



# Human Error & How to Give a Talk

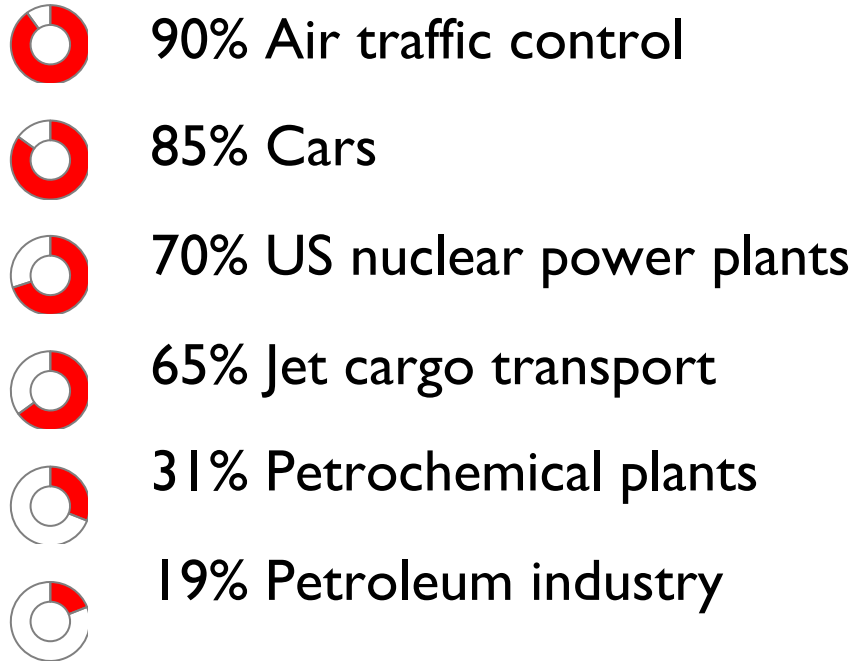
Eliot Winer

## Session 3

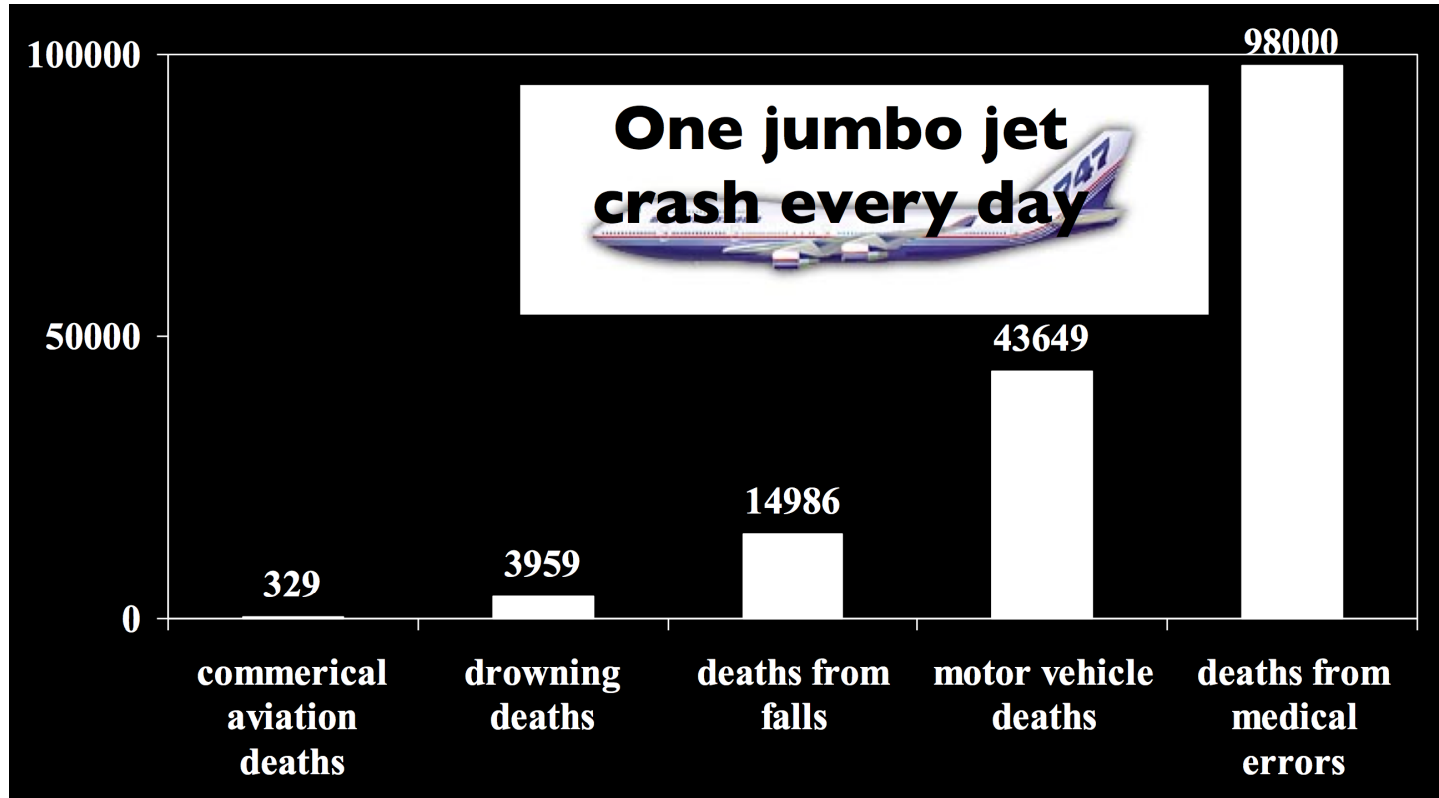
# Human Error

Some slides from Sarah Wiseman, Sandy Gould | University College London

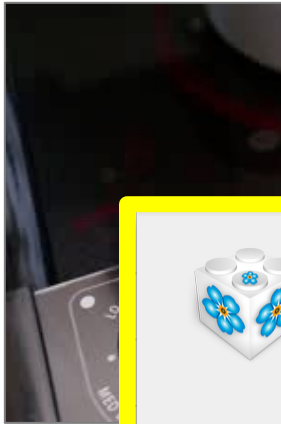
# Proportion of system failures based on human error



Instead of on:  
*Bad design*  
*Maintenance issues*  
*Management issues*



# Error: intenti



Budget Report

Send message


To: boss@company.com

Cc:

Bcc:

Subject: Budget Report

From: Stephen Gilbert <g...> Signature: None



**ForgetMeNot Attachment Reminder**

You mentioned 'attach' in your email message, but no attachment is present.

