

# THEORIES OF CHANGE

PMAP 8521: Program Evaluation for Public Service

September 16, 2019

*Fill out your reading report  
on iCollege!*

# PLAN FOR TODAY

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More with R

Final project

Program theories

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Logic models and results chains

Indicators and mechanisms

# MORE WITH R

# PIPES (%>%)

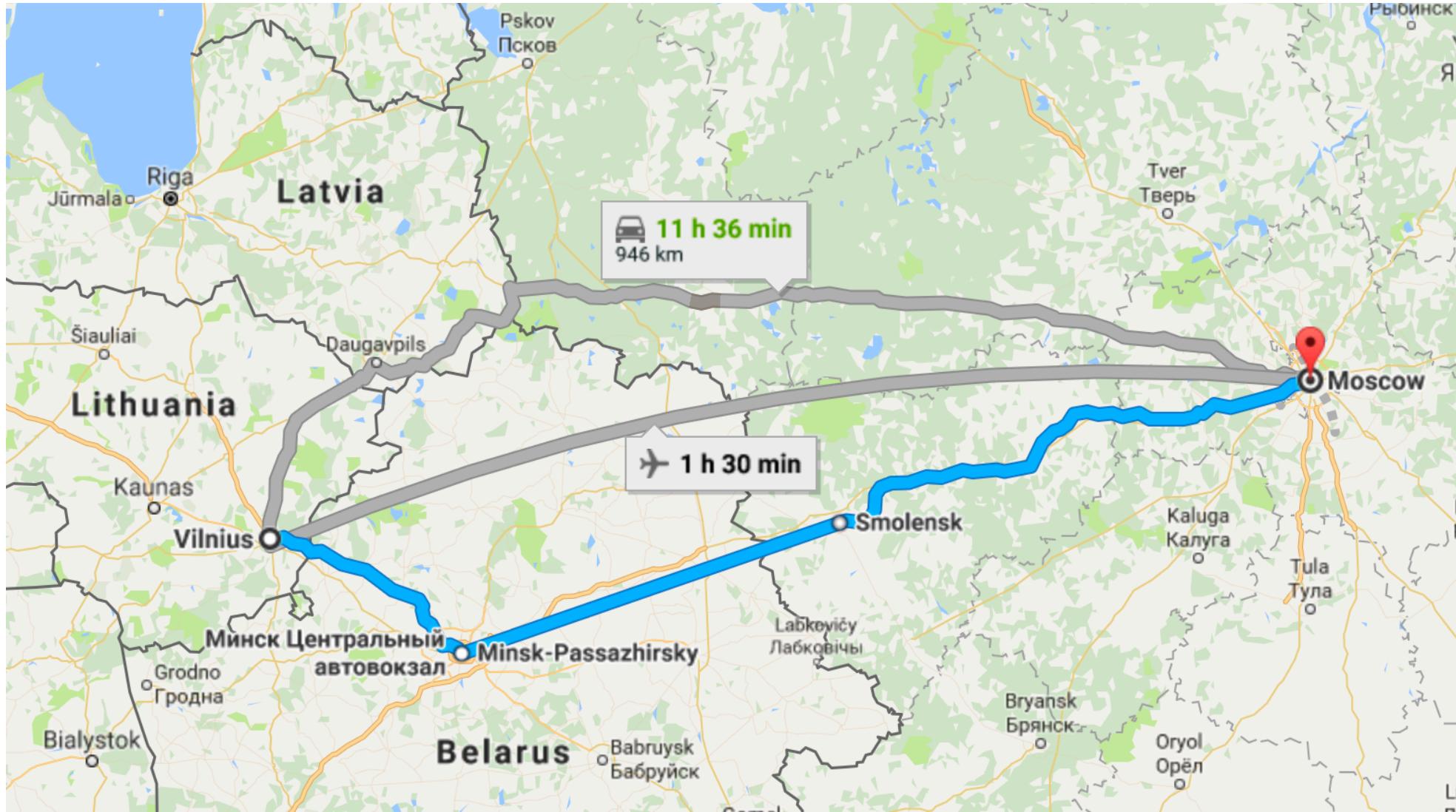
```
leave_house(get_dressed(get_out_of_bed(wake_up(me))))
```

```
me %>%
  wake_up() %>%
  get_out_of_bed() %>%
  get_dressed() %>%
  leave_house()
```



