

Welcome to the future.



*“We can never know about the days to come.
But we think about them anyway.”*
— Carly Simon



opening lines of “Anticipation”

GenEd 1112



What's a "Prediction"? (v1)

Nobody has responded yet.

Hang tight! Responses are coming in.

The Prediction Project

The Past and Present of the Future

HOME ABOUT MATERIALS TALKS WRITINGS PRESS FORUM

Prediction Essentials

Take a look at the essential elements of the course, including the framework for predictive systems.

→

Omens & Oracles

Gain insight into prediction as a human venture by studying the most ancient forms of prediction in Omens and Oracles.

→

Rise of Theory

Learn how humanity moved from mystical divination practices to genuine, scientific theories to explain natural phenomena.

→

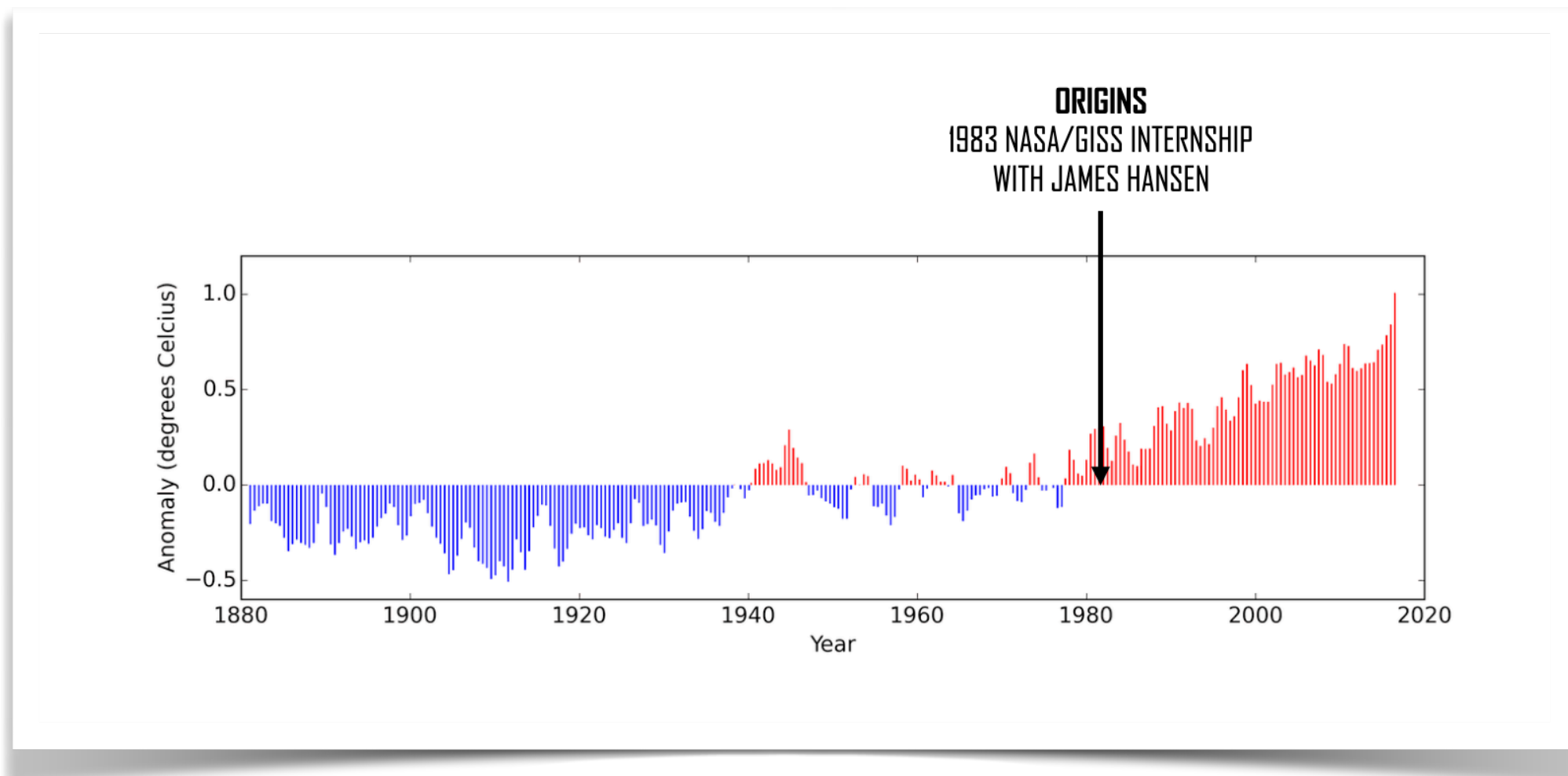
Modern Prediction

Discover the cutting edge predictive methods and modeling from preeminent experts across many fields.

→

How it all fits together

Our project has four main sections, fitting together to offer a broad overview of how humanity has predicted its future throughout history.



PREDICTIONX: THE PAST & PRESENT OF THE FUTURE

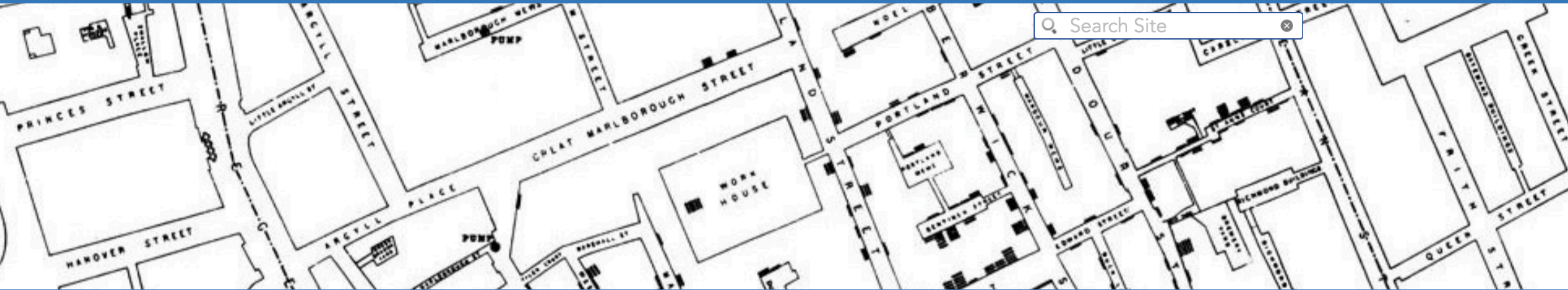
ESSENTIALS	Omens, Oracles & Prophecies	THE RISE OF THEORY	MODERN PREDICTION
<ul style="list-style-type: none"> Predictive Systems Framework Phenomena → Predictions Understanding Uncertainty Study Design Timelines Why predict? 	<ul style="list-style-type: none"> Mesopotamian Haruspicy Roman Augury Chinese Oracle Bones Oracle of Delphi Aztec Rituals Egyptian Priests Tarot The Diviner's Guide Turkish Tasseography Maya Spacetime Yoruba Ifa Casting Lots Greek Astronomy Astrology Comets of Doom 	<ul style="list-style-type: none"> Ancient Mesopotamia, Egypt, Greece & Rome Islamic Science The Path to Newton Indian Mathematics European Renaissance Health John Snow & Cholera Cholera Map Lost without Longitude (Navigation) Help, I'm Lost! Tools of the Navigator The Royal Society 	<ul style="list-style-type: none"> Health <ul style="list-style-type: none"> Epidemiology Personal Genomics Population Genetics Wealth <ul style="list-style-type: none"> Climate & Wealth Behavioral Economics The Future of the Future <ul style="list-style-type: none"> AI, Derek's Day Philosophy Uncertainty Earth <ul style="list-style-type: none"> Climate & Energy Climate Policy Tent Tarot Earthquakes Space <ul style="list-style-type: none"> Futures of our Universe SETI
Coming Soon	Interactive Resource	video(s)	available on edX

The Prediction Project

The Past and Present of the Future



[HOME](#) [ABOUT](#) [MATERIALS](#) [COURSES](#) [TALKS](#) [WRITINGS](#) [PRESS](#) [FORUM](#)



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A photograph of a street in Venice, Italy, shrouded in a thick, golden-hued fog. On the right, a large, ornate classical building with a prominent corner balcony and a textured stone facade stands next to a yellow building with dark shutters. In the foreground, several dark, ornate street lamps are visible. The sun is low in the sky on the left, creating a bright glow and casting long, soft shadows. The overall atmosphere is quiet and mysterious.

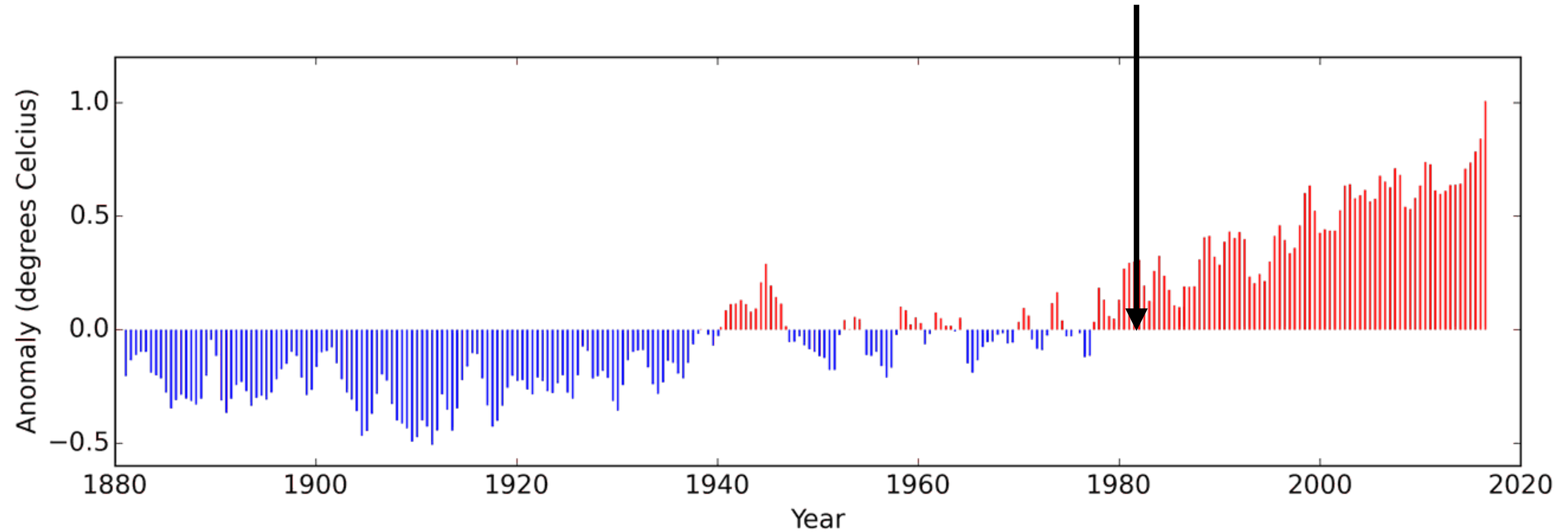
Do we really *want* to know?

Do we *already* know?

How well *can* we know?

Do we really *want* to know?

ORIGINS
1983 NASA/GISS INTERNSHIP
WITH JAMES HANSEN





PREDICTIONX

WGBH 2008

2011



edX
HarvardX

2014

 **HARVARD COLLEGE**
Freshman Seminar Program

2015



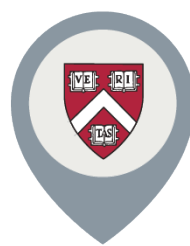
2016



2017

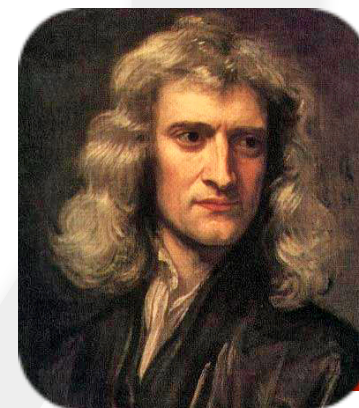
The **TIMELINE**
CONSORTIUM

SPIN-OFF
(TSF METADATA STANDARD, TOOL)



2019

Harvard College
Program in General Education
Explore. Expand. Engage.



2018



2019

SPIN-OFF (PATH-TO FOUNDATION)

Path-to-Foundation

2020

LabXchangeTM
Science and learning—connected.

2020



2021

2022

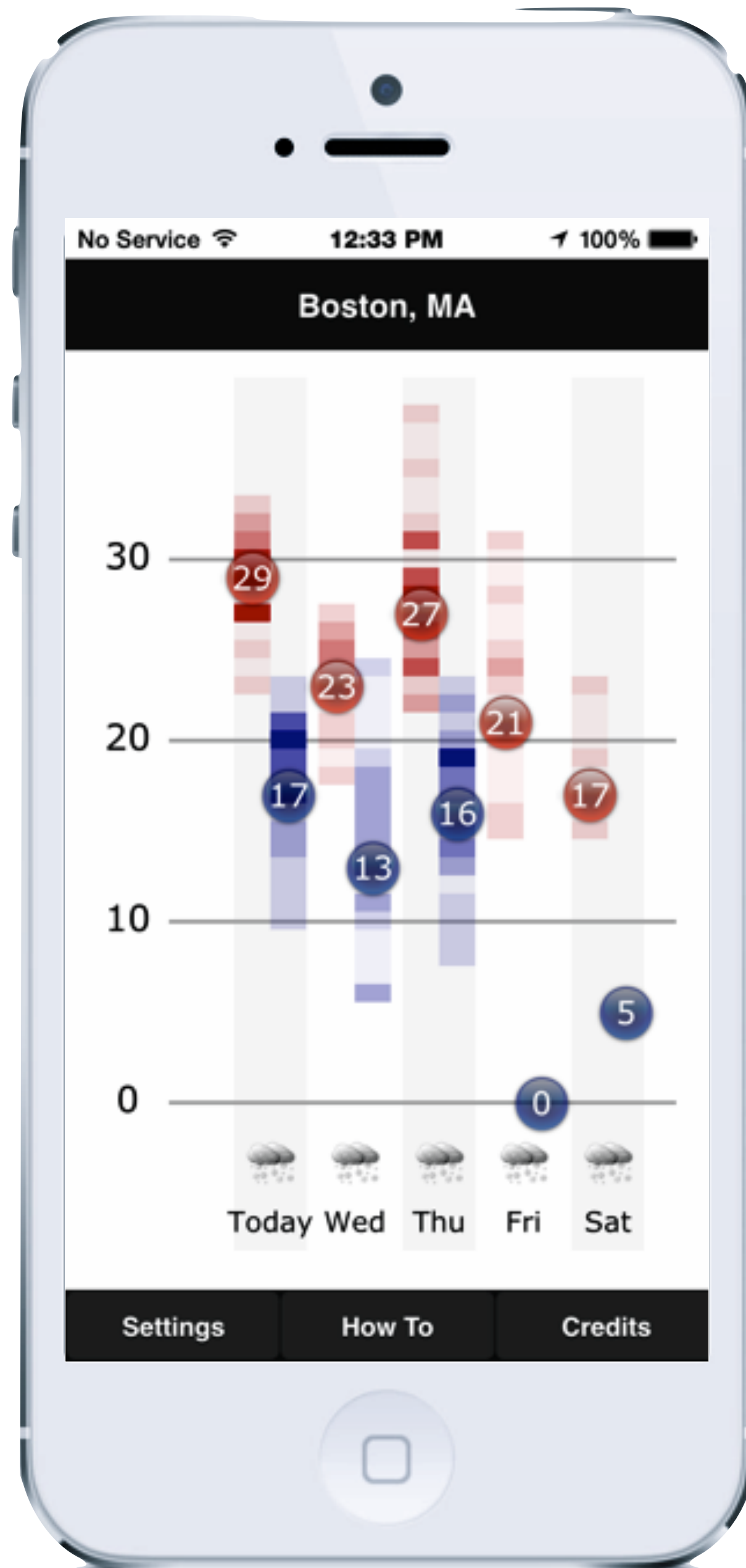


2024

"Take A Sweater"



2011



App Store Page Content:

