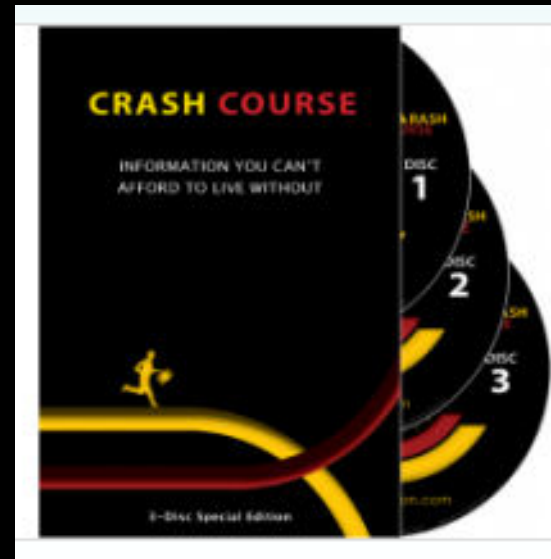
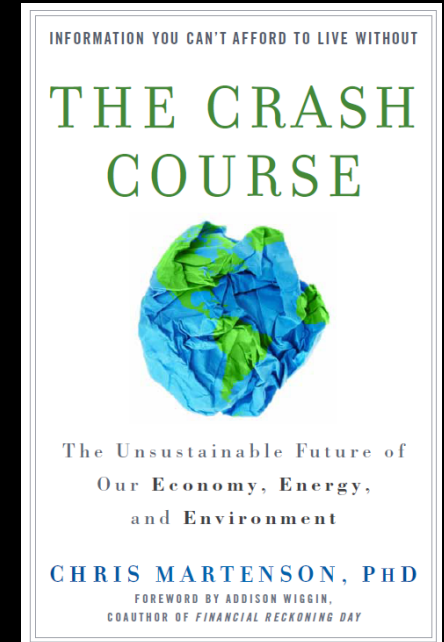


