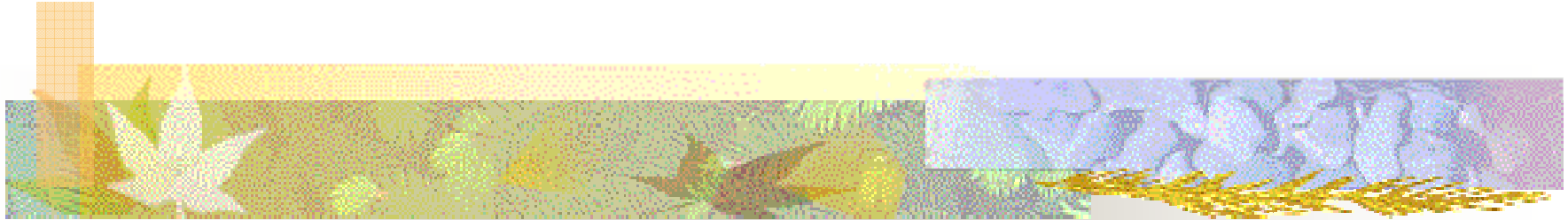


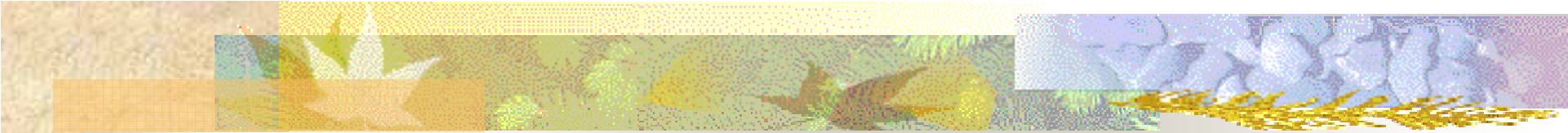
Hardwired for deception means trouble with estimates!!



Linda Rising

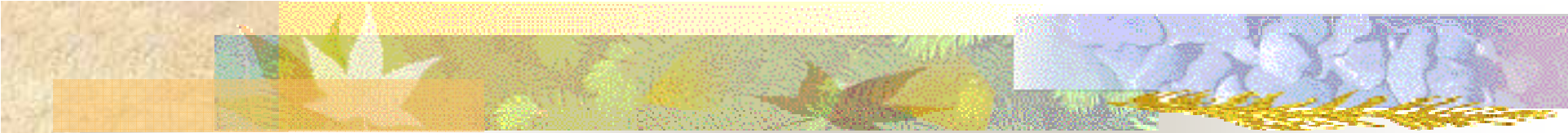
linda@lindarising.org

www.lindarising.org

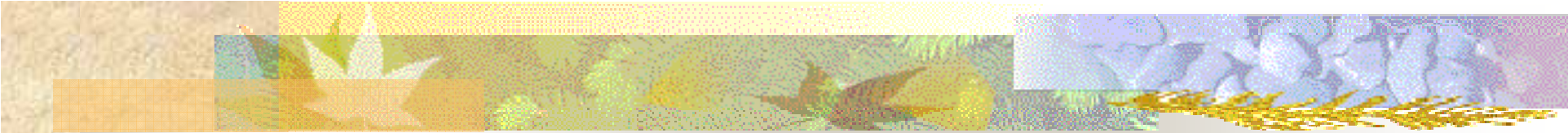


Disclaimer: This provocative presentation is ideally the beginning of a conversation. It won't take long for me to tell you everything I know about cognitive psychology, although I have been reading in the area for several years now. I'm an amateur who has sufficient interest in weird topics and a strange way of connecting ideas that might or might not be of interest to you. Thank you for your tolerance and understanding of my meanderings and I hope you learn a little that might help you in your life.

This is not an “academic” presentation, but those interested in more information are invited to ask me for references for any part of this talk and I will be happy to make them available.



Deception:
consciously or unconsciously
leading another (or yourself) to
believe something that is not true.



**My message is: we naturally
deceive ourselves and others—
constantly.**



We deceive ourselves in the estimates we make daily

- **Despite being confronted with actuarial data for life expectancy, we estimate that we will live about 10 years longer than estimated.**
- **Who at the wedding altar is thinking, “50-50 chance of this working—let’s keep our fingers crossed”**



We're hardwired to deceive!

- **We are hardwired to be optimistic**
- **We're hardwired to see the data we want to see**
- **We're hardwired to distort reality so that it fits our view of the world**
- **Then we “kid” ourselves at the end of the day with a “rational” argument**



Smarter = better deception!

- **Once scientists have crafted an hypothesis they are reluctant to let go**
- **Over time as contrary evidence accumulates the result is a radical shift in paradigm as the old gives way to the new**
- **Smarter people can create better “rational” explanations!**



Deception is rampant!

- On average, there are 3 lies in every 10 minutes of conversation
- In a survey of high school students, all thought they had above average abilities
- A survey of college professors revealed that 93% believe they were better than average
- 90% of on-line dating participants deceive—men tend to exaggerate age, while women tend to exaggerate weight—the older and heavier, the greater the deception



We teach it to our children

- **They are taught how to deceive in a socially acceptable manner.**
- **They are instructed to feign respect for their elders, to write thank you notes for disappointing presents and to refrain from telling grandma that her breath stinks.**
- **Socially appropriate deception is not merely tolerated, it is mandatory.**

We have trouble with size estimates!