Cancel Add attachment... Send anyway

# Probabilistic Risk Assessment

$$R = P_E \times \sum_i (P_i | E \times C_i)$$

$P(\text{consequence})$  =  $P(\text{opportunity})$  × of Cost of the  
of an Event  $P(\text{error given opportunity})$  × consequence  
given the event  $P(\text{no correction in time given error})$

Related to Failure Modes and Effects Analysis (FMEA)

# Challenges with probabilistic approach

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Getting the probabilities for human perceiving, responding, deciding, etc.

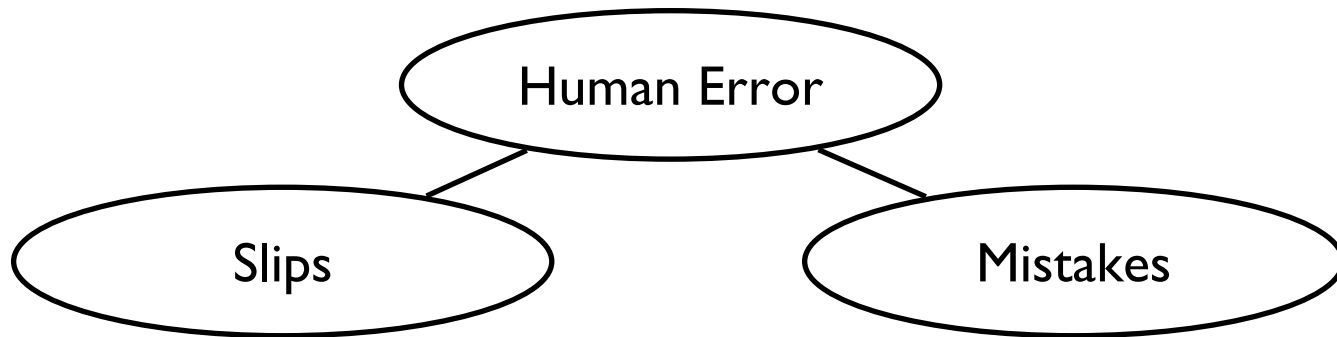
Estimating probabilities of rare or unexpected events

It assumes many events are independent, but they're not.

**Resilience Engineering**

# Types of Errors





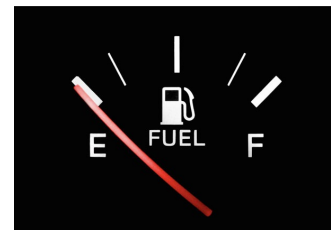
Right plan.  
Wrong execution.

Wrong plan.  
Right execution.

