

GLOBAL FINANCIAL STRATEGIES

# Sharpening Your Forecasting Skills

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Global Financial Strategies

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# Expert Political Judgment

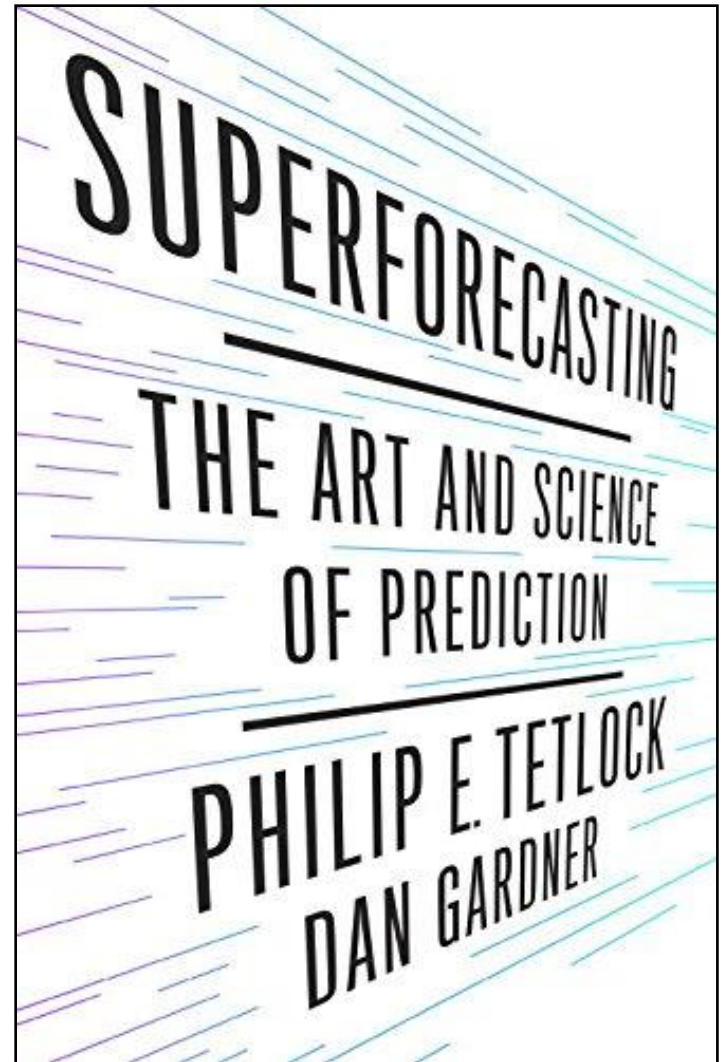


“. . . many pundits were hard-pressed to do better than chance, were overconfident, and were reluctant to change their minds in response to new evidence.”

Source: [www.edge.org/conversation/how-to-win-at-forecasting](http://www.edge.org/conversation/how-to-win-at-forecasting).

# Superforecasters

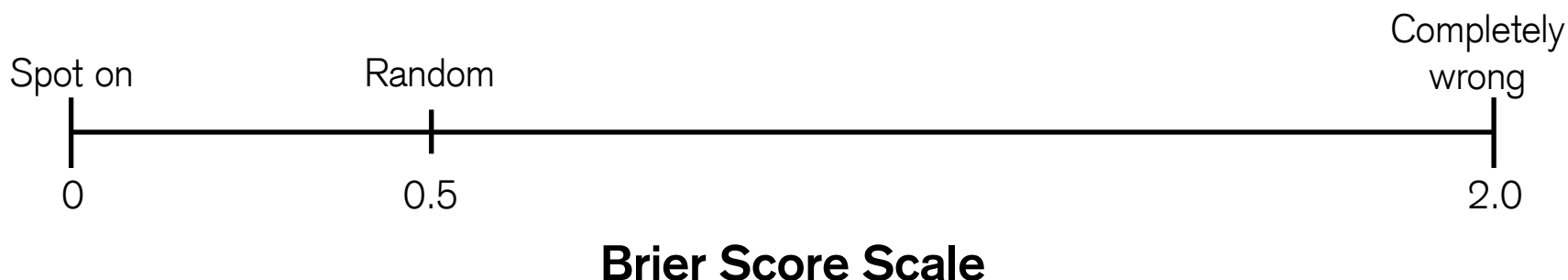
1. **Personality**
2. **Teams**
3. **De-Biasing Training**



Source: Philip E. Tetlock and Dan Gardner, *Superforecasting: The Art and Science of Prediction* (New York: Crown Publishers, 2015).