# Peak Prosperity On A Finite Planet

*Biophysical Econ. Conf., 2012*

# The Crash Course



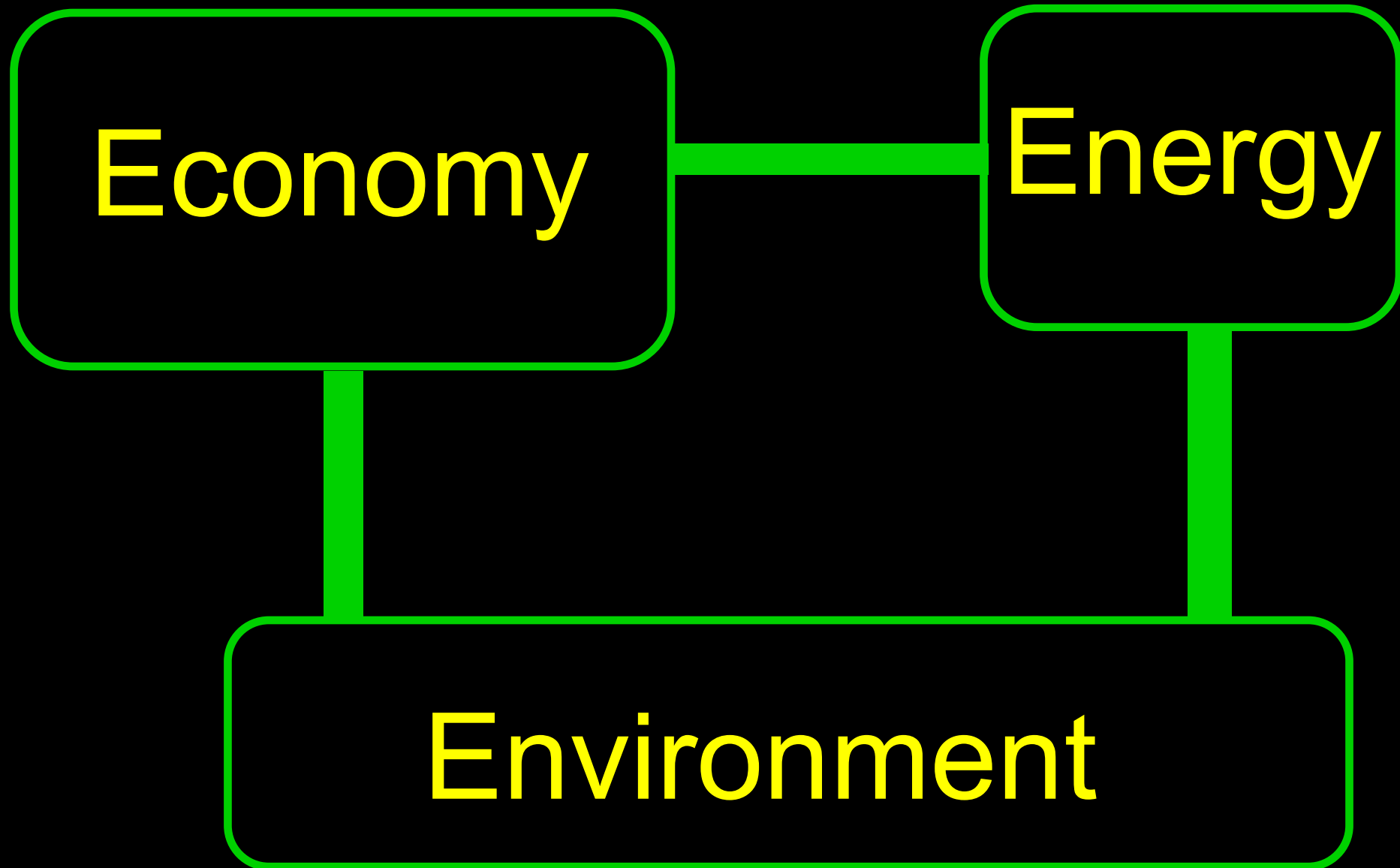
# Some Framing

# Creating A World Worth Inheriting

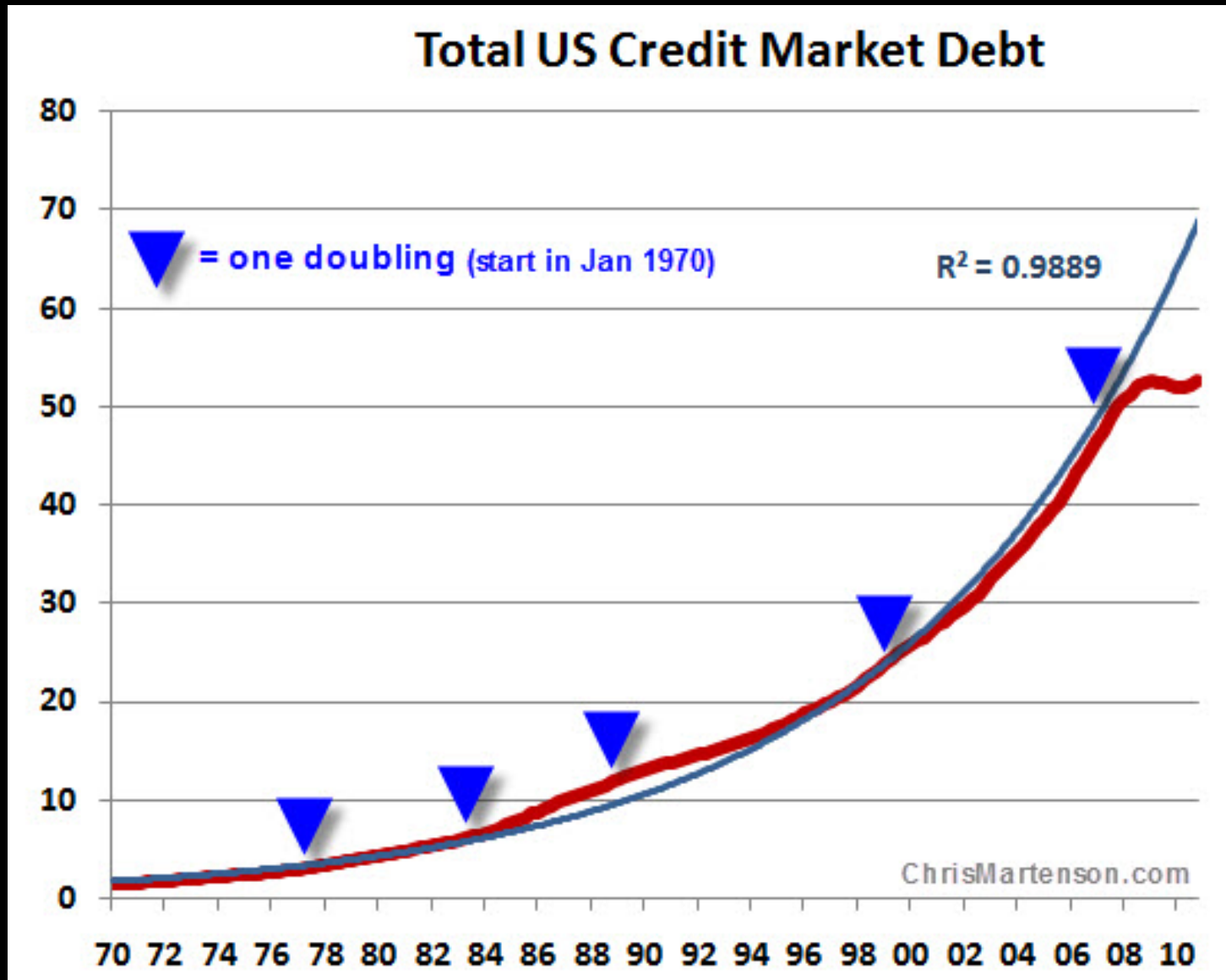




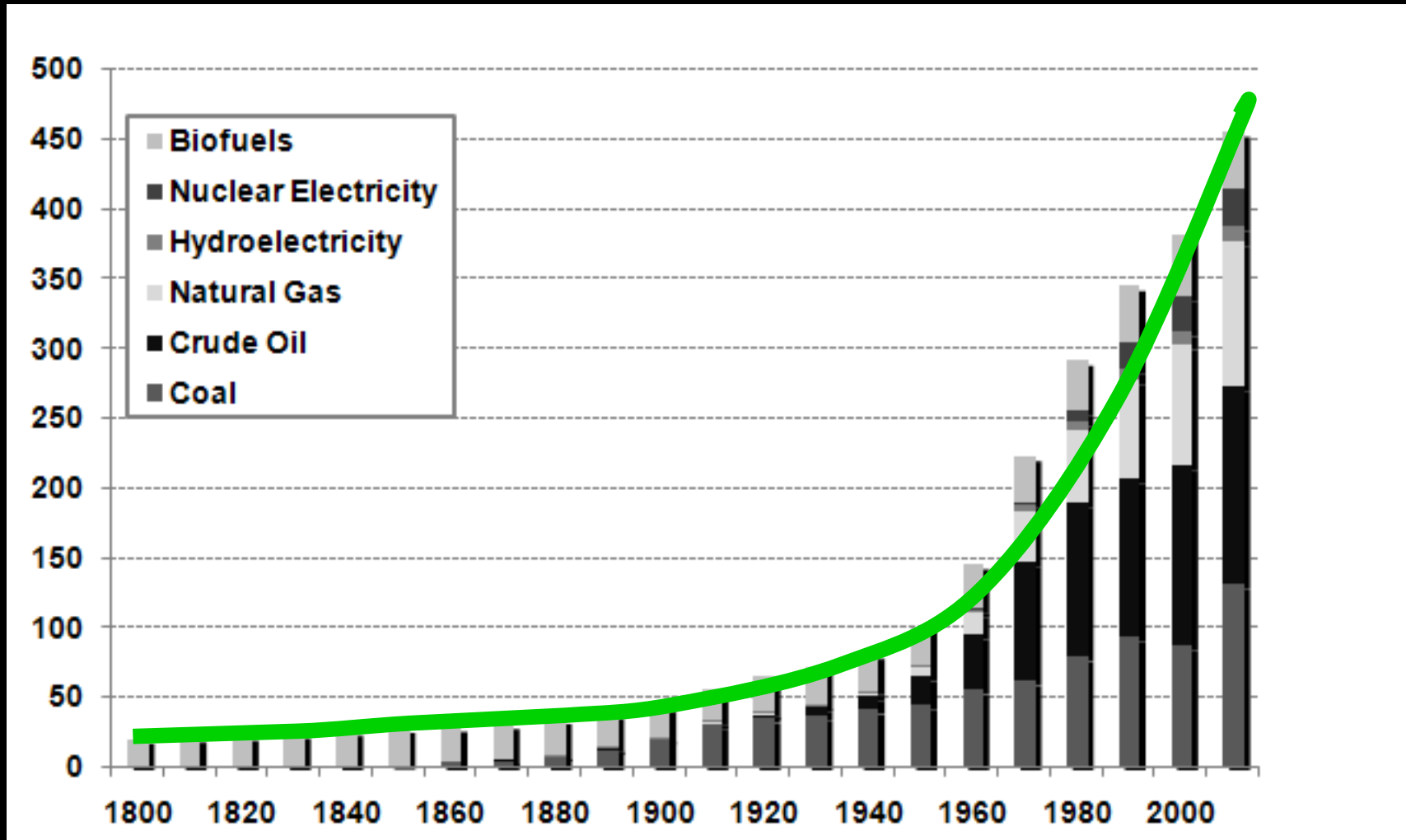
# The Three “E”s



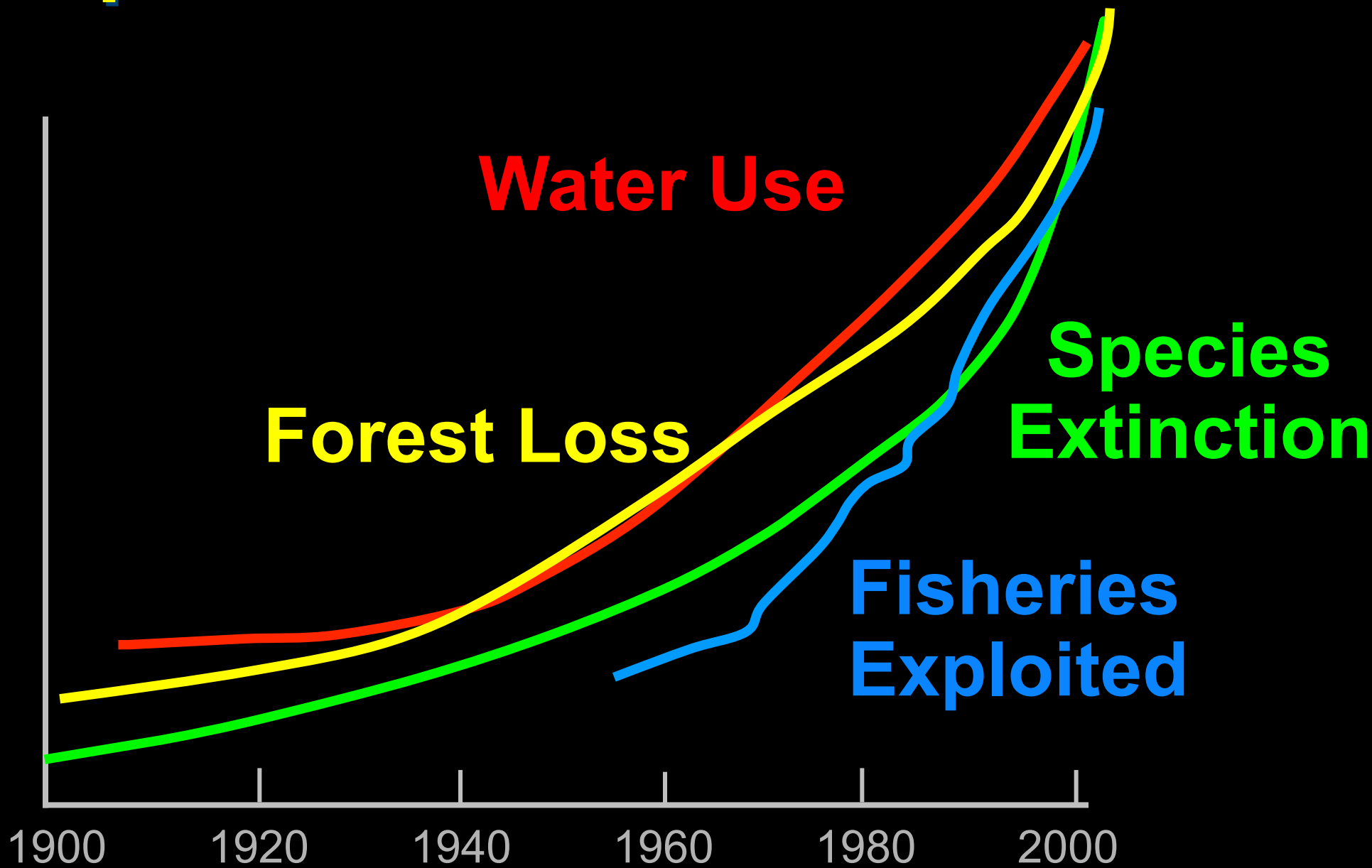
# Exponential Debt...



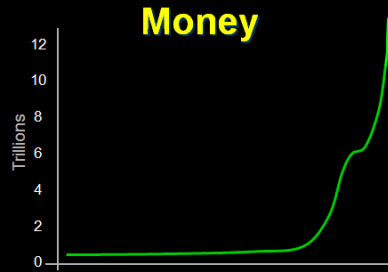
# Exponential Energy Use...



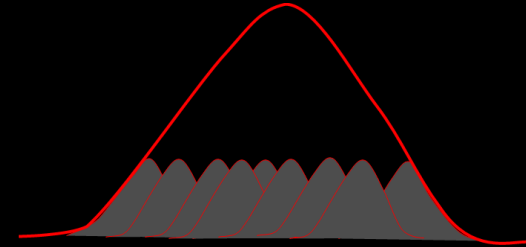
# Exponential Extraction...



