# Storytelling

## We all like stories.

March 12, 2013 – Michael Porath (@poezn)

**East Harlem**

*In the 2000 Census, 52.1% District describe themselves as of Hispanic origin, 35.7 as non-Hispanic black, 7.3 as non-Hispanic white, 2.7 Asian and Pacific Islander Nonhispanic, 1.7% as Two or more Races non-Hispanic, and 0.5% as other. (Wikipedia, http://bit.ly/v2u34o)*

**Mount Hope**

*As of the census of 2000, ... [t]he racial makeup of the town was 78.63% White, 16.51% African American, 0.27% Native American, 1.48% Asian, 0.03% Pacific Islander, 1.84% from other races, and 1.25% from two or more races. Hispanic or Latino of any race were 14.61% of the population. (Wikipedia, http://bit.ly/15h4RkP)*

**Brownsville**

*"In 2010, Brownsville's population was 116,579 and the demographics were 70.8% Non-Hispanic Black or African American, 19.1% Hispanic/Latino, 2.9% Non-Hispanic White, 1.8% Asian/Pacific Islander and 5.4% described themselves as other." (Wikipedia, http://bit.ly/XZiWFs)*

# Farmers Markets in the Five Boroughs

*Number of Farmers Markets*

▼ 1 ▼ 2 ▼ 3 ▼ 4 ▼ 5

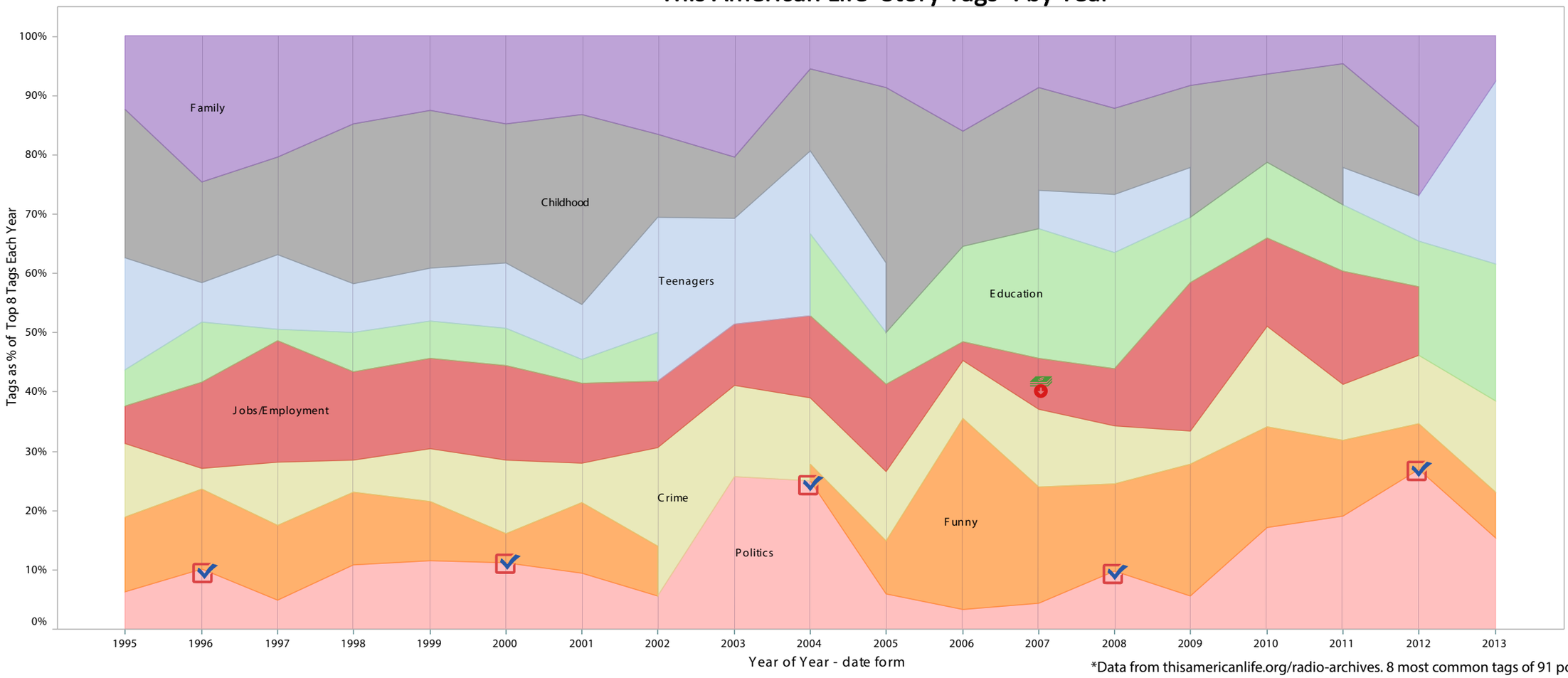
*Taking a look at the number of farmers markets in the five boroughs of New York City in conjunction with the racial demographics (by percentage) of each region.*

*Farmers Market Data from 2012:* **nycopendata.socrata.com**

*Demographic data from 2010-2011:* **census.gov**

**Jen Wang | jenmwang@ischool.berkeley.edu**
**Info 247: Information Visualization | Spring 2013**

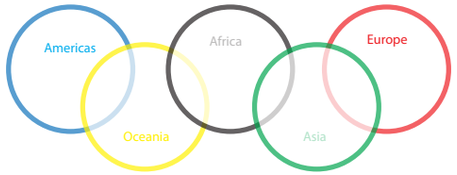
# ‘This American Life’ Story Tags*: by Year




THIS AMERICAN LIFE FROM WBEZ

*Data from thisamericanlife.org/radio-archives. 8 most common tags of 91 podcast tags represented.

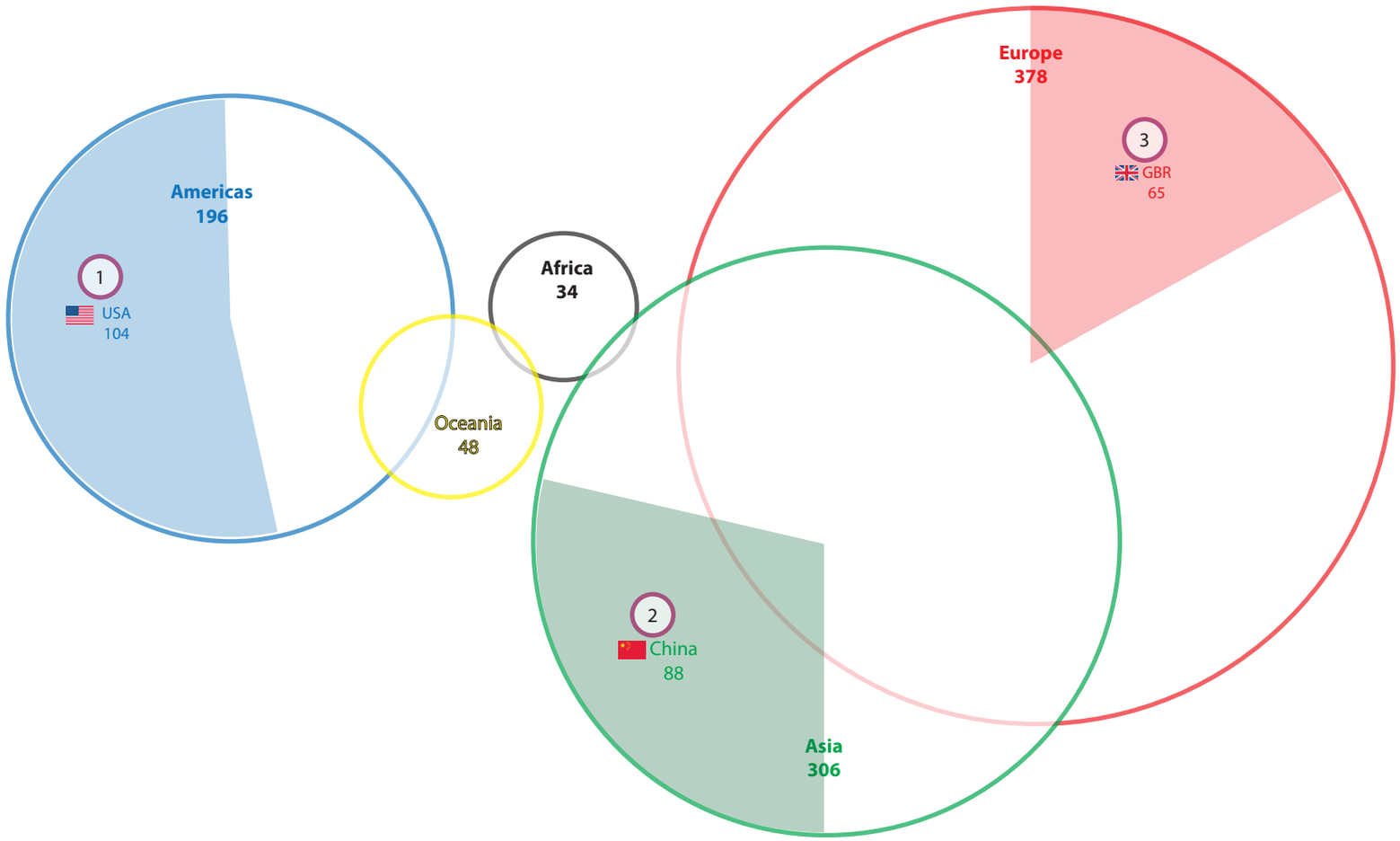
Morgan Wallace




LONDON 2012

**206** countries | **302** events |~**10,800** athletes

# MEDALS TALLY




Sources: http://www.london2012.com/medals/medal-count/
http://en.wikipedia.org/wiki/2012_Summer_Olympics

Kini Vimal

# When Does Service Matter In Restaurants?

By analyzing Yelp reviews, we can determine how much service matters to restaurant businesses. I created a metric called Service Percentage, and used it to compare various characteristics of restaurants.

## What is Service Percentage?

| | |
|---|---|
| The number of reviews with the word "service": | **Results for *service* on Cheese Board Pizza**<br>**188** |
| Divided by the total number of reviews: | 2607 reviews |
| Cheese Board Pizza's Service Percentage: | **7.21%** |

## Which Characteristics?

**Cheese Board Pizza**

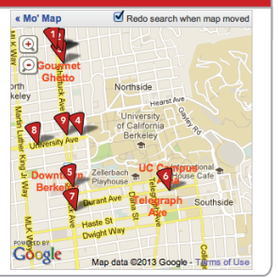
2607 reviews

**Price Range:** $
**Waiter Service:** No
**Good For:** Lunch
**Noise Level:** Loud
**Ambience:** Casual

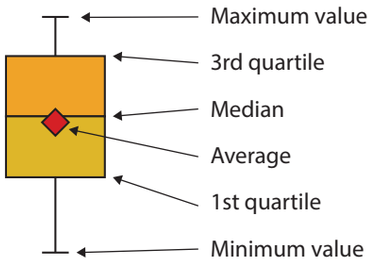
## The Dataset

The 250 most reviewed restaurants in the UC Berkeley area.

There were 100 restaurants excluded from the dataset. These restaurants had less than 20 reviews.

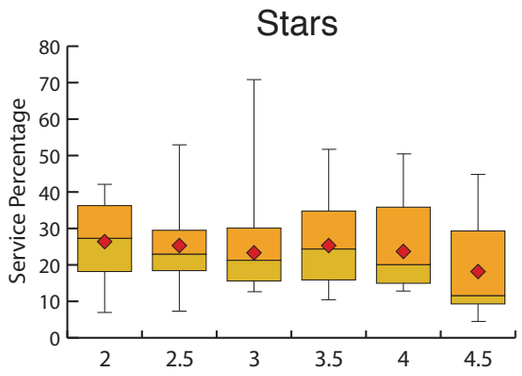


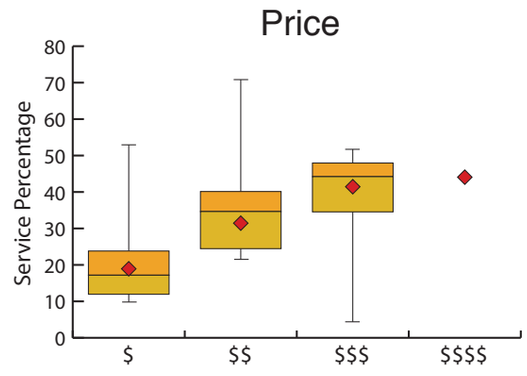

## Understanding the Box Plot

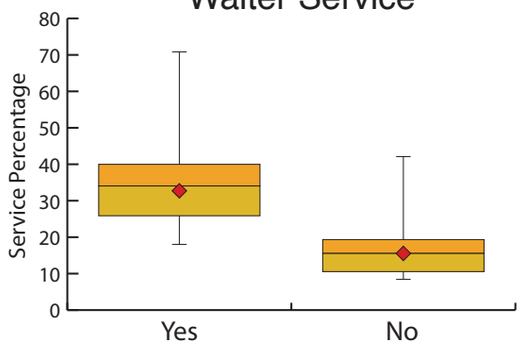


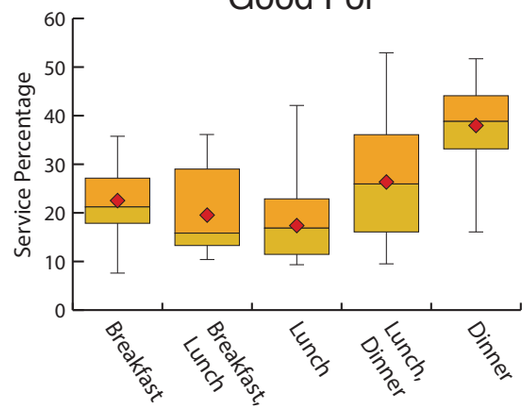

Note: In the price chart, only the average is shown for the $$$$ category. This is because there is only one $$$$ restaurant in the Berkeley region.

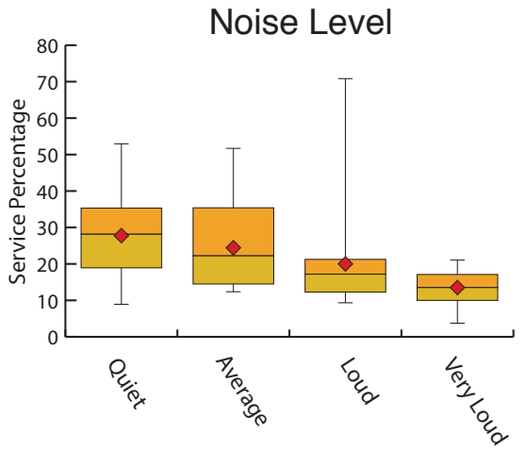
When Does Service Matter In Restaurants?