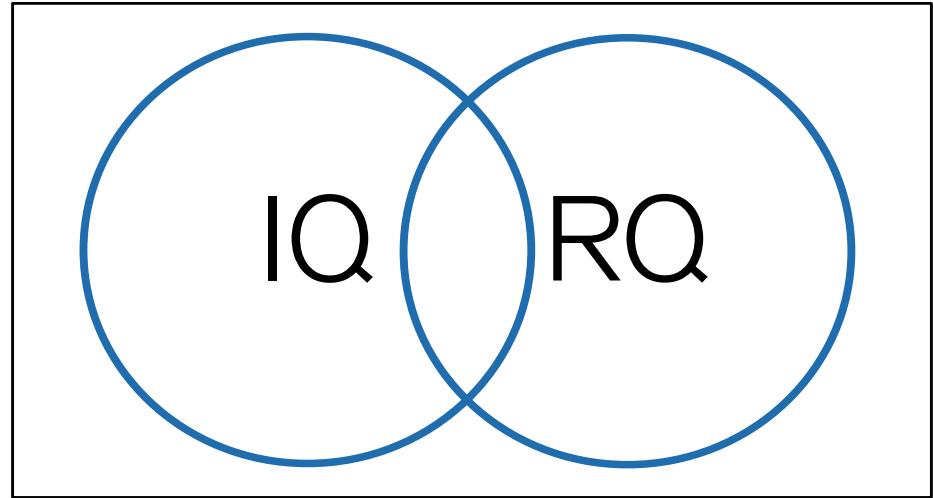
# Brier Score

Day	<u>Rain</u>		<u>No Rain</u>		<u>Brier Score</u>	
	Forecast	Outcome	Forecast	Outcome	Calculation	Result
1	30%	0	70%	1	$= (0.3-0)^2 + (0.7-1)^2$	0.18
2	80%	1	20%	0	$= (0.8-1)^2 + (0.2-0)^2$	0.08
3	60%	0	40%	1	$= (0.6-0)^2 + (0.4-1)^2$	0.72
4	100%	1	0%	0	$= (1.0-1)^2 + (0.0-0)^2$	0.00
<b>Mean</b>						<b>0.25</b>



Source: Glenn W. Brier, "Verification of Forecasts Expressed in Terms of Probability," *Monthly Weather Review*, Vol. 78, No. 1, January 1950, 1-3.

# Personality



- Instrumental rationality
- Epistemic rationality

“Beliefs are hypotheses to be tested, not treasures to be protected.”

Source: [www.keithstanovich.com](http://www.keithstanovich.com) and Tetlock and Gardner, *Superforecasting*, 191.

# Personality

Imagine that the Zapper virus causes a serious disease that occurs in one of every thousand people. Say there is a test to diagnose the disease that always indicates correctly that a person who has the Zapper virus actually has it.

Finally, imagine that the test indicates that the Zapper virus is present in five percent of the cases where the person does not have the virus.

We now choose a person at random without knowing anything about his or her medical history and administer the test, and the test indicates that the person has the Zapper virus.

What is the probability, expressed as a range from 0 to 100 percent, that the individual actually has the virus?

# Personality

confidence.success-equation.com

## Do you know what you know?

A Confidence Calibration Exercise

After answering each of the true/false questions below, indicate how confident you are in your answer using the corresponding slider. A value of 50% means you have no idea what the right answer is (the same probability as a random guess between the two choices); a value of 100% means you are completely confident in your answer.

