive for their efforts. Nor do studies suggest labor is slacking off today more than in past decades; quite the opposite, our workforce is working harder. Statistics show labor in this country presently works longer hours with fewer days off than in other nations with successful economies or than in this nation just a few decades ago. Households of laboring persons now require multiple breadwinners to keep their head above water; single-headed households dominate the lowest incomes.

Wellbeing depends not just on income; it also depends on how hard one must work to get that income and how humane the conditions of that work. Their increased effort would seem to merit increased compensation rather than no increase. This suggests that in the present economy the top earners are gaining an increased share of the wealth produced by the nation, not because they deserve it for increased productivity, nor because needed for proper incentive, but simply because the present economy has now put them in a position to divert a greater share to themselves compared to the economy of some decades ago.

Observe that this dismal performance on promoting the general welfare utterly refutes, empirically, the mantra that 'tax cuts for the rich' will stimulate greater economic activity, activity that will not only bring in more taxes at the new lower tax rates than the old higher tax rates, but will "trickle down" to raise the general welfare in more and better jobs. Theoretically the proposition has always had little substance; one famous skeptic called it voodoo economics. So how has it fared empirically: well, after three decades of this mantra,

where is the trickle down? Median income is stagnant. Empirically it has all been trickle up. The rich are richer than they have ever been in our history. Where are the jobs? Empirically, we got instead the Great Recession of 2008 devastating the general welfare—millions thrown out of work, millions thrown out of their homes, and we are just beginning to recover. As for the promised gain in tax revenue, the loss in tax revenue when these cuts were first done in the Reagan Administration was so great that Reagan wisely raised taxes. His spendthrift successors were not so wise or simply indifferent to the general wellbeing, and continued policies pursuing this intellectually bankrupt mantra. The resultant tax loss is still so great that for the last decade these 'tax cuts for the rich' have had to be subsidized by heavy Federal borrowing. Bluntly put, present policy has turned the rich into "takers" living off our posterity, the ones whose wellbeing we are Constitutionally pledged to protect, not steal.

The General Liberty

Is rising inequality increasing the liberty of the general citizenry or merely the liberty of the well-to-do? Is it undercutting the general liberty? General liberty does not lend itself to quantitative measures as readily as the general welfare. Thus its performance status—higher or lower or about the same—must be assessed qualitatively. Therefore I shall postpone the discussion until Part II, where I deal with it at length. Here I shall simply state briefly my conclusion from that later discussion. Roughly similar to its effect on the general welfare, I find that rising inequality is presently eroding general liberty, while increasing the individual liberty of the affluent the more affluent they are. This is where it becomes so important to distinguish between symptom and diagnosis, to go beyond the symptoms to the underlying cause of the symptoms. It is presently the symptoms of inequality and its sequelae that are getting all the attention and concern; there is pain because the present level of inequality and general liberty show that performance of the economy on the general wellbeing and liberty is falling painfully short of our stated Constitutional goals to promote them. But this present level and its sequelae are symptoms, not the diagnosis. I argue it is the diagnosis that presents the truly dire threat, and in all the noise over symptoms, it is being missed. Addressing the diagnosis means finding the underlying cause driving the steady rise in inequality and correcting it. In

the next section below, I begin to explore this diagnosis. I find that the underlying structure and incentives of the present economy are now driving inequality steadily upward with no apparent visible constraint now or in the foreseeable future. If this conclusion is correct, I then show why I conclude that if not corrected, this flawed economy can literally destroy the general liberty and reduce the nation to de facto despotism.

In the meantime, because the public and policymakers are unaware of this diagnosis and its lethal nature—indeed, seemingly unaware that they should even look for such a thing as a diagnosis: underlying flawed macrosystem structure and incentives that cause the malperformance—the debate over inequality has become a shouting match over whether it's too high or deservedly high. Sadly, as noted, symptoms are side-issues, largely intractable until the diagnosis is addressed.

Here is an illustrative example, an important and painful symptom, one of many, distracting the public and policy from the grave diagnosis. That symptom is America's vaunted equality of opportunity and social mobility, an important component of both wellbeing and liberty. It is falling. This is a distressing, growing discrepancy with the desired goal. Social mobility is the ability to rise in status, wealth and power above one's parents' status; it can be roughly measured by the percentage of the population who accomplish such a rise and how great a rise. The American ideal is embodied in Horatio Alger, the poor boy who by talent and pluck makes a fortune, likewise in Abe Lincoln rising from log cabin to president. The implication is that in America opportunity should ideally be equally available to all if you just have the talent, vision and grit to seize it. This is juxtaposed against the class societies of Europe, where an individual was seldom allowed to rise above his station: if opportunity is limited to the privileged, then the individual liberty of the privileged is enlarged at the expense of the general liberty. Of course in real life, equal opportunity—i.e., depending only on talent and character and independent of parents' station—is simply an ideal important to strive toward; opportunity has never been equally available to all. Wealth and privilege have always conferred advantage on its children. Nevertheless studies suggest that until recently social mobility in America was greater than in Europe. This has become no longer true; studies show

our social mobility lately appears to have fallen lower than that of several European countries.[7]

Thus some pundits have suggested we need to set aside for benign neglect the divisive issue of inequality and concentrate on improving social mobility. This is typical symptom-curing and seems futile, wishful thinking to me; rising inequality is the cause of falling social mobility. It appears that rising inequality is now conferring so large an advantage on children of the wealthy, studies now show that even their children with less talent are now more likely to achieve adult success—to gain entrance to prestigious universities and high-level well-paying positions—than those children with demonstrably greater talent from lower income families, the lower their income. The advantages of such disproportionate wealth and connections trumps ability. Thus privilege is showing first signs of becoming hereditary.

Ironically, Americans of all incomes still resolutely cling to their belief of more equality of opportunity and social mobility here than anywhere else in the world, even though the facts, sadly, now appear otherwise. In contrast, equally ironically, people in those other countries where social mobility has now become greater than here are less confident than us of equality of opportunity in their country. It takes some time for beliefs to catch up with realities. The reality, emerging from research rather than popular opinion, is that rising inequality has now made America more of a class society than some European nations, and has increased the individual liberty of the children of the privileged at the expense of the general liberty. Distressing as this symptom may be, it is a symptom, one of many painful but distracting symptoms, arising from the disturbing but distracting symptom of rising inequality. But these symptoms while serious are not catastrophe. I now turn to the diagnosis of why inequality is rising, and that is where I find catastrophe brewing.

Rising Inequality: Fluctuation or Runaway?

Observed inequality in the United States fell slowly but rather steadily after WWII until 1968 when it reached a minimum (GINI = 35),

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7 Source: http://finance.townhall.com/columnists/politicalcalculations/2013/12/05/the-major-trends-in-us-income-inequality-since-1947-n1757626/page/full

and since then has risen roughly steadily to its current maximum (GINI = 44), well above all other developed democratic nations. It appears to be continuing to rise; empirically no slowing trend has been observed so far.[8]

Consider the two possibilities: (A) *if inequality is basically a slow, fluctuating phenomenon* and its decades-long steady rise and currently unprecedented high level is simply a one-time record high in those fluctuations that will eventually be damped by natural or built-in mechanisms, and thus will reverse and sink back toward earlier levels . . . then present inequality is not a dire threat to the nation's general welfare and liberty but rather, as noted earlier, simply a controversial issue of fairness and incentive power in the distribution of the nation's wealth.

On the other hand, (B) *if rising inequality is a structural phenomenon—i.e., a product of flawed structure and incentives in the present economy steadily driving inequality upward without foreseeable limit* . . . then the peril to nation's general welfare and liberty is grave. As shown in the earlier argument for an upper limit on inequality, if inequality rises to undue extremes, this noble country will not long remain a free nation. It will fall into despotism, just another among the many.

It is crucial to ascertain which of these alternatives is the case, because if the latter, inequality will eventually become so extreme there will no longer be debate that it is undue and a lethal threat to the general welfare and liberty. And we cannot wait for that point of awakening to take action, lest the ever-increasing concentration of wealth become so undue by that time as to be irreversible

I shall now argue that the present steady, decades-long rise of inequality is the latter case: not an accidental random fluctuation or one-time event, but rather an ineluctable consequence inherent in our present structurally flawed economy. I shall show below that this economy's perverse structure and incentives strongly enable and reward rising in equality, and strongly reward ever-increasing concentration of wealth, and there appears no foreseeable constraint, neither any natural external checks nor any built-in internal checks,

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8 Source: http://finance.townhall.com/columnists/politicalcalculations/2013/12/05/the-major-trends-in-us-income-inequality-since-1947-n1757626/page/full

to hold it within the safe range. In other words, I shall advance a logical case why inequality is steadily rising without diminution in the current flawed economy, consistent with the empirical observation and predicting that the rise will continue indefinitely.

If this case is correct, then unless and until the structure and incentives of the current economy, and any other necessary institutions, are properly and intentionally redesigned to constrain this rise, inequality will grow without limit to extremes. When it passes any conceivable upper bound on the safe range, the nation will ineluctably fall into tyranny. Skeptics may feel this a wild assertion, just another Chicken Little crying the sky is falling. Certainly this is an argument that must be closely scrutinized. But if it is sound, then it is the deniers who are unrealistic, and the liberty of this great nation is in fact in growing peril, not from without, but from increasingly concentrated private wealth and power within.

The Nature of Market Economies

To build the case that runaway inequality is an inherent and dangerous symptom in improperly designed market economies, I shall begin in this section with a discussion of market economies generally, then turn in the next section to the structural and incentive weaknesses that provoke runaway inequality in markets, which proper design of market economies must avoid by explicitly including suitable damping mechanisms.

A properly structured market economy, the invention of the moral philosopher Adam Smith some two centuries ago, is one of the most powerful engines for economic progress ever devised by mankind. As proposed by Smith, market economies have two components: private markets and the "public services", by which he understood government, each with their respective responsibilities. Both components have the power to increase a society's wellbeing and material wealth, markets by producing private goods and services, government by producing public goods and services. (Since early in its history, the public services in this country also include additionally a substantial voluntary sector—uncommon in Europe, which relies largely on government for all public services—of institutions and agencies supported by charity rather than taxes; these produce important public goods and services often beyond the scope or

interest of government, which their interested donors believe beneficial to society.)

The market economy was designed by Smith with very specific goals as part of his discipline of political economy. Smith's aims started with the following observations:

- *"All for ourselves, and nothing for other people, seems, in every age of the world, to have been the vile maxim of the masters of mankind."*
- *"No society can surely be flourishing and happy of which by far the greater part of the numbers are poor and miserable."*
- *"A nation is not made wealthy by the childish accumulation of shiny metals, but is enriched by the economic prosperity of its people."*

Smith was wrestling with the problem of poverty and inequality of his time. For centuries poverty and inequality were accepted as part of the natural order of things, presumably divinely ordained, and were dealt with by encouraging compassion and charity toward the poor—treating symptom rather than cause. (Indeed, my impression of much of the literature of the time was that charity to the poor was often less about reducing poverty—thought inevitable, its absence inconceivable—than a divine mechanism beneficently provided to help the rich get to heaven by good works.) Smith was perhaps the first to propose we ought not be content just to ameliorate the misery of poverty, rather we ought try to reduce if not eliminate poverty and inequality themselves . . . in other words, promote the general welfare rather than just the welfare of the privileged. And he offered concrete means to do so.

He engaged in perhaps the first major "large system architecture" project: a proposed redesign of his nation's economic system, an idea to intentionally alter what had always existed so audacious it had not occurred to anyone before. He proceeded to invent the field of political economy, of which sound markets were one part (never thought by Smith as sufficient alone) to accomplish his purpose: namely, to overthrow the inequality of wealth monopolized by the privileged and spread it more equitably (not equally, Smith was no socialist) to all members of society. Here he defines political economy and its aims:

> *"Political economy, considered as a branch of the science of a statesman or legislator, proposes two distinct objects: first, to provide a plentiful revenue or subsistence for the people, or more properly to enable them to provide such a revenue or subsistence for themselves; and secondly, to supply the state or commonwealth with a revenue sufficient for the public services."*

Thus the two means proposed by Smith were sound markets and "the public services": sound markets for the production of private goods, and public services for the production of public goods. Let us remind ourselves of the distinction: private goods are those we can purchase by ourselves individually, like computers, carpentry and medical care; public goods are those we cannot, and must purchase collectively as a society, such as defense, sewer systems, and safety nets. Smith stated neither the market nor the public services alone is enough, both are necessary to create wealth and curb poverty and inequality.

One seldom hears of the wealth produced by the public services component of market economies. Indeed, according to some shrill and incessant schools of thought, government, the producer of the public services, is a parasite that takes from 'makers' and gives to 'takers'. This is quite false. Public goods produced or bought by government in return for our taxes are at least as great a source of wealth-creation as private goods made by the private sector. Indeed the most important public goods and services are in fact public investments rather than public consumption, creating public capital—vast material and non-material wealth generated by the public services—upon which all of society, public and private, freely draw. To mention a few, they include such collective goods as liberty, justice, national defense, public safety, public health and environmental safety (both more important to our health and longevity than medical care), an educated workforce, basic science indispensable to a flourishing private sector, physical infrastructure, money regulation, and market regulation. (Indeed, one of the most crucial and wealth-producing of the public services promoting the general welfare is properly regulating markets to keep them sound.) Many of these public goods and services are probably the ones we value most, much more than most private goods and services (i.e. which do you want most, liberty or a new car? . . . showing how market prices can mislead by equating

our wellbeing to our material wealth; I shall enlarge on this in Part III later). Smith explicitly placed responsibility for the public services, including market regulation, upon government; he was no proponent of laissez-faire (he would be aghast at the idea) nor of emasculating government. (His recommendations for the public services and role of government can be found in his *Wealth of Nations*.)

The difference between private and public goods can create a misleading illusion. The return on wealth created by private goods returns to its producers financed by customer purchases, whereas the return on wealth created by public goods does not, but rather returns to the prosperity and wellbeing of society as a whole. So public goods must be financed by other means: taxes. The price of private capital is profit; the price of public capital is taxes. Because people see successful private producers wax wealthy by capturing the return on the wealth they produce, but the public producer, government, does not wax wealthy and must continually ask for taxes, the shortsighted ... as they drive along public roads, fly in planes that seldom collide, hold skilled jobs requiring basic education, eat safe foods, and enjoy their cellphones developed by marvelous applied private technical research utterly reliant on equally marvelous free public basic scientific research, etc. ... miss that the public sector creates any wealth at all, let alone at least as much as the private sector. This all too common mistaken notion has led to dangerously shortsighted public policy and understanding, resulting in underfunding crucial public services, particularly public investments on which American economic leadership, if it is to continue, depends. The nation needs both a vital, dynamic private sector and a vital, dynamic public sector if our market economy and wellbeing are to flourish. The government is not the solution, but neither is the private sector (viz the 2008 crash); both, kept properly balanced and holding each other in check by statesmen of intelligence and goodwill, offer our best hope for promoting the general welfare and liberty.

I note a few salient points here. As a good large system architect, Smith began with goals, the goals he thought desirable for an economy. As is obvious, these goals were as much political as economic, hence his term for his field, political economy. He then designed an economy with structure and incentives he thought might best accomplish the goals. His economy comprised both private markets and

public services; thus an economy is much more than just markets alone. His society was sufficiently open—a growing mercantile class and a Parliament with growing rein over the monarchy—to find his proposals, both his goals and his design for the economy, persuasive, and they were gradually implemented, though not without opposition. The modern field of economics has considerably circumscribed its scope from that of Smith's political economy (now almost a lost discipline), focusing largely on private markets and their management and steering clear of political objectives. In doing so it also circumscribes its utility for policy design.

Smith's private sector component now comprises a very large set of interacting private markets and submarkets, producing our many and varied private goods and services. These private markets vary in how well they satisfy the set of conditions economists have found to maximize consumer value for money. The government, using policy and regulation, is to oversee that these conditions obtain; its present performance is with mixed success. Some markets it has kept quite sound, in which case producers maximally profit only by serving their consumers' welfare. Others are quite unsound, in which case producers maximally profit at the expense of consumer welfare. (There is also the case of some markets so unsound that neither producers' nor consumers' welfare is served.) In all these private markets, sound or unsound, those with the means and talent invest capital in new and/or existing private enterprises (our capitalists) in which they have full or share ownership. They either themselves manage or hire managers to run these enterprises (management), who then hire workers as needed from the larger workforce who share little or no ownership in the enterprises (labor). Some capitalists create and manage their own enterprises (our entrepreneurs), others simply provide capital for enterprises they do not manage (investors).