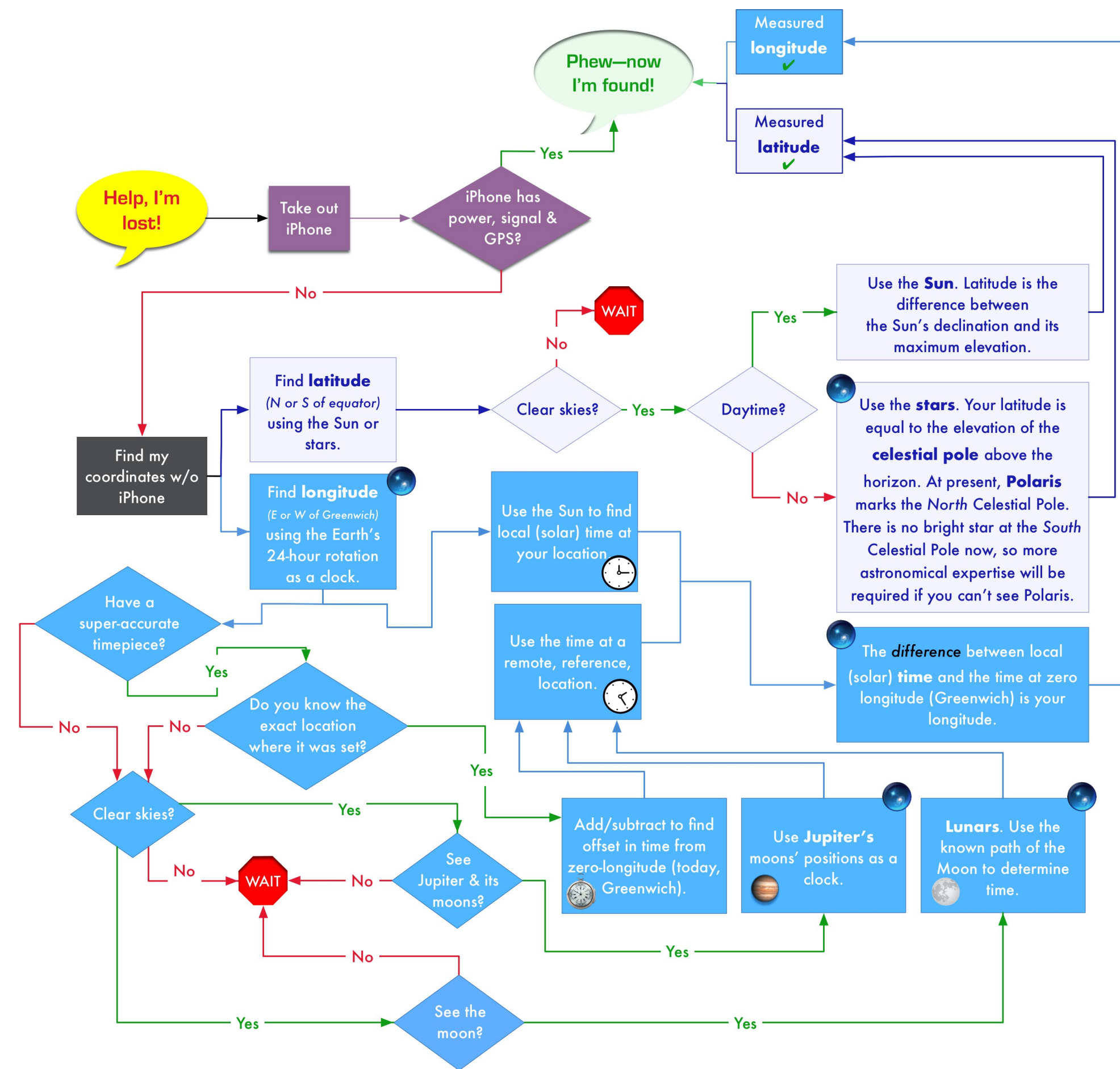
- App Store > Weather > Harvard University
- Take A Sweater
- Harvard University >
- Details | Ratings and Reviews | Related
- iPhone Screenshots: Shows the app interface, a histogram of temperature occurrences, and a settings screen.
- Description: NOTE: Take-A-Sweater currently only has data for Boston, MA. This will be changing with the next release. This App was created in 2012, for use in the Harvard University General Education course "The Art of Numbers," taught by Prof. Alyssa Goodman. The code was written by Bill Barthelmy of Harvard's Academic Technology Group. Historical data were kindly provided by ForecastWatch, a product of Intellovations, LLC. Current five-day weather forecast data are provided by NOAA...

takeasweater.com, and "TakeASweater" in the Apple App Store

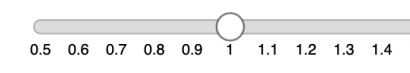
with thanks to Eric **Floehr** of Forecast Watch and Bill **Barthelmy** of HUIT Academic Technology at FAS

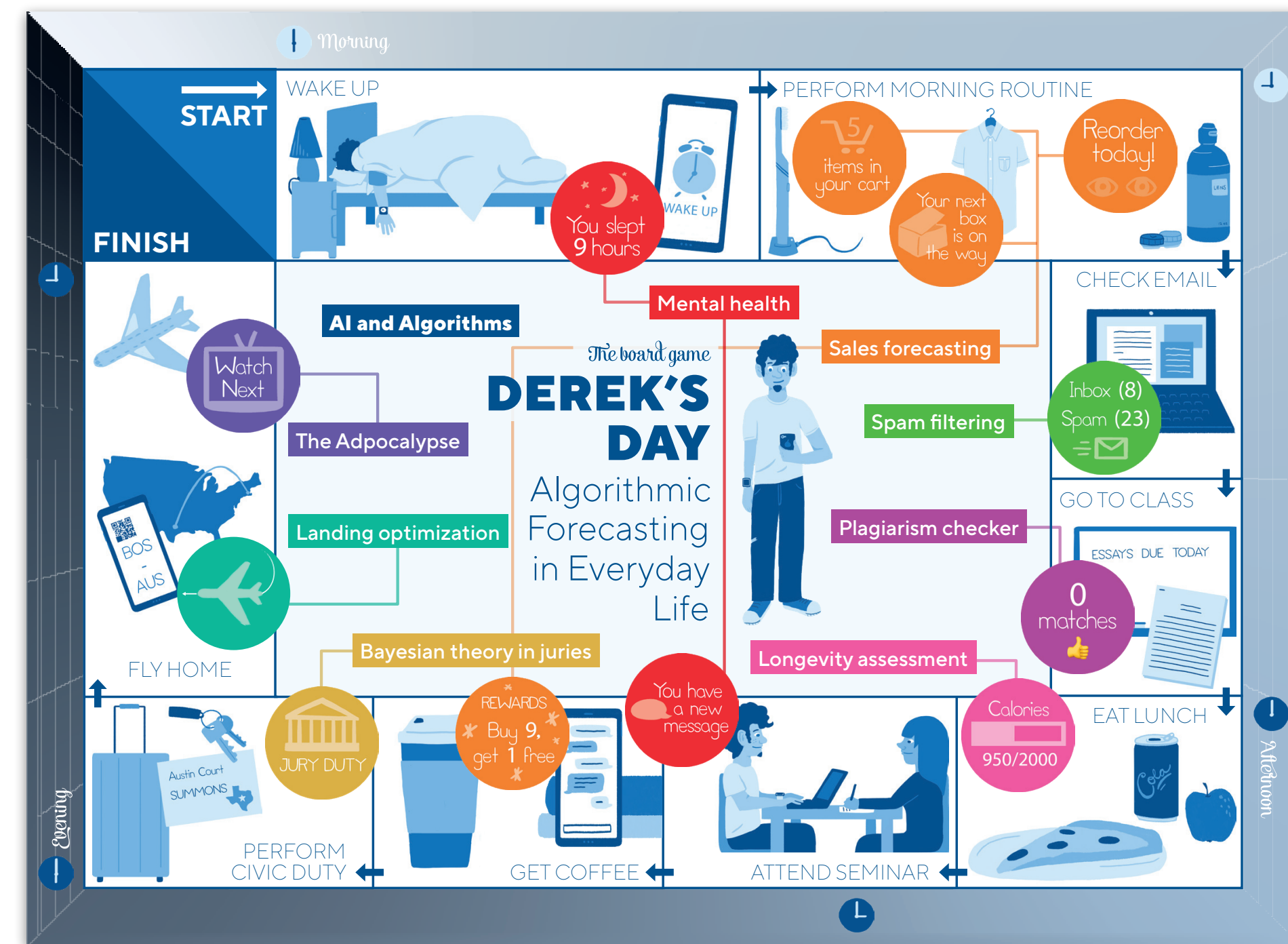
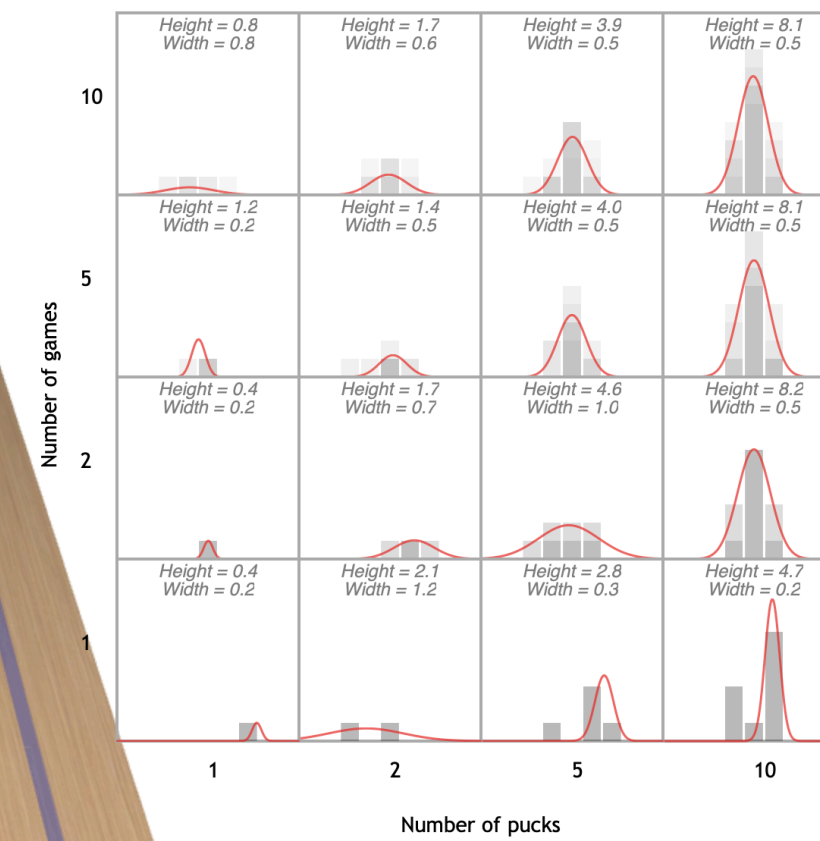
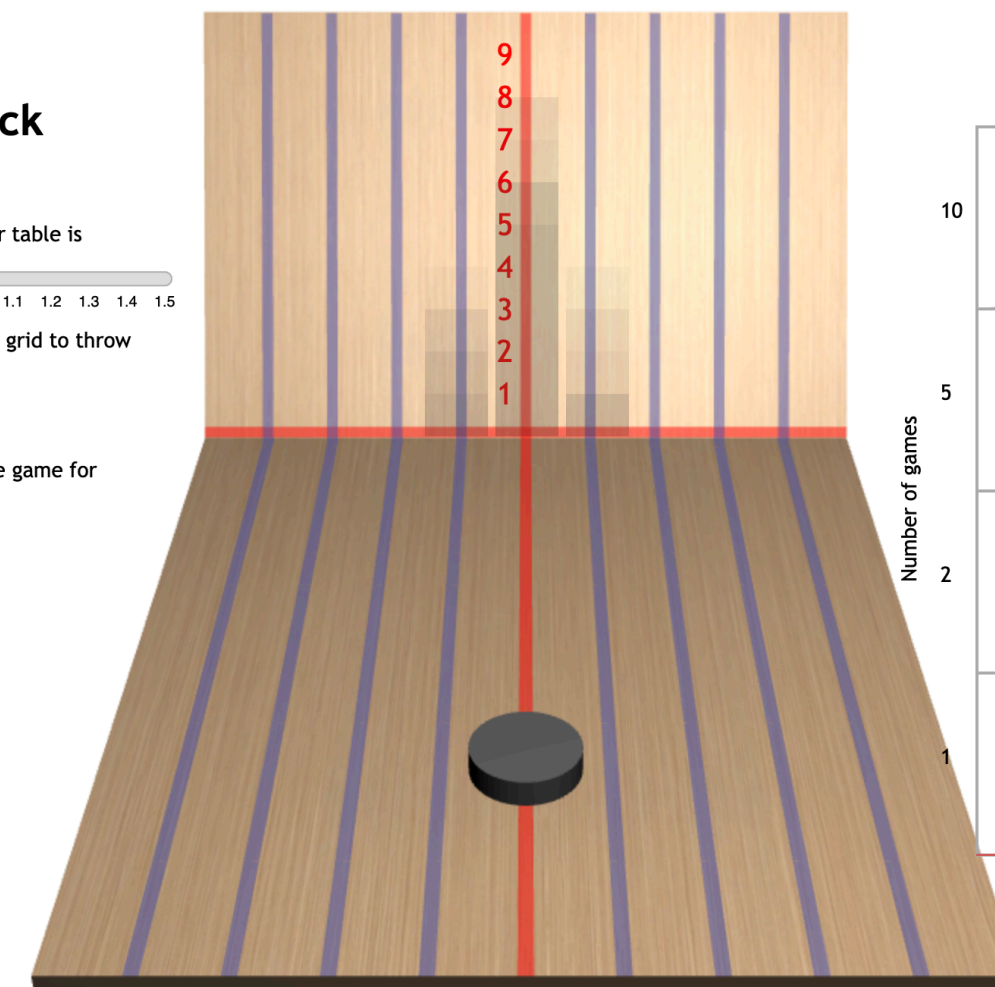


PREDICTIONX



Slide-the-puck

1. Decide how rough your table is

2. Click anywhere on the grid to throw the puck
3. Click [here](#) to finish the game for you



The Prediction Project

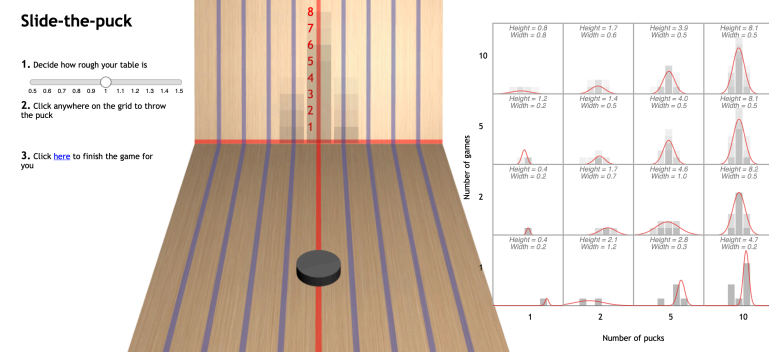
PREDICTIONX: THE PAST & PRESENT OF THE FUTURE



ESSENTIALS

Predictive Systems Framework

The "Rube Rainbow"



Study Design

Timelines

Why predict?



Omens, Oracles & Prophecies

Mesopotamian Haruspicy

Roman Augury

Chinese Oracle Bones

Oracle of Delphi

Aztec Rituals

Egyptian Priests

Tarot

The Diviner's Guide

Turkish Tasseography

Maya Spacetime

Yoruba Ifa

Casting Lots

Greek Astronomy

Astrology

Comets of Doom

cross-cultural conversations



THE RISE OF THEORY

Ancient Mesopotamia, Egypt, Greece & Rome

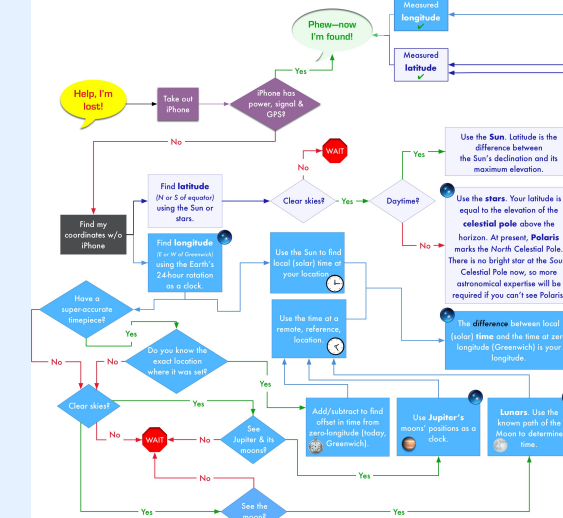
Islamic Science

The Path to Newton

Indian Mathematics
European Renaissance

The Royal Society

John Snow & Cholera
Cholera Map



Tools of the Navigator



MODERN PREDICTION

Health

- ▶ Epidemiology
- ▶ Personal Genomics
- ▶ Population Genetics

Wealth

- ▶ Climate & Wealth
- ▶ Behavioral Economics



Earth

- ▶ Climate & Energy
- ▶ Climate Policy
- ▶ Tent Tarot
- ▶ Earthquakes

Space

- ▶ Futures of our Universe
- ▶ SETI



Interactive Resource

▶ video(s)

Coming Soon

visit predictionx.org for more information on the Prediction Project



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HarvardX

LabXchange



The Prediction Project

PREDICTIONX: THE PAST & PRESENT OF THE FUTURE



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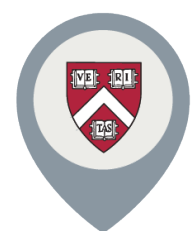


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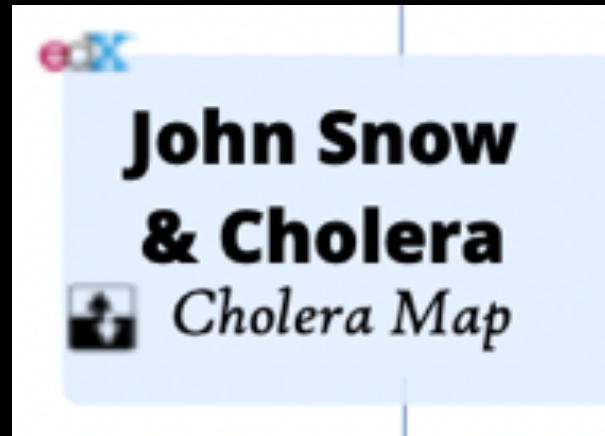
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HarvardX





John Snow & Cholera

Home Course Discussion Progress Timeline Glossary @PredictionX on Twitter

Welcome to HarvardX's PredictionX!


