

# CS 109: Data Science Presentations

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A blurry, low-light photograph of a person's hands holding a smartphone horizontally. The screen of the phone displays a presentation slide with the text "EVERY PRESENTATION EVER" in large, white, sans-serif capital letters. The background is dark and out of focus.

EVERY PRESENTATION EVER

# Results of the 2015 Annoying PowerPoint Survey

The speaker read the slides to us

71.7%

Full sentences for text

48.6%

Text too small to read

47.7%

Visuals too complex

36.9%

# Results of the 2015 Annoying PowerPoint Survey

**much long busy use**  
**Death another one**  
**deck cluttered death one**  
**audience texts story Wordy**  
**understand PPT info hate purpose**  
**Deck add right understand PPT notes**  
**summary need tool per colors**  
**time work speakers make**  
**easy clear confusing**  
**Necessary Speaker Get helpful**  
**read**  
**many point**  
**words get unclear**  
**small see**  
**choice template clever lack**  
**good hard**  
**Great material way less design**  
**for better better way**  
**less design**  
**Easy fit next tell**  
**next sorry**  
**informative detail**  
**overkill send poor go**  
**short concise**  
**informative detail**  
**bad like**  
**Good Waste thing**  
**Bad Hard graphs**  
**content**  
**read**  
**information**  
**text**  
**just**  
**Confusing**  
**interesting**  
**complicated fonts**  
**graphics**  
**great chart**  
**Pointless**  
**boring**

# Death by PowerPoint



A man with white hair and glasses, wearing a dark suit and light blue shirt, stands on a stage. He is looking towards the right. Behind him is a choir of approximately 15 people, mostly women, dressed in dark clothing, singing. The stage has a dark background with some blue lighting.

APRIL 2013

NEW YORK NEW YORK

Sir Ken Robinson, <http://www.ted.com/>

# Clarity

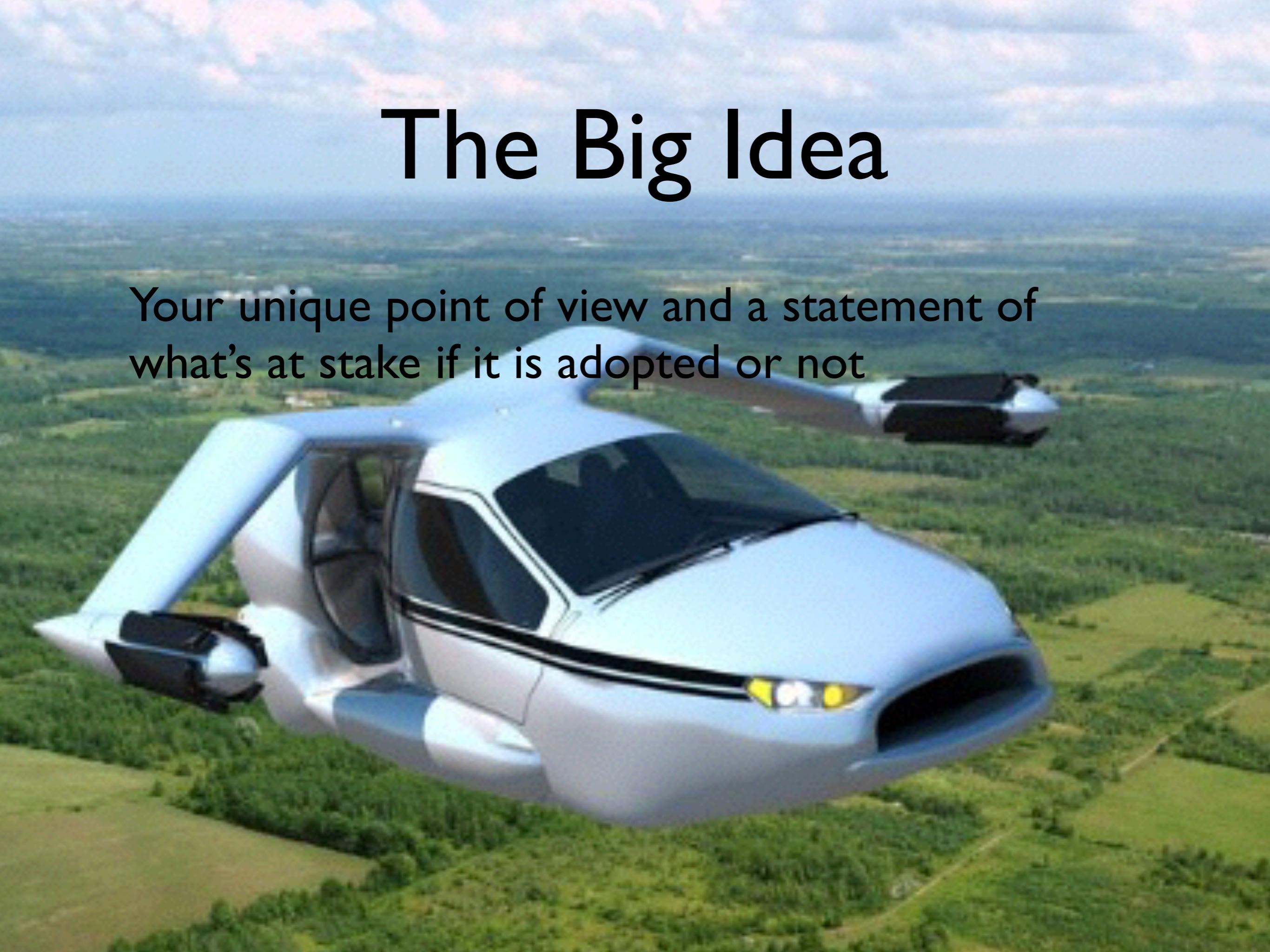
- Clarity of Message
- Clarity of Slides
- Clarity of Delivery