*I should take  
my umbrella  
tomorrow.*



*The grocery is  
right next to the  
gas station. I'll  
do shopping  
first.*

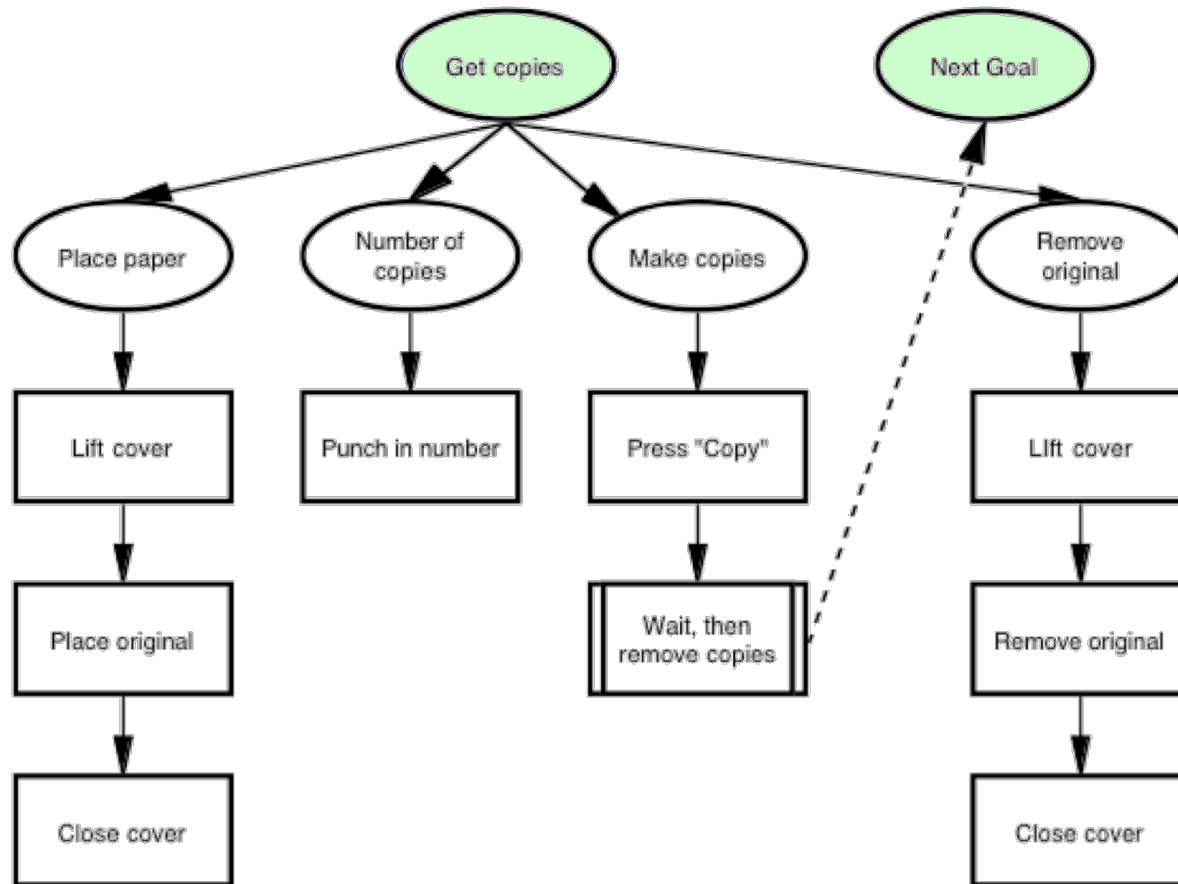


# Post-Completion Errors

Forgetting the final subgoal of a task because primary goal is reached.

Byrne, M. D., & Bovair, S. (1997). A working memory model of a common procedural error. *Cognitive Science*, 21, 31-61.

Chung, P. H., & Byrne, M. D. (2008). Cue effectiveness in mitigating postcompletion errors in a routine procedural task. *International Journal of Human-Computer Studies*, 66(4), 217-232.



# Design Implications

Remove possibility for post-completion errors.

If not feasible...

Provide very strong cues:

Explicit

Timely

Visually salient

# Design Implications 2: Resilience

Aid recovery

Make actions reversible

Make results of each action noticeable within 150 ms.

