

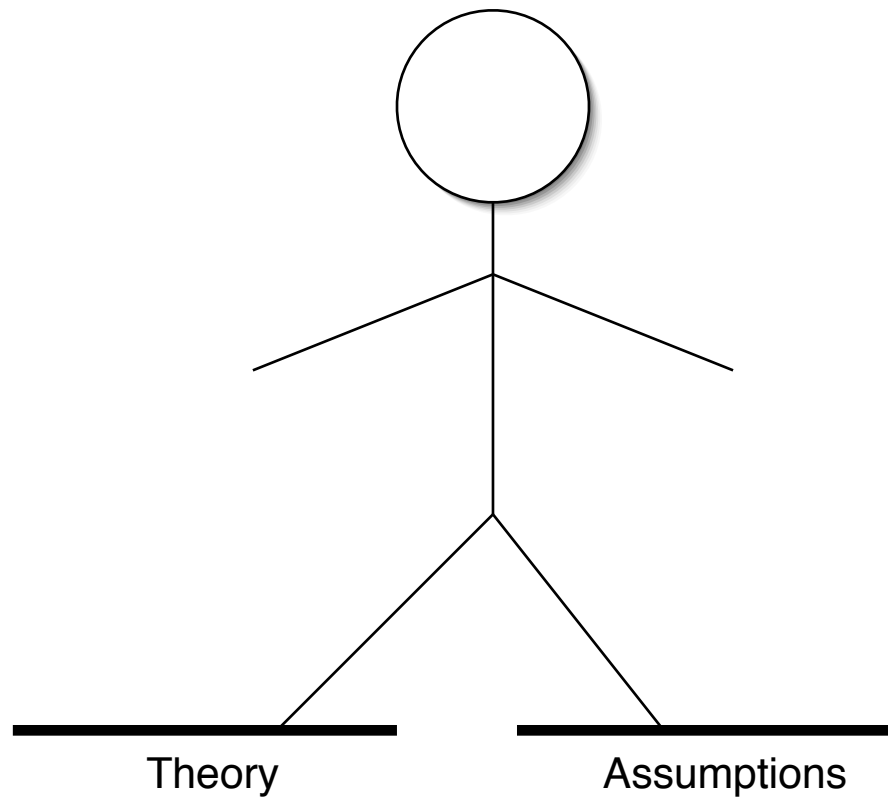
Doing GREAT Research

S. Keshav
University of Waterloo
December 10, 2007

GREAT Research

- Grounded