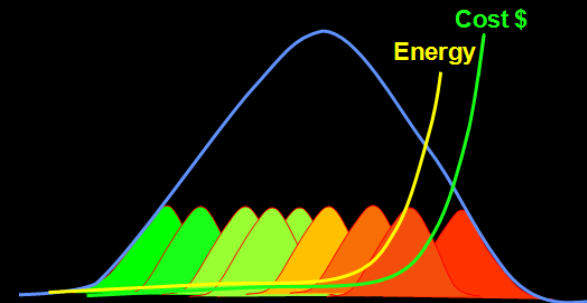
# Must Grow



# Can't Grow



# Depleting



**Anything That  
Can't Go On  
Forever Won't.**



# Creating Change



# Two Ways People Change



Insight

Pain



**I am agnostic  
about 'why'  
people change  
via insight**

# **Four Lessons From Behavioral Economics**

# Wired For Near & Immediate Threats



# Concrete Not Statistical



**Warning:**  
Future hazards!  
*(Maybe, we think)*



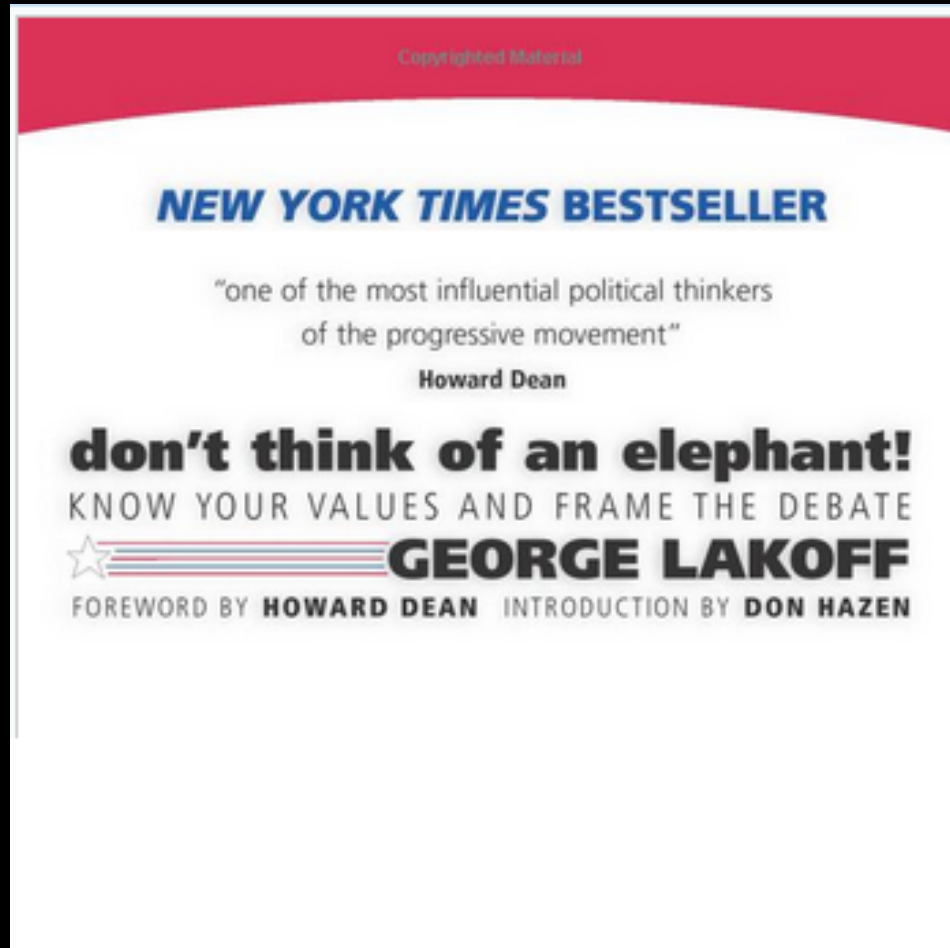
# Confirmed By Daily Experience



# A Sense Of Agency Is Essential



# Now For The “How”



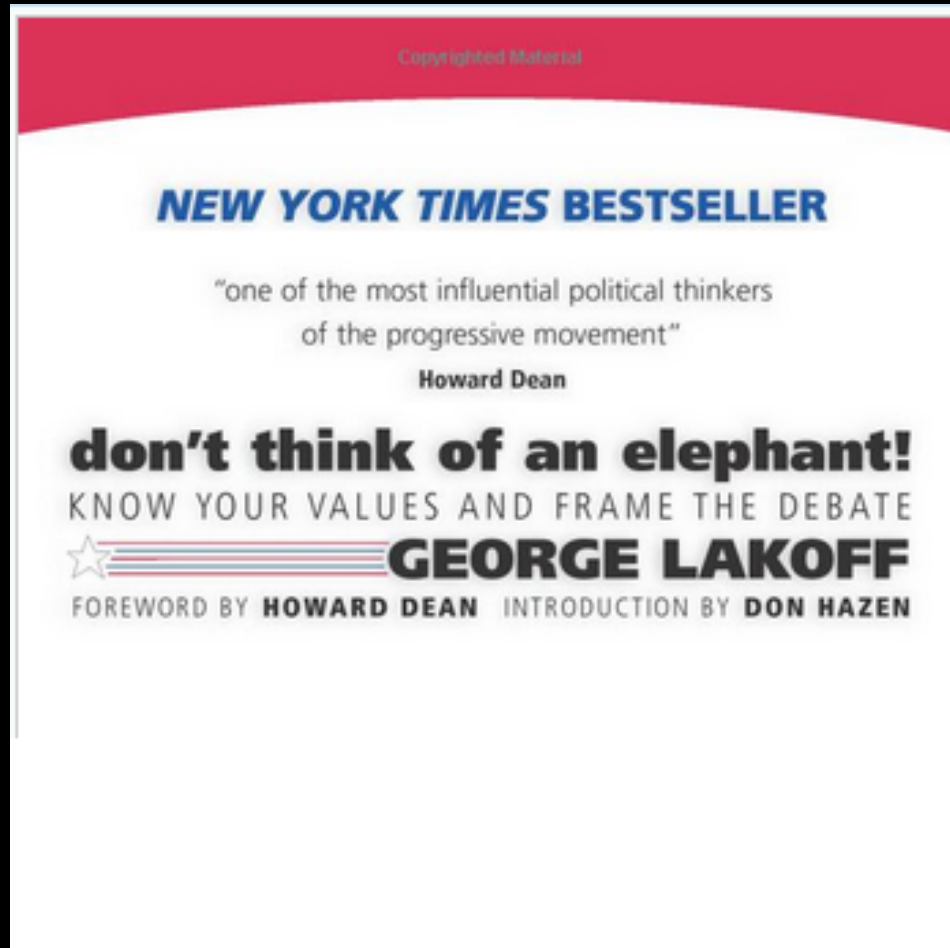
**Key Learning:**  
**Frame things**  
**on the moral**  
**level**



