

A dystopian cityscape with a ruined car and a large building. The scene is set in a desolate, post-apocalyptic environment. In the foreground, a mangled, rusted car lies amidst a sea of rubble and debris. To the right, a large, multi-story building with a curved facade stands, its windows dark and empty. The sky is a hazy, orange-brown color, suggesting a sunset or a smog-filled atmosphere. The overall mood is one of decay and despair.

# DYSTOPIA AND ECONOMICS

A Guide to Surviving Everything  
from the Apocalypse to Zombies

EDITED BY  
CHARITY-JOY REVERE ACCHIARDO  
AND MICHELLE ALBERT VACHRIS

ROUTLEDGE ECONOMICS  
AND POPULAR CULTURE

ROUTLEDGE

The Routledge logo, which consists of a stylized white silhouette of a person's head and neck, facing right, set against a dark background.

# DYSTOPIA AND ECONOMICS

Government collapsing? Zombies hunting you down? Everyone you know killed by a global epidemic? Not to worry! Economics holds the keys to survival. Often known as “the dismal science”, it is particularly equipped to reveal order in what seems like chaos.

Economists observe human behaviour: what leads us to take action, and the subsequent consequences. However, the choices made by individuals are not made in isolation; they influence and are influenced by the actions of others. A set of rules, even if unwritten, guides human behaviour. Foundational economic principles stand firmly in place, even when society is breaking down, and an understanding of these basic tenets of societies is essential to surviving the end of the world as we know it.

In this book, the authors draw from popular culture to show economic principles at work in the dystopian societies depicted in *The Walking Dead*, *Mad Max: Fury Road*, *The Hunger Games*, *Divergent*, *A Clockwork Orange*, and *The Last Man on Earth*. In each society, its members face resource and social constraints that incentivize particular behaviours and lead to predictable outcomes. How does human behaviour change when resources are severely limited, the legal system breaks down, or individual freedom is stifled? The examples presented here shed an eerie light on the principles that guide our actions every day.

*Dystopia and Economics: A Guide to Surviving Everything from the Apocalypse to Zombies* provides a user-friendly introduction to economics suitable for a general audience as well as devoted students of the discipline.

**Charity-Joy Revere Acchiardo** is a Lecturer of Economics at the University of Arizona, USA. She is a frequent speaker at teaching workshops across North America and Europe where she shares tips for making economics come alive for students. Her research has been published in leading economic education journals and she serves on the advisory board for the *Journal of Economics Teaching*.

**Michelle Albert Vachris** is Professor of Management, Business, and Economics at Virginia Wesleyan University, USA. Before arriving at VWU she taught economics at Christopher Newport University, where she holds the rank of Professor Emerita, and previously worked as an economist with the U.S. Bureau of Labor Statistics. Her publications include articles and book chapters on Public Choice economics, teaching pedagogy and economics in literature.

# **ROUTLEDGE ECONOMICS AND POPULAR CULTURE**

Series Editor

*J. Brian O’Roark*, Robert Morris University, USA

For a full list of titles in this series, please visit [www.routledge.com/Routledge-Economics-and-Popular-Culture-Series/book-series/REPC](http://www.routledge.com/Routledge-Economics-and-Popular-Culture-Series/book-series/REPC)

## **Broadway and Economics**

Economic Lessons from Show Tunes

*Matthew C. Rousu*

## **Dystopia and Economics**

A Guide to Surviving Everything from the Apocalypse to Zombies

*Edited by Charity-Joy Revere Achiardo and Michelle Albert Vachris*

This page intentionally left blank

# DYSTOPIA AND ECONOMICS

A Guide to Surviving Everything  
from the Apocalypse to  
Zombies

*Edited by Charity-Joy Revere Acchiardo  
and Michelle Albert Vachris*

First published 2018

by Routledge

2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

and by Routledge

711 Third Avenue, New York, NY 10017

*Routledge is an imprint of the Taylor & Francis Group, an informa business*

© 2018 selection and editorial matter, Charity-Joy Revere Acchiardo and Michelle Albert Vachris; individual chapters, the contributors

The right of Charity-Joy Revere Acchiardo and Michelle Albert Vachris to be identified as the authors of the editorial material, and of the authors for their individual chapters, has been asserted in accordance with sections 77 and 78 of the Copyright, Designs and Patents Act 1988.

All rights reserved. No part of this book may be reprinted or reproduced or utilised in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying and recording, or in any information storage or retrieval system, without permission in writing from the publishers.

*Trademark notice:* Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

*British Library Cataloguing-in-Publication Data*

A catalogue record for this book is available from the British Library

*Library of Congress Cataloging-in-Publication Data*

A catalog record for this title has been requested

ISBN: 978-1-138-05135-5 (hbk)

ISBN: 978-1-138-05136-2 (pbk)

ISBN: 978-1-315-16833-3 (ebk)

Typeset in Bembo

by Taylor & Francis Books

**To Dirk Mateer; Scott, Kyle, and Brendan Vachris;  
and Irene Albert for their encouragement and  
support.**



This page intentionally left blank

# CONTENTS

<i>List of contributors</i>	<i>xi</i>
<i>Preface</i>	<i>xv</i>
<i>Acknowledgements</i>	<i>xviii</i>
1 The walking econ: learning economics from <i>The Walking Dead</i> <i>Tawni H. Ferrarini</i>	1
2 Never a lovely day: the wretched economics of <i>Mad Max: Fury Road</i> <i>Michelle Albert Vachris and G. Dirk Mateer</i>	15
3 The odds are never in your favor: preventing economic growth in <i>The Hunger Games</i> <i>J. Brian O’Roark</i>	28
4 The <i>Divergent</i> economics of factions and governing <i>Samuel R. Staley</i>	45

x Contents

5	Choice, liberty and repression in <i>A Clockwork Orange</i> <i>Wayne Geerling</i>	58
6	Last man rules! <i>Charity-Joy Revere Acchiardo</i>	67
	<i>Index</i>	81

# CONTRIBUTORS

**Charity-Joy Revere Acchiardo** is a Lecturer of Economics at the University of Arizona. She understands that many people perceive the study of economics as uninteresting and disconnected to the realities of their everyday lives. But she also knows that isn't true. She gets her students actively engaged in observing their own worlds and solving the puzzles they find there. She is a frequent speaker at teaching workshops across North America and Europe where she shares tips for making economics come alive for students. Her research has been published in leading economic education journals, and she serves on the advisory board for the *Journal of Economics Teaching*. She has served as the Director of the Office of Economic Education at the University of Arizona. Dr. Acchiardo has an MBA from Middlebury Institute of International Studies and a Ph.D. from George Mason University where she was the Olofsson Weaver fellow in political economy.

**Tawni H. Ferrarini** serves as the Robert W. Plaster of Economic Education and Professor of Economics at Lindenwood University's Hammond Institute. Until 2017 she held the only endowed professorship at Northern Michigan University as the Sam M. Cohodas Professor of Economics. She was the 2015 President of the National Association of

Economic Educators. Her teaching, research, and service focus on regional growth and development with special attention drawn to the role of the private sector. Accolades include the 2016 Upper Peninsula Economic Development Non-profit Award, 2012; Council on Economic Education's Albert Beekhuis Center Award, 2010; Michigan Council on Economic Education Educator's Award, 2009; National Association of Economic Educator's Abbejean Kehler Technology Award (inaugural recipient); and a distinguished faculty award at NMU in 2009. Currently, Tawni serves as a senior fellow at the Mackinac Center for Public Policy in Midland, MI and the Fraser Institute, Vancouver, Canada. She is a co-author of *Common Sense Economics: What Everyone Should Know About Wealth and Prosperity* (St. Martin's Press, 2016). Tawni also publishes scholarly works in journals. She earned her doctorate from Washington University, where she studied under the 1993 Nobel laureate Douglass C. North.

**Wayne Geerling** is a senior lecturer at the University of Arizona. His expertise covers European economic history, resistance in authoritarian regimes and economics education, specifically using popular culture in the classroom. He has just published a research monograph: *Quantifying Resistance: Political Crime and the People's Court in Nazi Germany* (Springer Science and Business Media: Singapore, 2017) and has published in leading peer reviewed journals in the fields of economics education, economic history, and interdisciplinary history. He has taught more than 15,000 undergraduate students in his career and his contributions to teaching excellence has been recognized with several teaching awards at the Department, Faculty, University and National levels.

**G. Dirk Mateer** is a senior lecturer at the University of Arizona. His research has appeared in the *Journal of Economic Education* as well as other journals and focuses on media-enriched learning. He is the author of *Economics in the Movies* (2005), *Essentials of Economics* (2015), and *Principles of Economics* (2017). His website, [dirkmateer.com](http://dirkmateer.com), houses over 500 media assets that relate economics to popular culture. Dirk is also an award-winning instructor. He has been featured in the "Great Teachers in Economics" series and he was also the inaugural winner of the Economic Communicator Contest sponsored by the Association of

Private Enterprise Education. While he was at Penn State, he received the George W. Atherton Award, the university's highest teaching award, and was voted the best overall teacher in the Smeal College of Business by the readers of *Critique Magazine*. While he was at the University of Arizona, he received the best large class lecture award in the Eller College of Management.

**J. Brian O'Roark**, Ph.D., is a co-author of *Essentials of Economics* (with G. Dirk Mateer and Lee Coppock, 2016). He is also University Professor of Economics and Director of the Center for Economics Education at Robert Morris University in Pittsburgh. He is on the board of directors for the *Journal of Economics Teaching* and serves in the role of associate editor. In 2014, Brian was given the Undergraduate Teaching Innovation Award by the Middle Atlantic Association of Colleges of Business Administration and in 2016 he received the President's Award for Outstanding Teaching at RMU.

**Samuel R. Staley**, Ph.D., is film critic and a research fellow at the Independent Institute, Director of the DeVoe L. Moore Center in the College of Social Sciences at Florida State University, and an award-winning novelist. His research has appeared in leading academic journals, including *Transportation Research Part A*, the *Journal of Transportation Engineering and Policy*, *Constitutional Political Economy*, and *Housing Policy Debate*. His novels have earned top honors at the Eric Hoffer Book Awards, the Royal Palm Literary Awards of the Florida Writers Association, the Florida Authors and Publishers Association, among others. Dr. Staley earned his B.A. in Economics and Public Policy from Colby College, an M.S. in social and applied economics from Wright State University, and a Ph.D. in public administration with concentrations in urban planning and public finance from Ohio State University. He was also a Lynde and Harry Bradley Fellow in the Center for Study of Public Choice at George Mason University while pursuing doctoral-level studies in economics from 1989–1990. His book *Contemporary Film and Economics* will be published by Routledge in 2018.

**Michelle Albert Vachris** is Professor of Management, Business, and Economics at Virginia Wesleyan University. She earned a B.A. in

Economics from the College of William and Mary and an M.A. and a Ph.D. in Economics from George Mason University. Before arriving at VWU she taught economics at Christopher Newport University where she holds the rank of Professor Emerita. Dr. Vachris began her career as an economist with the U.S. Bureau of Labor Statistics in the International Price Program where she worked on export and import price indexes and purchasing power parities. She has since served as a consultant on international statistics for the BLS and the International Monetary Fund. Dr. Vachris is a past-president and Distinguished Fellow of the Virginia Association of Economists and co-editor of the *Virginia Economic Journal*. Her publications include articles and book chapters on Public Choice economics, teaching pedagogy, and economics in literature. She co-authored *Pride and Profit: The Intersection of Jane Austen and Adam Smith* (Lexington, 2015) with Cecil E. Bohanon.

# PREFACE

Government collapsing? Zombies hunting you down? Everyone you know killed by a global epidemic? Not to worry! Economics holds the keys to survival. The subject known as “the dismal science” is particularly equipped to reveal the order in what seems like chaos. Many don’t realize that economics, often characterized by stock quotes and abstract models, is actually a social science. Economists observe human behavior: what leads us to take a particular action, and the subsequent consequences. However, the choices made by individuals are not made in isolation; they influence and are influenced by the actions of others. A set of rules, even if unwritten, guides human behavior. Foundational economic principles stand firmly in place, even when society is breaking down. An understanding of these basic tenets of societies – dystopian ones included – is essential to surviving the end of the world as we know it.

In this book, several authors draw from popular media to show economic principles at work in the dystopian societies depicted in *The Walking Dead*, *Mad Max: Fury Road*, *The Hunger Games*, *Divergent*, *A Clockwork Orange*, and *The Last Man on Earth*. In each society, its members face a set of resource and social constraints that incentivize particular behaviors and lead to predictable outcomes. How does



human behavior change when resources are severely limited, the legal system breaks down, or individual freedom is stifled? The examples presented here shed an eerie light on the principles that guide our actions every day.

The first two chapters introduce basic economic principles. Tawni H. Ferrarini starts with the television series *The Walking Dead* and shows the difficulty of living in a post-apocalyptic world where there is no stable modern-day government, independent third party to provide law and order, or court system to settle disputes. The chapter weaves sound economic reasoning with the series' storyline, explaining the pivotal decisions made by key characters. In this chapter, you'll learn why property rights are foundational to economics, why missed opportunities are fundamental to understanding costs, and how the principles of comparative advantage and trade can improve standards of living.

Michelle Albert Vachris and G. Dirk Mateer then use the movie *Mad Max: Fury Road* to examine the economics of a society that forgets its history and repeats the mistakes of the past. In *Mad Max*, the survivors have forgotten the economic lessons that led most of the world out of abject poverty and are ruled by Immortan Joe in a command economy. They spend almost all of their time in survival mode. A command-driven economy dooms what little hope the survivors have for a better life. The chapter covers foundational economic topics such as scarcity, resource use, productivity, specialization, gains from trade, economic systems, and growth.

In Chapter 3, J. Brian O'Roark illustrates comparative economic systems and economic development theory in *The Hunger Games* trilogy by Suzanne Collins. The command economy of *The Hunger Games'* Panem is contrasted to a market economy and how these different systems affect citizens' standard of living and potential for economic growth.

Next, Samuel R. Staley examines the political structure of Veronica Roth's *Divergent* trilogy using Public Choice economics. Public Choice applies the tools of economic analysis to decision-making in the public sector. This model can explain the interactions of the factions of citizens in the *Divergent* series, the self-interested motivations of their leaders, and the resulting breakdown of the social order.

Wayne Geerling shows us how economics with philosophy intersect with his analysis of *A Clockwork Orange* by Anthony Burgess in Chapter 5.

Every government faces a dilemma between protecting individual freedom and the need for society to protect itself from criminal behavior. In *A Clockwork Orange*, the state takes away the freedom of choice of the main protagonist, Alex, and replaces it with prescribed good behavior. Without free-will, is Alex still human or is he a machine – something as unnatural as a clockwork orange? This chapter explores the link between free-will and choice, uses economics to analyze the timeless trade-off between liberty and security, and offers practical applications from behavioral economics.

Finally, in Chapter 6, Charity-Joy Revere Acchiardo explains the intricacies of individual and collective choice using television's *The Last Man on Earth*. Getting a chance to start over in a world of nearly unlimited resources sounds like a dream come true, but Phil Miller, the "last man on earth," quickly learns otherwise after a worldwide epidemic wipes out humankind. Over the course of a couple years, Phil finds several different survivors, and they form a small society. However, the old rules that governed a pre-plague civilization are no longer relevant in this new world. This chapter draws heavily from new institutional economics to examine how the survivors choose to cooperate, allocate resources, and handle conflict when they get to choose the rules.

# ACKNOWLEDGEMENTS

We thank the individual authors for their valuable contributions and for being so easy to work with. We also express our gratitude to the Association of Private Enterprise Education for providing a forum for us to present earlier versions of these chapters and to solicit feedback from those in attendance.

# 1

## THE WALKING ECON

### Learning economics from *The Walking Dead*

*Tawni H. Ferrarini*

We have all heard it said. “You don’t know how important something is until you lose it.” For economists, that “something” is secure rights to life, liberty, property, and the pursuit of happiness. Without these rights, our modern world turns upside down; the contemporary economy that connects millions of people, machines, and organizations is gone and a chaotic world with a lot of disturbing noise emerges. This is the dystopian world of *The Walking Dead*.

For seven seasons and counting, millions of diehard fans have watched AMC’s adaptation of Robert Kirkman’s *The Walking Dead* comic series. This pop culture phenomenon provides a fascinating entry point for economists to analyze the survivors’ fight against zombies and the dynamics of their relationships in a post-apocalyptic world. It illustrates how sound economic reasoning can be applied to improve standards of living and how the science of strategic decision-making can be applied skillfully to help individuals, like the survivors, live together better.

In what follows, you’ll learn why property rights are foundational to economics, why missed opportunities are fundamental to understanding costs, and how cooperation and coordination can improve standards of living.

## A post-apocalyptic scene

In the post-apocalyptic world of *The Walking Dead*, the stories of key individuals and groups struggling for survival unfold.

Everyone is infected with a dormant virus. The source is unknown. What is known is that, on death, the corpses of the dead reanimate. On reanimation, they begin a continuous walk in an aggressive search for a bite of the flesh of something living. Destroying the brain is the only way living humans can stop the zombies (also known as “walkers”).

As the epidemic spreads, a population of mindless zombies emerges. They need no food, water, clothing, or shelter. The only sustenance they require is the flesh of something living. Once a living human is bitten, only a short time passes before they join the mass of walkers. The progression continues.

Now members of a small minority, survivors navigate in a world in which there is no stable government or money, and all accompanying formal systems of organization and justice are gone. Even though the factors of production are readily available – fertile land is abundant, machines and buildings are ready for use, and people are, hypothetically, free to work – the survivors in *The Walking Dead* find themselves passing on opportunities to utilize these resources in productive ways. Instead, they focus on survival and fighting off the constant aggressions of walkers – reanimated human corpses that lumber around only seeking bites of flesh.

## Wake up, Deputy Sheriff! Law and order are gone

In the pilot episode, Deputy Sheriff Rick Grimes wakes up in an abandoned hospital situated in a community resting somewhere outside of Atlanta, Georgia. He quickly notices that something is not right. Rick is hooked up to monitors, but they are not checking his heart rate or taking his pulse. He doesn't know what time it is, and the wall clock has stopped. The bouquet of flowers next to his bed has shriveled and died. The emergency buzzer on his hospital bed does not work. A confused Rick gets up in a frantic search for explanations and understanding.

One of the last things Rick recalls is chatting with his patrol partner about home life just before jumping into fast gear and setting out on a high-speed chase. Rick was shot and wounded while on duty. He fell

into a coma. He awakes in an abandoned hospital surrounded by flesh-eating zombies. These zombies care nothing for Rick's (or others') right to life, property, happiness, and so forth. No, these "Walking Dead" live only for their next bite of flesh. I know. Gruesome. Stay with me, and read on. Rick does not instantly locate another human in the hospital. He leaves the hospital in frantic search of someone, anyone, who can provide answers to the millions of questions running through his mind.

Where is his family? The hospital staff? Where are all the people? Where are the residents of and visitors to Rick's bubbling bedroom community outside of Atlanta, Georgia? Where did his community go? As Deputy Sheriff, he was sworn to serve and protect it. Everywhere Rick looks, he feels as if he is in a defeated war zone with evidence of pillage and plunder. What happened? Who let this happen? Where is the system of law-enforcement? It had once provided protection to his family, his community, and the world with which he was so familiar. Where are the other law enforcers? The military police? The other first responders to help clean up the ubiquitous mess of debris and walking zombies? How could all of this happen? Rick's quest for answers unmasks the importance of what economists call "rule of law" and secure property in our modern lives.