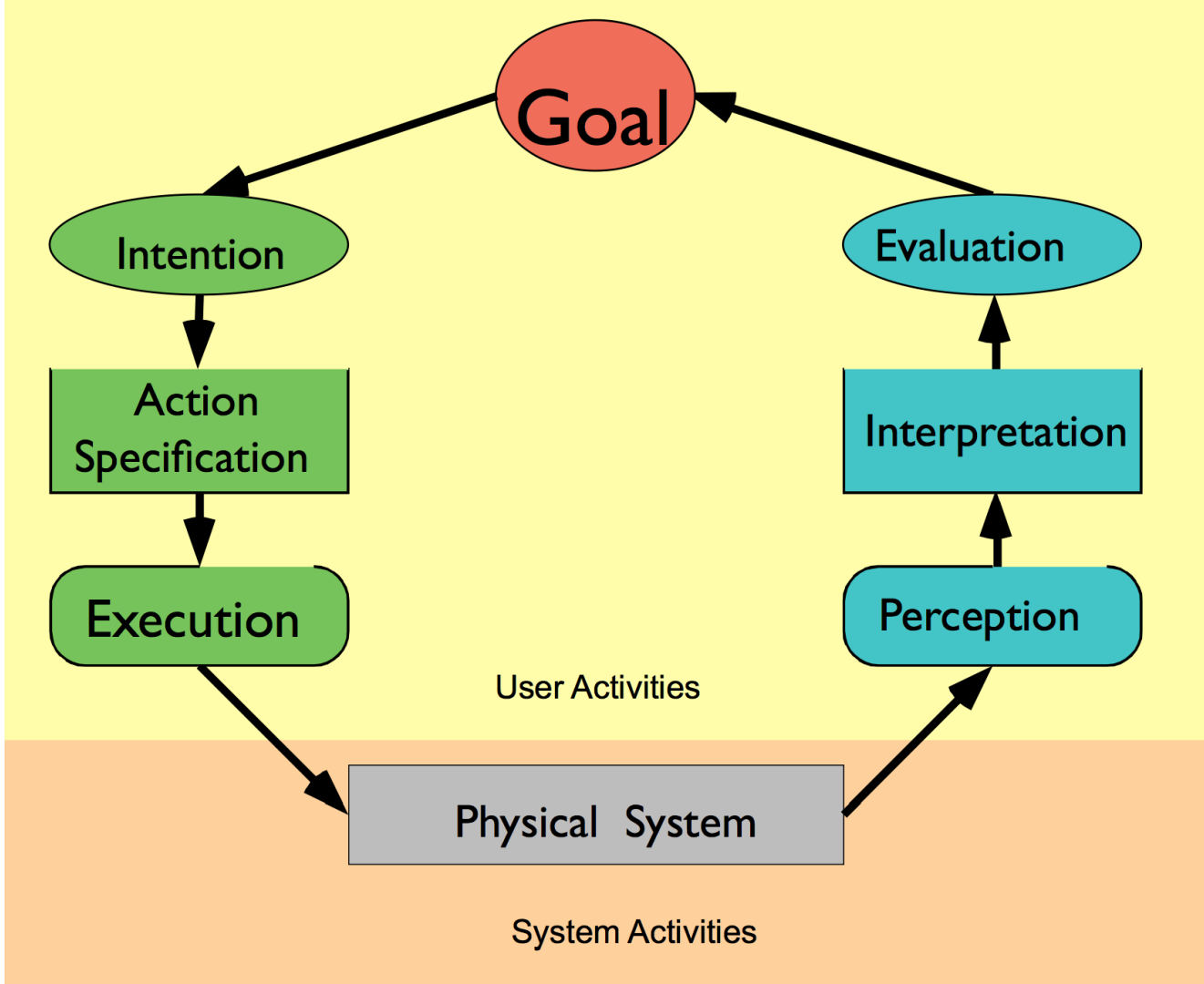


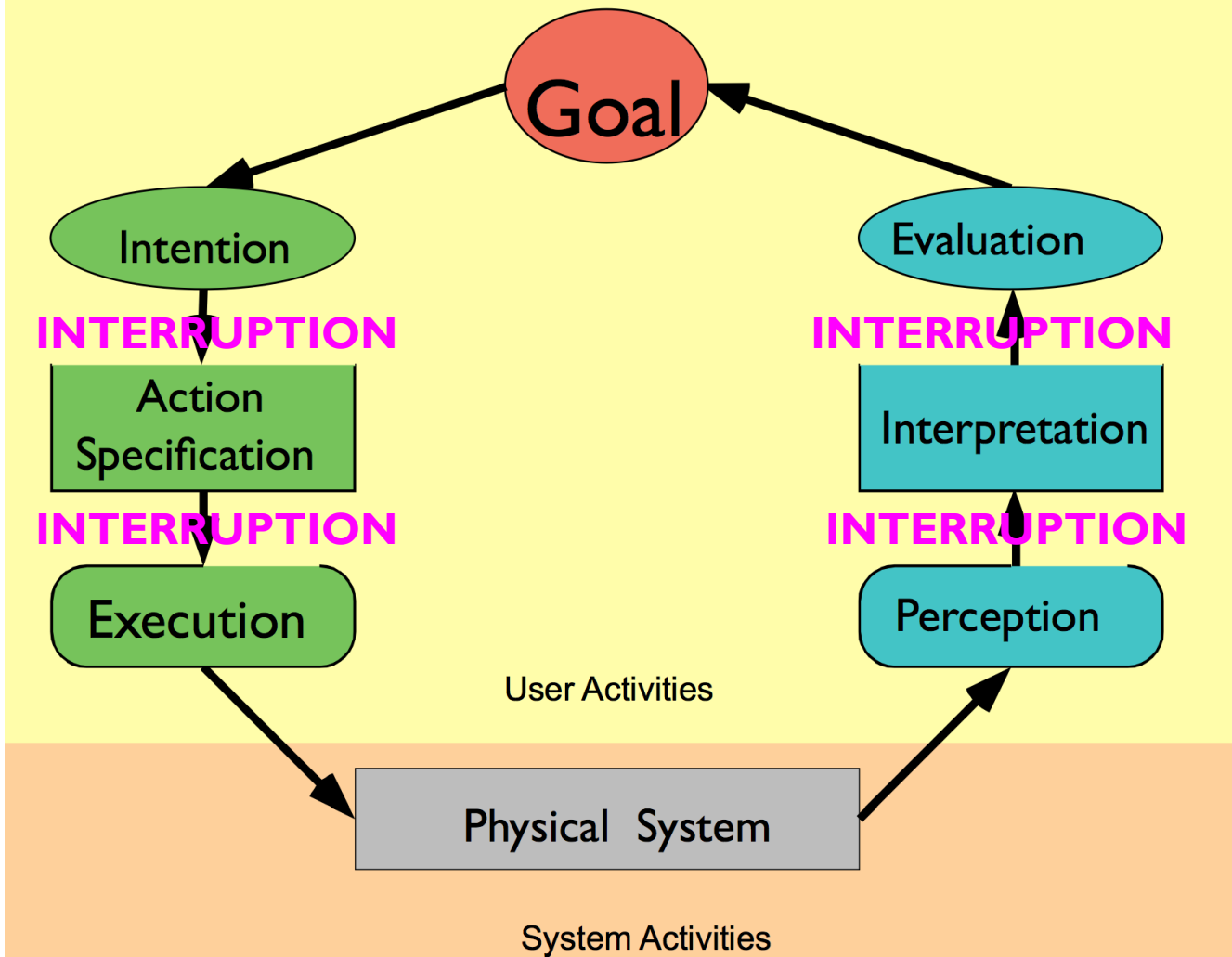
Bonnie John on Cancel

<http://www.youtube.com/watch?v=gxiA4jTS9P8&t=0m26s>

# Intention vs. Evaluation