English is the top language used on the Internet

True  False

Probability of correctness: 50%

The ferrule connects the bristles to the handle on a

True  False

Probability of correctness: 60%

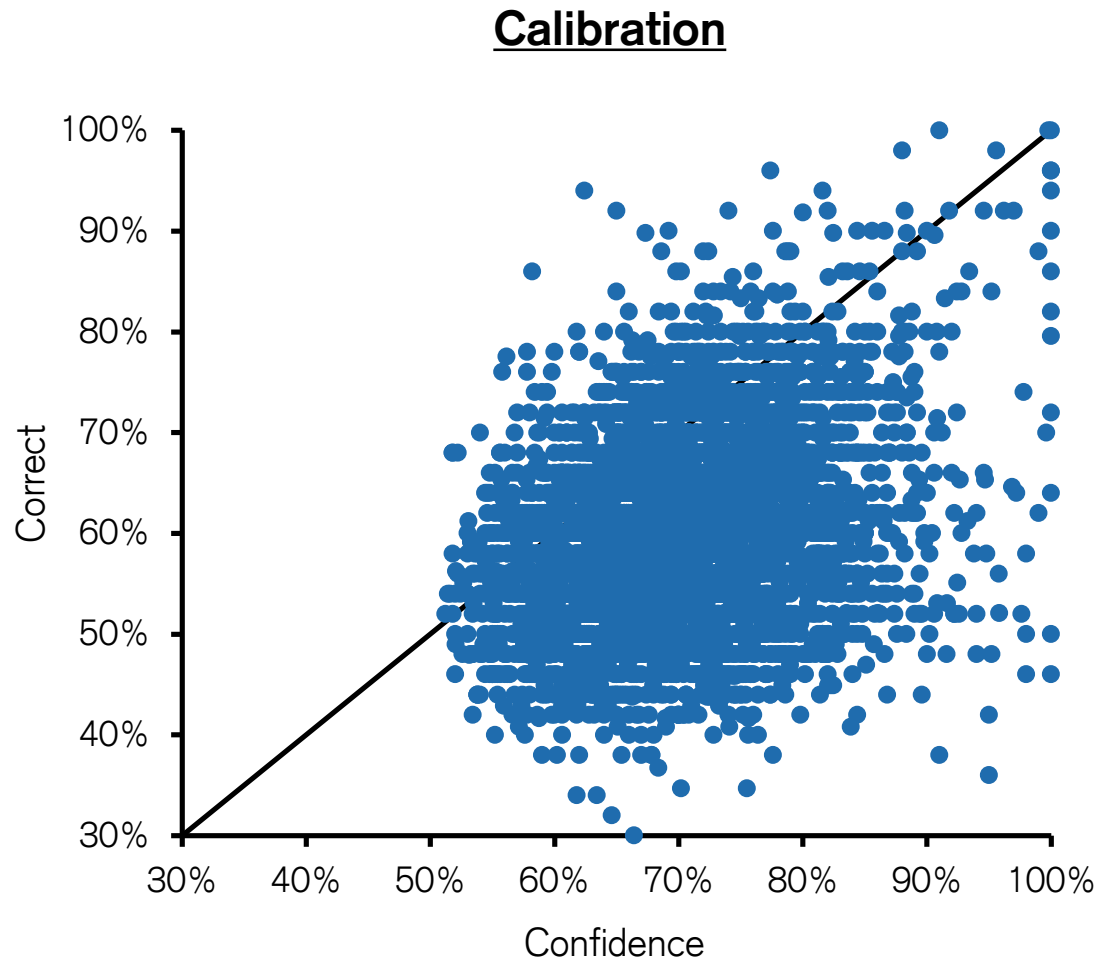
Neutrons are the particles in an atom that have positive charge

True  False

Probability of correctness: 50%

Source: www.confidence.success-equation.com.