In the modern United States and many countries around the globe characterized by economic growth and prosperity for more than 250 years there is a relatively stable system of law based on private rights to life, liberty, and the pursuit of happiness regardless of race, gender, income, status, religious creed, or background. Disputes or concerns associated with harm, hurt, damage, or exploitation of these rights are settled in a judicial system. As long as the majority of people in local communities, other societies, or countries respect the law and turn to a judicial system to settle matters related to violations of rights, especially property rights, individuals can settle into their communities, move about freely, pursue their independent dreams, and/or achieve their personal goals with minimal concern about protecting life or property.

In the post-apocalyptic world depicted in the series *The Walking Dead*, there is no stable modern-day government. There is no independent third party to provide law and order. There is no court system to settle disputes. What *was* yours in the pre-apocalyptic world is up for

grabs in the post-apocalyptic world. It is up to you to protect what is yours, including your life.

In the post-apocalyptic era, individuals direct energies and available resources toward protecting lives, keeping others from taking their valuables, pushing back the threats of thugs, and stopping the deadly aggressions of zombies. Since energy and other valuable resources are directed to protection, little if any remain for production, investment, education, and third-party transactions. Gone are the days of going about your daily business without concern for personal safety and protection of life and property.

Now, thoughts about protection and survival penetrate the waking moments of many survivors. Finding ways to meet basic needs while living in a natural state absent of the conveniences made available by today's commercial markets, technologies, medicines, investments, and trade across countries become a daily challenge. Survivors are now left to their own devices and moral codes to advance in a post-apocalyptic world like the one depicted in *The Walking Dead*.

### **Should I stay or should I go? Opportunity costs considered**

Violence and suspicion have replaced peace and trust. All formal networks facilitating communication and transmitting information have failed. Rick and the other survivors have been launched into a world void of reliable information, protection, and stable government. The market society of modern times has crumbled. The streets are littered with corpses, abandoned cars, heaps of clothes, spoiled food, broken furniture, and lots of trash. Most houses are vacant except those used as places of refuge.

Surviving in *The Walking Dead* world is a constant struggle. It is largely unfamiliar and unpredictable, but the survivors still have their reasoning capacities. Economists point out that economic reasoning is a powerful tool. It can be used by individuals to make their personal lives better and help others along the way. As it turns out, this is especially true in a dystopian society.

The survivors in the post-apocalyptic world are the same spirited individuals that lived in the pre-apocalyptic world. They still possess the same prevailing desires to live, and to varying degrees, they hold tightly to their personal commitments to make life better while helping others.

People pursue a multitude of goals everyday – eat food, go to work, walk regularly, watch nature, get a solid night of sleep, etc. They constantly consider and make choices in pursuit of these goals. This is where economics comes in. Economists will tell you that there is a cost to every choice, but their definition of cost has a twist to it. They look at costs as opportunities lost, or, more technically, *opportunity costs*. Opportunity costs may be monetary, but in most instances, they are not. Often, the opportunities lost are nonpecuniary. Opportunity costs play a crucial role in making the best or most strategic decisions for *The Walking Dead* survivors.

The apocalypse did not change the fact that the survivors live in a world of scarcity. In fact, we all live in a world of scarcity. Everyone only has 24 hours in a day and limited access to a finite number of resources. Productive resources can be arranged and utilized in different ways to meet basic needs, satisfy an endless list of wants, and pursue a variety of goals. However, because resources are limited, choices must be made about how to use these resources. In most instances, individuals make the choices that promise to deliver the highest perceived benefits at the least perceived costs.

To illustrate, let's consider Rick's decision to search for his wife Lori and son Carl in the pilot episode. After rummaging through his abandoned house in his devastated community, Rick notices that family pictures have been taken from their home. This suggests to Rick that Lori and Carl are alive. He reasons that Lori grabbed the pictures and fled with Carl. He's now faced with a choice – to search or not search for his family. If searching is his best option, what is his second-best option? Rick could stay home to become more familiar with the changes in his surroundings and gather more intelligence on the situation. Should he stay or should he go?

Sound economic reasoning requires that a person consider the opportunity costs. So, Rick considers his second-best choice – what he would miss out on if he chooses to search for his family. He weighs the benefits against the costs of that choice, compares the results to the other choice, and chooses the one with the highest net benefits. In light of his circumstances, Rick decides the pursuit of his family is worth the sacrifice of staying home.

This way of thinking can also be applied to the choices survivors make to flee or fight.



## Should we flee or should we fight?

Rick and other survivors increase their chances of survival by strategically choosing when to flee or when to battle against their aggressors. They flee when the net benefit of doing so is relatively high compared to the net benefit of fighting.

In Season 1, Rick finds himself under a military tank surrounded by hordes of zombies in the heart of Atlanta. Thanks to another survivor, he identifies an opening. The net benefits of staying under the tank are almost zero. Though not certain, the net benefits of fleeing are positive. Rick chooses to flee and escapes. He makes his world a slightly better place by calculating the benefits and costs of his top two choices and making the choice that promises the highest benefits relative to costs. By surviving, Rick makes it possible for others to benefit from his keen leadership and survival skills in the future.

Many times, survivors stay for the fight. They do not have to fight. They could flee (in this case, the second best option). However, they choose to stay because the perceived net benefits of fighting exceed those of fleeing in that moment. Once the decision to stay is made, survivors then choose some combination of available weaponry, skills, and other resources to land a fatal blow to the head of a zombie, eliminating its deadly threat.

In economic terms, weapons are a form of *capital* that serve to help survivors eliminate zombies. The most popular weapons in *The Walking Dead* include guns, knives, crossbows, and swords. Which should each survivor choose to use given their options?

Rick could choose a fully loaded gun or a knife to stop a walker. Viewers frequently witness Rick using his gun over his knife. Why? For Rick, the perceived net benefits of using his gun exceed those of using his knife. Let's say that Rick could stop six walkers with his signature Colt Python gun but only one with a knife.

In both instances, he stops walkers. That is the benefit.

Now, let's consider the costs of using each from the economist's perspective.

When Rick uses a knife to stop a walker in this example, he sacrifices getting six walkers with his gun. Stopping six walkers is the opportunity cost associated with using the knife. Likewise, the opportunity cost of using the gun is stopping one walker.

In each instance, Rick stops at least one walker. However, by using a gun, he stops five more walkers. Rick maximizes what he values most while minimizing his opportunity cost. His reasoning is sound and his decision strategic.

Now, let's look at someone who is fiercely independent and strongly intuitive. First seen at the end of Season 2, Michonne is introduced to viewers with two handless, jawless zombies chained up and following her. Zombies do not go after other zombies. So, the lumbering zombies chained to Michonne help her move about without being fatally attacked, grabbed, and bitten. She considers this benefit to outweigh the cost of being slowed down by the zombies.

The same logic applies to explain why the expert hunter and skilled tracker, Daryl, favors his crossbow over a gun or a knife. Daryl can use any of these three resources to stop walkers. However, he stops the most walkers at the least cost by choosing to use his crossbow. By choosing a gun or knife over his crossbow, he gives up the opportunity to stop a higher number of walkers.

In light of specialized skills, knowledge, and past experiences, each survivor chooses the particular resource that promises to deliver the highest benefit at the lowest cost. In other words, by using economic reasoning, the individual and other members of the social group that are impacted by the actions and interactions of the individual and social group are made better off. Why? Economic decisions, made in the broadest sense of the words commonly used by economists promise to make everyone in the social group better off once the benefits and costs are considered and compared. Otherwise, decisions would not be strategic nor mutually advantageous for the individual who helps make up the social group.

## **You're not alone: cooperate or clash?**

Choosing a weapon is important, but choosing your friends and leaders can be even more so. A growing hoard of walkers will more than likely take out a lone survivor. However, a group of fighting survivors, each with their own skill set and work ethic, has a much better chance of escape and survival.

Individuals are self-interested. That's true in our world as well as in the post-apocalyptic world of *The Walking Dead*. What economists have

found remarkable is that individuals often discover that cooperating with others and looking out for their interests are simultaneously in their own and others' best interest, especially over time.<sup>1</sup> This is particularly true in the series *The Walking Dead*. Noncooperation means almost certain death. The chances of survival outside the group are very, very low. Consider the following examples.

The core group in *The Walking Dead* organizes its members to increase their chances of survival. They learn to divide and conquer so that each person can eat and drink regularly, find shelter, and decide when to fight or flee. When exchanges of time, talents, and treasures are mutually beneficial they increase in number and the people involved discover ways of getting ahead by serving others.

Season 3 is peppered with examples of why people who live cooperatively, over time, do better on most fronts than those who live in constant fear of exploitation or harm. In this season, Rick and his core group of survivors locate a prison. Here, they create an environment which provides relatively stable accommodations and some food, weapons, ammunition, and medicine. Over time, they redirect the energies once spent constantly battling the undead toward planting gardens and participating in some "regular" activities like reading, developing friendships, and talking about their futures together. That is, the members of this post-apocalyptic community move slightly away from operating only in survival mode. Viewers get a glimpse of hope for a future better life – even in a zombie-infested world.

Throughout Season 3 (as well as in future seasons), people come and go from settlements like the prison. Some wander in, while others emerge from newly discovered parts of the unknown areas surrounding the settlement. Those individuals viewed as helping the settlement flourish, in spite of the extra "costs" associated with having extra mouths to feed and people to protect, are invited to stay.

When conflict is chosen over cooperation, one person or group is likely gaining at the expense of another. The exploited person or group channels valuable resources toward arguing, attacking, or pushing back against whatever is held responsible for taking advantage of a situation or relationship. In growing and thriving communities, these are scarce resources that could have been used more strategically for the betterment of the individuals directly involved, their community, and its general population.

Season 3 provides numerous examples of how exploitation and relationships based on one individual ruling by brutal force and through fear rather than mutual consent are difficult to maintain over time. This type of exploitation does not provide a sturdy foundation on which thriving communities can grow, healthy exchange can take place, entrepreneurship will emerge, or investment will occur.

At the end of Season 5, viewers see glimpses of tangible signs of modern living emerge when Rick's group is made aware of the Safe Zone in Alexandria, Virginia. Wall protection is sound and relatively safe. It was built with the expertise of a pre-apocalyptic professor of architecture and others using relatively skilled labor and quality materials retrieved from a nearby shopping mall abandoned after the apocalypse. There is solar power and a natural wastewater treatment system in an upscale residential community with many amenities familiar to viewers sitting in their homes while watching this AMC series.

Former Congresswoman Deanna steps up to lead the Alexandria Safe Zone. This community thrives enough to seek others outside their walls to grow their population. Rick's group is invited to join. Additionally, members of Alexandria seek other groups with which they can trade their surplus items to acquire goods and services in short supply at Alexandria.

All seems to be going well until the series introduces Negan and his group, The Saviors. Unlike any other group in the series, The Saviors turn out to have large numbers on their side. The Saviors are made up of hundreds and hundreds of survivors. They are led by force under the rule of a highly intelligent but cruel dictator named Negan.

Negan's Saviors ambush Rick's group while they are on a scouting expedition. The Saviors seize a large portion of Alexandria's current possessions and demand scheduled payments of even more food, ammunition, and weapons. Rick's Alexandria group is ordered to fall in line with Negan's despotic rule. When called on and without consent, the people of Alexandria are forced to give up whatever the Saviors require of them, including the services of their people with medical expertise. They are clearly exploited, and mutually beneficial exchange is not taking place.

Rick's core group pushes back, some more than others. Those who push back hardest value their personal liberties and freedoms more than

living simply to become slaves to the dictatorial rule of Negan, who promises cruel retaliation for not following his orders. Consequently, they choose to direct valuable resources to end Negan's rule. Daryl even chooses to suffer fear and pain to remain loyal to Rick and the principles of personal freedoms valued by the core group who are tied together through cooperation and harmonious exchanges rather than fear, force, and exploitation.

The members of Rick's group respect and support him and value his role as their leader. Therefore, they are willing to make sacrifices to benefit Rick in exchange for the benefits they receive from him. For example, back in Season 3, Rick experiences some emotionally dark days after suffering the loss of his wife. Hershel, Carl, Daryl, Carol, and others go out of their way to help Rick. They believe that Rick would do or has done the same for them. Their exchange is win-win.

Acting in one's self-interest involves considering how your actions impact the lives of others, and how they, in turn, will impact yours. In this way, decisions made out of self-interest can be mutually beneficial to the individual *and* the group as a whole. As you will soon see, these benefits are easily recognized by comparing opportunity costs.

## **Lead, hunt, or nurture? Discovering the power of comparative advantage**

Economists frequently talk about the principle of comparative advantage. It explains how mutually beneficial, voluntary exchange opens opportunities for people with different skills, experiences, and knowledge to work together to improve their standard of living. A person is said to have a comparative advantage if that person can do something at a lower opportunity cost than another. If individuals within a group focus on performing the activities for which they have a comparative advantage, the group as a whole will be able to produce more than what is otherwise possible if every individual performed every activity for themselves. *The Walking Dead* is filled with examples of the principle of comparative advantage.

In early seasons, the core group of survivors constantly struggled to achieve better living conditions under constant threat of walkers and attacks from other outside aggressors. By simply organizing themselves

in a way that allowed individuals to move into specialized roles where their efforts could be concentrated on doing those things for which they possessed a comparative advantage, the core group made progress and began to improve its circumstances.

Consider Rick and Daryl. In the pre-apocalyptic world, Rick served as a well-respected deputy sheriff working in a cozy community outside Atlanta, Georgia. Almost Rick's polar opposite, Daryl lacked social skills and preferred to live on the fringes of society. Viewers get glimpses of Daryl riding his iconic Triumph chopper with a distasteful Nazi insignia boldly shown on its fuel tanks. He's often seen with a crossbow at the ready to ward off attackers. Daryl appears to be a rule breaker while Rick is a rule enforcer. How can these two strikingly different people work together to make themselves and others better off?

Economics shows that Rick and Daryl can benefit from specialization and voluntary exchange. They do not have to like each other. They only need to possess something that the other finds valuable. Both are seeking to survive and improve their lives. Each offers something that will help the other. So the potential exists for advantageous trade.

Though it may not seem like it at first glance, opportunities to benefit from cooperating and exchanging services exist when opportunity costs are taken into account. Rick's and Daryl's skill sets are different. Rick assumes roles that involve strong leadership. He enforces rules and has a strong moral code. Rick serves as a role model of ideal citizenship and protects others from aggressors. On the other hand, Daryl is very successful at hunting food, tracking people, getting supplies, and eliminating the most challenging aggressors – the-flesh-seeking walkers.

To see the power of the principle of comparative advantage, let's consider the following. Daryl can hunt, and, if called upon, he could lead. As a core group of survivors begins to organize, will Daryl emerge as the leader? If he spends his time each day honing leadership skills, something he isn't particularly good at, the group will lose out on the benefits they receive from his hunts for food and protection from the walkers. Letting Daryl lead comes at a comparatively high opportunity cost for Daryl *and* the group. The same holds for Rick. The group *and* Rick lose when Rick spends his time performing those tasks that can be done by Daryl at a lower opportunity cost. Rick is comparatively better at leading than Daryl. In other words, he gives up less than Daryl when

performing this task. If he hadn't spent his time leading, perhaps he would have been able to hunt enough food to feed one person. Daryl, however, would likely have been able to hunt enough food for five people, so his opportunity cost of leading is higher than Rick's. For the benefit of themselves and the group, Daryl should hunt and Rick should lead.

Now, let's turn to Carol, another one of the original members of the core group. Prior to the virus outbreak, she was in a very abusive and controlling marriage. In Season 1, she was physically weak and emotionally fragile. Once freed from her abuser and accepted by the group, she began to transform and found valuable ways to help the group.

When opportunity costs are considered, Carol's value to the group is apparent. She performs services, completes tasks, and produces things that others find menial but important for survival. In early seasons, Carol kept a watchful eye on the children, prepared food, and attended the sick and injured. Daryl or Rick could have done these tasks, but because Carol was neither a good hunter nor leader, she had a lower opportunity cost, and thus a comparative advantage, of performing them. The group lost little if she chose not to hunt or lead, but they gained a lot when she freed up time for others, like Daryl and Rick, to focus on tasks they performed relatively better, like hunting and leading. When individuals in a group cooperate and specialize in those tasks for which they have a comparative advantage, everyone is made better off at the lowest possible cost.

## **Pizza or penicillin?**

What particular skills does your pizza delivery person have? Are they especially skilled at quickly weaving in and out of traffic and getting things delivered promptly? How could those skills be used advantageously in *The Walking Dead*? What about the specialized skill set of a veterinarian?

Glenn, another of the original survivors, spent his pre-apocalyptic working hours delivering pizza. In *The Walking Dead*, he is one of the lead supply runners. Glenn unquestionably has youth on his side. Viewers continuously see him quickly and keenly moving in and out of dangerous yet strategic entry and exit points. One can easily connect

these skills to his time delivering hot pizza in heavy traffic in the shortest amount of time possible. Likewise, Herschel, a veterinarian, is the most qualified to conduct surgeries and attend to medical emergencies. Of course, Herschel could be called to join supply runs, but the cost of him doing so would be relatively high when Glenn is available. His comparative advantage is in providing emergency medical services. Similarly, even though Glenn is less experienced than Herschel in knowing which supplies are needed, his comparative advantage still lies in running for those supplies.

Next time you're watching *The Walking Dead*, assess the relative abilities, not the absolute abilities, of key characters. Compare opportunities costs. Then, use those comparisons to identify beneficial ways to organize the characters on the basis of comparative advantage, specialization, and voluntary exchange in a world of people with diverse talents, interests, and skill sets.

## The walking econ (reprise)

The dystopian world featured in *The Walking Dead* is drastically different from the world in which we live. There is no money. There are no monetary prices. There are no businesses. Markets and prices, as we know them today, simply do not exist. However, there are humans! And these humans are making choices while living in a world of scarcity. So, even in a post-apocalyptic world plagued with zombies, economics can help shed light on how people who are free to think, act, interact, and pursue what is in their self-interest can cooperate to battle deadly zombies and improve the world in which they live.

Economics compels us to reflect on the costs associated with what is lost by choosing one option and not pursuing the next best opportunity. When you have attractive alternatives, your choices will be costly. Should you binge watch *The Walking Dead* when you could be working? If you choose to work, you give up the enjoyment of watching Rick, Daryl, and the others battle flesh-eating walkers. If you choose to binge, you give up the experience and money earned by working. The choice is yours.

But don't forget – the choices you make also impact the society in which you live. Choosing to cooperate with others and act in ways that



utilize your respective comparative advantages can reduce your collective opportunity costs and lead to the creation of a flourishing society. Discover ways to serve others through an exchange of time, gratitude, or resources. Help yourself by helping them. By working together, the economy will grow and prosper as long as mutually advantageous exchange continues.

## Note

- 1 “It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own self-interest. We address ourselves not to their humanity but to their self-love, and never talk to them of our own necessities, but of their advantages” (Smith, 1776: 1981, p. 18).

## Reference

Smith, Adam. ([1776] 1981) *An Inquiry into the Nature and Causes of the Wealth of Nations*, Volume I, Glasgow ed. Indianapolis: Liberty Fund, Inc. Also available at: [www.econlib.org/library/Smith/smWN.html](http://www.econlib.org/library/Smith/smWN.html).

# 2

## NEVER A LOVELY DAY

### The wretched economics of *Mad Max: Fury Road*

*Michelle Albert Vachris and G. Dirk Mateer*

*Mad Max: Fury Road*<sup>1</sup> (2015) is the reboot of the *Mad Max* films from the late 1970s and 1980s.<sup>2</sup> A crowdsourcing study of 45 year-end movie reviews determined that *Mad Max* was the best film of 2015, beating out the Academy Award winner, *Spotlight* (Grossman, 2015). Despite not receiving the best film award, *Mad Max* still garnered six Academy awards and was nominated for four others (IMDb). The film also sports a 97% score among critics at Rotten Tomatoes.