# I. Message

- Where do you want the audience to be?
- Where are they now?
- What is the best route to get them from here to there?

# The Big Idea

Your unique point of view and a statement of what's at stake if it is adopted or not



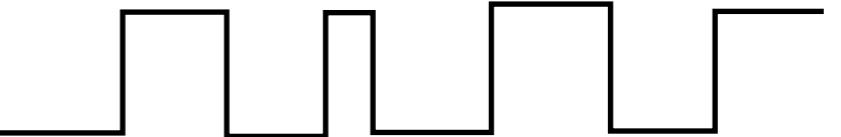


Steve Jobs, 2007



# Telling a Story

- Problem - Pathway - Solution
- Problem - Solution - Reasoning
- The Hero's Journey (cf. Star Wars)
- What is vs. What could be
- ...



# Telling a Story

Memorable Opening

Technical Nugget 1

I. More detail / 2. More detail / 3. More detail

Technical Nugget 2

I. More detail / 2. More detail / 3. More detail

Technical Nugget 3

I. More detail / 2. More detail / 3. More detail

Memorable Closing

# 2. Slides

- Avoid:

- spelling errors
- colors that are hard to see

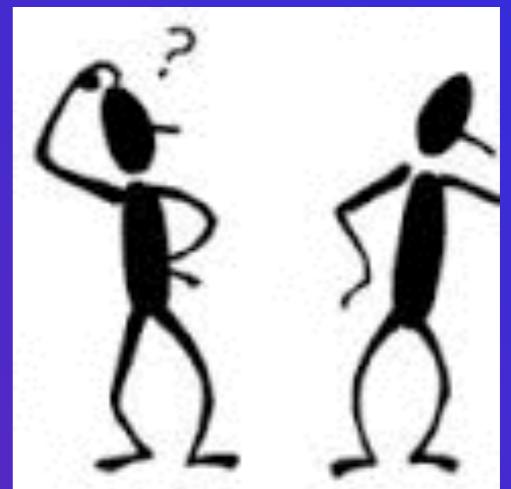
- fonts that are too small or hard to read