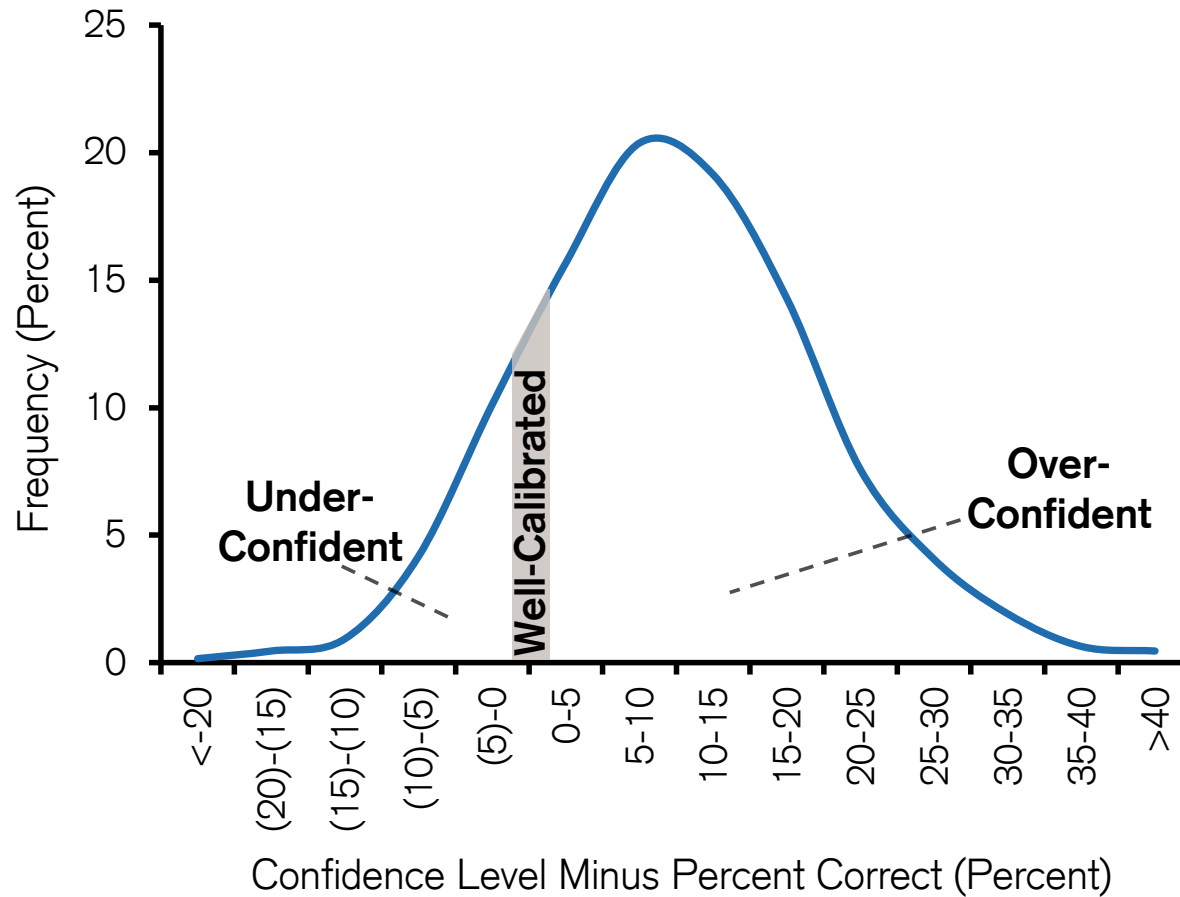
# Calibration and Conviction



Source: [www.confidence.success-equation.com](http://www.confidence.success-equation.com) and Credit Suisse.