The story begins years after the collapse of civilization. It is not clear what sort of disaster causes the apocalypse. A few tyrants have gained power, and each controls different essential resources – water, milk, fuel, blood, bullets, and produce. In this world, survivors like Max roam the desolate terrain trying to avoid capture by the gangs controlled by these tyrants.

One of these tyrants is Immortan Joe, who rules as part despot and part deity.<sup>3</sup> His fortress, the Citadel, is atop the only source of water left. People outside the Citadel (the Wretched) are left to fend for themselves, and their access to the water (Aqua Cola) is completely reliant on the whims of Immortan Joe. Kept inside the Citadel are slaves who power its machinery, the Milk Mothers who supply breast milk for nutrition, and the Wives with whom Immortan Joe is trying to produce healthy, male heirs. Joe reigns over an army of War Boys (and

War Pups who will grow up to be soldiers) and lieutenants, such as Emperor Furiosa, the film's heroine.

The War Boys all suffer from an unnamed disease that requires them to have regular blood transfusions to stay alive. That's where Max Rockatansky comes in. When Max is captured, he becomes a human blood bag for Nux, one of the War Boys. Max, it turns out, is a very valuable capture because his blood type makes him a universal donor. Once captured, Max is branded, placed in chains, and becomes the property of Immortan Joe.

The story heats up when Immortan Joe discovers that he's been betrayed by one of his lieutenants. Emperor Furiosa, was given the task of delivering water, produce, and mother's milk to neighboring Gas Town to trade for "guzzoline" and Bullet Farm to trade for bullets. But Joe soon figures out that she has actually liberated his breeder "wives" and is taking them away to safety.

Joe quickly combines forces with the leaders of Bullet Farm and Gas Town and pursues Furiosa into the wasteland. Nux insists on joining the chase though his transfusion is incomplete; thus, Max, ends up tied to Nux's vehicle as a portable blood bag. He manages to escape and find Furiosa's crew, and they become reluctant allies. Each needs the other to survive: Furiosa, to make it to the Green Place she remembers from her youth before Immortan Joe captured her; Max, to survive on his own, away from the oppressive rule of despots. Furiosa has the transportation that Max needs to escape the Citadel, and Max has the grit and resourcefulness that can help Furiosa protect the wives.

The post-apocalyptic landscape of Mad Max provides a number of thought-provoking illustrations of economic concepts. First off, it is very clearly a world of limited resources. This both limits and necessitates production, specialization, and trade. The unique way these activities are organized in this dystopian world give insights into the roles barter, money, and markets play in an economy. It also helps us see how different ways of organizing an economy affect economic growth. Let's look at each of these concepts in turn.

## **Limited resources**

Economics can be thought of as the study of scarcity. Scarcity is the fundamental problem of seemingly unlimited human wants in a world

of limited resources. Because resources are scarce, people have to make choices about how they will use them. People make these decisions based on perceived benefits and costs.

Economists measure costs in terms of foregone opportunities. We call them “opportunity costs”. You can calculate opportunity cost by determining the value you would have received from the next-best use of the resource in question. For example, let’s say your choice for tonight’s entertainment is between watching *Mad Max: Fury Road* again after reading this chapter or going out to see a new movie. The opportunity cost of staying home and watching *Mad Max* is the pleasure you would have gotten from going out.

Without scarcity, say if we could be in two places at one time, we would not have to choose between the movies. Unfortunately, the human condition consists of scarcity; therefore, we must choose.

In the world of *Mad Max*, scarcity is the norm. Everywhere you look, there are insufficient productive resources to fulfill even basic human wants and needs. Control over the productive resources that are available is concentrated in the hands of a few despots who artificially restrict availability to maintain power over the desperate survivors. Let’s look at six key resources in *Mad Max* – water, milk, fuel, blood, bullets, and produce – more carefully.

The Citadel is the only source of water in the film. Every once in a while, to appease the masses, Immortan Joe opens the aquifer and a waterfall pours down upon the Wretched who have gathered at the base of the Citadel to fill up whatever containers they can find. Most go away unquenched as Immortan Joe snidely warns them not to get addicted to water.

Another important resource in the film is milk. “Mother’s Milk” is produced in the Citadel by women kept in a constant state of lactation. These Rubenesque women are shown hooked up to milking machines while cuddling dolls to stimulate milk production. The Citadel trades both Mother’s Milk and water for ammunition and “guzzoline” from Bullet Farm and Gas Town.

Travel in the world of *Mad Max* relies on converted automobiles, sport utility vehicles, and trucks. Some of these trucks have been reconfigured as large War Rigs, and only the top lieutenants, like Furiosa, get to drive them.

As mentioned earlier, the War Boys need regular blood transfusions from “human blood bags” like Max, so blood is also a prized resource. Max and others are kept alive in cages, so their blood is available when required by the War Boys.

Of course, totalitarian regimes must back up their power with weapons, so Immortan Joe’s army needs bullets to fight his enemies and protect the Citadel. Ammunition is obtained via trade with Bullet Farm.

Because the Citadel controls the only source of clean water, it is the only place where produce will grow. The significance of this is underscored when an old woman from the former Green Place opens her purse and pulls out a collection of seed packets she has kept for many years. The seeds, “trees, flowers, fruit,” are her most precious possessions, her “heirlooms.” She plants one every now and then to see if the soil has recovered enough to grow things. So far, nothing has taken root.

The lack of resources described above creates tension and underlies the organization of economy activity in the film. Let’s take a further look.

## Production

In *Mad Max*, much of the technological know-how that existed before the apocalypse is now forgotten.<sup>4</sup> Remember that the apocalypse predated the internet so many of the choices we see are undertaken in a world without unlimited information on our smartphones. The material and equipment they have is only what survived the destruction. With an economy in shambles, everything that survived must last. Throughout the film, materials and equipment are salvaged, reused, and repurposed rather than manufactured. Many modern technological advances are absent. The survivors live in a wasteland without enough resources to produce anything but the most needed goods.

In *Mad Max*, Immortan Joe controls much of the remaining labor, land, capital (the machines and tools used to produce other goods), and entrepreneurship required for production. Collectively, these are referred to as the “means of production.” Labor is provided by slaves, War Boys, and War Pups. There’s a lot of land, but the only irrigated land is within the Citadel. We see various forms of capital within the Citadel, such as the milking machines and large human-powered pulleys. Entrepreneurship is directed toward survival and military ventures.

Since most of the means of production are destroyed and there are few survivors, the economies of scale necessary for mass production are missing. Economies of scale exist when per unit production costs are reduced as you produce more. A classic example of economies of scale is the efficiency improvements that Henry Ford's assembly line automobile plant had over custom made auto shops. A more modern example would be WalMart's ability to buy in bulk and thereby offer lower prices to customers than a Mom and Pop general store.

Rather than produce everything for themselves, the different factions in *Mad Max* specialize in the production of particular goods. The Citadel produces agricultural products; Gas Town produces fuel; Bullet Farm produces ammunition. Specialization makes it possible to gain more resources by trading what you're good at producing for something another is good at producing.

## Trade

There are three basic forms of economic trades: zero-sum, negative-sum, and positive-sum.

1. Zero-sum trade: Win-Lose.

One side wins and the other side loses by the same amount. For example, if I steal \$10 from you, I get \$10, but you lose \$10.

2. Negative-sum trade: Lose-Lose

The losses outweigh the gains. War is a classic example because while one side may "win" both sides suffer destruction.

3. Positive-sum trade: Win-Win.

The gains outweigh the losses. Voluntary trade creates many opportunities for positive-sum exchanges. When I buy a sweater for \$50 I do so because I want the sweater more than I want to keep my \$50. The store, on the other hand, would prefer to have the \$50 in sales than to keep the sweater on the shelf. Both of us win.

Trade is extremely limited in *Mad Max* because there are many barriers that stunt economic activity, or worse, create zero-sum or negative-sum outcomes.

The biggest barrier to trade is a lack of clearly established and enforced property rights. Property rights are the rules that govern the use of private property by its owners. For example, if you buy a baseball bat, you have the right to use it, sell it, give it away, or throw it away. You do not, however, have the right to hit someone with it, because that would infringe on their rights.

Due to a lack of property rights in *Mad Max*, everyone must constantly defend their assets. This creates a cycle of destruction. Scarce resources are used to wage war or protect property rather than to produce new goods and services. In the film's epic road war scenes, a vast army of combatants and equipment is destroyed. The victors, as well as the losers of this encounter, are poorer after the fight. Exchanges in *Mad Max* tend to be negative-sum. As 17th-century English philosopher Thomas Hobbes put it,

The condition of man is a condition of war of everyone against everyone, in which case everyone is governed by his own reason, and there is nothing he can make use of that may not be a help unto him in preserving his life against his enemies.

*(Hobbes, 1651, p. 80)*

Uncertainty over property rights thwarts trade in another way. Imagine if you ordered a book online but could not be assured that the book would be delivered. How likely would you be to pay in advance? Similarly, if the book-seller had no way to make sure that you would pay upon delivery, how likely would they be to send you the book? We make trades like these all the time in our economy, because we are convinced that our property rights are secure. If we don't get the book we wanted, we can return it or exchange it; if we don't get it at all, we can punish the vendor with a bad review and report them to the authorities. Ultimately, contract and property law backs our trades, leading to more trades being made.

Unfortunately, for those in the *Mad Max* world, this type of security doesn't exist. Furiosa understands this when she makes a barter trade

outside of the normal channels. Her group needs safe passage through a canyon to avoid Immortan Joe's army. In exchange, she brings the gang that controls the route 3,000 gallons of gasoline. When she tells Max about her deal, she expresses doubts about this trade. "I made a deal up ahead. Safe Passage. I don't know if it's still any good." When the gang reneges on the deal, she expends precious ammunition to defend her property.

Another hindrance to trade is the fact that there is no functioning currency. Instead, all of the trade is barter in nature. Immortan Joe sends his water, milk, and produce to the tyrants ruling Gas Town and Bullet Farm in exchange for fuel and ammunition.

Reliance on barter trade limits the amount of trade that can take place because the trading partners must have a double coincidence of wants. Each partner to the trade must have something the other wants. The Citadel is able to get gasoline and bullets because its trading partners want the water, milk, and produce it has to trade. If they wanted sugar, roses, and puppies instead, no trade would occur.

In an economy that uses money, this double coincidence of wants is not necessary. People trade their labor for money that they can use to buy anything they want. A hair dresser desiring to buy lunch does not have to find a sandwich shop owner who wants a haircut. Instead, the hair dresser earns money from cutting hair that can then be spent on lunch. Under a money-based economy, there can be much more trade compared to a barter economy.

In addition to learning about money-based versus barter economies, we can also use *Mad Max* to contrast command and market economies – the choice between these can mean the difference between life and death!

## Command versus market economies

Exploiting the breakdown of society and the state of Hobbesian fear, Immortan Joe wields enormous power with an iron fist. As such, *Mad Max*'s economy can be called a command economy. Command economies differ from market economics in five distinct ways (Gregory and Stuart, 2004, p. 31).

The first characteristic of an economic system is whether or not the decision-making structure is decentralized (market) or centralized



(command). In a market economy, decisions about what to produce are made by consumers. Why are grocery shelves filled with gluten-free items today? Because consumers want them! Companies won't make a profit if they don't make what consumers want to buy. Decisions about how to produce things are left to firms who want to produce things at low cost so they can earn more profit. In a competitive market, companies that can combine resources more efficiently than their competitors are the ones who stay in business. As for how things are distributed, market prices do the trick. If I want it and can afford it, I get it.

In a command economy, these three questions (what is produced, how it is produced, and who gets it) are answered using some central planning process. Think of the Communist Party under the Soviet Union. The planners wanted to build tanks – too bad if the consumers wanted blue jeans! Who determines the answer to each of these economic questions in the Citadel? Immortan Joe! He delivers the plan from a balcony near the top of the Citadel. No one inside the fortress acts without being told what to do.

The second distinction among economic systems is how information and coordination take place. Monetary prices are the mechanism for disseminating information in a market economy, and these prices coordinate the activities of millions of people.<sup>5</sup> For example, if a disease wipes out half the strawberry crops this year, the price of strawberries will increase as buyers compete for the remaining berries. This will mean the price of things like strawberry shortcake will also rise, and I'll be less likely to order it for dessert, while restaurants will be less likely to have it on their menu. As people respond to the incentive that prices provide, they will naturally conserve the resource that is now in short supply. Only those who really want strawberries, those willing to pay the higher price, will consume them.

Contrast this to the planning mechanism of command economies. Production plans and prices are set in advance by a planning commission (or in *Mad Max*, by Immortan Joe), and they don't adjust easily to changing conditions. Shortages or surpluses are likely to occur.

Thirdly, command and market economies differ with regard to property rights. In market economies, property is mostly privately owned, while the state owns most of the property in a command economy. Private property rights create an incentive for the owner to

care for their property since they will be able to use it for their own purposes or keep any proceeds from selling it. The tendency to care for resources is diminished when they're public property.

The fourth dimension in which economic systems can be compared has to do with what provides production incentives. In a market, self-interest provides people with an incentive to produce in order to make themselves materially better off. Private property rights ensure they can keep the profits they earn. In a command economy like that in *Mad Max*, workers are held as slaves or are brainwashed into thinking that their work for Immortan Joe will lead them to a heaven-like place of honor called Valhalla. Nux believes he is "awaited" for a place in Valhalla after Immortan Joe merely looks at him during the race to catch Furiosa. Indeed, when he sees his fellow War Boys die in a huge sandstorm in the chase, he exclaims "Oh, what a day...what a lovely day!" Fear, punishment, and moral incentives are used in this world to compel production.

Finally, we can compare the likely political system of market versus command economies. Command economies tend to have centralized political power because the planning process requires that the planners have authority to implement their plans. Democracy is more likely in market-based economies because attempts to plan the economy naturally lead to more and more political control. Indeed, economists have claimed that without reliance on a market-based economy, political freedom is impossible.<sup>6</sup>

One unfortunate consequence of command economies is that they do not provide incentives for innovation – and innovation helps economies grow. In *Mad Max*, since Immortan Joe ruthlessly controls the entire production process, the incentive to innovate is squelched. Why bother to innovate if you will not be able to reap the benefits from that innovation? Everything goes to Immortan Joe.

Innovation is vital for economic growth to occur and is most likely to occur in a market-based economy. Market-based economies work well because they rely on the three Ps of private property, prices, and profit/loss motive which lead to the three Is of incentives, information, and innovation (Boettke, 2012). Specifically, private property gives people the incentive to use resources wisely; these rights are non-existent in *Mad Max*. Prices provide buyers and sellers with essential information

about the relative scarcity of the good or service. So if I see the price of gasoline go up, that is an informational signal that I should buy less gas. Finally, the lure of profit spurs innovation in a market-based economy. Likewise, the fear of loss causes prudence in business.

We do not observe these three Ps and three Is in *Mad Max*. In contrast, one reviewer described the world of *Mad Max* as “pitiless, primitive, primal” (Lickona, 2015). As explained earlier, all property is owned (including human beings) by Immortan Joe. Most of the people are starving. If the Citadel had a market, prices would help direct the limited food resources to the persons with the highest willingness to pay (and they would have the ability to pay since they would also be paid for their labor). Instead, the sustenance is allocated to those in Immortan Joe’s inner circle.

Those under Immortan Joe are so consumed with meeting short run needs that they lack the time, energy, and control over resources to plan for the future. Evidence of entrepreneurship is confined to military activities (such as the impressive drum and flaming guitar vehicle that leads Immortan Joe’s convoy on the war path). Those are the types of innovations that will be rewarded, perhaps with a promotion or promise of a place in Valhalla. The only way to improve your station in life is to be valuable to Immortan Joe.

## Macro Max

A common measure of living standards is Gross Domestic Product (GDP), defined as the total monetary value of final goods and services produced within a country in a particular time period, say a year. Think of GDP as a country’s income. Yes, economists know that there is more than income contributing to quality of life, but high levels of GDP are also associated with high levels of other good things like health and literacy.<sup>7</sup>

When GDP increases, an economy is said to be growing. When it falls, the economy is contracting. In *Mad Max* we see a fundamental contraction in the economy’s potential output. Potential output is what can be produced if you fully and efficiently utilize your resources. These resources include natural resources (like the water in *Mad Max*), labor resources (like the Wretched), and capital resources (like the War Rigs). When resources are destroyed, potential output decreases.

The apocalypse in *Mad Max* wiped out hundreds of years of economic progress and dramatically decreased living standards. Sadly, there is little hope of improving conditions through economic growth in this world. Secure property rights, access to capital (both physical and human), and technological progress are pillars of economic growth. As we've already observed, all are in short supply in *Mad Max*. This world lacks the economic freedoms that provide a structure for people to thrive. Economists conclude that reliance on markets leads to economic growth and lower levels of absolute poverty.<sup>8</sup> The giant wave of growth in the Western world that happened in the 19th and 20th centuries was due to the opening up of markets to more and more people. We can look at the more recent development trends in China and India to see the positive effects of moving to a market-based economy. Unfortunately, we can also look to the tragic results in modern-day Venezuela to see the effects of turning away from markets towards a command economy. The end result is massive unemployment and widespread abject poverty, as we see amplified in *Mad Max* among the Wretched living outside the Citadel.

## Conclusion

*Mad Max* illustrates the important role that an economic system has in determining our quality of life. As opposed to Immortan Joe's command economy, markets encourage specialization, generate win-win trades, and efficiently ration scarce resources. Market economies also encourage innovation, leading to economic growth and prosperity. These economics concepts are crucially important to an understanding of how to create a world of human flourishing. In contrast, the characters in *Mad Max* spend their days just trying to survive.

In *Mad Max*, the survivors have forgotten the economic lessons that have led most of the world out of abject poverty. Now ruled by Immortan Joe in a command economy, economic freedom – the very thing that lifted billions of people out of poverty – is missing.

*Mad Max* ends with a curious, fictitious quote from the First History Man, "Where must we go, we who wander this wasteland, in search of our better selves?" A society that forgets its history is doomed to repeat the mistakes of history.

## Notes

- 1 A previous version of this chapter was published as Mateer, G. Dirk and Michelle Albert Vachris (2017). “Mad Max: travelling the fury road to learn economics.” *International Journal of Pluralism and Economics Education*, 8(1): 68–79. Copyright of the original article remains that of Inderscience Publishers.
- 2 The original series included: *Mad Max* (1979), *The Road Warrior (Mad Max 2)* (1981), and *Mad Max Beyond Thunderdome* (1985) (source: IMDb).
- 3 Aquilera (2015) describes the stratified nature of Immortan Joe’s society.
- 4 Streithorst (2015) compares the world of Mad Max to that of the Dark Ages.
- 5 See Hayek (1945) for a fuller explanation of the informatory role that prices play in a market economy.
- 6 See Hayek (1944) and Friedman (1962) for more on the relationship between economic and political freedom.
- 7 See Hall and Lawson (2014) for a survey of the literature on economic freedom and economic growth, these quality of life indicators.
- 8 See De Haan, Lundström, and Sturm (2006) for a survey of the literature on economic freedom and growth.