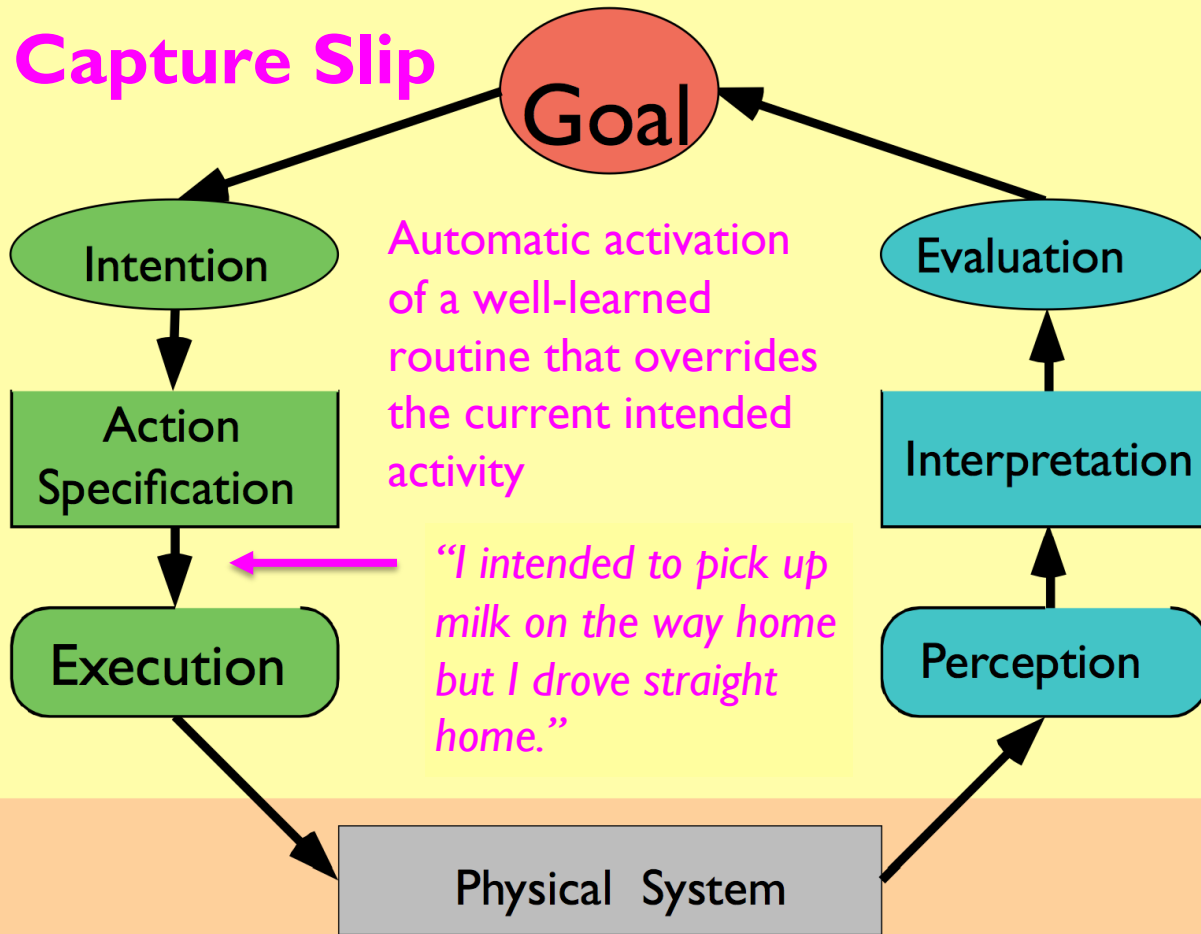
See handout





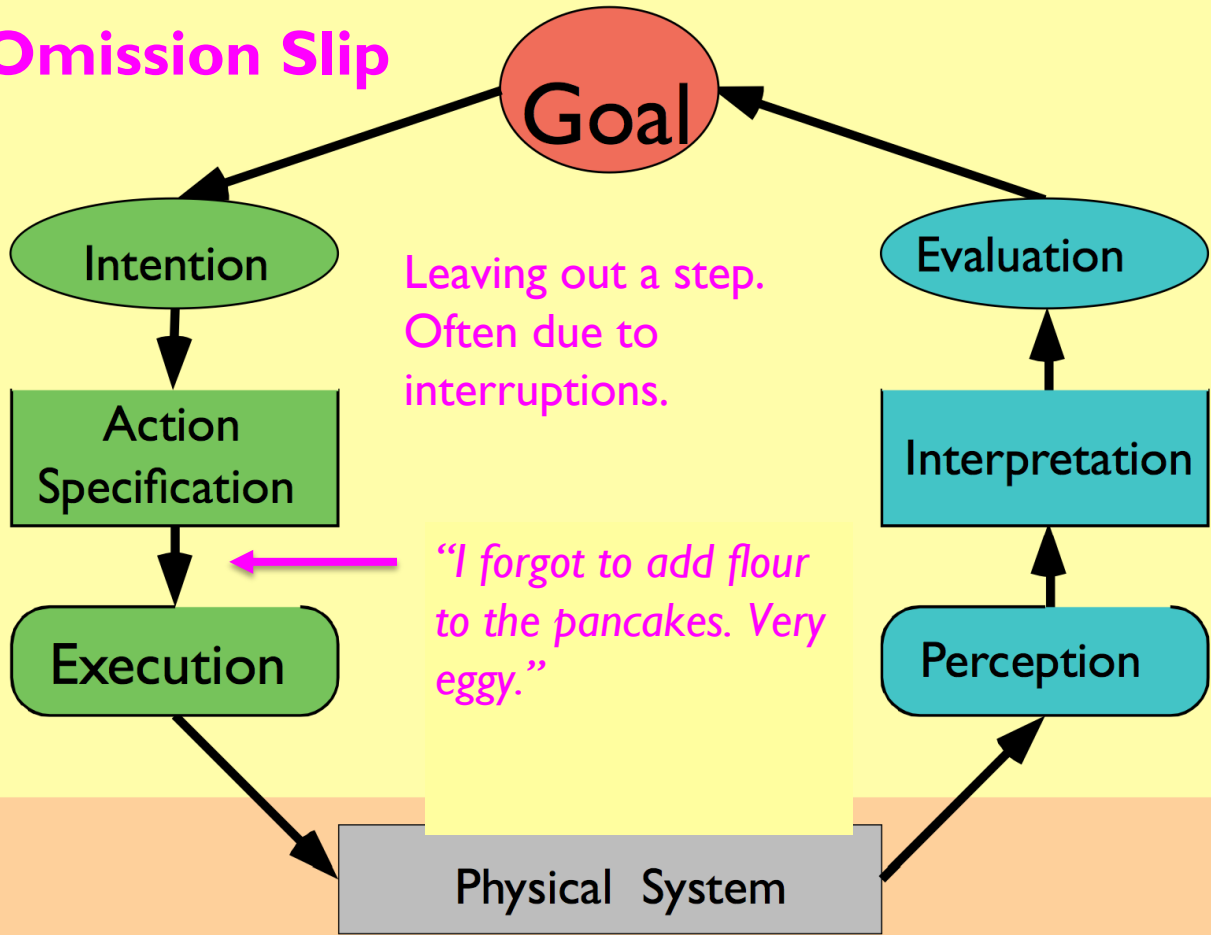


# Capture Slip



System Activities

# Omission Slip



Leaving out a step.  
Often due to interruptions.