# Creating A World Worth Inheriting



# More On “How”

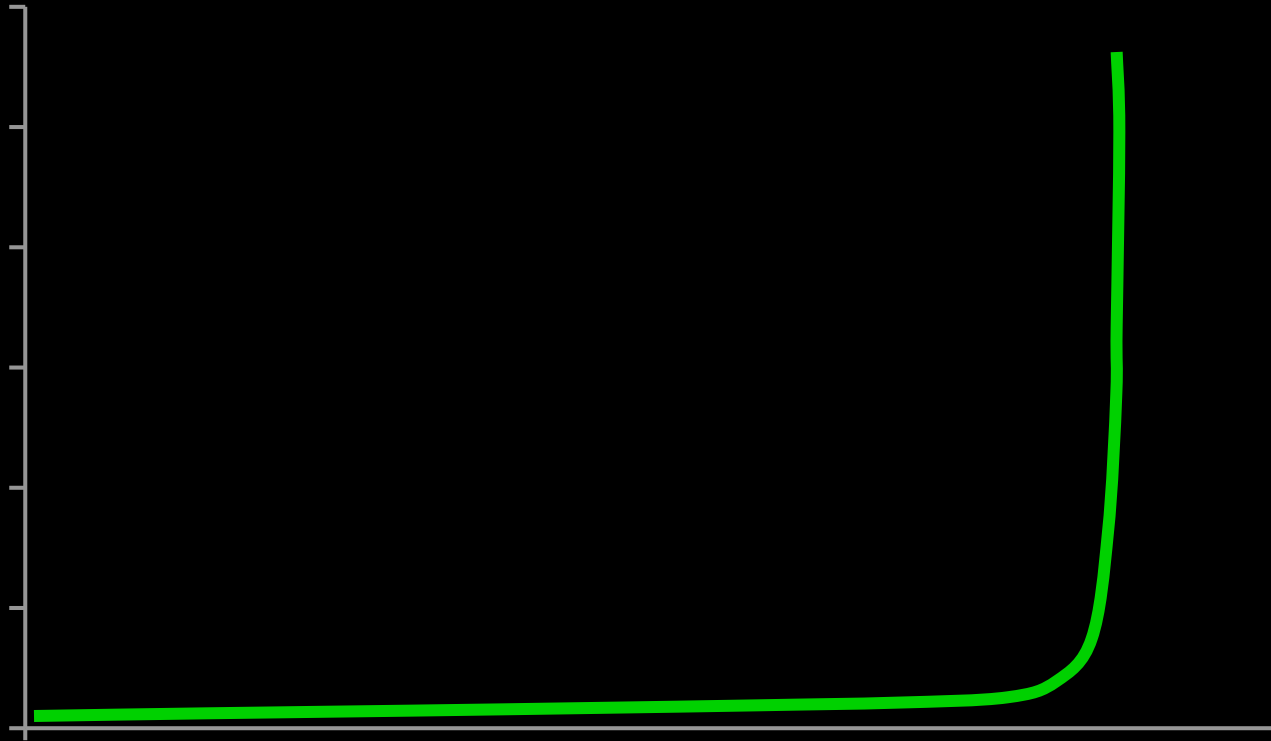


**Key Learning:**  
**Make it**  
**personal**

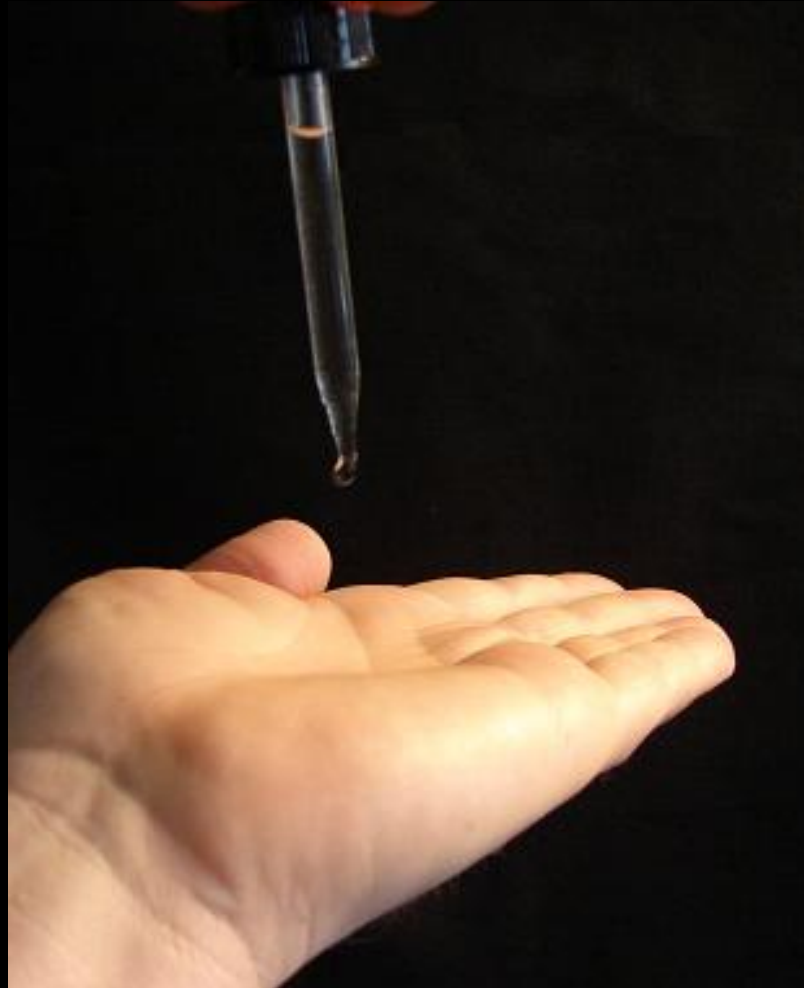
# An Example Of Making It Personal

# Exponential Growth

# A Hockey Stick Chart



# The Power of Exponential Growth





# Yankee Stadium



**If we began at 12:00, when would  
Yankee Stadium be filled?**

**12:50**

**At what time would it still be  
97% empty?**

**12:45**

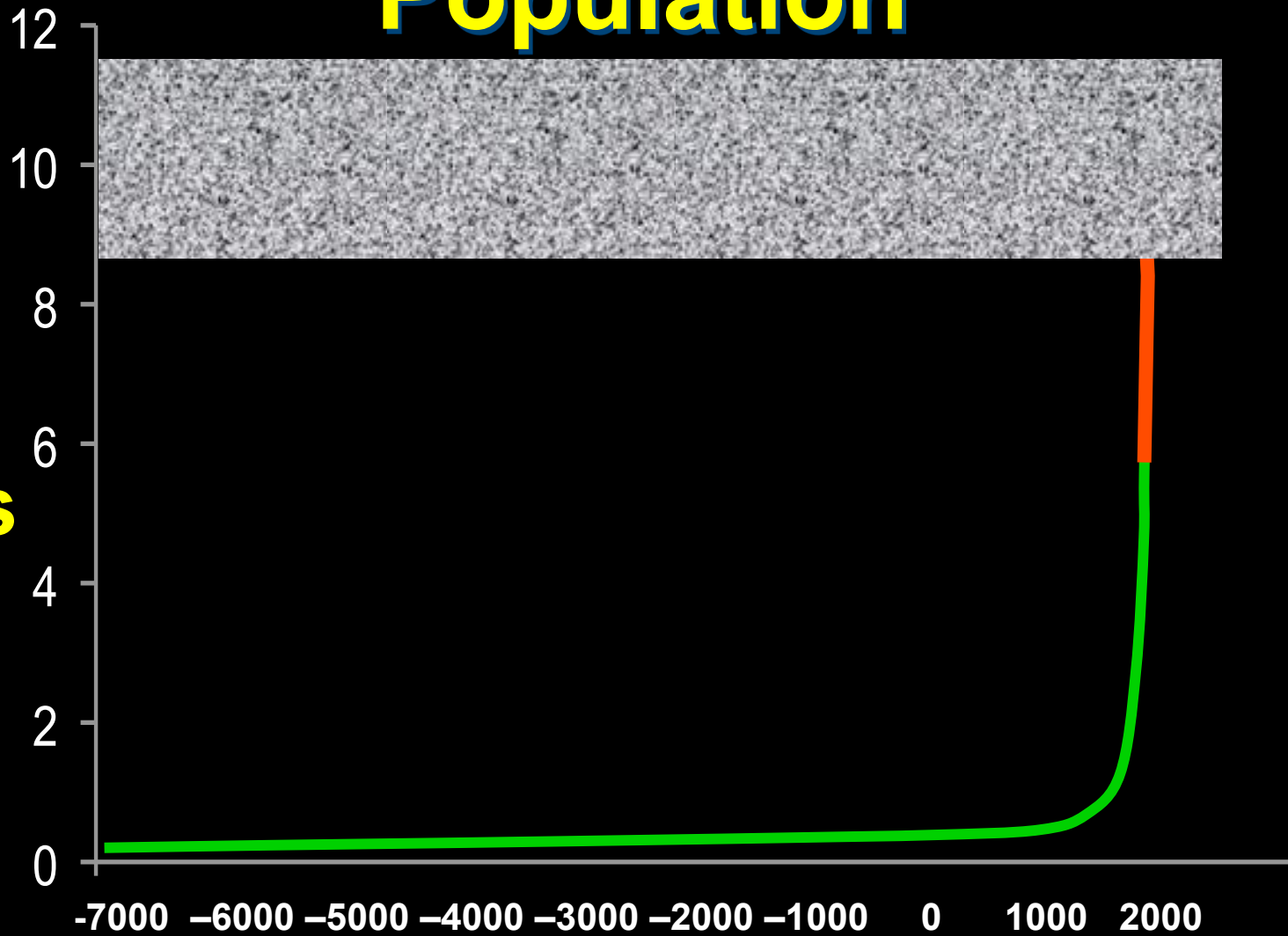


# This Is Our Stadium ...



# Population

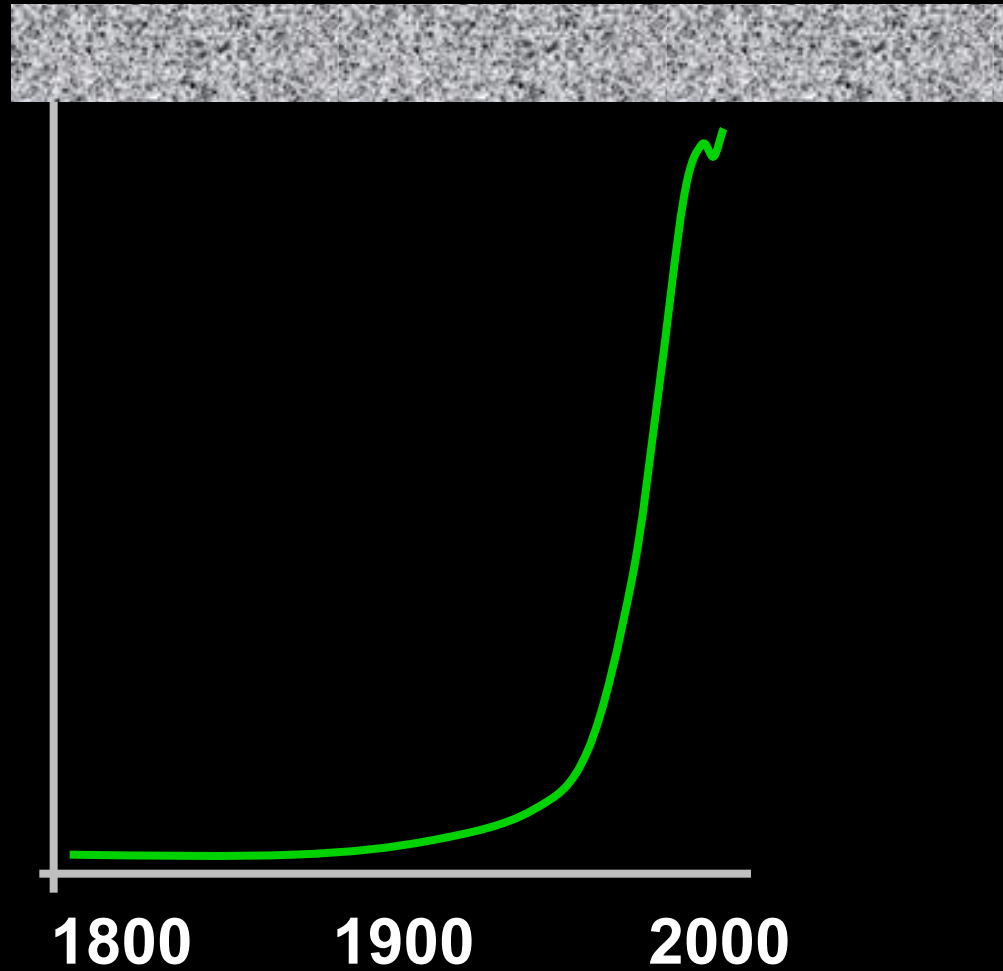
Billions