## References

- Aguilera, R. (July 9, 2015) “The Economics of Mad Max.” Blog post at *Disequilibrium.org*. [www.disequilibrium.org/2015/07/the-economics-of-mad-max/](http://www.disequilibrium.org/2015/07/the-economics-of-mad-max/) (Accessed June 17, 2016).
- Boettke, Peter J. (2012) *Living Economics: Yesterday, Today, and Tomorrow*. Oakland, CA: The Independent Institute.
- De Haan, Jakob, Susanna Lundström, and Jan-Egbert Sturm. (2006) “Market Oriented Institutions and Policies and Economic Growth: A Critical Survey.” *Journal of Economic Surveys*, 20(2): 157–181.
- Friedman, Milton. (1962) *Capitalism and Freedom*. Chicago: University of Chicago Press (40th anniversary ed., 2002).
- Gregory, P. and Stuart, R. C. (2004) *Comparative Economic Systems*, 7th ed. Mason, OH: South-Western, Cengage Learning.
- Grossman, S. (2015) “Here’s the Surprising Movie Critics Liked Most in 2015.” <http://time.com/4163289/best-movies-of-2015-mad-max/> (Accessed August 5, 2016).
- Hall, Joshua C. and Robert A. Lawson. (2014) “Economic Freedom of the World: An Accounting of the Literature.” *Contemporary Economic Policy*, 32(1): 1–19.
- Hayek, F. A. (1944) *The Road to Serfdom*. Chicago: University of Chicago Press (50th anniversary ed., 1994).
- Hayek, F. A. (1945) “The Use of Knowledge in Society.” *The American Economic Review*, 35(4): 519–530.

- Hobbes, Thomas. (1651) *Leviathan*. London, UK. <http://socserv2.socsci.mcmaster.ca/econ/ugcm/3ll3/hobbes/Leviathan.pdf> (Accessed October 28, 2016).
- IMDb (n.d.) [www.imdb.com/find?ref\\_=nv\\_sr\\_fn&q=mad+max&s=all](http://www.imdb.com/find?ref_=nv_sr_fn&q=mad+max&s=all) (Accessed January 22, 2017).
- Lickona, Matthew. (2015) “Mad Max: Fury Road.” *The San Diego Reader*. May 14, 2015. [www.sandiegoreader.com/movies/mad-max-fury-road/#](http://www.sandiegoreader.com/movies/mad-max-fury-road/#) (Accessed June 27, 2017).
- Mateer, G. Dirk and Michelle Albert Vachris. (2017) “Mad Max: Travelling the Fury Road to Learn Economics.” *International Journal of Pluralism and Economics Education*, 8(1): 68–79.
- Rotten Tomatoes (n.d.) [www.rottentomatoes.com/m/mad\\_max\\_fury\\_road/](http://www.rottentomatoes.com/m/mad_max_fury_road/) (Accessed January 22, 2017).
- Streithorst, T. (2015) “The Economics of Mad Max and Star Trek.” *Los Angeles Review of Books*. June 21, 2015. <https://lareviewofbooks.org/essay/the-economics-of-mad-max-and-star-trek>. (Accessed August 5, 2016).

# 3

## THE ODDS ARE NEVER IN YOUR FAVOR

### Preventing economic growth in *The Hunger Games*

*J. Brian O’Roark*

One of the most successful of the recent stream of Dystopian literature is certainly Suzanne Collins’ *The Hunger Games*. Not only were the books a huge hit with readers (over 65 million copies sold), but the commercial success of the movies (over \$4.5 billion dollars worldwide) makes this trilogy of stories an economic powerhouse all on its own. As we delve into the world of Panem, you’ll soon see how *The Hunger Games* deftly illustrates core economic principles pertaining to the relationship between a country’s economic system and macroeconomic phenomena such as inflation, unemployment, and economic growth.

#### **The premise**

At the heart of the story is a young heroine, Katniss Everdeen, who is trying to keep her mother and younger sister alive in an oppressive society called Panem. The country has 12 geographic districts located in the heart of a ravaged North America. The citizens of Panem are kept under the thumb of an autocratic ruler situated in the Capitol – the seat of government.

After a cataclysmic environmental disaster, followed by a decisive civil war where a 13th district was annihilated, the Capitol instituted

the Hunger Games as a way to control the remaining districts. Every year, one boy and one girl between the ages of 12 and 18 are chosen by lottery from each district and taken to the Capitol. After a brief, intense training period, they are set loose in an elaborate arena where they battle to the death. The last living contestant is declared the winner, and is provided with a steady supply of food for their family.

The citizens who are unfortunate enough to reside outside the Capitol struggle under a despotic regime. Some have obvious talents that could be used to improve the lot of the community, but such actions are prohibited. Everyone must submit to the demands of the state. The impoverished inhabitants attempt to eke out an existence, sometimes violating the law to survive. However, the police state is so far-reaching, that most people choose to slowly starve rather than break the law by hunting outside of the border fence. Doing so marks you as a criminal against the state, the penalty for which is execution – unless you pay off the state.

Katniss and her family gather with the other citizens of District 12 on the day contestants will be chosen for the Hunger Games. When, to her horror, her younger sister is chosen, Katniss volunteers to take her place. Once the games begin, survival is initially based on the alliances the players form. Katniss' skills, honed from a need to survive in District 12 serve her well and she ends up as one of the final two contestants. The remaining player is her friend Peeta, the male from District 12. Rather than try to kill each other, the two make a suicide pact that will deprive the Capitol of a winner. The leaders in the Capitol thwart their plan and declare them both winners. There is no happy ending though. The luxurious lives they are privileged to as winners are complicated by the political consequences of making a mockery of the Hunger Games. At the end of *The Hunger Games*, a disillusioned Katniss wonders where she stands in relation to Peeta, her family, and the Capitol.

## The hunger economy

*The Hunger Games* as a whole has numerous economic applications.<sup>1</sup> The focus of this chapter will be the first book where we discover and connect with the characters in a way that evokes our empathy during the events that follow. Collins describes Katniss' mother,



Mrs. Everdeen, in a way that reminds us of the desperation mothers must have felt during The Great Depression. We forgive Katniss’ cold demeanor after the loss of her father and admire how she loves and protects her younger sister, Prim. When Prim is selected as the female representative of District 12, the reader is just as taken aback as Katniss or Mrs. Everdeen at the unexpected turn of events and is angered that this state of degradation has been brought about by the punitive measures levied by the agents of the Capitol.

Non-economists might shake their heads and think, “How very unfortunate. Katniss and her family don’t stand a chance.” Economists, in their calculating way, see a host of lost opportunities, unnecessary hardships, and downright foolhardy policy decisions. Those in the Capitol want to bask in the lap of luxury, yet they are likely causing themselves to be worse off, at least in the long run.

In the pages that follow, we will examine, how the agents of the Capitol keep the outlying districts from increasing their economic activity and advancing their standards of living. There is no free trade; no labor mobility within the district; no travel or communication between districts, no capital formation or investment, either internal or external; there are no private property or ownership rights; no opportunity for entrepreneurship or innovation. Each of these presents a significant barrier to economic freedom and growth.

## **Micro and macro**

In economics, there are two primary divisions: microeconomics (micro) and macroeconomics (macro). When we study individual actions and choices, or the decisions made by firms, we are looking at the micro side of things. Policies or data that apply to the economy as a whole rather than to an individual or firm, are the realm of macro. When we hear talk of the unemployment rate of a country, the growth rate of developing nations, or updates from the latest Federal Reserve Board meetings, the discussion has turned to macro.

Economics is the study of how individuals (at the micro level) and societies (at the macro level) can use their limited available resources to deal with the problem of unlimited wants. Even if you view yourself as a minimalist, there are still things you would like to have. Maybe you

don't envision yourself with a Porsche 911 convertible, but there is surely something else that you want that is in short supply. Clean water, perhaps? Whenever we have a situation where there isn't enough of something to go around, so that all people can have as much as they would like at no charge, economists say there is scarcity.

There are a number of different ways to deal with scarcity. Essentially, these revolve around the idea of how goods should be distributed. Such decisions are made under the pretext of economic systems which guide societies in answering three key questions: what to produce, how to produce it, and for whom those things should be produced. The way a society chooses to answer these questions will have a significant impact on the quality of life of the people who live in that society.

## Free market and command economies

At one end of the spectrum we have a free market economy. In its purest form, the three questions of what, how, and for whom, are decided by individuals with no interference from the government. If you want to start up a taco stand because you see a hole in the market, you do it. How you make the tacos is up to you. If you want to buy all your produce locally, that's your choice. If you want to press your tacos in a waffle iron, that is your choice. If you want to spread peanut butter on every taco shell, that is also your choice. Whom you market your product to is also up to you. It might be that you target college students. Perhaps you go on the road and sell tacos from a truck outside a concert arena. The whole process is up to you, and if you succeed, you are rewarded by earning profits. To the victor go the spoils. The flip side of that is if you make bad decisions (peanut butter tacos?), you also bear the losses resulting from your poor choices.

This is not a warm and fuzzy kind of economic system. It is a dog-eat-dog world and you're wearing Milk Bone underwear.<sup>2</sup> Success is not guaranteed no matter how much work you put in. However, the prospect of financial gains or the idea of being your own boss incentivizes many people to give it a go, while the fear of losses encourages a degree of caution.

On the other end of the spectrum is a command economy. In a command system the questions of what, how, and for whom are

answered by government planners. In its purest form, people aren’t free to choose what they want to produce, how or for whom. If you want to be a doctor (a producer of medical services), but the government decides you will be on the gymnastics team, you’d better learn that front handspring.

A critical problem with the command system is that it doesn’t respond quickly when things go wrong. Because the chain of command extends from whoever is controlling the economy to the very lowliest of tasks, hiccups in production become major problems. In a market economy, if you work in a pencil factory and the saw that cuts the wood to the proper length needs a new blade, you can easily order a replacement from a supplier of your choosing. In a command economy, you notify the boss, and he starts filling out the paperwork to request a saw blade from the government saw blade shop. That might not be such a big deal, except the saw blade shop is waiting for permission to acquire a blade sharpener because theirs broke. That paperwork is stuck in some bureaucrat’s office because the lights won’t come on since the power plant blew a transformer, and well, you get the picture. Government, no matter how well intentioned, simply can’t act quickly enough in all circumstances to deal with problems in real time

If we compare a market based country to a command based one, we see stark contrasts. South Korea is a bustling, vibrant economy where the standard of living has increased rapidly since 1960. After adjusting for inflation, incomes have risen from about \$155 per person per year in 1960 to over \$27,000 per person per year in 2016! Although not the only reason, the adoption of a market-based economic system has contributed in large part to this. Over the same period of time North Korea, an extreme example of a command economy, has seen incomes rise from \$1,100 per person to \$1,800 per person.<sup>3</sup> What is the difference here? Why do South Koreans live so much better than their neighbors to the north? Because individuals make their own decisions and have a stake in the outcome, they tend to be more productive, and that translates into higher incomes. In North Korea people don’t benefit from their production. Their government tells them what to produce and then decides who will get it. For North Korea, this results in large military expenditures with little allocated to the general population.

In the real world no economy – even North and South Korea – fits the definition of a purely market or command economy. Every economy combines individual freedom and government control in varying proportions. In market-leaning economies, governments frequently step in to regulate businesses. In the US, for instance, you aren't supposed to sell alcohol to customers unless they are 21. In command-leaning economies, there are exceptions to total government control, such as the many home based restaurants found in Cuba.

### **Economic systems – Panem style**

Panem in *The Hunger Games* is certainly a mixed economy. The Capitol very clearly dictates the what, how, and for whom questions – much like North Korea. The reader immediately sympathizes with the people of District 12 living in a state of abject poverty. It seems unfair that these people are forced into the mines, the danger of which is illustrated by the explosion that killed Katniss' father. Yet, there are market features here too. The Hob operates as an underground market in District 12. Government can't be everywhere at once, and what's more, some government officials want in on what is being provided illegally, because they can't get it either. District 12's underground economy is bolstered by its proximity to the border fence, beyond which there are ample food sources, and its extended distance from the Capitol, which helps it avoid close government scrutiny.

Before moving on, let's imagine Katniss in a more market-based economy to see how life might be different than the one portrayed in *The Hunger Games*. During her journey to the Capitol for the Hunger Games, Katniss thinks about how she could replicate one of the savory dishes she is served. She would just go to the store, pick up the ingredients, and cook the meal, right? She doesn't have to do all the prep work; someone else has plucked and deboned the chicken, and still another has farmed the peas. Those items will show up on store shelves as long as someone in District 12 is willing and able to pay for them, because suppliers will choose to provide them when and where it is profitable to do so. Of course, no one is going to give away the chicken, peas, and other ingredients she needs, so Katniss needs to find a job. Maybe she becomes a personal trainer and offers get-back-to-nature workouts

popular with 20 to 29 year olds; she’s free to make that choice. By catering to this niche market, she makes a good living until her clientele tire of picking thorns out of their hands. When that happens, she moves onto the next big thing. She doesn’t have to wait to be told what to do. The reduction in the number of paying students in her classes tells her that it’s time to find a more profitable career.

Panem, however, has more of a command-based economy, and this leaves poor Katniss and her family in a very different position. Relative to the rest of Panem, the Everdeens are on the low rung of the socio-economic ladder. Their first problem is geographic. District 12 is on the outskirts of the country, further from the Capitol than any other district, and consequently, neglected when it comes to food rations. The working class spends their time in the coal mines where conditions are abysmal. Many are maimed or broken from their time in the mines.

Economic systems help to explain the ways countries organize and allocate resources to achieve objectives. Market systems leave these decisions in the hands of individuals guided by market forces, while command systems are more carefully coordinated by government officials. It is safe to say that Panem falls into the latter category. The objective is to make the lives of those living in the Capitol as comfortable as possible, while subjecting the rest of the country to punishment for a past rebellion and as a preventative against future uprisings. Obviously, this is bad for the majority of people living in Panem, but it might also be bad for those living in the Capitol. To understand this incongruity, we need to examine some other macro topics.

## The macro games

At the macro level, attention is often concentrated on three areas – price stability, low unemployment, and economic growth. Achieving this trifecta is commonly referred to as economic stability. Let’s take a look at each of these as they apply to Panem.

As noted economist Milton Friedman suggested in 1970, “inflation is always and everywhere a monetary phenomenon” (p.11). This means that inflation is precipitated by printing too much money. When money is plentiful, it is not worth as much. In District 12 there isn’t much money; you basically work for food and barter is part of the

economy. We see illustrations of this when Peeta's father trades a loaf of bread for a dead squirrel or when Katniss and Gale trade greens for candle wax, and barter for a goat. If inflation is a monetary phenomenon, then prices are going to be pretty stable, at least in District 12.<sup>4</sup> Thus, we can conceivably say that the economic policies of the Capitol are actually good at price stability. If there isn't much money it is difficult to have inflation. So, check one box for the Capitol.

It also seems that the Capitol has unemployment under control. Since everyone is forced to work, there is no unemployment. Even if they are not employed formally by the Capitol, people work, because in Panem if you don't work, you don't eat. In a country where people eke out an existence under conditions of subsistence living, unemployment equals death. This is one of the reasons why Katniss seems particularly miffed with her mother. After her father was killed, Mrs. Everdeen emotionally checks out and Katniss is left to feed the family. Without Katniss' efforts, she would die. So, unless you have either a Katniss in your family or a death wish, you probably aren't unemployed. While macabre, it seems like the Capitol's policy of forced servitude means that unemployment is also not a problem. Check box number two for the Capitol.

That leaves economic growth. Economic growth is measured by how much a country produces in one year.<sup>5</sup> More generally, if you produced more stuff this year than you did last year, congratulations, you have economic growth! It is important to understand that growth has nothing to do with the distribution of what was produced. Not everyone gets an equal share. A country of 100 citizens could produce gadgets worth a total of \$100 million, making it the richest country on the planet in terms of income per person. This doesn't mean that everyone is a millionaire. One person could have everything, and everyone else could be a dirt farmer. However, countries that produce more stuff typically need the citizens to be part of the production process, so the income earned from selling what you make does get spread around to incentivize work. As output increases, income per person typically increases and so does the standard of living.

In Panem, we have the peculiar situation that the working classes do not benefit from the production process. The workers of Districts 11 (farmers) and 12 (coal miners) are heavily exploited, while those closer

to the Capitol are better off. The luxury goods produced in District 1 are probably the least necessary for survival, but we see that the people of this district are treated better than other districts. The people in the Capitol are essentially conspicuous consumers, the kind of people economist Thorstein Veblen found repugnant.<sup>6</sup> Their appetites know no bounds, yet they are entirely unnecessary in terms of production. Cinna, one of Katniss’ handlers during the Hunger Games, poignantly remarks that people of the Capitol must seem despicable to Katniss and Peeta. In Marxist terms, they are the bourgeois run amok.

It is here where the Capitol’s policies leave Panem high and dry. Economic growth is the product of using resources efficiently. Growth is the result of allowing entrepreneurs to combine labor, natural resources, capital (think machinery and tools), and technology in profitable ways that consumers value. Yet, there are no entrepreneurs, and there is certainly no profit motive. In fact, the Capitol is doing things about as wrong as you can if you want to achieve economic growth.

### **The wealth of Panem (or lack thereof)**

When economists consider economic growth the only real consensus is that we want it. How to get it is another issue altogether. There is a long literature on how growth is to be attained. Ignoring the cranks, charlatans, utopian and otherwise implausible views of growth, we are still left with a significantly broad selection of growth theories that have been advocated over the years. A good place to start is with Adam Smith who, in 1776, published *The Wealth of Nations*, in which he concludes that the key to growth is specialization of labor. Production can take off when people stop trying to do everything for themselves and instead look to others to help.

Smith has a point here, and we can see this in the subsistence level of existence in which Katniss and her family reside. The families of District 12, particularly the mining families, work exclusively for the state. The product of their labor is co-opted in exchange for meager rations, no matter how well they do their job. They aren’t necessarily good miners; they are conscripts. As a result, there is probably less coal produced and less innovation in the production of coal. For the Capitol, workers are disposable, so there isn’t an incentive to figure out more

effective and safer ways to extract the coal. Furthermore, since the workers are slaves and they cannot choose what they want to do, there are very few human resources available to produce things the families of District 12 actually want. This means less variety and more disaffected coal miners.

Consider also the limitations on labor mobility. There are people in District 12 who are probably not going to make good miners, but they might make good fishermen. There are strong, able-bodied folks in District 2 working as stonemasons who might be even better miners, and there are lumberjacks in District 7 who would be better fashion designers. Because they can't move from district to district, these workers are employed in jobs where they will be less productive. It isn't that they are bad people; it is that their innate skills or interests make them more productive in some other occupation. This set up is clearly bad for them, but it is also bad for the Capitol. Because workers can't move from the job to which they've been assigned to one where they are better suited to work, output potential is not reached. This means fewer goods for the conspicuous consumers of the Capitol.

Another aspect of growth upon which Smith focuses is the ability to trade. In Smith's economy, government has a few limited roles. It should provide an army for protection from foreign invaders. It should also provide a just police and court system to protect property from threats within its borders. These are instrumental for growth, because who will start a business if the proceeds can be taken from them by someone bigger and stronger? Smith also adds that government should help promote trade. It should provide the infrastructure that helps get goods from one place to another. In *Panem*, the free flow of goods and the free flow of labor are prohibited by the government. This prevents goods from getting to those who value them the most. If the people of District 12 are starving, they would be better off trading coal for food, but since the government takes the coal, and prevents it from going to the people of District 11 who may want it when the nights get cold, both districts are worse off than they could be if they were allowed to trade.

## Capital in the Capitol

Smith isn't the last word in growth theory though. Robert Solow is perhaps the most well-known growth economist in the 20th century.



Solow’s model of growth has evolved over time, starting with the initial premise that all you need is more capital (Solow, 1956). When economists speak of capital they don’t really mean money. Instead, capital refers to the resources in the production process that are man-made and used to make other things. For instance, bulldozers are great fun. Who wouldn’t want one? However, there aren’t too many people who buy bulldozers for the sake of owning a bulldozer. They want it to help them get work done. That’s what capital is.