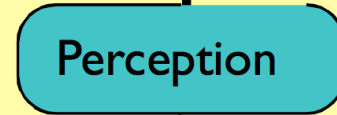
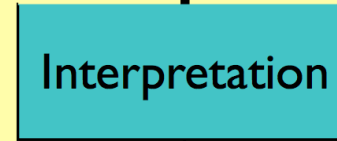
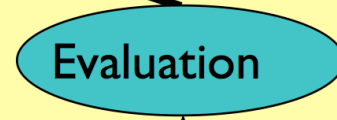
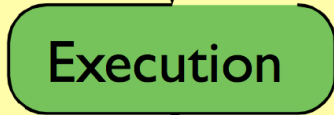
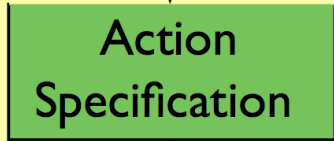
*"I forgot to add flour to the pancakes. Very egggy."*

System Activities

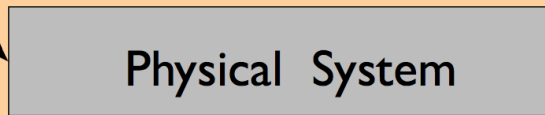
Loss of  
Activation



*“By the time I got downstairs, I forgot what I had come down for.”*

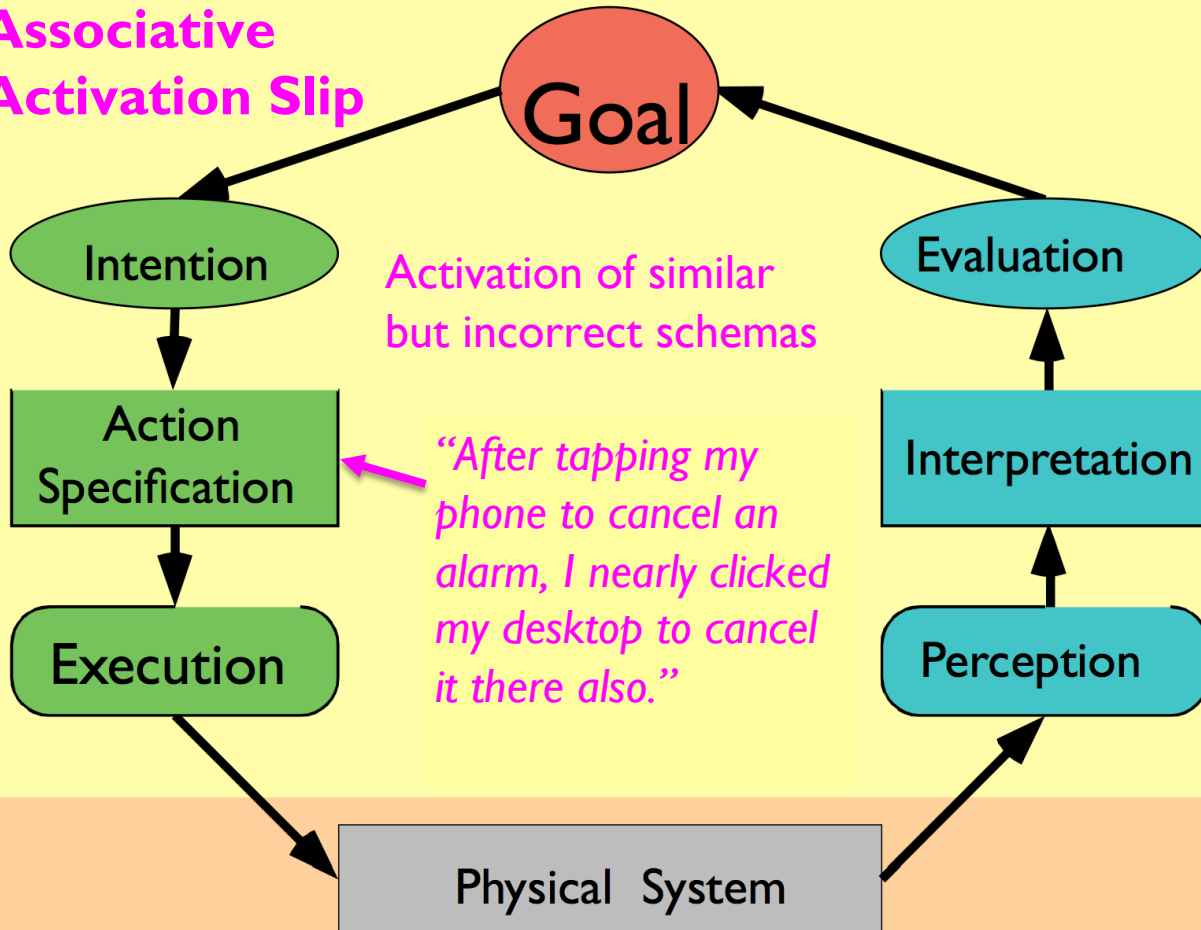


User Activities



System Activities

# Associative Activation Slip

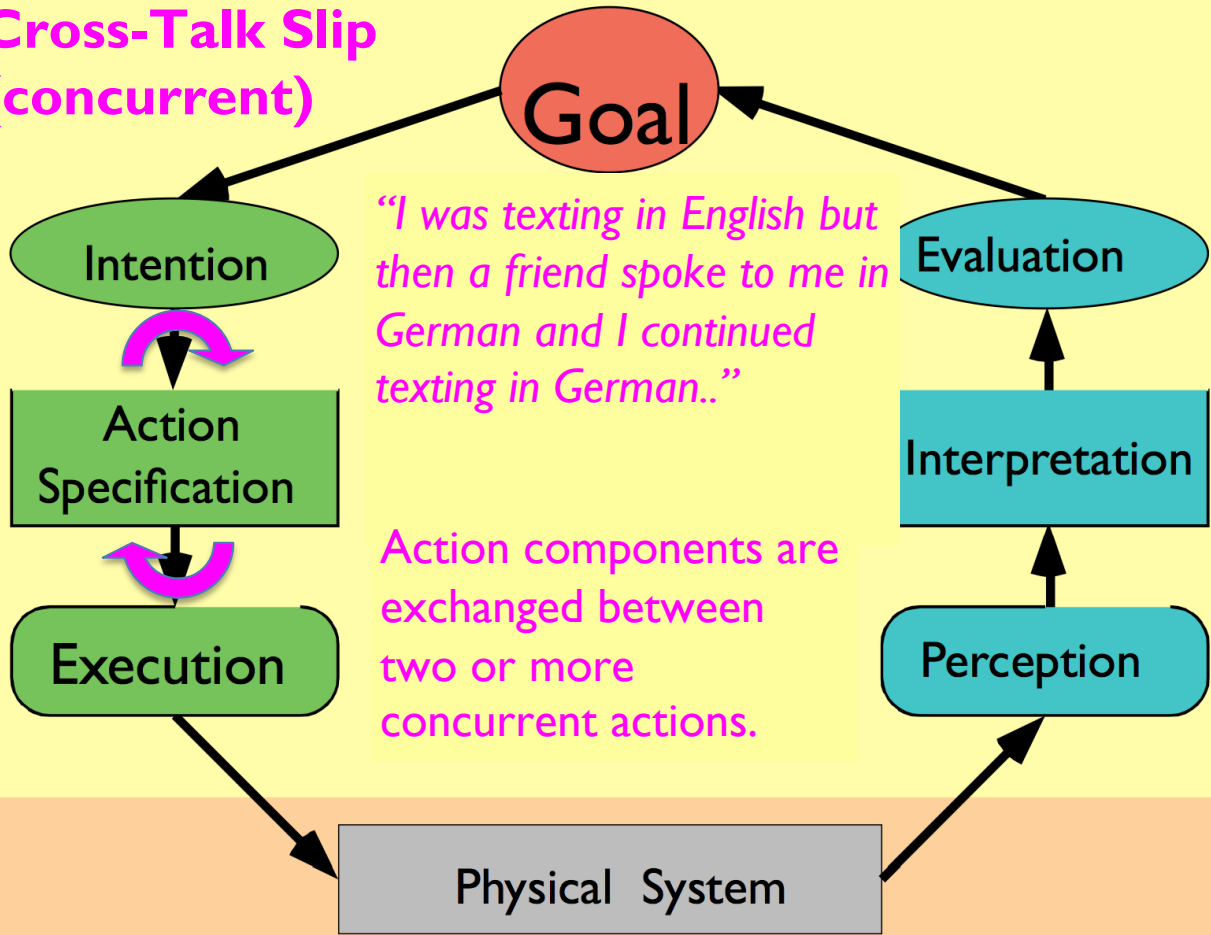


Activation of similar but incorrect schemas