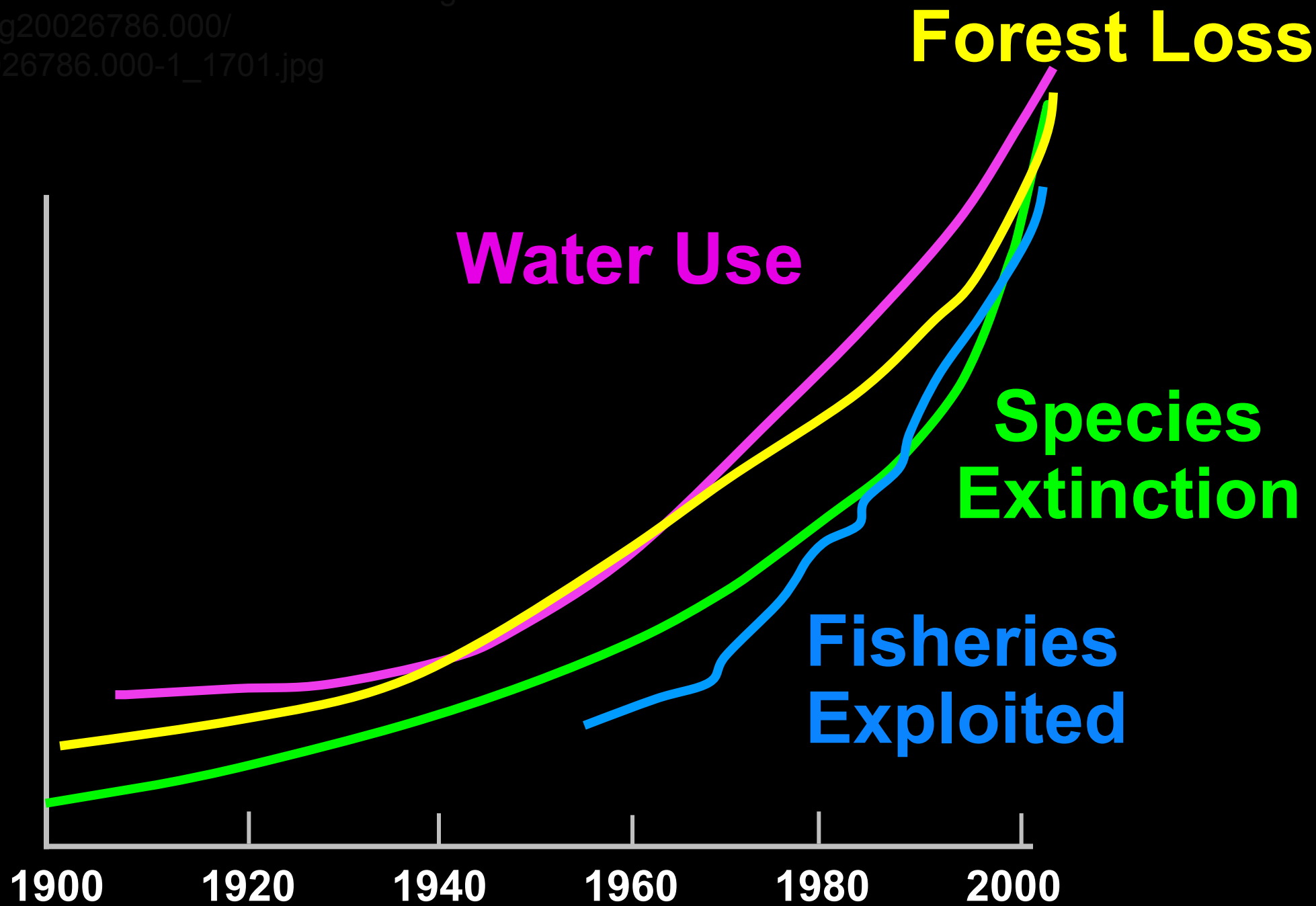


Years

# Oil

Production



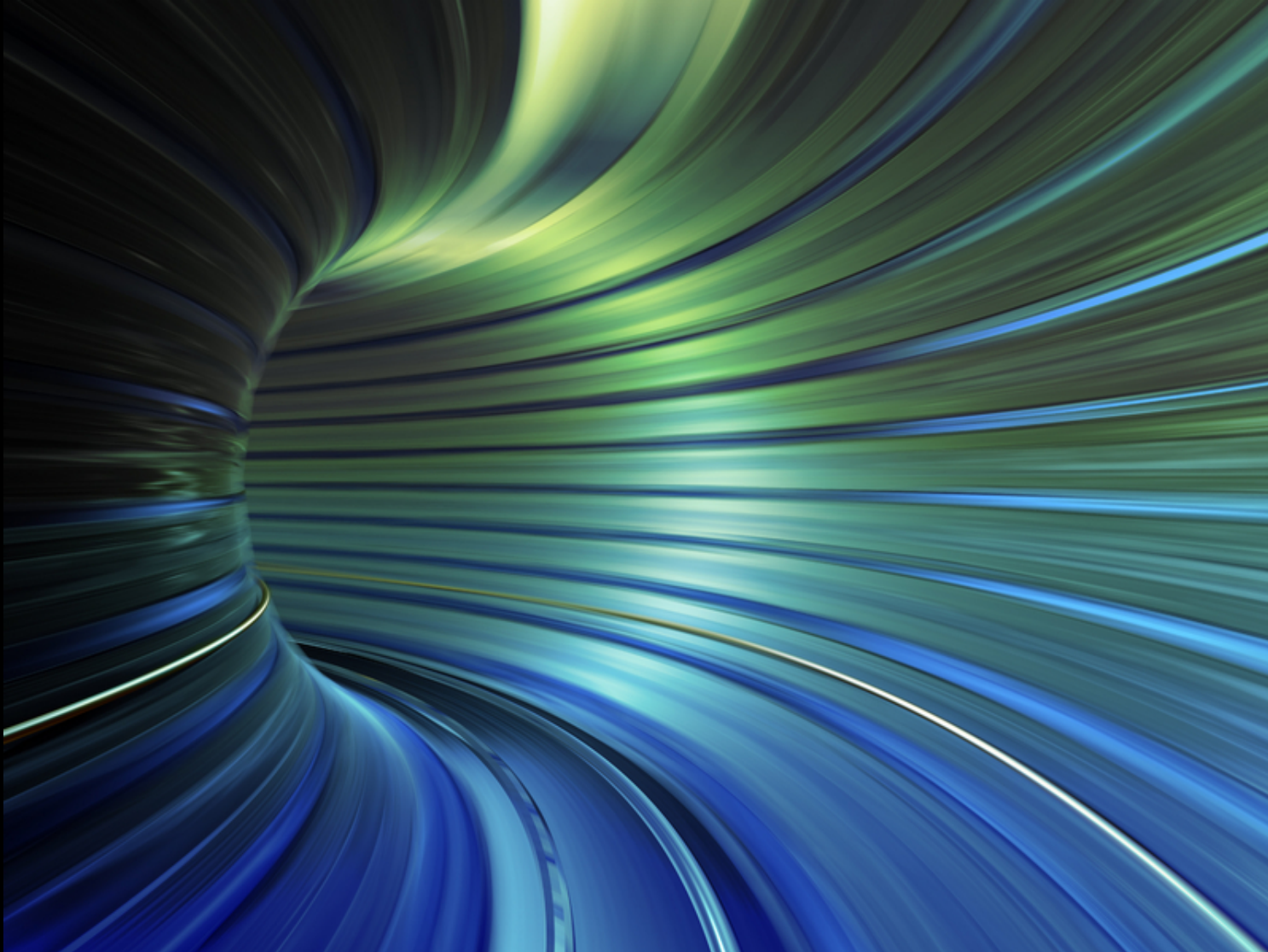


# Key Concept

**Exponential charts are  
everywhere.**

**Economy. Energy. Environment.**

# Exponential Systems Speed Up...





# Prediction: Events Will Unfold Rapidly



**Personal Motto:**  
**“I’d rather be a year  
early than a day  
late.”**



# A Personal Example

# The American Dream

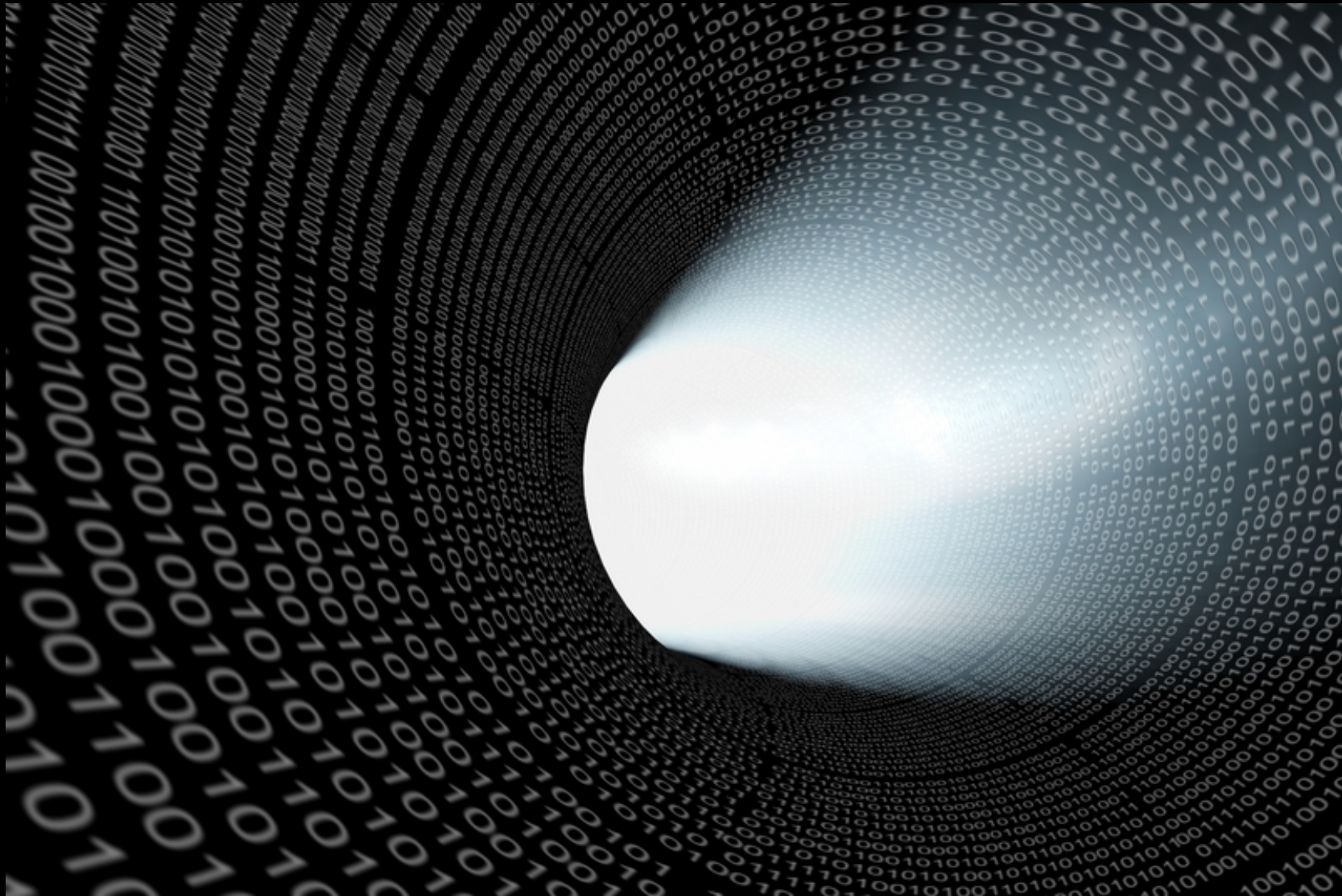


# My Prior Life





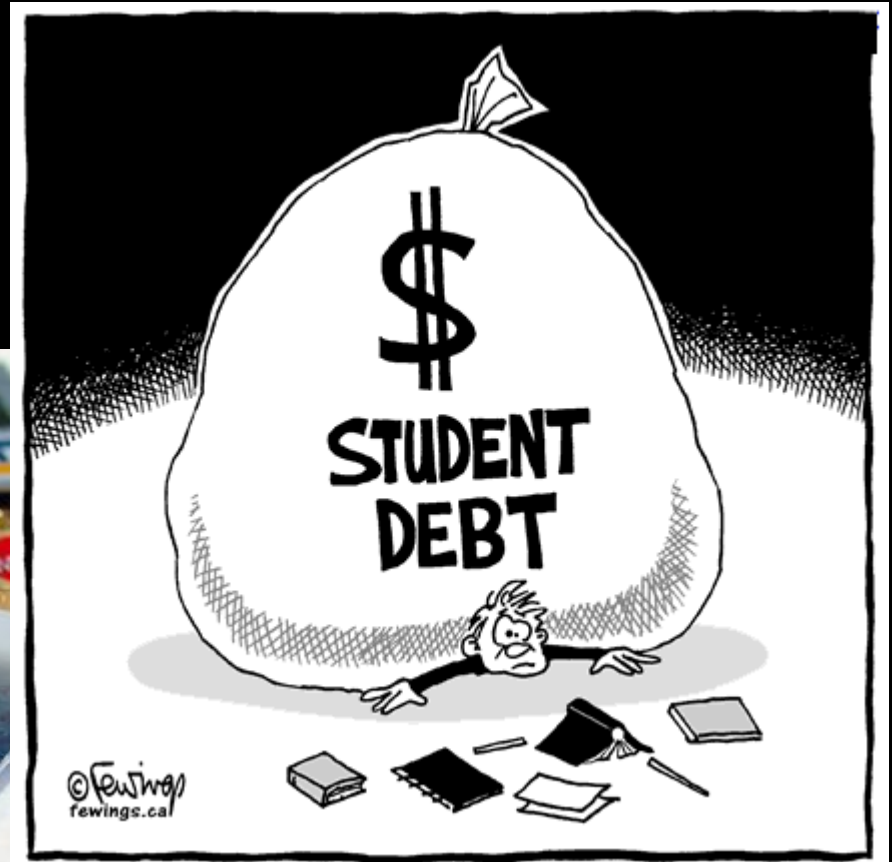
# I Fell Into A Rabbit Hole Of Data



**So What  
Did I do?**