Solow’s thought was that poor countries needed more capital to expand their production capabilities. Those nations had plenty of people and some were flush with natural resources, so give them a couple of bulldozers, and they should be off to the races. As is often the case with economic models, Solow’s model didn’t work. Poor countries were given irrigation implements, train lines, and even hydroelectric power plants, but economic growth did not follow.<sup>7</sup> Some didn’t have any real use for bulldozers or the other forms of capital that were given them. Others didn’t have the resources to maintain power plants and other equipment. Much of the donated capital ended up not being used or in disrepair. Solow got people thinking about growth and even won the Nobel Prize in economics for his work on growth theory, but it was a group of people who came after him, who shed light on an overlooked yet key piece of the growth puzzle. This piece – institutions, or more simply, the rules of the game – turns out to be vital for growth, and plays a prominent role in *The Hunger Games*.

## The rules of the (hunger) game

Economist Douglass North (who won the Nobel Prize in 1993) said that: “Institutions are the rules of the game in a society, [...] the humanly devised constraints that shape human interaction. [...] They structure incentives in human exchange, whether political, social or economic” (North, 1990, p. 4). This includes all of those things that order life, including the legal issues such as property and contract laws, as well as the religious aspects, social norms, and cultural expectations of society.

Economists, who were trying to understand why the bulldozers they sent to Sudan didn’t make the country into an economic dynamo, began looking at institutions in earnest in the 1980s. They found

growth depends on more than having sufficient capital. The institutional environment could make or break an economy. This led to an explosion of research into the role institutions play in economic growth. The results were and still are stunning.<sup>8</sup> In many cases the research suggests that institutions are more important than bulldozers (and other forms of capital), and the contest isn't even close. Adam Smith was right: if you have a government that constructs a just court system and processes that support trade, you are likely to be better off than those countries without such a government. Institutional environments that promote political stability; credible, democratically elected governments; and civil liberties also contribute to consistent growth. Now, let's think about the way things work in Panem.

First, the regime that came to power in the Capitol became an unquestioned autarchy after the rebellion that resulted in the Hunger Games. There is an obvious top down leadership structure. The mandates of the president favor those living in the Capitol at the expense of everyone else. No one owns their own means of production; it is all controlled by the state. In fact, the Hunger Games exist as a reminder to citizens that they do not control their own lives. Participation is mandatory. You must submit your name to a contest where, if chosen, the probability of death is 95.83%.

Second, justice in Panem is hardly just. Theft is punishable by death. Public whippings occur frequently. If you want to leave, you are either executed or your tongue is cut out, and you are forced into an even more severe form of slavery.

Third, trade is forbidden. Thus, road maintenance between the districts is not an issue. Infrastructure is actually a tool of oppression. District 12 gets a few hours of electricity a day, but curiously, electricity always works during the Hunger Games and when the Capitol wants to broadcast a message.

Other characteristics of growing economies are also absent in Panem. The president isn't elected; he's a dictator for life. There are no civil rights. To limit revolt, freedom of speech is abolished. People are constantly looking over their shoulders wondering if what they say will be recorded or reported.

While Panem has political stability (it's easy if the dissenters are all dead or mute), it doesn't provide an environment where anyone, other

than the ruling elite wants to live. Consequently, when you don’t get to keep the fruits of your own labor, you have no incentive to increase your productivity, and when productivity does not increase, economic growth will grind to a halt. There is no hope that you can improve your own lot, so why try to make things better for your oppressors? In fact, with no hope for the future, people may do some peculiar, albeit predictable things, that further slow growth.

## **Peculiar preferences**

Would you wait 20 minutes for a marshmallow? A long-term study beginning in the early 1960s evaluated the behavior of preschoolers and their ability to delay gratification.<sup>9</sup> A child could have a marshmallow right now or wait by themselves for 20 minutes and have two marshmallows. Researchers followed up with the children years later and found that those who waited for the two marshmallows fared better on a number of indicators including SAT scores, body mass index, and personal earnings.

Such studies of willpower are interesting because they tell us about how willing we are to forego instant satisfaction in exchange for something we know will be better if only we were willing to wait. Why don’t people save for their retirement when they are young? They’d rather spend their money (or have their marshmallow) now. In economics, we refer to this behavior as time preference. If you have a strong time preference you eat the marshmallow now. Someone with a weak time preference can put off that gooey sweetness for a little while, knowing the payoff down the road will be even more satisfactory. Time preference explains choices to save, splurge at the mall, and even study for your next economics exam. Time preference also helps us to understand why economic growth cannot possibly happen in Panem.

Solow’s growth model initially relied on capital as the driver of output. As noted, capital is man-made, but that doesn’t mean it is easy to make. Think about computer software, a tractor, or a factory as examples of capital. These things take time and money to develop and build. For a small start-up to develop a new piece of software it requires some funding, and often, those small enterprises struggle to find it. They must acquire their funds through some outside source. Perhaps

they go to a bank for a loan, or possibly there is a venture capitalist willing to invest in their business. Even a giant corporation, like Ford Motors, needs funding to build a new plant. They have different avenues down which to travel, maybe they float a bond or issue more stock, but the concept is the same. Big or small, a business needs to find funding for their ventures.

In the financial system, this funding comes from lenders. People are willing to let a business borrow their money so that the business can expand. The downside of lending is that the lender doesn't have use of that money. The upside is that the borrower will pay for the privilege of using your money.

Imagine you have \$10,000 that you aren't sure what to do with. You could take your friends to see the musical *Hamilton* on Broadway. It would be a great day or two, and after the show, when the money is spent, you have wonderful memories. Alternately, you could use that money to buy a Ford Motor Company bond. In essence, you would be lending Ford your \$10,000. This isn't nearly as fun, but the upside is that the bond pays interest. This means Ford is paying you to use your money. But wait, there's more! At some point you can either sell the bond to someone else to get some of your money back, or you can wait until the bond matures and Ford will pay you back. The bond may not provide great memories of a trip to New York City, but it does have the advantage that you are making money. What should you do? The answer depends in part on your time preference. Saving money reflects a weaker time preference while lining the pockets of *Hamilton* star and playwright Lin Manuel-Miranda suggests a stronger time preference.

Now, if you were living in District 12, what would you do? Assuming the Capitol would agree that you should be paid interest, is saving money a good idea? Probably not. Katniss observed the distinction between districts. An old person is revered in District 12 because of the rarity of living very long. In the Capitol, no one wants to look old; it isn't good for appearances. If you don't expect to live to the ripe old age of say 45, what's the point of saving? Additionally, if you only have just enough to feed your family, setting aside savings is preposterous. Who cares how much you save if you starve to death? This means that the residents of District 12, and most of the other districts, will have a

very strong time preference. They prefer to consume what little they have now, because to do otherwise will likely lead to a rather unpleasant death.

Now, here’s the rub: economic growth is necessarily linked to savings. Without savings, new software would not be developed, new tractors would not be manufactured, and new factories would not be built, at least not on the grand scale needed for economic growth to occur. When you buy bonds, you are lending money to a company so they can increase production. In the future, you will be paid interest on that loan. Solow may have missed the point about institutions, but he wasn’t entirely wrong. You can’t grow your economy if firms have no way to fund capital investments. In District 12, and even in the Capitol, there is little thought of saving. Pretty much everyone is thinking about their immediate gratification – the poor because they must to survive and the wealthy because they desire status. Regardless, the outcome is a stagnant economy.

## Conclusion

Katniss provides us a perfect illustration of how the excess of the Capitol diverges so much from the hardscrabble life of the districts. During her stay she marvels at the idea of luxurious foods seeming to appear out of nowhere. No wonder the residents of the Capitol have so much time to spend on their appearances and entertainment like the Games. For the majority of people in Panem, such leisure time does not exist. For example, in District 12 Katniss must spend those hours hunting and foraging for things to eat.

Under the command economic system in Panem, it is unlikely that the residents will escape crushing poverty. This poverty manifests itself in a variety of ways beyond a lack of food: substandard housing; limited and erratic electricity (ironic given the coal mining economy); no consumer purchasing power or markets; dangerous working conditions; almost no access to technology.

All this stands in stark contrast to the citizens of the Capitol. They enjoy modern conveniences, high-speed transport, luxuries in terms of food and clothing, and hot showers! Why such a difference? They have access to and control of a variety of technologies. They maintain a

standing military force to create an environment of fear to repress any ideas of rebellion. They exploit the districts through resource extraction. All this gives them political control through economic dominance.

Fear not! The story is about to take a turn. Devotees of the book may say that the inspiration for the coming revolution is Katniss' victory in the Hunger Games. They would be wrong. Katniss is indeed a rallying point, but the oppression that comes from living under a command economic system and the desire for a better life, that is what stokes the fires of change in Panem. In order to enrich their lives at the micro level, and subsequently the fortunes of the nation at the macro level, people need incentives. They need a reason to innovate and use their resources to their fullest. If there are more opportunities elsewhere, they need to be able to relocate. Expanding trade across the nation improves the lot of all. They also need incentives to save for the future. To accomplish all this, institutions need to be established that protect property rights, facilitate trade, and ensure the law will be enforced fairly.

To end the Hunger Games the citizens of Panem need to throw off the economic shackles imposed by the Capitol. In the *Road to Serfdom*, F. A. Hayek notes that without economic freedom there can be no political freedom. As the subsequent volumes of *The Hunger Games* detail, this will not be an easy road, but the destination will be worth it.

## Notes

- 1 These include, but are certainly not limited to comparative advantage, market activity, and game theory, some of which are explored in Cleveland, Holder and O'Roark (2016).
- 2 Thanks to Norm Peterson (actor George Wendt) of the television show *Cheers* for this inspiring quote. 1986, season 4, episode 18.
- 3 These data come from the Angus Maddison project and the CIA World Fact Book. North Korean data are notoriously unreliable, but they should be in the ball park.
- 4 Later in the story there does seem to be some inflation in the Capitol itself. Because of uprisings in the districts, supplies of some goods are cut leading to higher prices.
- 5 Technically speaking, economic growth is measured as a change in gross domestic product (GDP) from one year to the next. GDP is the summation of the market value of all final goods and services produced within the borders of a country over a year. To compare these data accurately you must adjust the value of GDP for inflation. Inflation adjusted GDP is called real GDP.

- 6 Veblen’s 1899 work *Theory of the Labor Class* lashes out at the privileged class who no longer had to engage in physical labor, or in some cases labor of any kind, yet consumed material goods with the purpose of conveying their station in life.
- 7 See Hirschman (1967) and Easterly (2001) for numerous examples.
- 8 See Besley (1995), Knack and Keefer (1995), Easterly and Levine (1997), and Hall and Jones (1999).
- 9 Details of this study are provided in Urist (2014).

## References

- Besley, T. (1995) “Property Rights and Investment Incentives: Theory and Evidence from Ghana”. *Journal of Political Economy*, 103(5): 903–937.
- Cleveland, J., K. Holder and B. O’Roark. (2016) “Economics of The Hunger Games”. *International Journal of Pluralism and Economics Education*, 7(2): 152–169.
- Collins, Suzanne. (2008) *The Hunger Games*. New York: Scholastic Inc.
- Easterly, W. R. (2001) *The Elusive Quest for Growth: Economists’ Adventures and Misadventures in the Tropics*. Cambridge, MA: MIT Press.
- Easterly, W. and R. Levine. (1997) “Africa’s Growth Tragedy: Policies and Ethnic Divisions”, *Quarterly Journal of Economics*, 112(4): 1203–1250.
- Friedman, M. (1970) *The Counter-Revolution in Monetary Theory*. London: Institute of Economic Affairs.
- Hall, R. and C. Jones. (1999) “Why Do Some Countries Produce So Much More Output per Worker Than Others?” *Quarterly Journal of Economics*, 114(1): 83–116.
- Hayek, F. A. (2007) *Road to Serfdom*. Chicago: University of Chicago Press.
- Hirschman, Albert O. (1967) *Development Projects Observed*. Washington, DC: Brookings Institution Press.
- Knack, S. and P. Keefer. (1995) “Institutions and Economic Performance: Cross-country Tests Using Alternative Institutional Indicators”, *Economics and Politics*, 7(3): 207–227.
- North, Douglass C. (1990) *Institutions, Institutional Change, and Economic Performance*. Cambridge: Cambridge University Press.
- Smith, Adam. (1994) *The Wealth of Nations* (6th ed.). New York: Modern Library.
- Solow, Robert M. (1956) “A Contribution to the Theory of economic Growth”, *Quarterly Journal of Economics* (Feb.): 65–94.
- Urist, J. (2014) “What the Marshmallow Test Really Teaches About Self-Control”, *The Atlantic*. [www.theatlantic.com/health/archive/2014/09/what-the-marshmallow-test-really-teaches-about-self-control/380673/](http://www.theatlantic.com/health/archive/2014/09/what-the-marshmallow-test-really-teaches-about-self-control/380673/) Accessed: August 18, 2017.
- Veblen, Thorstein. (2012) *The Theory of the Leisure Class*. New York: Oxford University Press.

# 4

## THE *DIVERGENT* ECONOMICS OF FACTIONS AND GOVERNING

*Samuel R. Staley*

Who does the government work for? When we use the term “public servant” we imply that government officials are trying to serve the best interests of society as a whole. But are private interests really at work behind the scenes? These are questions explored by Public Choice economics. Economics, in general, is a study of how choices are made. In the private sector, we assume that companies and their customers make choices based on self-interest. Companies want to make a profit, and customers want to get their money’s worth. Public Choice theory combines economics and political science to make that same self-interested assumption about government officials (Mueller, 2003). After all, they are people, too! Why should we assume a Senator acts out of self-interest when she is negotiating the price of her new car, but when she enters the Capitol building to vote on a bill, she dons a halo?

Nobel Prize winner and one of the founders of this sub discipline of economics, James Buchanan, called this approach “politics without romance” (Buchanan, 1979). A central tenet of Public Choice economics is that politicians act out of their own self-interest and act rationally by weighing the costs and benefits of keeping and using power (Mueller, 2003). They are not the noble philosopher kings who always work toward a well-defined public interest.



The Public Choice model of government is illustrated beautifully by Veronica Roth in her wildly successful dystopian young adult novels, the *Divergent* trilogy. Roth's trilogy – *Divergent* (2011), *Insurgent* (2012), *Allegiant* (2013) – has sold tens of millions of copies, while the films have generated worldwide revenues in excess of \$750 million (Roback, 2014; *The Divergent Series*, n.d.). Her characters grapple with fundamental questions of individual identity, coming of age, rebellion against authority, overcoming life threatening challenges, and other themes. In Roth's dystopian world, these choices are made within the context of a rudimentary economic system and a governing system that isn't immune to self-interested people pulling the levers of government.

Public Choice theory is remarkably helpful in showing the rationale behind the actions of the lead characters and even validates much of the behavior Roth describes (Staley, 2016). Nonetheless, Roth was a creative writing major at Northwestern University where she wrote *Divergent* during her senior year and appears to have never studied economics or political science. For economists, it isn't surprising that the economics sneaks into the novels despite Roth's lack of explicit training in the discipline. Notwithstanding the mathematical formulas, charts, graphs, and statistical studies that have become hallmarks of modern economics, the discipline is fundamentally about understanding and interpreting human behavior in a social system.

Roth's dystopian world reflects many Public Choice insights, in no small measure because she has grounded her novels' observations on real human behavior and the challenges individuals face in making choices about personal relationships, social affiliations, and the role of government. Staley (2016) explicitly cited sources of inspiration for the series, one of which was her longtime interest in government systems, particularly those that “stick” citizens in classes, castes, cliques, or other groups.

What emerges is an intriguing and engaging story of Public Choice economics in action. We'll see this unfold in the following sections of this chapter. First, we'll examine the stories themselves, laying out the plot and core ideas that make up the story. Then we'll examine how her characters and key plot points reveal a provocative story about how political systems actually work, and how core economic ideas help us understand their dynamics. Finally, we'll examine the faction system

and how this system of governance captures the worst fears of the U.S. founding fathers as they designed the U.S. Constitution and how economic insights into human behavior explain the collapse of the faction system and the chaos that emerges in the aftermath. In short, we'll see how Veronica Roth, whether intentionally or not, has provided a dynamic illustration of why the economic insights underlying Public Choice economics led to one of its founders earning the Nobel Prize in economics.

### **The divergent version of “politics without romance”**

The concept of self-interest, in all facets of society, is central to Roth's plot and the overall arc of the series. We are first pulled into the story by the natural rebellion of Beatrice “Tris” Prior, the daughter of leaders in the Abnegation faction. Abnegation's duties are to run the government in the public interest, that is, the collective interest of the community rather than individual interests. Abnegation represents the public interest view of government that prevailed in economics before Public Choice theory took hold.<sup>1</sup>

Abnegation's social system subverts any behavior that appears to reflect the individual ego or self-interest, including banishing mirrors because focusing on one's reflection is considered vain and egocentric. Sixteen-year old Tris is trying to find her own identity, what we today would regard as a normal search for “self.” In the dystopian world of post-apocalyptic Chicago, however, that search is seen as a personality disorder. Breaking away from the constraints of her home faction would seem to be a natural step in her growth, at least from the point of view of a 21st-century reader. Unlike other members of her faction, Tris doesn't see anything wrong with the individual ego (although she learns to appreciate the benefits of restraint and dedication to duty implied in the Abnegation faction).

What Tris learns is that her search for identity is directly tied to her “Divergence,” someone with aptitudes in more than one faction. At sixteen, every child in the city is subject to a drug-induced simulation where their aptitudes for different factions are tested. In economic terms, as a Divergent, she is more capable of making choices based on their expected costs and benefits, because her divergence allows her to

more fully appreciate and understand her range of abilities and potential. She is forced to make a choice, and the nature of that choice provides information that others might not have. Non-divergents are more constrained by the alignment of more clearly identified dominant abilities, the effects of the serum on reinforcing those perceptions, and a culture and political system that emphasize acceptance of the collectively determined outcome. Thus, the fact Tris has to make a choice is an important step in her journey toward self-awareness and the consequences of her decisions.

In addition to Abnegation, the other factions are:

- Amity: the peaceful, farmers and producers who govern themselves through pure democracy and consensus.
- Candor: the faction representing brutal honesty and impartiality.
- Erudite: the intellectuals, innovators, and knowledge seekers.
- Dauntless: the brave and fearless, the designated enforcers.

Not everyone succeeds in their factions, so they are cast out, becoming in effect members of the lowest caste who perform their society's menial functions such as driving buses and trains, performing maintenance, or working odd jobs as part of the disenfranchised "factionless." Thus, the system includes a Darwinistic element where only those with the greatest aptitude remain in the organized factions and provide socially respectable roles and functions.

As a Divergent, Tris can never feel like she is completely at home in one faction, since she has aptitudes for three factions: Candor, Abnegation, and Dauntless. She has a strong, intuitive understanding of justice and truth (Candor), a sense of duty and commitment to higher goals (Abnegation), and the courage to put herself at risk to achieve these goals (Dauntless). These elements give strength to her character.

Her character "flaw" – the search for and acceptance of individual identity independent of group/faction identity – is crucial to the story and the series. Tris can see and understand the self-interests that motivate faction leaders, both good and bad. This plays out through all three books.

In *Divergent*, she is suspicious of all faction leaders, including those in her chosen faction of Dauntless. This skepticism bears fruit when she

suspects Jeanine, the leader of the intellectual and arrogant Erudite, of plotting to take over all factions by using a serum to induce compliance among the other factions. As a Divergent, Tris is immune to the coma-inducing serum. This allows her, with the help of others, most notably her soon to be love interest Tobias “Four” Eaton, to upend Jeanine’s plan for a coup d’état. Their success is bittersweet, however, as half of the Abnegation faction, including Tris’s parents, is wiped out by serum-controlled Dauntless.