A Diagnosis: The Structural Nature of Rising Inequality In Markets

I now come to the heart of the argument that rising inequality in the present economy is structural. It hinges on a penetrating observation by Smith more than 200 years ago: the private market component of his proposed economy has the following property:

> *" . . . the rise of wages operates as simple interest does, the rise of profit operates like compound interest."*

In other words, even in sound markets, and usually much worse in unsound markets, shorn of intervention and oversight by the public services, the financial returns to private capital investment mount much faster than the returns to labor.

If Smith is right, the material wealth produced by capital enterprises in markets will tend to increasingly concentrate disproportionately in the hands of the owners of capital, even though they are working no harder than before; and labor's share of the wealth it helps produce will steadily decline, even though it is working no less hard than it was before.

If true, then without adequate mechanisms incorporated in the public services component of Smith's proposed economy, markets, even Smith's sound *markets, left to themselves have an inescapable structural effect of steadily worsening inequality.* (The technically oriented will recognize this as a runaway positive feedback loop.) Unexpectedly, Smith's extraordinary innovation, the private market component of his proposed market economy, designed to help the unprivileged gain a more just share of their society's wealth, can, if left unmitigated, become their enemy, utterly contrary to his goal of spreading prosperity generally.

In Smith's day there were few capital entities beginning to approach those of today's giant business and finance corporations and conglomerates, so it is not certain that Smith grasped the gravity or endpoint of this structural weakness. But he certainly understood that it was dangerous, enough to propose remedies (Smith's remedies are discussed later below).

The crucial question is just how true is Smith's observation? Does it hold up over time as markets and producers evolve? Smith based his conclusion on his own shrewd and knowledgeable scrutiny of the workings of markets and capitalists of his day. But once pointed out to observers today, who make the same careful inspection of present markets, Smith's observation seems no less obvious at present than in his own time. Can it be shown more rigorously than by astute qualitative inspection and insight? One would prefer more rigorous and objective confirmation if possible, using empirical time-series historical data, of any such crucial conclusion no matter how face-valid and persuasive it appears upon qualitative inspection.

At last, two centuries later, that desired more quantitative and objective empirical verification of Smith's original observation has become possible. French economist Thomas Piketty's recent new book has created quite a stir by reaching basically the same conclusion as Smith: the run-away nature of capital accumulation and consequent rising inequality in market economies in the absence of redistribution or other constraining measures. Piketty has proven empirically with much greater objectivity and rigor the observation made by Smith more than 200 years ago.

Smith and Piketty thus show private markets, by themselves, not only produce material wealth, they concentrate that wealth increasingly disproportionately in the hands of capital holders. Unless compensating mechanisms are included in the second component of the economy, the public services, to assure that private markets promote the general welfare rather than just the welfare of capital holders, the material wealth of the society will increasingly concentrate in the hands of capital holders.

To complete the argument, an additional observation should be added to Smith's. Capitalists do not stay content with their wealth, they seek to increase it, and to do so they begin to eat each other up. One cannot help but observe the growth, acquisition and consolidation of smaller firms into larger and larger firms. Sometimes smaller firms welcome mergers or being acquired; others may oppose acquisition but are forcefully taken over by the much greater leverage of a larger firm that has targeted them. As a result those who control these larger firms exercise more and more control over the nation's capital assets.

It is not necessary for individual holders of capital to own all the capital assets they control, they simply need to have sufficient control to determine how the capital they do not personally own is used. For example, stockholders in a large corporation have very little control over the behavior of the corporation unless they hold a very large portion of its shares; control is effectively exercised by top management and the board of directors (and boards themselves are not infrequently the chosen handmaidens of top management). Stockholder meetings are highly managed affairs carefully choreographed by top management, and it is rare that, except for very large stockholders, that any stockholders can muster the time, resources and

inside information to build a coalition sufficient to challenge management. Top management thus holds and controls far more capital than it owns. The same is true of top directors of hedge funds. Thus as these large business and financial organizations grow at the expense of smaller competitors, concentration of financial power increases as fewer and fewer holders at the top control more and more of the nation's capital assets.

In other words, not only does inequality grow between capital and labor, it grows among holders of capital themselves. It is this ability of larger holders of capital to acquire ownership or control of smaller holders of capital with or without their consent that concentrates more and more of the nation's capital and its attendant financial power in the hands of ever fewer, larger holders of capital. (This is an example of incumbency, a runaway phenomenon defined and elaborated on in Part II. below.) Thus arise the structural forces driving inequality and its attendant concentration of wealth and financial power, ineluctably upward in the present economy.

- Knowing now that markets have this potential for runaway inequality and runaway concentration of financial power that violate our Constitutional responsibility to promote the general welfare and liberty, we become Constitutionally obligated (Congress and Supreme Court, please take note) to design an economy with structure and incentives that will constrain and prevent any such runaway.

So we must now inquire whether in the present economy there are any limiting factors that will arise to constrain this runaway inequality driving ever-greater concentration of financial power. Any such limiting factors must be strong enough to constrain inequality from exceeding the safe range that protects the general welfare and liberty. If they do not become operative until well above any reasonable upper bound on the safe range, then they do not protect the nation from tyranny. I can observe no such built-in limiting factors in the structure of the present economy. Indeed, the reverse appears true. Such built-in constraining mechanisms as once existed—progressive income and asset taxation, etc.—have been steadily eroded over the last thirty years by Congress, with attendant acceleration in inequality. And the recent amazing Supreme Court decision in Citizens United has now, to the contrary, installed an amplifying mechanism likely to

accelerate the rise of inequality and concentration of financial power: not only may holders of capital spend unlimited amounts of their own personal fortune to influence elections, the Court ruled that they may now additionally spend unlimited amounts of the assets of the corporations and financial firms they control, often several times greater than their personal assets, to the same end. (I discuss this influence on elections and its observed and expected consequences in Part II below.) Thus current built-in mechanisms in the present economy not only do not constrain or limit the rise of inequality and its attendant concentration of financial power, they likely accelerate it. Hence we may now ask if there is any external natural mechanism that will arise to constrain inequality within the safe range; and if not within the safe range, where is inequality likely to stop? It cannot be completely unlimited. It cannot exceed one individual controlling all the wealth, but in practice it will stop long short of that. So we must ask how extreme beyond the safe range in inequality likely to go before natural external constraints slow it to a halt. Moreover, because a rise to truly extreme levels seems unimaginable to many people—their experience suggests it really can't become all that bad, can it?!!—we must inquire what the nation might look like at this point. I turn to these questions in Part II next.

To be completed:

Part II. Incumbency and The Death Knell of Liberty

- the concept of incumbency
- the first great incumbency: organized force due agriculture
  —liberty and wellbeing before agriculture
  —collapse of liberty and wellbeing after agriculture
- the growing evidence of a second incumbency: capital in flawed market economies

  —the new size

  —the new propaganda

  —the new bribery

Part III. Toward an Economics of Wellbeing

Part IV. Redesigning the Economy and Other Necessary Institutions

CHAPTER 4

The Pope, Poverty and Adam Smith

Is government a maker or taker . . . what would Adam say?

Working Paper

December 20, 2015

In a recent Sunday opinion piece one of our local columnists praised Pope Francis and his noble goals of forgiveness, tolerance and reducing world poverty, but lamented his "sweeping and oversimplified condemnations of profits and markets", accusing him of "left-leaning pronouncements . . . worrisome to those of us who think free markets a big part of what's needed to win the struggle against poverty and hunger around the world." And, he went on, "as immortally defined by Adam Smith through his 'invisible hand' metaphor, self-interest will inspire most of us to serve the needs of others (as a means to making a profit . . .) more energetically than generous feelings will."

Within a week a spokesman for the area Catholic Conference wrote a counterpoint stating that by "shoehorning a few of the media's favorite Francis sound-bites into the usual left-right strait-jacket," Francis and the entire rich tradition of Catholic social commentary on which Francis' statements build was misrepresented, including John Paul II's statement that "the free market is the most efficient instrument for utilizing resources efficiently, and effectively responding to needs." This tradition, and Francis himself, said the spokesman, recognize that market mechanisms have lifted people out of poverty and greatly contributed to the global increase in prosperity and standards of living. Similar heated exchanges are playing out across the country, ignited by Francis' remarkable if controversial new encyclical, *On Care of our Common Home*.

Now, like our columnist I also admire Pope Francis and his goals. And being a strong advocate of sound markets, I share our columnist's admiration for market economies. But I lament that our columnist's own 'sweeping and oversimplified' claims regarding the market—and he is far from alone—not only may misrepresent Francis and Catholic theology, they surely misrepresent Adam Smith, the moral philosopher who became the father of market economics.

It's understandable. Adam Smith has been so badly misrepresented by certain economists (the Chicago school) and popular soothsayers that we ought remind ourselves of both his aims and his proposals. Just for starters, it is Gordon Gecko and Ayn Rand who said "greed is good", not Adam Smith. Adam Smith said just the opposite: that, like rust in a machine, greed would destroy sound markets.

The aims of this moral philosopher started with the following observations:

- *"All for ourselves, and nothing for other people, seems, in every age of the world, to have been the vile maxim of the masters of mankind."*
- *"No society can surely be flourishing and happy of which by far the greater part of the numbers are poor and miserable."*
- *"A nation is not made wealthy by the childish accumulation of shiny metals, but is enriched by the economic prosperity of its people."*

In other words, like Francis, Smith was wrestling with the problem of poverty and inequality. But unlike religion—which for centuries accepted poverty and inequality as part of the natural order of things, presumably divinely ordained, and sought to alleviate the consequent suffering with compassion and charity (treating symptom rather than cause)—Smith was perhaps the first to propose we ought try to reduce if not eliminate poverty and inequality themselves. And he offered concrete means to do so. He proceeded to invent the field of political economy, of which sound markets were one part (never thought by Smith as sufficient alone) to accomplish this purpose: namely, to overthrow the inequality of wealth monopolized by the privileged and spread it more equitably (not equally, Smith was no socialist) to all members of society. Here he defines political economy and its aims:

> *"Political economy, considered as a branch of the science of a statesman or legislator, proposes two distinct objects: first, to provide a plentiful revenue or subsistence for the people, or more properly to enable them to provide such a revenue or subsistence for themselves; and secondly, to supply the state or commonwealth with a revenue sufficient for the public services."*

Thus the two means proposed by Smith were sound markets and "the public services": sound markets for the production of private goods, and public services for the production of public goods. Let us remind ourselves of the distinction: private goods are those we can purchase by ourselves individually, like computers, carpentry and medical care; public goods are those we cannot, and must purchase collectively as a society, such as defense, sewer systems, and safety nets. Smith stated neither the market nor the public services

alone is enough, both are necessary to create wealth and curb poverty and inequality.

One seldom hears of the wealth produced by the public services. Indeed, according to one shrill, incessant school of thought, the producer of the public services, government, is a parasite that takes from 'makers' and gives to 'takers'. This is quite false. Public goods produced or bought by government are at least as great a source of wealth-creation as private goods made by the private sector. But the return on wealth created by private goods returns to its producers financed by customer purchases, whereas the return on wealth created by public goods does not, but rather returns to the prosperity of society as a whole. So public goods must be financed by other means: taxes.

Note, this difference can create a misleading illusion. Because people see successful private producers wax wealthy by capturing the return on the wealth they produce, but the public producer, government, does not wax wealthy and must continually ask for taxes, the shortsighted miss that the public sector creates any wealth at all, let alone at least as much as the private sector. This mistaken notion, abetted by simplistic, unceasing special interest propaganda, has led to dangerously shortsighted public policy and understanding.

As a quick example of how the prosperity and wellbeing produced by good public services accrue to society as a whole, consider the Interstate highway system. When built, travel time and expense fell drastically for citizens and business alike, traffic accidents and fatalities plummeted, personal mobility rose, new bedroom communities with affordable housing opened up, the travel and transportation industries boomed, the land value at intersections soared as gas stations, hotels, motels, restaurants, convention centers, shipping hubs and tourist attractions rushed in to take advantage of the new business opportunity, a goldmine in new jobs and profits created entirely by the public sector. Interestingly, the initial investment was justified as a defense expenditure: mobile long-range missile carriers could elude a Soviet attack protecting our retaliatory power, a defense need soon obviated by long-range missiles in land silos and submarines. But superfluous missile carriers aside, there was never need to justify the Interstate system on the basis of defense, it would have been amply justified simply as a far-sighted public investment with profound continuing returns to the economy and

public wellbeing, a public investment the nation would have been foolish not to make.

Now observe that, with the exception of a few pre-existing state toll roads incorporated into the system, scarcely a cent—none from its flourishing intersections—of all this great new and continuing wealth and wellbeing comes back directly to its public producer, government, and so the Interstate system must be supported by taxes. (False economy now allowing this enormous wealth-producing public service to erode with inadequate maintenance is worrisome.) But suppose instead, when it built the Interstates, that along with the roadway the government had also bought up the land around the intersections and leased it to the businesses flocking there; that lease revenue—simply capturing a fair share of the wealth it created—would have sustained superb maintenance of the Interstate system in perpetuity. However, as I will shortly discuss, on most good public investments such direct return is seldom feasible nor desirable (and even when it is, is not the way Americans usually prefer things: government is to operate on taxes, not make money like the private sector). I simply bring up the Interstate system as one easily understood example of the wealth-producing power of smart public investments when beyond the capacity or interest of our private sector.

I will return to wealth-creation by the public services shortly, but let us begin with the first part of Smith's proposal, the sound market. Though (as he says) not sufficient in itself, the sound market turns out when done right to be the finest engine for beneficial wealth creation ever discovered. I prefer the term 'sound market' to 'free market' for the very good reason that free market has become distorted by special interests to imply Smith meant laissez faire: i.e., no government interference or regulation. Smith would be aghast at the idea markets should be left unregulated:

- *"People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices."*
- *"The interest of [businessmen] is always in some respects different from, and even opposite to, that of the public . . . The proposal of any new law or regulation of commerce which comes from this order . . . ought never to be adopted, till after*

having been long and carefully examined . . . with the most suspicious attention. It comes from an order of men . . . who have generally an interest to deceive and even oppress the public."

- *"Consumption is the sole end of all production; and the interest of the producer ought be attended to, only so far as it may be necessary for promoting that of the consumer."*

Our local columnist accused Francis of left-leaning because Francis decried "a crude and naive trust in the goodness of those wielding economic power." But as we see above, Smith was even more blunt! Shall we call the inventor of the sound market and market capitalism left-leaning?

Remember, Smith clearly regarded business as vital to society's wellbeing, and his observations above are generalities, not about individuals, lest anyone take umbrage. Many businesspeople would not intentionally deceive or exploit the public, but, as Smith observed, others do not scruple against doing so except in matter of degree. Hence enough business-originated proposals contain actions not necessarily in the public interest—not all but enough—that Smith strongly advised each be examined carefully on the merits.

By 'sound market' is meant one so structured that the incentives of the market reward the goals that society desires of that market. An 'unsound market' is one where the incentives of the market are counter to society's goals. Thus Smith's famous 'invisible hand' is, in fact, really quite visible, and it turns out very much a two-edge sword. That it is always beneficial is a false article of faith misrepresenting economic science and Adam Smith. Under certain well-known conditions markets are sound and beneficial; lacking these conditions they can be highly destructive—have a dark side, as our columnist acknowledged—preventable if the proper conditions are well maintained.

So what is the invisible hand? It is simply a metaphor for the incentives on producers and consumers created by the structure of a market. Arising from the structural arrangements of the market, these incentives are beyond the power of individual producers and consumers to alter. No matter their motives, whether altruistic or selfish, producers must follow these incentives to prosper. Those who oppose them suffer and fail.