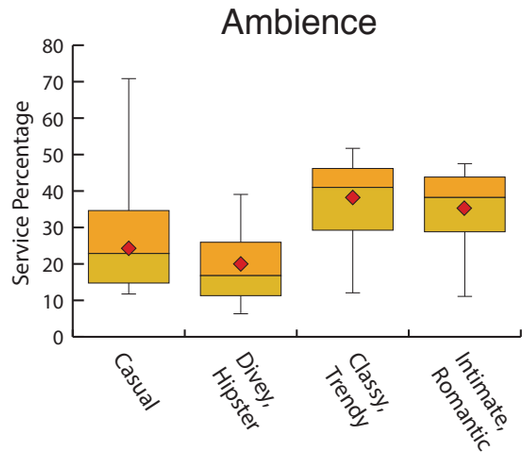



Taeil Kwak

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- Start early, have a plan!

Average: 16.09/20

# Why Storytelling?

Central America

## Out of control

TEGUCIGALPA

**In the first of two reports on the threat of rampant violence to Central America's small republics, we look at the risk of Honduras becoming a failed state**

WHEN soldiers bundled Honduras's elected president onto an aeroplane to Costa Rica in a coup in 2009, nobody believed that the Central American country would swiftly get back to normal. But even pessimists must be disappointed by what has happened. Although the constitutional crisis was resolved early in 2010 after the election as president of Porfirio Lobo and the return of Manuel Zelaya, his ousted predecessor, Honduras continues to march backwards. Gang violence, catalysed by drug trafficking, and weak law enforcement have given Honduras the highest murder rate in the world. Poor financial management and the hangover from a stop to aid after the coup have left the government struggling to pay its bills. And Congress has picked a fight with the judiciary, creating fresh constitutional strains just as the country gears up for another presidential election in November.

The scale of violence is dizzying. Last year saw 86 murders per 100,000 people according to the National Autonomous University. That was about the same as in 2011, but more than double the Central American average—itself among the highest in the world (see chart). In 2012 Honduran men in their 20s faced a 1-in-300 chance of being murdered, or 1-in-150 in the most dangerous towns.

Drug mafias, under pressure in Mexico, have set up in Honduras. In January the authorities discovered a cache of weapons, including a gold-plated AK-47, believed to belong to Mexico's "Zetas" mob. Honduras's wild coast and empty jungle provide landing points for some 40% of cocaine destined for the United States. Traffickers pay their hired help in drugs rather than cash, creating a local market and the mayhem than goes with it. Some of the violence comes from gangs known as *maras*, which migrants form in jails in the United States and remain members of in Central America after they are deported.

Then there are seemingly targeted assassinations. At least 25 journalists, including eight last year, have been killed since the coup. Some members of the opposition have accused the government of snuffing out dissent. But Robert Marin, a reporter on *El Heraldo*, a newspaper, who has himself received threats, points out that journalists of all political stripes (and none) have been victims. So, too, have gay-rights campaigners—at least eight were killed last year—and lawyers, 15 of whom were murdered. However, these are by no means the people most at risk: some 60 taxi drivers were killed in 2012, in many cases following extortion attempts, and about 70 police. Last month the teenage son of a former police chief was shot dead.

The underlying problem is that few of the killings are investigated, let alone punished. Even as Honduras's murder rate has doubled, the number of police has fallen, from about 14,000 in 2009 to 13,000 now. Many supplement their $400 monthly wages by charging a "war tax" on citizens. A vetting programme begun in August tested 1,231 officers by the end of the year, firing 281 of them. A farther 450 left voluntarily. The remainder are due to be vetted this year, and a thousand more recruited annually until the force reaches 20,000. Training time has been doubled, to 12 months.

**Killing fields**

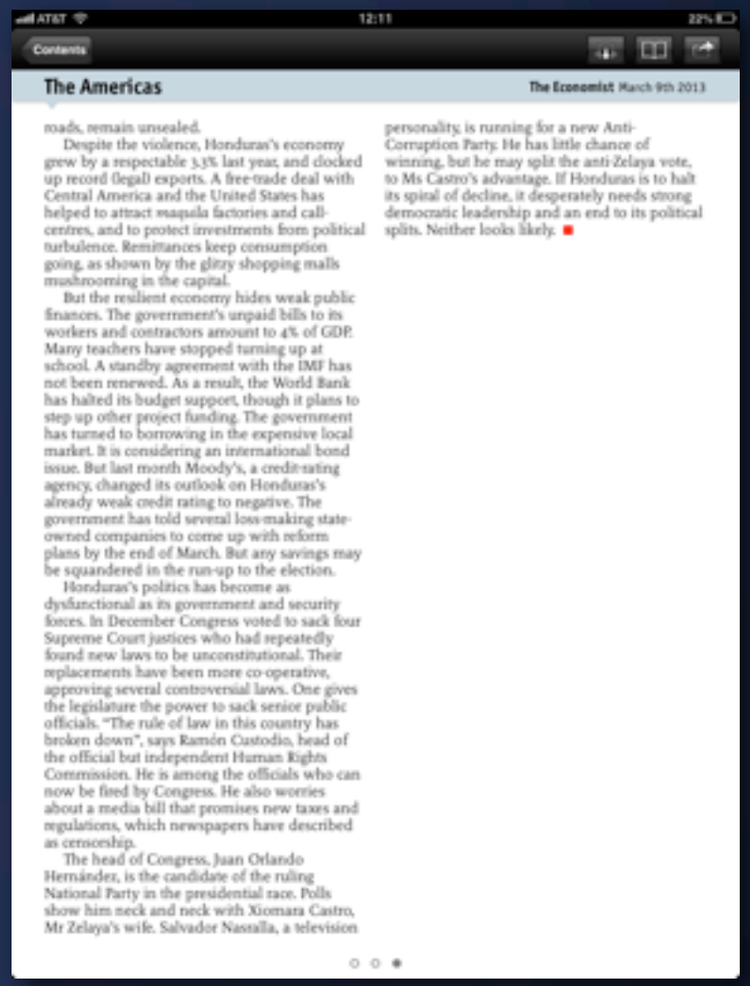
Murders per 100,000 people




Source: UNODC; national statistics

It will take a decade fully to restore faith in the police, which had "fallen into total discredit", admits Héctor Mejía, the force's spokesman. The army patrols with the police in Tegucigalpa, the capital, and in the northern city of San Pedro Sula, as part of an "emergency" measure renewed three times since it was introduced in 2011.

Many Hondurans are taking protective measures into their own hands. In Villa Cecilia, a small working-class suburb of mechanics, seamstresses and policemen in Tegucigalpa, residents pay 700 lempiras ($35) per household per month to employ four security guards with shotguns. Next will come CCTV, an entry-phone system and a bigger perimeter wall. "If you want to sleep well, you have to pay", shrugs Jiovanny Aguilera, a taxi driver whose home is protected by two metal doors, barbed wire, and a pair of large dogs. The city government has encouraged such barrios seguros, permitting residents to block off their streets. The poorest districts, built on steep hillsides lacking formal




roads, remain unsealed.

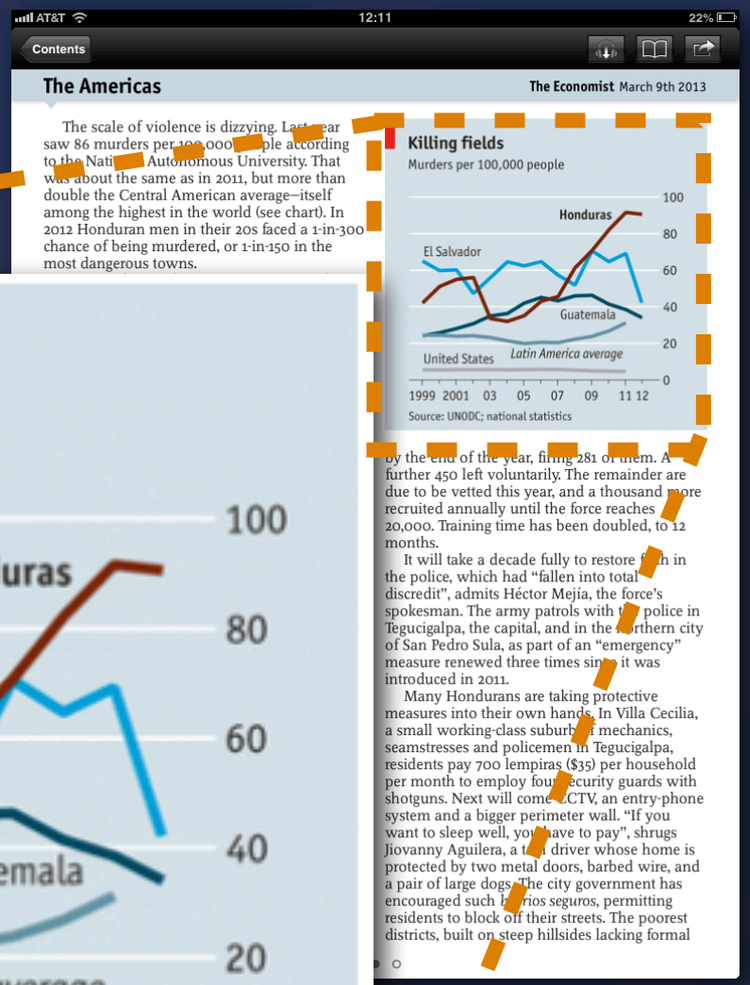
Despite the violence, Honduras's economy grew by a respectable 3.3% last year, and clocked up record (legal) exports. A free-trade deal with Central America and the United States has helped to attract *maquila* factories and call-centres, and to protect investments from political turbulence. Remittances keep consumption going, as shown by the glitzy shopping malls mushrooming in the capital.

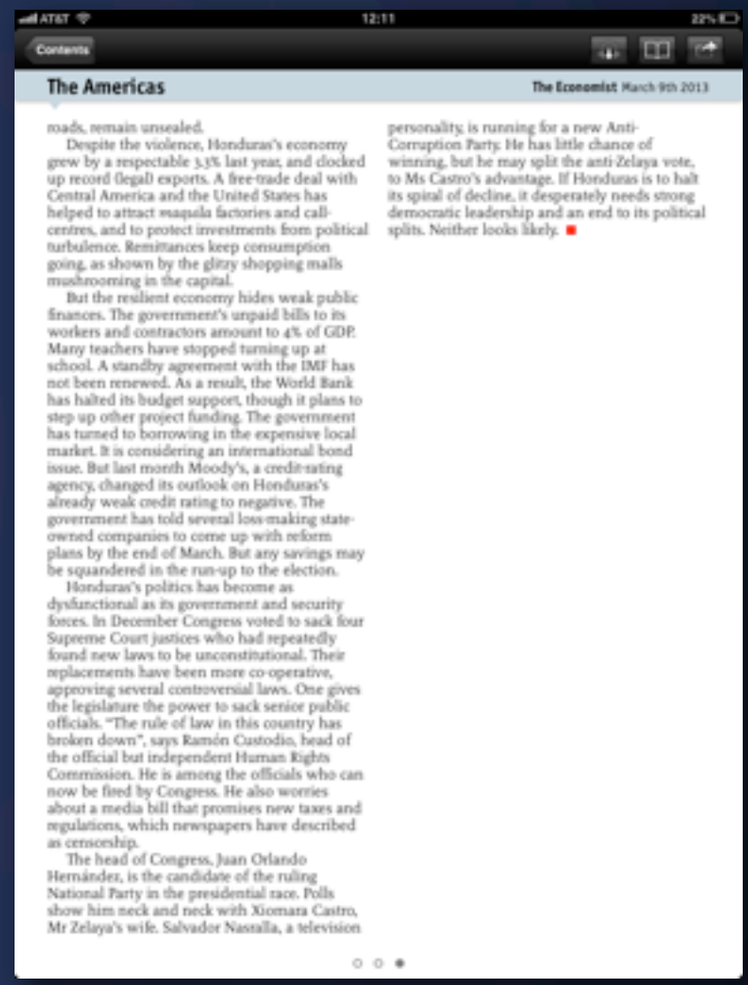
But the resilient economy hides weak public finances. The government's unpaid bills to its workers and contractors amount to 4% of GDP. Many teachers have stopped turning up at school. A standby agreement with the IMF has not been renewed. As a result, the World Bank has halted its budget support, though it plans to step up other project funding. The government has turned to borrowing in the expensive local market. It is considering an international bond issue. But last month Moody's, a credit-rating agency, changed its outlook on Honduras's already weak credit rating to negative. The government has told several loss-making state-owned companies to come up with reform plans by the end of March. But any savings may be squandered in the run-up to the election.

Honduras's politics has become as dysfunctional as its government and security forces. In December Congress voted to sack four Supreme Court justices who had repeatedly found new laws to be unconstitutional. Their replacements have been more co-operative, approving several controversial laws. One gives the legislature the power to sack senior public officials. "The rule of law in this country has broken down", says Ramón Custodio, head of the official but independent Human Rights Commission. He is among the officials who can now be fired by Congress. He also worries about a media bill that promises new taxes and regulations, which newspapers have described as censorship.

The head of Congress, Juan Orlando Hernández, is the candidate of the ruling National Party in the presidential race. Polls show him neck and neck with Xiomara Castro, Mr Zelaya's wife. Salvador Nasralla, a television personality, is running for a new Anti-Corruption Party. He has little chance of winning, but he may split the anti-Zelaya vote, to Ms Castro's advantage. If Honduras is to halt its spiral of decline, it desperately needs strong democratic leadership and an end to its political splits. Neither looks likely. ■

# Why Storytelling?




an afterthought

# This American Life

# This American Life

***What's the structure of every show?***

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Prologue

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***What's the structure of every show?***

Prologue

Act 1

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Act 2

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...