- Risky
- Ethical
- Absorbing
- Thorough

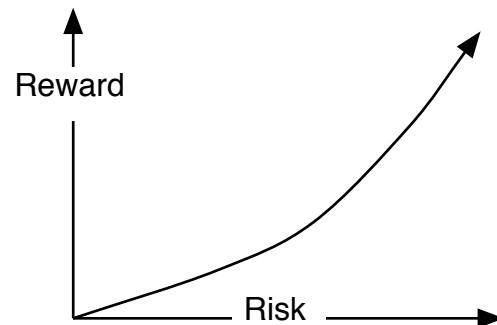
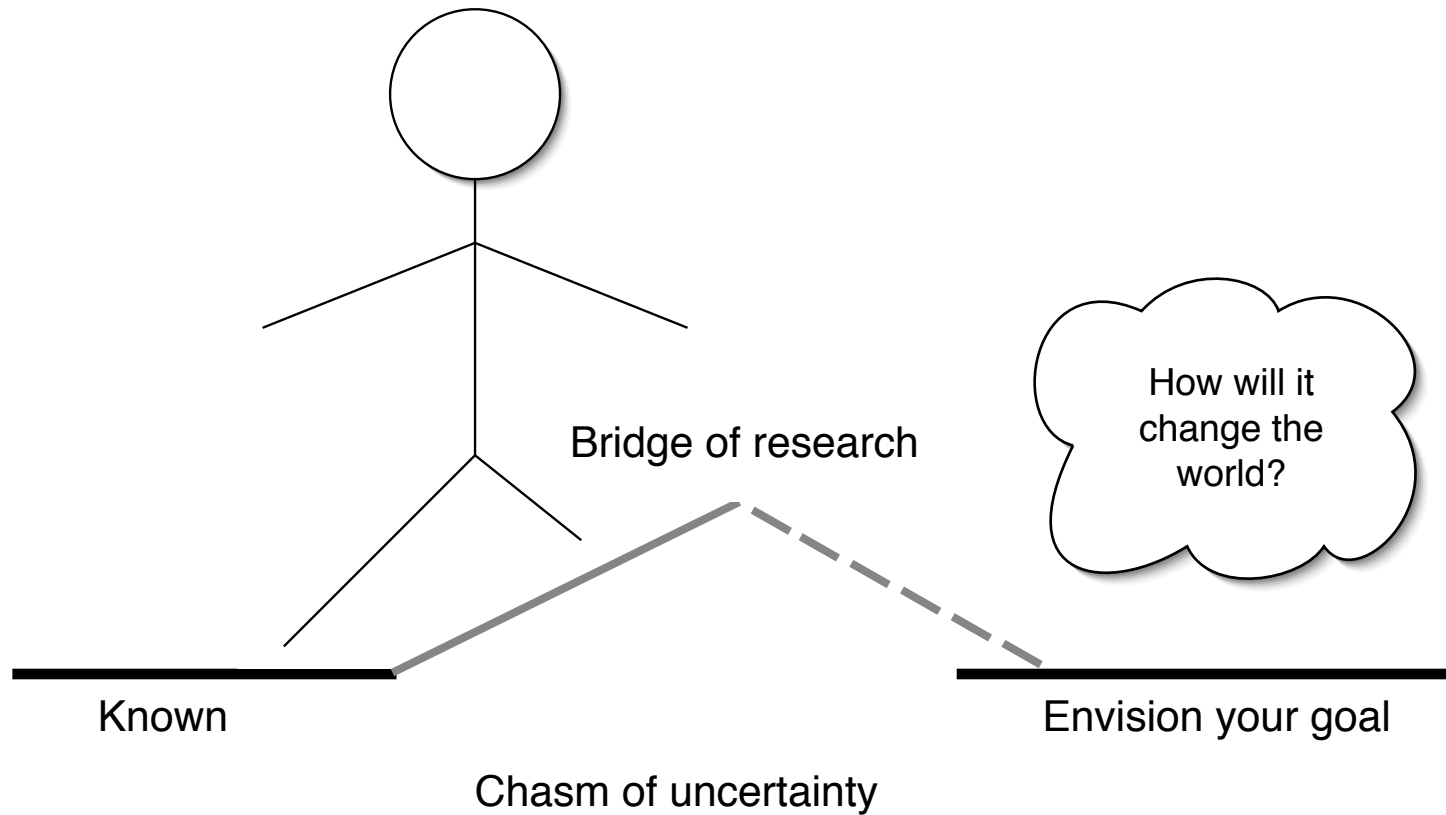
Grounded