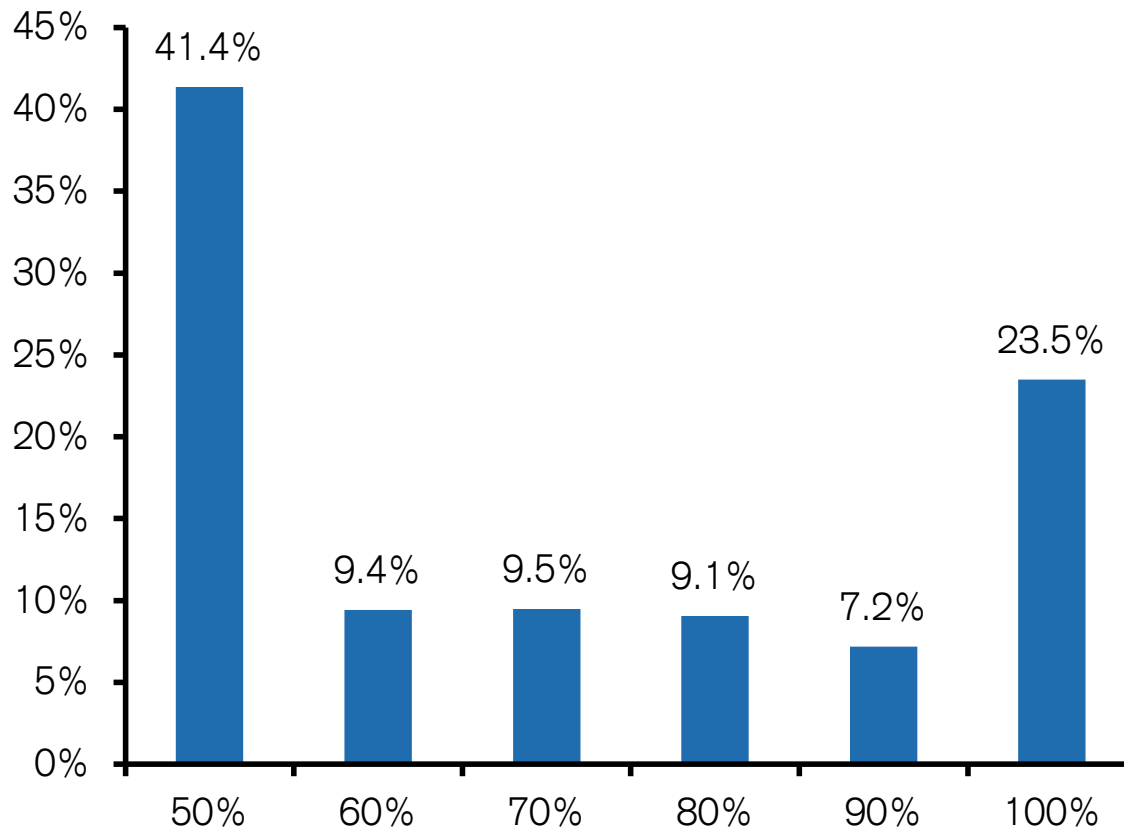


# Calibration and Conviction



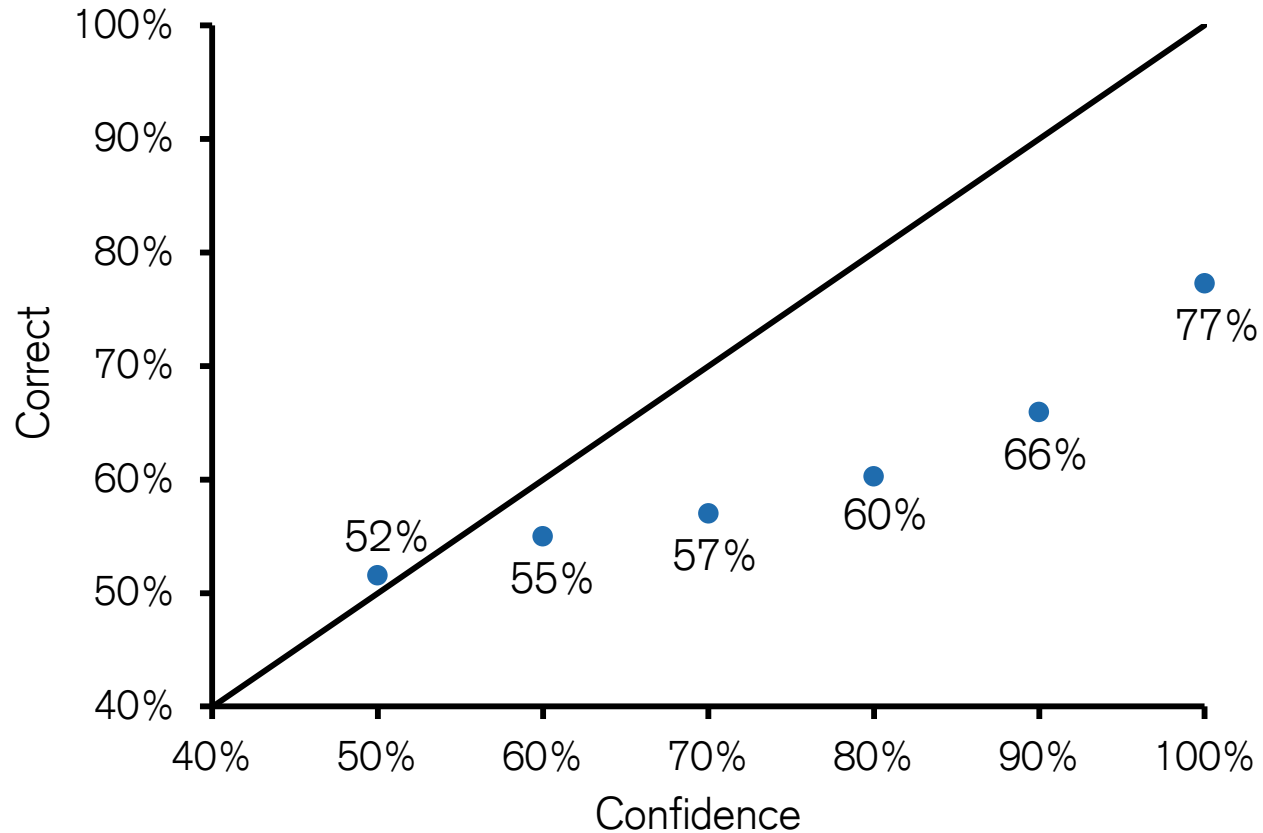
Source: [www.confidence.success-equation.com](http://www.confidence.success-equation.com) and Credit Suisse.