# Four Things To Do

## #1: Get out of debt



# Four Things To Do

**#2: Invest in yourself**



# Energy Production









# Woodstove



# Energy Efficiency - Insulation





# Redundant Water



# A Nice Garden





# Food Storage















# Four Things To Do

**#3: Buy gold (and silver too)**



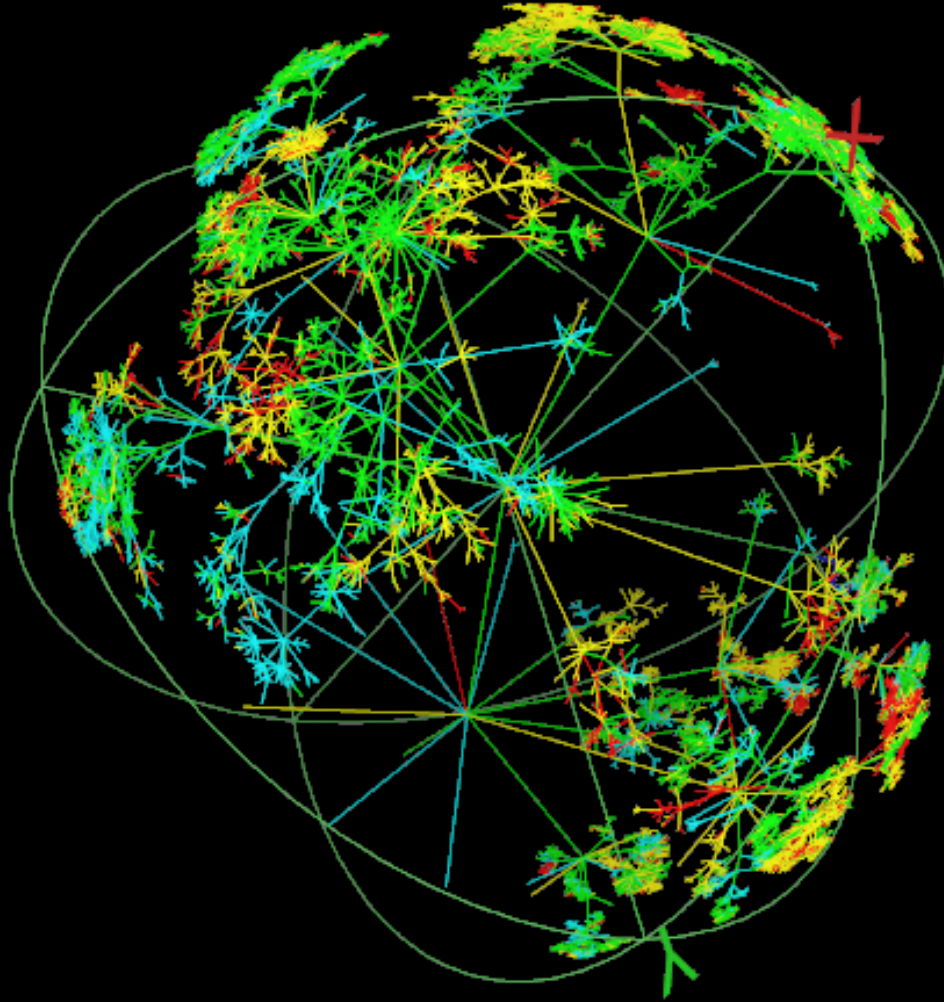
# Four Things To Do:

**#4: Money left  
over? Have it  
managed safely  
and well.**

**Make Even  
The Most  
Complex  
Simple**

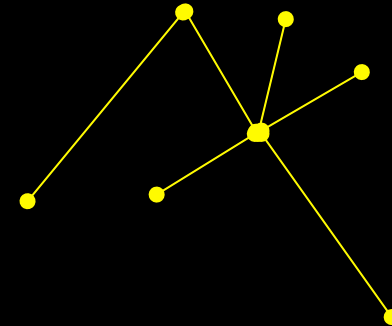
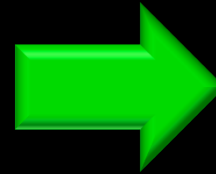
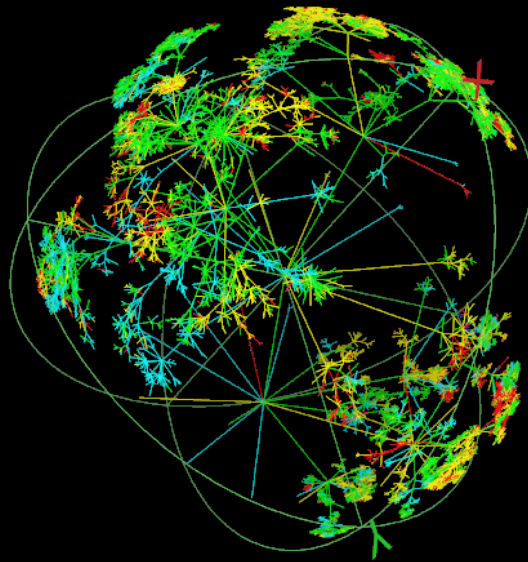


# The Economy is a Complex System



# A Prediction

Simplicity is coming....