Jeanine is overthrown in the second installment of the series, *Insurgent*, by a coalition of the remnants of Abnegation, the Dauntless who are resistant to Jeanine’s authority, and the factionless, who are led by the determined, charismatic Evelyn. Evelyn has come to see the downsides of the faction system, yet she wants to do more than simply overthrow Jeanine and end Erudite’s domination over their society. Tris is the first to see that Evelyn is motivated by her own quest for power and the authority to implement her own “utopia” of a factionless society. As Evelyn consolidates power, Tris organizes opposition.

Notably, Jeanine and Evelyn appeal to their understanding of the public interest to rally support for their causes. They portray themselves as the noble, public interested leaders who can institute a system that maximizes the public benefit. Public Choice theory predicts that politicians and others supporting political change will attempt to appeal to the public interest when promoting policies that really serve self-interested agendas (Yandle, 1983, 1999). Jeanine accomplishes this by installing a favored faction, Erudite, at the pinnacle of a social hierarchy that reinforces a rigid caste system; that is, she consolidates personal power. Evelyn, on the other hand, envisions a different world where everyone is treated equally and identities are forged around a collective vision for the entire community.

In the first case, Jeanine uses individual identity and associations with caste to establish hierarchy and order. In the second case, as an outsider and victim of the faction system, Evelyn attempts to use her power to destroy individual identity to forge her own vision of an idealized collective identity. Each of these paths is chosen through a self-interested, rational process. Roth does an excellent job of showing through the stories and development of the characters how these paths lead to Jeanine and Evelyn’s demise.

As a Divergent, Tris's identity is a unique blend of her personal experience and aptitudes that transcend one faction. This gives her insight into the motivations of individuals; she sees their self-interest, not just the image they present to the general public. In short, Tris sees the politics of dystopian Chicago without the romance that utopian visions of the authority project.

## Self-interest and political instability

While seeing how the motivations of individual leaders contribute to their downfall is easy, an intriguing aspect of Roth's story reveals how the faction system would implode independently of those leaders. In other words, the faction system itself is inherently unstable.

Interestingly, the role of factions and their destructive behavior played a central role in the debate over the U.S. Constitution in the late 18th century. Two seminal essays related to democracy and factions were penned for *The Federalist Papers*: Federalist 9, "The Union as a Safeguard Against Domestic Faction and Insurrection" by Alexander Hamilton, and Federalist 10, "The Same Subject Continued" by James Madison. Madison's essay, in particular, shows how the federal government was never intended to be partisan and how factions could potentially destroy the ability to govern.

Madison believed factions were inevitable. The diversity of the population would lead men to bind together in groups in order to achieve their goals through the political process. Only by establishing an effective system of government that limits the influence of factions could a sustainable government be achieved. Public Choice economists such as Buchanan have dubbed the economic analysis of these governing rules, the incentives for individuals to engage in the government, and the study of their outcomes as "constitutional political economy" (Buchanan, 1986; Gwartney and Wagner, 1988). Individuals act in their own self-interest to pursue their own aims, but their decisions are constrained by the rules within which they operate. Now, let's take a look at the rules established to govern the world Roth has penned.

In the Divergent world, the choosing ceremony and the faction system represent an overarching set of rules that define the framework in which individual choice and action are allowed. The characters make

rational choices based on the rewards established by the system. In Jeanine's case, this implies consolidating power to control society. In Evelyn's case, it's obtaining the authority to impose an idealized vision of a factionless society. Similarly, Tris makes choices about how to prevent this usurpation of freedom, and perhaps encourage the expansion of freedom, by working within the constraints and resources provided by the faction system. (Tris never dismisses the benefits of group identity nor romanticizes the foibles of individual identity, and she seems to be navigating her personal place between the two.)

Roth uses what we know about social psychology – the need for people to band together in groups, and form a personal identity around groups – to explore broader issues of governance such as who is in control, how authority is exercised, and how power shifts. We learn in the final book, *Allegiant*, that, contrary to James Madison who viewed factions as harmful, those who set up the faction system in Roth's world viewed factions as a way to solve problems and bridge important social divides. By establishing factions and separating citizens into groups by aptitude, they believed a new society would emerge that was more balanced and peaceful, with each respecting the attributes of the other.

The first book in the trilogy, *Divergent*, shows us the role of factions in determining individual identity and the constraints of using rigid hierarchy to order society. Tris's aptitude test is insufficient to determine her place in a faction. She chooses Dauntless as a way to separate herself from the collectivist and other-oriented culture of Abnegation. While her Divergent personality means she isn't entirely comfortable in Dauntless, she soon distinguishes herself as competent and brave. She doesn't embrace the headiness that comes with the power given to her by the faction system, but she identifies strongly with the bravery that is critical to Dauntless, as well as the unwavering belief in the goodness of her role as enforcer and protector.

In the second book, *Insurgent*, Tris escapes the city with Four and several others after they disrupt Jeanine's plan to subvert the other factions to Erudite's authority. They seek refuge in the Amity community until the Erudites and "traitor Dauntless" track them down, arrest them, and attempt to kill them. However, Jeanine's machinations have split the factions and society, setting up a different set of incentives, rewards, and costs. New rules have emerged, and different groups are vying for

power. Abnegation and some members of Dauntless join forces with the factionless to unseat Jeanine and Erudite, who are now united with Candor and loyal elements of Dauntless.<sup>2</sup> The attempt to consolidate power by Jeanine destabilized the political structure of the faction system.

Prior to Jeanine's attempts to centralize authority, the community had been in balance, or, in economic terms equilibrium. In all likelihood, although this is not explicit in the narrative, equilibrium was maintained because each of the factions depended on the others to provide critical goods and services. Amity provided food; Erudite provided technology (and presumably production of manufactured goods); Candor provided justice; Abnegation provided government services; Dauntless provided law enforcement. Power was distributed through the decentralized allocation of essential products and services. The benefits of this kind of trade kept attempts by one faction to gain power over the others in check. Amity, for example, could withhold food if it was threatened. Only when Erudite gained a technological advantage – mind control through a serum – did power become unbalanced. This led to resistance, insurrection and disrupted the equilibrium.

Economists have examined the conditions that lead to what is sometimes called “regime uncertainty.”<sup>3</sup> When the benefits of investment or trade become uncertain because laws are not applied equally or authorities interpret them capriciously, economies falter and political systems become less stable. While Roth doesn't discuss the details of the governing system prior to Erudite's corruption, the implication from the story is that leaders from the factions were able to resolve most differences and prevent civil war. This outcome would be expected when power is balanced and the benefits are, to some extent, shared. This type of social stability supports political stability.

Once the faction system is destabilized, society descends into chaos. Factions split, new coalitions develop, and new leaders emerge. But these coalitions are unstable as long as others believe power is imbalanced. The factions that joined with Evelyn and her factionless supporters to overthrow Jeanine expected a new balance to emerge. Most hoped for a return to a balanced faction system.<sup>4</sup>

But, as soon as Jeanine was overthrown, Evelyn consolidated her power to establish a new dominant faction (comprised of the formerly factionless) over the other factions. Unlike the Erudite who used the

advantage of technology and science, the factionless used more conventional methods of enforcement: guns and the threat of violence to repress dissent. Evelyn imposed new rules that reflected the interests and values of the factionless. For example, no one could wear clothes that reflected only their former faction; they had to wear the colors and clothes of all the factions. This created dissent because many had found value in their identity with a particular faction. Thus, victory was secure, but stable governance is fleeting, and the seeds for yet another regime change are planted under Evelyn's even more dictatorial rule. A new faction, the Allegiant, emerges to overthrow Evelyn.

### **Factions, coalitions, and clubs**

Why groups form and disband is an important focus of Public Choice economics. In the private economy, for example, Sam's Club and Costco are companies founded to provide lower priced consumer goods to their members. This is different from traditional retail stores which allow anyone to come in and buy their products. Because only their members, not the general public, are allowed to purchase items in these stores, they can provide food, office supplies, and other goods and services at wholesale (business to business) prices rather than retail (business to consumer) prices. The analysis of the formation and dissolution of groups that provide products and services for their members is called "club theory" in Public Choice economics (Buchanan, 1965; Mueller, 2003). Club theory, and the provision of specific goods or services called "club goods," is useful for understanding faction behavior and its willingness to create (and dissolve) coalitions with other factions and groups.

Coalitions will form based on their ability to appeal to the self-interests of their members and the costs of organizing the coalition or club. In theory, the coalition is formed because of a common goal. Jeanine's usurpation of control created a natural coalition of resistance, especially after she nearly wiped out Abnegation. As long as the coalition agreed on action with a common benefit – overthrowing Jeanine – it was able to hold together. However, the coalition was unstable because duplicitous behavior within coalitions, most importantly the interests of the factionless in destroying all remnants of the faction system, undermined trust among the group.



In *Allegiant*, the third book, Roth's cultural meditation goes a step further. In order to root out opposition from the deposed, the new leaders engage in trials and executions of former leaders and conspirators. Tris and Four make their way beyond the wall surrounding Chicago to discover they have been part of an even larger, grander experiment. They are taken in by the Bureau of Genetic Welfare, an organization of survivors from the war that has been, in effect, trying to breed Divergents as a "genetically pure" component of the human species. Chicago is their laboratory and the only remaining experiment with the possibility of proving the potential and success of their program. Tris makes a plea for a factionless world where individual identities, strengths, and weaknesses are recognized and valued. The factions, however, continue to fight for power until they have a new, common enemy: the master manipulator, the Bureau of Genetic Welfare.

At the end of the trilogy, Roth's themes have triangulated into yet another area of political economy by returning to a fundamental issue that grounded the original series: how society should be organized. Chicago's social and economic system was established through a central organizing authority, the Bureau of Genetic Welfare, with the intent of breeding a new race of humans that was genetically pure. Their plans go awry because they fail to fully grasp the organic, spontaneous, and dynamic nature of human action. Divergents were not lauded for their genetic purity, but were purged because of their threat to the existing regime and faction system. The original central planners had intended for Divergents to become a large enough population that they would be released into the general population beyond Chicago to establish a new society that was more tolerant, inclusive, and collaborative. Instead, the self-interested nature of humans led to attempts to consolidate political power to preserve other visions of the public interest – the superiority of Erudite (*Divergent*) followed by a factionless society (*Insurgent*).

In *Allegiant*, the entire world implodes because the political institutions cannot tame the self-interest of its participants. Indeed, Tris's skepticism turns into cynicism about the motives of all the main characters. Jeanine and Evelyn were not the exceptions, she finds. The noble platitudes of the scientists and engineers supporting the faction-based utopia turned dystopia of Chicago are revealed as little more than efforts by those in authority to pursue their own interests and visions for the world.

Self-interest cannot be purged from society, even when the scientists and engineers, the “experts,” are in charge. The tragic results are an inevitable consequence of ignoring the role of self-interest and the spontaneous ability of individuals to (1) make choices, (2) fashion new strategies for achieving their goals, and (3) work within a resource-constrained world to achieve their own personal ends.

Traditional literary analysis sees these protagonists and antagonists through the lens of conflict. After all, that’s what propels the story. As each character is confronted with a new challenge, they evolve and are changed by the experience. Whether intentional or not, the characters in Roth’s world and their allied groups grapple with the very real and practical problem of governing among factions, a framework well suited to the framework provided by constitutional political economy.

## Conclusion

The political economy of Veronica Roth’s *Divergent* world is far more complex and layered than many recognize. The stories have rich characters that anchor rousing dystopian action novels. Her artistic desire to focus on the complexities of real-world group dynamics and individual identity have provided an unusual and intriguing gateway into understanding how political systems operate. This gateway has also provided insight into the reality of political economy by removing the veil that projects the illusion of genteel, public interest politics so many of our textbooks and romantic visions of government depict. Public Choice economics provides a set of concepts, principles, and tools for examining this behavior, and the *Divergent* series is striking in how well it maps into an engaging storyline. In *Divergent*, the rules of the game matter, as does the self-interest of individuals. These insights show how fiction can be a provocative prism through which we understand the world unfolding outside our own back doors. Roth gives intellectual life to a narrative that extends well beyond the comfortable chairs of our homes, bookstores, and libraries.

## Notes

- 1 See James Buchanan’s Nobel Prize Lecture, “The Constitution of Economic Policy” (Buchanan 1986), available from [nobelprize.org](http://nobelprize.org) for a highly

- accessible overview of how the economic perspective differed and led in part to the establishment of Public Choice economics. See also Johnson (1991, pp. 11–13); Gwartney and Wagner (1988, pp. 7–10).
- 2 Amity joins the coalition against Jeanine in the film, but remains officially neutral in the book.
  - 3 This term was coined by economic historian Robert Higgs (1997).
  - 4 Of course, the factionless would not have wanted to return to the old system. The interests of the factionless are not described in detail, nor would it serve the narrative of the story. They are already split between “traitor Dauntless” and the Dauntless who remained loyal to Jeanine. The traitor factionless are allied with Evelyn, however, whose ideal of a factionless system appears to be contrary to many, perhaps a majority, in her broader constituency.

## References

- Buchanan, J. M. (1965) “An Economic Theory of Clubs.” *Economica*, new series, 32(125): 1–14.
- Buchanan, J. (1979) “Politics Without Romance: A Sketch of Positive Public Choice Theory and Its Normative Implications.” *IHS-Journal*. Reprinted in *The Collected Works of James M. Buchanan, Volume 1: The Logical Foundations of Constitutional Liberty*. Indianapolis: Liberty Fund, 1999, pp. 45–59.
- Buchanan, J. (1986) “The Constitution of Economic Policy.” Nobel Prize Lecture, December 8. [www.nobelprize.org/nobel\\_prizes/economic-sciences/laureates/1986/buchanan-lecture.html](http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/1986/buchanan-lecture.html) (Accessed August 9, 2017).
- The *Divergent* Series: Box Office Performance. (n.d.) In *Wikipedia*. [https://en.wikipedia.org/wiki/The\\_Divergent\\_Series#Box\\_office\\_performance](https://en.wikipedia.org/wiki/The_Divergent_Series#Box_office_performance) (Accessed January 15, 2017).
- Gwartney, J. and Wagner, R. (eds) (1988) *Public Choice and Constitutional Economics*. Greenwich, CT: JAI Press.
- Higgs, R. (1997) “Regime Uncertainty: Why the Great Depression Lasted So Long and Why Prosperity Resumed After the War.” *The Independent Review*, 1 (Spring): 561–590.
- Johnson, D. (1991) *Public Choice: An Introduction to the New Political Economy*. Mountain View, CA: Bristlecone Books.
- Mueller, D. (2003) *Public Choice III*, 3rd ed. New York: Cambridge University Press.
- Roback, D. (2014) “Facts & Figures 2013: For Children’s Books, *Divergent* Led the Pack.” *Publishers Weekly*, March 14. [www.publishersweekly.com/pw/by-topic/childrens/childrens-industry-news/article/61447-for-children-s-books-in-2013-divergent-led-the-pack-facts-figures-2013.html](http://www.publishersweekly.com/pw/by-topic/childrens/childrens-industry-news/article/61447-for-children-s-books-in-2013-divergent-led-the-pack-facts-figures-2013.html) (Accessed January 15, 2017).

- Roth, V. (2011) *Divergent*. New York: Katherine Tegan Books.
- Roth, V. (2012) *Insurgent*. New York: Katherine Tegan Books.
- Roth, V. (2013) *Allegiant*. New York: Katherine Tegan Books.
- Staley, S. (2016, March 28) "The Constitutional Economics of the 'Divergent' Films." *The Beacon* [Blog post]. <http://blog.independent.org/2016/03/28/the-divergent-films-as-an-allegory-for-federalism/> (Accessed January 14, 2017).
- Yandle, B. (1983) "Bootleggers and Baptists: The Education of a Regulatory Economist." *Regulation*, 7(3): 12.
- Yandle, B. (1999) "Bootleggers and Baptists in Retrospect." *Regulation*, 22(3): 5, 7.

# 5

## CHOICE, LIBERTY AND REPRESSION IN *A CLOCKWORK ORANGE*

*Wayne Geerling*

Choice is at the heart of economics. But what happens when people do not have the ability to choose? That's what we see in *A Clockwork Orange* by Anthony Burgess. Dystopic fiction typically involves either a totalitarian government enforcing its will on its people, or a lawless society with no government. Every government faces the trade-off between protecting individual freedom and the need for society to protect itself from criminal behavior. In *A Clockwork Orange*, the state takes away the freedom of choice of the main protagonist, Alex, and replaces it with prescribed good behavior. A person devoid of free will loses the ability to choose between right and wrong so he becomes a machine, something as unnatural as a clockwork orange. That is, something that looks like a lovely piece of fruit on the outside, but on the inside is merely a mechanism that is controlled by someone else.

### **Constructing *A Clockwork Orange***

Published in 1962, *A Clockwork Orange*, is set in futuristic England. The story is narrated by the main protagonist, Alex, a fifteen-year-old thug, who leads his gang on a series of drug-fuelled, ultra-violent, sadistic assaults. During one home invasion, Alex and his gang break into the

home of a couple, gang rape the wife and force her husband to watch. In another, Alex knocks a lady unconscious (she later dies from her injuries). When his gang sets him up to be caught by the police, Alex is charged with murder and sentenced to fourteen years in prison.

After spending two years in prison, the government proposes a deal. If Alex agrees to “volunteer” to undergo an experimental behavior-modification treatment called the “Ludovico Technique,” a form of aversion therapy, he will be released from prison early. Alex agrees and is injected with nausea-inducing drugs while strapped to a chair with his eyelids probed open, and he is forced to watch films of graphic violence. Through the treatment, he is conditioned to associate scenes of violence and feelings of pain with overwhelming nausea. An unintended consequence of this treatment plays a key part later in the story. As it turns out, the soundtrack to one of the films is Beethoven’s Fifth Symphony, so he is no longer able to enjoy one of his favorite pieces of classical music.

The state sees this psychological conditioning to kill the criminal instinct as a solution to antisocial behavior. Alex is released back into society where he encounters people he had wronged earlier. Now, the mere thought of violence induces overwhelming nausea, and Alex is left helpless. When he is attacked by an old scholar whom Alex had assaulted, two policemen come to his aid: Dim, a former member of Alex’s gang, and Billyboy, a member of a rival gang. They take Alex to an isolated place outside town and beat him, leaving him there to die.

Alex stumbles into the home of a man – the same man he once forced to watch the gang rape of his wife. This man, a writer and revolutionary, F. Alexander, now lives alone, after his wife died from her injuries suffered during the attack. When Alex informs the writer of his experience with the Ludovico Technique, F. Alexander intends to use Alex’s situation to prevent the incumbent government from being re-elected.

Initially, F. Alexander does not recognize Alex as ringleader of the home invasion which led to the death of his wife but Alex betrays his involvement by inadvertently recalling details of the writer’s home, specifically that he did not have a phone. The only way he could have known this is if he had previously been there. Following this faux pas, F. Alexander changes his plan; he locks Alex in a bedroom upstairs and

plays classical music over speakers, hoping that Alex will commit suicide, which could then be blamed on the government. Alex indeed tries to commit suicide by jumping out of the window, but he ultimately fails and falls into a coma. When Alex wakes up in hospital, he is courted by government officials anxious to mitigate the fallout from negative press. The Minister of the Interior arrives and offers Alex a well-paid job in return for his cooperation in the minister's re-election campaign. Unbeknown to Alex, the effects of the Ludovico Technique had been reversed while he was in a coma. A round of psychological tests reveal that Alex no longer has an aversion to violence or sex.