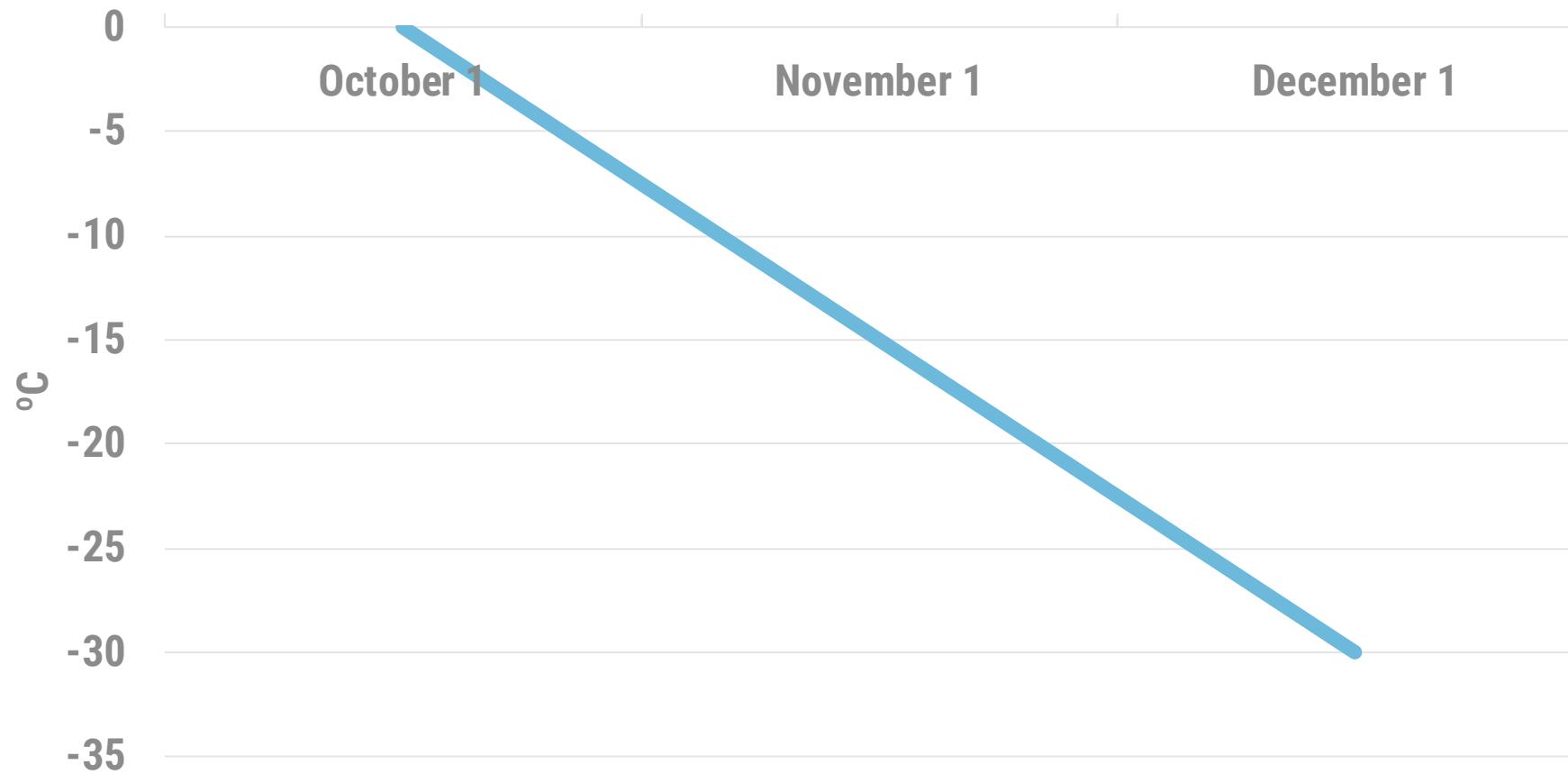
# THE WAR OF 1812

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# THE WAR OF 1812

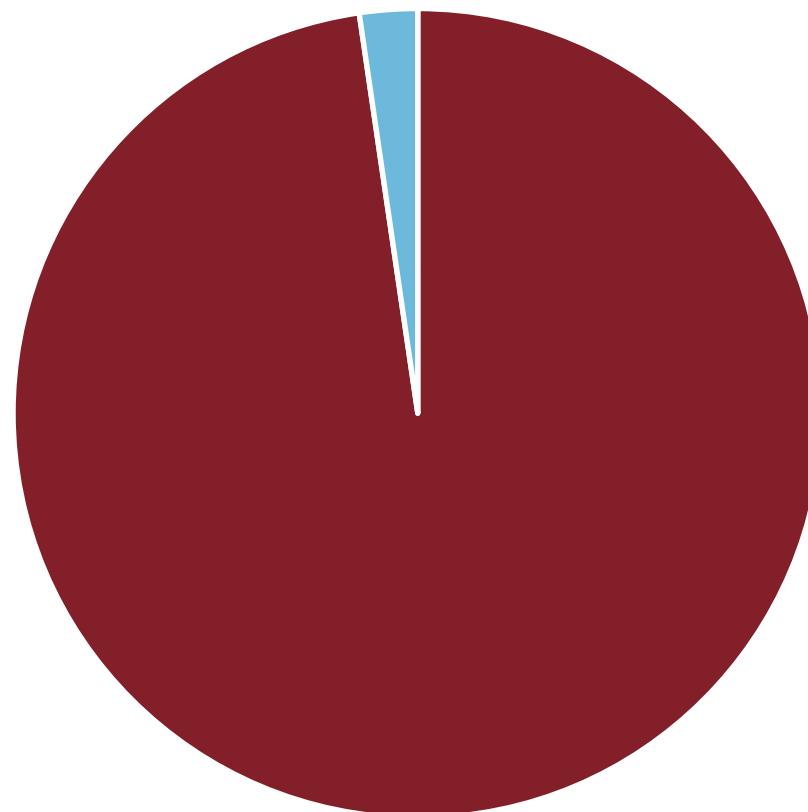
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# THE WAR OF 1812

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## Napoleon's Grande Armée



■ Died ■ Survived

# Carte Figurative des pertes successives en hommes de l'Armée Française dans la Campagne de Russie 1812-1813.

Dressée par M. Minard, Inspecteur Général des Ponts et Chaussees en retraite  
Paris, le 20 Novembre 1869.

Les nombres d'hommes présents sont représentés par les largeurs des zones colorées à raison d'un millimètre pour dix mille hommes; ils sont de plus écrits en travers des zones. Le rouge désigne les hommes qui entrent en Russie; le noir ceux qui en sortent. — Les renseignements qui ont servi à dresser la carte ont été puisés dans les ouvrages de M. M. Chiers, de Séguir, de Fézensac, de Chambray et le journal inédit de Jacob, pharmacien de l'Armée depuis le 28 Octobre.

Pour mieux faire juger à l'œil la diminution de l'armée, j'ai supposé que les corps du Prince Jérôme et du Maréchal Davout qui avaient été détachés sur Minsk en Mohilow et se rejoignaient vers Orscha en Wilebsk, avaient toujours marché avec l'armée.