- LOW QUALITY FUZZY IMAGES

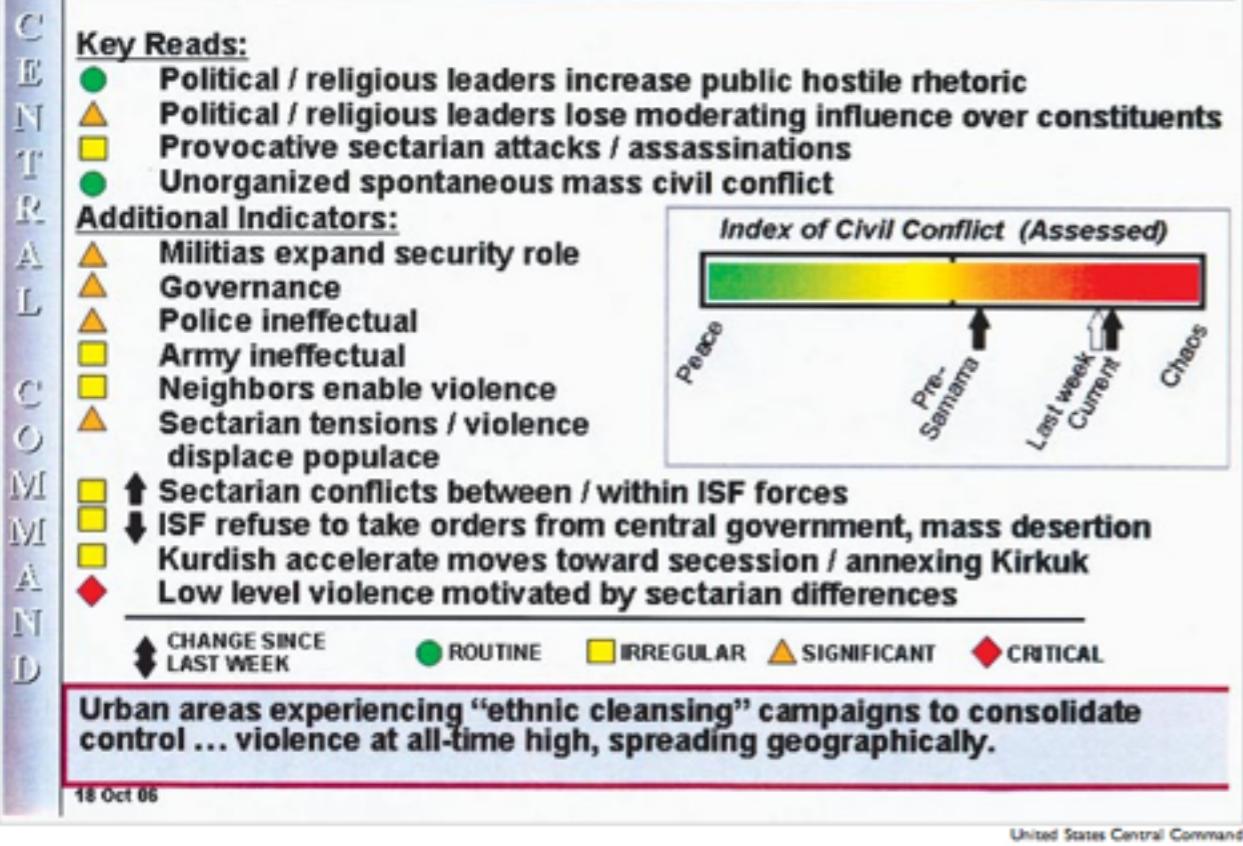


- clipart

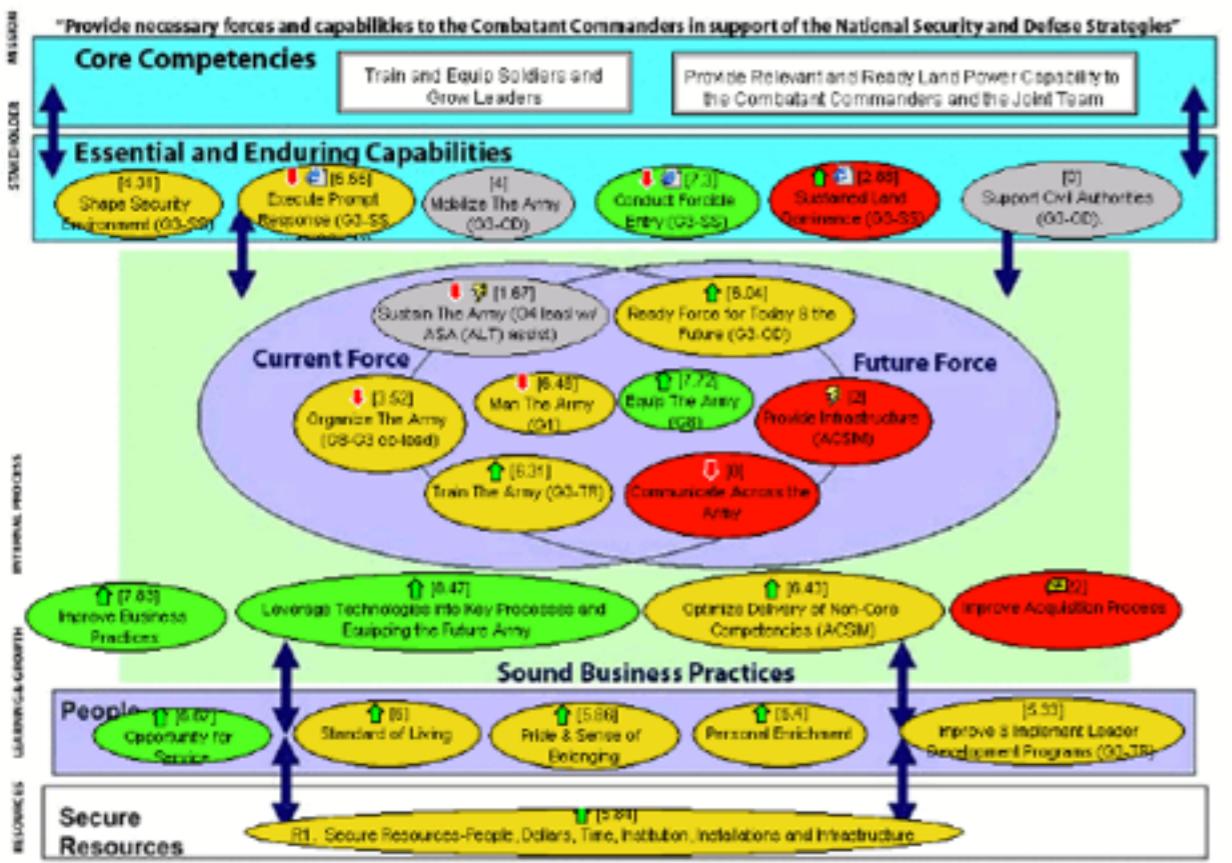
- misaligned images



## Iraq: I&W of Civil Conflict



### Strategy Map for US Army/Army/Army Scorecard : Dec-03



## VII. Maximizing Average Local Consistency

- Algorithm 7.4: find consistent labelings when the matrix of compatibilities is symmetric

Initialize

1) Start with an initial labeling assignment  $\bar{\beta}^0 \in \mathbb{K}$ .

Set  $k = 0$ .

Loop until a stop is executed:

2) Compute  $\bar{q}^k = \frac{1}{2} \text{grad } A(\bar{\beta}^k)$ .