One can analyze a market to determine whether its incentives are sound or unsound. An example of a sound market is computers, where the incentives are if you can't make a better computer for less, you're out of business; and, lo, computers keep getting better for less. An example of a highly unsound market is medical care, which greatly rewards costliness independent of quality; the costly provider prospers and the one who gets better health results for less suffers (indeed if he is as efficient as we know high-quality providers can be, he will soon be out of business); and, lo, the nation is being eaten out of house and home by ever more costly superfluous medical care with little or negative effect on health, far beyond what other nations with better health results spend.

Too often people don't think about incentives when there are problems in markets. For example, providers are accused of greed because of the excessive costs of health care. But no one says computers are better for less because of the altruism of computer company executives. It is the incentives of the sound market that drive them, both the virtuous and the unvirtuous (and there are plenty of both, as in all large groups of humans). Nor can we blame providers, as is all too popular (and wrong), for the runaway costs of the unsound medical market. Again it is the incentives. In this unsound market they perversely punish the virtuous and unvirtuous alike for efficiency. Get the incentives right and markets will home on the desired goals, get them wrong and markets will perform badly.

Markets are thus not an end in themselves, but rather a means to an end: the goals that society desires. Good policy should design markets accordingly. There are a set of several structural conditions which make markets sound (you may know them if you have suffered through Econ 101; e.g. one better-known condition is 'no monopolies'). These conditions do not arise spontaneously, they must be put in place and maintained by thoughtful public policy and regulation . . . unsound markets do not self-correct! The problem with unregulated ("free") markets is that they rapidly become unsound: left to themselves free of regulation, as Smith notes above, producers erode the necessary conditions. It is the duty of government, as Smith indicates, to correct and maintain sound markets, by ensuring the necessary conditions are put in place and not allowed to erode. Establishing and maintaining sound markets by proper legislation

and regulation is among the most important, and wealth-producing, of the public services.

Note importantly, it is not private producers or the profit motive (and certainly not greed) that make markets sound and better for less. It is this set of sound market conditions. Private for-profit producers are profit-maximizers, and when not in sound markets, the profit motive can lead to undesirable results. For example, in unsound markets, for-profit producers are not particularly efficient (think e.g. military suppliers). And if profits come from costliness independent of quality, as in the present medical care market, for-profit producers will maximize their inefficiency and costliness, extracting wealth from the rest of us, while true wealth creation—health results per dollar—falls.

Thus we see it possible to amass wealth in two ways: by creating it, or by taking it from others: not all wealth amassers are wealth creators. Place producers in a sturdily maintained sound market and they will continually produce better for less, whether they are private or public, profit or non-profit, selfish or altruistic. Those doing the right thing will prosper, those doing the wrong thing will suffer and fail, no matter how good or bad the motives of either. In other words, Smith's sound market with proper incentives is a much larger and more powerful concept than people realize, applying not just to private for-profit producers but to any producers, private or public, profit or non-profit. Public policy should stop overlooking that and take advantage of it.

Because monopolies, both public and private alike, ultimately serve themselves rather than the public, and because properly structured and regulated sound markets reward desired societal goals independent of the motives, noble or base, of producers, it is usually far more efficient and productive that, wherever possible, government set up sound markets of competing producers, *whether private or public*, rather than try to be the sole producer itself.

Despite Smith's admonitions, all too often public policy overlooks bad incentives. This seems to be a regular error of both conservatives and liberals. Instead of restructuring the market to replace unsound incentives with sound incentives as recommended above, conservative policy, for example, tends to trust badly performing unsound "free markets" to correct themselves (they do not). On the other hand, current liberal policy tries to overpower them with 'command

regulation': i.e., regulatory directives commanding producers to act against the unsound incentives. Unfortunately if producers comply with such directives, they will suffer, even fail, due the unsound incentives, so they must compromise, evade or tokenize compliance, and the command regulation fails—only to be replaced with more and stronger command regulation that also fails. This has been, for example, the history of health care policy for the past five decades: In five decades our *private health care market* has failed to correct itself and scarce made a dent in the medical care cost rise. Similarly, in five decades of command regulation in our "*single payer*" public programs—Medicare and Medicaid—these programs have piled up ever more and costly rules, red tape and paralysis, yet also have made scarcely a dent in the cost rise. And so, with its strong, perverse cost-raising incentives still untamed, health care has continued to eat up ever more staggering amounts of GNP with no commensurate gain in health, and little end in sight. This is a huge loss of wealth needed for things that would create true wealth (. . . not to mention improve health far more than would more medical care). Thus inadequate public services to create and maintain a sound health care market have cost the nation enormous wellbeing and prosperity.

Now let us look beyond sound market maintenance to other public services that produce great wealth in return for our taxes. Consider three examples. First, there is hardly a higher return on public investment than public health. History dramatically displays the enormous drop in death and disease rates due the advent of the public health services. To estimate the wealth produced, simply imagine how much each person would pay private doctors if they knew they would other-wise die next day of diphtheria or polluted water, or contract polio or food poisoning. But this is only the beginning. In addition to this direct increase in our wellbeing of greater longevity and healthier life, there is also the increase in societal prosperity of everybody due the well-studied economic benefits of having a longer-lived healthier work force. And all those sick-care expenditures avoided by good public health can now be spent on other things to increase our individual and societal wellbeing and prosperity. But, since people won't pay for illness that doesn't happen to them (or for anything else averted by good preventive public services) and since we all benefit, we declare public health a public good and buy it collectively through taxes.

Second, consider public education. The immense gain in societal wealth due to productivity increase, not to mention individual well-being, created by an educated workforce and citizenry is well known. But employers can't buy an educated workforce; they have no idea who will grow up to work for them. Since we all benefit from this increase in our prosperity, we make this a public good we buy for all our young collectively through taxes. Thus our public education system, its shortcomings notwithstanding, creates enormous public capital—educated citizens and workers—made freely available to the entire private and public economy. (Properly redesigned with improved incentives for performance, the public education system would likely produce even greater public capital.)

Third, consider the wealth returned from basic research financed by government. It is almost immeasurable. Why is the United States so far out in front of the world technologically? Because we have invested more in basic research than anyone else. (Indeed, recent cutbacks are worrisome.) Virtually the entire economy, private and public, now runs on the continuing fruits of basic research. Basic research is different than applied research. Applied research is what the private sector does so well: as soon as basic scientific facts and principles are well enough known to foresee a viable commercial product, the private sector will eagerly invest in applied research to bring it to market. On the other hand, basic research in all the hard and soft sciences is what continually reveals all these hitherto unknown fundamental facts and principles on which applied research feeds. It may take years to discover them, and the fruits are totally uncertain and unknowable in advance. So it is unreasonable to ask private investors to finance basic research; not only are they too narrowly specialized and interested, they will long be bankrupt before there is any promise of return, nor will they have any idea in what amount and what area it will occur. What is knowable and decidedly certain is how large the return on investment for the nation has been from steady basic research to discover more and more of these basic facts and principles. It took decades of effort and expense, for example, to reveal the principles of solid-state electronics or of Einstein's general relativity—initially we knew nothing even of their existence—yet every firm manufacturing e.g. electronic chips (all requiring basic solid-state principles) or using satellites (all requiring basic relativistic

corrections) uses them. Basic research results are a vast, free public capital created by the public services. If firms had to pay royalties for using these basic research findings, we would not lack for extraordinarily generous funding for basic research. But it is impractical to ask royalties on principles which often take years of further basic and applied research to find practical application, long past usual patent expiration dates, and now continually combined in impossible profusion by all producers. Hence since our individual wellbeing and societal prosperity depend so strongly on basic research, we wisely see it is a public good and buy it collectively with taxes.

It is astonishing how many people, even many in Congress who should know better, fail to see the wealth created by basic research, and the disaster to the nation's prosperity that will follow from insufficient funding. We often hear mantras that until a commercial product can be made and sold, no wealth has been created. This is akin to constructing a bridge and claiming only the pavers have created wealth, since no cars can use the bridge before then. Until basic principles are discovered and fleshed out, no practical applications can be conceived let alone invented. For example, the great British prime minister Gladstone, seeing a demonstration of magnetic induction by its discoverer, the great scientist Faraday, remarked dismissively " . . . but after all, professor, what practical use is it?" To which Faraday allegedly replied, "Why minister, there is every probability that you will soon be able to tax it." Not even Faraday could have imagined the economic engine of wellbeing and prosperity this hitherto completely unknown phenomenon has brought about today; virtually all the world's electricity is generated by magnetic induction. If we each had to put a penny in the basic research fund every time we flipped a light switch, basic research would not lack for adequate funding. Similarly Einstein's discovery of general relativity in 1917 was greeted dismissively by the short-sighted as a useless curiosity. Because they could not imagine any immediate practical applications, they assumed there were none. The wise knew better. Today our space travel and communications, with all the wealth and wellbeing that flow from them, are utterly dependent on applications of Einstein's theory.

I share with conservatives concern to avoid "takers" living off "makers". We should aggressively avoid, for example, any sort of perverse welfare

system where able-bodied citizens can live off the dole. But equally, there should be just as great concern that any able-bodied business not be allowed to become a private sector “taker”, living off the public services “maker”, by shirking its fair share of taxes for the public goods it so freely consumes—quite as much free-loading at the public trough as any welfare cheat. Tax dodges are thus a perverse public dole for business, likely well more costly to the taxpayer than any welfare dole. Both are to be aggressively avoided.

Thus profit is not, as our local columnist oversimplified, “the price of capital”. Profit is the price of capital for private goods and services. The price of capital for public goods and services is taxes. Done wisely and well, the public services are a profound investment by far-sighted legislators, with great return to the wellbeing and prosperity of both individuals and society. Done poorly or inadequately, they can destroy individual and societal wellbeing and prosperity.

I would now like to turn to three areas—finance, health care, and poverty reduction—where I believe, if done well, a further healthy investment and strengthening of the public services would produce great gains, the biggest bang for our tax dollar far exceeding the cost, to the nation’s prosperity and wellbeing. So far these areas have been handled with inadequate or poorly designed public services, and it has cost the nation dearly in both wealth and wellbeing. There are certainly far more good things to do for the nation’s well-being than it can afford. Therefore one would hope both liberals and conservatives might unite on those public investments that are not only right but smart, those that not only notably improve the nation’s wellbeing but at the same time return a significant and continuing profit to its economy.

As reducing poverty was a high ideal of both Adam Smith and now Francis, let me begin and spend a little extra time on it, in particular on the huge costly problem of structural poverty in this country. Sound markets are vital but inadequate alone to address this problem. Structural poverty differs from ordinary poverty. The ordinary poor have the same work ethic and values as the middle class but for any variety of reasons have little income or money; given opportunity they can rise. Unlike ordinary poverty, structural poverty involves large, chronically low-income areas—ghettos of poverty—with excessive concentrations of high unemployment, chaotic and often violent

home life, poor or absent role models, unskilled parenting, high illness and medical problems, high addiction, gang violence, crime, insecurity, and discrimination. This toxic brew is found strongly and negatively correlated with adequate human development, let alone acquiring marketable social, intellectual and emotional skills, not to mention technical skills. These areas, because of their low-skilled workers, impoverished consumers and instability, seldom attract employers offering decent well-paying jobs, and the low-skill jobs further away that residents may qualify for often pay so poorly they scarcely cover the hours and expense of the inadequate transportation to get there and back; hence unemployment remains high. People commonly become trapped in these areas because they were raised in them or have too little money or social support to relocate. To most, the ways of the middle class are a foreign country of which they have little knowledge or experience, nor are middle class ways very useful trying to survive in these areas. The all-too-few who manage to escape are rightfully applauded for their courage and tenacity, but their success is notable for its rarity. Social mobility in America, once our pride, has fallen below Canada and Europe.

Too many middle-class adults fault the structural poor for their low skills and undisciplined work habits. They blame their poor genes and weak character, implying their woes are ineluctable and irremediable, thereby excusing themselves to ignore all this human misery. Nobles used to similarly fault peasants, British upper classes to fault the criminal class they exported to Australia, imperial powers to fault subject native populations, and masters to fault slaves. But the structural poor appear natively to have neither much better nor worse potential talent than any other large group of humans, the intra-group differences in all large groups dwarfing the inter-group differences. The distinction, sadly, is that an excessive proportion are ill-developed, like so many peasants and slaves before them, so this substantial body of talent and potential goes unrealized, wasted.

Likewise, too many of the middle class righteously expect the structural poor to grow up and act like themselves, oblivious of the powerful human development system that is their own privileged upbringing. They seem blind that they themselves have had competent successful parents, neighbors and communities providing role models and mentors and networking sources, and have seen

and experienced the value of investing time and effort in delayed rewards—all of which are far more valuable to their future success than simply money, which they also have. All of this they take for granted rather than with constant gratitude. They have little clue as to the chaotic, insecure, often violent, upbringing and living conditions of the structural poor, and the low self-esteem, defensiveness, and the poor experience and low confidence with delayed rewards that these conditions engender. By the time they reach employable age, the structural poor are largely unschooled and unaware of the social, emotional, cultural and learning skills necessary to hold a job, skills that are second nature to the middle class. Beyond low skills many have attitude and reliability problems that can antagonize customers, co-workers and managers. None of this exonerates the structural poor from personal responsibility for the consequences of their behavior or poor choices. But remember, the middle class, too, make their fair share of poor choices and are properly held accountable. However, their resources and social support systems buffer and soften the consequences, making them far less disastrous and permanent, while little shields the structural poor from severe, long-term consequences. The middle class and the structural poor are playing on an uneven game field, one could even say they are in altogether different games.

Thus markets, by themselves, cannot serve or lift the structural poor because the mental, emotional and cultural skills to advance in markets are unfortunately foreign to them—skills that require considerable time, effort and mentoring to develop, skills that they scarcely know exist let alone how to acquire. Just as markets do not skew good employment toward areas of poverty, they do not skew products toward them. Markets skew products toward the distribution of income, toward consumers with incomes sufficient to buy them: they develop far more and costly goods and services for those with high income than low. The poor benefit, often enormously, but only when market efficiencies bring some of these products within their reach. Thus markets will not, can not, offer the kind of development services critically requisite to help the structural poor acquire the needed skills because such services are unprofitable. They are too expensive, far more expensive than the structural poor could ever afford ... even if they had the knowledge to appreciate their value.

(Advertising of expensive goods and services, which is how many consumers learn their value, is not aimed at the poor.)

Since markets are inadequate alone, if the structural poor are to rise it is the public services which must help them acquire the needed skills. Only then can the sound market work its magic. How? Do as we have done so successfully before: design public services to solve the problem *not by hand-outs and charity but by proper investment in human development*. If by smart, efficient investment in their development, the public services can help the structural poor become competent citizens and workers, as capable as the rest of the population to rise to their full potential, then there is great opportunity here.

In other words, too few realize that our most valuable, wealth-creating public services are human development services. The public health services are in fact a continuing public investment in the health of our workforce, greatly increasing their productivity not just their wellbeing. The public school system is in fact a continuing public investment in development of our young, many of whose families could never afford such education privately. It taps a huge source of skilled workers and entrepreneurs untouched before public education, and increases individual and societal prosperity many times beyond its cost. It is an immense 'making', not a 'taking'. (And recall, many of the prosperous at the time argued trying to educate the children of the masses would be a waste of tax money: 'those people will never amount to anything'. They thought education a private good, to be privately purchased only by those who could afford it. When society wisely made it a public good, the prosperity and wellbeing of the nation boomed.) Or realize that the GI bill, first thought of as a thank-you gift to veterans, turned out to be another incredible public investment in human development. It created prosperity far beyond its cost, as we brought this hitherto untapped source of skilled workers into the workforce who never could have afforded college. (It faced the same opposition: why would you try to educate 'those' people.) The gift turned out to be from our GIs to us. (Recent cutbacks in funding college education for qualified low-income students are worrisome).

Now consider again structural poverty. Presently we have a leaky safety net, part of it called the welfare system and the other part called unemployment insurance, but a safety net is not a human

development system. It does not, nor can it ever, address alleviating structural poverty. Many argue we have given all kinds of opportunities and programs to the poor, and it's just throwing money away. We have tried to invest in their development through grants, special training programs, etc., and the results have been discouraging. There is all too much truth in this skepticism, because too many of these programs have been scatter-shot, based more on good intentions than careful cumulative research and demonstration. Some, such as low-income housing projects built at enormous effort and expense, have even been disastrous, exacerbating rather than reducing structural poverty. But this is not the whole or most important truth. Amidst all this well-meant wasted public do-gooding, careful long-term research and demonstrations have determined that certain programs appear to have worked beyond all expectation. And *if* they can be scaled up with the same success rate, we have now an unprecedented chance to slowly and systematically reduce structural poverty with economic returns to society far exceeding the cost.