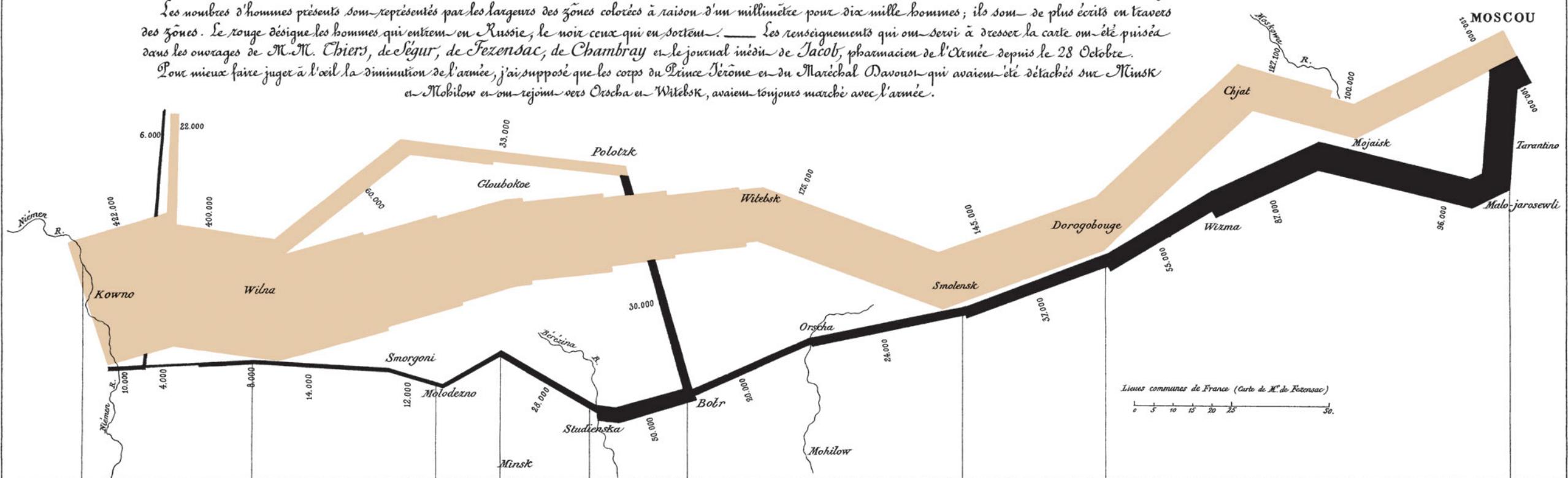


TABLEAU GRAPHIQUE de la température en degrés du thermomètre de Réaumur au dessous de zéro.

Les Cosaques passent au galop  
le Niemen gelé.



# AESTHETICS AND DATA

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Data	Aesthetic	Graphic
Longitude	x	point
Latitude	y	point
Army size	size	path
Army direction	color	path
Date	x	line and text
Temperature	y	line and text