3) Use the algorithm in Appendix A, with  $\bar{\beta} = \bar{\beta}^k$ ,  $\bar{q} = \bar{q}^k$ , to find the solution  $\bar{u}^k$  to Problem 7.1.

4) If  $\bar{u}^k = 0$ , stop.

5) Set  $\bar{\beta}^{k+1} = \bar{\beta}^k + h\bar{u}^k$ , where  $0 < h \leq \alpha_k$  is determined so that  $\bar{\beta}^{k+1} \in \mathbb{K}$ . The maximum step size  $\alpha_k$  is some predetermined small value, and may decrease as  $k$  increases to facilitate convergence.

6) Replace  $k$  by  $k + 1$ .

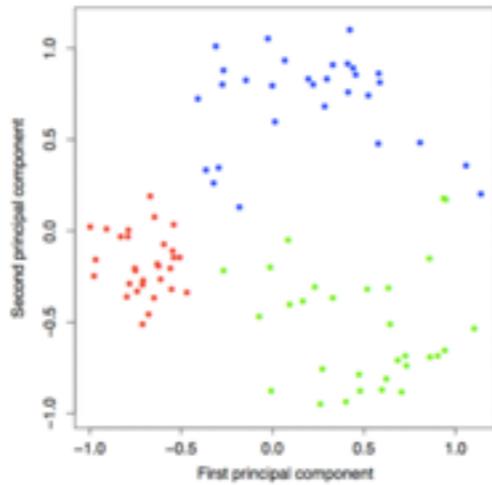
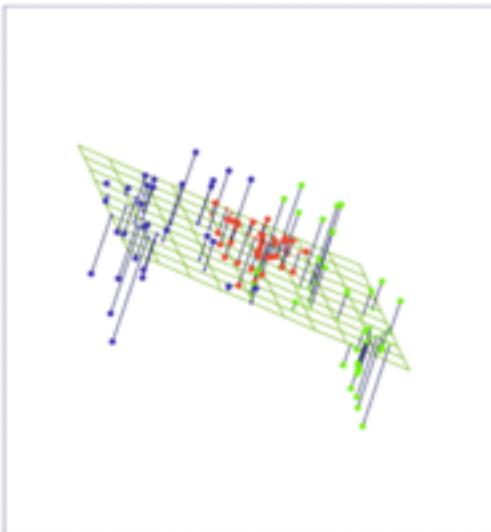
End loop. □

