



**JSFIDDLE**

# Perceiving AJAX Performance

Piotr Zalewa  
Lightning Talk for London Ajax User Group  
London 9/11/10

Speed is the most important feature.  
If your application is slow, people  
won't use it.

*Fred Wilson's 10 Golden Principles of Successful Web Apps*

<http://thinkvitamin.com/web-apps/fred-wilsons-10-golden-principles-of-successful-web-apps/>



# slowdowns hurt business metrics

- Bing - 2s slower - 4.3% drop in revenue/user
- Google - 0.4s delay - 0.59% drop in searches/user
- Yahoo - 0.4s delay - 5-9% drop in full-page traffic
- Mozilla - 2.2s off landing page - 15.4% more downloads
- Shopzilla - 5s speed up - conversion rate up by 7-12%



# Please wait...





<http://www.flickr.com/photos/theivorytower/4126601940/>



<http://www.flickr.com/photos/scragz/91147636/>

# Requests take time

Uploading data

Processing request on the server

Downloading data

Computing the response



**Quantitative**  
Uploading  
Downloading

**Undeterminable**  
Processing request on the server  
Computing the response



# Inform users



# Progress Bar

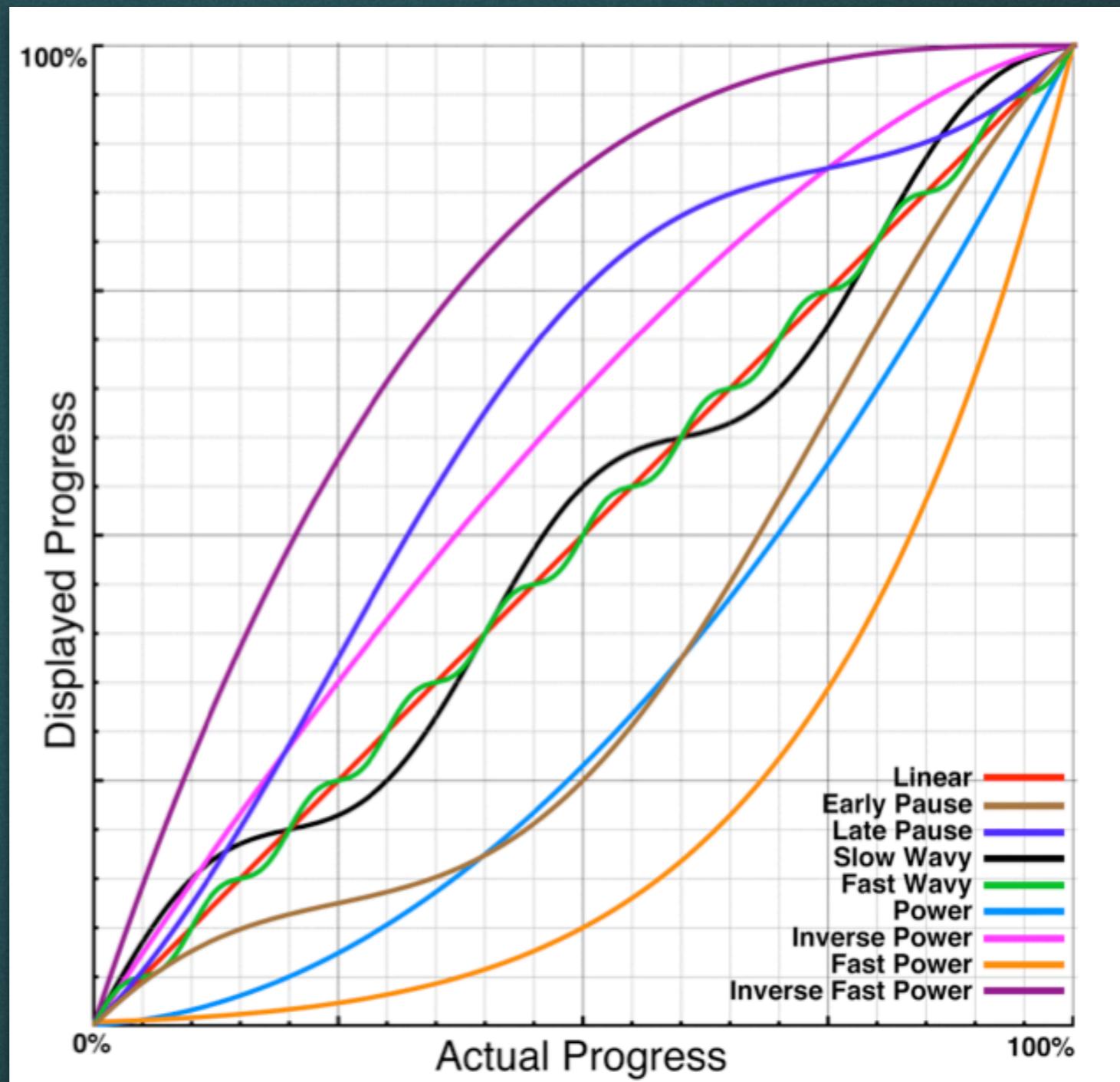


<http://www.flickr.com/photos/sainz/485663542/>

Humans do not perceive the  
passage of time in a linear way.  
This [...] causes human perception  
of process duration to vary.