At the end of the novel, Alex briefly returns to his life of crime, but then decides for himself he would like to settle down and have a child. The original American publication of *A Clockwork Orange* and Kubrick's film excluded the final (twenty-first) chapter, in which Alex renounces a life of violence. There is no hint of this change in the twentieth chapter of the book. At its end, the Ludovico treatment has been reversed and Alex looks forward to resuming his life of crime.

### **What's it going to be then, eh?**

The setting of *A Clockwork Orange* takes place in a repressive, violent society. The government is obsessed with control, order and efficiency. The drudgery and monotony of everyday life is symbolized by Alex's parents, who robotically shuffle off to work in a factory every day. Like any consumer-based society, the teens are obsessed with the latest trends and fashions, but this masks their alienation from a society where the government systematically suppresses the individual in favor of the collective. They use "Nadsat," a curious mix of Slavic and Shakespearean English, as a form of escapism, since it is a language their elders cannot understand. Fuelled by drugs, detached from society, and desensitized to violence by a state which employs hooligans as police, small groups of youth, like Alex's gang, take vengeance on a regimented society through wanton acts of violence. In turn, the government uses violence to destroy Alex's criminal instinct. Violence begets violence.

Is it ever justifiable for a state to use thought or behavior control, to take away an individual's freedom of choice? Is it better for us to force individuals to live by a set of agreed rules, if acting according to

unfettered free will imposes significant costs on society? Can government intervention, even with the noble intention of providing security, promote the greater good? The answers to these questions have implications in evaluating the optimal role of government in society. For insights we can look back in time to the writings of the Enlightenment.

The English philosopher and political economist, John Stuart Mill, was one of the most influential thinkers of the 19th century, and a major contributor to the concept of classical liberalism. In *On Liberty*, published in 1859, Mill provided a rational justification for the freedom of the individual in opposition to the claims of the state to impose unlimited control. Mill drew heavily from John Locke's *Second Treatise of Government*, published in the late 17th century, in which Locke famously proposed the concept of defending the rights of the individual against the state. Self-protection was the exception to this rule, and was the only legitimate justification for state interference with an individual's freedom. In words which could have been lifted straight out of Burgess' novel, Mill identified the central metaphor at the heart of *A Clockwork Orange*:

Human nature is not a machine to be built after a model, and set to do exactly the work prescribed for it, but a tree, which requires to grow and develop itself on all sides, according to the tendency of the inward forces which make it a living thing.

(Macleod, 2017, p. 25)

Mill also invokes the concept of the "harm principle" in providing justification for legitimate coercion, where power can be rightfully exercised over any member of a civilized community against his will. This principle states the conditions under which interference is permissible (not necessarily desirable) (Macleod, 2017, p. 26). The state goes way beyond this concept of "self-protection" in its campaign to reduce crime in *A Clockwork Orange*. Dr. Brodsky, in charge of the Ludovico Technique, concedes that the government is not concerned with public interest motives or higher ethics; rather the campaign is driven by reducing crime, relieving prison congestion and, most importantly, getting re-elected. Let's face it, a state which employs violent hooligans as police does not have the best interests of society at heart.



In *Anarchy, State and Utopia*, Robert Nozick argues in defense of the minimal state. The book opens with the claim that: “Individuals have rights, and there are things no person or group may do to them (without violating their rights)” (Nozick, 1974, p. x). These moral rights are defined as state of nature rights. We have them because of what we are. They are not given to us by someone else. In layman’s terms, this refers to the right to live as one wants, to do whatever one chooses, with whatever one legitimately owns, provided one does not harm non-consenting others (in ways that violate their moral rights). The concept of natural rights forms the bedrock of libertarianism. Nozick sees the rights that individuals have as “moral bulwarks against behavior that promotes even the most radiant – or apparently radiant – social end” (Mack, 2015, p. 3). He warns against the danger of creating a slippery slope by forcing individuals to undergo pain or sacrifice for the overall social good.

In our story, Alex makes a conscious choice to undergo the experimental treatment, but this choice is driven by desperation and hope for an early release from prison. It is not an informed choice, based on accurate information and knowledge. When Alex belatedly realizes the full implications of this treatment, particularly the feeling of nausea which accompanies the music of his favorite composer, Beethoven, he begs them to stop. But it is too late. By conditioning Alex against violence, the state removes his free will, making him less human and more of a machine. Alex is no longer capable of choosing between good and evil. When the Minister of the Interior demonstrates Alex’s rehabilitation to a gathering of prison officials, this tragi-comedy reaches farcical proportions. Alex is driven to grotesque acts of self-abasement: kissing the feet of an actor who threatens him (rather than defending himself); going down on one knee and quoting Shakespeare at the sight of a girl trying to seduce him. When Alex is released from prison, he is powerless to defend himself and is exploited and manipulated by a revolutionary writer who wants to use his plight to bring down the government. In fact, one of the great ironies of the novel is that the anti-government groups are prepared to sacrifice Alex against his will and make him a martyr for the cause of liberty for the people. The final act of exploitation comes from government officials who reverse his conditioning for the benefit of their political careers. The overarching theme of *A Clockwork*

*Orange* is the danger inherent in depriving individuals of free will, even the wickedest criminals.

“What’s it going to be then, eh?” The same question is repeated at the beginning of each chapter, echoing the theme of free will evident throughout the novel. At each point in Alex’s life, there are choices to be made, and these choices determine his fate. First, Alex chooses to pursue his hedonistic desires into a life of crime resulting in imprisonment. Second, he chooses to undergo the Ludovico Technique in hope of regaining his freedom. Third he decides to attempt suicide to escape the alternate form of imprisonment imposed by his psychological reconditioning. Finally, Alex decides to leave his violent life behind and start a family. This act is only possible after the government reverses the Ludovico Technique and restores his free will. In the final pages of the novel, Alex understands that his wrongdoing stemmed from immaturity and that only through suffering is he eventually able to make the right choices in life. Before the aversion therapy, Alex chose evil, to the detriment of others. Afterwards, he was only able to choose good, to his own detriment. Now, after the conditioning has been reversed, Alex is once again free to choose, and he freely chooses a path with greater benefits for both himself and the society in which he lives.

### **A noble pursuit or an inhumane tradeoff?**

We can use *A Clockwork Orange* to analyze how tradeoffs, incentives and unintended consequences affect our choices. Understanding how we make choices and the implications of those choices lies at the heart of economics. Economics is the study of how people allocate their scarce resources to meet their nearly unlimited wants, in other words how people make choices. Since we all have limited money and time, we have to make choices. Given that we cannot satisfy every conceivable want, we must choose between alternatives. A choice to pursue one course of action implies that we have given up the opportunity to reap the benefits of an alternative choice. This is what economists mean when they say there’s an *opportunity cost* to our choices.

Alex makes a series of choices in the novel, which illustrate tradeoffs and opportunity cost.<sup>1</sup> When he is convicted of murder, Alex gives up his freedom. By undergoing the Ludovico Treatment, he consents to

another tradeoff: free will in exchange for an early release from prison. Unknowingly, he also gives up the ability to enjoy classical music and lead a normal life. The fate of a convicted murderer like Alex would be of little interest to most citizens living in a society wracked by violent crime. In this society, Alex's fate is of so little consequence that government officials choose to employ inhumane methods in an effort to eradicate crime. But what is the optimal balance between an individual's right to liberty and the state's responsibility to provide security for its citizens? How much liberty are individuals willing to tradeoff to feel more secure?

We can use a *cost-benefit analysis* to help arrive at an answer. In a violent society, the *marginal benefit* from a reduction in crime (think of this as the "additional" happiness citizens feel when the crime rate falls) is quite high whereas the *marginal cost* (what these citizens have to give up) appears to be quite low. Sacrificing some individual rights for extra security is a tradeoff most citizens will accept. Giving up all personal freedom for (perceived) complete security is not. A middle ground must be agreed upon. There are always tradeoffs.

Choice, tradeoffs and decision making depend on incentives. Knowing *that* people respond to incentives is one thing. Knowing *how* they respond to incentives is another. The carrot or stick approach is an idiom which refers to the use of incentives: the carrot rewards or encourages good behavior; the stick punishes bad behavior. If people respond predictably to the use of incentives, their behavior can be changed by altering the mix of incentives they face. When Alex consents to the Ludovico Technique, he is motivated by the promise of a positive incentive: his freedom.

What he – and the state – do not understand at this stage is that altering incentives often has unintended consequences. The purpose of aversion therapy is to condition Alex against violence, to kill the criminal instinct. As Dr. Brodsky points out, with the therapy Alex will become almost Christ-like in his demeanor, always turning the other cheek and ready to sacrifice himself for others. But there are several unintended side effects of the treatment. First, Alex can no longer enjoy classical music, as he associates this with the violence of the films he was forced to endure. Second, his aversion to violence also extends to sex; feelings of lust are associated with nausea. Third, he is a guinea pig for an

experiment, which is part of a broader law and order campaign. When despair leads Alex to attempt suicide, the government is forced to undo the treatment to save face. Often, the actual costs and benefits of a choice are not as they were perceived when the choice was made. Unintended consequences result in the failure of many noble pursuits.

## Conclusion

The lessons learned in *A Clockwork Orange* are relevant today. While the behavior modification program in the novel is extreme, we do see efforts in today's world to "nudge"<sup>2</sup> people to make different choices using the insights of *behavioral economics*. In their popular book, *Nudge: Improving Decisions about Health, Wealth, and Happiness*, Thaler and Sunstein offer suggestions for using incentives to help people make better choices. Many of these involve an opt-out versus an opt-in strategy. If people in general are not saving enough for retirement, employers can change the sign-up process to influence the choice to save. When you start your job, you would automatically be enrolled in the matching savings plan unless you purposely opt-out by checking a box. Since opting out requires more effort than opting in, most people would leave the box unchecked and therefore end up saving more. The same might hold for that box you can check on your driver's license to become an organ donor.<sup>3</sup> What if, instead, in order to obtain or renew your license, you had to check either one box to become an organ donor or another box to not consent? More organ donors! Some countries like Austria go so far as to have opt-out systems like the retirement plan system described above, in that you are presumed to consent to organ donation *unless* you opt out by checking the box. Yes, people still have free will, but the incentives are set up to influence, or nudge, us to a better outcome. The question remains, who decides what a "better" outcome is?

*A Clockwork Orange* can be viewed as a dystopic forecast, a warning about the dangers of a totalitarian society, which prioritizes social control and efficiency over human nature. Aversion therapy (behavior modification) is popular with politicians, who promise to cut down on crime and make the streets safer, but in the hands of a repressive regime in futuristic England, the opportunity cost of this is liberty, free will, and the ability of the main protagonist to make moral choices. Even a

benign government, operating with noble intentions, in a modern democracy with safeguards, can create a slippery slope towards tyranny with policies on crime which deprive the individual of his/her inalienable human rights. The difficulties of reconciling the conflict between individual freedom and social order is one of the most pressing challenges facing governments in the 21st century. The main lesson to be drawn from *A Clockwork Orange* is that there are limits to which society should go in the pursuit of maintaining law and order.

## Notes

- 1 Economists refer to all possible alternatives to a particular choice as tradeoffs, but only the next best alternative is referred to as the opportunity cost of that choice.
- 2 For an overview of Nudge theory, see Thaler and Sunstein (2008).
- 3 In one of his TED talks, behavioral economist, Dan Ariely, showed that we are not always in control of our own decisions. See Ariely (2009).

## References

- Ariely, Dan (2009) "Are We in Control of our Own Decisions?" TED Talk, posted May 2009. Online [www.ted.com/talks/dan\\_ariely\\_asks\\_are\\_we\\_in\\_control\\_of\\_our\\_own\\_decisions](http://www.ted.com/talks/dan_ariely_asks_are_we_in_control_of_our_own_decisions).
- Burgess, Anthony (1972) *A Clockwork Orange*. London: Penguin.
- Mack, Eric (2015, Summer ed.) "Robert Nozick's Political Philosophy." *The Stanford Encyclopedia of Philosophy*, Edward N. Zalta (ed.), online <https://plato.stanford.edu/archives/sum2015/entries/nozick-political/>.
- Macleod, Christopher (2017, Spring ed.) "John Stuart Mill." *The Stanford Encyclopedia of Philosophy*, Edward N. Zalta (ed.), online <https://plato.stanford.edu/archives/spr2017/entries/mill/>.
- Nozick, Robert (1974) *Anarchy, State and Utopia*. New York: Basic Books.
- Thaler, Richard H. and Cass R. Sunstein (2008) *Nudge: Improving Decisions about Health, Wealth and Happiness*. New Haven: Yale University Press.

# 6

## LAST MAN RULES!

*Charity-Joy Revere Acchiardo*

At one time, many of us have dreamed of being all alone. Perhaps we've been shipwrecked on a deserted, tropical island, or maybe we're floating through space, the only survivor on an inter-galactic transport. How will we live? Will we meet anyone else? What will it be like now that we get to be the boss of our world?

The possibilities tempt us to dream of a world that will bend to our every whim and desire. We're the boss here, free to do whatever pleases us and come and go as we choose. Of course, we're sure to meet someone else along the way. They'll be exceptionally good looking, and, even more importantly, we'll be perfectly compatible. That is, they'll agree with our every decision about what we should be doing, how we should be doing it, and when it will happen!

Fox's *The Last Man on Earth* shows us a more realistic picture of how such a scenario might unfold. The happy-go-lucky protagonist, Phil Miller, enjoys his freedom as the last man on earth for a while, but soon, he finds he misses the companionship of others. In the nick of time, he discovers another survivor. However, he soon realizes that the joy of her company comes at a cost – the freedom to live in the way he would choose if she wasn't in the picture.

While Phil is adjusting to this new equilibrium, more survivors enter the scene and add a whole new level of complexity to the way in which each of them had been living prior to the discovery of other survivors. Most choose to live as a small, fledgling society though it means sacrificing some of their independence and compromising with others. As they learn to live together, pool resources, and benefit from their individual talents, they find it useful to establish rules for how they will make collective decisions and share these resources.

Because we have many more wants than resources to satisfy those wants, we are forced to choose between alternative courses of action. Economists study how these choices are made and what consequences arise as a result. But economics is a social science. Individuals do not choose in a world where they are the last being on earth. They live in families, local communities, and larger societies. Their choices impact the choices of others and vice versa.

We will see that there are competing uses for resources that necessitate choice whether an individual is living in isolation or within a group. As the number of people using a resource grows, so does the number of ways in which it might be used, so we will take a look at how people can successfully manage and share resources collectively. A few thoughtful rules can help resolve disputes and ensure more efficient use of a resource for the benefit of the group as a whole. The hilarious escapades of the band of misfits in *The Last Man on Earth* provide the perfect setting to examine both the difficulty in reaching collective agreements and the benefits that can be reaped through compromise and cooperation.

## **Without you, I'm nothing**

Phil Miller was the last man on earth. A catastrophic plague wiped out every other animal and human being. Somehow, he survived. It didn't take long for Phil to realize he didn't have to play by the rules that had governed his previous life. He didn't have to be accountable to anyone, worry about breaking the law, or consider how others may feel about his actions. And he didn't have to share! He could take whatever he wanted to use in whatever way he wished. No one was going to dispute his ownership or disapprove of his choices.

Imagine the freedom! Drive as fast you want, occupy your dream house, and take whatever you want off the shelves of any store you choose. It's a dream come true! Initially, Phil enjoyed his ultimate bachelor life to the fullest. He decorated his new home with furnishings he had taken from the Oval Office, the Smithsonian museums, and celebrity estates. He discovered the most efficient way to lounge around and drink was to simply lie in a splash pool filled with tequila; he only had to turn his head for a sip.

He did, however, run into a few minor complications. For instance, there was no one but himself to take care of the plumbing and sewage services in his new world. His solution? The swimming pool in his backyard became his "toilet pool!" Gross! Yet in a world with only himself, Phil didn't have to worry about offending his neighbors. If he was willing to live with the stench, it was an acceptable resolution to the problem.

Initially, we might be tempted to think that our friend Phil is living the life. He can find everything he wants at one of the many deserted businesses in Tucson. If he decides he has to have the President's desk, there is no one to stop him from driving to the White House to claim it. He can even make his own hours. There is no boss to constrain his free time to evenings and weekends. Yet, as we follow Phil through his first year as the last man on earth, we see his early enthusiasm about his newfound freedom diminish. He isn't bothered by living without things like electricity and running water, since substitutes (like batteries, bottled water, and pools) are easy to find. There is, however, one very important thing he lacks – companionship.

His attempts to find substitutes for this need are inadequate. First, he creates some "guys" to hang out with at the bar. Among the gang, there's Gary the volleyball, Jimmy the basketball, and Kevin the tennis ball, each attentively listening with sharpie-drawn expressions. Later, he begins a "relationship" with a mannequin in a store window. These efforts do little to ease the loneliness for Phil, and eventually, the thrill of having a city full of resources at his disposal wears off, and he begins to plan his suicide.

Despite what seems like an inexhaustible supply of material goods available to Phil, he still lacks what he needs to fulfill his desires. This is a condition known as *scarcity*, and it is the reason economics exists.



Because our resources are scarce, we are forced to choose how we will use them. Economists study what influences us to choose a particular action and the outcomes of those actions.

Perhaps the most interesting choices we see Phil make regard how he spends his time. He is now the manager of his own time, but still, there are limits. A trip to the White House means he won't be seeing Yosemite that week. He is forced to make a choice. Eventually, he comes to the point where he considers the choice to continue using the time given him on earth or to end it all. For him, the cost of living alone is not worth the benefit of being the last man on earth. He chooses to drive off a cliff.

That ending would have made for a very short TV series! Fortunately, for fans of *The Last Man on Earth*, Phil notices a plume of smoke in the distance as he drives to his demise, and he abruptly changes course to investigate. To his great joy, he finds another survivor – Carol Pilbasian!

## **With you, I'm something**

In one moment, Phil's attitude changes from one of despondency to one of exuberant hope. Carol is the answer to his intense loneliness. Soon, he is driving her to see his home. On the way there, he flies down the road as he always does.

“STOP!!!”

He slams on the brakes. “What!? What is it?” He looks around, alarmed.

Carol exclaims, “You just ran a stop sign!”

Now imagine you are the last man on earth driving down the road with the last woman on earth. Are you going to pay attention to the speed limit? How about traffic signals? That would be insane, right? Not according to Carol. She insists on a particular order in her world, one defined by the set of rules she was accustomed to before the virus. All Phil could think of upon meeting Carol was that his need for companionship would finally be met. Little did he realize that her presence would alter the choices he made on a daily basis.

Earlier, we witnessed Phil making all sorts of choices that we'd be unlikely to see in any sort of social setting. And it's actually this contrast between what Phil chose to do in isolation versus the choices he makes when others are involved that underscores the social nature of the choices you and I make every day. Economics is, after all, a social science. The choices we make influence and limit the choices others make and vice versa.

Phil's primitive sewage disposal would surely never be acceptable if he had neighbors, but Phil has only himself with which to be concerned. As soon as another person is introduced to the picture, conflict arises. People disagree about how different resources should be used, and since the resources are limited, they must find a way to resolve these conflicts. Moreover, people have different opinions on how society should be organized to handle these conflicts.

A stop sign is a way of allocating resources, in this case, a section of the road. There's one intersection, and multiple drivers need to get across it. They could just speed through it. You might choose that option if you drive a monster truck. They could all stop, get out of their cars, and decide on who was going to go first. Or they could agree to a convention, like a stop sign, that allocated the right-of-way among drivers.