Act n

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(Conslusion / Credits)

# What is Storytelling?

# What is storytelling?

The world's oldest profession

second

# Narrative

Oxford English Dictionary

**nar·ra·tive** *noun* \ˈner-ə-tiv, ˈna-rə-\

an account of a
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# Storytelling and Visualization

## Learning from other media

# You have an audience

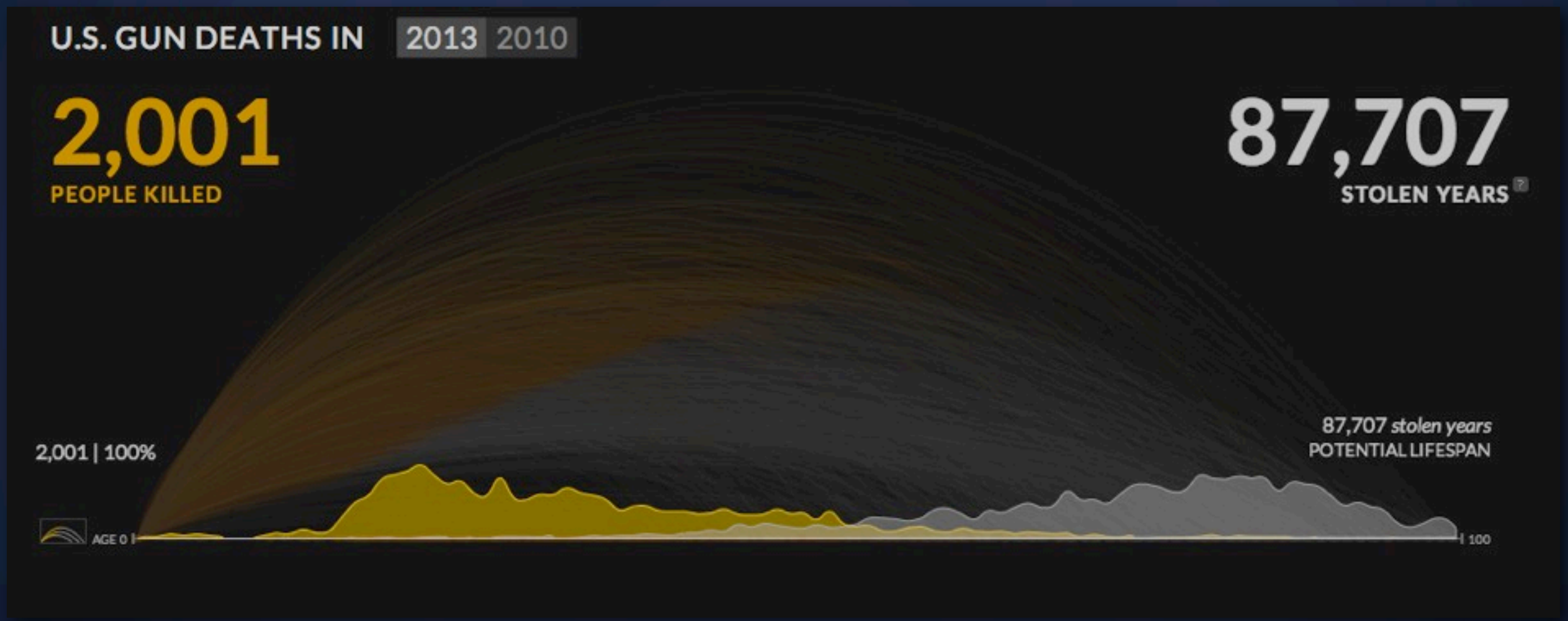
# Narrative Devices

*What narrative devices exist for telling stories with data?*

Segel and Heer, 2010

# Case Study 1

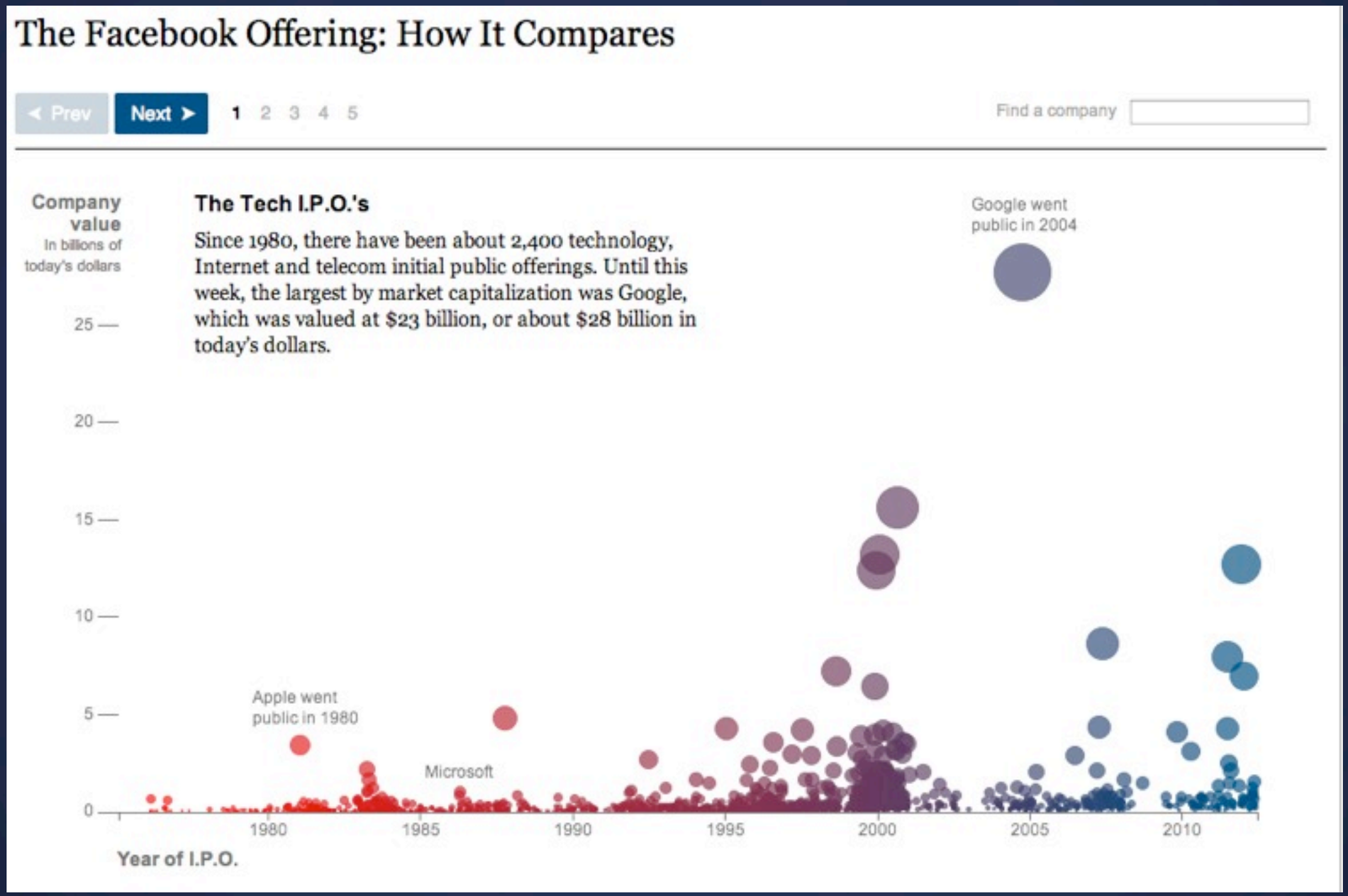
Periscopic: Guns




http://guns.periscopic.com

# Case Study 2

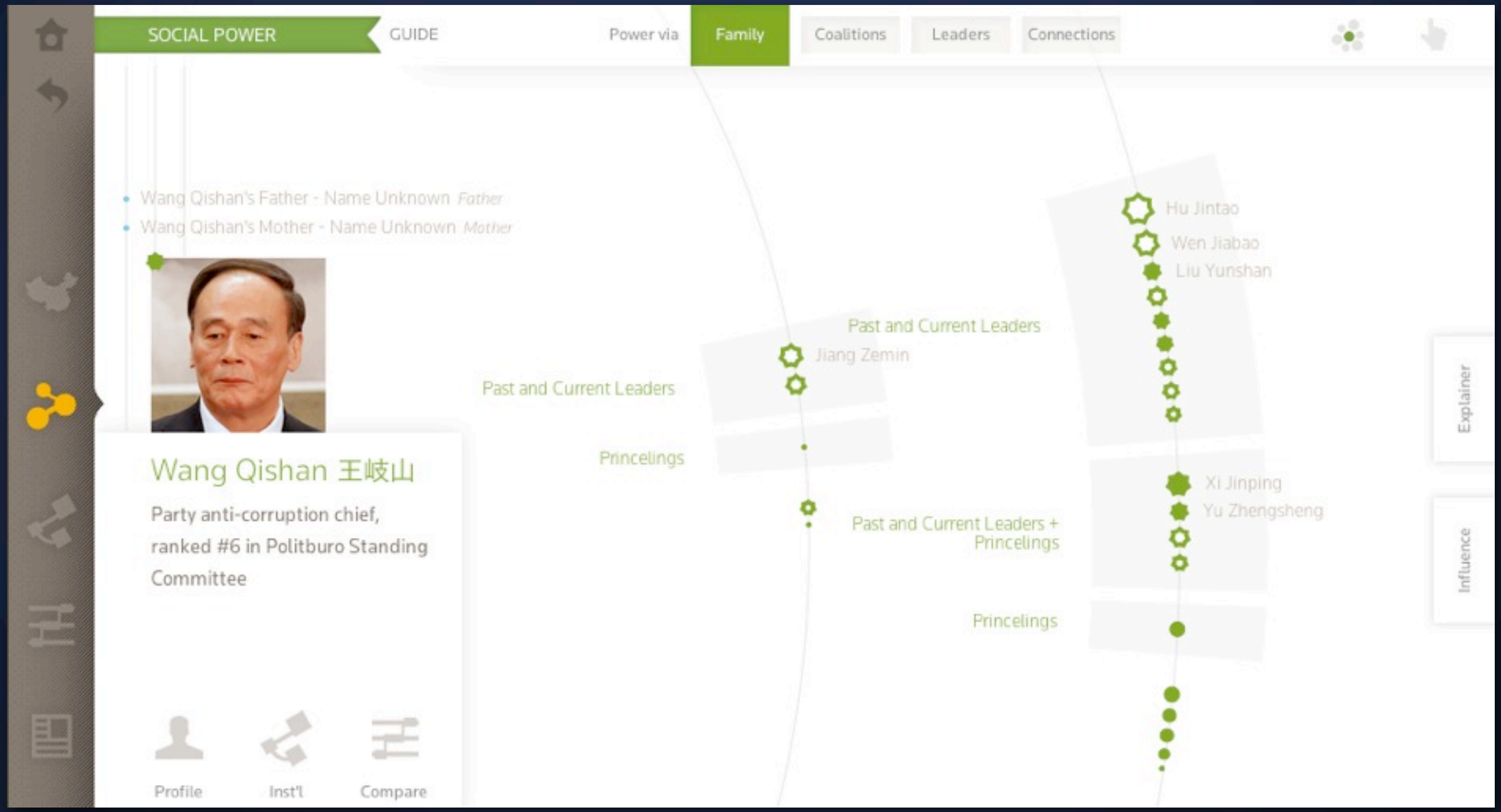
## NY Times: The Facebook IPO




http://www.nytimes.com/interactive/2012/05/17/business/dealbook/how-the-facebook-offering-compares.html

# Case Study 3

## Reuters: Connected China




http://connectedchina.reuters.com/

# Reader-Driven vs Author-Driven

Segel and Heer, 2010

Data Diagnostics
Pattern Discovery
Hypothesis Formation

Storytelling
Clear Communication
Fast Communication

# Reader-Driven vs Author-Driven

Segel and Heer, 2010

No prescribed ordering
No messaging
Free interactivity

Linear ordering of scenes
Heavy messaging
No interactivity

# Reader-Driven vs Author-Driven

Segel and Heer, 2010

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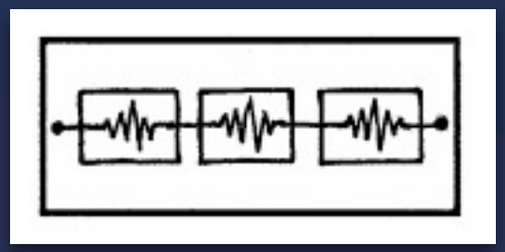

*Interactive Slideshow*

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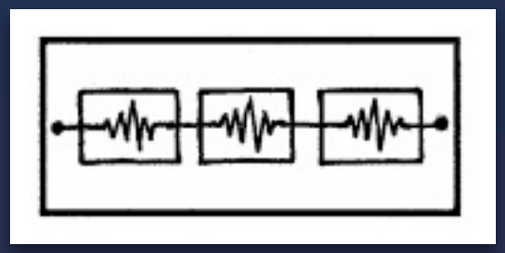
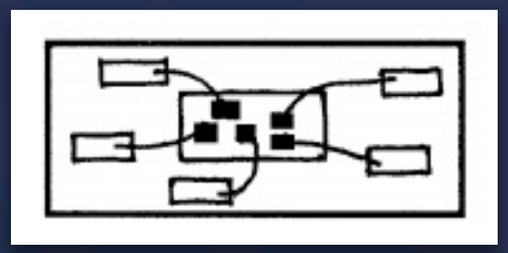


*Interactive Slideshow*

*Drill-Down Story*



*Reader-Driven* — *Author-Driven*

# Reader-Driven vs Author-Driven

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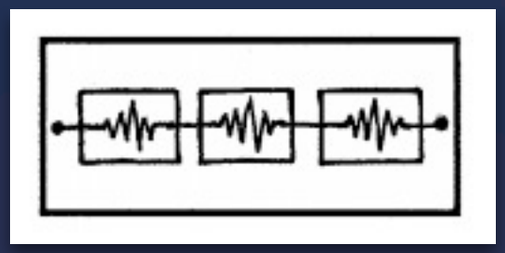

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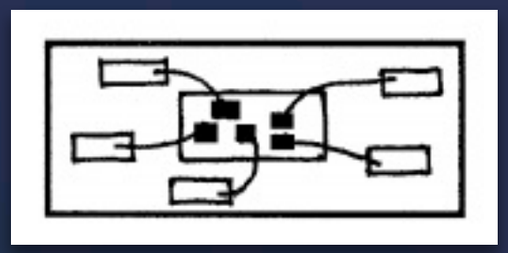
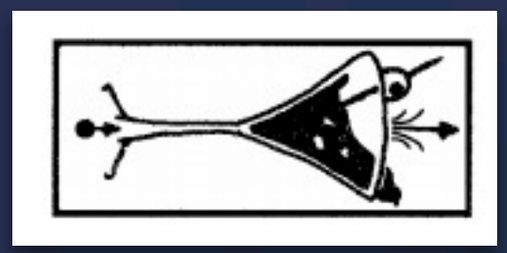


*Martini Glass Structure*



*Reader-Driven* ⟷ *Author-Driven*

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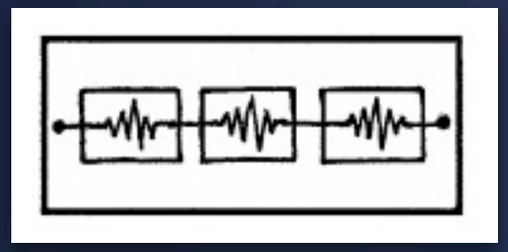