*“After tapping my phone to cancel an alarm, I nearly clicked my desktop to cancel it there also.”*

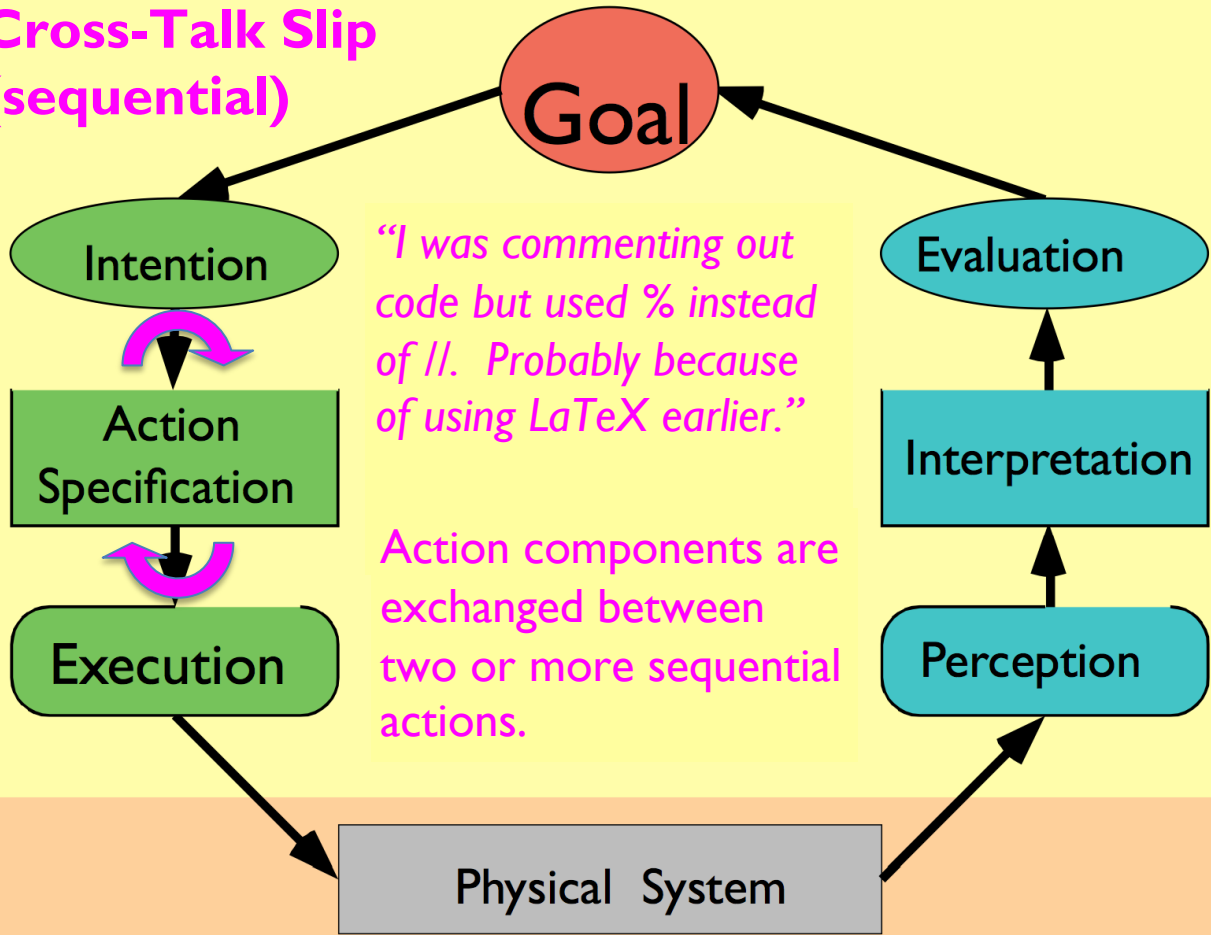
System Activities

# Cross-Talk Slip (concurrent)



System Activities

# Cross-Talk Slip (sequential)



System Activities

# Name that error

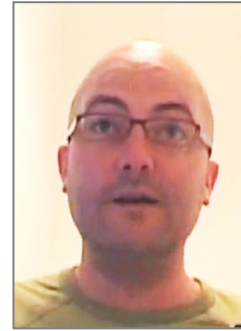
Pizza complaint

<http://youtu.be/pkAeNcNJVjA>



# Name that error

Dominic Furniss  
University College London



## **Man-Machine Nightmares: Chaos buttons, human error and healthcare**

Morning 1

<http://www.youtube.com/watch?v=ifjDWKMNllk&t=1m54s>

Morning 2

<http://www.youtube.com/watch?v=ifjDWKMNllk&t=3m12s>



# Further discussion of errors?

Before we switch topics?