Mini-Course: John Snow and the Cholera Outbreak of 1854


Support


Course Updates and News


September 12, 2016 Hide

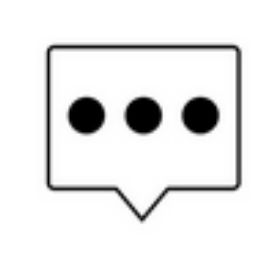
PredictionX: John Snow and the Cholera Outbreak of 1854



[Snow and Cholera](#)



[Expert Conversations](#)


[The Map](#)

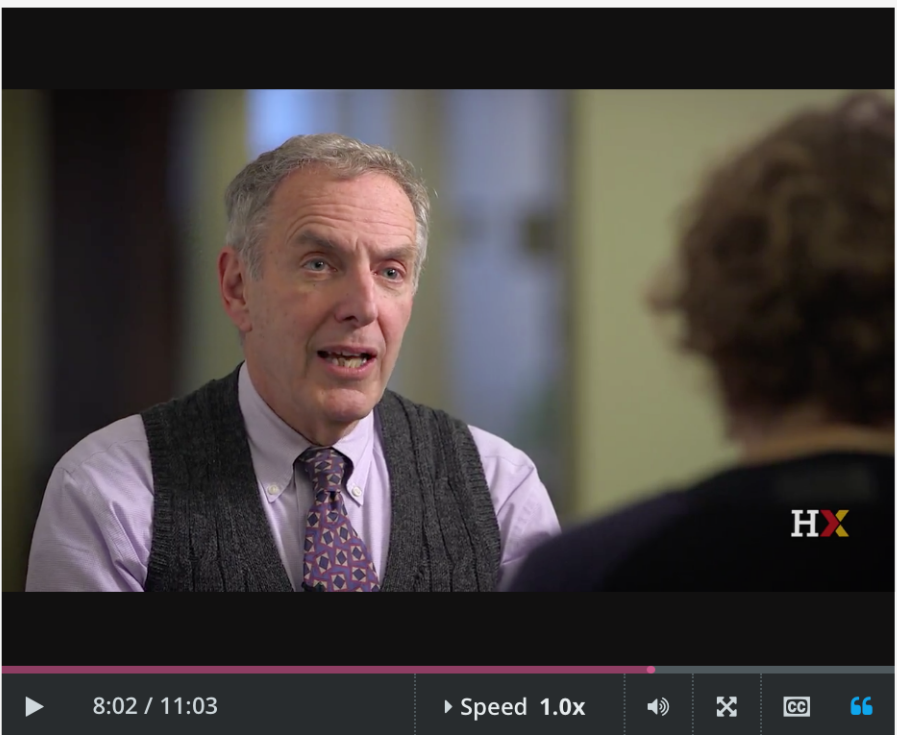

[Timeline](#)


[Extra Material](#)


[Assessments](#)


[PredictionX](#)

A Conversation with Experts



8:02 / 11:03 | Speed 1.0x

John Snow Society mag.
ROSALIND: Yes.
So he had, if you like, he'd got the data.
And this was just another way of demonstrating it.
It wasn't how he solved the outbreak.
DON: When I talk to my students about this, I always ask them, **so did John Snow perform a case control study,** which is fundamental in epidemiology.
It's the greatest tool for working up outbreaks that we have.
In a case control study, you study the exposure of the cases, in this case, water pumps, and the exposure of the controls, the people who were

Video [Download video file](#)

Transcripts [Download SubRip \(.srt\) file](#) [Download Text \(.txt\) file](#)

ArcGIS - PredictionX: John Snow Maps

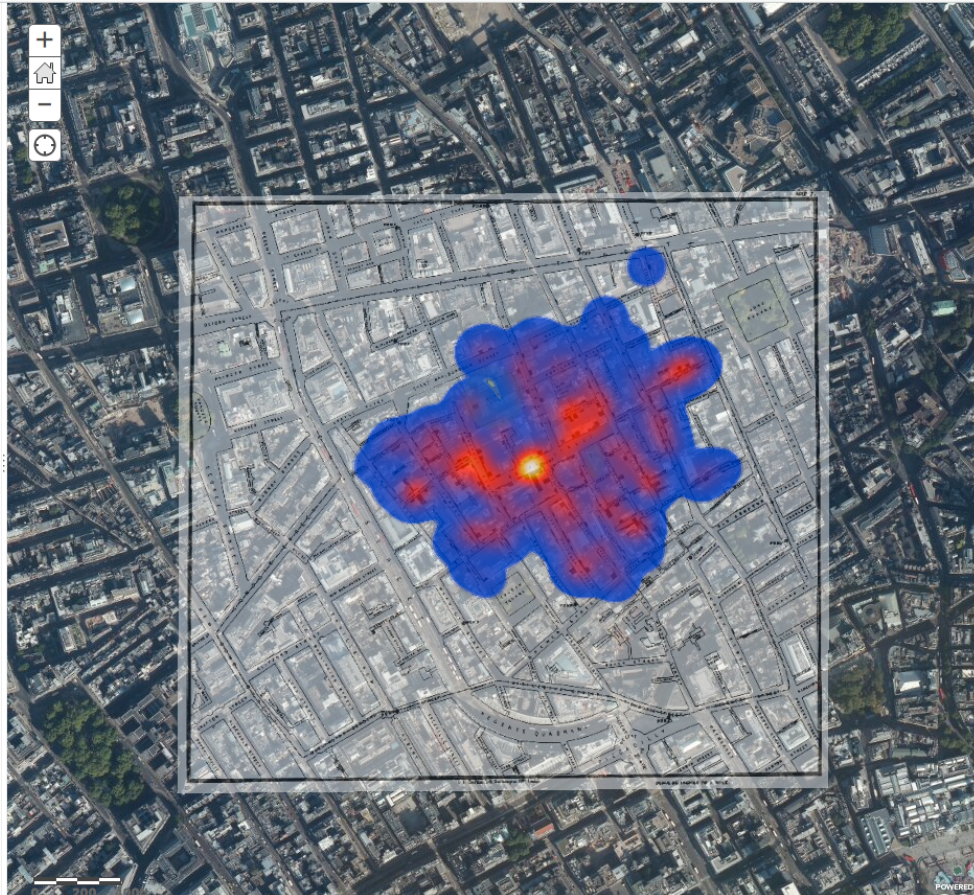
Modify Map Sign In

Details Basemap

Share Print Measure Find address or place

Contents

- Workhouse
- Brewery
- JohnSnowCholera - Broad Street Pump
- JohnSnowCholera - Pumps
- JohnSnowCholera - Deaths by Address
- Snow Cholera Points - Heatmap
- John Snow Map Semi-Transparent
- John Snow's Map
- SnowWaterCompanyMap
- Imagery



featuring Don Goldmann, AG & Rosalind Stanwell-Smith

Prediction: Day 7

opening remarks on COVID-19 & plans for the rest of [GenEd1119](#)

quick review of outdoor Navigation Exercise



questions about “Prediction in Space & Time” re:Navigation, *and Epidemiology*

John Snow & Cholera (edX highlights & more)

Student research/discussion re:COVID-19 using survey at tinyurl.com/gened1112covid19

Modeling the spread of epidemics, and uncertainty

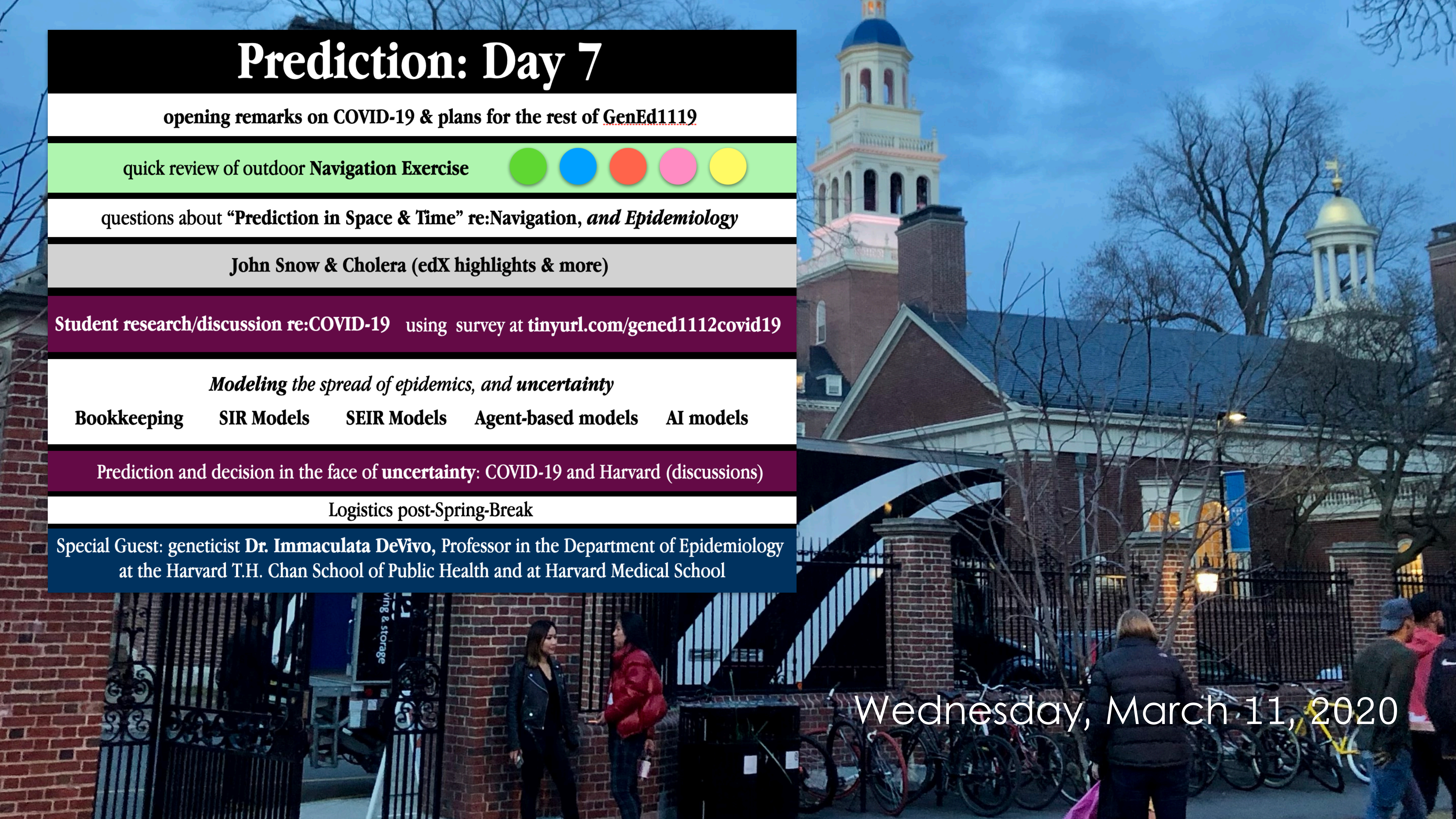
Bookkeeping SIR Models SEIR Models Agent-based models AI models

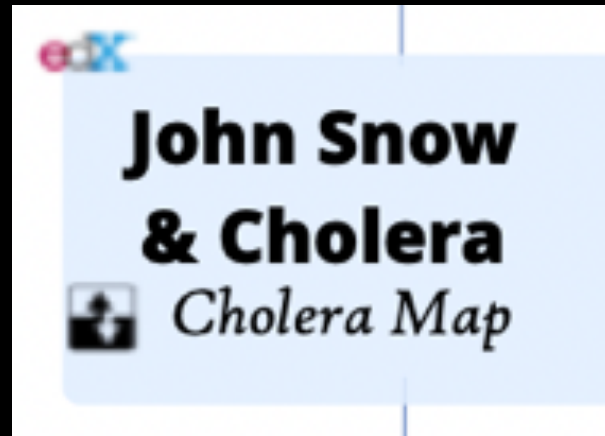
Prediction and decision in the face of uncertainty: COVID-19 and Harvard (discussions)

Logistics post-Spring-Break

Special Guest: geneticist **Dr. Immaculata DeVivo**, Professor in the Department of Epidemiology at the Harvard T.H. Chan School of Public Health and at Harvard Medical School

Wednesday, March 11, 2020





John Snow & Cholera

Home Course Discussion Progress Timeline Glossary @PredictionX on Twitter

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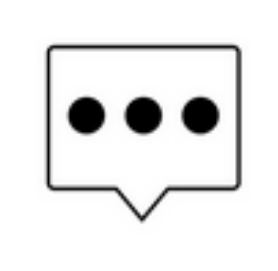
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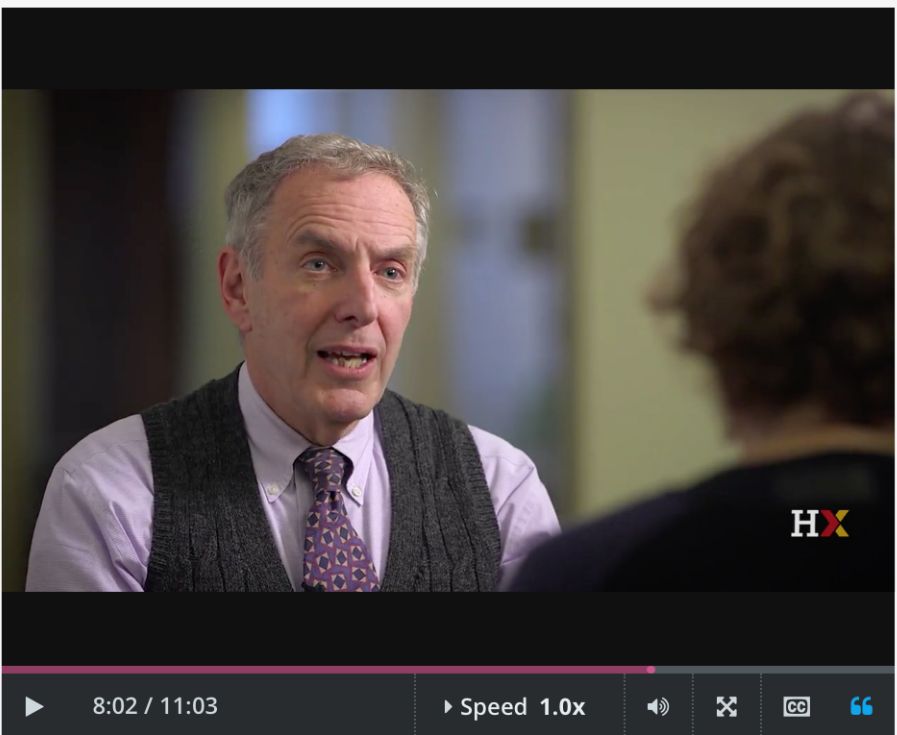

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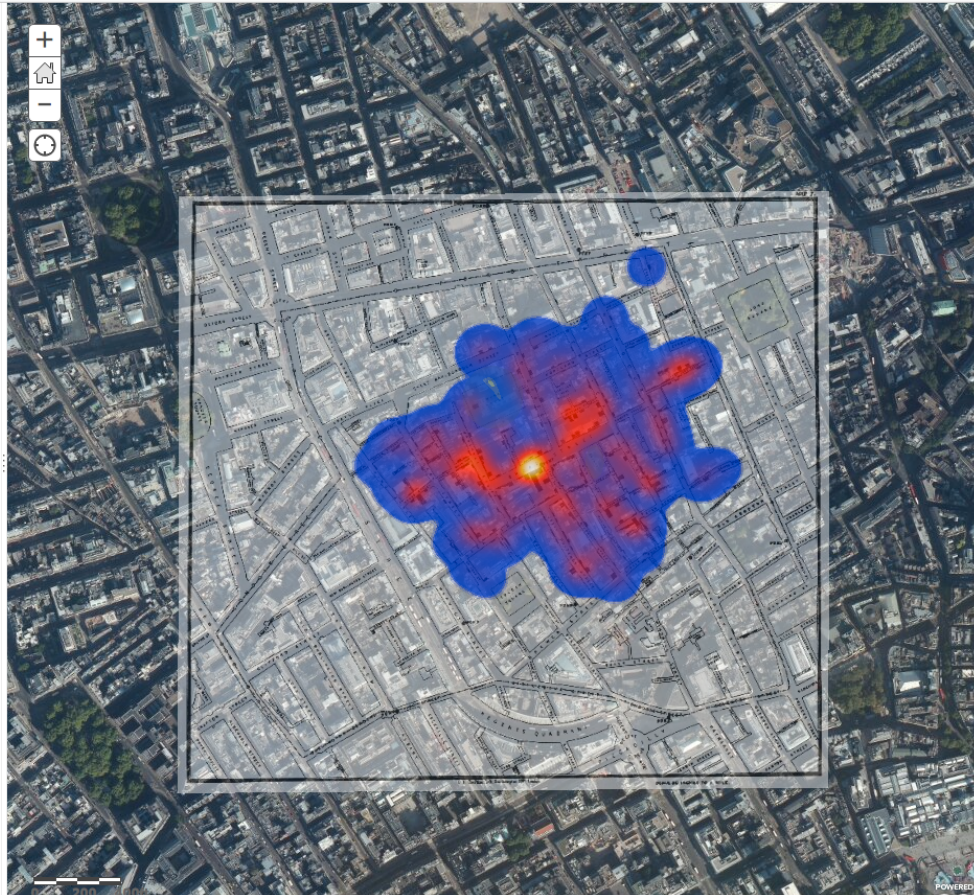
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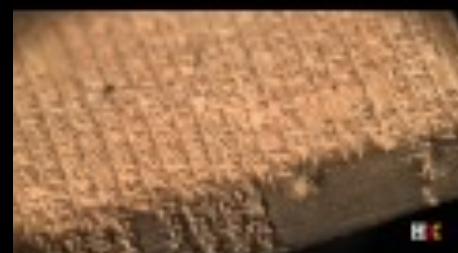
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ROMAN AUGURY


