# Black Swans Are The Rule...





**And Then  
Plant The  
Seed(s)**

# “From The Outside In”



# **The Response:**

**Keep your eye on  
the edges of the  
system, not the  
center**

**You Are Not  
In The  
Business Of  
Sharing  
Information**

# **You Are In The Business Of Challenging Beliefs**

# 6 STAGES OF AWARENESS





# DENIAL





# ANGER



# BARGAINING





# FEAR



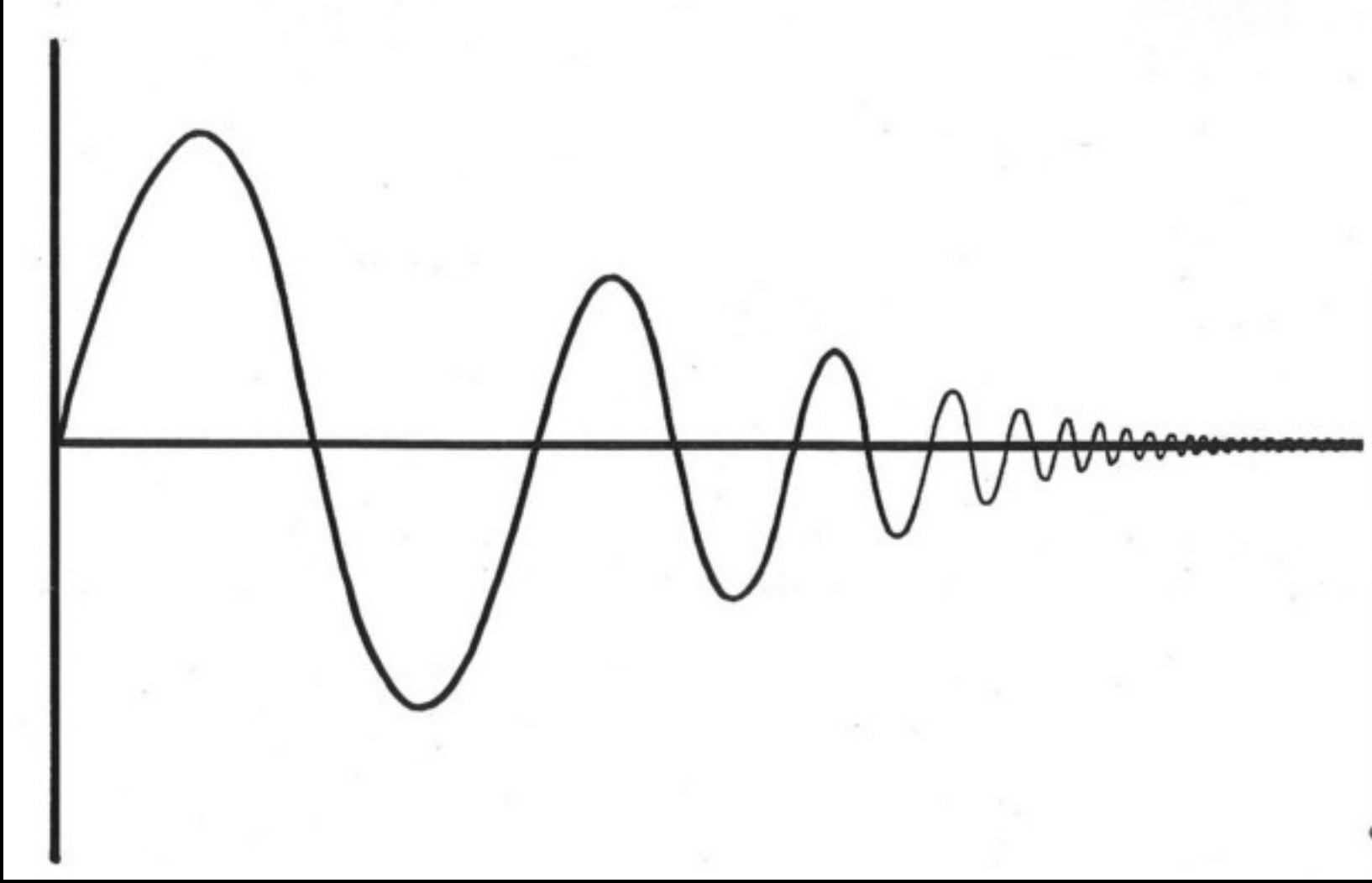


# DEPRESSION



# ACCEPTANCE

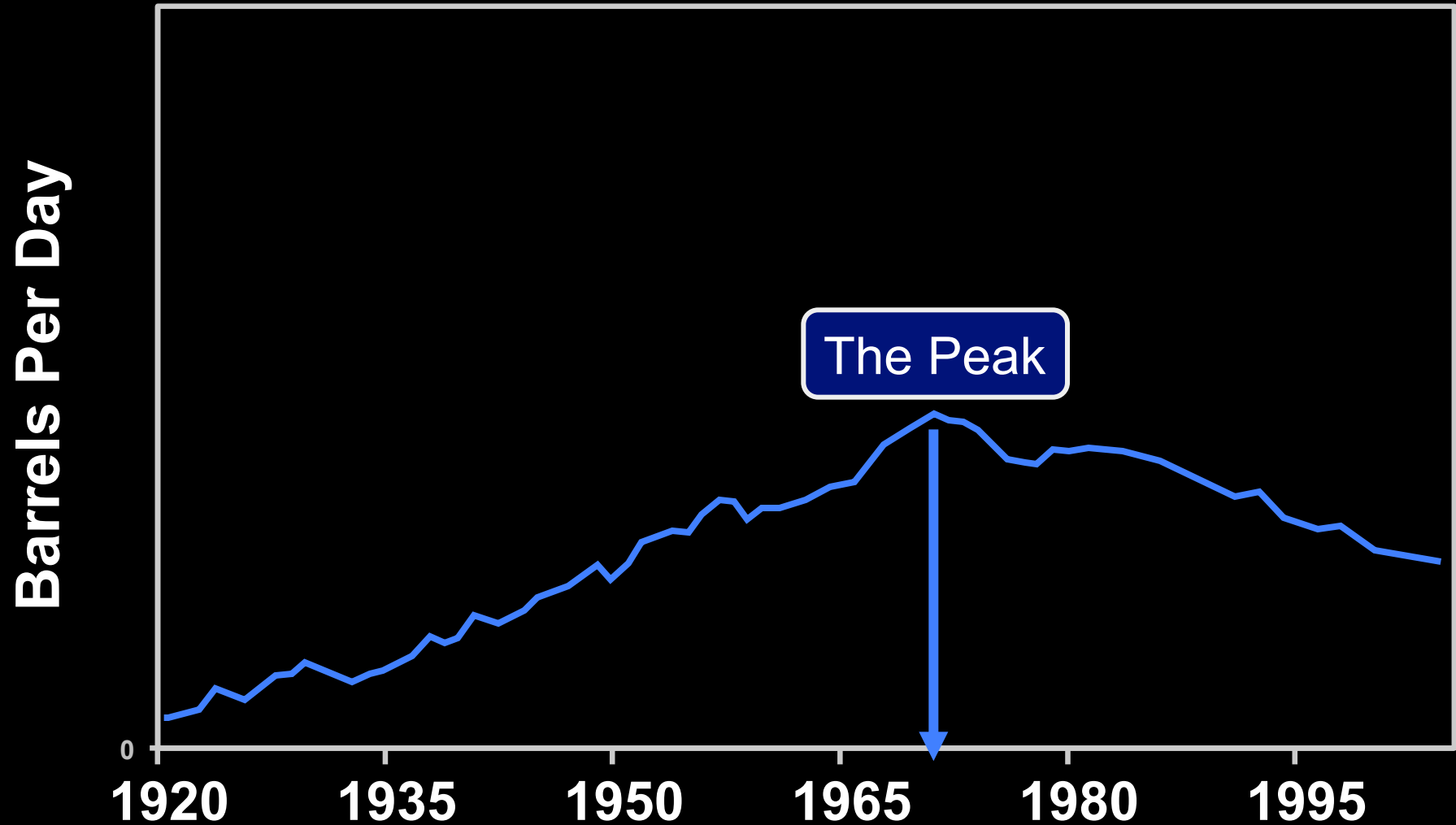






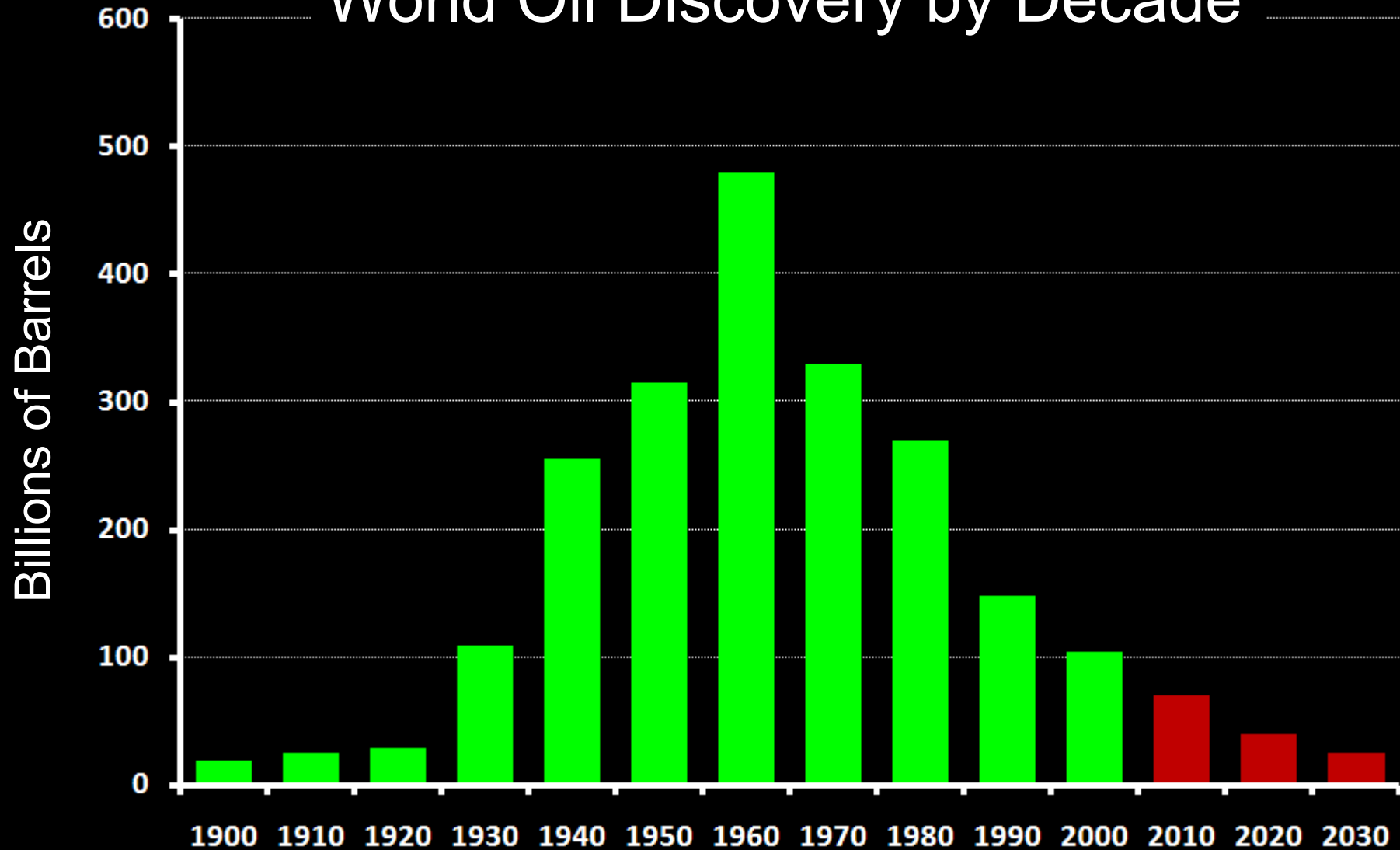
# Beliefs Trump Information

# US Oil Production & Dependency

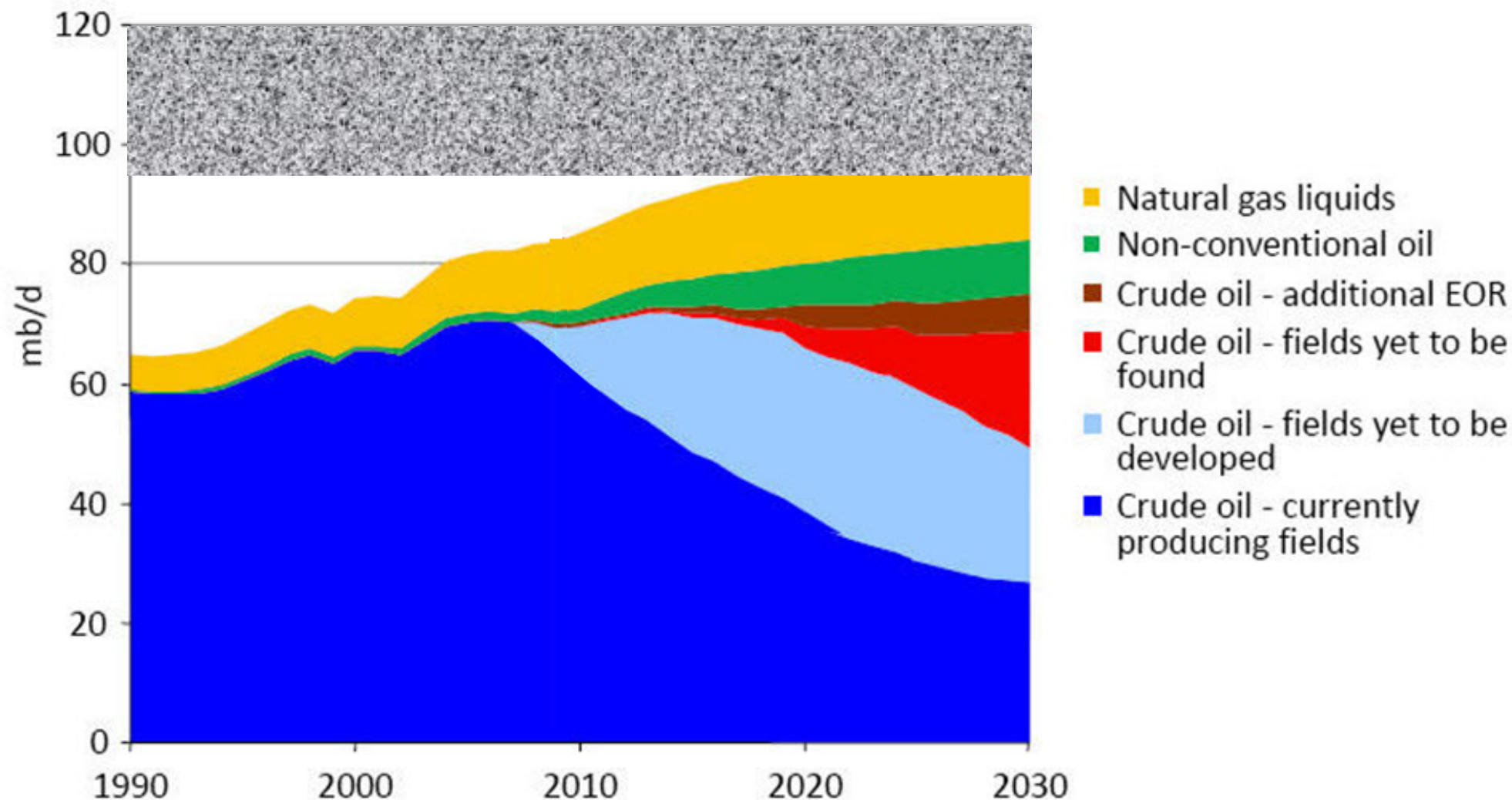