We now know that growing up in structural poverty produces developmental deficits in most children by school age (observable in IQ tests and brain scans), not often reversible. Thus our society tolerates conditions which impair these children, denying them equal opportunity through no fault of their own. But if we target programs of specific kinds of developmental assistance identified by research, specifically at just high-risk kids and their parents or guardians (low-risk kids neither need nor benefit from these programs and it would be a waste of money), starting at or before birth (school, even preschool, is too late and too limited to close the gap) and ending as they reach school age, the eventual annualized return on the original cost as these high-risk children reach adulthood is estimated from long-term follow-up studies at 18 percent a year in continuing increased employment, productivity, and taxes, and reduced crime and welfare costs. While not successful with all children, the approach is so successful with so many that it turns the cost of this human development approach to structural poverty into a public investment with a rate of economic return beggaring the Dow-Jones average. If we cautiously scale up and these returns hold up as the approach is extended to more and more of our high-risk kids, we have an unparalleled public investment opportunity that is not only right but smart. (Note, other

effective programs have also been identified, with excellent results returning well more than they cost, if not quite so dramatic as the infant development approach above. These, too, appear well worth trying to scale up.) Before the basic research was done, who knew?

The structural poor thus constitute a large rich pool of untapped talent, just as unschooled children and non-college-educated GIs before them. Again, it should be emphasized that structural poverty and human development programs to reduce it do not exonerate the poor or anyone else from personal responsibility for their own good or poor decisions and behavior, any more than do public education or the GI Bill. But given the statistics, society cannot be exonerated either if it fails to provide the kind of help known to improve the outcomes for these children and for society, particularly if, like public education and the GI Bill, it can do so at great public profit. It is time for legislators to take advantage of these new findings and make public investment in a carefully scaled up human development system for families in structural poverty. We cannot afford not to do so. This is not the place to penny-pinch on "the public services". As the great conservative Edmund Burke reminded us a century and a half ago:

> *"Mere parsimony is not economy. Expense, and great expense, may be an essential part in true economy."*

In other words, policymakers on both sides of the aisle should not fear to engage in large public expenditures if they are good public investments, raising not only wellbeing but the national prosperity much more than they cost in tax dollars. Indeed, they hurt the nation if they do not. Likewise, they should largely avoid expenditures for measures that, though worthy, raise prosperity less than their cost in tax dollars; too many of these and they become an unsustainable drain on the public purse.

Structural poverty is not the only opportunity for wise high-return public investments in human development. A second great opportunity is health care. The major point about this opportunity is to dispel the widespread notion, held by many short-sighted if well-meaning politicians, that universal health care and coverage is some kind of extravagant government give-away at the expense of the taxpayer, a free lunch for those who can't or won't buy health insurance. This notion is not only wrong, it utterly misses the point and cuts the nation's throat. We need to reframe our thinking about universal

care and coverage, and the proper parallel is universal public education; no well-informed person thinks universal public education a government free lunch for those who can't or won't pay for adequate schooling. Universal care and coverage, just like universal public education, is similarly a shrewd public investment with enormous return to the nation's economy as well as its wellbeing, an investment we are foolish not to make: if you wish to out-compete a billion Chinese, you better have a smarter, healthier workforce than anyone else. Not only must we invest in the education and skills of our workforce, but in their health, from birth to retirement. The untreated and undertreated ill constitute a vast untapped pool of talent. Sickness is costly to producers, shrinks our workforce, saps its productivity, and burdens the nation; good health cuts costs, expands our workforce and increases its productivity. A big reason other countries achieve a healthier workforce at much less cost than us is because they cover everybody. They start at birth and reap the benefits: better health maintenance and its attendant lower costs. Done right, universal coverage for the working population and children is therefore no more a government handout than universal public education; it is a huge opportunity for a smart public investment in our present and future workforce, with great returns to societal prosperity as well as individual wellbeing. And note, by working population is meant not just those in the paid workforce but all those individuals, including homemakers and retirees, performing countless unpaid hours of family care and voluntary service. (Parenthetically, though not part of this argument, if we are a decent society even those elders no longer working warrant our concern. Although no longer a public investment, most have done their best during their working years and merit our respect and care in their decline when they can least afford health care. If care and coverage at public expense for these elderly is charity, so be it; virtually all Americans support it.)

The second major point about this opportunity is that it offers a double bang-for-the-buck: done right, universal health care and coverage can also be used to stop the runaway cost of health care described earlier, and bring it in line with the rest of the economy. The caveat is 'done right'. Unfortunately our present attempt at universal care and coverage for the non-elderly, Obamacare, just like Medicare before it, has not been done right. Both have ignored Adam

Smith and omitted any sound market incentives on either providers or patients for quality and economy (. . . ironic, since presumably designed by economists!), which is why costs are soaring out of control. Needing the benefits but insulated from the true cost, elders presently have little idea what a financial disaster to the country their program has been. Obamacare seems doomed to follow the same trajectory. This need not be. Why weren't sensible incentives installed in Medicare and now Obamacare in the first place; where were our conservatives and Smithian liberals? Isn't it high time for them to now correct these programs with incentives that will protect quality and bring costs under control? Shouldn't conservatives wake up that proper universal coverage is essential for the nation's future economic as well as physical health, get behind these programs and see that they are redesigned to include sound incentives—in short, don't fight Obama care, redo it and get it right? And equally, shouldn't liberals finally wake up and stop thinking government can beat health care providers into submission by coercive controls (in 50 years of Medicare . . . our large 'single payer' program . . . they have not succeeded)—in short, recognize with conservatives that sound incentives on both patients and providers are essential to cost-contained universal care and coverage? If the health care market continues unsound, its costs will remain uncontrollably inflationary whether coverage is made universal or not. The nation loses on every count: our gift to the elderly will become unsustainable; our investment opportunity of universal coverage for our workforce, and for our children who will be our future workforce, will be blown. It is time to abandon both current failed approaches, the present unsound private market and single-payer command regulation, and instead restructure health care into a sound market with universal affordable coverage. One would hope far-sighted legislators on both sides of the aisle would now heed Adam Smith and support amendments to overhaul Obamacare and Medicare with proper incentives and bring this great public investment opportunity to fruition.

Lastly, consider a far greater example of wealth destruction due lack of adequate public services, greater than even the unsound health care market: the finance industry. The cause of the great economic collapse of 2008 is well known: failure to maintain a sound market in finance. Government abandoned oversight regulation of the financial

market, a vital public service, on the preposterous notion that this market would self-regulate in its own interest. (To his credit Alan Greenspan, an outspoken advocate before, admitted publicly after the collapse this idea was sadly wrong.) Left unprotected, the necessary conditions for a sound financial market were rapidly eroded as the finance industry in unbridled avarice undid all the restraints (again validating Smith's cautions). Wholesale wild and wooly risks and speculation in subprime mortgages ensued. The bubble burst, the national and world economy collapsed, millions of people were left (and many remain) homeless, jobless and impoverished. (And yet some would tell us greed is good . . . !) And the bankrupt finance industry had to be bailed out at enormous expense by its victims, the taxpayers—a welfare system for the rich, lest they forget, beggaring any welfare system for the poor in this country. The human and economic loss from abeyance of this crucial public service was colossal.

An irony is that we know exactly the kind of regulation by the public services needed to keep the financial market sound. It was devised by Ronald Reagan's first head of the Federal Reserve, Paul Volcker. One would hope that responsible legislators and public-spirited private financial leaders would step forward to cooperate and enact this regulation to make finance a sound market. It is a great public investment opportunity for proper use of the public services. But what we see enacted is the weak Dodd-Frank regulation, a pale reflection of the needed Volcker regulation. And what we see is the finance industry spending millions on lobbying and campaign contributions to erode even Dodd-Frank, again endangering the nation's economy and the taxpayers. Surely there are financial leaders who want their industry to serve the nation rather than imperil it. One must admonish responsible legislators and financial leaders to finally listen to Adam Smith and establish a sound, soundly regulated, market in finance.

Summing up, policy must be mindful, as Adam Smith taught us, that the production of wealth for the nation requires both sound markets and sound public services, and one without the other will prove, as they already have, costly to our national competitiveness and wellbeing. Public stimulus of private investment, if and when needed, is all well and good, but a wise, far-sighted Administration and Congress will see to adequate steady investment in the public services vital to our wellbeing that boost our prosperity well beyond

their cost; in particular: that our sound markets are given proper oversight to assure they stay sound; that our unsound health care and financial markets are redesigned with proper incentives; that we enact a sound plan for universal health care and coverage; that we maintain adequate support of public health, public education and basic research; and that we attempt a strong new targeted public investment in human development to reduce structural poverty. In this latter we would employ Adam Smith's double-barreled union of sound markets and the public services to advance a cause held dear not just by Pope Francis and Adam Smith but every major religion and, more pointedly, by our own Constitutional obligations to promote the general welfare and equal opportunity.

The technical details of these initiatives are reasonably in hand among the various expert specialists; that is not what's holding us up. Now needed are the political wisdom and will. What will it take to break today's stalemate of simplistic political ideologies, some allegedly based on Adam Smith himself? Part of the answer may be helping Americans understand what Smith actually said rather than the caricature presently pushed by special interests. But it will take much more. What will it take to build, to mobilize, an aroused well-informed body of citizens, legislators and leaders ready to abandon empty myths and recognize, indeed demand, with Adam Smith that a vital well-run public sector is as crucial to the nation's wealth and wellbeing as a vital well-run private sector? That is a question beyond the scope of this brief article, but surely a nation that established a Republic based on liberty and justice for all, that abolished slavery, that extended the vote to all its citizens regardless of gender and race, ought be up to the task.

CHAPTER 5

Structure and Incentive Problems in Economic Regulation of Medical Care

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It is occasionally assumed that if a sector of the private economy is performing badly, then a public regulatory apparatus can make the private system straighten up and fly right, or at least fly better. In some cases this is certainly true, in others it is less true. This paper analyzes some of the limitations of this assumption for one particular and frequently proposed situation: strong, direct economic regulation of medical care. One purpose of the analysis is to facilitate better regulatory design by setting out some of the more deeply entrenched structural and incentive weaknesses that can be expected in such regulation. Improved regulatory systems should specifically attempt to remedy these weaknesses. Insofar as the analysis argues from the general to the specific, it may have some useful application to other kinds of regulation and other fields. A second purpose of the analysis is to shake any blind confidence that such improved regulatory design will be an easy job. In some cases it may not even be possible to design a regulatory system that will do more good than harm. This may encourage policy makers to consider more diligently the full range of options available to them: private sector restructuring and market reform, as well as regulation.

The limitations in the above assumption (that regulation can always improve poor private sector performance) do not lie in the integrity, diligence, or competence of people in the public sector. Neither the private nor public sector has any monopoly on talent or decency, nor for that matter on ineptitude and self-serving action. The issue of private markets versus public controls is unfortunately subject to much ideological cant that serves neither those who wish to improve the private sector nor those who wish to improve public regulation.

Our point is that systems of people ultimately tend to perform the way they are structured and rewarded to perform. This tendency is likely whether the people involved are well- or ill-intentioned. Poor structure tends to beget poor incentives, and poor incentives tend to beget poor performance. Incentives are quite as important in the public sector as in the private sector. If we desire improved performance of any major societal system, we must improve its structure and incentives.

To be more concrete, it has frequently been proposed, for a variety of reasons (see Section 1), that the medical care system be placed largely under the strong, direct economic control of some sort of

regulatory agency or system of agencies. The details of such proposals vary greatly. The agencies may be at the federal, state, or local level, or all three. Their powers may include control over prices, quantity and type of service, facilities and equipment, manpower, capital investment, or any combination thereof. These powers all may be concentrated in one system of agencies or separated among several sets of agencies. To the extent possible, we try to avoid most of these details and focus on the generic structure and incentive problems that such an economic regulatory system is likely to encounter. There are many other less direct means of economic regulation, e.g. the tax structure, public financing of medical care, etc.; but we shall largely exclude these as outside the scope of our discussion.

Our method is frankly analytical and hardly definitive. We attempt to assess, as generally as we can, the likely incentives that will arise from the generic sort of regulatory structure proposed above. From these general incentives, we attempt to predict the behavior of the regulated system. Where possible we attempt to confirm these predictions against the general empirical evidence on economically regulated medical care systems and other economically regulated industries. We emphasize that incentives are only positive and negative pressures and can only predict tendencies that may or may not be realized in every individual situation. While hard researchers may find such methods much too speculative, we point out that the problem of policy analysis is to assess the likely significant consequences of proposals in advance of their adoption. Any economic regulatory system will have to deal with any potentially perverse incentive tendencies inherent within itself. Quite significant consequences may take more than a decade to show up, and may never show up in smaller-scale experiments, frustrating the common call for more research in advance of the policy decision. The unfortunate urgency of important policy decisions then requires that, where empirical evidence is lacking, we use the best analytical arguments that can be made. Until supplanted by harder evidence, such arguments may provide some guidance to policy and offer some hypotheses and directions for future research.

Our emphasis on problems in direct economic regulation should not lead to any premature (and wrong) conclusion that such regulation is never justified. It may be appropriate in many cases. In some cases

it may be the only alternative. Our message is that such regulation should never be adopted uncritically without careful advance analysis of its general structural and incentive vulnerabilities. This should result in both improved regulatory design and a more balanced assessment of the strengths and weaknesses of all the policy alternatives available, both market reform policies and economic regulation policies.

1. Motivating Economic Regulation

The motivation for economic regulation of medical care starts with the premise that the medical care system is in severe market failure, producing seriously excessive expenditure escalation, inefficiency, and maldistribution of manpower and resources. The naïve regulatory argument stops at this point and proposes some form of economic regulation as the solution. As Schultze (1977) remarks, "The virtually universal characteristic of public policy in these circumstances is to start from the conclusion that regulation is the obvious answer; the alternative is literally never considered."

A more cogent argument for economic regulation is that the medical care system is not only in market failure, it also has a severe equity problem. Even were the medical market performing perfectly, adequate medical care and health insurance would be beyond the reach of low-income persons. At a minimum, government would have to take over at least some, if not all, of the financing for such people. So far, this argument appears totally correct. The next proposition is less certain. Proponents argue that the only way to assure adequate equity is to grant all people the same universal entitlement and coverage; and, since any price competition would inevitably discriminate against the poor, price competition is inappropriate. Therefore, they conclude that market strategies, which necessarily rely on both price and nonprice competition, are not possible; and strong, direct economic regulation is the only means left to constrain expenditures and allocate resources.

That the medical care system is in market failure is not at issue. Severe market failure has been amply demonstrated, and there is now little scientific controversy on this point. But we believe that both the naïve and sophisticated regulatory arguments above, nevertheless, miss two important points. They ignore the existence of a set of equally promising alternative strategies based on market reform;

these strategies seek the same goal of equitable, adequate, humane medical care and coverage for all at a price society can afford but employ market, rather than regulatory, means. Both regulatory arguments also ignore the growing body of research and experience on regulatory failure. We consider these two objections in turn.

There are at least two major strategic alternatives to deal with the market failure of the current medical care system. Certainly, direct economic regulation is one such alternative, and several states and the federal government are now engaged in a variety of economic controls which attempt to impose regulatory forces as a substitute for the missing market forces. The alternative to regulation is the market approach. Several cogent strategies have been proposed to restructure the private medical care system in order to establish effective market forces; and, in one of the few places where such a market strategy has been initiated, it appears quite promising. (These market strategies anticipate the use of public financing to assure adequate and equitable purchasing power for low-income people in this market).

For brevity the strategic alternatives are often referred to as "competition versus regulation," but this is not accurate. A more precise phrase would be "market reform versus direct economic regulation." The present medical care system is vigorously competitive, but, because of its structural market failure, this competition is cost-generating, not cost-saving—it is a medical arms race. Moreover, even market reform strategies presuppose some degree of regulation. Few market advocates are proposing to do away with the life and safety codes, the licensure laws, or other reasonable quality assurance regulations, although certainly advocates of both strategies agree that such regulation could be much improved. The real and overriding issue between the two strategies is economic control: how to exercise economic allocation and restraint most compatibly with, and supportive of, the other major goals of coverage, availability, quality, equity, efficiency, innovation, and responsiveness to consumers.