ROMAN AUGURY

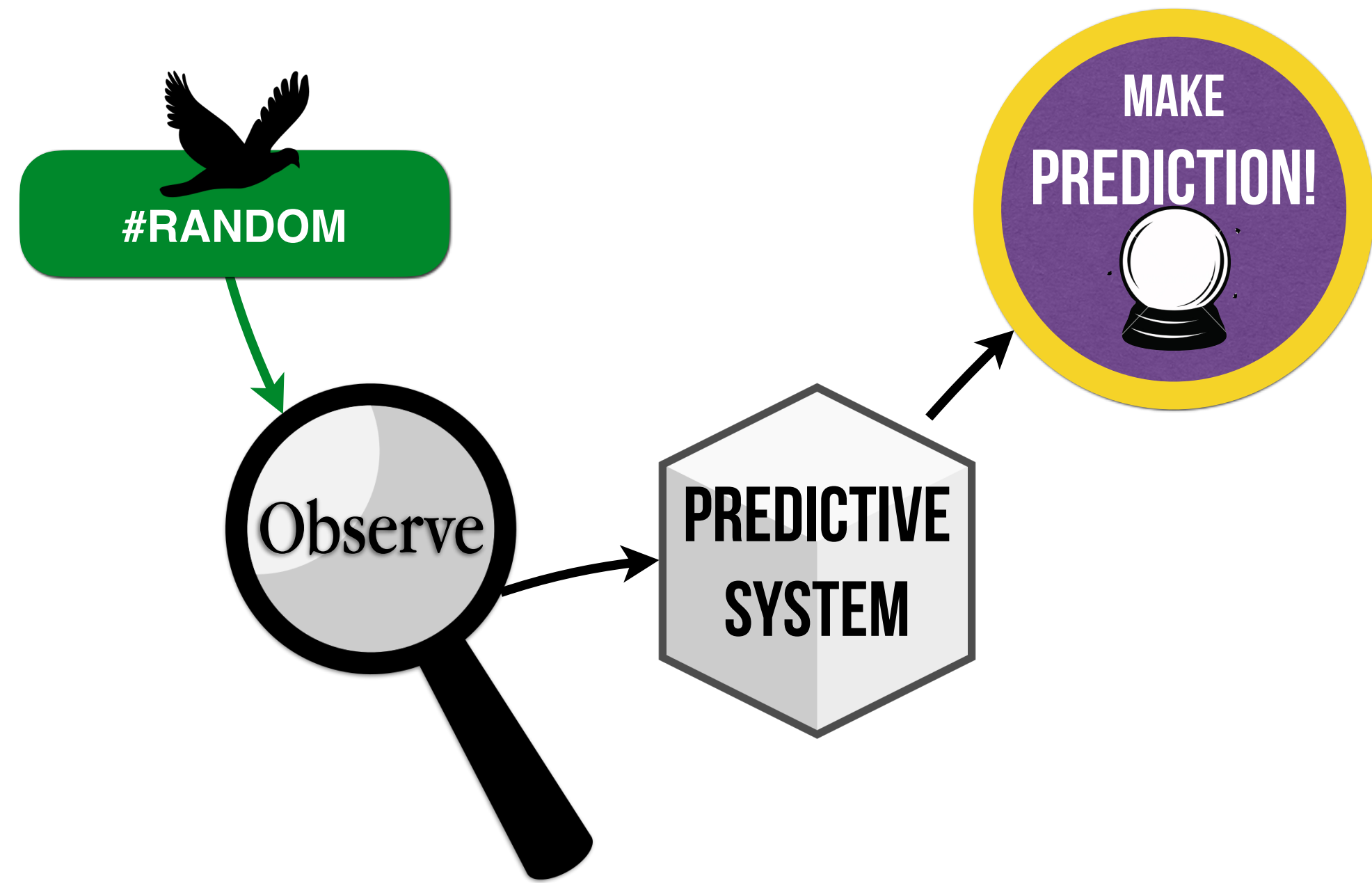
"Senior political officials of the Roman state had to take auspices before any major political event like elections." —Emma Dench

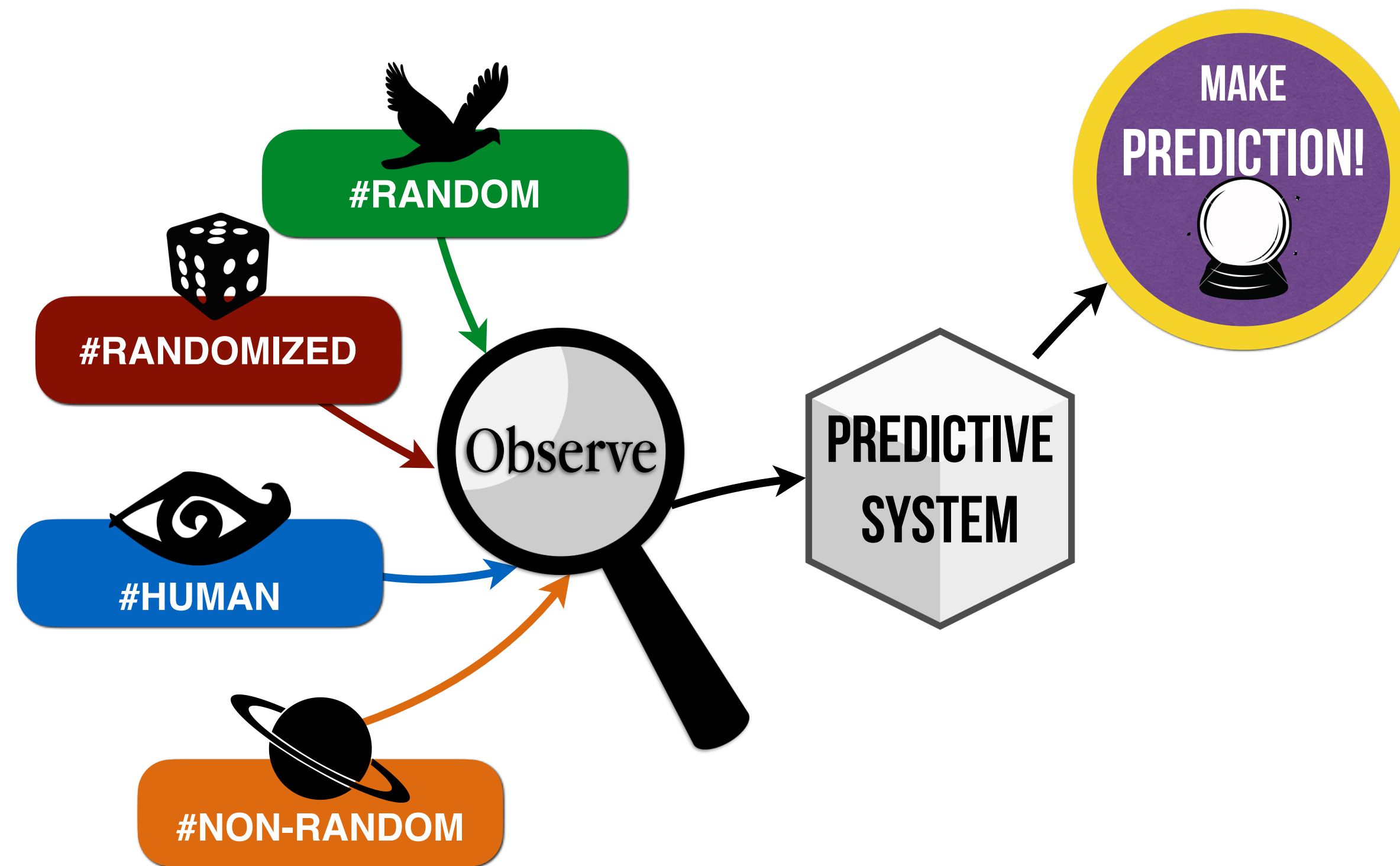


DIVINER'S GUIDE: TABLE OF CONTENTS

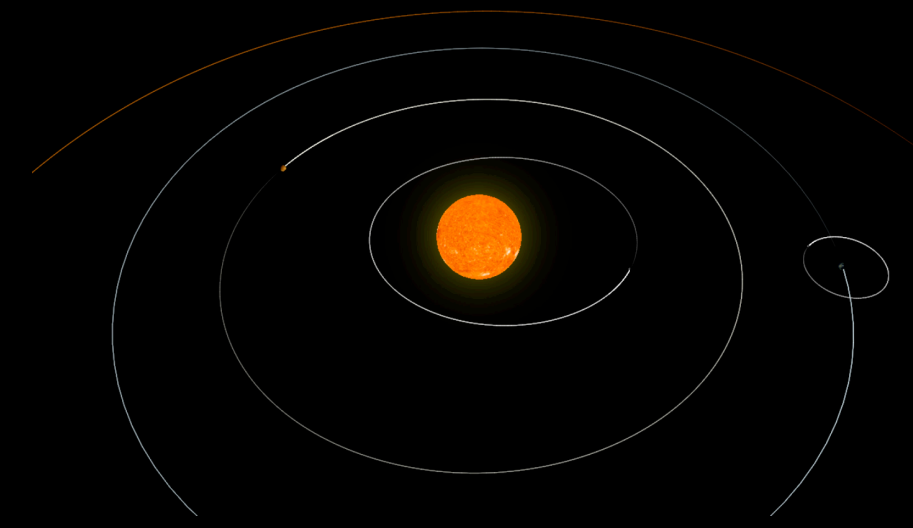
 ASTROLOGY	 MAYA SPACETIME
 AZTEC RITUALS	 ORACLE BONES
 CASTING LOTS	 ORACLE OF DELPHI
 COMETS	 ROMAN AUGURY
 EGYPTIAN STATUE	 TAROT
 HARUSPICY	 TASSEOGRAPHY
 IFA	

(see "Roman Bird Augury" video on edX)





#NON-RANDOM



Celestial Motion

#RANDOMIZED



Ifa

#HUMAN



Egyptian "Bobble Head"