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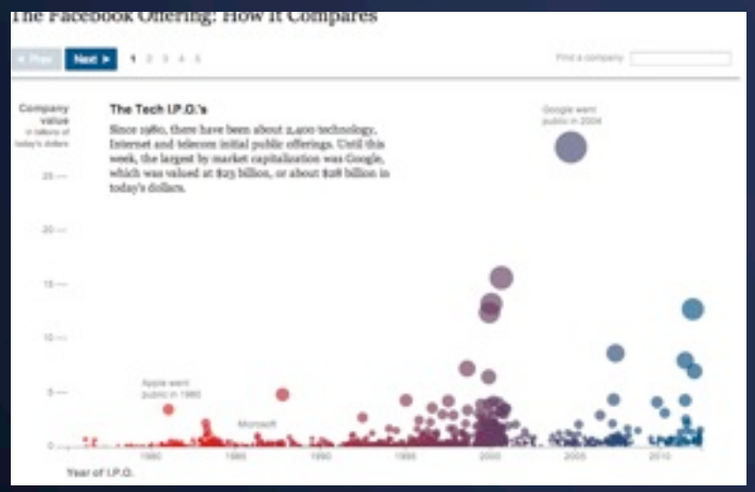

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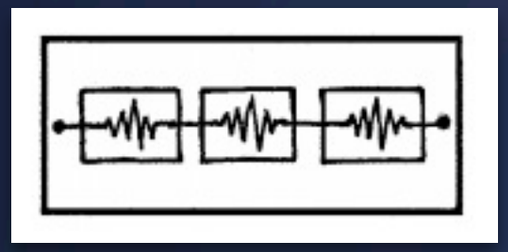

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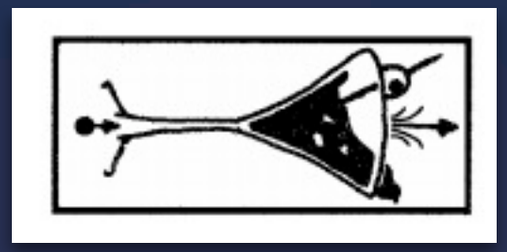

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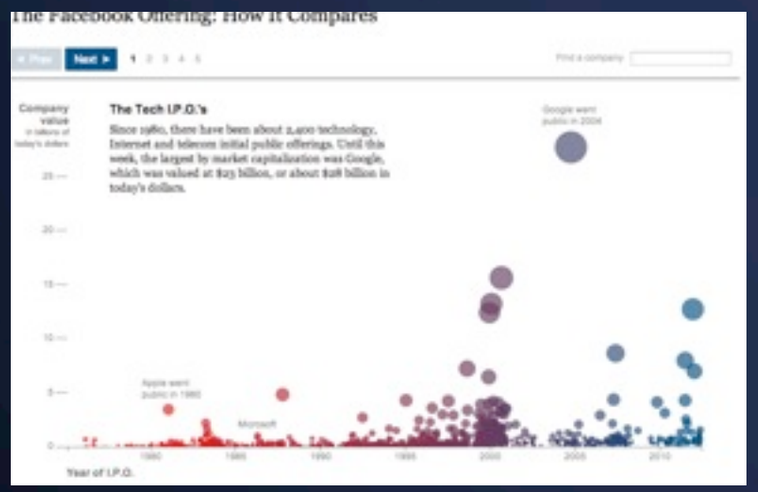

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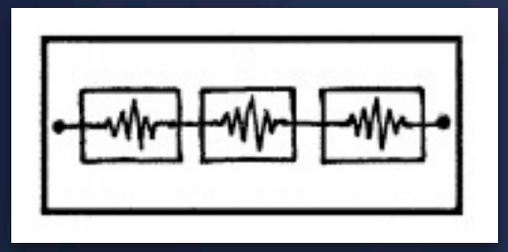

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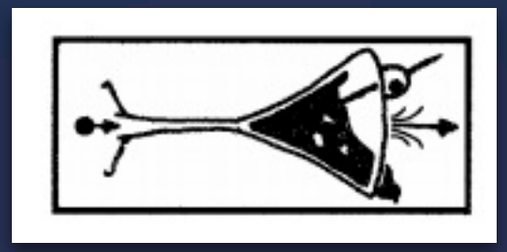

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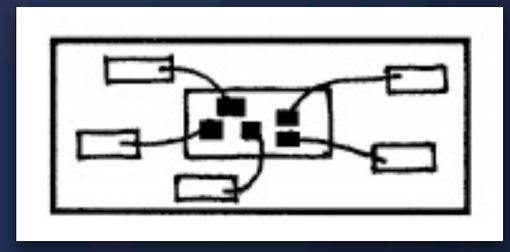
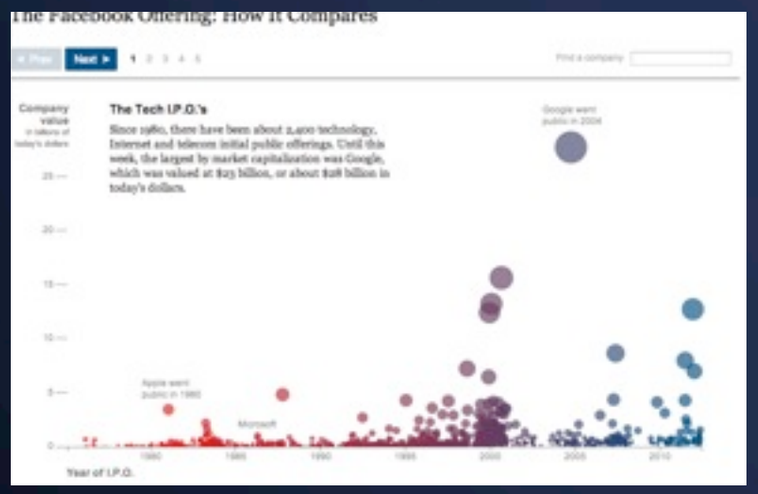


*Drill-Down Story*



# Framework

# Framework

Guide. Highlight. Interpret

**Visual Structure** support the story

**Messaging** tell the story

**Interactivity** engage the story

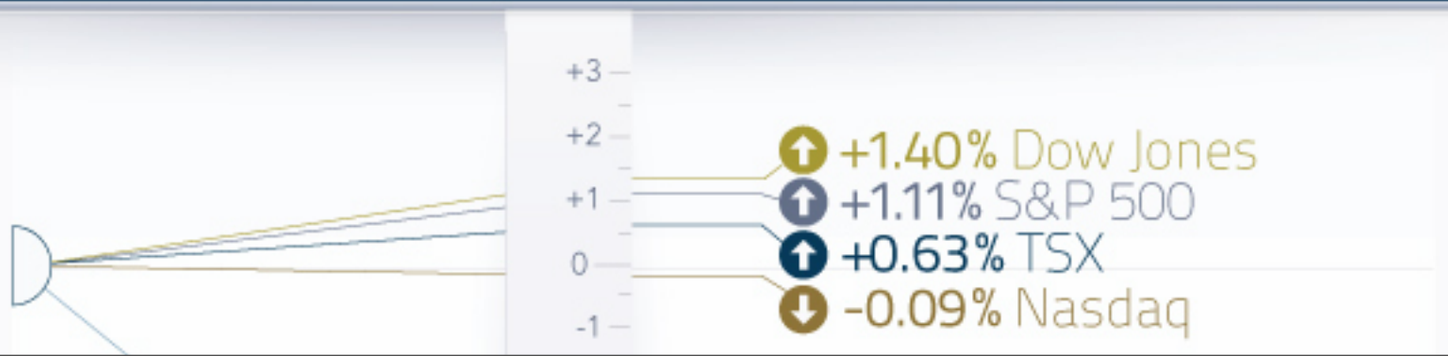
# Visual Structure

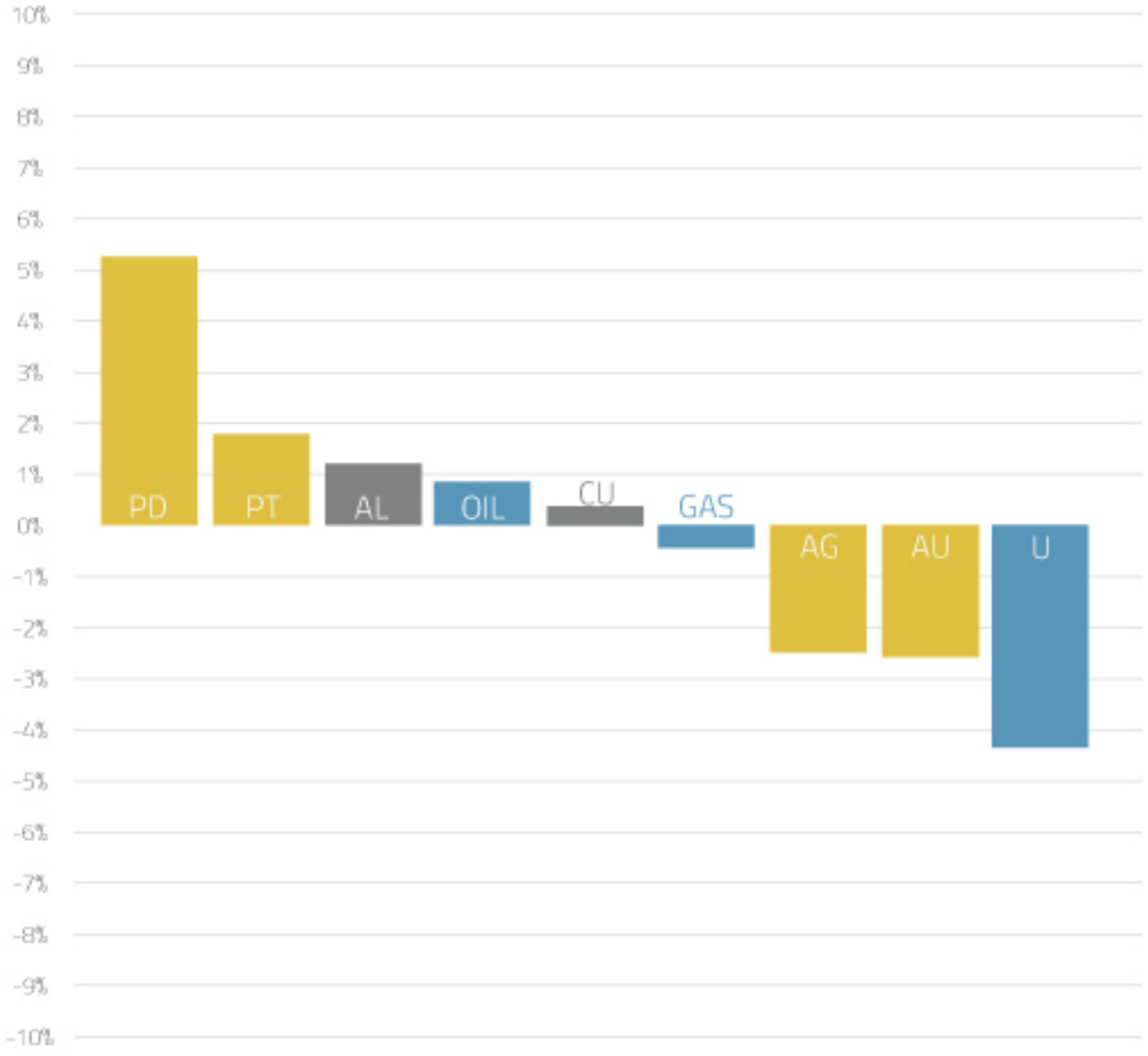
Where to start?

## MARKET TRENDS MONTH-TO-MONTH

FEBRUARY 2013 VS PREVIOUS MONTH

The major US markets continued their steady rise with the DJIA clos-






| COMMODITY | AV. PRICE |
|---|---|
| AU GOLD (OZ) | $1627.59 |
| AG SILVER (OZ) | $30.33 |
| PT PLATINUM (OZ) | $1674.55 |
| PD PALLADIUM (OZ) | $751.92 |
| OIL OIL (WTI) | $95.31 |
| GAS NAT. GAS (HENRY HUB) | $3.33 |
| U URANIUM (LB) | $42.00 |
| CU COPPER (LB) | $3.66 |
| AL ALUMINUM (LB) | $0.93 |

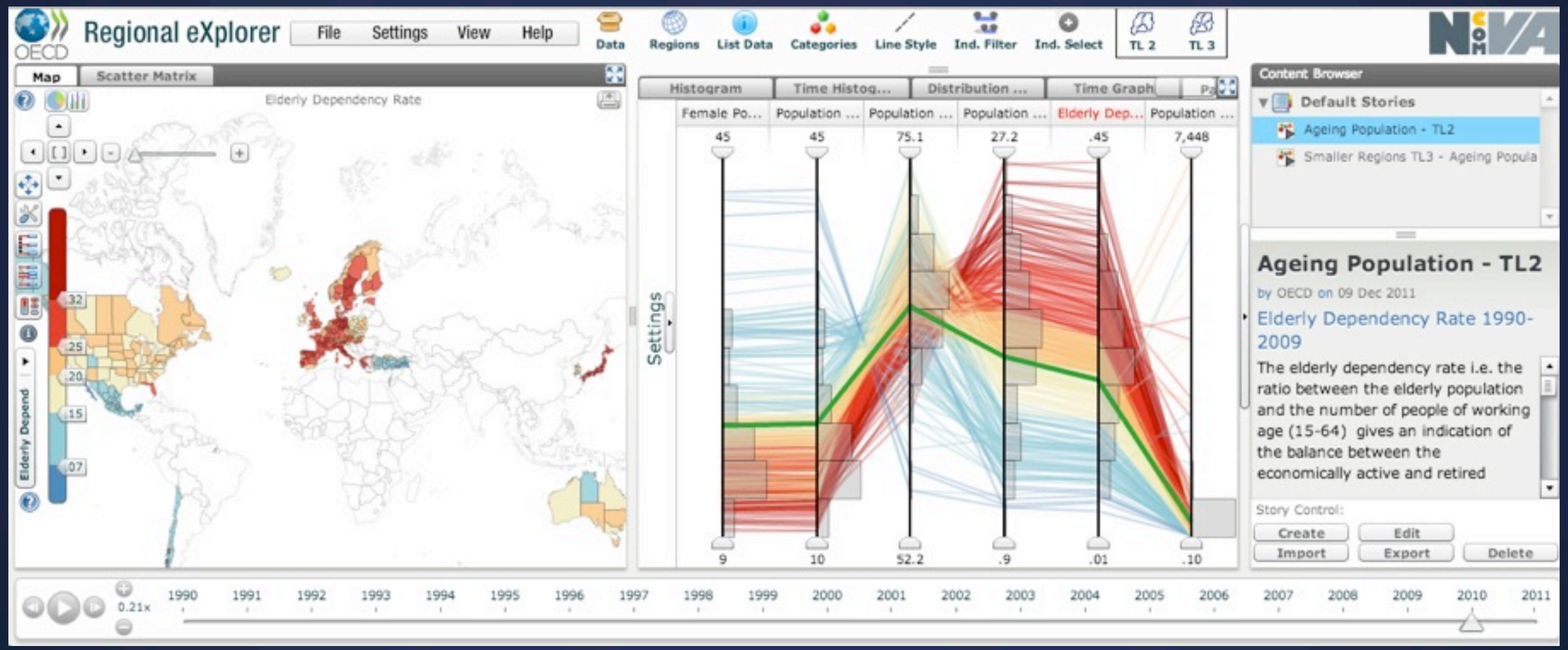
VISUAL CAPITALIST

For more information on investing and commodities, visit us at:

visualcapitalist.com

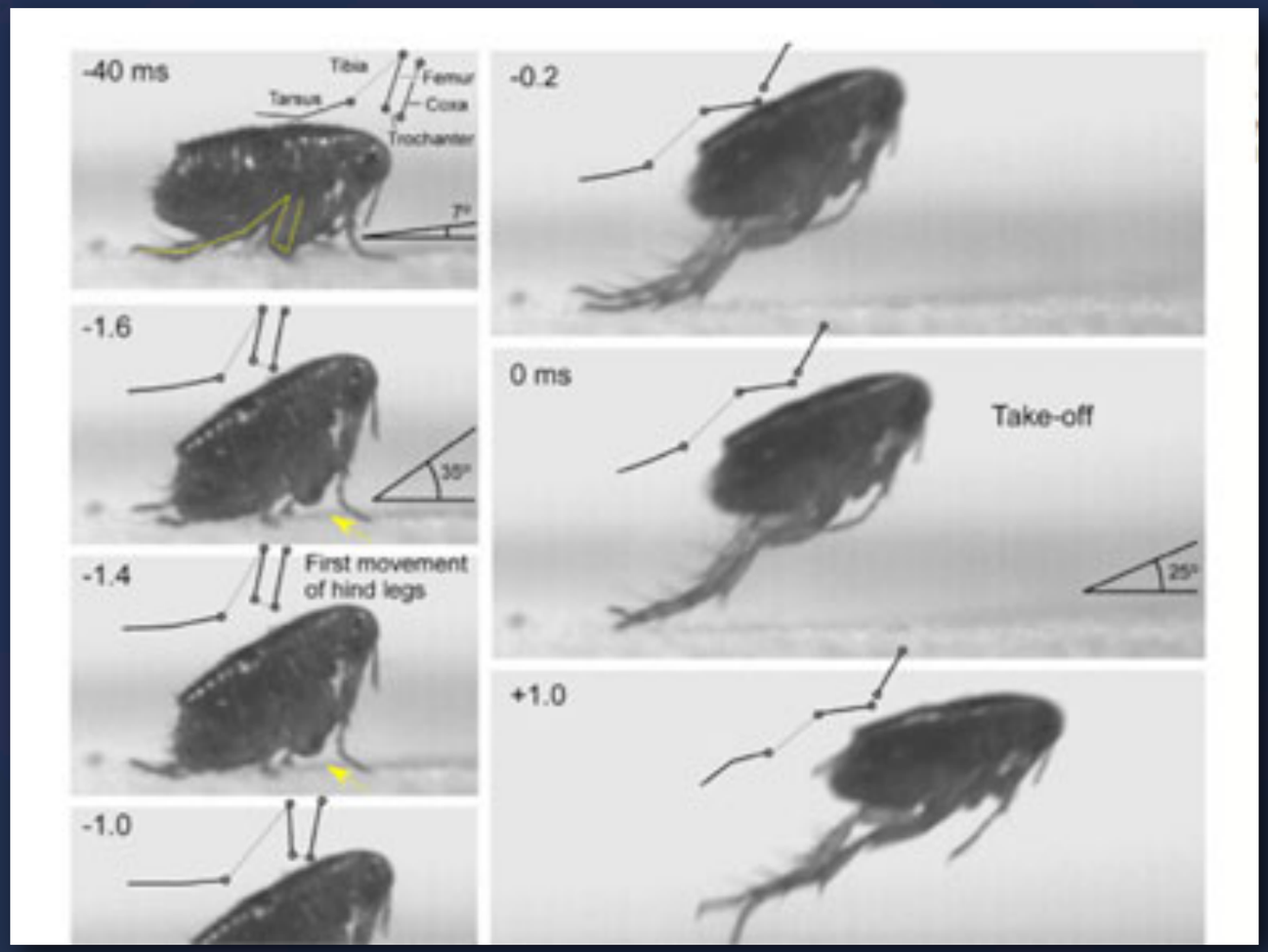
# Visual Structure

Where to start?



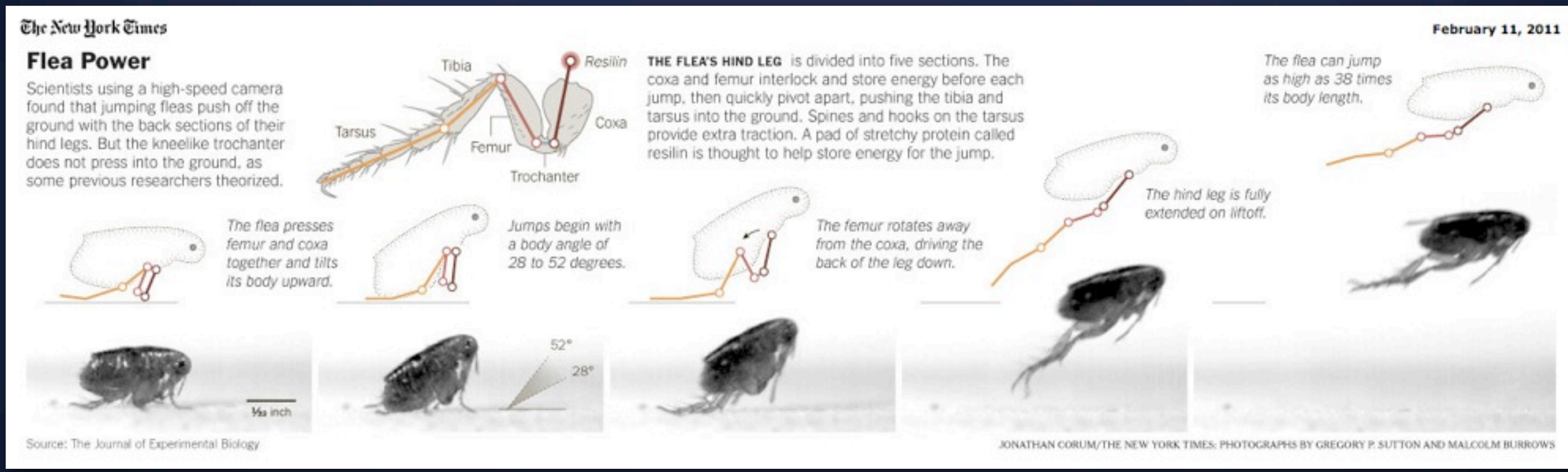
# The more linear the better

Journal of experimental biology



# The more linear the better

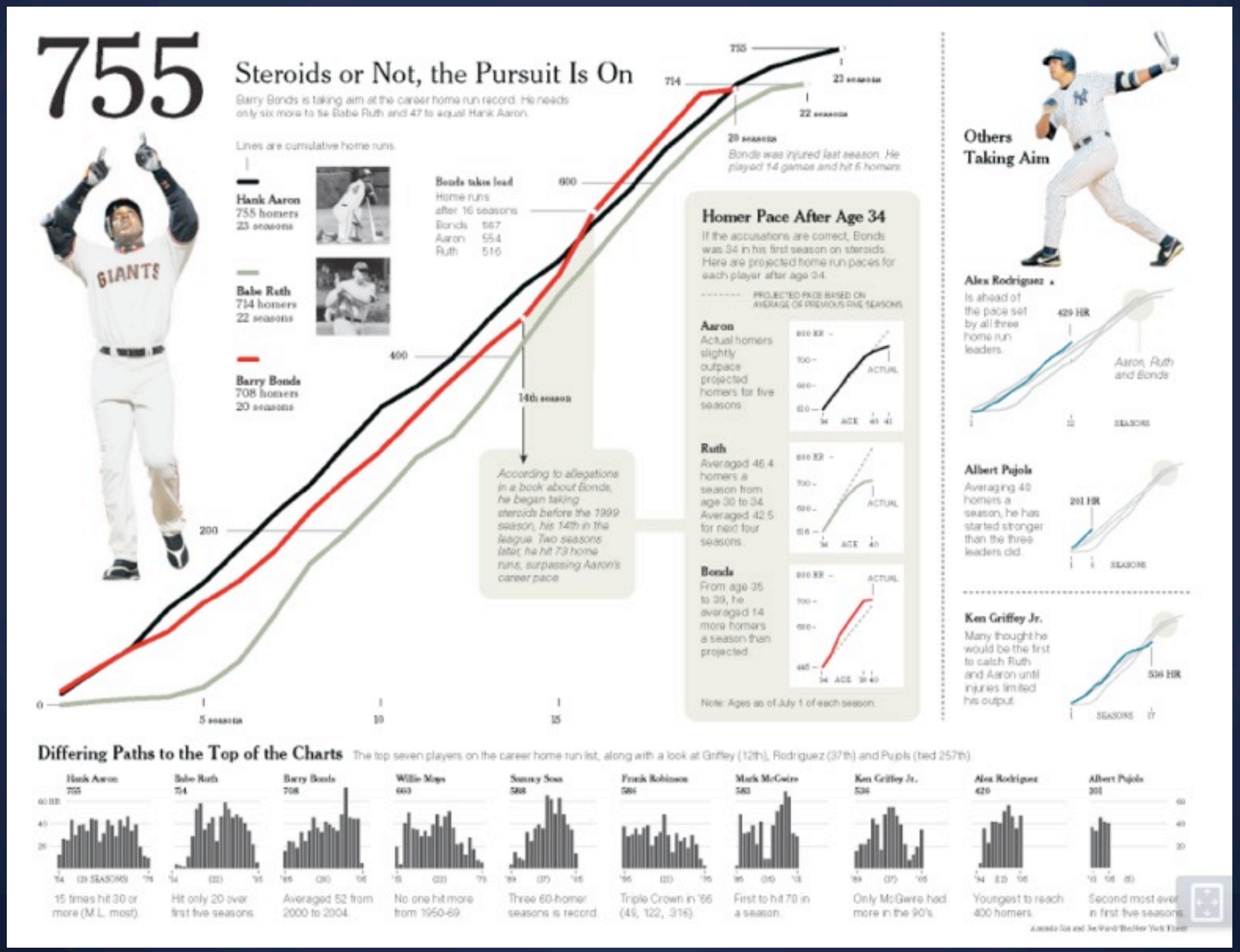
Flea Power; NY Times




http://www.nytimes.com/2011/02/15/science/15flea.html

# Visual Structure

## NY Times: Steroids or Not, the Pursuit Is On



# Visual Structure

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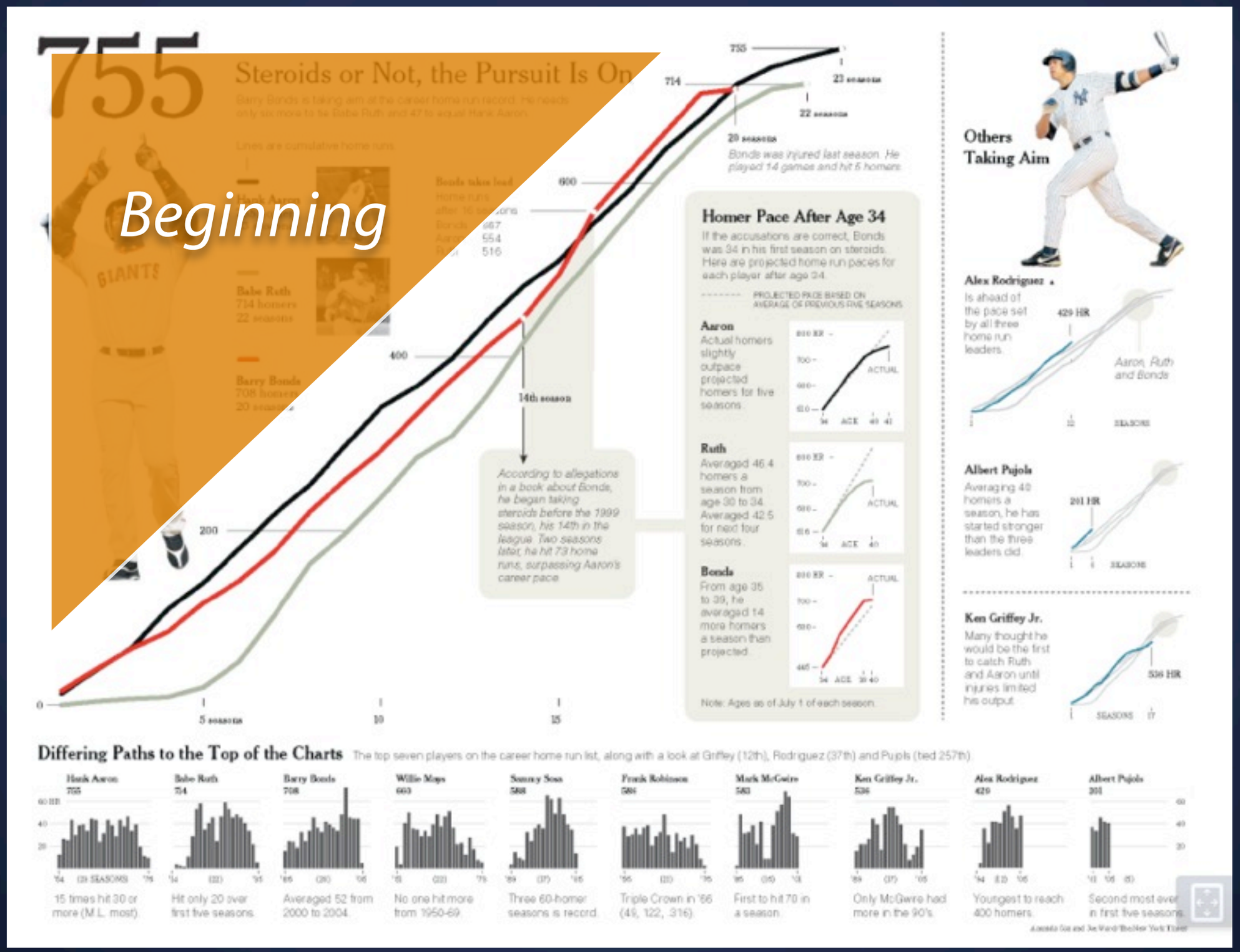