Market reform strategies emphasize private choice and competition in a fair and structurally sound marketplace as the dominant economic allocation device. The role of government is to make the necessary temporary interventions to create this new, restructured, effective marketplace; to alter public financing programs to be compatible with it; and then to exercise modest continuing oversight (antitrust

enforcement, etc.) to assure that healthy competition is maintained. We may term this market-corrective regulation. In contrast, direct economic regulation strategies emphasize explicit policy decisions and direct public controls on providers to impose cost restraint and allocate resources. Following Schultze, we may term this command and control economic regulation. Because effective market forces are weak or absent in the present medical care system, such direct economic regulation will have to be quite strong and pervasive to succeed. Some proponents advocate the use of market reform and direct economic regulation at the same time. While not impossible, the two approaches are so highly incompatible that their simultaneous use may be more speculative in practice than either approach alone. Perhaps the most important strategic decision facing medical care policy in the 1980s will be to choose the relative role and emphasis to be given each alternative: market reform and direct economic regulation. The naïve regulatory argument misses this basic strategic decision entirely.

The second weakness of the regulatory arguments above is that both fail to recognize or address our increasing understanding that command economic regulation, like the present medical care system, has its own set of structural and incentive failings. Just as the structure and incentive weaknesses in the present medical care system lead to market failure, there is growing evidence that present regulatory processes have perverse, structurally entrenched incentives that in many cases lead to regulatory failure. There is both theory and some hard evidence that under certain conditions command regulation is not conducive to efficiency, innovation, quality, or equity (see Section 2). Indeed, command regulation can lead to the special interests of politicians, bureaucrats, and providers intentionally or unintentionally making deals at the expense of consumers. We are concerned at the present rush to command regulation in medical care at a time when the nation's experience with heavy command regulation in other industries has been so poor that it is now trying to deregulate many of them. In fact, premature or ill-advised command regulation may saddle the medical care system with a new set of structural and incentive difficulties more intractable than those it was supposed to solve.

Therefore, a defensible regulatory argument must: (1) identify the structural and incentive defects of the present private system that

must be corrected; (2) similarly identify the structural and incentive defects in present command economic regulation systems that must be avoided; (3) analyze the strengths and inadequacies of proposed market reform strategies; and (4) design and justify an economic regulatory system for medical care that, on the basis of its improved structure and incentives, can be expected to perform superior (i.e. achieve goals better) to either the present private system or proposed market reforms. In particular, it must show, through its improved structure and incentives, how and why the proposed regulatory system will not ultimately succumb to the generally observed failings, now documented by research and experience, of present command regulation.

In this paper we will limit ourselves to the second task above: a structure-incentive analysis of command economic regulation systems particularly as they apply to medical care. We have drawn freely upon the excellent work of Schultze (1977), Enthoven (1978), Noll (1975), and Bauer (1977), especially in Sections 2 and 4 below. We happily acknowledge our debt and also absolve them of our errors. The remaining tasks, analyzing the present system and market reform strategies and developing and defending regulatory strategies, are far too extensive to treat in this already lengthy paper and have been treated elsewhere in some detail (McClure, 1976a, 1979).

2. Research on Observed Regulatory Behavior

Noll (1975), in his excellent review, suggests three models of economic regulatory behavior. The traditional public interest model assumes regulation to be an omniscient and disinterested set of bureaucrats who see to it that market power or consumer ignorance is not exploited to enrich a few businessmen at the sacrifice of the general welfare. According to this model, cost regulation should reduce regulated prices to levels comparable with competitive market prices—usually taken as the standard of what efficient prices should be, since economic theory demonstrates these are the lowest prices at which suppliers still will enter the industry to meet the demand that consumers will pay for. The second model, the capture model, assumes regulation is proposed, supported, and unduly influenced by the regulated industry to supplant competition with a legally enforceable cartel; politicians accept the cartel in return for campaign contributions and other support as long as they have sufficient

oversight authority to assure that the cartel does not become a political liability. According to this model, cost regulation should produce monopoly prices and monopoly profits. The third model, the political economic model, assumes regulators attempt to impose some concept of the public interest in a milieu of uncertain, expensive, and unbalanced information; competing and conflicting social interests; and tenuous oversight structure, which creates biased and perverse incentives on the regulators. According to this model, cost regulation should produce monopoly prices and also push industry costs up such that they are no more than competitive market profits.

According to Noll, the empirical evidence at this point, while far from complete, tends to support the third model. Economists have analyzed demand and cost conditions in several regulated industries and numerous pricing and profit decisions by regulatory agencies. Contrary to the public interest model, except in the case of regulation of natural gas prices at the wellhead, no depressing effect of regulation on prices has been found in any studied industry. However, contrary to the capture model, few studies have found any tendency of regulated firms to earn exorbitant profits. Instead, through a variety of largely uneconomic and undesirable behaviors induced by regulation, industry costs are pushed up. While research on the magnitude of these induced costs is by no means complete, existing studies suggest that, in addition to the direct cost of the regulatory agencies themselves, unnecessary industry costs induced by regulation may account for up to 25 percent to, in some cases, 50 percent of the revenue of regulated firms (Noll, 1975). If further studies continue to confirm results anywhere near such magnitude, this represents regulatory failure on a stunning scale. (In fairness, it must be noted that not all regulation is aimed just at cost control; but it seems doubtful that this magnitude of unnecessary cost can be justified by any supposed public benefit.)

Noll classifies the observed uneconomic behaviors producing these unnecessary costs into four categories: consumer cross-subsidization, producer protectionism, limited innovation, and inefficient operation. In consumer cross-subsidization, regulators permit monopoly pricing of some products to subsidize otherwise uneconomic activities. Such uneconomic activities are ostensibly in the public interest, but more often they benefit special interests. An illustrative example

in health care is the requirement that hospitals that have received federal Hill-Burton grants must provide some amount of free care to the indigent. The hospital pays for free care by charging higher rates to paying patients. However, except for a few hospitals, free care to the indigent is a negligible cross-subsidy amounting to less than 1 percent of hospital revenues. A far larger example with questionable public interest is excessive charges by hospitals on hospital drugs, lab tests, and X-rays that are used to subsidize high-cost technological modalities—such as cardiac diagnostic procedures, intensive care units, fetal monitoring, and the like—which attract doctors, and loss leaders—such as maternity, pediatrics, and primary clinics—which attract patients (Blumberg, 1981). The profligate spread and excessive use of these professionally attractive modalities with high costs and low marginal benefits to health is well documented (Russell, 1978; McClure, 1976b) and is preserved by present public financing policies. The literature shows that such uneconomic cross-subsidization is common to all regulated industries, not just health care. Even when such behavior has some benefit for society (whether or not the benefit is justified by the cost), there is the further objection to cross-subsidization that such costs should be explicit and borne by all society, not just certain users. For example, the cost of free care to the poor should be borne by all society, not just privately insured hospital patients.

A second uneconomic behavior commonly found by regulatory research is producer protectionism. Regulatory agencies set prices that prevent low-cost firms or industries from driving high-cost producers out of the market. An illustrative example from transportation is that boats, rails, and trucks are forced to use common prices on common routes even though on certain routes one mode is demonstrably lower in cost than the others and could drive them out by competitive pricing. An example from health care is that inefficient high-cost hospitals are allowed to charge more than efficient low-cost hospitals. Such protectionism of inefficient producers is often justified by the regulatory agency as maintaining a balanced system and as preventing one (more efficient) set of producers from monopolizing the industry. This latter is indeed a strange argument if the industry is regulated and the agency can presumably proscribe monopolistic profits. The actual incentives resulting in such producer protection by regulators are more complex (see Sections 3 and 4).

A third uneconomic behavior identified by regulatory research is that regulatory agencies have delayed or prevented many beneficial innovations while permitting or promoting others that are not justified (Capron, 1971). This limited innovation appears related to the previous behavior, being particularly pronounced when an innovation would substantially alter the balance among established producers in the industry or cause industry profits to decline. An example in communications is cable television, where, despite demonstrable consumer demand and benefit, the innovation was long delayed and is still heavily restricted by regulation. It should be noted that producers likely to profit are different from the established existing VHF networks and stations. Examples in health care are prepaid group practice that is treated prejudicially be Medicare and the Health Maintenance Organization (HMO) Act and state laws, while, on the other hand, expensive, professionally popular, but scientifically unproven, innovations such as fetal monitoring of routine pregnancies and intensive care treatment of uncomplicated heart attach are permitted to flourish.

A last category of uneconomic behavior is inefficient operation; goods and services, whether or not economic (i.e., whose benefit may or may not be justified by their costs when produced efficiently), are produced more inefficiently than they could be. An illustrative example from transportation is railroad management, which has been criticized as lax, especially when compared to European and Japanese railroads. The health care field is often criticized for inefficient operation, although we suspect that its inefficiencies are due less to lax management than to the other uneconomic behaviors identified above (McClure, 1976a). However, there is little doubt that there is considerable inefficiency of provider operation due to detailed procedural requirements imposed by regulation itself that confer no value to society commensurate with their costs (McCarthy, 1978). Lobbying and legal challenges to legislative and regulatory agencies are a much lesser, but not negligible, expense induced by regulation, although some of this activity can be considered valuable and legitimate to society.

There are two points to note about this observed regulatory behavior. First, the fact that this behavior occurs to varying degrees in all regulated industries studied suggests that this behavior is not due

to simple regulatory mismanagement or lack of effort which easily could be corrected just by trying harder. Rather, this behavior would seem to be due to more fundamental structure and incentive problems inherent in regulating these industries. Second, the fact that the same behavior occurs in all studied industries suggests that the structure and incentive problems are not specific to the details of the particular industries but rather likely inherent in the general structure and incentives of the present regulatory strategy for health care. To perform better than it has in other industries to date, then this strategy must alter or counter any major structure and incentive factors producing present perverse behavior.

Our method for determining structure and incentive causes of system behavior is termed structural incentive analysis; the method has been described and applied to health care system behavior elsewhere (McClure, 1976a). We briefly explain the method in Section 3 and apply it to regulatory behavior in Section 4.

3. Structural Incentive Analysis of Organizational Behavior

The object of this and the next section is to explain the perverse observed behavior of regulatory agencies and regulated industries reported in the previous section. Since we can safely assume that the great majority of regulatory officials are competent and honorable, there must be perverse underlying incentives and structural characteristics intrinsic in present regulation that lead well-intentioned regulatory agencies to induce undesirable and ineffective cost performance in regulated industries. By explicitly identifying these underlying structural features and incentives, we hopefully can design a regulatory strategy that can either remove or alter perverse incentives or overwhelm them with new, stronger counterincentives.

In identifying incentives, we must distinguish between incentives on the agency as an organization and incentives on the agency staff as individuals. In addition to external incentives placed on individual staff members by the agency itself, staff members have their own "internal" incentives or motivations, including a mix of such motivations as job security, agreeable work associates, interesting work, career advancement in position and income, professional respect and reputation, and finally aspirations to do a good job, perceived by themselves and others as socially useful. This mix of

internal motivations will vary from one individual to the next, some individuals being powerfully social-interest motivated, others more self-interest motivated, and most with a balance of both. However, even an agency initially full of high-minded, public-interest motivated staff will not guarantee continuing agency behavior that is in the public interest.

To see this, we may introduce a rather self-evident theory of general organizational behavior and evolution, not unlike the genetic selection theory of natural behavior and evolution. Any organization or agency may be loosely likened to a natural organism in a natural environment or ecosystem. At any point in time, the organism has an internal or genetic endowment shaping its behavior. However, genetic selection will favor those organisms whose behaviors enhance survival in the natural ecosystem. A species of organisms that fails to adapt its behavior to its ecosystem will become extinct. Just so, an organization (be it a company, a government agency, or whatever) exists in a larger environment or organizational ecosystem consisting of other organizations, pressures, and competing interests. A given organization has internal incentives, namely, its stated purposes and the motivations and competence of its staff, which in part shape its behavior. But an organization's behavior is also shaped by its environment. The organization may be said to have external incentives placed upon it by the organizational ecosystem to engage in behaviors which cause the organization to prosper in that ecosystem and to avoid behaviors which weaken or imperil it. If the internal and external incentives upon the organization are aligned, well and good; the organization will prosper. But, if they are antithetical, the organization adapts by altering or deviating from its stated purposes and by translating the incentives on the organization into parallel incentives on its individual staff. If it can do so, the organization will prosper; if it can not, it will eventually fail. Staff will leave (internal failure) or the organization will be starved, abolished, or restructured by the external forces of the environment. Thus, surviving organizations are those that have sufficiently translated external environmental incentives on the organization into individual incentives on its staff members or that have replaced staff members who cannot be so motivated (i.e., a selection principle operates upon staff). Organizations which fail

to so motivate or replace staff eventually do not survive; they may be said to have failed to adapt and become extinct.

The above theory of organizational behavior and evolution has important implications for regulatory strategy design. It implies that no matter how a regulatory agency is internally organized or how well-motivated its staff, the agency cannot persist in behavior which violates the incentives placed upon it by the larger regulatory ecosystem or it will perish. Thus, suppose the regulatory agency is initially staffed with well-intentioned individuals bent on public-interest behavior. Assume that the staff can technically identify and carry out such public-interest behavior. (This itself is a large and doubtful assumption, see Section 4C.) However, suppose that such public-interest behavior is not welcomed by many organizations in the larger regulatory ecosystem. And, more crucially, suppose they can cause it to fall into legislative or executive disfavor that might result in jurisdictional limitations, staff and budget cuts, or even abolition or replacement of the agency. Staff will begin to feel their interests threatened. The more self-interested staff will begin to advocate compromises in agency behavior. If they win out, the more social-interested staff will begin to leave or be forced out. If the social-interest staff wins out, the agency will persist in public-interest behavior. This then provokes the threatened interventions from outside pressures in the larger ecosystem: jurisdictional restrictions, staff and budget cuts, replacement of leadership, agency reorganization, or outright abolition. Eventually the agency is emasculated or reorganized to behave in a way the ecosystem will tolerate. Whether the staff is willing to compromise or not, the result is the same: the agency either adapts its behavior to the larger ecosystem incentives or perishes.

The above argument leads us to postulate that systems of people behave the way they are structured and rewarded to behave. The aim of structural incentive analysis is to identify the fundamental structure and incentive factors operating on the organizations and individuals of the system and to explain or predict the behavior of the system from these. By fundamental structure and incentive factors, we mean factors not derivable from other underlying fundamental structure and incentive factors within the system. A chain of structure and incentive factors operates in most systems. Fun-

damental structures that create derived incentives, and so on. It is the more fundamental factors that must be altered or countered if system performance is to change. We understand the term structure in its broadest sense, including not only the arrangements and relationships between people and organizations in the system but the process by which these arrangements are created. Structure thus includes all mechanical restraints on the freedom of individuals and organizations to act. Incentives are all the motivational forces that cause individuals and organizations to act.

Note that a change in a fundamental incentive will not necessarily have an instantaneous effect on system behavior; rather, as in the regulatory agency example above, it takes time for incentive effects to alter organizational behavior. But eventually the incentive balance will tend to determine behavior. (If system behavior is observed that cannot be explained by known incentives, then analysis has overlooked important incentives in the system; analysis must be continued until all major system behavior can be derived from identified, fundamental structure and incentive factors.)

The purpose of structural incentive analysis is better policy design. Thus proper regulatory design must take into account the larger regulatory ecosystem and the incentives it places upon a regulatory agency. All policy, including regulatory design, should take into account the incentives leading to poor industry behavior. It is less fruitful to prescribe the correct behavior of regulatory agencies or industry firms than to prescribe the conditions that create appropriate incentives on industry firms and regulatory agencies to behave correctly. The first approach demands heavy policing of behavior in possible conflict with incentives; the second aligns the incentives with desired behavior and requires little policing. As Schultze observes, "consistently ... we try to impose solutions without remedying the incentive structure, and equally consistently, the power of that incentive structure defeats us" (1977).