# AESTHETICS AND DATA

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`data`

`Longitude`

`Latitude`

`Army size`

`Army direction`

`Date`

`Temperature`

`aes()`

`x`

`y`

`size`

`color`

`x`

`y`

`geom_`

`point`

`point`

`path`

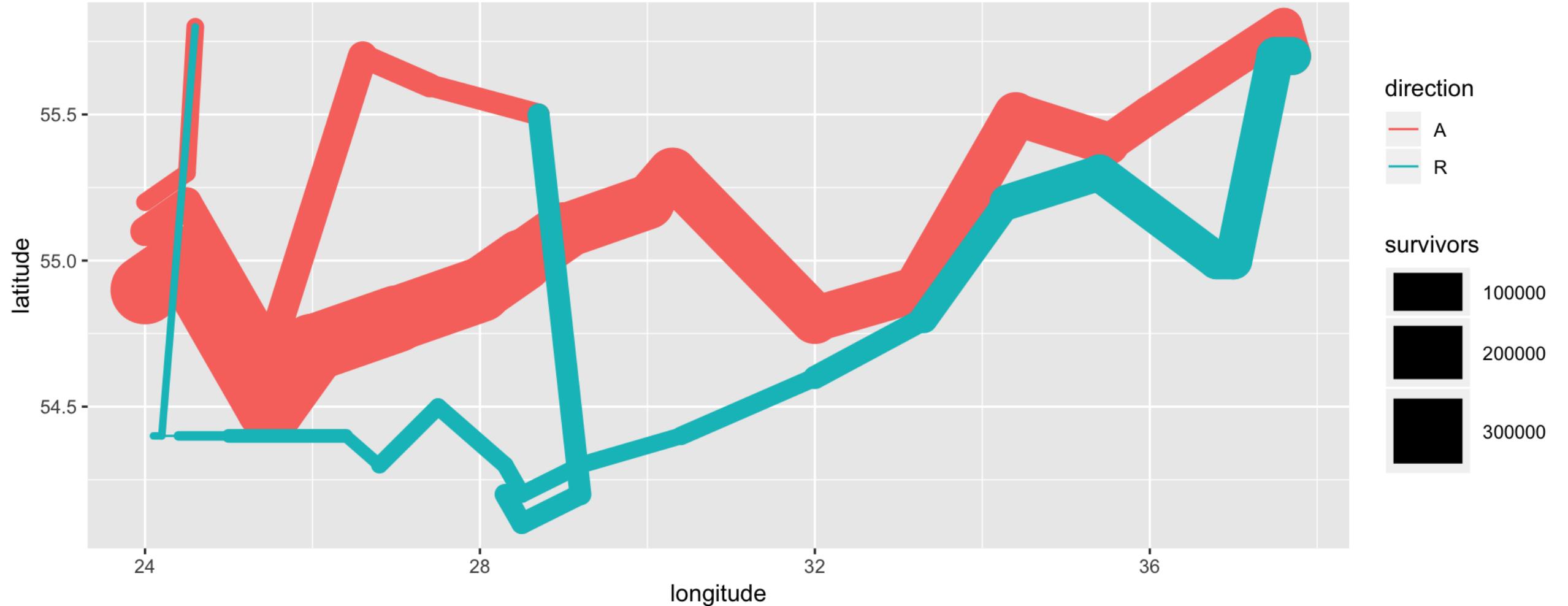
`path`

`line` and `text`

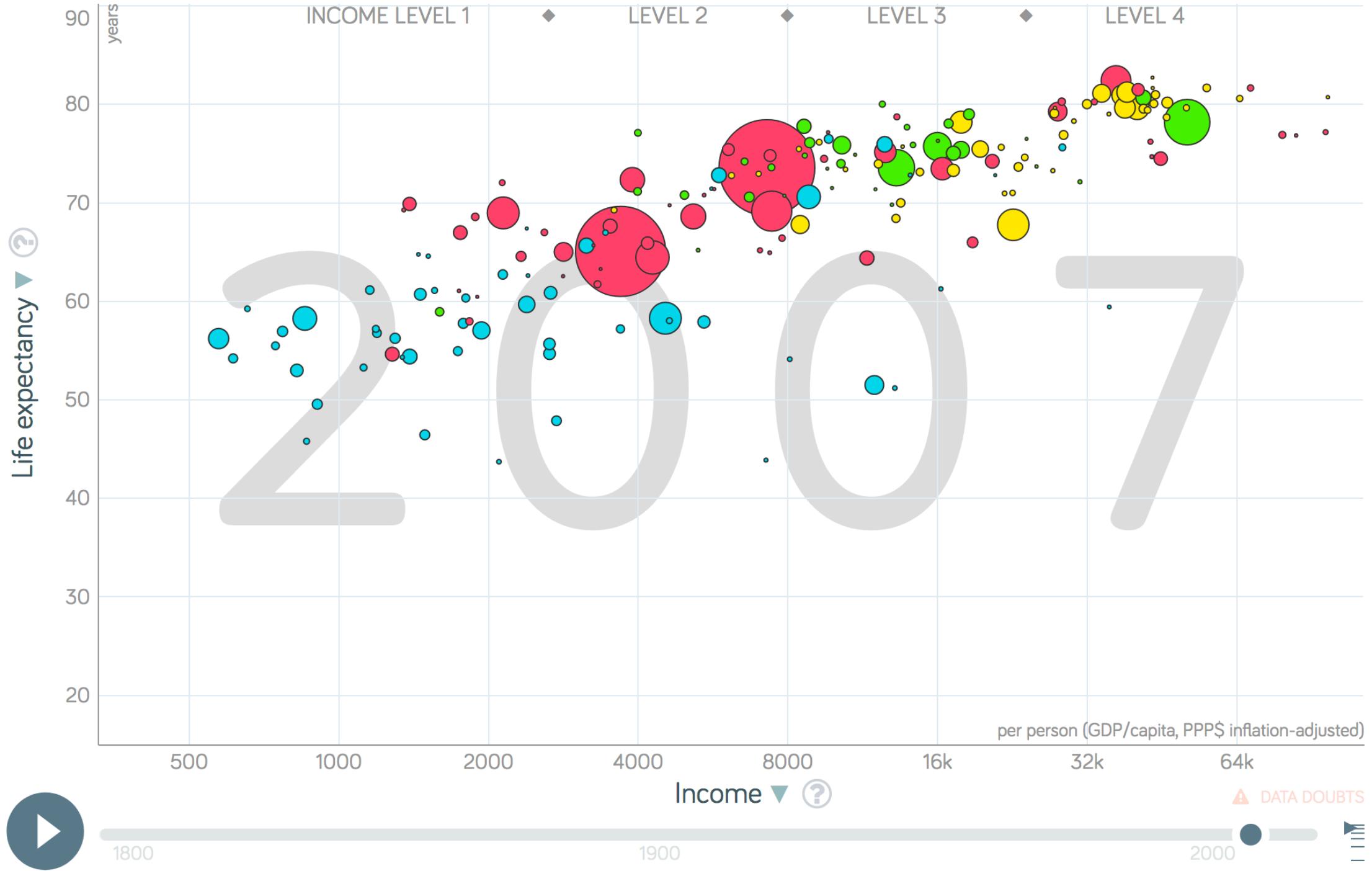
`line` and `text`

# ANATOMY OF `ggplot()`

# ANATOMY OF `ggplot()`







# AESTHETICS AND DATA

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data

**Wealth** (GDP/capita)

**Health** (Life expectancy)

**Continent**

**Population**

aes()