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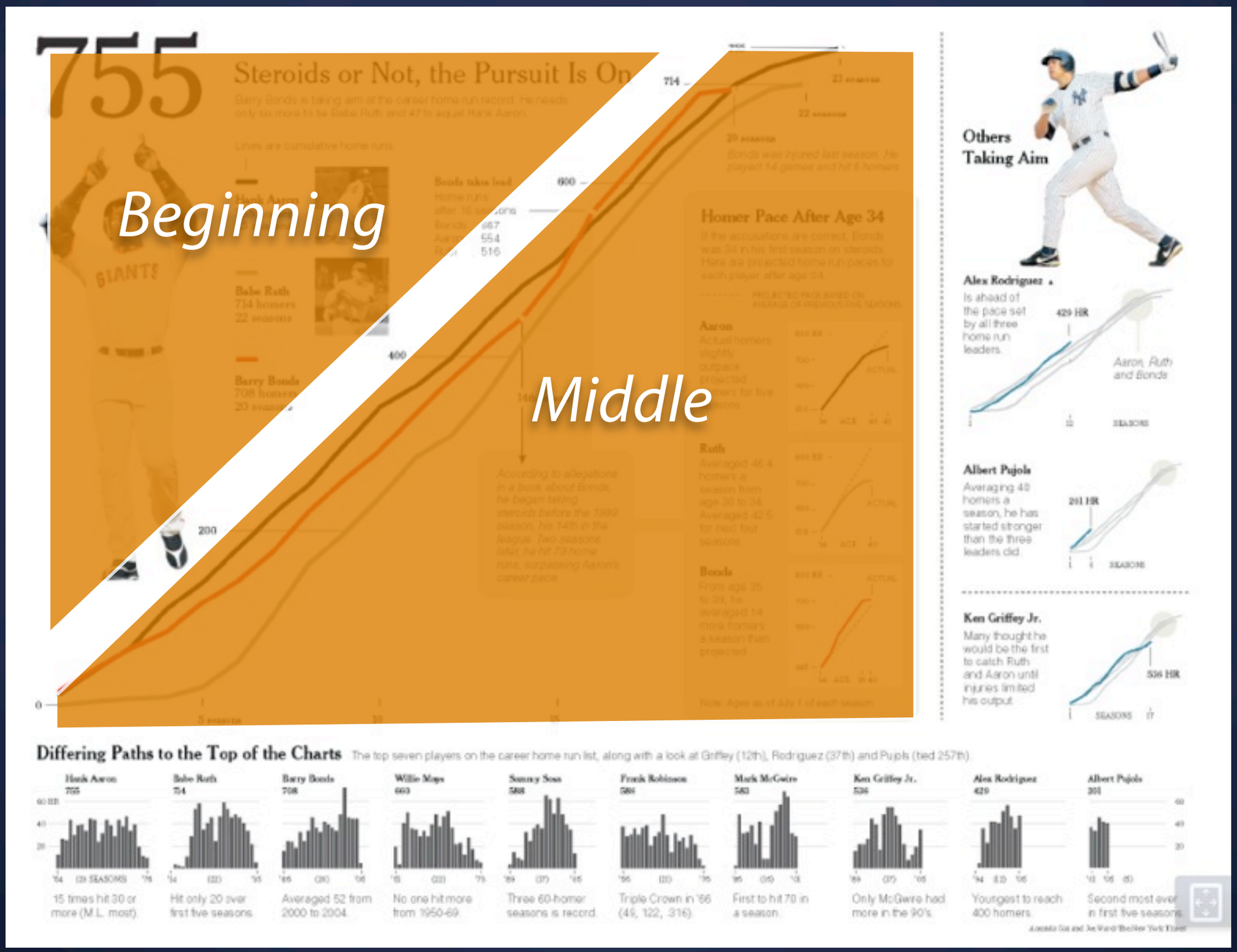
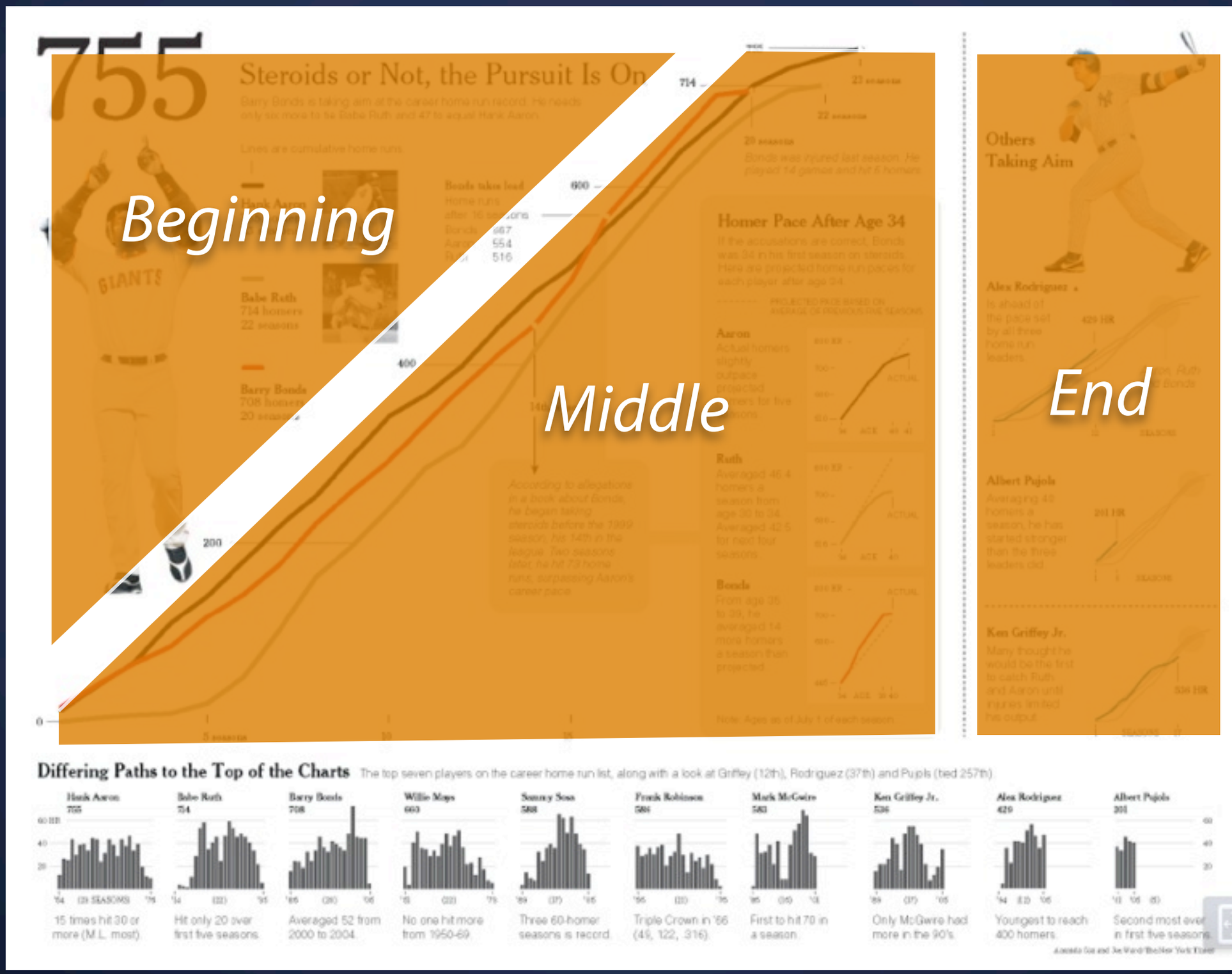


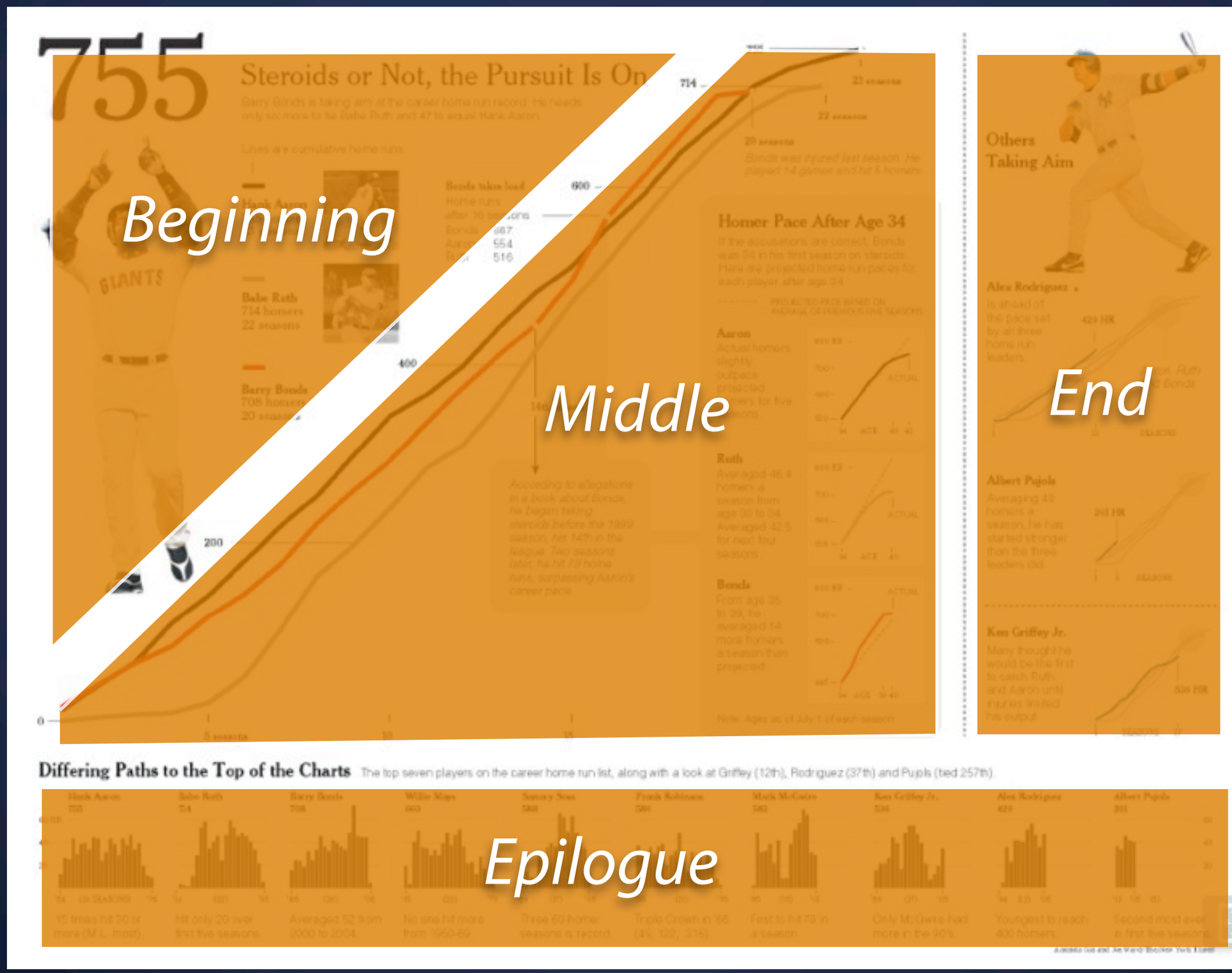
# Visual Structure

## NY Times: Steroids or Not, the Pursuit Is On



# Visual Structure

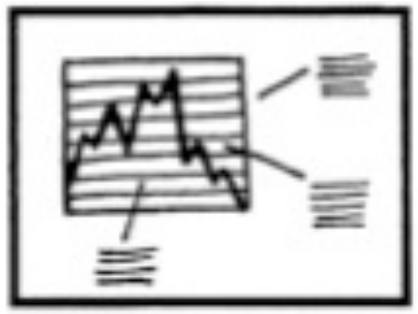
## NY Times: Steroids or Not, the Pursuit Is On