# Calibration and Conviction



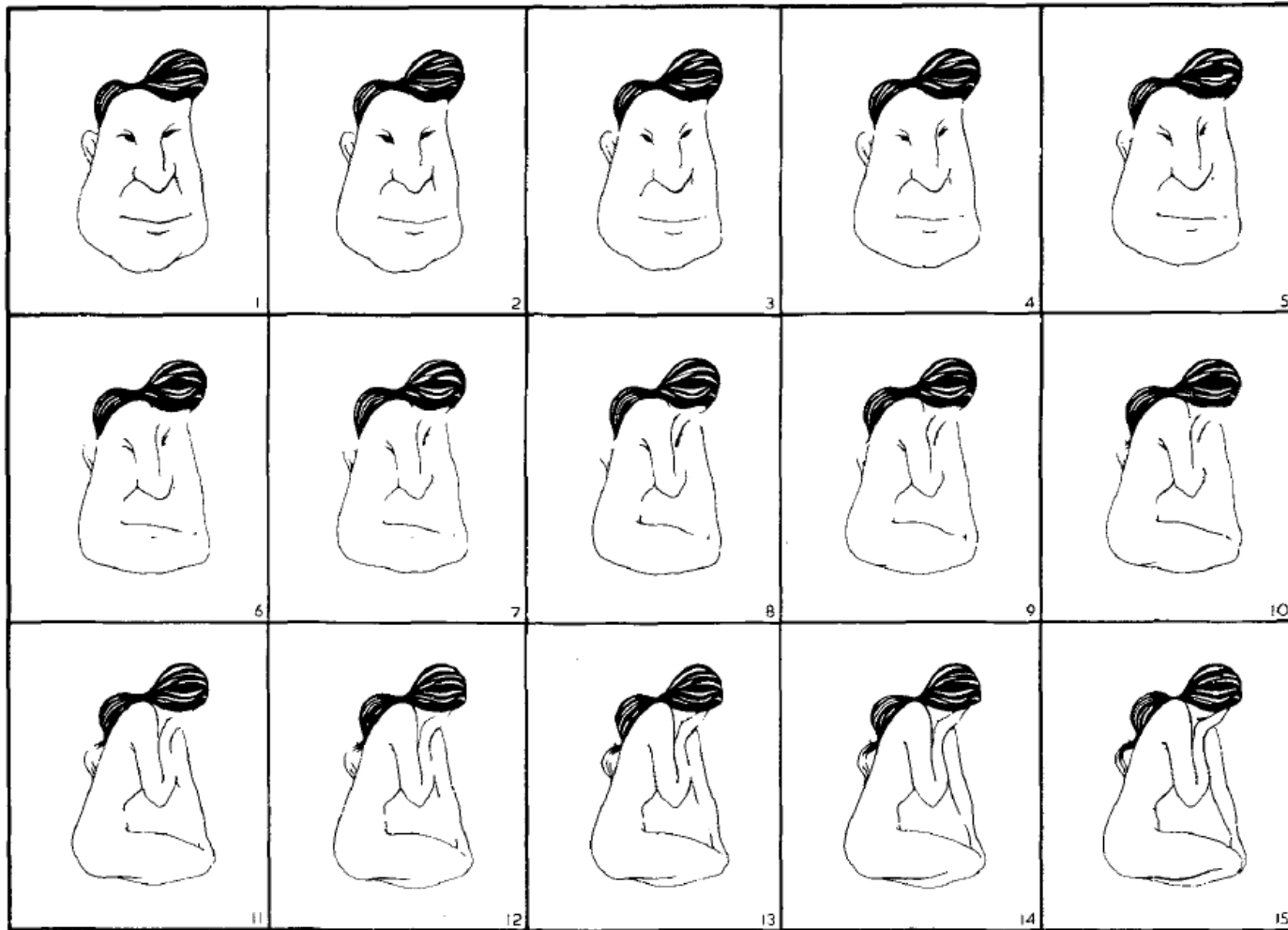
Source: [www.confidence.success-equation.com](http://www.confidence.success-equation.com) and Credit Suisse.

# Calibration and Conviction



Source: [www.confidence.success-equation.com](http://www.confidence.success-equation.com) and Credit Suisse.

# Personality



Source: Gerald H. Fisher, "Preparation of ambiguous stimulus materials," *Perception & Psychophysics*, Vol. 2, No. 9, September 1967, 421-422.