4. Structural Incentive Analysis of Command and Control Regulatory Behavior

In Section 2, we described the observed behavior of economically regulated industries and regulatory agencies. In this section, we attempt to identify the fundamental structure and incentive fac-

tors that produce this observed behavior. Since the same perverse performance is observed across all studied industries, it will not be necessary to explore the detailed structure and incentives on producers in each industry; it will suffice to assume that, where industry interests conflict with consumer interests, established firms will favor their own interests wherever possible. And, since command and control regulation presupposes weak or absent market forces, we may assume the major counterincentives on firms for pro-consumer behavior (beyond the fact that most industry people do not wish to harm consumers) in such conflicts comes from the regulation itself.

We may classify the suggested fundamental structure and incentive factors in three loose categories: (A) diffuse versus concentrated interest problems, (B) political setting problems, and (C) technical content and structure problems. In each paragraph below, we set out a fundamental structure or incentive problem. To give a feel for this problem, we usually also derive some behavioral consequences that result from it. In Section 4D, we then show how these fundamental structure and incentive factors in combination can explain the observed regulatory behavior of Section 2.

In order to anticipate potential problems, we have tried to be fairly exhaustive in setting out those factors that might affect direct economic regulation by an explicit regulatory agency or system of agencies. *We caution again that incentives produce general tendencies not absolute consequences.* We do not expect every structural feature and incentive listed to be present in every situation, and some incentives will be countered by others in ways not wholly predictable. Even alone, a given incentive will not be felt with equal force nor produce the most probable behavior in every organizational entity and individual. We emphasize these caveats because probabilistic exposition is often turgid and opaque. Therefore, for clarity and brevity, our language in this section may frequently be more absolutist and less probabilistic than strict precision would commend.

A basic purpose of the analysis is to distinguish those structure and incentive factors that are fundamental from those that derive from more fundamental structures and incentives. If we try to alter only derived incentives, the more fundamental incentive forces may defeat

us. Once the fundamental incentives are identified, we can survey the ones that are vulnerable to alteration or possible counterincentives and, thereby, design better policies.

A. Diffuse Consumer Interests versus Concentrated Producer Interests

A regulatory agency may be considered a referee between legitimate consumer interests and legitimate producer interests. But consumer interests are broad and diffuse and therefore difficult to mobilize through a regulatory process; whereas producer interests are sharp, concentrated, and, ironically, more easily mobilized in a regulatory process than in a market. Thus, a purely regulatory process unbalances the respective leverage of consumers and producers in favor of the producers. This is a central, almost inherent structural defect of command and control regulation that is extremely difficult to remedy.

1. *Consumer interests are broad and diffuse, whereas producer interests are sharp and concentrated.* Consumers have many interests beyond any particular regulated good or service. While their collective gain or loss from a regulatory decision may be substantial, the individual stake of any single consumer is usually rather small. Moreover, most regulatory processes are lengthy, drawn-out proceedings, often lasting months or years, and entail considerable expense to prepare and represent one's case. Thus, most consumers have neither the interest, the skill, the time, nor the money to mount the necessary effort to represent their interests and influence the countless regulatory decisions in all the many regulated areas that affect them. In contrast, producer interests in each regulated industry are sharply focused on their regulated good or service; and regulatory decisions mean life or death to them. There are fewer producers to mobilize; their financial resources are larger; and they cannot afford not to spend the necessary time, effort, and money to hire the best talent in order to influence favorably a critical regulatory decision. Thus, they have the interest, the skill, the time, and the money that consumers do not have. (Note that in a market, producers expend this skill, time, and money trying to influence consumer decisions through advertising and marketing; but, as long as the market offers real choices, each consumer has the ultimate leverage in his decision to buy or not to buy. Each consumer, not a regulator, is

the judge.) As an oversimplified illustration, suppose a regulated system allows producers to extract a dollar from every American and put it in their own pocket. Each consumer is out a dollar, and the producers collectively garner $200 million. Obviously, producers will be willing to spend a substantial fraction of these gains to perpetuate such a system. They will give contributions to legislators who see it their way and oppose legislators who do not; they will conduct public relations campaigns on the virtues of continuing the system, etc. How much time and money will consumers spend to oppose producers when their stake, assuming they are even aware of it, is only one dollar? Obviously, not much. Thus, in cases where it must decide between consumer and producer interests, the regulatory agency knows that if it decides against the industry, a well-organized, well-financed lobby will be out to attack it, whereas no equally strong counter constituency of the general public will rise up to defend it.

2. *The leverage available to consumers in a regulatory process is difficult to mobilize and favors unrepresentative consumer interests.* Consumer levers to influence regulatory decisions include: lobbying regulators, lobbying elected officials, voting favorable officials in and unfavorable ones out, and boycotts and demonstrations. Spontaneous mass voter demonstrations or consumer protests require the least consumer effort but are unlikely to be triggered by incremental regulatory decisions. Also, they are hard to focus and hard to sustain long enough to gain permanent results. They are useful as a kind of blunt weapon—an outer limit that regulators and politicians will strive to avoid.

   All the other levers are beyond the means of individual consumers and require organization and financing to carry out effectively. It takes skill, time, and money to become educated to industry complexities, gather and analyze industry information (not always obtainable by consumers), and prepare a case that will stand up to a well-prepared industry case. It takes further skill, time, and money to lobby that case through the regulatory process, court appeals, and legislative hearings. It takes a campaign to mount a nonspontaneous consumer demonstration. It takes a campaign to elect favorable officials. The agency head

is usually appointed, and the relevant legislators may be from different voting districts than the disaffected consumers. Also, voters seldom vote a candidate up or down on a single issue, let alone a regulatory issue that does not greatly impinge on them.

Even organized consumer groups appear to offer marginal or unrepresentative effect. Most consumers will neither participate nor contribute to such groups, both because the consumer has many other interests and because he will benefit from the group whether he helps it or not ("free rider" effect). Hence, these groups are characteristically undermanned and underfinanced, and the kind of consumers who do participate are seldom characteristic of all consumers. An exception to underfinancing occurs when a special interest group stands to gain from the consumer group and supports it with staff and money. In some cases, a group of highly motivated, zealous activists, usually with a larger ideology unsupported by a majority of consumers, can sustain a consumer group by sheer personal sacrifice. All these factors bias the kind of consumer voices heard by regulatory agencies and do not guarantee decisions in the broad public interest. Organized consumer groups do play a generally helpful, if usually marginal, role. But organized consumer groups appear inadequate to answer the problem.

3. *The leverage available to established producers in a regulatory process is substantial.* Producers have the same levers as do consumers and more, and they are already organized and much better financed and positioned to use them. They can therefore exert a strong voice on, and strongly reward and penalize, regulatory decisions. Producers are already expert on the industry and have access to its data; therefore, they can prepare a solid case. They already have an experienced lobby with continuing contacts with the regulatory agency and other relevant government officials. They can mount strong public relations efforts with the public and government officials to cast doubt on or discredit an unfavorable regulatory decision or the agency itself. They can appeal an unfavorable decision and exhaust agency staff and funds (and consumer group staff and funds) in lengthy judicial proceedings on a single technical point, thereby diverting the agency from any other actions even should the producers lose. They can trade

industry support on other issues for legislative support on industry issues (one-issue consumer groups cannot do this easily). They can give campaign contributions to favorable legislators and to the opponents of unfavorable legislators, especially those on the legislative committee that oversees the regulatory agency. (Poorly financed consumer groups cannot.) All of these moves can jeopardize the reputation, authority, staff, or funds of the regulatory agency.

4. *Consumers can seldom perceive most regulatory decisions, but they can perceive and oppose service failure and people put out of work even when in the consumer interest.* A final risk to the regulatory agency comes ironically from consumers themselves. Consumers are unlikely to recognize incremental regulatory pricing decisions that lead to a tight, efficient industry (pro-consumer decisions). Hence, the regulatory agency garners little consumer support to counter strong industry opposition. Consumers are unlikely to recognize incremental decisions that lead to a bloated inefficient industry (pro-industry decisions); hence, the agency gains little consumer support to oppose industry positions. But consumers can recognize regulatory decisions when lead to temporary or continuing service failure or which they cause producers to fail and lay off employees (even if there is excess capacity in the industry that should be closed in the consumers' interest). Such events can produce strong consumer and political backlash (supported by the industry and its unions) against the agency.

We may summarize these diffuse versus concentrated interest incentives as follows: In a regulatory process, the consumer voice will be poorly represented and poorly heard compared with the producer voice. And the regulatory agency has little reward and great risk for pro-consumer decisions that antagonize existing producers and great reward and little risk for decisions favoring existing producers. As a consequence, we can expect a general bias in regulatory actions favoring existing producers. One need not assume malice on the part of the agency (although outright capture is not unheard of). The agency will simply be conditioned by the incentive signals from the industry, the politicians, and the public to err on the side of existing producers whenever in doubt. (As will be seen in Section 4C,

there is always considerable room for legitimate doubt.) The agency need never grossly violate the public interest in any single decision, or even perceive itself as doing so. But over time the accumulated weight of incremental, moderately, but constantly, biased decisions will eventually strongly favor existing producers over consumers. This structural problem appears extremely difficult to counter, and it is only one set of powerful perverse incentives. We now turn to a second set.

B. The Political Setting

Regulatory agencies are created by government, operate within the structure of government, and are overseen by elected officials on whom they are dependent for authority, staff, and funds. Thus, regulation is inescapably imbedded in the political process, and this creates structure and incentive restraints on regulatory behavior. It is therefore simplistic to assume that regulatory agencies can be staffed with impartial, wise, and well-intentioned persons who can (or should) act unfettered by political pressures.

1. *Americans distrust government and support an elaborate, almost endless set of legal safeguards to protect individual citizens and groups against arbitrary exercise of government power.* Americans tolerate substantial gain and loss of individual income, property, and well-being caused by private economic decisions and forces. For example, a company may close a plant that is the major source of a community's employment without significant public outcry, but Americans distrust any individual losses created by government action. Such action is viewed as a possible abuse of government power until proven otherwise. Any individuals or group experiencing losses as a consequence of government (e.g. regulatory) action may avail themselves of an elaborate set of constitutional and legislated due process appeal procedures, which can delay government actions for months and years. Elaborate administrative appeal procedures are usually written into all regulatory legislation; and, after these are exhausted, the aggrieved party may appeal to the courts. As a consequence, even when a government action would create great overall social gain (or failure to act would create great overall social loss), an individual or group who would experience direct loss as a result of the action can tie

up the government endlessly by these appeal mechanisms. The converse is less true: individuals and groups who experience loss indirectly as a result of government failure to act have less recourse. They cannot appeal unless they can prove government was legally obligated to act, and the cause of their losses is more speculative and difficult to prove.

2. *Interest groups have greater leverage on elected officials than do individual citizens or the broad public.* Elected officials are subject to the same diffuse versus concentrated interest incentives as are regulatory agencies, and they face the same imbalanced risks and rewards. Thus, politicians are reluctant to take actions which might create or offend one-issue interest groups. For example, while polls suggest the majority of Americans favor some form of gun control, a special interest group has forestalled any legislation because it commands a substantial body of one-issue voters; it makes no difference to such voters whether a politician is a statesman or a dunce, or what his views on other issues are, they will vote him up or down on his position on gun control—a skilled, well-financed lobby of these unrepresentative consumers and firearms companies will help him or hurt him. This incentive on elected officials reinforces the previous incentive described in Section 4B(1). A government action that would produce large, but diffuse, social gain at the expense of small, but concentrated, losses to a few individuals or special interests may turn these aggrieved groups into a one-issue constituency opposing politicians favorable to the action. But such an action is unlikely to create any broad counterconstituency of support for such politicians. (Also a small group on a national scale may be a very large group in the district of particular legislators.) The resulting reluctance of elected officials to create or offend one-issue interest groups unnecessarily, combined with the elaborate appeal procedures, creates what Schultze (1977) calls the "do no direct harm" principle of government behavior: government finds it extremely difficult and time-consuming to take actions that create direct losses to particular groups, even when these losses are greatly outweighed by the broad social benefit of the action. Since almost any major government action involves losses for somebody, almost all government action will be cumbersome and slow. The fundamental nature of these incentives makes the

"do no direct harm" principle extremely hard to remedy. Americans are wisely reluctant to hedge legal safeguards that have served them well for two centuries. And it is extremely difficult to create representative pro-consumer counterforces to oppose the leverage of focused interest groups.

3. *Regulatory agencies are subject to elected officials. This rather obvious point simply emphasizes that the political forces on elected officials are translated to the agency itself.* Elected officials appoint agency heads, can call them up for hearings and praise or embarrass them, can modify the jurisdiction of the agency by legislation (or abolish or restructure it), and can decide its staff positions and budget. It is simplistic to assume that regulatory agencies can or should be completely insulated from oversight beyelected officials. Moreover, elected officials, knowing they will be held responsible in any event, will not permit more than partial insulation of regulation from legislative authority. This means that regulatory decisions will be determined as much by political muscle as by the broad public interest.
4. *Unrepresentative oversight.* The legislative committee with oversight of the regulatory agency is not necessarily representative of the broad consumer public. It is representative only of the districts of the legislators on the committee. Moreover, since most committees have several responsibilities, only one or two legislators may give particular attention to the agency; or the committee may be controlled by its chairman or a few other powerful members. The industry can be counted on to reward or penalize these few legislators as much as it can for favorable and unfavorable decisions. As long as pro-industry decisions do not upset their district voters or their influence with other legislators, these legislators face unequal incentives favoring the industry. And the agency must respond to these legislators whether they have resisted or succumbed to these incentives.
5. *Noble language is cheap but tax monies are dear.* Noble statements win favorable press and public attention for elected officials and cost little. Raising taxes attracts unfavorable attention. Consequently, legislators frequently give regulatory agencies magnificent responsibilities (many of them technically impossible or prohibitively expensive) but appropriate inadequate funds

to carry them out. Also, to avoid antagonizing industry interests, legislators may compromise the jurisdiction and sanctions of the agency. Indeed, compromise may be necessary to obtain any legislation at all. The resulting funding and authority incommensurate with responsibilities often lead the agency to spread itself so thin that it cannot regulate any aspect of the industry effectively. This structural defect is remediable by more realistic design, but only if the legislators are willing to enact it and resist the pressures against it.

6. *Neither the political process nor the mass media lend themselves to subtle, complex arguments and strategies.* As social problems become more complex and government intervention in society increases, strategies to effect improvement become more complex and often require sustained effort over several years to produce results. These strategies are difficult to initiate and sustain. Americans are impatient with slow social processes and demand quick results, even when this is impossible. Various interest groups, otherwise supportive of a complex strategy, can emasculate that strategy simply by each fighting a particular element inimical to them; over time one or two vital elements get picked off in this way, frequently vitiating the effectiveness of the remaining elements. Or elected officials become anxious because of public impatience with the lack of quick results and divert effort to other, more precipitous schemes. The mass media make it difficult for legislators to explain complex strategies or defend them when results are slow in coming. The media want catchy statements and dramatic results, not complex arguments and evolutionary progress. Legislators cope with this by projecting an "image" so that voters who respond to this image have confidence that the legislator is acting as they would act in complicated situations. Hence, legislators are reluctant to take any action that could be taken out of context by their opponents' rhetoric and used to cloud their image. Complex strategies usually include several actions vulnerable to simplistic, rhetorical twisting, so public debate is often reduced to the lowest common rhetorical denominator. The result is that potentially effective, but complex and slow-acting, policies are often driven out by simplistic, ineffective policies.