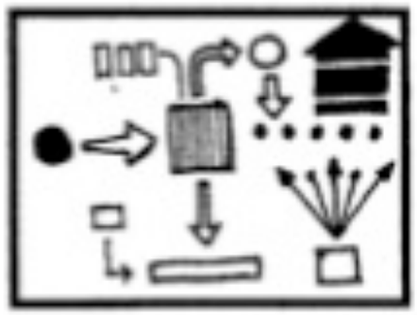
# Visual Structure: Seven Genres

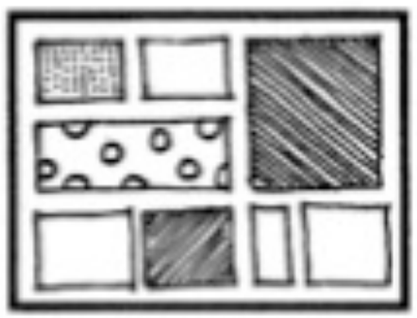
Segel and Heer, 2010

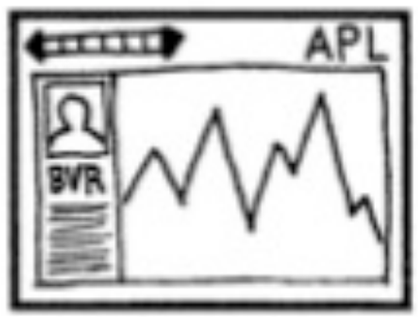
Magazine Style


Annotated Chart

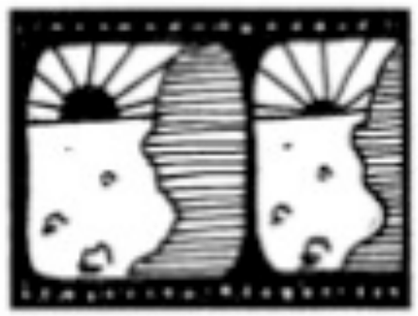
Partitioned Poster


Flow Chart


Comic Strip



Slide Show


Film/Video/Animation

# Highlighting and flow

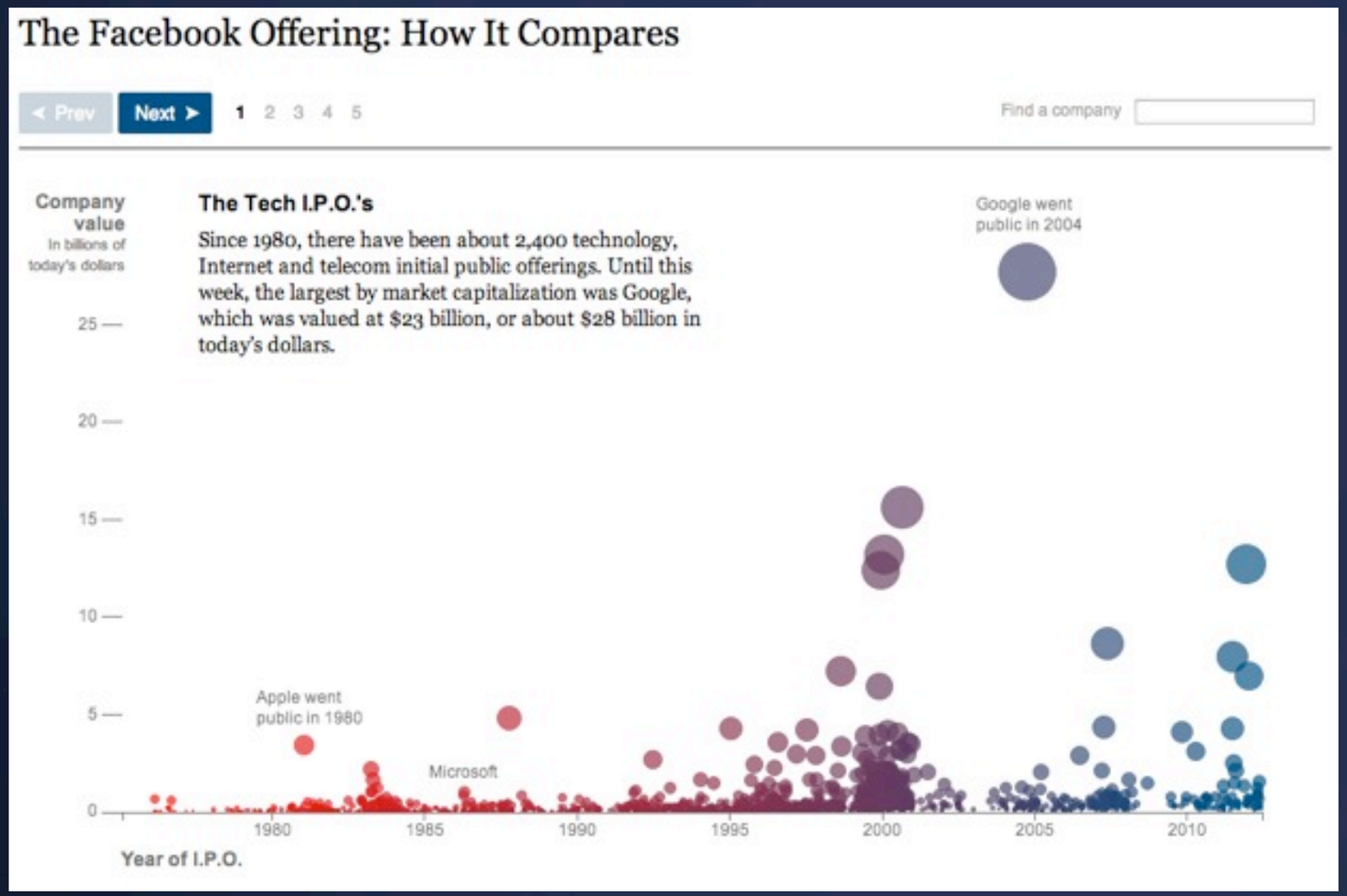
Watson and the Shark, John Singleton Copley (1778)

# Highlighting and flow

Watson and the Shark, John Singleton Copley (1778)