#RANDOM

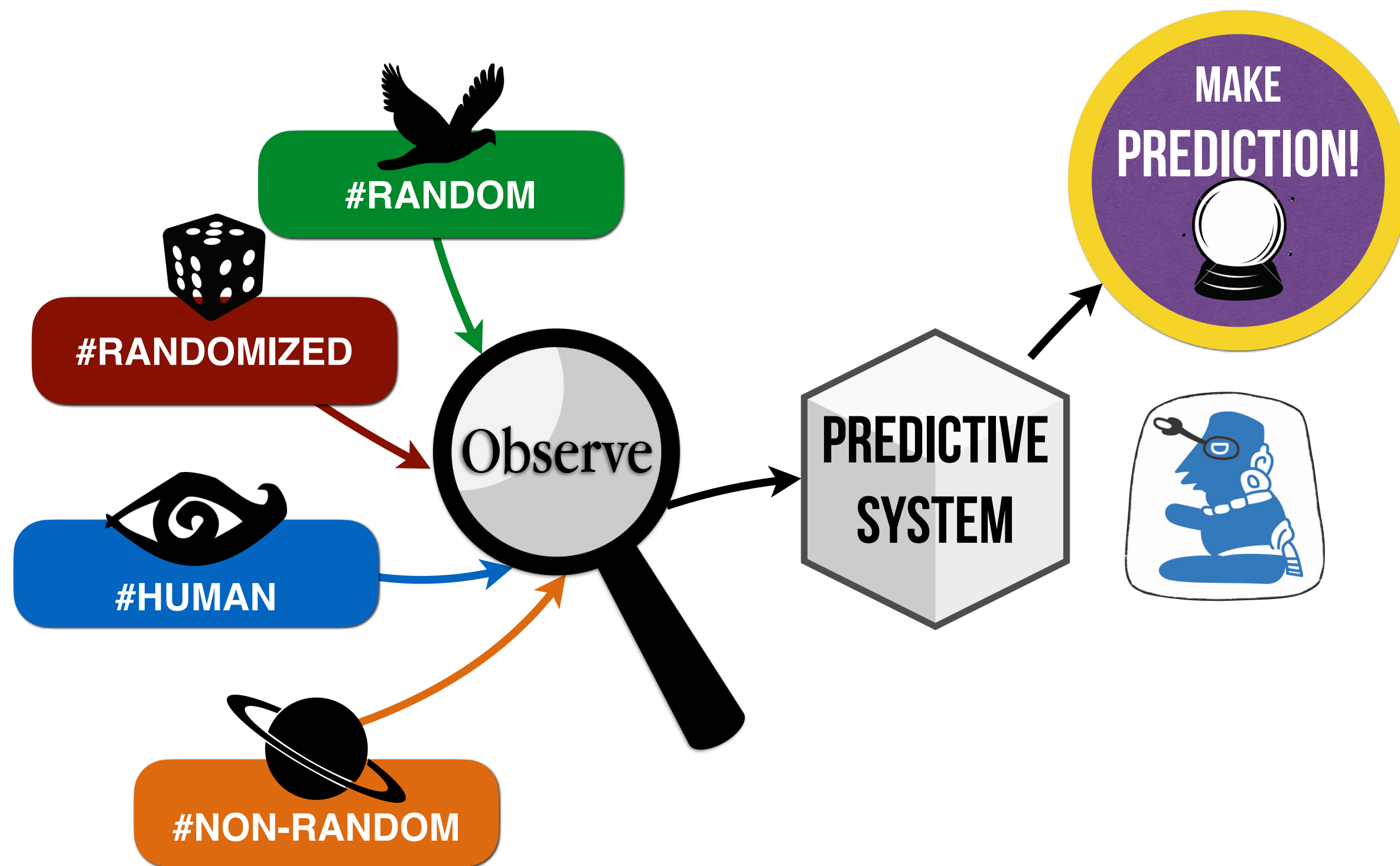


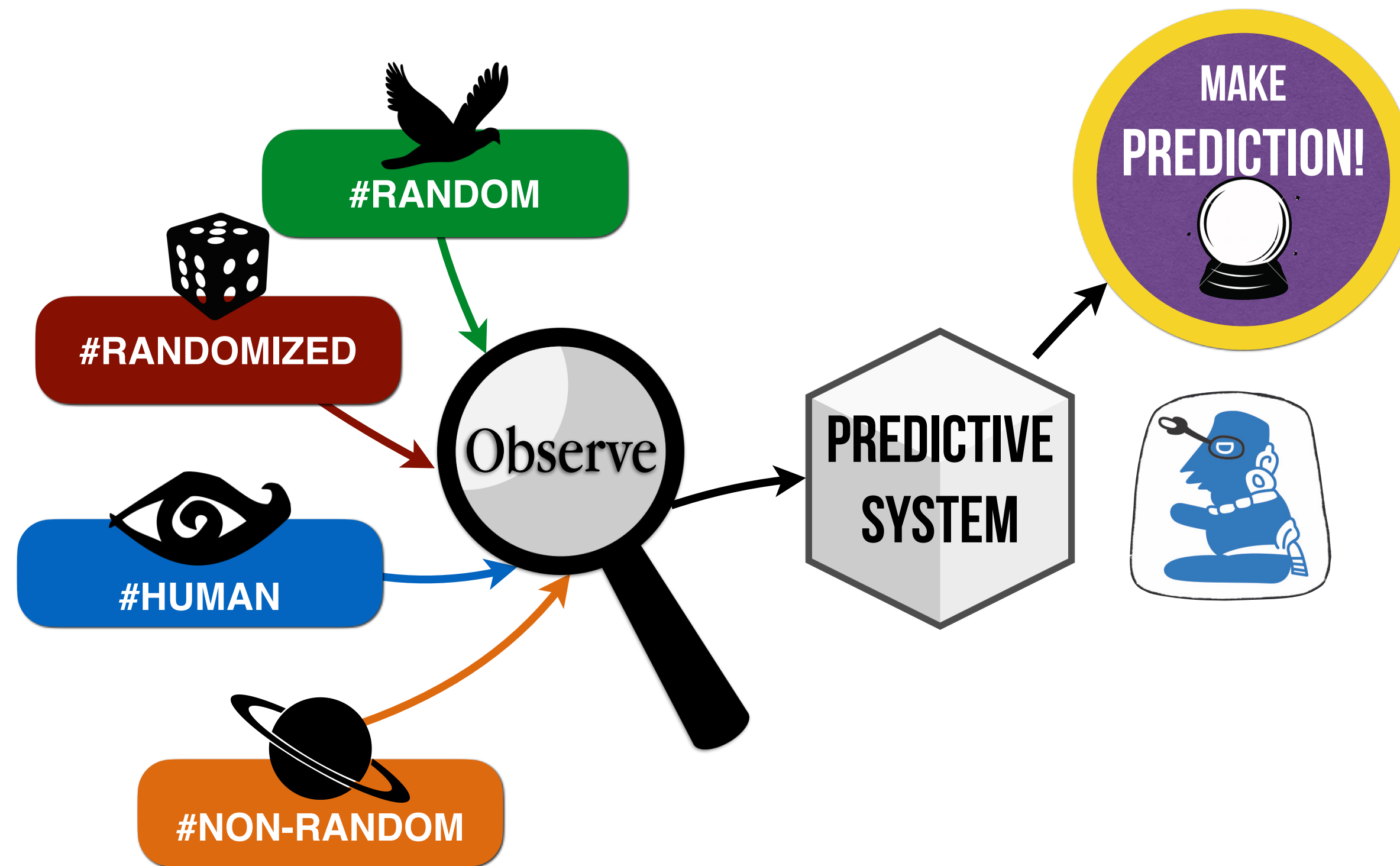
Comets of Doom

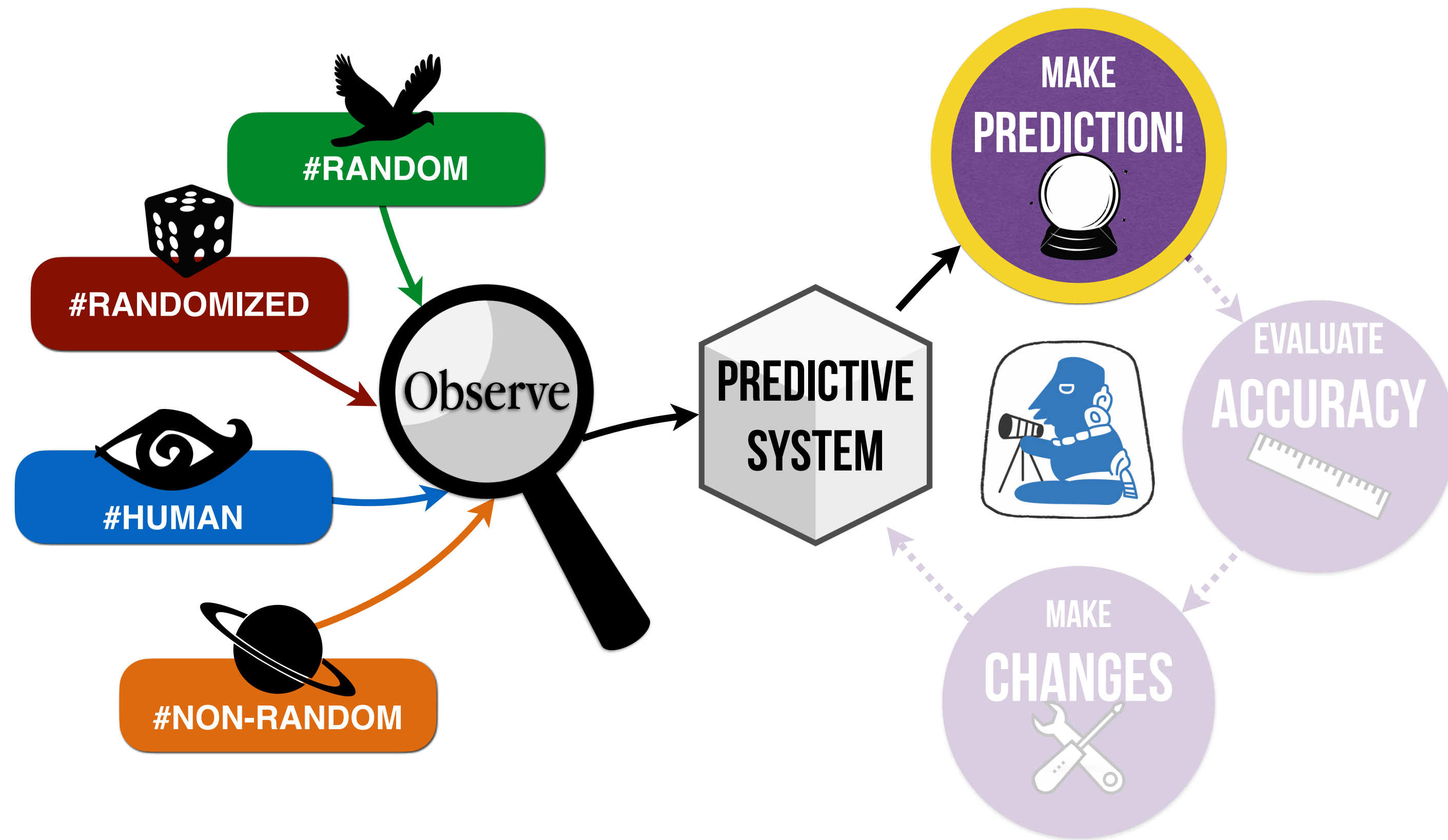


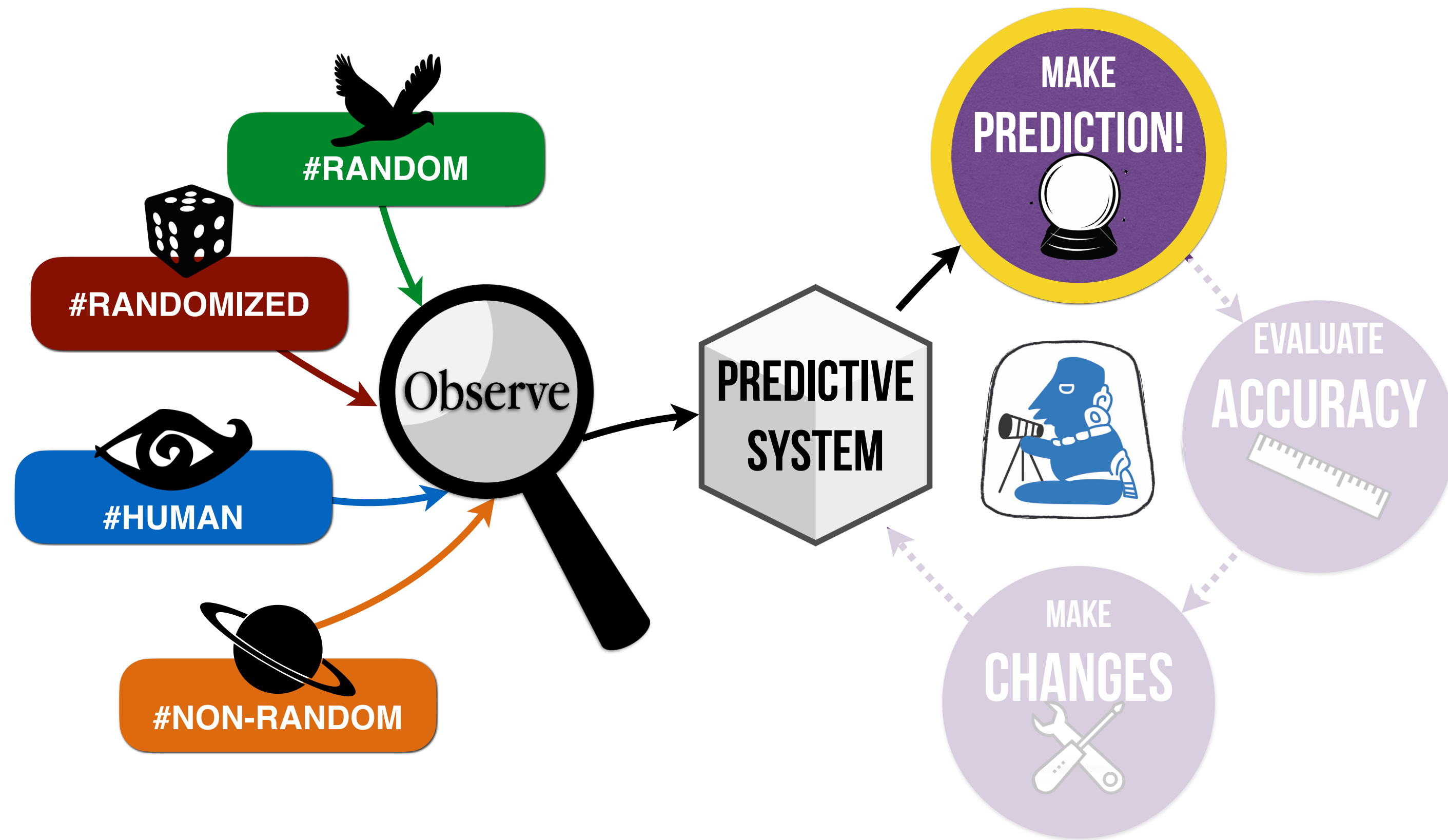
#HUMAN

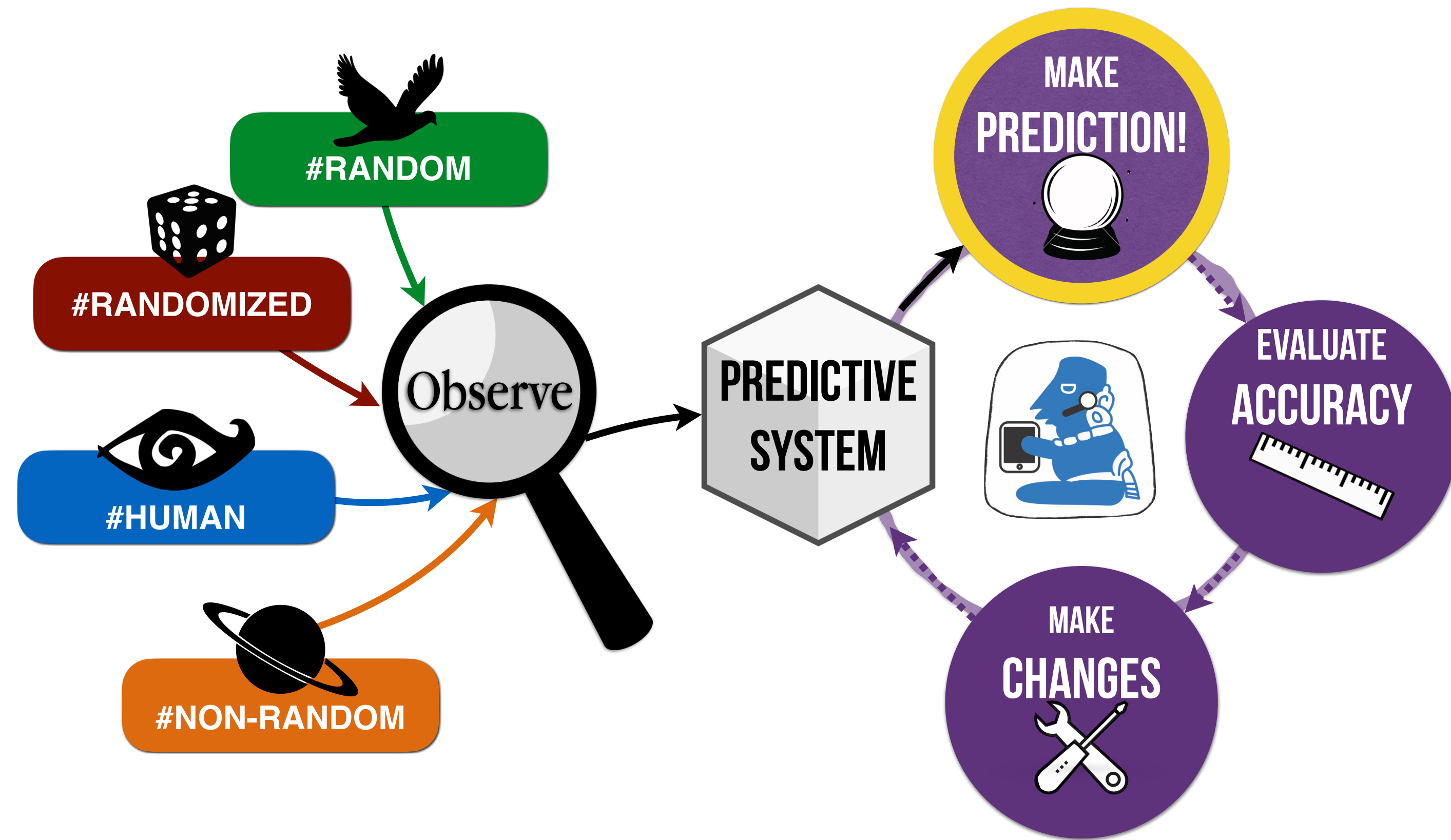
Ancient Egyptian Divination, featuring Prof. Peter der Manuelian (Harvard Semitic Museum)

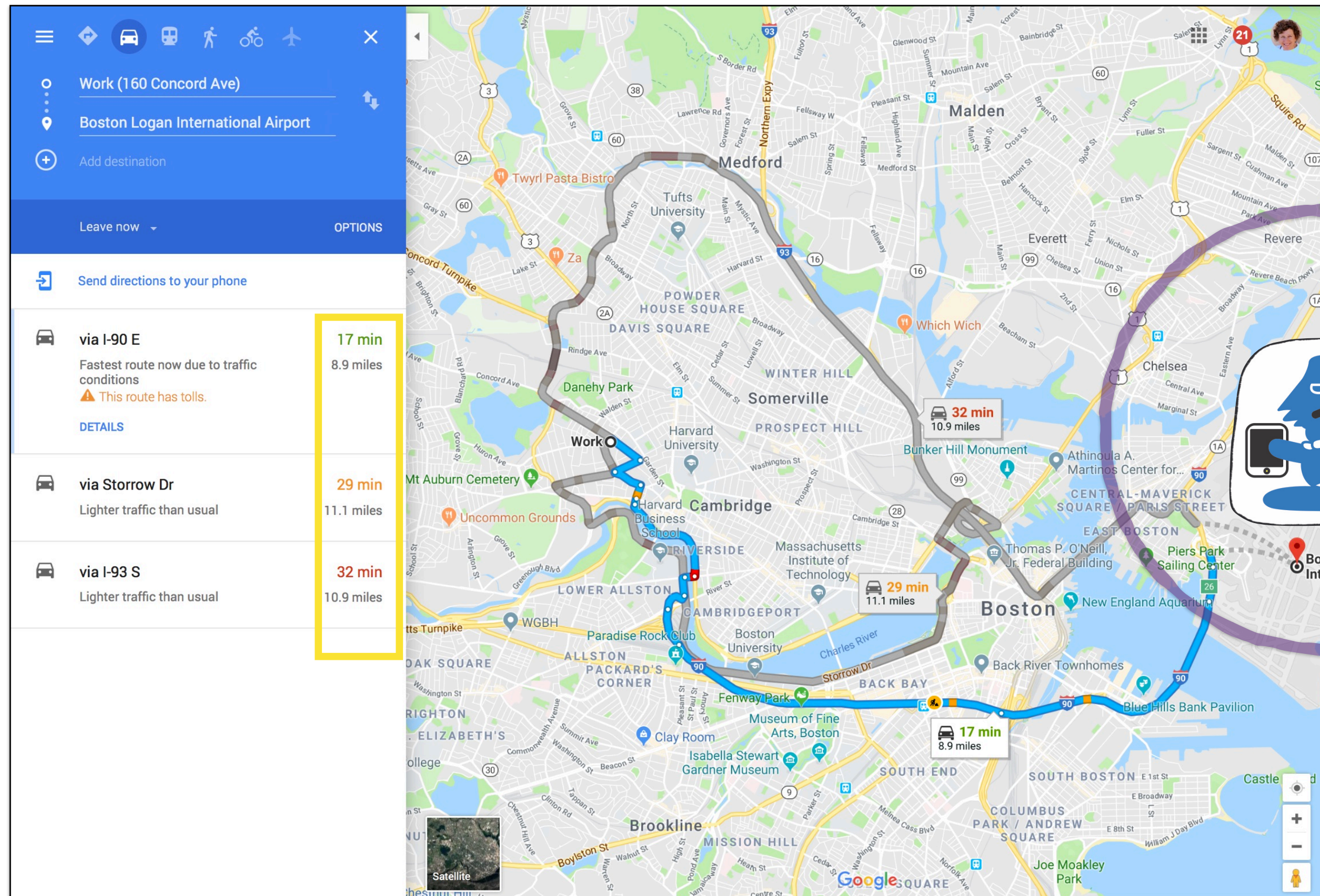






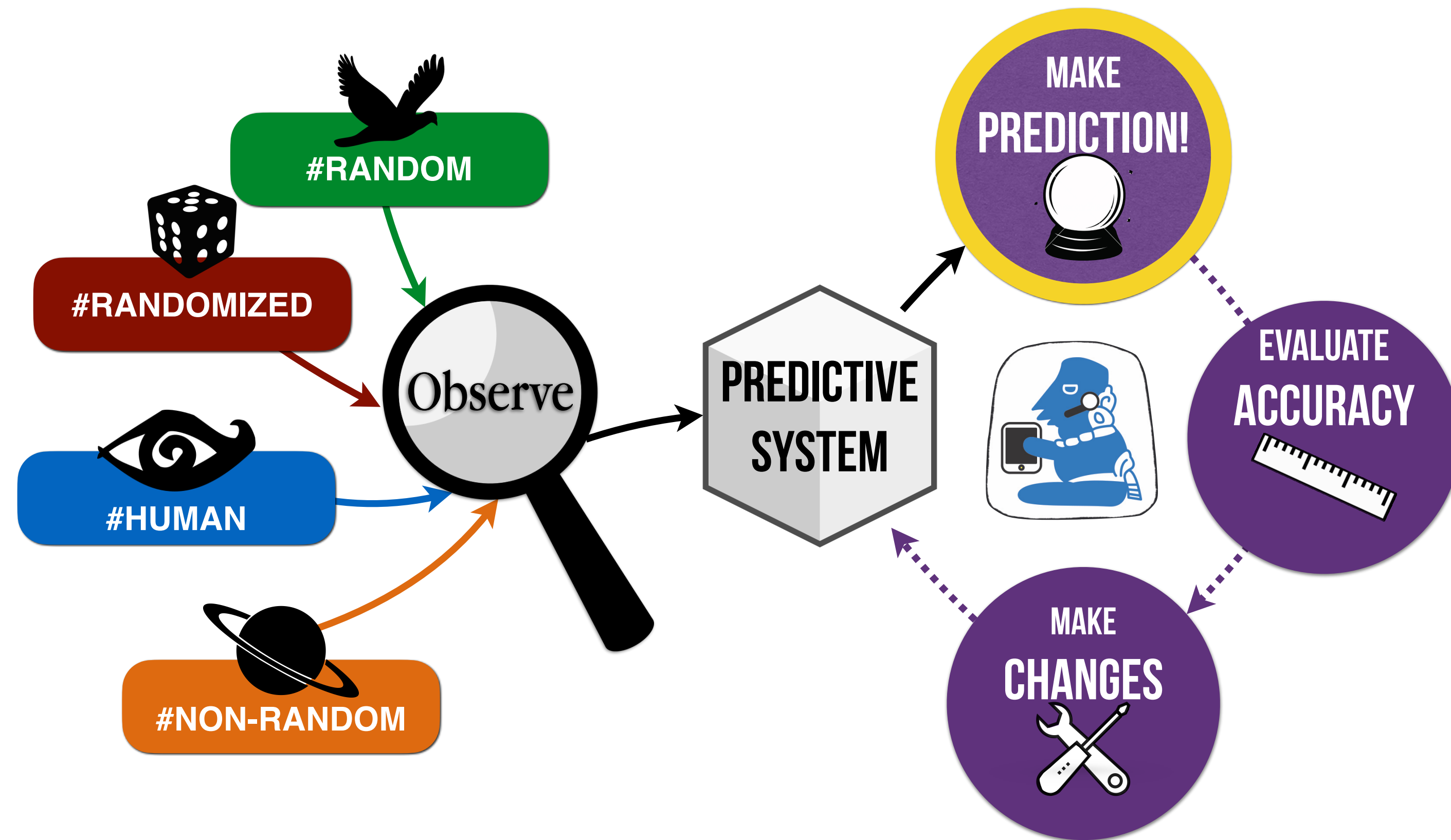


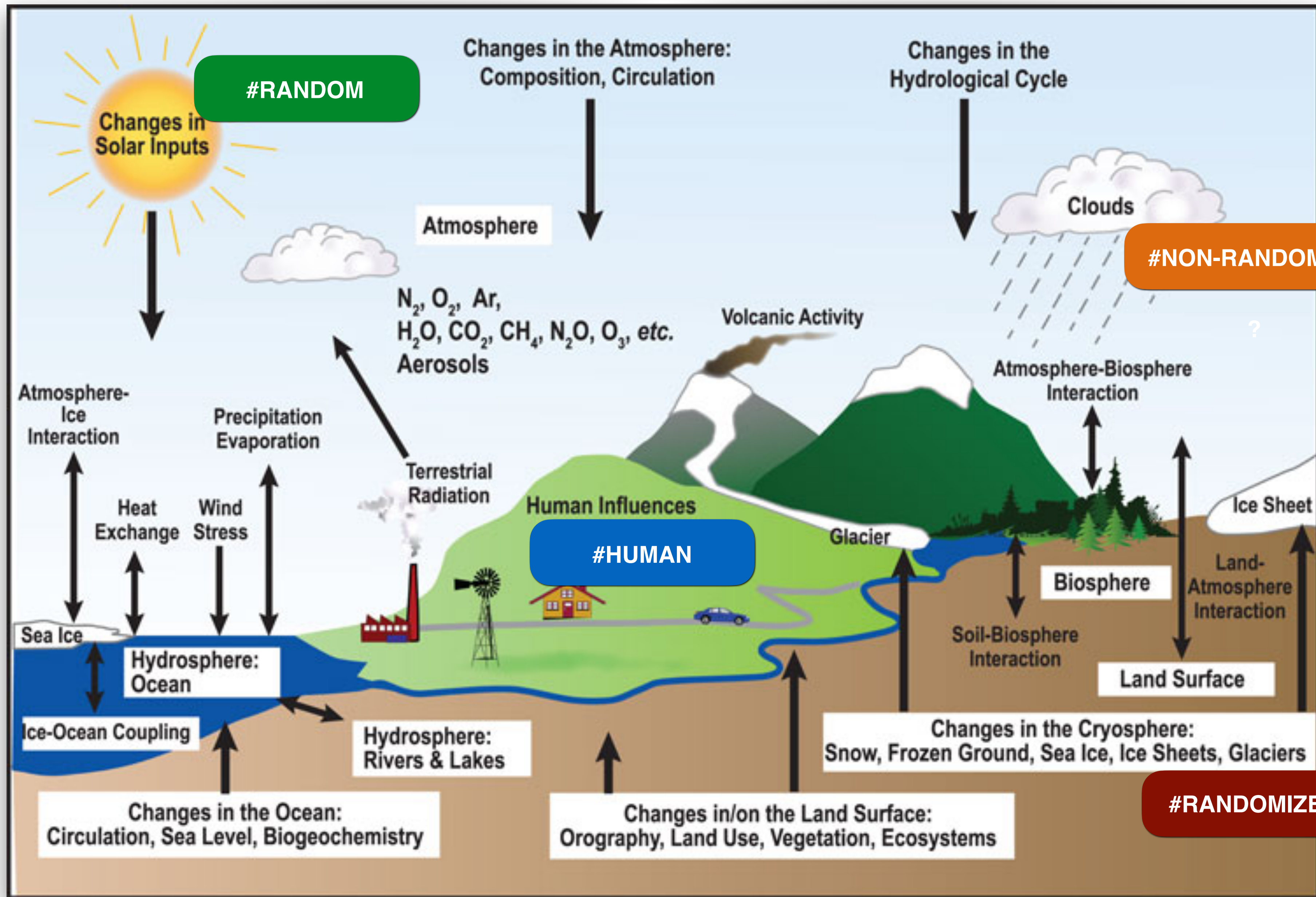




“Most companies who do live traffic **compare** their predictions against actual time in traffic to tune their algorithms and data sources. The likely result of this is that the companies who have access to the best usage data ... are likely to end up with the best predictions in the medium to long term.”