*Rethinking The Progress Bar*  
<http://chrisharrison.net/projects/progressbars/index.html>





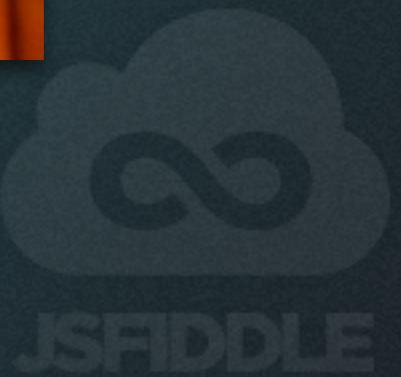
Harrison, C., Amento, B., Kuznetsov, S., and Bell, R. 2007. Rethinking the progress bar.  
<http://chrisharrison.net/projects/progressbars/ProgBarHarrison.pdf>

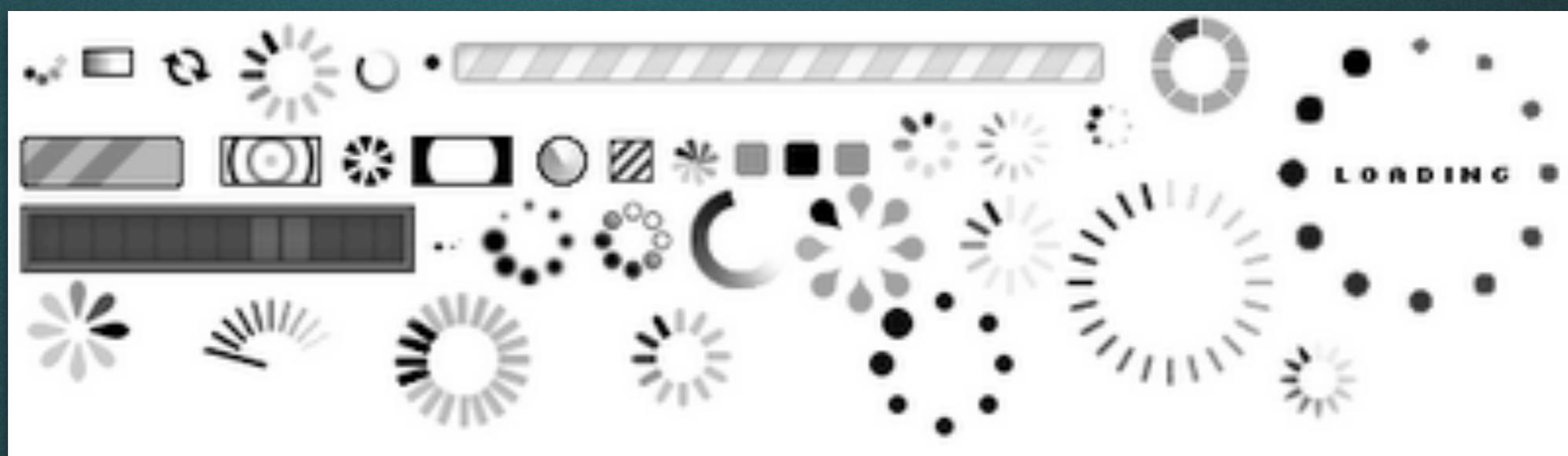


# Spinner

known also as  
Loading Indicator or Waiter

[http://www.flickr.com/photos/denial\\_land/3282600913/](http://www.flickr.com/photos/denial_land/3282600913/)





# Mastering Spinner



Draw the [...] spinner icon as little  
as possible, but one solid break  
isn't bad and might be better than  
one really long spinner.

*John Wayne “Perceived Speed Performance”*

<http://www.johnwaynehill.com/blog/2010/06/16/perceived-speed-performance/>



# jsFiddle and Ajax

- Echo XHR Request
- HTML, JSON, JSONP, XML
- Defined in the fiddle
- Stored on Github
- Delay

Docs: <http://doc.jsfiddle.net/use/echo.html>

Example: <http://jsfiddle.net/zalun/6yLuQ/embedded/result/>



# Spinner delay survey

- <http://survey.jsfiddle.net/spinner/>
- 2 Requests with the same (randomized) XHR Duration and randomized Spinner delays
- XHR Durations: 0.2, 0.4, 0.6, 1.0, 1.5 seconds
- Spinner delays: no delay, 0.2, 0.4, 0.6 seconds or no spinner at all
- Participant is choosing which request was faster and if both requests felt responsive
- The results were calculated from 1200 responses



# Compare Spinner delays keeping actions order

A B	no delay	0.2s	0.4s	0.6s	no spinner
no delay	-1%	17%	45%	74%	57%
0.2s	-16%	1%	15%	30%	55%
0.4s	-28%	-18%	7%	20%	54%
0.6s	-50%	-29%	6%	18%	
no spinner	-56%	-54%	-60%		9%

Action A is perceived faster than action B if value > 0

# Compare Spinner delays regardless actions order

I 2	0.2s	0.4s	0.6s	no spinner
no delay	17%	36%	65%	57%
0.2s		17%	29%	57%
0.4s			4%	58%

delay I is perceived faster than delay 2 if value > 0





<http://www.flickr.com/photos/santos/4648899011>

- 10 Golden Principles of Successful Web Apps  
<http://thinkvitamin.com/web-apps/fred-wilsons-10-golden-principles-of-successful-web-apps/>
- Actual Performance, Perceived Performance  
<http://www.codinghorror.com/blog/2008/03/actual-performance-perceived-performance.html>
- Rethinking the progress bar  
<http://chrisharrison.net/projects/progressbars/ProgBarHarrison.pdf>
- Perceived Speed Performace  
<http://www.johnwaynehill.com/blog/2010/06/16/perceived-speed-performace/>
- Spinner Delay Survey <http://survey.jsfiddle.net/spinner/>
- jsFiddle Echo: <http://doc.jsfiddle.net/use/echo.html>
- jsFiddle Spinner Delay Example: <http://jsfiddle.net/zalun/6yLuQ/>



# Questions?

piotr@zalewa.info  
<http://twitter.com/zalun>  
irc://irc.freenode.net/jsfiddle  
<http://piotr.zalewa.info/>