# Messaging

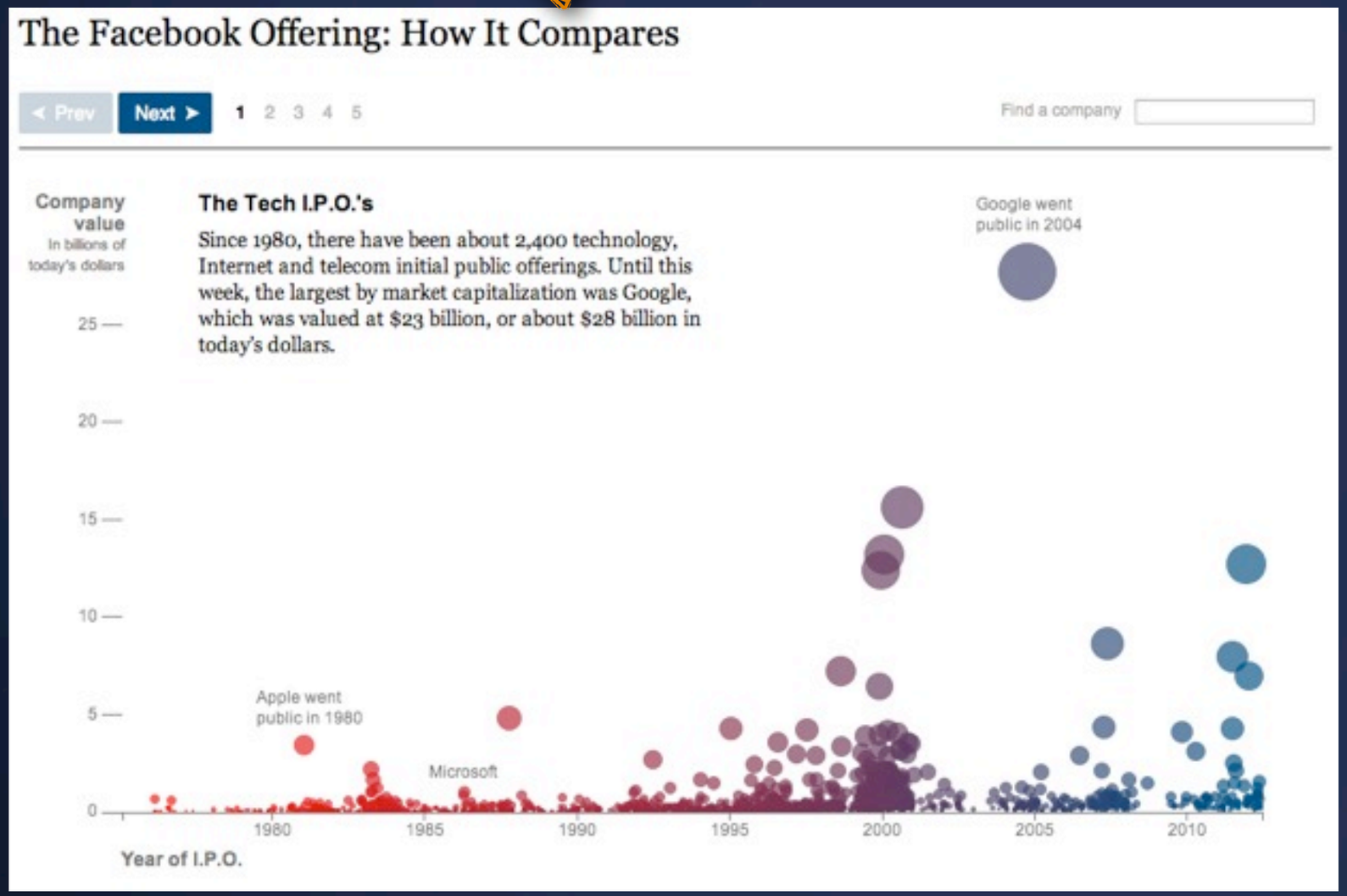
Tell the story; not JUST with visuals



# Messaging

Tell the story; not JUST with visuals

## Headline

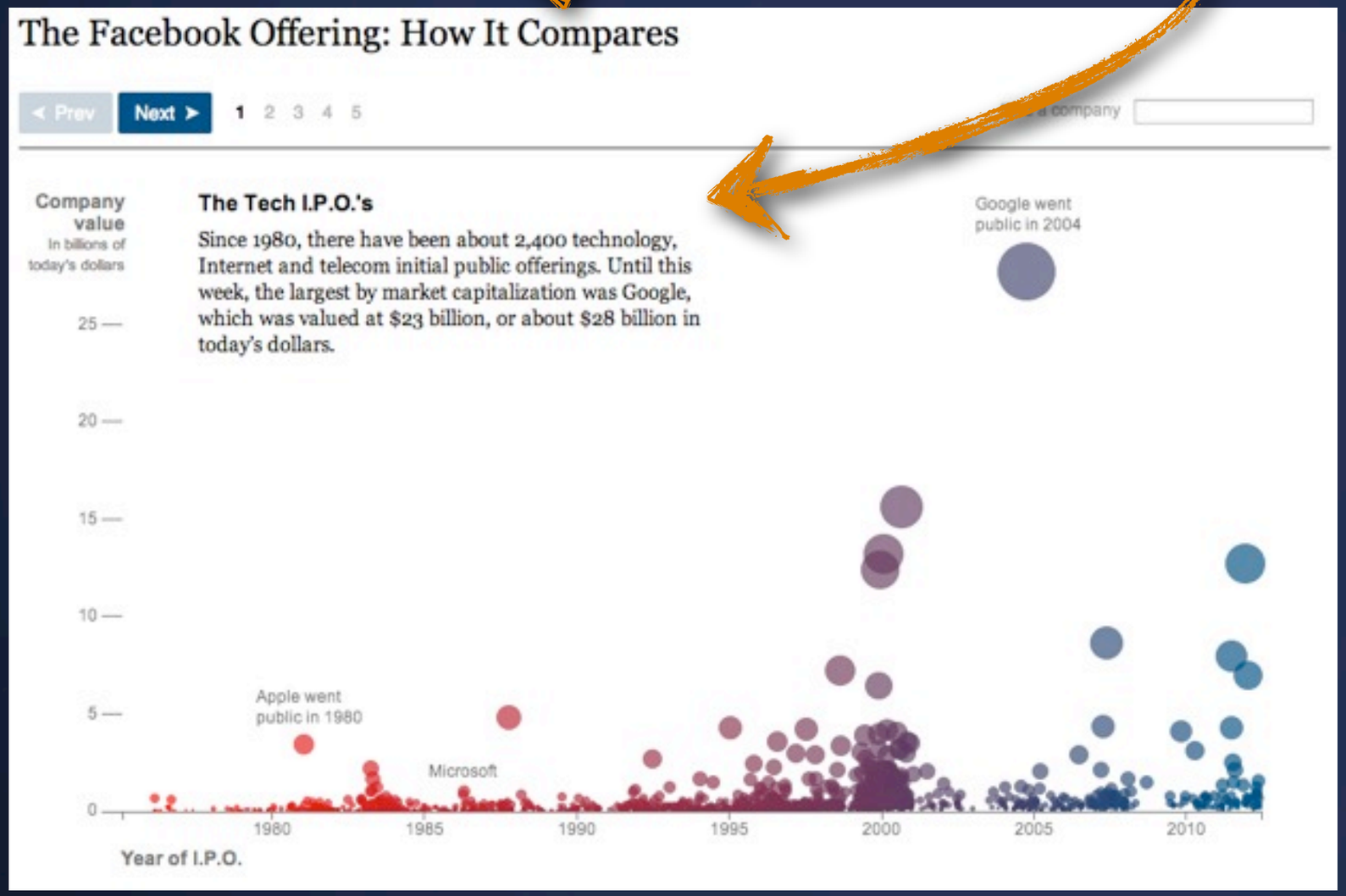


# Messaging

Tell the story; not JUST with visuals

Headline

Caption



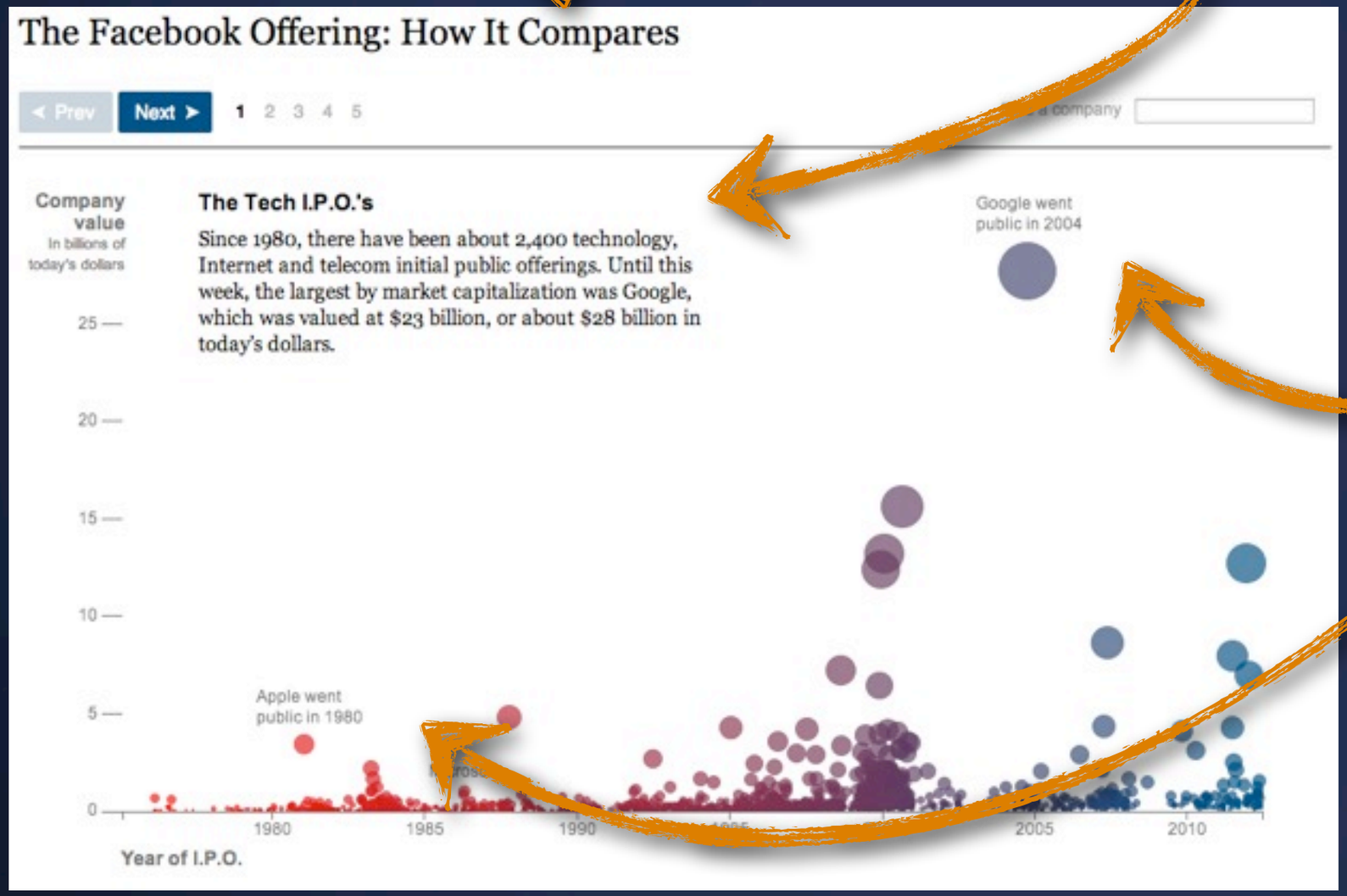
# Messaging

Tell the story; not JUST with visuals

Headline

Caption

Annotation

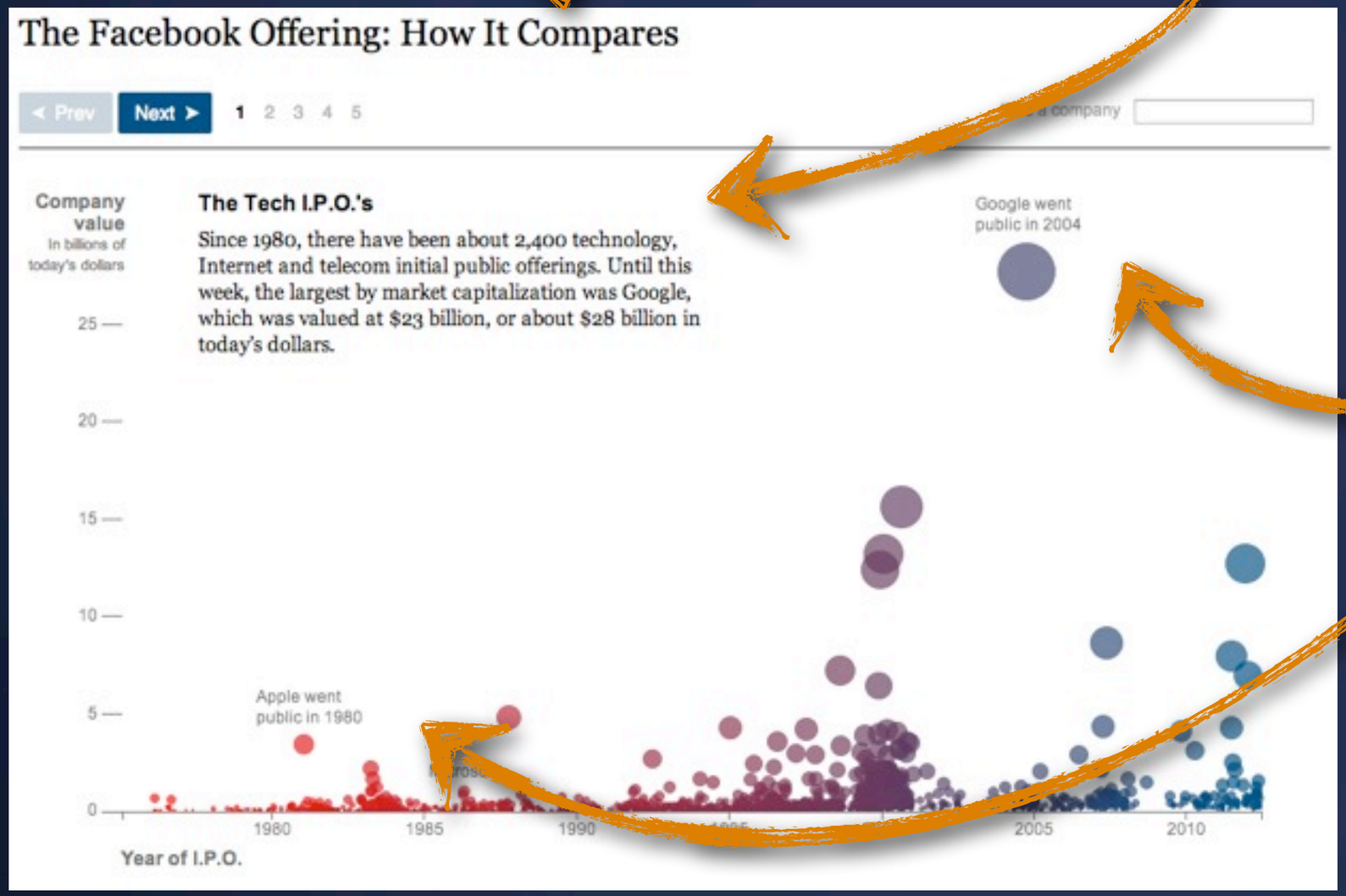


# Messaging

Tell the story; not JUST with visuals

Headline

Caption




Annotation

weave text *into* the graphic!

# Messaging?

Central America

## Out of control

TEGUCIGALPA

**In the first of two reports on the threat of rampant violence to Central America's small republics, we look at the risk of Honduras becoming a failed state**

WHEN soldiers bundled Honduras's elected president onto an aeroplane to Costa Rica in a coup in 2009, nobody believed that the Central American country would swiftly get back to normal. But even pessimists must be disappointed by what has happened. Although the constitutional crisis was resolved early in 2010 after the election as president of Porfirio Lobo and the return of Manuel Zelaya, his ousted predecessor, Honduras continues to march backwards. Gang violence, catalysed by drug trafficking, and weak law enforcement have given Honduras the highest murder rate in the world. Poor financial management and the hangover from a stop to aid after the coup have left the government struggling to pay its bills. And Congress has picked a fight with the judiciary, creating fresh constitutional strains just as the country gears up for another presidential election in November.

The scale of violence is dizzying. Last year saw 86 murders per 100,000 people according to the National Autonomous University. That was about the same as in 2011, but more than double the Central American average—itself among the highest in the world (see chart). In 2012 Honduran men in their 20s faced a 1-in-300 chance of being murdered, or 1-in-150 in the most dangerous towns.

Drug mafias, under pressure in Mexico, have set up in Honduras. In January the authorities discovered a cache of weapons, including a gold-plated AK-47, believed to belong to Mexico's "Zetas" mob. Honduras's wild coast and empty jungle provide landing points for some 40% of cocaine destined for the United States. Traffickers pay their hired help in drugs rather than cash, creating a local market and the mayhem than goes with it. Some of the violence comes from gangs known as *maras*, which migrants form in jails in the United States and remain members of in Central America after they are deported.

Then there are seemingly targeted assassinations. At least 25 journalists, including eight last year, have been killed since the coup. Some members of the opposition have accused the government of snuffing out dissent. But Robert Marin, a reporter on *El Heraldo*, a newspaper, who has himself received threats, points out that journalists of all political stripes (and none) have been victims. So, too, have gay-rights campaigners—at least eight were killed last year—and lawyers, 15 of whom were murdered. However, these are by no means the people most at risk: some 60 taxi drivers were killed in 2012, in many cases following extortion attempts, and about 70 police. Last month the teenage son of a former police chief was shot dead.

The underlying problem is that few of the killings are investigated, let alone punished. Even as Honduras's murder rate has doubled, the number of police has fallen, from about 14,000 in 2009 to 13,000 now. Many supplement their $400 monthly wages by charging a "war tax" on citizens. A vetting programme begun in August tested 1,231 officers by the end of the year, firing 281 of them. A farther 450 left voluntarily. The remainder are due to be vetted this year, and a thousand more recruited annually until the force reaches 20,000. Training time has been doubled, to 12 months.

**Killing fields**

Murders per 100,000 people




Source: UNODC; national statistics

It will take a decade fully to restore faith in the police, which had "fallen into total discredit", admits Héctor Mejía, the force's spokesman. The army patrols with the police in Tegucigalpa, the capital, and in the northern city of San Pedro Sula, as part of an "emergency" measure renewed three times since it was introduced in 2011.

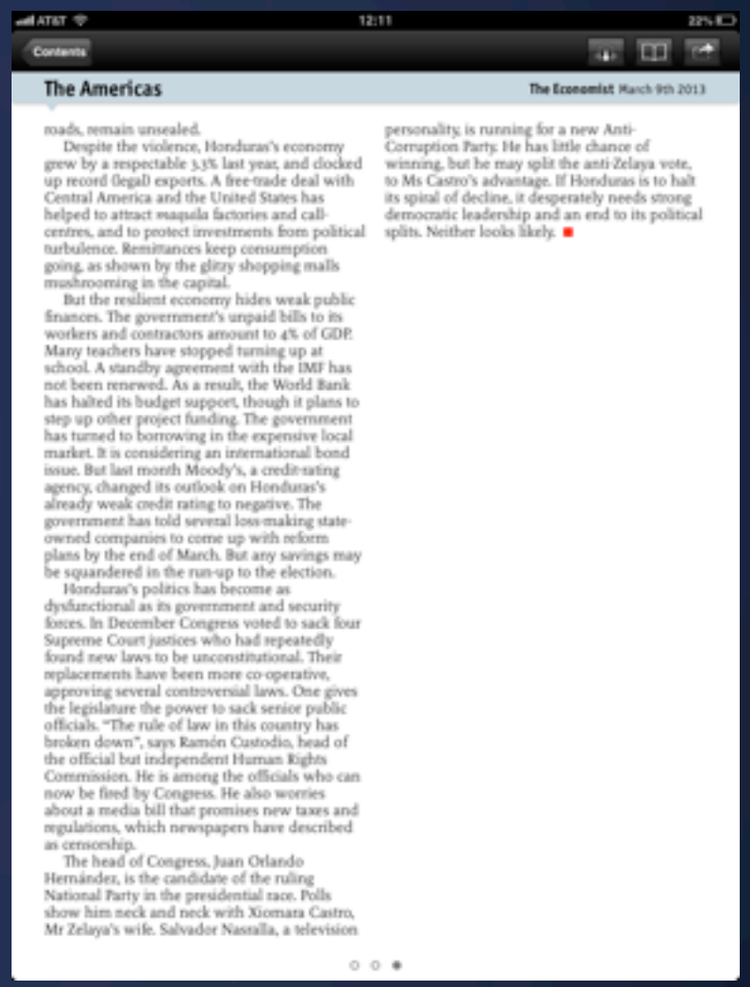
Many Hondurans are taking protective measures into their own hands. In Villa Cecilia, a small working-class suburb of mechanics, seamstresses and policemen in Tegucigalpa, residents pay 700 lempiras ($35) per household per month to employ four security guards with shotguns. Next will come CCTV, an entry-phone system and a bigger perimeter wall. "If you want to sleep well, you have to pay", shrugs Jiovanny Aguilera, a taxi driver whose home is protected by two metal doors, barbed wire, and a pair of large dogs. The city government has encouraged such barrios seguros, permitting residents to block off their streets. The poorest districts, built on steep hillsides lacking formal roads, remain unsealed.

Despite the violence, Honduras's economy grew by a respectable 3.3% last year, and clocked up record (legal) exports. A free-trade deal with Central America and the United States has helped to attract maquila factories and call-centres, and to protect investments from political turbulence. Remittances keep consumption going, as shown by the glitzy shopping malls mushrooming in the capital.

But the resilient economy hides weak public finances. The government's unpaid bills to its workers and contractors amount to 4% of GDP. Many teachers have stopped turning up at school. A standby agreement with the IMF has not been renewed. As a result, the World Bank has halted its budget support, though it plans to step up other project funding. The government has turned to borrowing in the expensive local market. It is considering an international bond issue. But last month Moody's, a credit-rating agency, changed its outlook on Honduras's already weak credit rating to negative. The government has told several loss-making state-owned companies to come up with reform plans by the end of March. But any savings may be squandered in the run-up to the election.

Honduras's politics has become as dysfunctional as its government and security forces. In December Congress voted to sack four Supreme Court justices who had repeatedly found new laws to be unconstitutional. Their replacements have been more co-operative, approving several controversial laws. One gives the legislature the power to sack senior public officials. "The rule of law in this country has broken down", says Ramón Custodio, head of the official but independent Human Rights Commission. He is among the officials who can now be fired by Congress. He also worries about a media bill that promises new taxes and regulations, which newspapers have described as censorship.

The head of Congress, Juan Orlando Hernández, is the candidate of the ruling National Party in the presidential race. Polls show him neck and neck with Xiomara Castro, Mr Zelaya's wife. Salvador Nasralla, a television personality, is running for a new Anti-Corruption Party. He has little chance of winning, but he may split the anti-Zelaya vote, to Ms Castro's advantage. If Honduras is to halt its spiral of decline, it desperately needs strong democratic leadership and an end to its political splits. Neither looks likely. ■



# Interactivity

Give visual cues

Animation

# Interactivity

Give visual cues

Animation

# Interactivity

Give visual cues

Animation

“Tacit Tutorials”

# Interactivity

Give visual cues

Animation

“Tacit Tutorials”

# Edit!

*Always ask yourself:*
"Does this help telling the story?"

Scissors designed by Monika Ciapala from The Noun Project

# Edit!

*Always ask yourself:*
"Does this help telling the story?"

If the answer is no:

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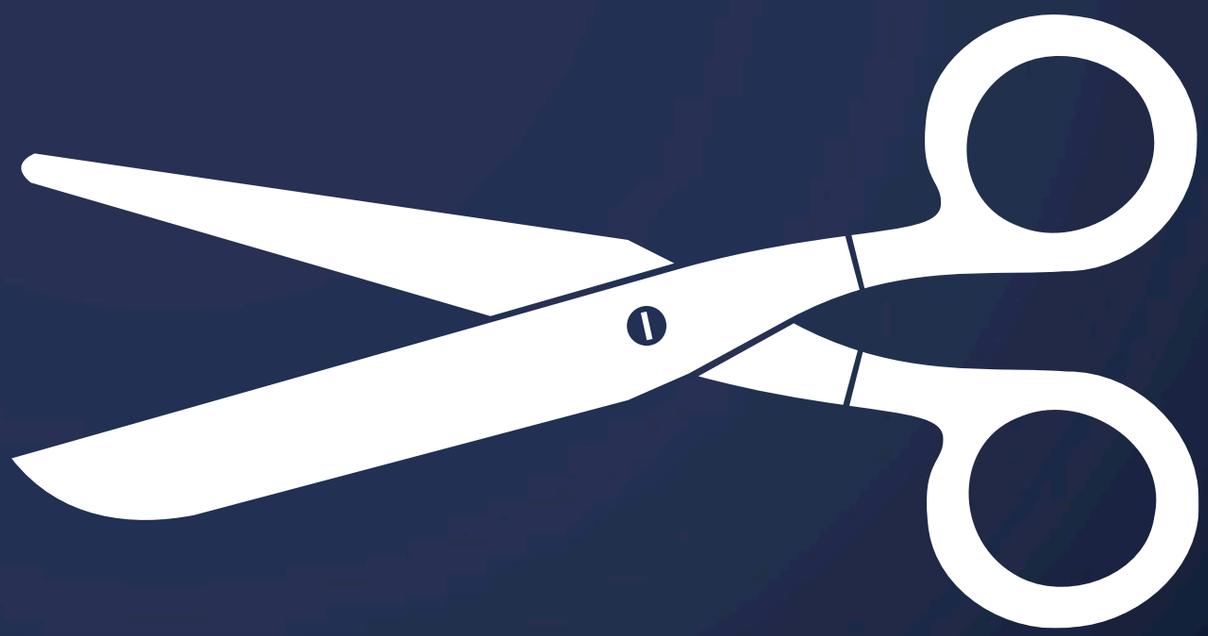

Scissors designed by Monika Ciapala from The Noun Project

# Storytelling with data

Recent presentation

Check it out!

http://style.org/tapestry/

# Recap

# Final Project

## Start thinking about your project and team

# Next Lecture

## Effective Visualizations (More tips!)

# Next Lab

## Storytelling