Framework for Predictive Systems





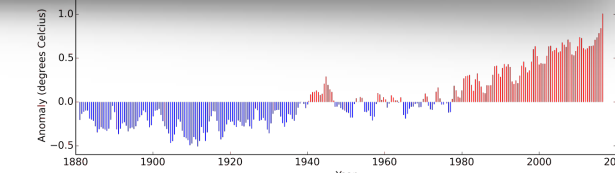
#RANDOM

#NON-RANDOM

#HUMAN

#RANDOMIZED

EVALUATE ACCURACY



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THE RISE OF THEORY

Ancient Mesopotamia, Egypt, Greece & Rome

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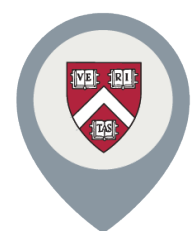


Interactive Resource

▶ video(s)

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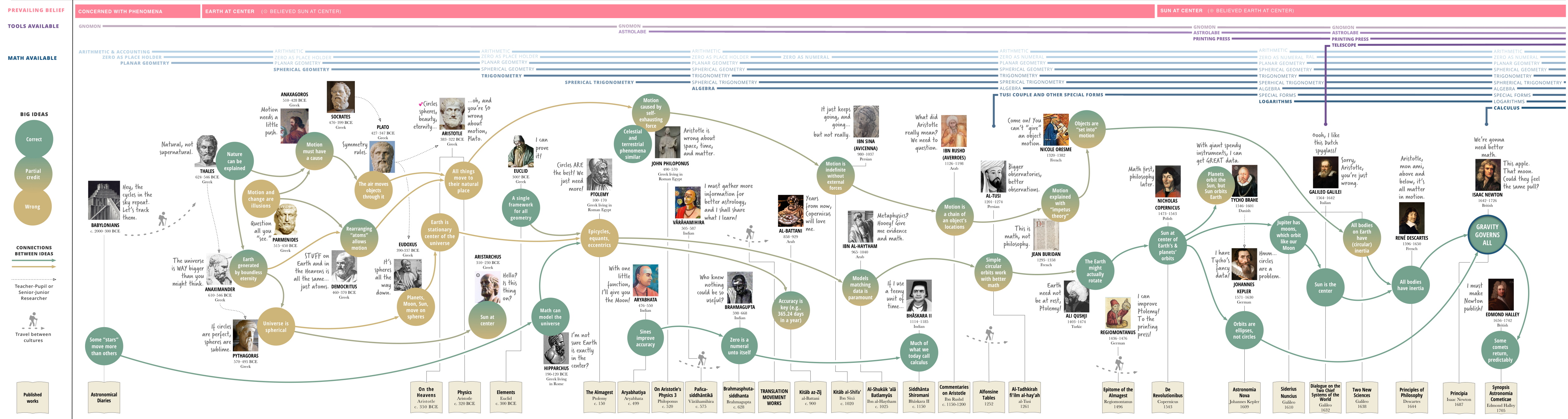
HarvardX



The Path to Newton



The Path to Newton



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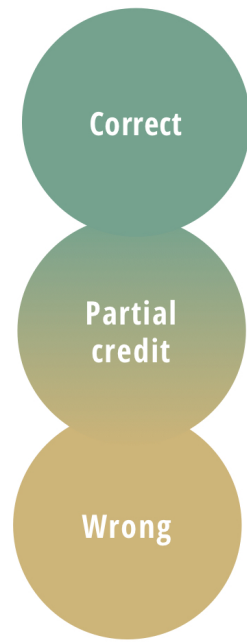
The Path to Newton

PREVAILING BELIEF

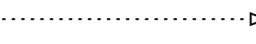
TOOLS AVAILABLE

MATH AVAILABLE

BIG IDEAS



CONNECTIONS BETWEEN IDEAS



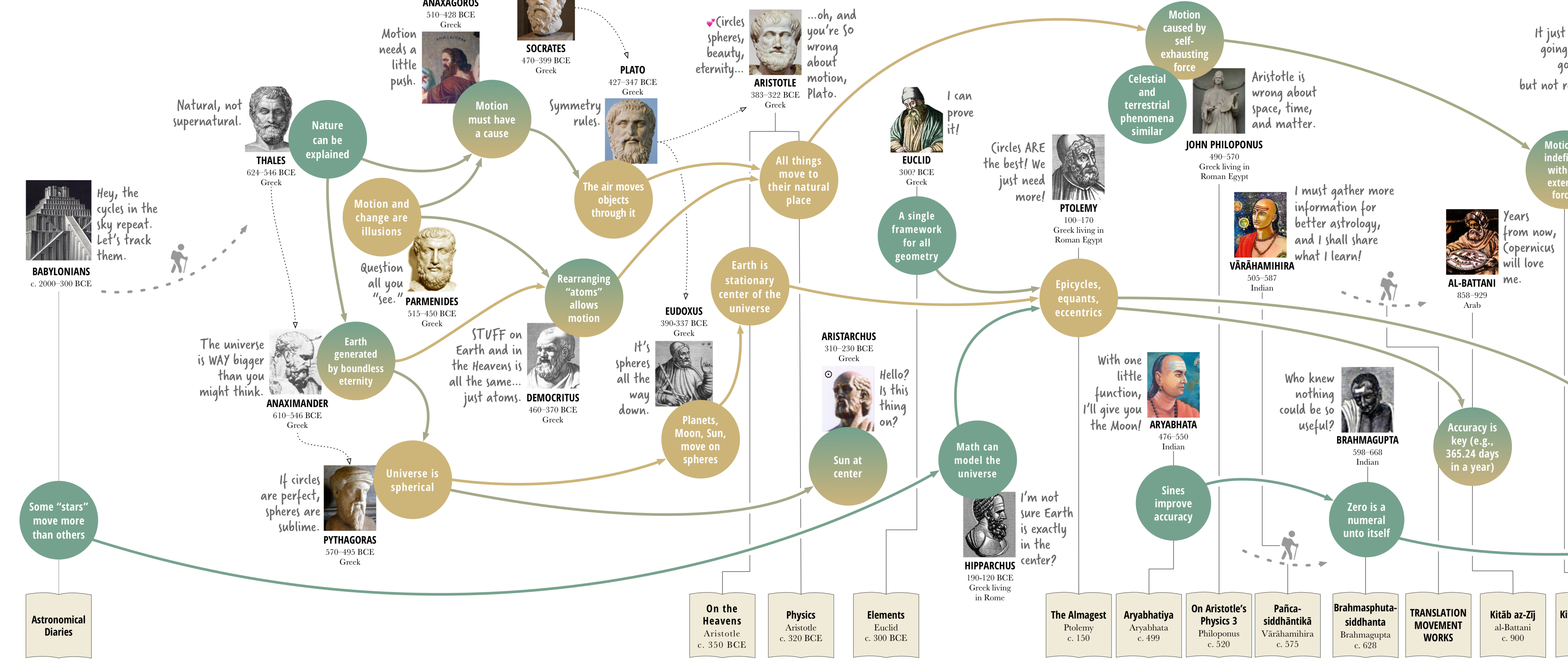
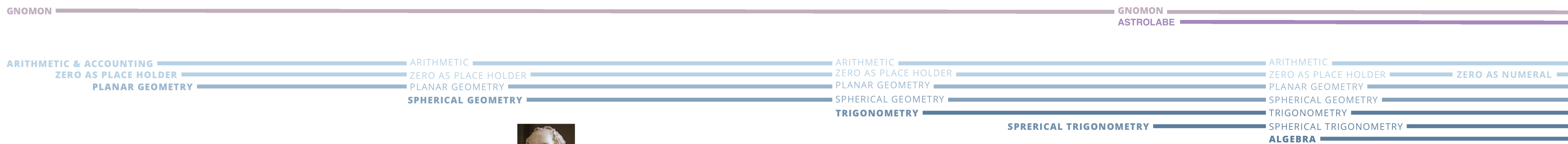
Teacher-Pupil or Senior-Junior Researcher



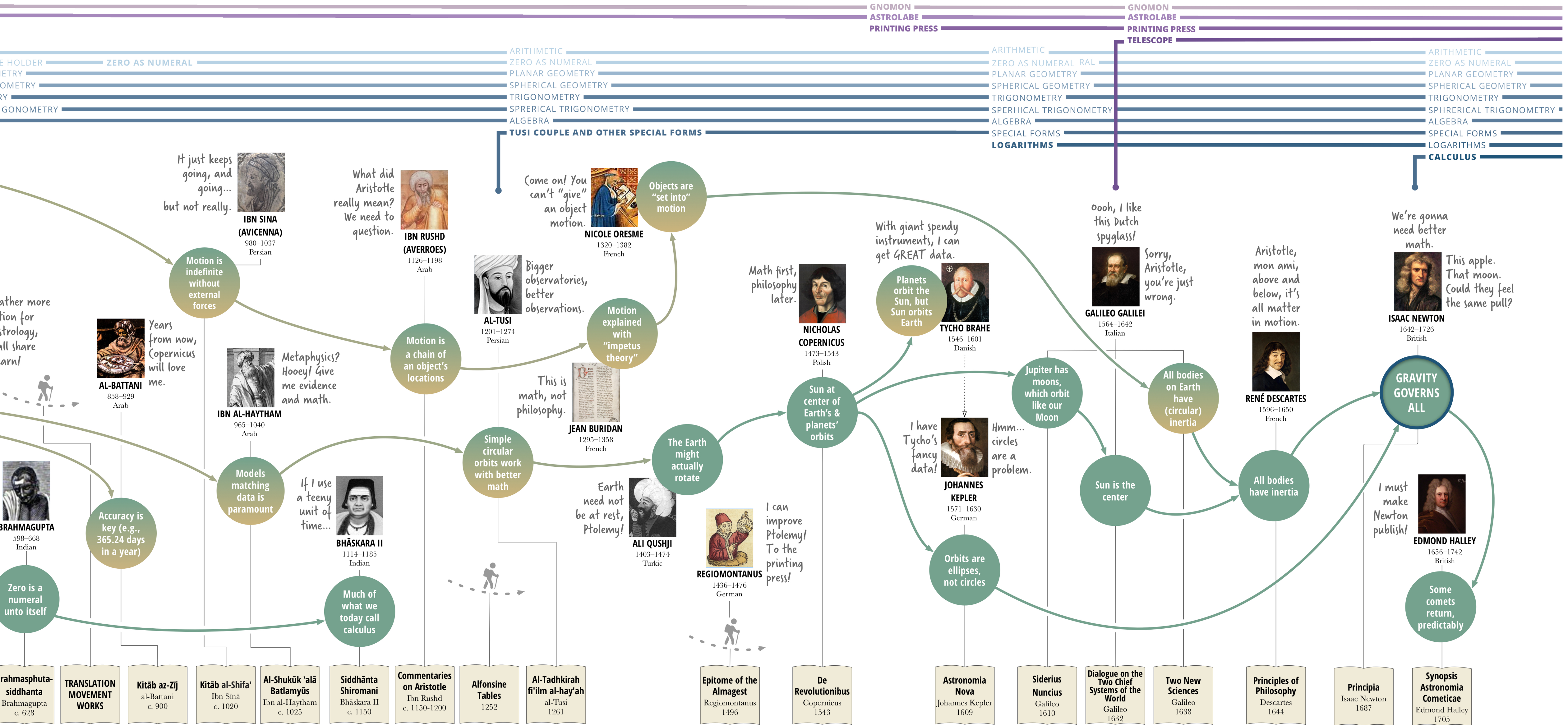
Travel between cultures



Published works



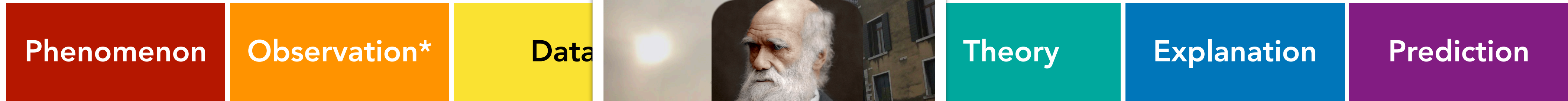
SUN AT CENTER (☉ BELIEVED EARTH AT CENTER)



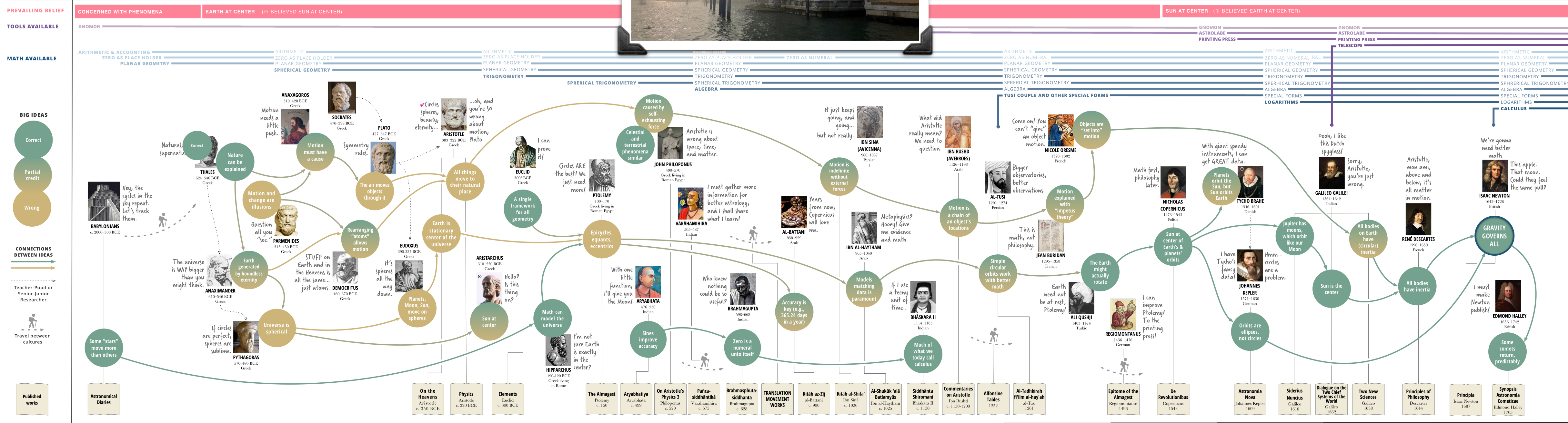
The “Padua Rainbow” & The Path to Newton