Our own bodies deceive us

- **We eat more from larger containers or if given larger portions**
- **We eat more from all-you-can eat buffets and the more we pay the more we eat**
- **We eat more if food is closer or present in greater variety than if it's some distance away or all the same**
- **Names and presentation distort taste**
- **All the while we under-estimate how much we have actually eaten!**





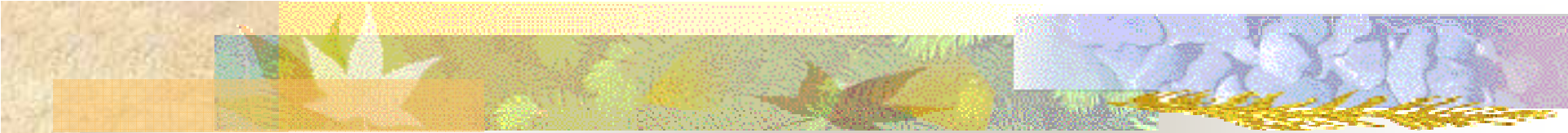
What happened after 9/11?

- Large segments of the population estimated that their chances of survival were better in a car than in a plane
- Air travel decreased by 20%
- Adding half the number of miles gives an increase of 800 passenger/pedestrian deaths
- In one year this number is 3x the number killed in the 4 planes on 9/11



We distort risk estimation

- **Smokers (average life expectancy reduced by 5 years) fear flying (average life expectancy reduction is 1 day)**
- **We feel our chances of winning the big lottery ticket (1 in 100,000,000) are greater than having a heart attack (1 in 50)**



An outbreak of a mysterious illness is expected to kill 600 people. Two programs have been proposed but there is only funding for one.

A – 200 people will be saved, for certain

B – 1/3 probability that all 600 will be saved, but 2/3 probability that none will be saved

Your vote?



In one version of this study:

72% chose Program A

28% chose Program B

The majority are risk averse - saving 200 lives is better than the risky prospect of a one-in-three chance of saving 600 lives.



Here are two more proposed programs:

C – 400 people will certainly die

D – 1/3 probability that no one will die but 2/3 probability that all 600 will die

Your choice?



In one version of this study:

22 % chose Program C

78% chose Program D

The majority chose risk taking - the certain death of 400 people is less acceptable than the 2/3 chance that 600 will die.



Choices involving gains tend to be risk averse.

Choices involving loss tend to be risk taking.

The two problems are identical, but outcomes are described in A/B by number of lives saved and in C/D by number of lives lost. This results in a shift from risk aversion to risk taking.



We're hardwired to fear...

- **what our Stone Age ancestors feared**
- **what we cannot control**
- **what is immediate**
- **what is most available in memory**



The result of this hardwiring...

**...an unavoidable distortion in our ability
to clearly and rationally estimate risks
that involve these fears**



Deception correlates with brain size

- **The evolution of primate intelligence was spurred not by the challenges of the physical world but by the demands of living within a community.**
- **Smaller monkeys, e.g. lemurs don't evidence deception.**
- **Society, sneakiness, brain size, intelligence are bound up with one another.**



Other animals also deceive

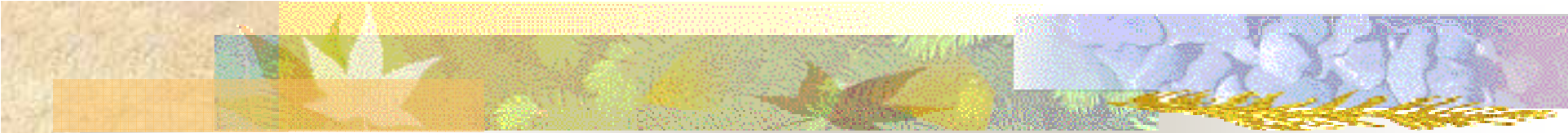
- **Dandy ignores grapefruit**
- **Figan ignores bananas**





What's the connection with software development?

- We tend to believe we're better than we are
- "...all the women are strong, all the men are good-looking, and all the children are above average."
- As a result we tend to overestimate our ability to do anything: code, test, solve problems, ...
- Left to our own devices we will always overestimate by attributing problems in the past to exceptional conditions.



A strong tendency to ignore previous feedback and persist in overconfidence in their own estimates have been observed in software development...



What about data?

- I used to believe that complicated mathematical models and megatons of data from past projects would point the way to better estimates.
- But I saw that this path was no better than any of the others I had tried. The problem is too complex.
- Is there no way out?



Agile to the rescue!

- **Now I believe that the only way to achieve estimates that are “good enough” is to...**
- **...take small steps. Experiment and learn both from failure as well as success.**
- **You must involve others because you will deceive yourself about your own estimates**
- **The process must incorporate retrospectives and as much openness as possible**



Agile is a multi-legged stool

- You can't just estimate as you go, on your own without help from others
- You can't just give lip service about being open about what happened in the last iteration
- You can't fake it
- You must include all the elements: small steps, retrospect, sharing, openness, and as much honesty as your deceitful self will allow 😊!



Forecasting & Estimation

**The goal is not to predict the future but to
find out what you need to take
meaningful action in the present.**

**Create strong decisions but hold them
weakly.**



The bright side...

- There are definite social advantages to deception
- There are sub-groups of people who are brutally honest about the way the world is and about their own abilities
- These people are also clinically depressed ☹!!
- People who deceive are healthier 😊!
- This does not hold for sociopaths!!!!



No one said it was easy!

- **It sounds easy but it is like a lot of easy things—easy to say but very, very difficult to do!**
- **Good luck!! Thanks for listening!!**