The advantage members of a society achieve by agreeing to follow the same set of rules is a reduction in the amount of time spent on choosing a particular course of action. There are a great number of variables that affect each decision we make. So many, in fact, that were we to consider them all, we would be paralyzed by choice. To limit the number of variables to a manageable set and make the best use of our time, we develop heuristics (personal rules of thumb) that guide our choices (Gigerenzer, Todd, & ABC Research Group, 1999). Here's a simple example. When I choose a box of cereal at the store, I look at the sugar, fat, fiber, and protein content. I choose the one with the best combination of low sugar and fat and high fiber and protein. Some people simplify the process further by always choosing the same cereal. An inordinate amount of time would be required to consider all the variables, such as manufacturing and sourcing details, every time I buy a box of cereal. A heuristic saves time, and time is a scarce resource.

Economists call rules that guide our choices in social settings *institutions*. Like heuristics, they decrease the cost of obtaining information. If we

return to our stop sign example, we can easily see how the addition of one more driver complicates our choice of how to proceed through the intersection. If, like Phil, we're the only driver on the road, our choice is easy. If we want to go through the intersection, we go right on through it. But if Carol moves into town, we have to consider that she may want to cross the intersection at the same time. The amount of uncertainty in our decision increases. Carol is unpredictable. I can't read her mind. I don't know when she'll get a hankering for raisin cakes and head out to the store. If it's at the same time as I'm returning from the bar, there's a possibility we may collide in the intersection. This substantially increases the cost of my decision to go through the intersection.

So what can we do to avoid a potential crash? If we can agree to a rule that both of us will abide by regarding who has the right-of-way, we can decrease the uncertainty that has arisen as a result of having multiple drivers who have their own ideas about what they want to do. Now, we don't have to carefully consider all the information presented to us every time we come to a signed intersection. In order to determine right-of-way, we only need to pay attention to who arrived at the intersection first and whether they're on our right or left. Once again, this saves valuable time.

It's fairly straightforward to see the value of having rules for guiding individual and collective decision-making. What is less obvious is how we agree upon and enforce the rules that govern our social interactions.

### **But how will we get along?**

Consider this situation: My husband and I have one car. If I want to go to work and he wants to meet up with a friend at the same time, we have to come to an agreement about what to do. My ideal scenario may be driving the car directly to work. I could grab the keys and take off before he's realized he's been left without transportation, but that's probably not a good *long-term* strategy. He's not likely to be too pleased when I return home. If I continued behaving in the same manner, after a while, he may decide to hide the keys or take off early, leaving me without a ride. This behavior could also have implications on how we handle other shared resources. If he's worried that I'm going to coopt other property we own jointly, he may start to hoard and hide what he

thinks he needs for his personal use. To avoid this scenario, we could write up a contract detailing who gets to use the car and when. On Mondays, I get it from 8 to 5, and he gets it from 5 to 10. If either of us violates the contract, the other receives full ownership of the car. We could. But that would be weird. What we're most likely to do (and indeed, how most personal conflicts are solved) is reach a compromise. We'll informally agree to leave a few minutes early so he can drop me off at work on his way to meet his friend.

There is an important feature of the example above. The interaction between my husband and me is ongoing. When we got married, we agreed to act in ways that would benefit the other, or in economic terms, maximize our joint utility (don't worry, we didn't state it quite that way in our vows!). This means we will each need to consider the long-term repercussions of our choices in addition to the short-term costs and benefits. If the conflict over how to use the car was a one-time interaction, and we were never going to see each other again, taking off with the car might be the choice that benefits me most; however, I plan on living with my husband for quite some time, so I'll need to consider how he'll respond to my actions and whether that will be of benefit in subsequent interactions. He'll need to be thinking similarly. In this case, allowing my selfish action to continue unchecked could mean that I would continue to behave in a way that is detrimental to him. A common way to deter unwanted behavior is to reciprocate the action. If I act in a way that benefits me while imposing costs on him, he does the same. Hopefully, we figure out that it's in both our long-term interests to cooperate and be considerate of each other's welfare.

Compromise and reciprocity are effective conflict resolution strategies in situations with small groups of people. Indeed, this is what we see happen between Phil and Carol almost immediately. Within a day of meeting each other, they begin talking about repopulating the earth. At least that's how Carol sees it. Phil is simply interested in sex. But Carol insists they marry, so their progeny won't be "bastard children." Given they're the only two people alive, Phil thinks Carol's request is ridiculous, but he agrees to go along with all her over-the-top wedding preparations (Spivey & Woliner, 2015). He compromises, and the conflict is settled. Later, when they can't agree on how to keep house, another

compromise is made. Carol moves across the street. Carol gives Phil room to choose his own decor and level of sanitation. Phil does the same for Carol (Cackowski & Traill, 2015). Compromise and reciprocity resolve the conflict.

## **Together, we're everything**

Though it's taken Phil a year to find Carol, they encounter a number of other survivors shortly after their meeting. (The efficiency with which TV storylines proceed is remarkable!) First, Melissa literally crashes onto the scene – another stop sign fail. Days later, Todd sees Phil's fireworks display, and finds the growing group. The following week, Erica and Gail happen upon Phil after following his "Alive in Tucson" billboards. And the final addition to this initial group is yet another Phil Miller!

Each survivor has their own distinct personality and set of preferences. Except for Erica and Gail, each has been living in isolation for a year and has become accustomed to doing things the way they like. Imagine the adjustments needed to live with a group! Phil and Carol have already encountered the difficulty of negotiating a compromise between just the two of them, but now, a whole new level of complexity is introduced when there are competing ideas from seven unique individuals. The need for effective and efficient conflict resolution is immediately apparent.

The first couple of group conflicts happen soon after the first four survivors begin to live in the same neighborhood. It doesn't take long for Carol to complain to Phil about his method of sewage management. Phil's use of a neighborhood pool as his toilet imposes costs on those who choose to live near him. Carol goes so far as to stuff dryer sheets in her nostrils to cover the stench when Phil refuses to comply with her requests to clean the pool. However, when the tables are turned and Phil has to bear the costs of Todd and Melissa frequently playing their "sex song" loudly enough that he can hear it across the street, Phil takes action.

Phil proposes the group gather for a weekly town hall meeting and introduces a "Grievance Board." He explains that anyone can write a complaint on the board and the group will vote on it. He begins the

process by proposing a noise ordinance that would prohibit Todd and Melissa from playing their song at all hours of the night. Todd and Melissa respond by making various, silly proposals, and it seems like Phil's grievance board idea may not be taken seriously until Carol proposes that he clean out his toilet pool. Immediately, Melissa and Todd vote in agreement with her. Phil realizes that his plan has backfired and tries to adjourn the meeting, but it is too late. The fledgling community has adopted the new governing process (Noel & Atencio, 2015).

## **A framework fit for the last humans on earth**

Nobel laureate, Elinor Ostrom, spent her career studying how different groups of people can effectively agree to use a resource shared among them (we'll refer to these as common resources). Her insights have been applied to water rights, forest management, police services, and much more (Ostrom, 1990). As it turns out, the principles she helped identify for governing common resources can shed light on the problems and resolutions of those problems encountered by the brand new mini-society forming in the *The Last Man on Earth*.

Ostrom's work emphasizes the importance of organization, monitoring, and sanctioning for good governance. Organization involves making rules for the distribution of rights and responsibilities. Monitoring activities determine whether those rules are being followed, and sanctioning entails the enforcement of those rules.<sup>1</sup>

## **Organization**

Successful organization requires three elements: clearly defined boundaries, congruence between the rules governing common resource use and local conditions, and collective choice arrangements. Let's take a look at how these apply when Phil happens upon a lone, surviving cow (did it also follow the "Alive in Tucson" signs?) (Cackowski & Scanlon, 2015).

To clearly define boundaries over the use of a common resource we must first precisely define the common resource itself. Is the resource a section of a forest, access to county emergency services, or a particular facility like a library? Additionally, who has the right to use the resource and in what manner may they use it? In our example, the common resource is the cow

and the milk it provides. All members of Phil's group may use the milk, but it must be shared (easy enough when the group is small). The cow is not to be butchered, nor do we see it used as a pack animal.

When considering congruence between the rules governing common resource use and local conditions we ask questions like, "What are the existing legal, social, and physical parameters within which the common resource will be managed?" and, "Will the common pool resource be used in a manner compatible with those constraints?" In this nascent society, there really aren't legal rules with which to comply and the social rules are still being formed. Phil tries to evoke the "finders-keepers rule," but everyone else in the group follows the assumption that resources such as this will be shared. This is due to the physical conditions in which they now live; livestock also perished in the outbreak, so sharing what animals are left makes sense. For the same reason, the group decides to use the milk from the cow (a renewable resource) and not use it for steaks (non-renewable when there's only one cow).

When it comes to collective choice arrangements, the most effective allow those affected by the operational rules to participate in modifying those rules. In this scenario, the group collectively agrees to let the cow live in Todd's yard, tied to a tree. When it "escapes" to Carol's house, they agree to leave it and milk it from there. They also seem to be in agreement over how the milk is used. The cheese and butter that come from the milk are shared with all. Again, consensus is easier when the group is small, so an informal decision-making process is sufficient.

Though the arrangement is informal, the rules are still understood by all those who will use the resource. If a member of the group decides to coopt the cow for their own purposes, you can be sure the others would protest. Phil knows he'd better not act on his urge to have a hamburger, or there will be serious consequences. But who's going to know? In this case, with a limited number of suspects, it's fairly easy to find the culprit. When larger groups share a resource, monitoring plays an important role to ensure adherence to the organizational rules.

## Monitoring

Common resource management includes effective monitoring of the resource to make sure it is being used in the manner agreed upon.

Those who monitor the resource are either those who also use the resource, or they are accountable to those who use the resource.

In our story, the society is so small that everyone participates in monitoring the use of shared resources. The group decides to leave the cow in Todd's yard, partially because he has grass the cow enjoys and partially because Todd knows more than the others about caring for a cow. This initially annoys Phil, and he steals the cow the first night. When the group discovers it's missing, they organize a search. Melissa is rightfully suspicious of Phil and volunteers to search the area she knows he's most likely to hide a cow rather than let him "search" that quadrant. This is a way of monitoring his actions. Luckily, for Phil, the cow escapes from her hiding spot before Melissa gets there. Had his violation of their groups' agreement about using the cow as a common resource been discovered, sanctions most certainly would have been levied.

## Sanctioning

Monitoring is not sufficient to ensure everyone is complying with the rules governing a common resource's use. There must also be sanctions when noncompliant behavior is discovered. Graduated sanctions provide consequences for violators in accordance with the severity of their infraction. Additionally, easy access to conflict-resolution processes is a part of efficient common resource governance. Both of these aspects can be seen in an intriguing common resource example that arises after our mini-society has been together a while and had more time to establish the rules that govern their collective behavior.

One night, Phil notices Todd sneaking off to a nearby house. He investigates and discovers that the house has been running on solar power and has a freezer full of bacon in the garage! He also sees that Todd has already eaten most of the supply. He confronts Todd and demands to be included in the next bacon feast. Todd knows that he's broken the sharing norm their society has practiced, and he feels guilty about it. He has to share with Phil or confess to the whole group.

The collective decision to manage the cow as a common resource set a precedent for other similar resources that may be discovered. Because of local conditions – an extreme shortage of any food product that wasn't a shelf stable can or dry good – dairy, meat, and the like were to



be shared among the group. There was an expectation that resources of that type would be common resources and the previously established rules regarding their use would apply.

When the group finally discovered (there were only three packages left!) that Todd had taken the bacon for his own use, they called for sanctions. This wasn't going to make a difference for this particular supply of bacon, since it was a non-renewable resource, but it would matter for the management of future instances of common resources that fell into this agricultural category. Todd and Phil were placed in the stocks for a day, a time the group decided fit the crime. While this may seem like an archaic form of punishment, it was what this group had decided to use right from the start and had been employed a number of times before. As such, it turned out to be an acceptable and effective sanction (McAuliffe & Woliner, 2015).

Sanctions increase the cost of choosing to not cooperate when it comes to sharing common resources. The short-term benefit you may get by violating an agreement is offset by the cost of the sanction. You will forego the long-term benefits associated with ongoing cooperation.

Taken together, effective organization, monitoring, and sanctioning activities help preserve shared resources and ensure they are used efficiently.

## **Living together**

If you've ever moved from living with your family to your own place, or perhaps you've gone from living on your own to having a roommate, you understand you have to live by at least slightly different rules in each situation. Perhaps you can't leave your dirty dishes in the sink for quite as long or you have to remember to close the door to the bathroom when you're using it. Compromise and reciprocity are essential keys to peacefully sharing a home.

Now think about living in an apartment complex, a dorm, or a neighborhood. Resources, including the communal living environment, are shared among many more people than your immediate living partners. Usually, a higher degree of formality is needed to agree upon rules and enforce them. For instance, residents may sign an agreement when they move in that holds them to quiet hours between 10 pm and

6 am (organization). Neighbors may call security if you play your music too loudly after ten (monitoring). Repeated infractions may result in fines or revocation of your lease (sanctioning). A degree of organization, monitoring, and sanctioning can help effectively resolve conflict and manage a common pool resource among hundreds, even thousands, of people. Night owls and early birds can share a nest!

*The Last Man on Earth* shows the joys and challenges of learning to live with others who have different ideas about how to use joint resources. Those who choose to participate in this mini-society have done so freely, and thus demonstrate they value companionship over always doing everything their own way. However, that doesn't mean it's easy to figure out how to flourish together.

When groups, like Phil's band, are very small, they are even more dependent on each other. Some short-term plans (I want to eat all the bacon myself!) are exchanged for increased benefits in the long run (I will enjoy the continued company and resourcefulness provided by those in my group). It's critical that they learn to resolve conflict efficiently and effectively govern common resources. Compromise helps keep the peace. Reciprocity encourages individuals to treat each other well and curbs behavior that isn't beneficial to the group. Guiding principles, such as those explained by Ostrom, aid in governing shared resources.

## Note

- 1 The complete list of eight principles is as follows: 1. Clearly defined boundaries. 2. Congruence between appropriation and provision rules and local conditions. 3. Collective choice arrangements. 4. Monitoring. 5. Graduated Sanctions. 6. Conflict resolution mechanisms. 7. Minimal recognition of rights to organize. 8. Nested enterprises.

## References

- Cackowski, L. (Writer), & Traill, P. (Director). (2015, March 15) *Sweet Melissa* [Television series episode]. In W. Forte, P. Lord, C. Miller, S. Cohen (Executive Producers), *The Last Man on Earth*. Twentieth Century Fox Film Corporation.
- Cackowski, L. (Writer), & Scanlon, C. (Director). (2015, March 29) *Mooovin' in* [Television series episode]. In W. Forte, P. Lord, C. Miller, S. Cohen

- (Executive Producers), *The Last Man on Earth*. Twentieth Century Fox Film Corporation.
- Gigerenzer, G., Todd, P. M., & ABC Research Group. (1999) *Simple Heuristics That Make Us Smart*. New York: Oxford University Press.
- McAuliffe, T. (Writer), & Woliner, J. (Director). (2015, October 25) *Crickets* [Television series episode]. In W. Forte, P. Lord, C. Miller, S. Cohen (Executive Producers), *The Last Man on Earth*. Twentieth Century Fox Film Corporation.
- Noel, D. (Writer), & Atencio, P. (Director). (2015, March 29) *She drives me crazy* [Television series episode]. In W. Forte, P. Lord, C. Miller, S. Cohen (Executive Producers), *The Last Man on Earth*. Twentieth Century Fox Film Corporation.
- Ostrom, Elinor. (1990) *Governing the Commons: The Evolution of Institutions for Collective Action*. New York: Cambridge University Press.
- Spivey, E. (Writer), & Woliner, J. (Director). (2015, March 8) *Raisin balls and wedding bells* [Television series episode]. In W. Forte, P. Lord, C. Miller, S. Cohen (Executive Producers), *The Last Man on Earth*. Twentieth Century Fox Film Corporation.

# INDEX

- allocation of resources 4, 8, 34, 52, 64, 68, 71
- barter 20–1, 34–5
- behavioral economics 65
- Buchanan, James 45, 50
- capital 6, 18, 24, 25, 30, 36–42
- choice: and behavioral economics 65, 71; collective 48, 68, 72, 75–7; economics as the study of 30, 45, 46, 58, 70; and free will 62–63; *see also* cost-benefit analysis; opportunity cost
- club theory 53
- command economy 21–5, 31–4, 43
- common resources 75–8
- comparative advantage 10–14 *see also* specialization
- conspicuous consumption 36–7
- constitutional political economy 50, 55
- contract law 20, 38, 73
- cost-benefit analysis 5–7, 17, 64, 73, 78–9 *see also* choice; opportunity cost
- democracy 23, 48, 50, 66
- dictatorship 9–10, 29, 39, 53, 58
- economic development *see* economic growth
- economic freedom 25, 30, 43
- economic growth 3, 23, 25, 35–42 *see also* gross domestic product; standard of living
- economic organization *see* economic system
- economic system 21–5, 31–4
- economies of scale 19
- Enlightenment, the 61
- entrepreneurship 9, 18, 24, 30, 36
- equilibrium 52, 68
- exchange *see* trade
- factions and democracy 50, 51, 53
- factors of production 2, 18
- free will 58, 61–5
- Friedman, Milton 34

- gains from trade 19  
gross domestic product 24 *see also*  
    economic growth; standard of living
- Hamilton, Alexander 50  
Hayek, F. A. 43  
heuristic 71  
Hobbes, Thomas 20, 21
- incentives 22–3, 36, 38, 40, 43, 50–1,  
64–5  
inflation 32, 34–5  
institutions 38–9, 43, 71–2  
investment 4, 9, 30, 42, 52
- labor 9, 18, 21, 24, 36; mobility of  
30, 37  
libertarianism 62  
liberty 9, 64  
limited resources 5, 16–17, 30, 63, 71  
Locke, John 61
- macroeconomics 24, 30, 34, 43  
Madison, James 50–1  
marginal benefit 64  
marginal cost 64  
markets 4; vs command economy  
21–5, 31–4  
Marxism 36  
microeconomics 30, 43  
Mill, John Stuart 61  
money 13, 21, 34
- natural resources 24, 36  
natural rights 62  
new institutional economics 38–39,  
71–2, 75–9  
North, Douglass 38  
Nozick, Robert 62
- opportunity cost 5–7, 11–14, 17, 63,  
66n1 *see also* choice; cost-benefit  
analysis  
Ostrom, Elinor 75, 79
- political freedom 23, 43  
poverty 25, 33, 42  
prices 13, 19, 22–4, 53  
production 4, 18–19, 23, 32, 35–8  
productivity 19, 40  
profit 22–4, 31, 33–4, 36, 45  
property rights 1, 3, 20–3, 25,  
30, 43  
public choice economics 45–7, 49,  
50, 53
- regime uncertainty 52  
resources *see* factors of production  
resources, efficient use of 22, 24, 36,  
68, 78  
rule of law 3  
rules of the game *see* institutions
- saving 41–2, 65  
scarcity 5, 8, 13, 16–17, 24,  
31, 69  
self-interest 7, 10, 13, 14n1, 23,  
45–51, 53–5  
Smith, Adam 36, 37–9  
social psychology 51  
Solow, Robert 37–8, 40, 42  
specialization 11–12, 19, 36 *see also*  
    comparative advantage  
standard of living 1, 10, 24–5, 30, 32,  
35 *see also* economic growth; gross  
    domestic product
- technology 18, 25, 36, 42, 52–3  
time preference 40  
totalitarian *see* dictatorship  
trade 4, 8–11, 16–21, 30, 35, 37, 39,  
43, 52; zero-sum, negative-sum,  
    positive sum 19  
tradeoffs 58, 63–4, 66n1  
trust 4, 53
- unemployment 25, 30, 35
- Veblen, Thorstein 36