The "Padua Rainbow" & The Path to Newton



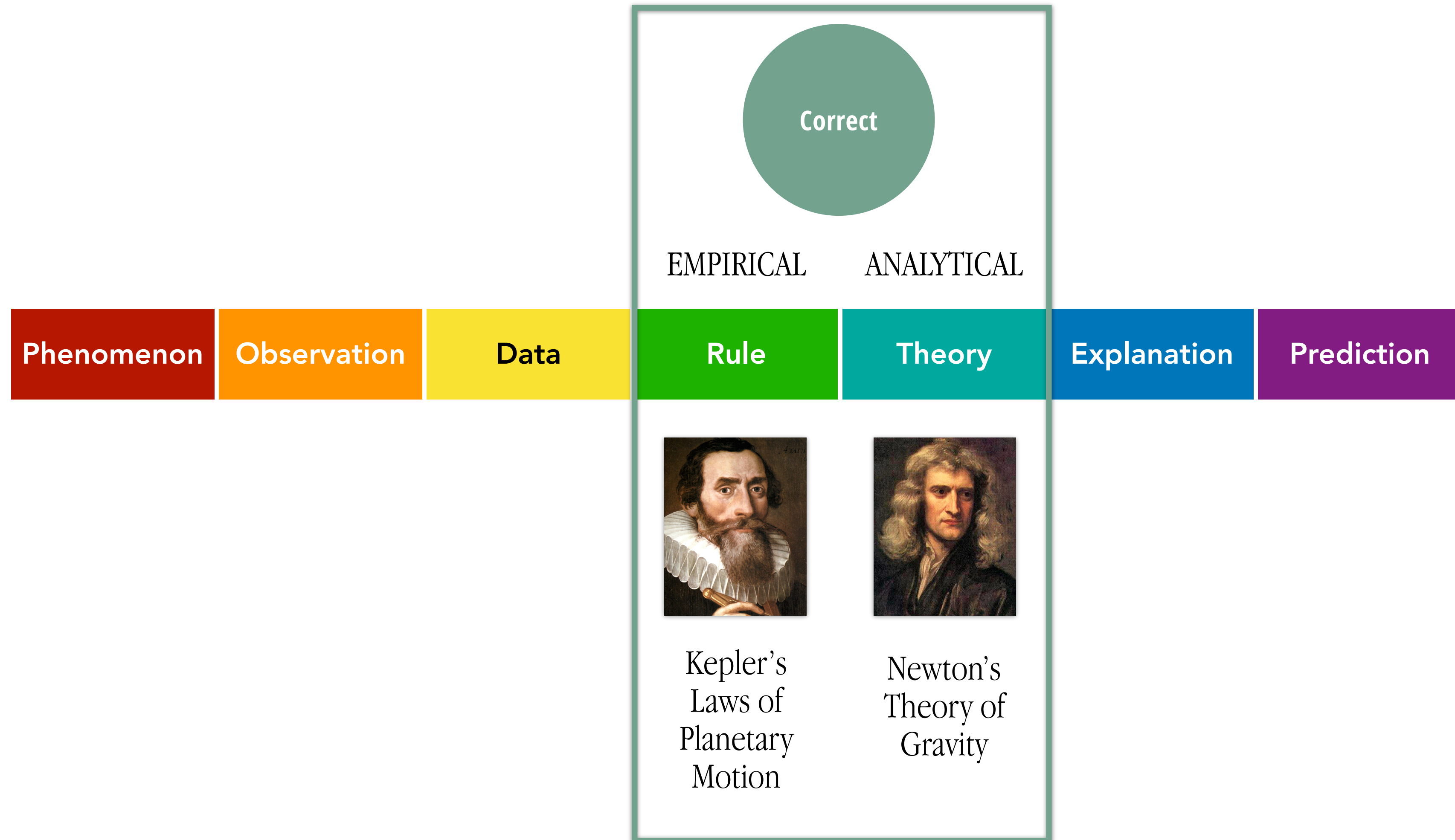
The Path to Newton



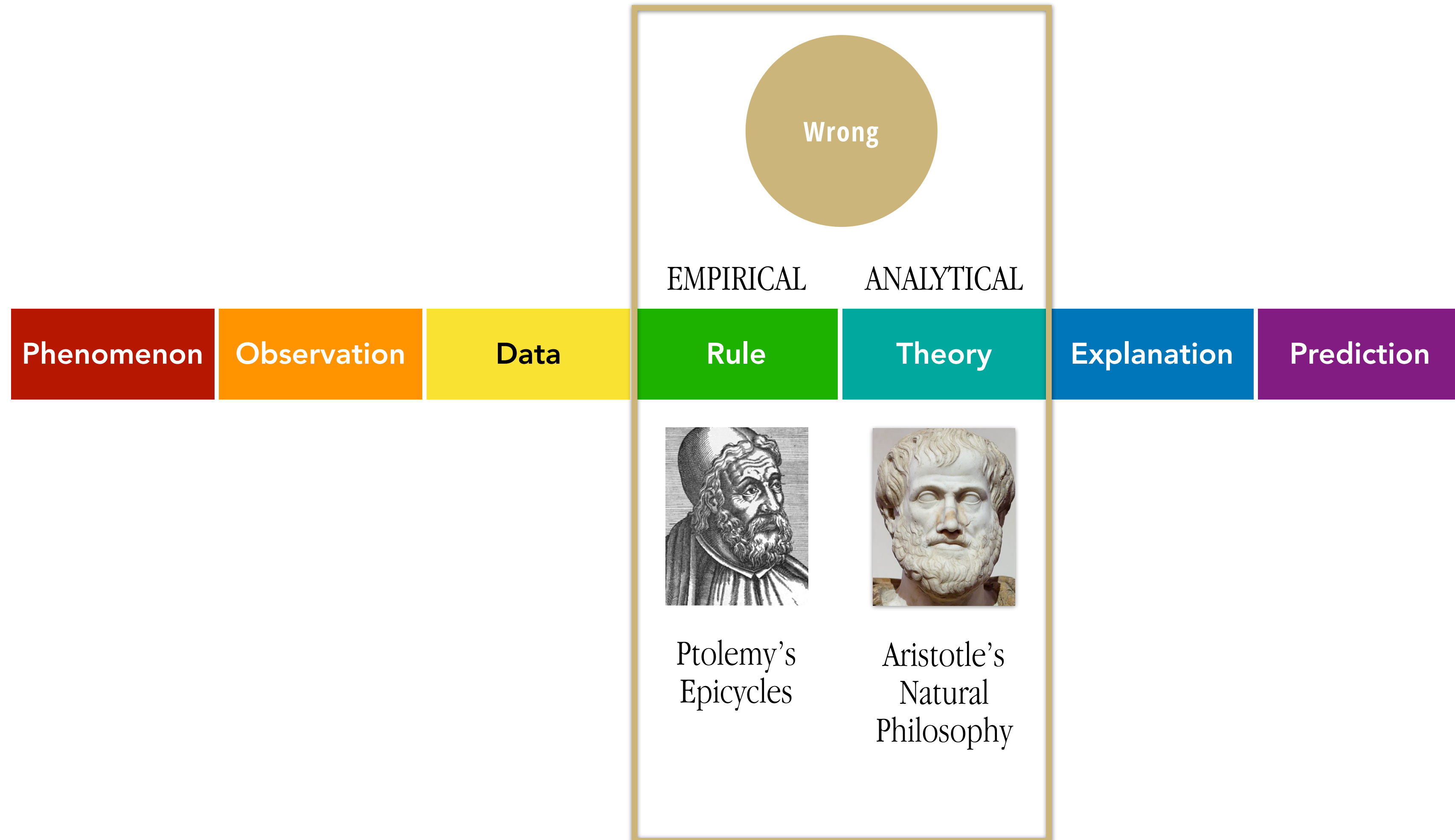
or, Experiment

© Harvard University, created by Alyssa Goodman, Jais Brohinsky, Drew Lichtenstein & Katie Peek, re-use is allowed, with attribution, version 1, 2019

The “Padua Rainbow” & The Path to Newton

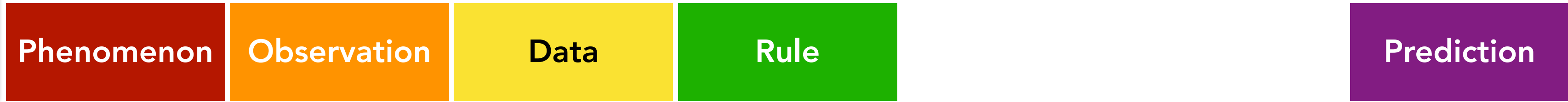


The “Padua Rainbow” & The Path to Newton





Mendel



Darwin

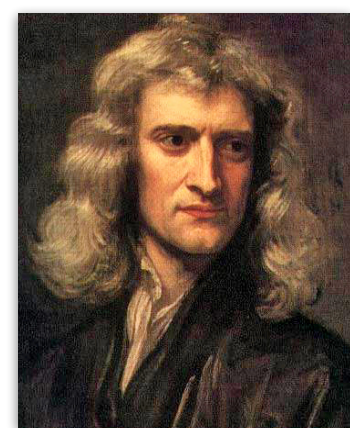
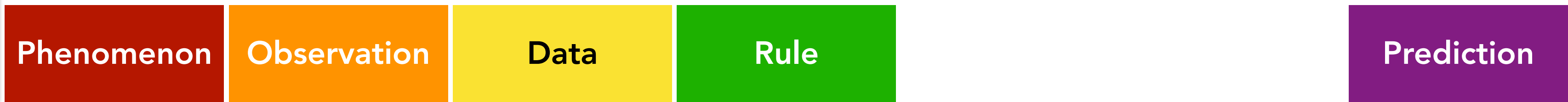


BIOLOGY

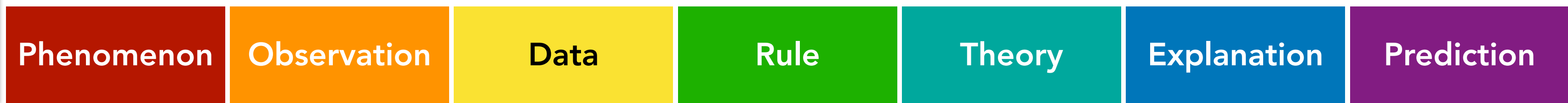
PHYSICS



Kepler



Newton





Mendel

1865

Phenomenon

Observation

Data

Rule

Prediction



Darwin

1859

Phenomenon

Observation

Data

Theory

Explanation

Prediction

NO FULLY PREDICTIVE GENERAL THEORY

FULLY PREDICTIVE GENERAL THOERY



Kepler

1609

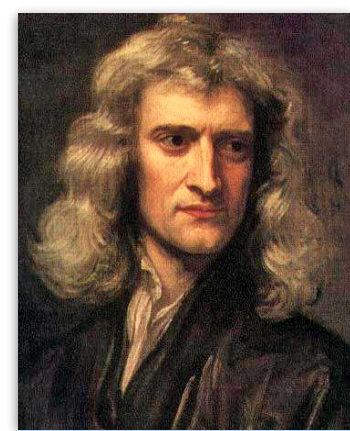
Phenomenon

Observation

Data

Rule

Prediction



Newton

1687

Phenomenon

Observation

Data

Rule

Theory

Explanation

Prediction

The FUTURE of the Future

20th century





How good does Chat GPT think it is at Prediction?

ChatGPT 4o ▾

how good are LLMs at predicting the future?



Large language models (LLMs) like GPT are not inherently designed to predict the future. They generate text based on patterns in the data they've been trained on, including historical information, facts, and language use up to a certain point. While they can offer insights, there are important limitations to consider when evaluating how good they are at predicting the future:

- Lack of Foresight:** LLMs don't have direct access to the future. They can make projections based on past trends, but these are often speculative and often lack the nuance and real-time context of professional forecasting.
 - Limited Context:** LLMs have a fixed knowledge cutoff (in the case of GPT, until 2023). They cannot account for developments, research, or events beyond that point without being updated through external tools or browsing functions.
- While LLMs can discuss likely future outcomes by extrapolating from existing data (e.g., scientific advancements, societal trends). However, this type of "future prediction" is speculative and should be treated as such.
- No Access to Real-Time Data:** Without real-time access to data or current news (except via special integrations), LLMs cannot make dynamic, informed predictions about ongoing events, limiting their ability to predict near-term futures.

In fields like technology or science, where change follows observable trends, LLMs can offer educated guesses, but these shouldn't be confused with precise forecasting. Human expertise, specialized models, and real-time data analysis are typically more reliable for future prediction tasks.

Good answer! It knows it's bad.



How good is Chat GPT at Prediction?

It knows its limitations!



Since I don't have access to real-time information, my predictive capabilities are limited. I can't tell you what will specifically happen tomorrow, but I can provide information about events that are planned or cyclical, such as weather patterns, seasonal events, or known astronomical phenomena, which can be anticipated based on historical data. For real-time or near-term information, you could check reliable sources like weather services, event schedules, or news outlets.

When asked more broadly about trends or events tomorrow, LLMs can only speculate based on their knowledge about trends, not specific occurrences. ●

What will happen tomorrow



How good is Chat GPT at helping you learn?

Prompt

Write a 3 paragraph summary of how modern weather forecasts are made.

ChatGPT 4

Modern weather forecasts are made using a combination of sophisticated technology, vast amounts of data, and complex mathematical models. The process begins with data collection. Meteorologists gather data from a variety of sources including weather satellites, radar systems, weather stations, and ocean buoys. Satellites play a crucial role, providing real-time images of weather systems from space, while radar systems offer detailed information about precipitation. Ground-based weather stations measure local temperature, humidity, wind speed, and pressure. Ocean buoys collect data about ocean conditions. All this data provides a comprehensive picture of the atmosphere at various levels.

The collected data is then fed into advanced computer models to simulate the atmosphere's behavior. These models, known as numerical weather prediction (NWP) models, use complex equations to describe the physics and dynamics of the atmosphere. They divide the Earth's atmosphere into a three-dimensional grid system, allowing meteorologists to analyze data at different altitudes and geographical locations. The models then compute how these atmospheric variables will change over time, based on the laws of physics. There are many NWP models run by different meteorological organizations worldwide, each with its own strengths and weaknesses. Some are designed for short-term weather predictions, while others are designed for longer-term forecasts.

Meteorologists interpret the output from these models to create weather forecasts. This step involves human expertise, as they consider model predictions, historical weather patterns, and their understanding of local geography and climate. They also compare different models and consider their respective track records for accuracy. Forecasts are continually updated as new data comes in and models are rerun, leading to more accurate predictions. This process enables meteorologists to forecast not just the likelihood of rain, snow, or sunshine, but also more complex weather phenomena like hurricanes, tornadoes, and heatwaves. The result is the weather forecasts that the public receives, ranging from immediate short-term forecasts to longer-range predictions that can help in planning and preparing for various weather conditions.






This is ASTONISHINGLY good!



Modern Prediction

Prediction is everywhere in the modern world, making up essential aspects of almost every part of our lives. From checking the weather on your phone, knowing when you will arrive to work, to longer term predictions of the success of your stock portfolio and your personal health goals. This section of the course examines five areas of modern prediction: Earth, Health, Wealth, Space, and the Future of the Future -- which looks at the driving forces currently changing our own conceptions of prediction, including artificial intelligence and machine learning -- to give learners a picture of the state of modern predictive methodologies. Select which modern form of prediction you want to study first by **clicking on an image of the topic you want to study** using the interactive menu below.

This site contains our prediction videos uploaded on YouTube; to enjoy them in their full format with video annotations and useful links, check out our [Modern Prediction cluster on LabXchange](#).

 <h3>EARTH</h3> <p>Study the complex modeling that has defined humanity's comprehension of climate change and the future of our planet in Earth.</p>	 <h3>HEALTH</h3> <p>Discover the incredible modern advancements in global health prediction -- using technology to make humanity healthier from mobile health to genomics, and possibly altering what it means to be human.</p>	 <h3>SPACE</h3> <p>Learn about modern astronomical prediction, with cutting edge simulations now defining the field of astronomy and contributing to a monumental change in our understanding of the universe.</p>	 <h3>WEALTH</h3> <p>Understand the rapidly changing modern state of wealth prediction, pulling on innovative fields such as behavioral economics to comprehend the inherent difficulty of predicting markets.</p>	 <h3>FUTURE OF THE FUTURE</h3> <p>How will prediction change as technology further develops? How will artificial intelligence influence our ability to understand uncertainty? These questions and others are touched on by philosophers and scientists in the Future of the Future.</p>
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Corporations and Climate with Rebecca Henderson:

Alyssa speaks with Harvard University Professor Rebecca Henderson about organizational rigidity as an essential barrier to overcome in order to mitigate climate change. ([LabXchange version](#))



Climate Policy with Gina McCarthy:

Alyssa speaks with former head of the EPA Gina McCarthy about the future of climate and the role of prediction in policymaking. ([LabXchange Version](#))



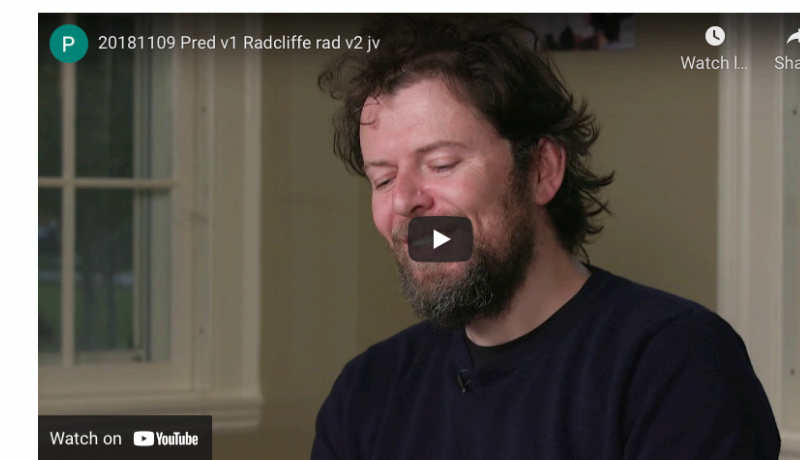
The Future of Energy with Dan Kammen:

Alyssa speaks with UC Berkeley's Professor of Energy Dan Kammen about climate change and the future of energy on Earth. ([LabXchange Version](#))



Predicting Health, and Earthquakes with Susan Murphy and Brendan Meade:

Alyssa speaks with earthquake predictions expert Prof. Brendan Meade and mobile health researcher and statistician Prof. Susan Murphy. This interview looks at the power of technology in guiding humanity's future health outcomes in a variety of ways. ([LabXchange Version](#))



The Future of Climate Prediction by Michael Foley:

Read this essay by Alyssa's teaching fellow Michael Foley on the use of models in climate science to predict the future of Earth's climate and the outcomes of human-caused climate change:

Climate change predictions have taken on an increasingly important role in national and international decision making given that the current economic and social course would lead to catastrophic warming. Given that many sectors of society contribute to climate change and the whole world will experience its impacts, such predictions must consider the domains of both physical laws and human interactions. Addressing #health, #wealth, and #earth in the shadow of climate change is a daunting task, and responses to climate change effects and predictions have ranged from aggressive mitigation to proactive or reactive adaptation.

The Prediction Project

The Past and Present of the Future

HOME ABOUT MATERIALS COURSES TALKS WRITINGS PRESS FORUM

Prediction Essentials

Take a look at the essential elements of the course, including the framework for predictive systems.

→

Omens & Oracles

Gain insight into prediction as a human venture by studying the most ancient forms of prediction in Omens and Oracles.

→

Rise of Theory

Learn how humanity moved from mystical divination practices to genuine, scientific theories to explain natural phenomena.