x

y

color

size

geom\_

point

point

point

point

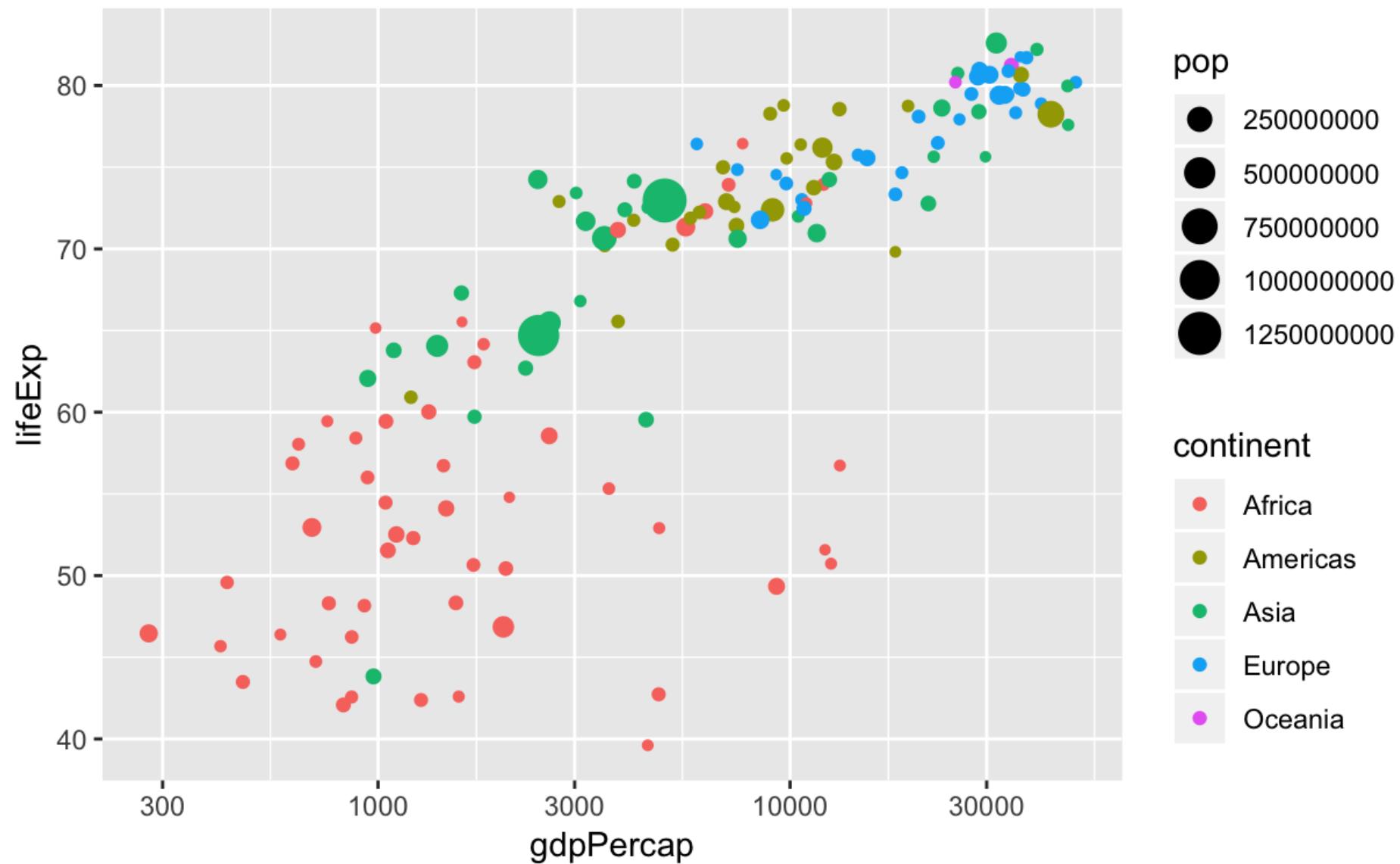
# HEALTH AND WEALTH

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```
ggplot(data = gapminder_2007,  
       mapping = aes(x = gdpPercap,  
                      y = lifeExp,  
                      color = continent,  
                      size = pop) ) +  
  geom_point() +  
  scale_x_log10()
```

# HEALTH AND WEALTH

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# FINAL PROJECT

# DETAILS

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Choose a real world program

Research theory of change  
and draw detailed logic model

Design ideal impact evaluation

Run evaluation using  
simulated data

# PROGRAM THEORIES

# PROGRAM THEORY

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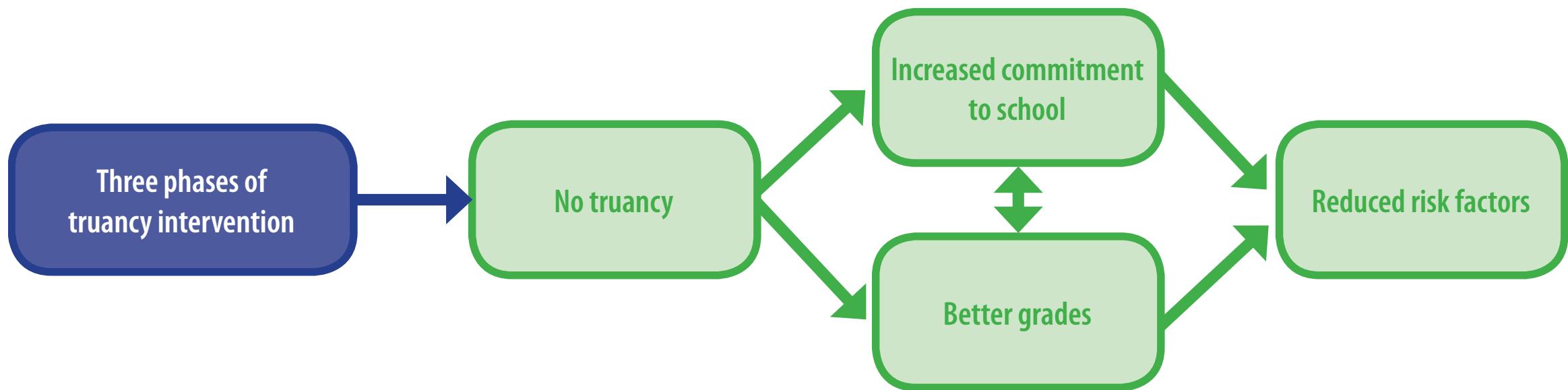
How and why an  
intervention causes change

A sequence of events that connects inputs  
to activities to outputs to outcomes

# IMPACT THEORY

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Causes (activities) linked to effects (outcomes)



# ONE LAPTOP PER CHILD (OLPC)

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# OLPC

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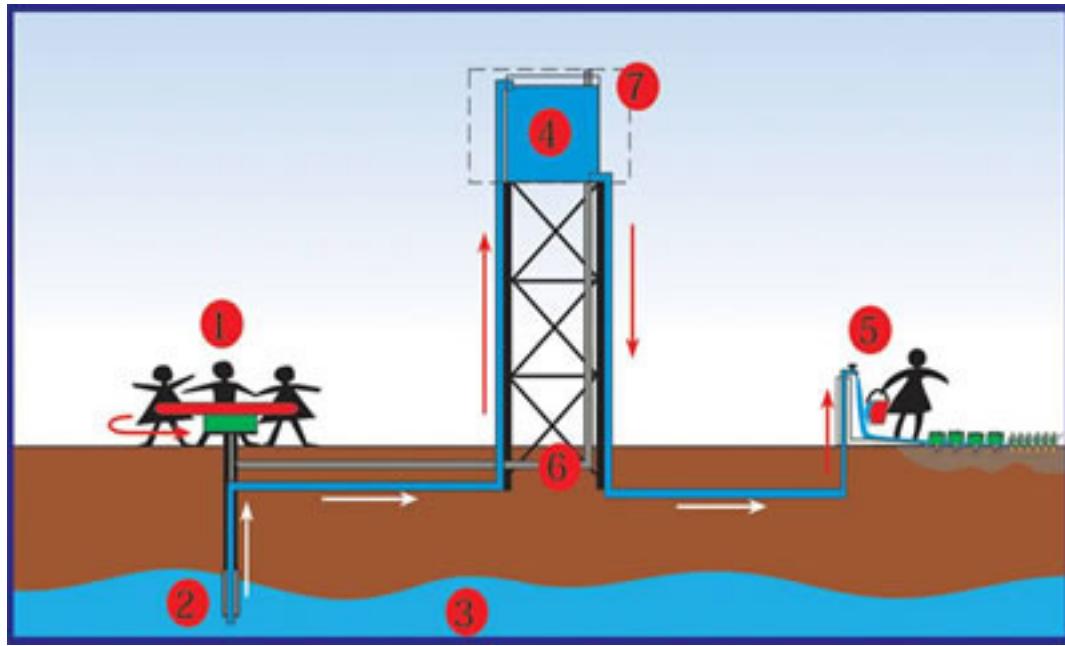
OLPC may have undercut even the XO-1's strong points by overselling them. "The utopianism set unrealistic expectations around what the laptops should be able to accomplish," says Morgan Ames, a Berkeley researcher who's currently writing a book about OLPC. That included Negroponte's laptop-tossing demonstrations. *"When you're talking about a laptop that kids are using surrounded by concrete floors and cobblestone streets — there was a ton of breakage that really blindsided projects, because they expected these laptops to be a lot more indestructible."*