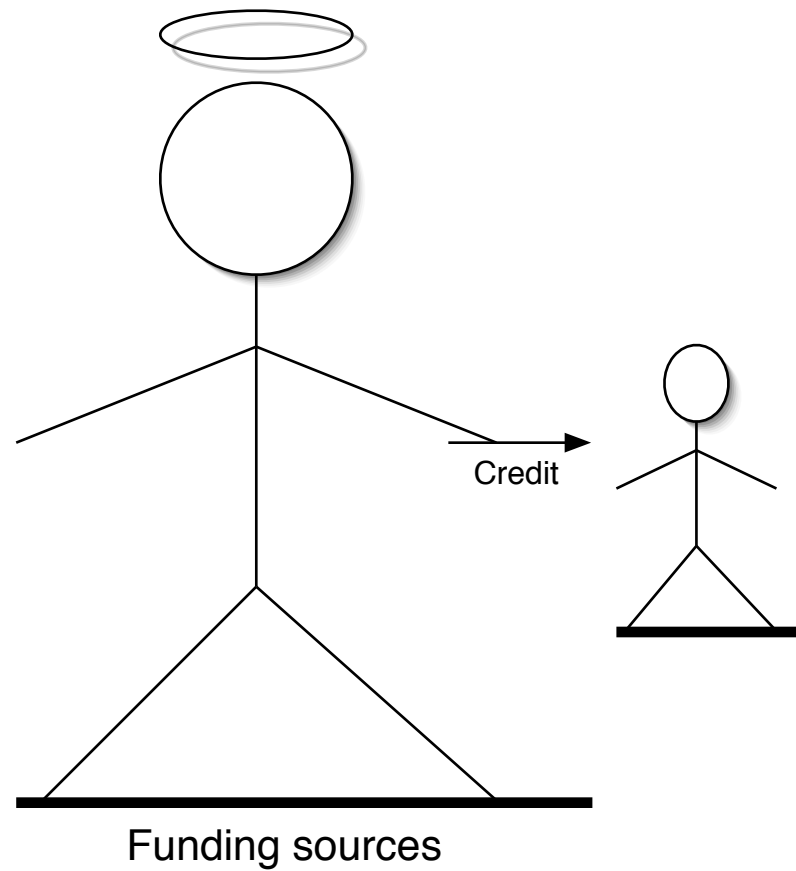
Grounded

- Look for gap between hype and reality
- Use appropriate theory
- Assumptions are critical
 - Be the harshest critic of your own work
 - Prepare to move on