7. *Errors of commission have much higher political risk than errors of omission*. Elected officials, prosecutors, and the press obtain heavy rewards for public attention. Given American distrust of government, public attention is easily captured by government actions that fail. Hence, errors are sensationalized, and the responsible government official is then publicly flagellated by the press and political opponents alike. While public scrutiny is indispensable, this contributes to several harmful consequences. First, government becomes extremely risk-averse. It is better not to act than to risk an action that might fail (or do direct harm) because the consequences of failure to act are always speculative and more easily defended against than the consequences of action. Second, government relies excessively on rules. Because they are not subject to detailed public scrutiny or trial in the mass media, private executives, unlike public officials, can defend their errors and failures by pointing to their "batting average." But the public official is berated for his "strike-outs" and not allowed to divert attention to his batting average. (This is particularly true when his strike-out has political implications that one set of proponents can sensationalize to use against political opponents.) His usual defense then is that he followed the rules. This diverts blame from the regulator to the rules. Then to show visible concern that the error not be repeated, government must promulgate new expanded rules. Since no set of rules can cover all conceivable cases, the possibility for expansion is infinite. Rule-writing is cheap, it is a visible (if naïve) way to show concern that errors not be repeated, and it protects the bureaucracy in future actions. These factors contribute to rapidly expanding rules that rigidify the industry and raise its costs and to the substitution of rules in place of discretionary judgment. To stand up to industry and cope with innovation, a regulatory agency must be able to exercise judgment and take reasonable risks. Yet, democracy requires public scrutiny, and the incentive pressures underlying risk-aversion and excessive rule-making are not easily altered by regular design, only by larger changes of attitude in society and more sophisticated legislatures and regulators.

8. *Absence of public and legislative sophistication about incentives.* Government policies tend to ignore incentives both on regulatory agencies and on industry firms, and the power of these incentives consistently defeats the objectives of policy. Part of this policy failure to consider incentives can be attributed to incentive factors already mentioned: incentive strategies tend to be complex and slow acting; threaten the established positions of producers and may cause direct losses to particular groups, who will use their leverage to neutralize the strategy; are technically difficult to design (see Section 4C). But part of the policy failure to consider incentives arises because policy makers and the general public do not appreciate the central importance and power of incentives. Potentially, this can be remedied by education.

   Failure to consider incentives has several adverse consequences. First, government fails to consider alternative incentive-based options that might work better than regulatory policy options. In some cases, well-designed regulation may be the best policy, but not in all. Second, government fails to build incentives into regulatory policies. For example, much existing regulation falls equally upon well-performing producers and poorly performing producers. If a firm cannot escape regulation by performing well, it has no incentive to perform well, only an incentive to fight the regulation. Third, government places unrealistic responsibilities on regulatory agencies, responsibilities beyond their capability, damaging the credibility of government. Thus, present regulatory design is frequently not only unrealistic about the incentive restraints on regulatory performance, it also heightens the incentives on industry to resist the regulation.

   Lack of sophistication about incentives plus the vulnerability of complex arguments to simplistic criticisms produces another adverse government behavior: government tends to equate equity with uniformity. Policies that treat well-performing firms differently from poorly-performing firms can be attacked on the plausible, but erroneous, grounds that they are unfair. Because such policies threaten the established balance in the industry, the industry will resist them. And because performance criteria are usually complex and technically difficult to design (see Section 4C), the industry can usually cast doubt on the criteria, making the claim of unfairness more plausible. On the other hand, pol-

icies and regulation that fall equally on all producers do not threaten the established balance in the industry and can be plausibly, but erroneously, defended as equitable (i.e., both the fat guys and the thin guys must go on the same diet).

9. *Civil service impediments.* As employees of government, most regulatory staff are subject to civil service rules. Originally designed to protect against patronage abuse, civil service rules now seem almost fiendishly designed to overly protect incompetent and obsolescent civil servants and frustrate able ones. Only with extreme difficulty can a civil servant be demoted or fired; he can usually only be moved sideways or up. This removes a major incentive for individual performance. It also makes replacing obsolescent skills difficult. As circumstances change and require new skills in an agency, it cannot easily replace obsolescent staff with more appropriate staff unless it can find another agency that will take its obsolescent staff. Each skillful agency manager is thus trying to push his incompetent and obsolete staff onto other agencies. And new agencies often find they inherit everybody's discards whose skills seldom match the agency's needs. To obtain qualified staff, a typical ploy of agency heads is to try to create additional positions so they can bring in new people. Thus, bureaucracy grows in size without eliminating its deadwood. The atmosphere is debilitating to civil servants, creating a climate of indifference because poor work goes unpenalized. And competent civil servants become frustrated, and many eventually leave. This produces a selection mechanism that tends to force out many better performers and retain many poorer performers who could not be hired privately at their government job and salary level. It is a credit to many dedicated civil servants that they perform as well as they do in this milieu. But this selection mechanism saddles many regulatory agencies with staff inadequately skilled to do battle with well-financed, entrenched industries.

Large numbers of overmatched, inadequately motivated staff not only dilute the quality of a bureaucracy's action, they make it sluggish. Even adequately skilled staff want to justify their existence or at least fill in time; therefore, they invent work—an enormous amount on internal paper shuffling, procedural meetings, and memo writing goes on. Such make-work not only avoids

or postpones the risk of real action, it proves to the individual and to others that he is working and that his job is necessary and worthwhile. All these individuals attempting to avoid risk while pressing to make some little visible contribution to each action passing through their bureau slow government's ability to respond, despite many able staff in the bureaucracy. This major structural-incentive defect is technically remediable by civil service reform. Some progress is now being made on civil service reform, but the adequacy of the reform is unknown. Such reform is likely to be slow and resisted by public employee unions.

10. *The relatively short terms of elected officials give them correspondingly short time horizons and militate against long-term strategies.* As noted, in a complex world effective strategies must usually operate over several years. But elected officials need quick dramatic results to which they can point with pride at the next election. They gain political advantage if they can avoid politically difficult strategies, and they gain little political advantage with long-term strategies whose benefits and credit will accrue mainly to their successors. Since incentive strategies are effective but slow acting and often involve political and economic pain before their benefits begin to show, they are often not very attractive to elected officials when compared with immediate dramatic actions which appear to be doing something even if they are ineffective (especially if any visible adverse consequences will not show up until after the elected officials have left office).

11. *Command and control regulation subjects government officials to substantial temptation.* When regulatory decisions mean life and death to the financial interests of a large industry, there will usually arise occasions where a few unscrupulous industry officials will offer substantial financial inducements to legislators and regulatory officials to see things their way. The vast majority of business and government officials are honorable and would repudiate such tactics; indeed, as the other structure and incentive weaknesses of regulation suggest, illegal tactics are seldom necessary and quite legal tactics suffice. But bribery and corruption do occur in both the public and private sector. It seems wise to avoid policies that unnecessarily extend the opportunities for temptation that will impugn the integrity of government.

C. Technical Content and Structure

The above imposing array of incentives antithetical to good regulation is further compounded by the technical vulnerabilities of the regulatory task itself. These vulnerabilities will be exploited by the forces opposing good regulation.

1. *Industry inputs and outputs are numerous and complex; many are unknown; and information costs are often high. Costs and benefits are usually difficult to quantify; many are unknown; and most benefits are finally subjective value judgments.* The more extensive the regulatory intervention in an industry, the more difficult and expensive it becomes to acquire and analyze the necessary information at a central office for regulatory decisions. In the absence of any market forces, regulatory intervention is likely to be very extensive. Regulatory decisions may have to be made on the relative costs and benefits of literally thousands of types of transactions. The time and expense to obtain such information will be large. Moreover, benefits are often unknown, difficult to quantify, and involve inescapably subjective value decisions. (For example, what risks are produced by what concentration of asbestos fiber in water, and when does this risk exceed the cost of closing a particular factory with asbestos fiber effluents and putting its employees out of work, perhaps devastating a community's economy? This particular decision—the Reserve Mining case in Minnesota—required seven years of acrimonious judicial appeals and enormous legal expenses to resolve. As a second example, after ten years of hospital rate regulation by Medicare and several states, there is still no accepted way to determine whether or not a hospital is efficient.) The necessity for decisions before all information is known inevitably opens such decisions to challenge by adversely affected parties, who will appeal and demand new studies, more detailed information, and more rigorous criteria and methods. (In the above example, a rigorous research study of the cancer risk of water-borne asbestos fiber would require twenty or thirty years to reach definitive results because many cancer agents are slow acting.) Difficult and expensive as such information requirements and regulatory decisions may be in a static context, the problem is dwarfed by keeping all these thousands of decisions continually up-to-date with chang-

ing technology and circumstances in the industry. This latitude of uncertainty and incomplete information, coupled with endless appeal mechanisms, assures sluggish regulatory response when regulation is extensive.

2. *No standard of comparison.* In markets, consumers make decisions by comparing the price and efficacy of one product with another. But a regulatory agency cannot accurately measure whether its industry is efficient and effective by comparing one firm with another if all are led by regulation to engage in similar inefficient behavior.

3. *Profits are measurable and can be compared; American attitudes toward profit are ambivalent.* One quantifiable cost factor in an industry is producer profits, and it can be compared with profits in other industries (usually using return on invested capital as the index). In the private sector, Americans aggressively seek profits; and economists recognize profit as a necessary signal to draw capital and promote efficiency. In regulated industries, Americans tend to equate profits with profiteering. Both because it is one of the few indices that can be measured and because the public is so sensitive to it, regulatory agencies and the press give obsessive attention to profits. The agency thus has a strong incentive to hold down industry profit to levels equal to or below that in other industries. We can also show that no comparable restraining force acts on industry costs. Because efficient costs of production are almost impossible to determine in the absence of comparable alternatives and unchallengeable standards, the simplest regulatory expedient is to accept most incurred costs as legitimate costs. This expedient is reinforced by producers. Efficiency is hard and demanding (for example, employees must be laid off when efficiency demands it). If there is no profit or other incentive reward for efficiency, producers will not seek efficiency. They will instead seek revenue growth and security. Larger revenues not only mean security, they mean higher salaries, especially to top management, and more money to engage in activities of interest to the firm and its employees. A second incentive to revenue growth arises if the regulatory agency uses return on invested capital as the measure of profit; more investment, demanding more revenues, means more profit. Hence, the

industry will bend its considerable leverage to justifying revenue-generating activities, all in the name of the public interest. Finally, the regulatory agency knows that it will be judged to some extent on the health and tranquility of the industry (particularly in the absence of better measures) and that it will be castigated if there is service failure or employee layoff—see specially Sections 4A(4) and 4B(2). Lacking unchallengeable standards and comparisons to defend itself or to arouse the (difficult to arouse) public, the agency will have a tendency to accept incurred costs as legitimate costs, either voluntarily or under pressure. It will then set regulated prices equal (with minor modifications and much squabbling at the edges) to incurred costs plus a small profit. And the industry will engage in cost-generating activities that increase costs in incremental and tolerable steps and so increase revenues.

4. *Monolithic regulatory decisions cannot satisfy all diverse consumer tastes.* Even pluralistic markets cannot please all consumer tastes. But the more centralized and extensive the regulation of an industry, the more inevitable that broad-brush regulatory decisions must aim at average tastes and offend sizeable consumer minorities or do them "direct harm." Sufficiently unhappy consumers will appeal the decision to the agency or courts, which is proper and desirable. But often, because there is no downward pressure on industry costs, the agency will buy off aggrieved consumers by mandating the industry to engage in uneconomic behavior to satisfy them. This structural deficiency can be somewhat ameliorated by decentralizing regulatory decisions, but only if the decentralized regulators are under sufficient incentives to make proper decisions.

5. *Complex regulation requires expertise usually available only from the industry itself.* Thus, the regulatory agency must usually acquire some staff formerly with the industry and who expect to return to the industry in many cases. Even when such persons attempt to be wholly objective, and we suspect most try to be, they cannot entirely avoid the industry perspective of their experience or their many friendships and loyalties in the industry. (Indeed natural friendships and loyalties are likely to emerge in the constant contact of all regulatory staff with industry people.) When such persons are deliberately less than objective, they can

do much mischief. This structural weakness can be minimized by assuring a balance of expert staff in which industry personnel do not dominate.

6. *The regulatory staff are always outnumbered*. For every regulatory official, there are hundreds of equally competent industry officials, well-paid to outsmart the regulatory agency. They will find all the holes overlooked by the agency in the regulations, and the sheer demands on agency staff will assure that not all perverse industry behavior will come to the attention of the agency.

D. Consequences for Regulatory Behavior

Under this staggering array of fundamental structural and incentive factors stacked against good regulatory performance, regulatory failure seems less surprising than unavoidable. Most of the observed regulatory failure in Section 2 has already been discussed, but we quickly summarize a few of the arguments. The reader can supply others; indeed, a discouraging result of the analysis is how many factors combine and reinforce each other in so many different ways to generate the same undesirable behavior. This makes it difficult to find vulnerable points where incentives can be altered to produce improved performance.

Cross-subsidy of uneconomic activity results because the forces opposing cross-subsidy are broad and diffuse and therefore weak, while the many forces favoring uneconomic activity are concentrated and strong. The incremental cost of an uneconomic activity, when spread broadly and thinly and almost invisibly (no taxes need be raised) over all consumers, will provoke little tangible consumer pressure against the regulatory agency or elected officials. On the other hand, special interest producer and consumer groups desiring favored treatment can bring strong and continuing pressure on the agency. For example, citizens and merchants of a small town lobby incessantly for uneconomic air service or passenger rail service for their town; an airline or rail line (now Amtrak) agrees to provide the uneconomic service at a price below cost in exchange for a more profitable route elsewhere; the politicians of the area support the deal; the passengers on the more profitable line will never know they are subsidizing the uneconomic route; faced with these democratic forces, the regulatory agency agrees to the deal in the plausible name of a broader transportation system. Thus, cross-subsidy of such

uneconomic activities becomes a principle tool for regulatory agencies to satisfy concentrated, unbalanced pressures from producers, consumer minorities, and politicians who want the activity and who might otherwise harm the agency if it resists.

Producer protectionism results from the same underlying imbalance of forces on regulatory agencies and elected officials mentioned above. It is important to note that these forces are not always anti-consumer or even pro-industry, but they are always pro-existing producers. It is existing producers who have the unequal leverage to protect themselves. While they may fight among themselves over market shares, they will unite against new competitors. The best means for existing producers to protect themselves against efficient new competitors is regulation of entry and innovation. Then when a new competitor or innovation threatens existing producers, they can mobilize their considerable influence on the regulatory process to limit or exclude it. This is much cheaper and less demanding for existing producers than competing against the new competitor or innovation in a market. This explains why entry controls are so often supported, if not actively proposed, by producers. Regulators accept entry authority for a variety of reasons beyond just unbalanced producer pressure favoring entry controls. First, they usually believe they can abet the public interest with such authority (keep out bad producers and cutthroat competition) even though experience contradicts this hope. It gives them additional authority to satisfy the pressures upon them. They also can limit the spread of an uncertain innovation that might cause disruption for which the agency would be blamed. Finally, having created the peace among interest groups with various uneconomic cross-subsidies, the regulators cannot afford to let an efficient new competitor enter and drive out inefficient firms engaging in these uneconomic activities, thereby upsetting the hard-won peace. These factors explain the widespread prevalence of entry controls in price-regulated industries.

Innovation is limited partly because of the inevitable sluggishness in keeping hundreds of regulatory decisions up-to-date, partly because existing firms will resist an innovation by any one of them or by a new firm that would upset the existing balance in the industry, and partly because any innovation is accompanied by a risk that it might not work out and therefore produce public dissatisfaction that will fall upon the agency. The innovation is then limited or excluded

through the use of entry controls and regulated cost structures.

Inefficient operation derives from both the forces leading regulators to equate regulated prices with historical cost and the forces leading to entry controls on new firms and innovations. Because producers know that their costs are virtually guaranteed, that higher costs mean higher revenues, that there is no profit or other reward for efficiency or innovation, and that there is little reason to fear entry by more efficient competitors and innovations, then producers have virtually every reason to ignore the hard demands of efficiency.

In all these perverse behaviors, the rewards to the regulatory agency for permitting the perverse behavior are high and the risks are low, whereas the rewards for opposing the perverse behavior are low and the risks are high. No malicious or corrupt intent on the part of regulators need to be assumed. The incentives compel the agency to buy the peace by assuring that nobody's share of the pie gets smaller; the agency satisfies conflict by allowing the size of the pie to increase so that it can offer increased shares or new shares to contending interest groups. The consumer gets stuck with the cost of the pie.

5. Structural Incentive Analysis of Health Care Regulation

The previous section has shown that general regulatory failure is not a consequence of incompetence or corruption or not trying hard enough or not having adequate regulatory power. It is the result of policies and regulatory design that do not adequately recognize the full structure and incentive difficulties facing good regulation. People in government are neither more nor less competent and well-intentioned than people in the private sector; people in both respond to the structure and incentives placed upon them by the system. This section considers whether there is anything special about health care that might mitigate these difficulties. In particular, is there anything that might lead cost regulation of health care to succeed where in other industries it has failed so badly? Our conclusion is that, if anything, the difficulties in health care may be worse, with one powerful exception.