# A Discovery Peak

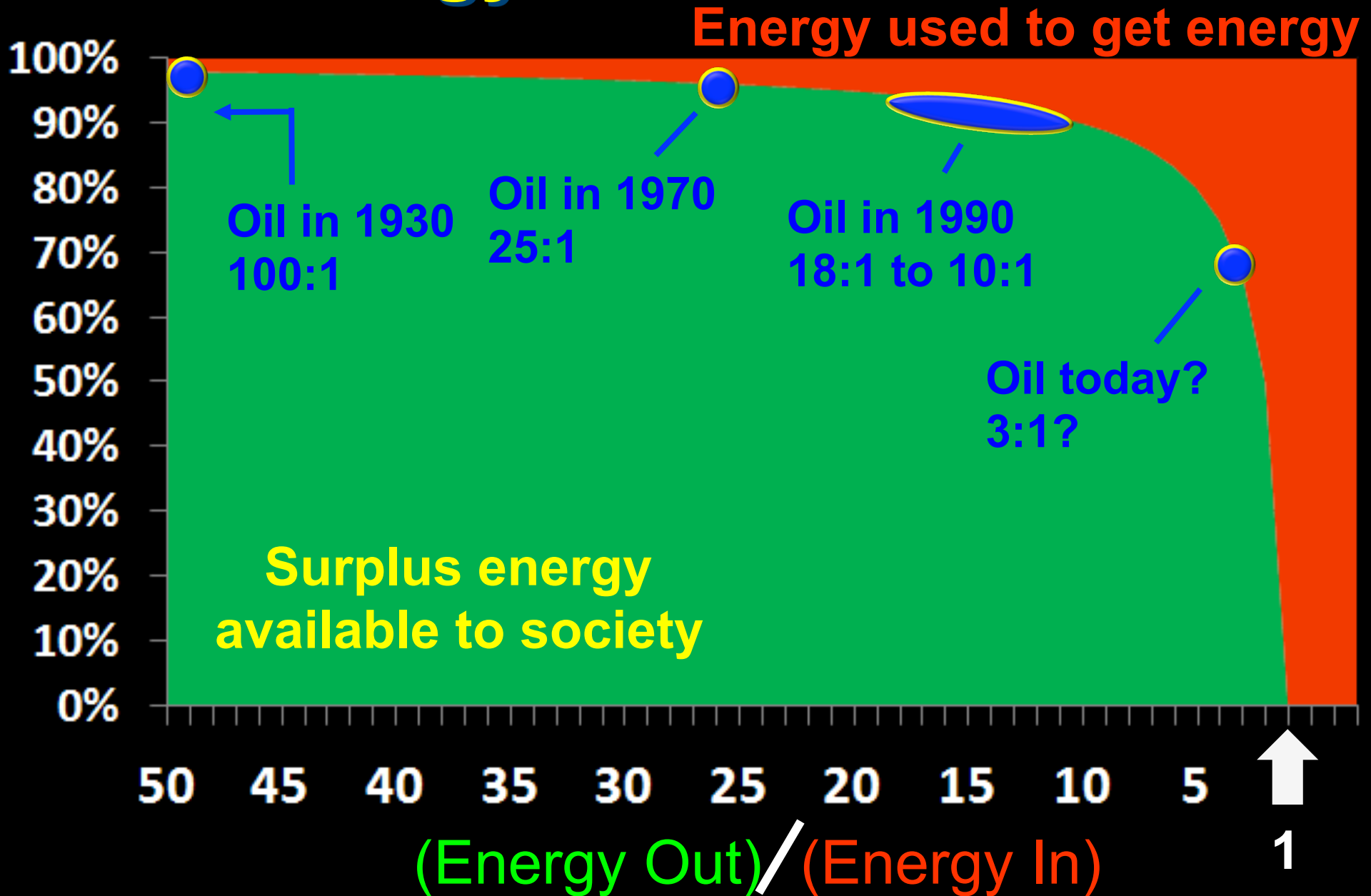
World Oil Discovery by Decade



# Oil – Past (conventional) Peak Already

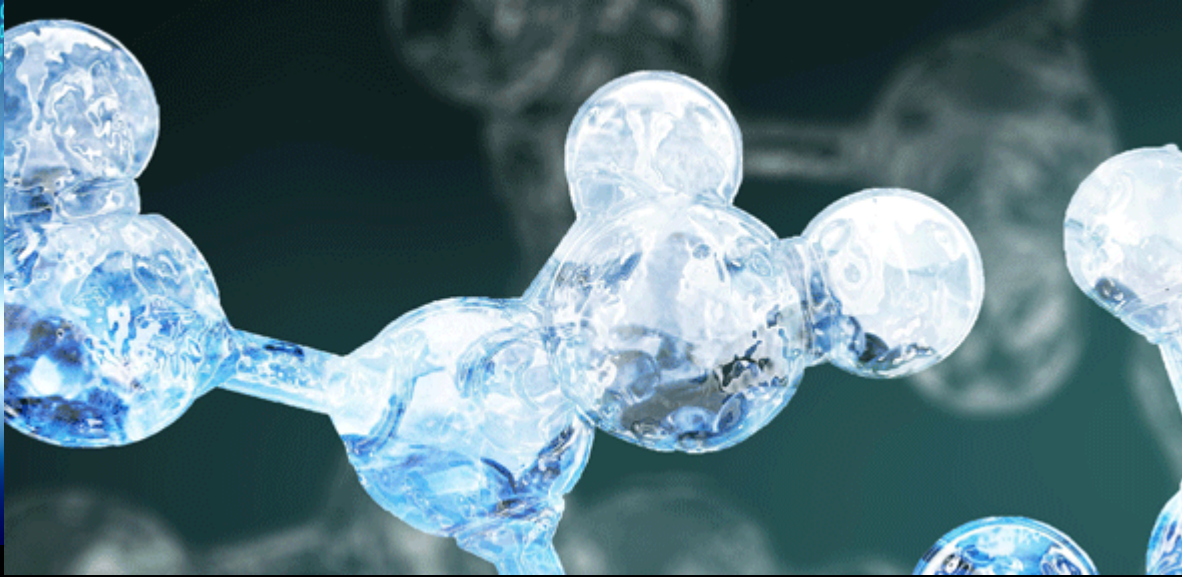


# The Energy Cliff - Oil



**Beliefs Trump  
Information**  
*(So Speak To The  
Beliefs)*





# Ah...About That Technology...

## Limits



## The Second Law



~~Create  
Energy~~

# Summary

- Success requires *what* you say, *how* you say it, and *when* you say it.
- Make things personal, relevant and actionable
- Humans only rarely make decisions based on information
- Understand the beliefs you are challenging!!
- Make things as simple as possible

# Thank You

**Peak Prosperity**