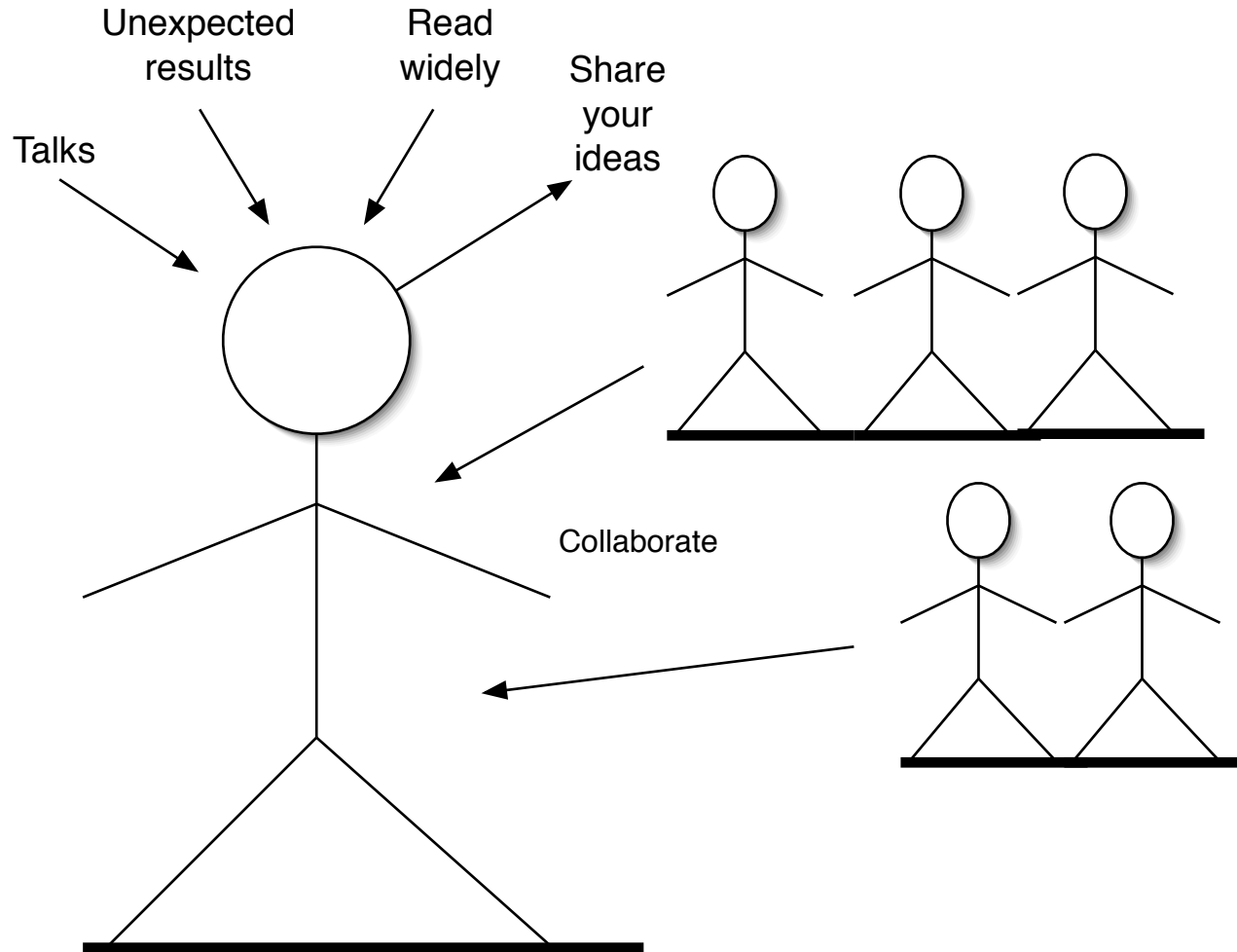
Risky



Ethical



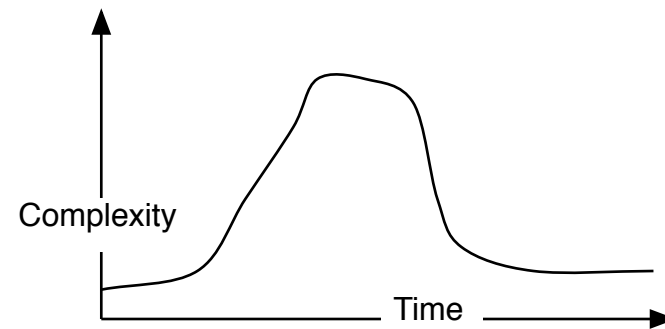
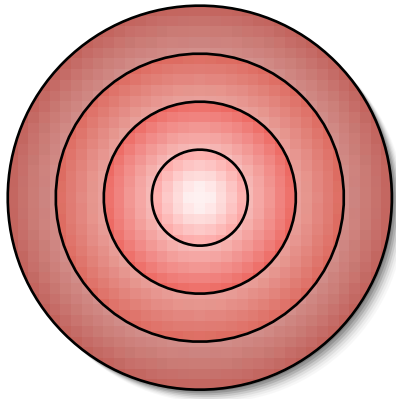
Absorbing



Absorbing

- Be passionate
- Read widely
- Attend diverse talks
- Share your ideas
 - Maintain a research site

Thorough



Being thorough

- Always begin with a literature survey
- Start with the smallest non-trivial instance
- Learn as you go
- Prepare to change
- Crystallize solutions
- Keep an eye open for the unexpected
- Carry a notebook

On writing papers

- Publish, but not at any cost
 - Quality trumps quantity
- Avoid gratuitous math
- Fuzzy writing indicates fuzzy thinking
- Use the one week rule
- Hone your writing and thoughts
- Rejection strengthens your work

On giving talks

- **One** idea per slide
- **Two** minutes per slide
- Audience can remember only **three** things
- Impact is inversely proportional to word count
- Start with a compelling example
- End on time!

On attending talks

- Take detailed notes
- Attend talks in diverse areas
- Ask questions
 - It keeps you from sleeping

The bottom line

- Have fun doing research!
- You're not going to make any money anyway :-)