Successive iterates are obtained by moving a small step in the direction of the projection of the gradient

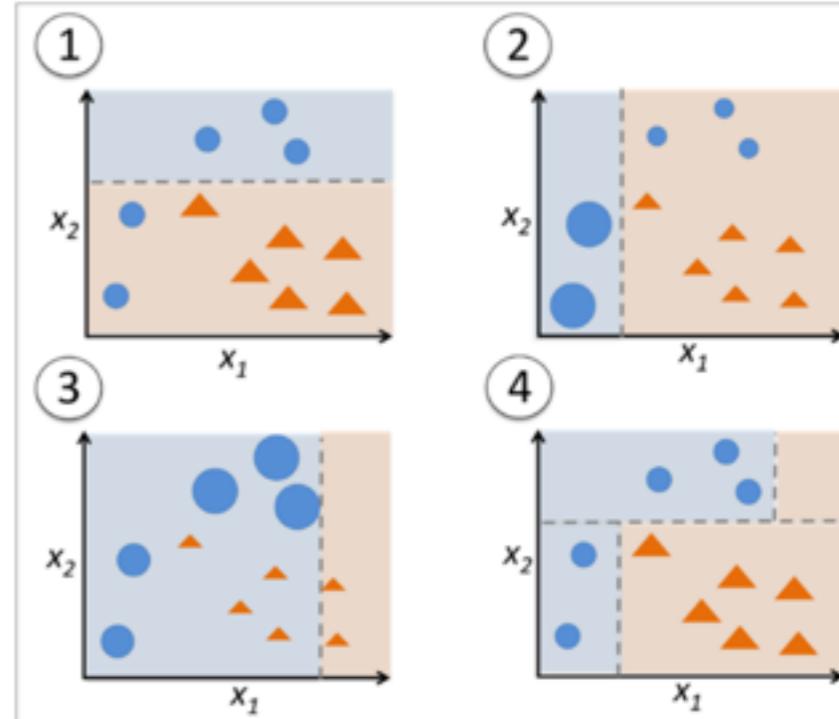
Algorithm stops when the projection  $\bar{q} = 0$

# Visualize Ideas

## Dimensionality Reduction

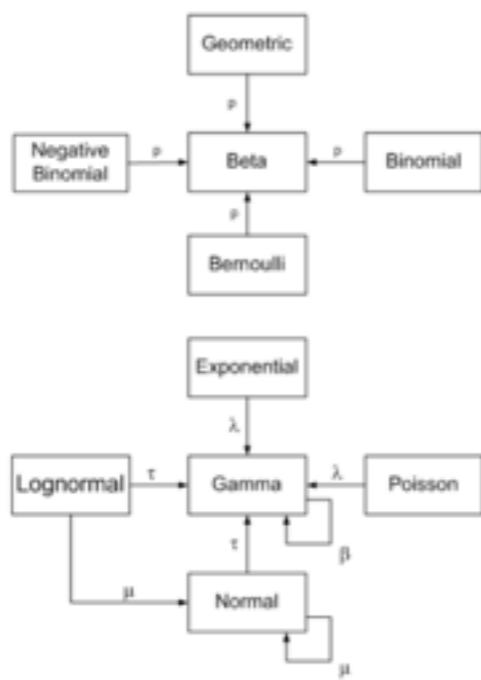


Hastie et al., "The Elements of Statistical Learning: Data Mining, Inference, and Prediction", Springer (2009)



Raschka, Python Machine Learning

## Conjugate Priors



[http://www.johndcook.com/conjugate\\_prior\\_diagram.html](http://www.johndcook.com/conjugate_prior_diagram.html)

## MCMC as mountain exploration



vs.