# Personality

## ■ Philosophic Outlook

- **Cautious:** Nothing is certain
- **Humble:** Reality is infinitely complex
- **Nondeterministic:** What happens is not meant to be and does not have to happen

## ■ Abilities and Thinking Styles

- **Actively open-minded:** Beliefs are hypotheses to be tested, not treasures to be protected
- **Intelligent and knowledgeable, with a “need for cognition”:** Intellectually curious, enjoy puzzles and mental challenges
- **Reflective:** Introspective and self-critical
- **Numerate:** Comfortable with numbers

**Actively open-minded**

## ■ Methods of Forecasting

- **Pragmatic:** Not wedded to any idea or agenda
- **Analytical:** Capable of stepping back from the tip-of-your-nose perspective and considering other views
- **Dragonfly-eyed:** Value diverse views and synthesize them into your own
- **Probabilistic:** Judge using many grades of maybe
- **Thoughtful updaters:** When facts change, they change their minds
- **Good intuitive psychologists:** Aware of the value of checking thinking for cognitive and emotional biases

**Probabilistic**

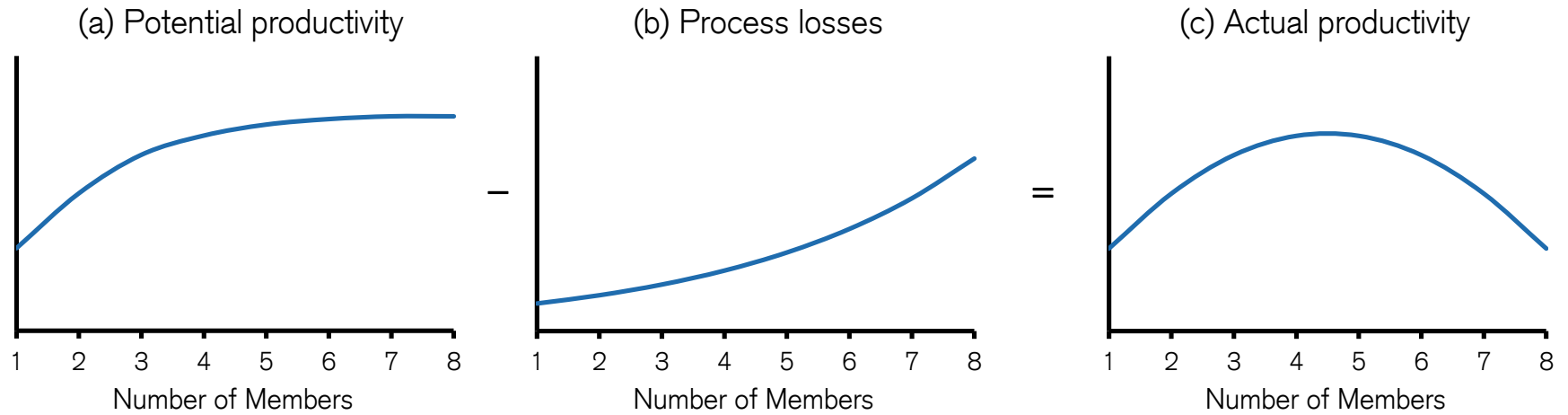
## ■ Work Ethic

- **A growth mindset:** Believe it's possible to get better
- **Grit:** Determined to keep at it however long it takes

**Thoughtful updaters**

Source: Philip E. Tetlock and Dan Gardner, *Superforecasting: The Art and Science of Prediction* (New York: Crown Publishers, 2015), 191-192. Used by permission.

# Teams



Source: Adapted from J. Richard Hackman, *Leading Teams: Setting the Stage for Great Performance* (Boston, MA: Harvard Business School Press, 2002), 117.

# Teams

## Types of Diversity

### Social category

Race

Ethnicity

Gender

Age

Religion

Sexual orientation

### Cognitive

Education

Functional knowledge

Information or expertise

Training

Experience

Abilities

### Value

Task

Goal

Target

Mission

Source: Adapted from Elizabeth Mannix and Margaret A. Neale, "What Differences Make a Difference? The Promise and Reality of Diverse Teams in Organizations," *Psychological Science in the Public Interest*, Vol. 6, No. 2, October 2005, 36. Also, Karen A. Jehn, Gregory B. Northcraft, and Margaret A. Neale, "Why Differences Make a Difference: A Field Study of Diversity, Conflict, and Performance in Workgroups," *Administrative Quarterly*, Vol. 44, No 4, December 1999, 741-763.