# How to Give a Talk



# You'll be giving a talk...

Research symposium

Group presentation

“What did you do this summer?”

# Doesn't talking come naturally?

No.

It can be scary.

It can be boring, even soporific.

# Doesn't talking come naturally?

No.

It can be scary.

It can be boring, even soporific.

*Practice*

*Technique*

# What are you trying to tell to your audience?

You're a **passionate analytical authority**.

Oh, and by the way...

Your **message**.

# Messages

Please have 1-3 messages to convey.

Each could be said in 30 seconds.

Facebook Participation Increases  
Isolation Within Rural Communities.

*Our method of usability testing  
using bluetooth is better than  
existing methods.*

# Non-Useful Messages

I'm running out of time.

I'm sorry...

I did this, and this, and this, and that.



# Typical Talk Outline

What's the problem? (**Hook!**)

What have you done about it? (big picture)

How are you different than other people?

What did you do really? (details)

How did you solve the problem?

How did you evaluate your solution?

# Don't delay the message

## Worse

First, there was the mouse.  
Then other interfaces...  
I'm working on the iPhone...  
**My contribution is...**

## Better

A problem to be solved is...  
**My contribution is...**  
Why does this matter?  
First there was the mouse...

**Build**

# An effective talk must:

Communicate arguments and evidence

Persuade your audience they're true

Be interesting and entertaining

*What's that mean?*

From Paul Edwards' *How to Give an Academic Talk*

# Tips

From  
Paul Edwards'  
*How to Give an  
Academic Talk*

(Valid even  
though your talk  
isn't "academic")

<i>USUALLY BETTER</i>	<i>USUALLY WORSE</i>
<b>Talk</b>	<b>Read</b>
<b>Stand</b>	<b>Sit</b>
<b>Move</b>	<b>Stand still</b>
<b>Vary the pitch of your voice</b>	<b>Speak in a monotone</b>
<b>Speak loudly, facing the audience</b>	<b>Mumble, facing downward</b>
<b>Make eye contact</b>	<b>Stare at your laptop</b>
<b>Focus on main points</b>	<b>Get lost in details</b>
<b>Use outlines, images, and charts</b>	<b>Have no visual aids</b>
<b>Finish within your time limit</b>	<b>Run overtime</b>
<b>Rehearse</b>	<b>Don't practice because you're too busy working on the slides</b>
<b>Summarize your main points at the beginning and end</b>	<b>Start without an overview; trail off without a conclusion</b>
<b>Notice your audience and respond to its needs</b>	<b>Ignore audience behavior</b>
<b>Emulate excellent speakers</b>	<b>Emulate your advisor, even if s/he gives lousy talks</b>

# Keep control of talk

Rehearse, including *jokes* & tech

Bring backup notes

No need to apologize

# Learn from Great Speakers

TED Talks ([ted.com](http://ted.com))

Ignite talks ([igniteTalks.io](http://igniteTalks.io))

iTunes U

And from [bad ones](#)

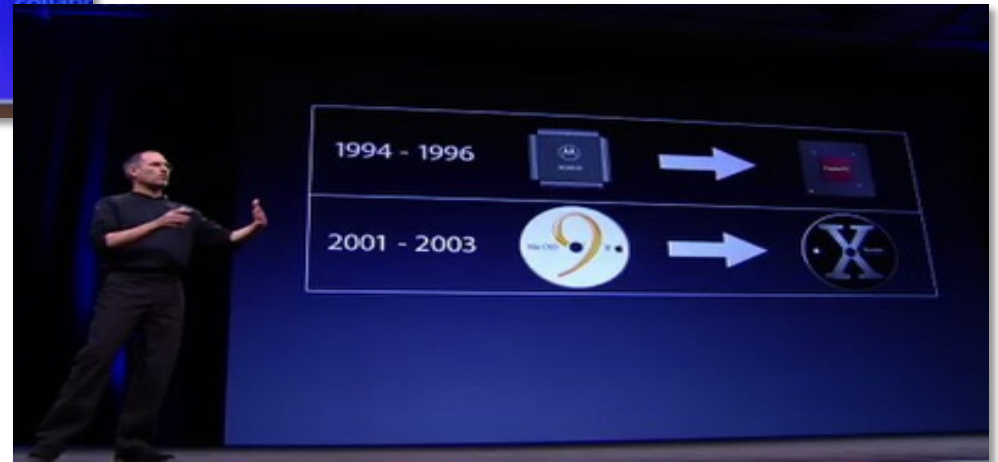
# Slide Advice

PowerPoint  
Keynote  
Prezi  
Google Docs  
Slide Rocket  
Impress  
...



David Byrne

# Less is more





# Conscious decision

Right now,

Should they look at me or the screen?

Do my words need any visual aid?

# Last tips

Use a remote control.

Avoid giving a demo live.

Don't look at the screen  
(your back's to the audience).

Don't read your slides.

Do look at someone.

# Sum Up

Passion & Style, not just content

Tight messages

Tell a story – Signposting!

# Improv Activity

Need 2 volunteers

# Improv Activity

2 volunteers

Remaining group decides topic

Volunteers have 5 minutes to prepare a 3-minute talk where both speak

We all comment / critique