→

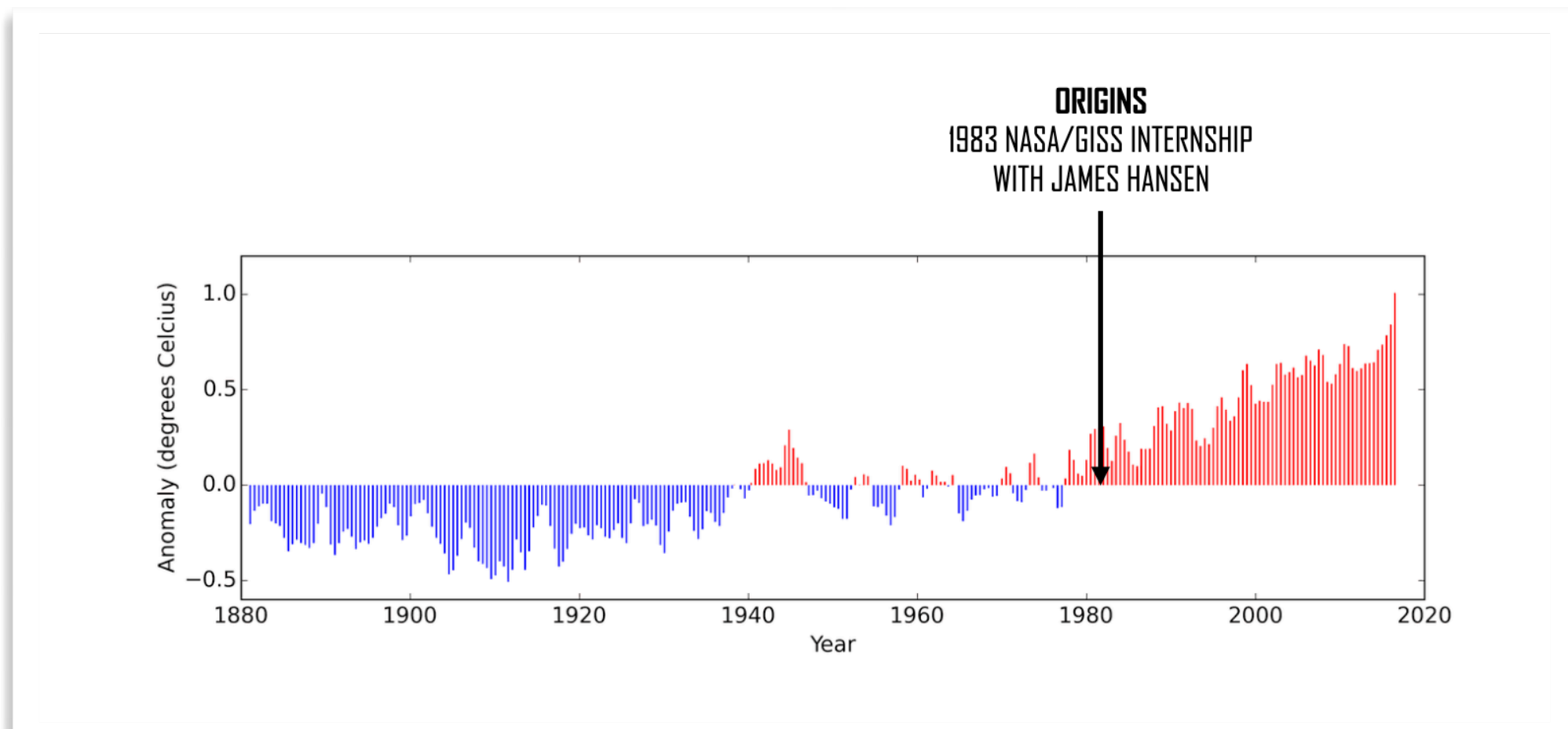
Modern Prediction

Discover the cutting edge predictive methods and modeling from preminent experts across many fields.

→

How it all fits together

Our project has four main sections, fitting together to offer a broad overview of how humanity has predicted its future throughout history.



PREDICTIONX: THE PAST & PRESENT OF THE FUTURE

ESSENTIALS	Omens, Oracles & Prophecies	THE RISE OF THEORY	MODERN PREDICTION
<ul style="list-style-type: none"> Predictive Systems Framework Phenomena → Predictions Understanding Uncertainty Study Design Timelines Why predict? 	<ul style="list-style-type: none"> Mesopotamian Haruspicy Roman Augury Chinese Oracle Bones Oracle of Delphi Aztec Rituals Egyptian Priests Tarot The Diviner's Guide Turkish Tasseography Maya Spacetime Yoruba Ifa Casting Lots Greek Astronomy Astrology Comets of Doom cross-cultural conversations 	<ul style="list-style-type: none"> Ancient Mesopotamia, Egypt, Greece & Rome Islamic Science The Path to Newton Indian Mathematics European Renaissance Health John Snow & Cholera Cholera Map Lost without Longitude (Navigation) Help, I'm Lost! Tools of the Navigator The Royal Society 	<ul style="list-style-type: none"> Health <ul style="list-style-type: none"> Epidemiology Personal Genomics Population Genetics Wealth <ul style="list-style-type: none"> Climate & Wealth Behavioral Economics The Future of the Future <ul style="list-style-type: none"> AI, Derek's Day Philosophy Uncertainty Earth <ul style="list-style-type: none"> Climate & Energy Climate Policy Tent Tarot Earthquakes Space <ul style="list-style-type: none"> Futures of our Universe SETI
Coming Soon	Interactive Resource	video(s)	available on edX



Do we really *want* to know?

Do we *already* know?

How well *can* we know?

Do we really *want* to know?



HX

Cengiz Cemaloglu, Turkish Coffee Ground Divination, Radcliffe 2016

How well *can* we know?

SLIDE-THE-PUCK KNOW-HOW

1. Use full screen

2. How to Play:

1. Decide how rough your table is



The lower the number, the more rough your table will be and the more the puck will veer off course.

2. Choose the number of games and pucks by clicking anywhere on the grid

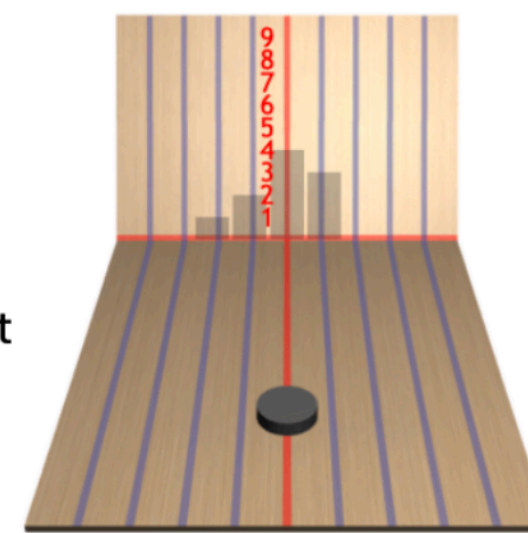


3. Click the blue link to finish the game and have all the boxes automatically filled in.

3. Understanding Your Results

THE BOARD

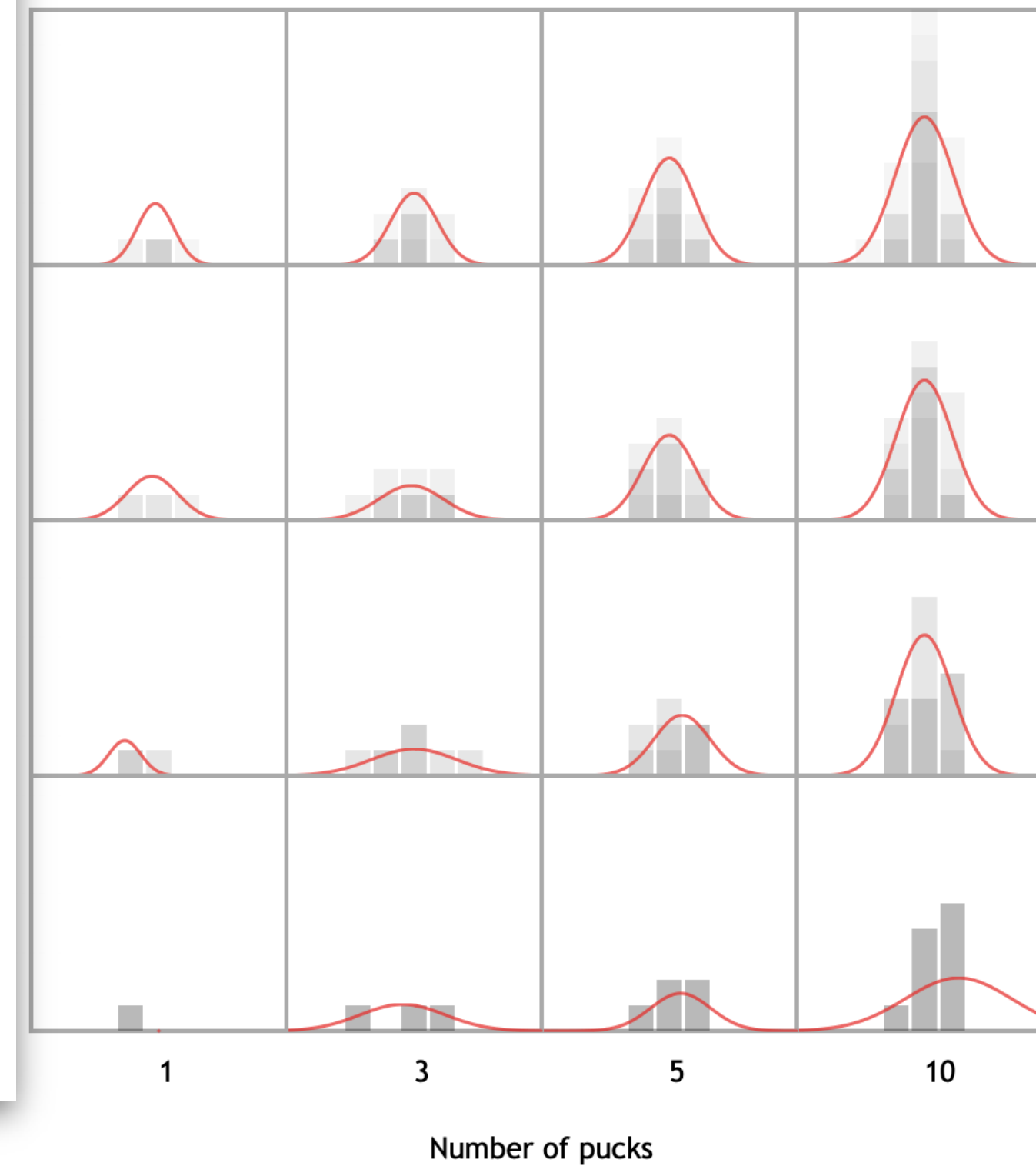
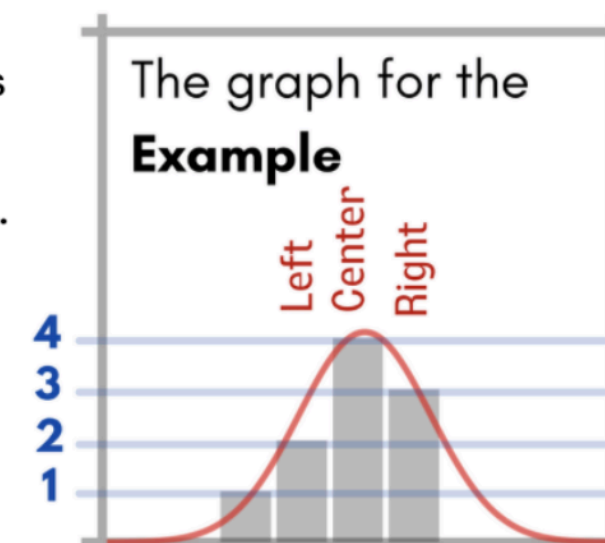
Example: The puck hit the board 4 times at the center, 3 times to the right of the center, and 2 times to the left of the center



THE GRAPH

The y-axis is the number of times a puck hit that position and the x-axis is the position of the puck.

Example: The puck hit the board 4 times at the center, 3 times to the right of the center, and 2 times to the left of the center



Do we *already* know?

THIS IS
**THE TENT of CASUALLY
OBSERVED PHENOLOGIES** —
a portable sacred space for
contemplating the impacts of
CLIMATE CHANGE and correlated
ENVIRONMENTAL CRISES

★ The title comes from the
devotional paintings pinned to the
exterior. Each depicts different species
observed by common folk to be
shifting in its **NATURAL RHYTHMS** —
or **PHENOLOGIES** — as the climate changes

★ — inside I offer **free**
CLIMATE CHANGE
DIVINATION READINGS.

- first come, first served
- if I am presently engaged, please
be respectful
- each visitor will be received
in order of arrival

★ **THANK YOU**
for your cooperation!



The Tent of Casually Observed Phenologies
Climate Change Divination by James Leonard, Harvard 2015

What's a Prediction?

(motivational discussion questions from the GenEd 1112 syllabus)

What's a Prediction? (Discussion)

Most people will say “prediction” has something to do with the future--but questions linger.

1. How far is this “future”?
2. Is testability required?
3. Is a prediction always part of a decision?
4. How is a decision different from a prediction?
5. Who really knows and doesn't know the future?
6. Why do we want to know?
7. How can we know?
8. How does prediction manifest in your everyday life? In society? Today? In the past? In the future?



Reply

What's a "Prediction"? (V2)

Nobody has responded yet.

Hang tight! Responses are coming in.

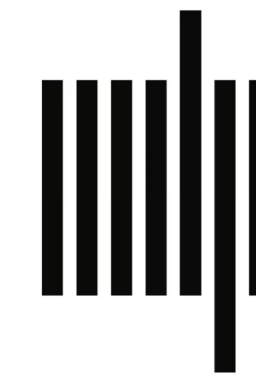
Donate

THE PATH-TO FOUNDATION

Making science more human.

Science is so much more than equations and lab coats. It requires human creativity, ingenuity, argument, and persistence.

The Path-to Foundation's goal is to deepen students', scientists', and the broader public's appreciation of science by telling stories of its history.

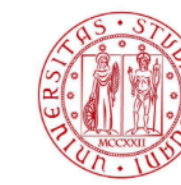


The MIT Press

The Path-To Foundation's work includes the creation of additional paths, beyond **The Path to Newton**, including:

- **The Path from Newton to Einstein**
- **The Path to Darwin**
- **The Path from Darwin to Modern Genetics**
- **The Path to AI**

The Path-to Science Consortium



UNIVERSITÀ DEGLI STUDI DI PADOVA



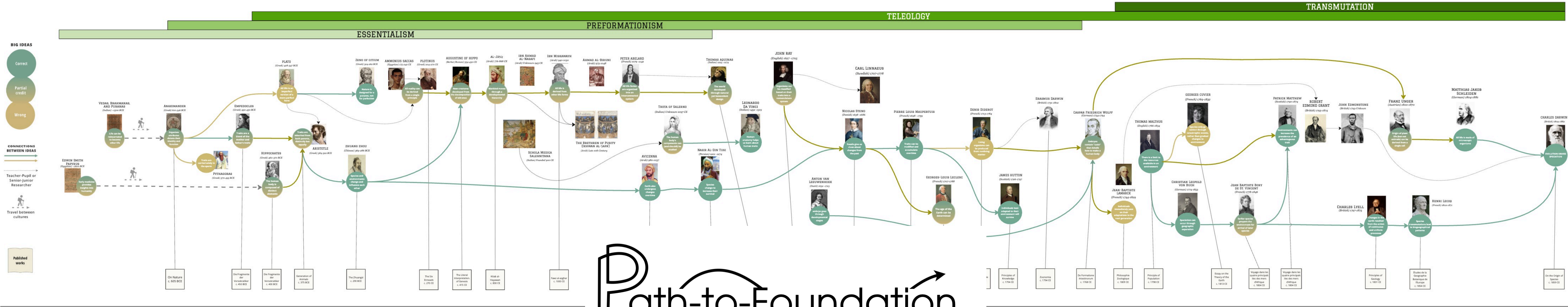
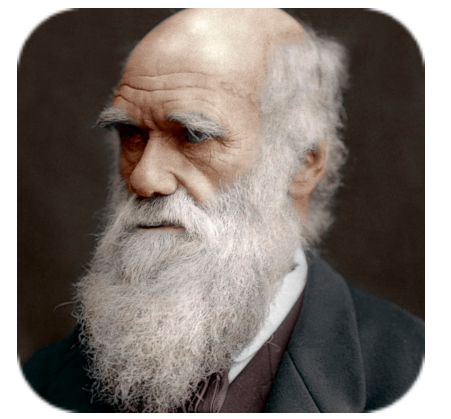
HARVARD UNIVERSITY



UNIVERSITY OF OXFORD

The Path to Darwin, v. 0.1

Prof. Immaculata De Vivo & Mally Shan (Class of 24)



Path-to-Foundation

The Path to AI, v. 0.01

Simeon Sayer, Class of 22



Path to AI Threads - Data

- Papyrus Scrolls (3000 BCE)
- Clay Tablets (2000 BCE)
- Parchment and Vellum (200 BCE)
- Invention of Paper (105 CE)
- Printing Press (1440)
- Card Catalogs (late 19th century)
- Magnetic Tape (1928)
- Hard Disk Drives (1956)
- Floppy Disks (1971)
- Compact Disc (CD) (1982)
- Solid State Drives (SSDs) (2009)
- Cloud Storage (2006 - present)

Path to AI Threads – Human History

- Artificial beings created by Gods (1600 BCE)
- Designing mechanical humanoid figures (8th - 14th century)
- Considering the design for automotive machines (1400)
- "beginning of science-fiction (1800s)"
- AI is featured in films (1950s - present)
- AI is shown to be dangerous in films (1950s - present)

Path to AI Threads - Algorithms

- Birth of graph theory (1736)
- Boolean Algebra (1847)
- Evolution of graph theory (1845 - 1990s)
- Game Theory (1928-1944)
- Linear Threshold Unit Model (1943)
- Prediction Calculus (1956)
- Logic Theorist (1956)
- Decision trees (1970s)
- Transformer Paper (2018)

+Q* ?

The SHEEP of DESTINY



He SMILES because he sees
your future.

And Oh, how HAPPY shall
that future be!

EDWARD MONKTON © Portobello Rights Ltd.





PREDICTIONX

predictionx.org