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***"THE UTOPIANISM SET UNREALISTIC EXPECTATIONS AROUND WHAT THE LAPTOPS SHOULD BE ABLE TO ACCOMPLISH."***

# PLAYPUMP

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# **Ugandan mothers want justice for their children who died in care of an unlicensed American health worker**



By [Rosebell Kagumire](#) in Kampala, Uganda • August 17, 2019



# WHY THEORIZIZE?

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Should all social programs be rooted in explicit theory?

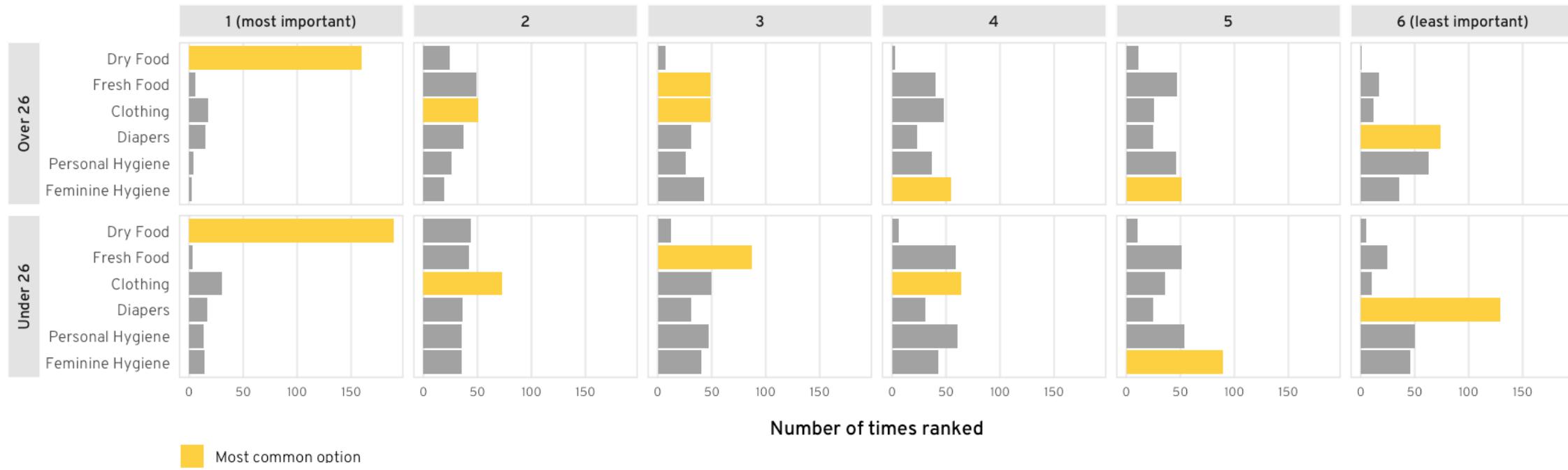
Articulated theory

Implicit theory

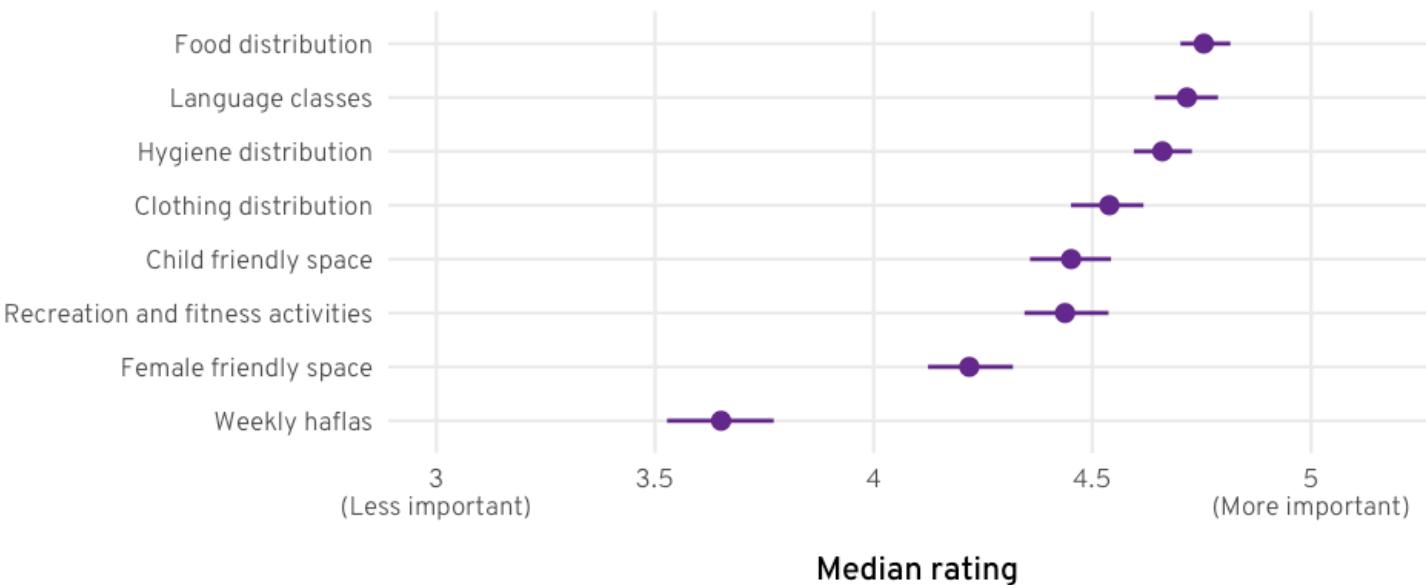


 **Lifting Hands Around the World**

## Distribution preferences by age



## Median program importance, overall



# LOGIC MODELS & RESULTS CHAINS

# PIECES OF A LOGIC MODEL

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## Inputs

Things that go into a project;  
money, people, time, etc.

## Activities

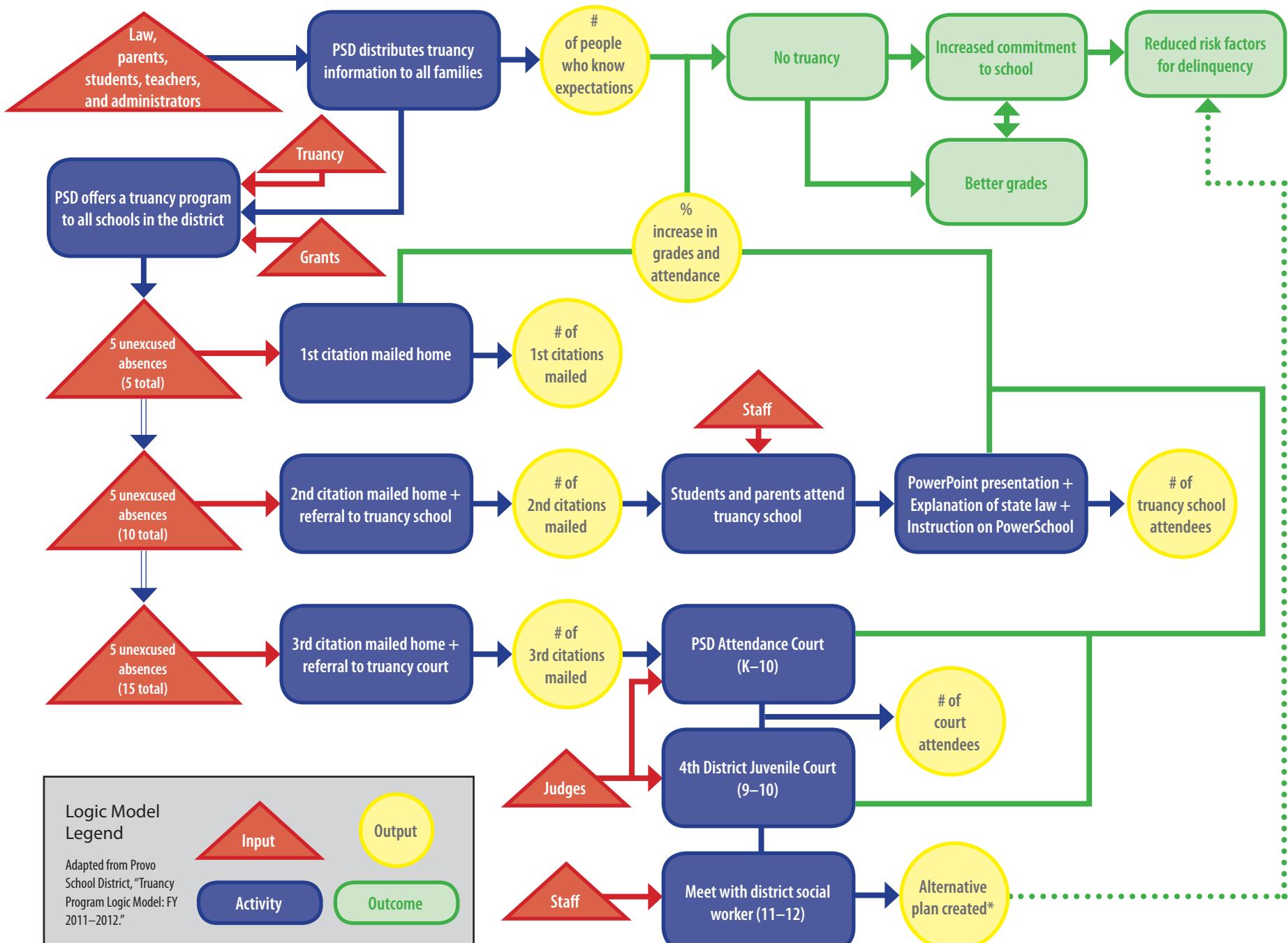
Actions that convert inputs to  
outputs; things that you do

## Outputs

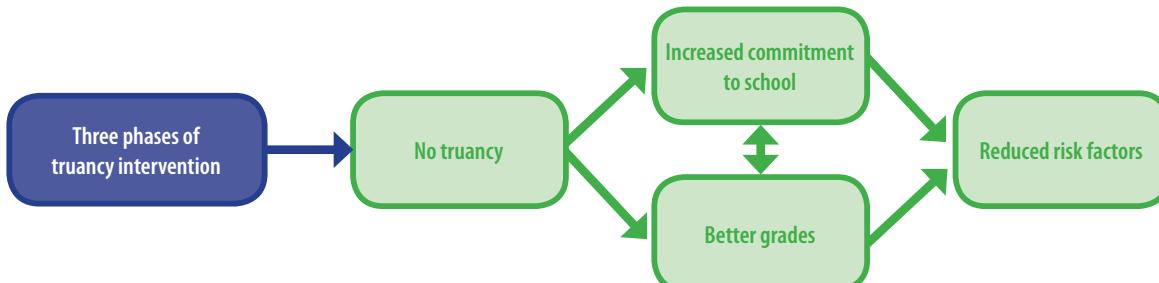
Tangible goods and services  
produced by activities; you  
have control over these

## Outcomes

What happens when the  
target population uses the  
outputs; you don't have  
control over these



# IMPACT THEORY VS. LOGIC MODEL



\* Because 11th and 12th graders who receive 3rd citations are generally unable to graduate from high school, district social workers no longer attempt to increase their commitment to school. As such, any outcomes that occur as a result of the alternative plans made for these students (work study programs, career development assistance, etc.) are only tangentially related to the outcomes of the truancy program itself. The system for creating alternative plans is an entirely separate program with its own logic model, goals, and outcomes.