First, regarding cost-benefit decisions, benefits of health care are even less quantifiable and less known than for most other industry products. Many health care services and benefits are almost indefinable and intangible (see Section 4C[1]). Second, the present health care system is more monolithic than most, and economic alternatives for

comparison scarcely exist (see Section 4C[2] above); note, were it not for the HMOs, almost no independent comparative practical standard to suggest the inefficiency of the traditional system would have been available). Third, health care regulation requires considerable medical expertise, and provider incentives are not all identical to public policy objectives (see Section 4C[5]). Fourth, physicians and hospitals are already well-mobilized to use leverage in the regulatory process; they are powerful, sophisticated, well-financed lobbies, and already dominate most health care regulation (see Sections 4A[3] and 4B[2]). Fifth, while consumers generally make adequate, if not perfect, decisions with respect to their health care, they cannot defend these decisions with the expertise needed to stand up against providers in a regulatory process; coupled with their high respect, even awe, of providers, this lack of medical sophistication suggests consumers will be a poor counterbalance to providers in a regulatory setting (see Section 4A[2]). Sixth, medical care is almost a "sacred cow"; objective arguments on costs and benefits are extremely vulnerable to simplistic rhetoric (see Section 4B[6]); e.g., "human life has no price" can defeat objective evidence that much medical care has little connection to human life, that equal health can be achieved with much less medical care, and that some underemphasized types of health care can create more health per dollar spent than some other overemphasized types of health care. Any loss of human life that can be remotely connected to a regulatory decision will invite terrible harm upon the agency even if its decision was sound (see Section 4B[7]). These and other arguments suggest that health care regulation is not likely to be any exception to generally observed regulatory performance. If anything, it may be even more vulnerable.

There is one powerful exception to the above arguments that may vitiate this conclusion, at least in part. Unlike other regulated industries, in health care, government itself is a very large buyer. This gives government a substantial incentive to contain health care expenditures. Indeed, it is escalating public expenditures for Medicare and Medicaid that have continually pressured the government to intervene in health care in the first place. How large government expenditures must be before government will develop the political will to effectively restrain the health care system is not clear. The British government finances and operates virtually all health care and achieves excellent

cost restraint, although it pays a substantial price in the bureaucratic rigidity, inefficiency, and undercapitalization of its health care system. The Canadian government finances and regulates most health care, but the system is largely private, and there are indications that some restraint is starting to occur. It is possible but not certain that present U.S. government health care expenditures are escalating sufficiently to produce effective controls eventually.

However, even if we assume that government has the will to restrain health care expenditures to a reasonable level, there is little assurance that it will do so in such a way as to eliminate uneconomic cross-subsidies, producer protectionism, rigidity, and inefficient operation. All the above arguments are still operative. Even if costs are restrained, we may simply get an inefficient, noninnovative, unresponsive health care system for our money. Indeed, such protectionistic results may be the political price of gaining reasonable expenditure constraint. Effective expenditure restraint will create considerable political opposition from providers. Once expenditures are constrained acceptably, government would lose its principal incentive to intervene further in the system in order to make health care efficient and responsive. Therefore, as a political quid pro quo for constraint, government may well allow providers to allocate the constrained funds according to their professional interests and largely independent of need for efficiency.

We conclude that, with the exception of government as a large buyer of health care, the structure and incentives in health care regulation are even less conducive to effective direct economic regulation than in most economically regulated industries. I is possible, but not certain, that command economic regulation may contain costs; but, without substantial change in the regulatory incentive structure, such regulation may harm access, efficiency, effectiveness, innovation, and responsiveness to consumers.

6. Implications for Policy

The discouraging results of the foregoing structural incentive analysis suggest that command regulation of medical care is highly vulnerable to regulatory failure. Of course, any firm and final conclusions regarding a particular command regulation strategy must rest on a detailed structural incentive analysis of that strategy in comparison with alternative strategies. In some cases, command regulation may

well be superior to the alternatives. But the sheer magnitude of structural and incentive defects in command regulation generically, many of them seemingly almost beyond the power of policy to alter, suggests certain conclusions. Confronted with problem performance in the private sector:

> Market reform strategies, if sound and feasible technically and politically, appear more likely to work well than command and control economic regulation. Thus, policy makers should consider first whether they can intervene to create conditions that will strengthen competitive market forces. Because effective markets have intrinsic incentives for efficiency and responsiveness, only modest regulatory oversight is needed. Therefore, inefficient producers usually cannot seek relief through regulatory influence because such regulation lacks authority to extend much relief. (Government bail-out of inefficient producers in a market is not unheard of, but it is infrequent because it is so visible.) While markets are not appropriate to all goods and services and market reform is difficult to design and achieve, it seems worth trying wherever it is appropriate.
>
> Where market reform seems possible but inadequate alone, policy may do best to pursue both market reform and command economic regulation together, rather than give up on the market entirely. Because market forces and command economic regulation are highly incompatible, this combination strategy is not an obvious or easy solution and may well be impossible. Policy makers should probably try to maximize all possible market forces and reduce command regulation to an absolute minimum. Care should be taken in designing the regulatory structure so that neither producers nor regulators can, intentionally or unintentionally, use the regulation to escape market forces. Such a combination strategy, if it is possible, may help alleviate the weaknesses of either market reform or command regulation used alone.
>
> Where market reform is impossible or inappropriate, command regulation is the only alternative. The regulation should then be structured, insofar as possible, to supply the incentives for good performance that an effective market would otherwise provide. Such performance-oriented incentives should be placed not only

on the producers but on the regulators as well.

If neither a market reform strategy nor a command regulation strategy can be designed with structure and incentives superior to the existing private system, the best policy would be to do nothing until the situation is altered by natural causes.

In short, the structure and incentives of command economic regulation compromise the assumption, so seemingly simple and obvious on the surface, that direct public economic controls can easily remedy market failings over the long run. The basic argument for command regulation is not that it will perform terribly well. We have little experience or theory that this is likely. Rather, if a market reform strategy is technically or politically infeasible, there is no recourse but to command regulation. In this case, policy makers must either design a regulatory structure that alters the incentive weaknesses identified above sufficiently to outperform the existing private system or else content themselves with a less than perfect world.

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Center for Policy Design

The Center for Policy Design was founded in 1981 as the Center for Policy Studies when Walt McClure left the Minneapolis-based Interstudy, a health policy think tank where he had worked under the leadership of Paul Ellwood since 1969. At the Center McClure developed Large System Architecture, both a general theory of why organizations do what they do and a set of methods to design and carry out system redesign strategies to correct the incentives that a system places on the organizations within it, if flawed, to align with the goals society has for that system and its organizations.

With these methods he and his colleagues at the Center developed a health care system reform strategy to get better quality care for less cost, and developed a National Health Insurance proposal consonant with this strategy. McClure assisted Medicare, Pennsylvania and Cleveland to implement the first step of the strategy, severity-adjusted outcomes assessment of providers, before his retirement in 1990 for medical reasons. That work was chronicled by the Wall Street Journal in 2009.

Around the time of McClure's retirement the Center became active in public education system redesign under the leadership of Ted Kolderie, through the project Education|Evolving. Kolderie and his colleagues established themselves as influential thought leaders and actors in American education reform by working with states and national policy makers on the architecture of the K-12 system, and recently have become involved in the redesign of schooling.

Beginning in 2010 the Center became home to the Minnesota Education Policy Fellowship Program (EPFP), facilitated in partnership with the Washington-based Institute for Educational Leadership (IEL). Begun in 1975 the fellowship program has almost 500 alumni in the state. (Until 2010 the fellowship had been hosted by the University of Minnesota.)

In 2014 the Center changed its name to the Center for Policy Design to better reflect its actual focus from the beginning, not just studies but development of actionable policy strategy at the system level.

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Index

Figures (including charts, diagrams, etc.) are noted in the index as f.

Acton, Lord, 124
Adams, John, 114
Affordable Care Act. *See* Obamacare
Agriculture, 81-85, 87, 89, 105-108, 159
Alger, Horatio, 77, 147
American Revolution, 88, 97, 102, 104-105, 115
Anti-trust laws, 127-129
AT&T, 72

Bell Labs, 58, 72, 74
Bill of Rights, 119
Borlaug, Norman, 91-92
Burke, Edmund, 73, 177
Butler, Lewis, 52, 55

Cameron, William Bruce, 77, 138
Capitalism, x, 9, 92, 132, 154-156, 166
Center for Policy Design
  development of, v, 20-24, 42, 44-45, 55, 66, 221
  works of, ix-x, 1, 71-72, 222
Charter Schools, 21, 28-29, 31-33, 42, 44, 46, 66
Civil service impediments, 208-209
Cohen, Mark, 79
Collective action, 13, 59
Complex arguments and strategies, 205
Constitution
  goals of, 65, 70, 104, 110-112, 118-120, 136-138, 146
  obligations of, 102-103, 129-132, 142, 157, 181
  powers of, 78, 89, 92-94, 125-127, 202. *See also* Preamble to Constitution
Consumer groups, 200-201, 213
Continuous System Improvement, 8, 11

Darwin, Charles, 1, 59, 82
Decentralization Theorem/Principle, 5, 13, 33-35
Declaration of Independence, 64, 75, 102, 112, 118-120, 125-127, 137
Depression, 1, 21, 52
Designing future models, 14-19, 21
Diffuse vs. Concentrated Consumer Interests, 197-203
Distrust of government, 202-203, 205-206
Dodd-Frank Reform, 94, 180
DeVos, Betsy, 46

Education|Evolving, 21, 221
Einstein, Albert, 31, 170-171
Ellwood, Paul, v, 21, 42, 54-55, 66, 221
Enlightenment, 84, 88, 139
Enthoven, Alain, 43, 55, 189
Errors of commission/omission, 205-206

Finns (Finland schools), 46
Franken, Al, 63
French Revolution, 89
Future models, 100-101. *See also* Designing future models

Gecko, Gordon, 162
GI Bill, 6, 175, 177
GINI Index, 96-97, 133, 134-135f, 136, 140
Goals
  of society, 14-17, 34-40, 66-69, 74-78, 111, 117-128, 131-133, 166-168
  of systems, 42, 49, 56-57, 61-65, 90, 100-101, 136-138

Grantmaking, 53, 58, 71-73

Health Care system redesign, 2-3, 21, 25-28, 56
Health Maintenance Organization. *See* HMO
Hill-Burton grants, 190-191
HMO, 21, 42, 47, 54-55, 66, 192, 216
Hobbes, Thomas, 79, 105
Hunter-gatherers, 79-87, 105-107

Incumbency
 of power, 84, 87-90, 92-94, 107-108
 of wealth, 95, 109, 141, 157
Inefficient operation, 190-192, 215, 217
Inequality, Runaway,
 character of, 141, 150, 157
 escalation of, 3-4, 66, 78, 94, 101, 142f
Informed Consumer Choice, 21, 25-28, 43, 47, 56, 72
Interest groups, 17-19, 200, 203-205, 214-215
InterStudy, v, 21, 42, 55, 66, 221
Invisible hand, 48, 56, 162, 166

Johnson, Jeff, x, 1

Kleptocracy, 97, 132
Kolderie, Ted, xiii, 21, 24, 44, 53, 221

Large System Architects
 design and, 56-57
 goals of, 65, 88, 154
 redesign and, 22-24, 73, 89
 roles of, 11, 14-20, 35-37, 54, 61-63, 69, 75, 98
Large System Architecture. *See* LSA
Liberty and Welfare (individual vs. general), 104, 112, 119, 123-124
Limitation (general principles), 126-128, 130, 137
Limited innovation, 190-192, 214-215
Lincoln, Abe, 147
Log jams, 18, 73
Loritz, Dan, 1, 53
LSA
 definition of, xii-xiv, 9, 117
 economics and, 38-40, 66, 152
 methods, 1-2, 14-20, 36-37, 57-58, 67, 95, 220
 role of, 38, 47, 54, 151
 theory of, 11-13, 21, 24, 33, 42, 45, 95, 221

Machiavelli, Niccolò, 19-20, 97-98
Macrosystem incentives, 12, 33-38, 67-69,74
Macrosystems (unsound), 12-16, 47-49, 52, 96, 147
Malperforming systems, 1-5, 8-14, 26, 49, 52, 67-69, 74, 146
Market Economies,
 about, 6, 57, 93, 100-101, 122, 131
 design of, 111-112, 117, 133, 138, 150-156, 162
 flawed, 89, 92, 108-109. *See also* Sound Markets, Unsound Markets
McClure, Walt, i, v, ix-xiii, 1-6, 42, 66, 221
McDonald, Tim, ix, 1, 53, 70
Mead, Margaret, 79
Medicare,
 about, 51, 55, 63, 169, 178-179, 192, 210, 216
 collaboration with, 21-22, 220
Medicare (Miami), 27
Medicare (Twin Cities), 26-27
Monopolies, 5, 13-14, 30-31, 51, 110, 127-129, 167-168, 190-191

NASA, 15-16, 60

Obamacare, 43, 63, 178-179
Opioid epidemic, 90-91

Pardee RAND Graduate School, ix, 54, 65, 73
Performance problems (of large systems), 14-15, 71-72, 75-76, 90, 136-137
Piketty, Thomas, 92, 156
Political Economy, 4, 38, 57-58, 137, 151-154, 163
Political setting, 197, 202-203
Pope Francis, 162-163, 181
Poverty, structural, 172-173, 175-178, 181
Pre-agriculture, 83, 105-106
Preamble to Constitution, 39, 64, 75, 83, 118-119, 125-127
Principle of Limitation. *See* Limitation
Private healthcare market, 26, 51, 153-156, 169-172, 175, 187-191, 215-219
Producer Protectionism, 190-191, 214, 217
Public education redesign, 20-25, 28-33, 46, 67, 117, 170, 175-178, 221
Public School Choice, 28-33, 42, 44, 66
Purdue Pharma, 90-91

Rand, Ayn, 162
RAND Corporation, 3, 43, 45, 53, 55, 58, 71-73, 100-101
Regulation, regulatory agencies, 4-5, 33-34, 184-193, 195-204, 206-216, 217-219
Rich, Michael, 73-74

Sahlins, Marshall, 79
Schultze, Ash, 186, 188-189, 196, 203
Short terms of elected officials, 209
Single Payer System, 26, 51, 169, 179
Slavery, 75, 81, 83-84, 106, 110, 173, 181
Smith, Adam
  contributions of, 2-3, 57, 94-95, 117-118, 150-156
  economic principles and, 96, 109, 132, 136, 162-168, 172, 179-181
  quotes of, 92, 139
  teachings of, 5-6, 45, 50-51, 69, 111-112, 121. *See also* Invisible hand, Market economies
Societal goals and policy, 15-16, 34-37, 117, 119, 125-126, 131, 144, 168. *See also* Goals
Sound Markets,
  conditions for, 5, 51, 56, 95-96, 129, 166-168, 175
  economy and, 74, 109, 125-127, 130, 179-181
  goods and, 151-152, 162-163, 165, 169
threats to, 155, 162, 172
Structural Incentive Analysis, 77-78, 95, 189, 193-196, 215-218
System incentives, 34, 38, 220
System redesign
  definition of, 8-12,
  effective, 15-16, 19-24, 36-37, 72, 220
  need for, 49, 52-53, 68-70
  strategies, 42, 56, 60.
  See also Health care system redesign, Public education redesign

Toward an Economics of Wellbeing, 131, 144
Trickle Down/Up, economics, 145-146
Tyranny
  causes of, 3, 101, 104-109, 114-115, 121, 123, 150
  protections from, 36, 84, 89, 102, 110-113, 157

Union School District (Tulsa), 46
Unrepresentative oversight, 199-200, 203-204
Unsound Markets
conditions for, 5, 37, 39, 116, 155, 166-169
economy and, 48-51, 57, 103-104
goods and, 154-155, 179, 181
threats to, 61-62, 67-69, 96

Vaccination, 128-129
Venter, Craig, 58
Volcker, Paul, 180

Washington, George, 104, 114
Webb, James, 60
Welfare, general, defined, 39-40, 125-126, 138-139