Who am I?

Bob Wilson

I am not a financial advisor!
I am not 53

Assistant Professor of Psychology
and Cognitive Science
Neuroscience of decision making
Outline

• How does financial decision making change as we age?
• Why does financial decision making change as we age?
  – Psychology perspective
  – Neuroscience perspective
• What can we do to make better financial decisions in old age?
Financial decisions ...
Financial decisions are more important as we age

• We have more money to lose
  
  $171,135

  Median network of households with head over 65 years of age according to 2011 census

• Most of us are retired
  
  61% retired by 65
How does financial decision making change as we age?

The Age of Reason: Financial Decisions over the Life-Cycle with Implications for Regulation

Sumit Agarwal, John C. Driscoll, Xavier Gabaix, and David Laibson*

October 19, 2009
Prepared for the *Brookings Papers on Economic Activity*
Lower rates = better decisions
Lower rates = better decisions

Agarwal, Driscoll, Gabaix, & Laibson, 2009
Refinancing

REFINANCE AND SAVE MONEY

➤ Apply Now!
Refinancing mistakes

More mistakes worse decisions

Frequency of mistakes

0%
50%
100%

Fewer mistakes better decisions

Age

20
50
80
Hidden Fees
Hidden fees

More fees

Less fees

Age

20
50
80
Financial decision making peaks at 53

<table>
<thead>
<tr>
<th>Financial Product</th>
<th>Age of Peak Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Equity Loans–APR</td>
<td>55.9</td>
</tr>
<tr>
<td>Home Equity Lines–APR</td>
<td>53.3</td>
</tr>
<tr>
<td>Eureka Moment</td>
<td>45.8</td>
</tr>
<tr>
<td>Credit Card–APR</td>
<td>50.3</td>
</tr>
<tr>
<td>Auto Loans–APR</td>
<td>49.6</td>
</tr>
<tr>
<td>Mortgage–APR</td>
<td>56.0</td>
</tr>
<tr>
<td>Small Business Credit Card–APR</td>
<td>61.8</td>
</tr>
<tr>
<td>Credit Card Late Fee</td>
<td>51.9</td>
</tr>
<tr>
<td>Credit Card Over Limit Fee</td>
<td>54.0</td>
</tr>
<tr>
<td>Credit Card Cash Advance Fee</td>
<td>54.8</td>
</tr>
<tr>
<td><strong>Average over the 10 Studies</strong></td>
<td><strong>53.3</strong></td>
</tr>
</tbody>
</table>

Agarwal, Driscoll, Gabaix, & Laibson, 2009
Financial decision making peaks at 53
Why does financial decision making change over the lifespan?
Two kinds of intelligence

• Fluid intelligence
  – Dealing with new information
  – Handling uncertainty

• Crystallized intelligence
  – Ability to use skills, knowledge and experience

Quick thinking
Wisdom
Fluid intelligence

Performance

better

worse

Age

Fluid intelligence
Crystallized intelligence

Performance

better

worse

Age

20

50

80

Crystallized intelligence
Crystallized intelligence

Fluid intelligence

Performance

Age

better

worse
Financial decisions require fluid and crystallized intelligence.
Fluid intelligence affects how we deal with uncertainty ...
An experiment!

• Which do you prefer?

100% chance of $10

25% chance of $35
Data from my lab ...

Risk seeking

Attitude to uncertainty

Risk averse

age
Data from my lab ...

Teens are risk seeking

Older adults are risk averse

Risk seeking → Attitude to uncertainty → Risk averse

Risk averse

Risk averse
Society celebrates risk takers

- taking risks is an essential part of life
- taking risks is an essential part of life
- taking risks is good

Risk Takers

I Risk Therefore I Am

Find The Upside

Marsh
Society doesn’t celebrate risk aversion

not taking risks is the biggest risk of all
nothing is riskier than not taking risks
the biggest risk in life is not taking risks

is not taking any risk.”

Mark Zuckerberg
Take home message #1: Some risk aversion is a good thing!

- Risk aversion is smart!
- Don’t invest in risky stocks when you’re retired
- Risk aversion is a good idea if you don’t like uncertainty
Risk aversion can cost you if ...

- ... you don’t switch away from bad options
- E.g. old credit card with $200 annual fee
Fluid intelligence = risk attitude
Crystallized intelligence = ?
Crystallized intelligence = patience
Another experiment

• Which do you prefer?

$50 today

$100 in 6 months
Older adults are less impulsive and more patient.
Take home message #2: Embrace patience! Don’t be impulsive

• Even Google is with you on this one!
Financial decisions require fluid and crystallized intelligence.
Tying risk taking and impulsivity together in the brain
The dopamine, “reward” system
Two brain circuits compete to make a decision

Go circuit
Go for it!

No-go circuit
Don’t do it!

Mikhael & Bogacz 2016
Lots of dopamine (young people) = risk taking and impulsive

Go circuit
Go for it!

No-go circuit
Don’t do it!

Mikhael & Bogacz 2016
Less dopamine (old people people) = risk averse and patient

Go circuit
Go for it!

No-go circuit
Don’t do it!

Mikhael & Bogacz 2016
Take home #3
Dopamine = risk taking

• But this is hardly something you can use in daily life ...

• ... or is it ...?
Blink rate = dopamine!
Blink rate = risk taking?
Blink rate = risk taking?

Emily Sherman
Take home #3

Blink rate = risk taking!

Emily Sherman
Summary

• Take home #1
  – Risk aversion goes up with age
  – This is a good strategy as you get older

• Take home #2
  – Impulsivity goes down with age
  – This is also a good strategy!

• Take home #3
  – People who blink more take more risks!
Take home #4

• Be careful who you take financial advice from
  – Especially if they are Psychology professors
  – Who are under 53
  – And who blink too much!
Thank You Supporters!