# MPA/MPP at GSU

## Master of Public Policy

Preparing students for roles as effective citizens and workers in the public sphere.

[About](#)   [Curriculum](#)   [Admissions](#)   [MPA vs. MPP](#)   [Current Students](#)

The Master of Public Policy (MPP) is an interdisciplinary degree program designed to prepare students for work in the analysis, development, and evaluation of public policies. In all levels of government and on a global scale, public needs and limited resources require public policy choices that are at once economically efficient, socially and technically effective, and politically responsive. Such choices confront policymakers in a broad range of critical issues, including health, education, economic development, public finance, social policy, nonprofit policy, and disaster policy.

Decision-makers often lack the knowledge and skills needed to interpret the full social, political, economic, and technical dimensions of the policy issues they face. In response, state and local governments, businesses, and federal agencies have turned to trained policy analysts for assistance in assessing policy options and in evaluating public programs. The same is true for nonprofit agencies, such as hospitals, schools, emergency preparedness and relief agencies, and regional planning organizations.

## Master of Public Administration

A flexible program for working professionals and full-time scholars.

The mission of the Master of Public Administration (MPA) program is to prepare students to become leaders in public service careers as executives, managers, analysts, and policy specialists in government and nonprofit organizations.

# Your own logic models

# INDICATORS & MECHANISMS



# INDICATORS

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## Inputs, activities, & outputs

Generally directly  
measurable

# of citations mailed,  
% increase in grades, etc.

## Outcomes

Harder to directly  
measure

Commitment to school,  
reduced risk factors

# GOOD INDICATORS

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Specific

Measurable

Attributable

Realistic

Targeted

Construct validity

Connected to  
theory

# MEASUREMENT

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Juvenile delinquency

School performance

Poverty

One of your program's outcomes

# MECHANISM TESTING

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**Measure the relationship between  
two elements of the logic model  
(one causal pathway)**

Check to make sure the  
pathway is valid

Poverty → obesity

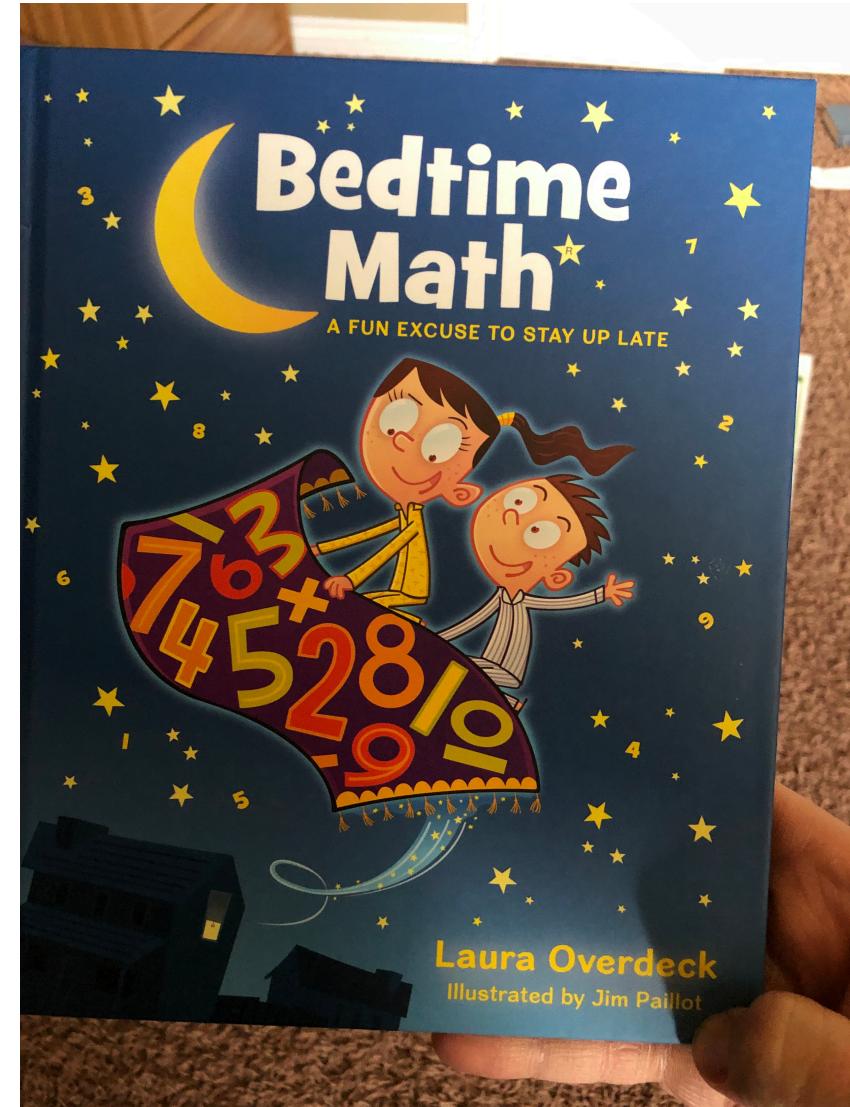
Access to food → obesity

# SMALL SCALE TESTING

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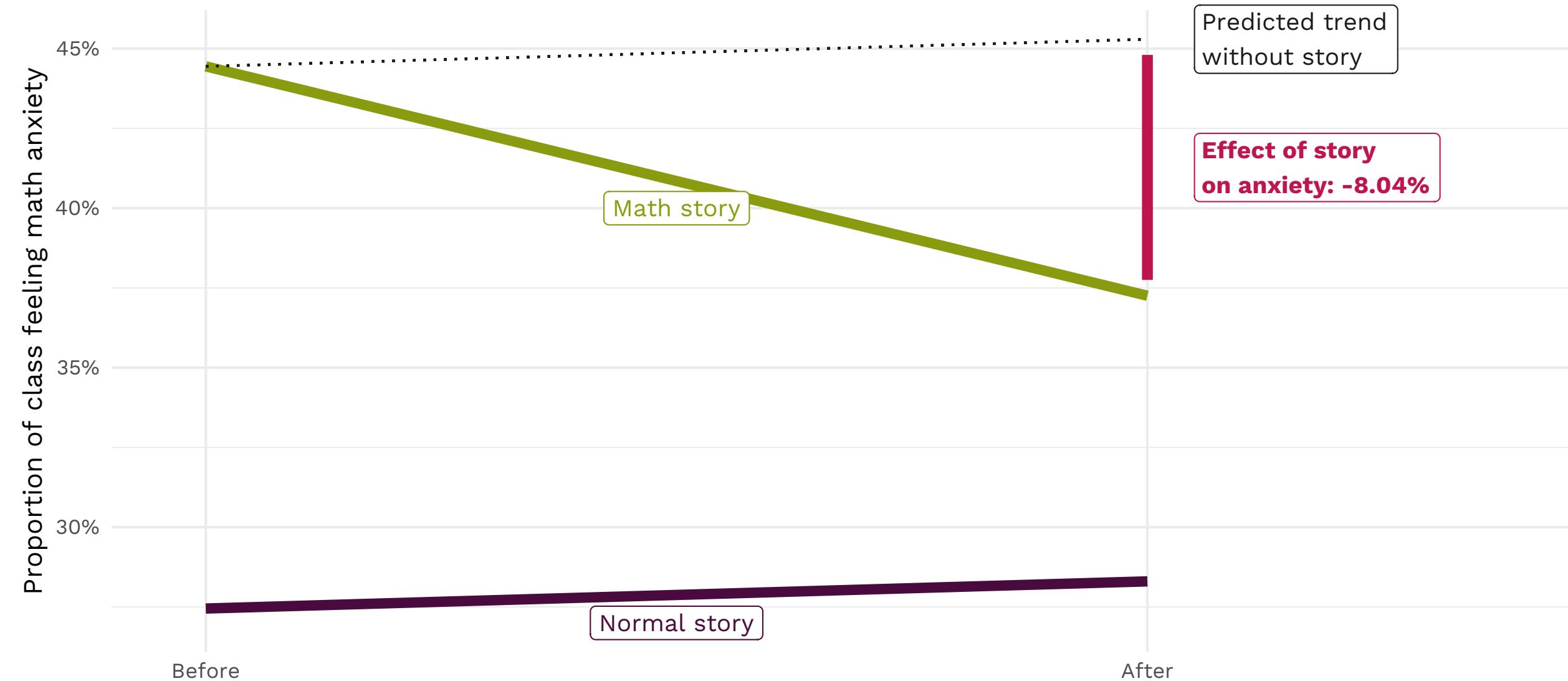
Inclusive teaching  
approaches → better  
educational attainment

Reading fun story  
about math → lower  
math anxiety → better  
math scores



# Reading a story about math reduces math anxiety

Experiment in four 4th grade classes



# MORAL OF THE STORY

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Identifying program theory  
is hard, but essential

Mapping out complete logic  
model is hard, but essential

Measuring outcomes is hard, but essential

Test small-scale mechanisms to  
check theory and measurements