<http://healthyalgorithms.com/2010/03/12/a-useful-metaphor-for-explaining-mcmc/>

# 3. Delivery



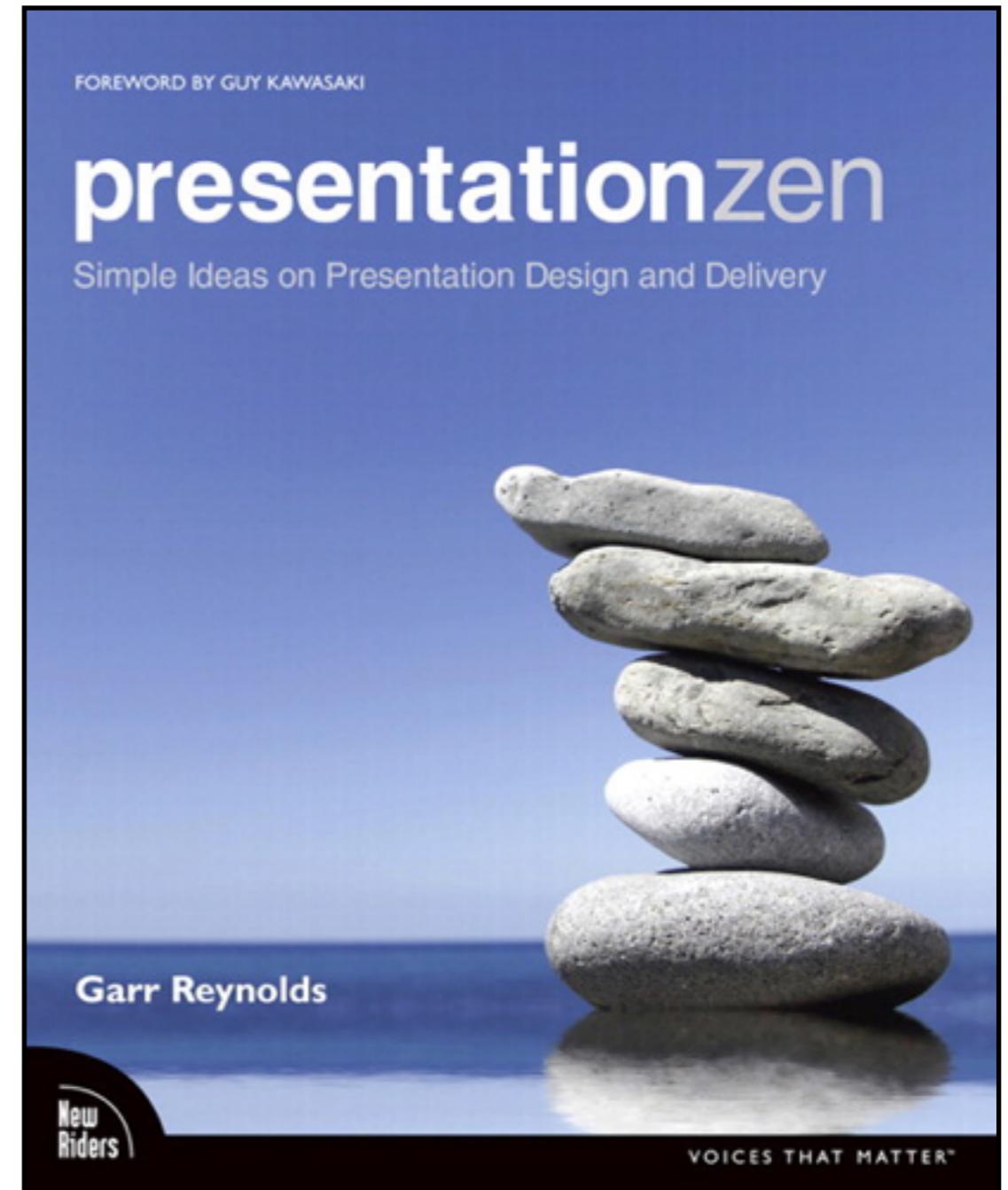
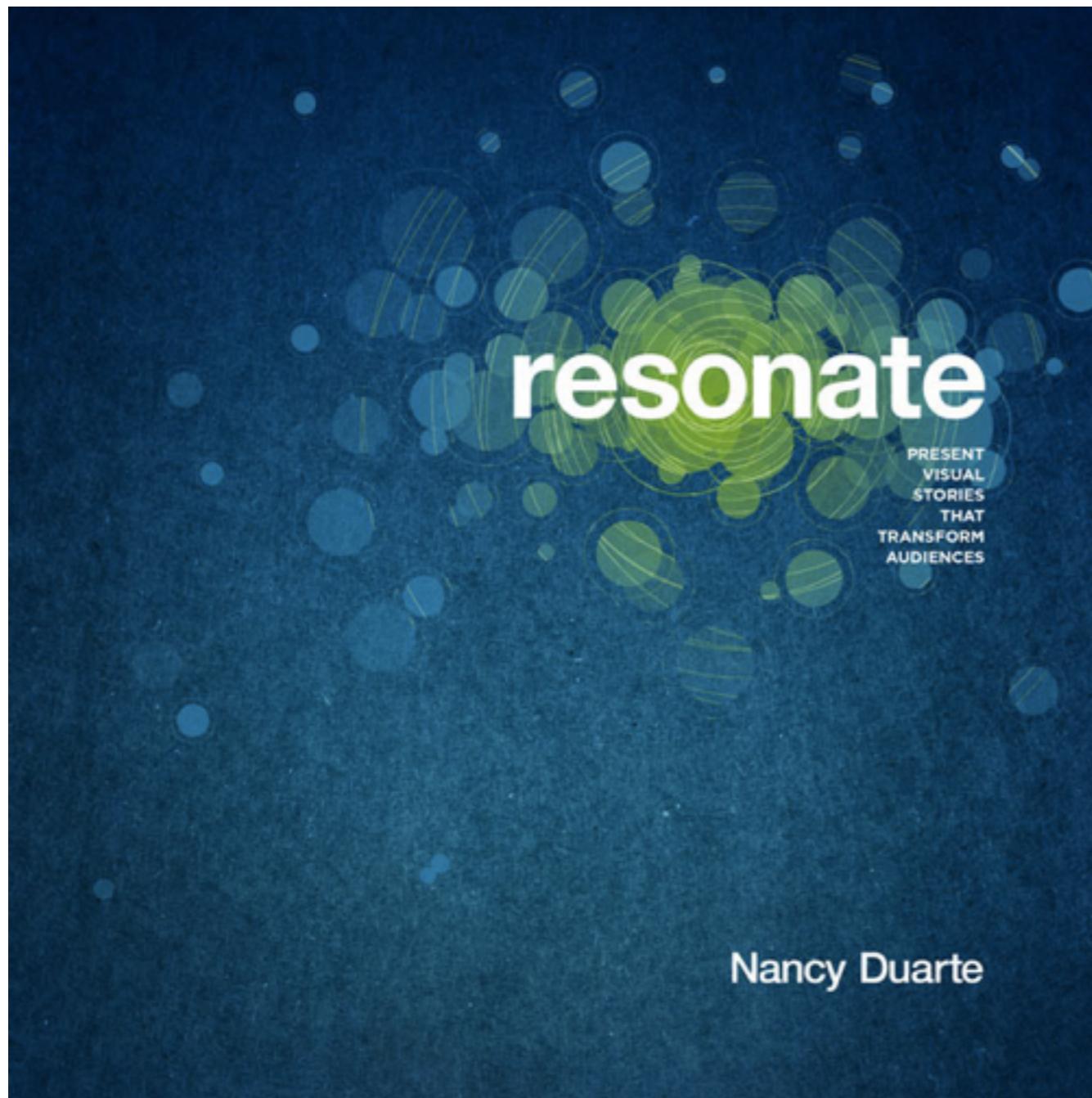


STEINWAY & SONS

Benjamin Zander, <http://www.ted.com/>

Make People's Eyes  
Shine

# Further Reading



# Further Reading

- Alexei Kaptelev, Death by Powerpoint  
<http://www.slideshare.net/thecroaker/death-by-powerpoint>
- Kayvon Fatahalian, Tips for Clear Talks  
<http://www.cs.cmu.edu/~kayvonf/misc/cleartalktips.pdf>
- Rebecca Schumann, PowerPointless  
[http://www.slate.com/articles/life/education/2014/03/powerpoint\\_in\\_higher\\_education\\_is\\_ruining\\_teaching.html](http://www.slate.com/articles/life/education/2014/03/powerpoint_in_higher_education_is_ruining_teaching.html)