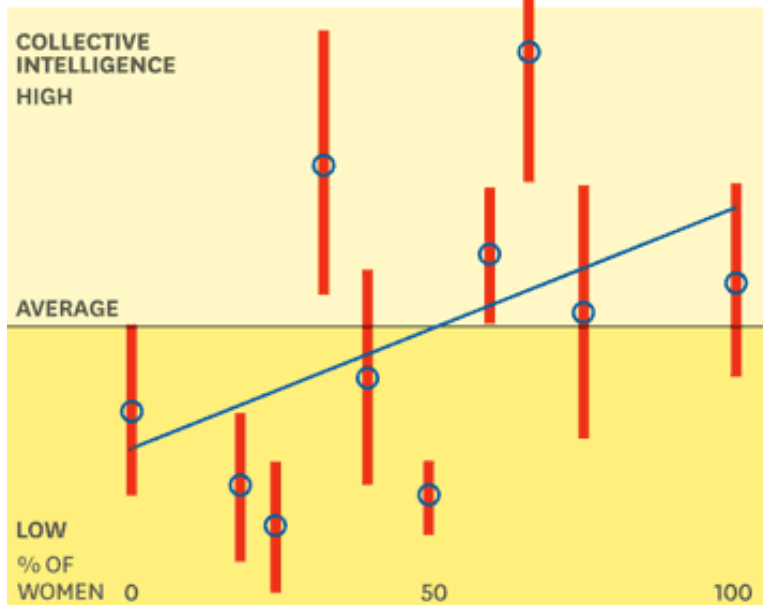
# Teams

- **Psychological safety.** Team members feel safe to take risks and be vulnerable in front of one another.
- **Dependability.** Team members get things done on time and meet a high bar for excellence.
- **Structure and clarity.** Team members have clear roles, plans, and goals.
- **Meaning.** Work is personally important to team members.
- **Impact.** Team members think their work matters and creates change.

Source: Julia Rozovsky, "The Five Keys to a Successful Google Team," November 17, 2015. See <https://rework.withgoogle.com/blog/five-keys-to-a-successful-google-team/>.



# Teams



## Collective intelligence – *c* – exists

- Members contribute equally to discussion
- Members score higher in a test of “Reading the Mind in the Eyes”
- Teams with women outperform teams with men

Source: Anita Woolley and Thomas W. Malone, “Defend Your Research: What Makes a Team Smarter? More Women,” *Harvard Business Review*, June 2011.

# De-Biasing Training

Inside

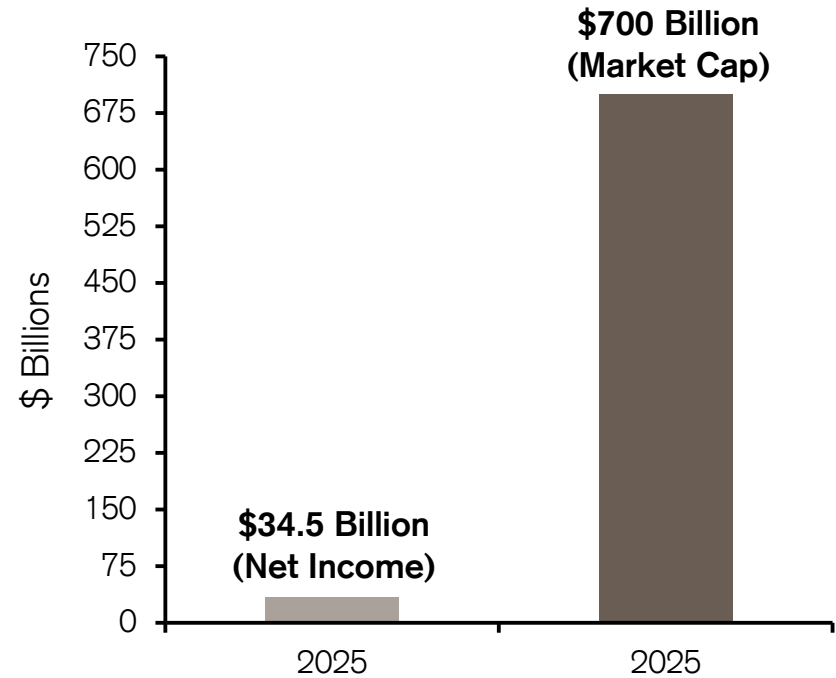
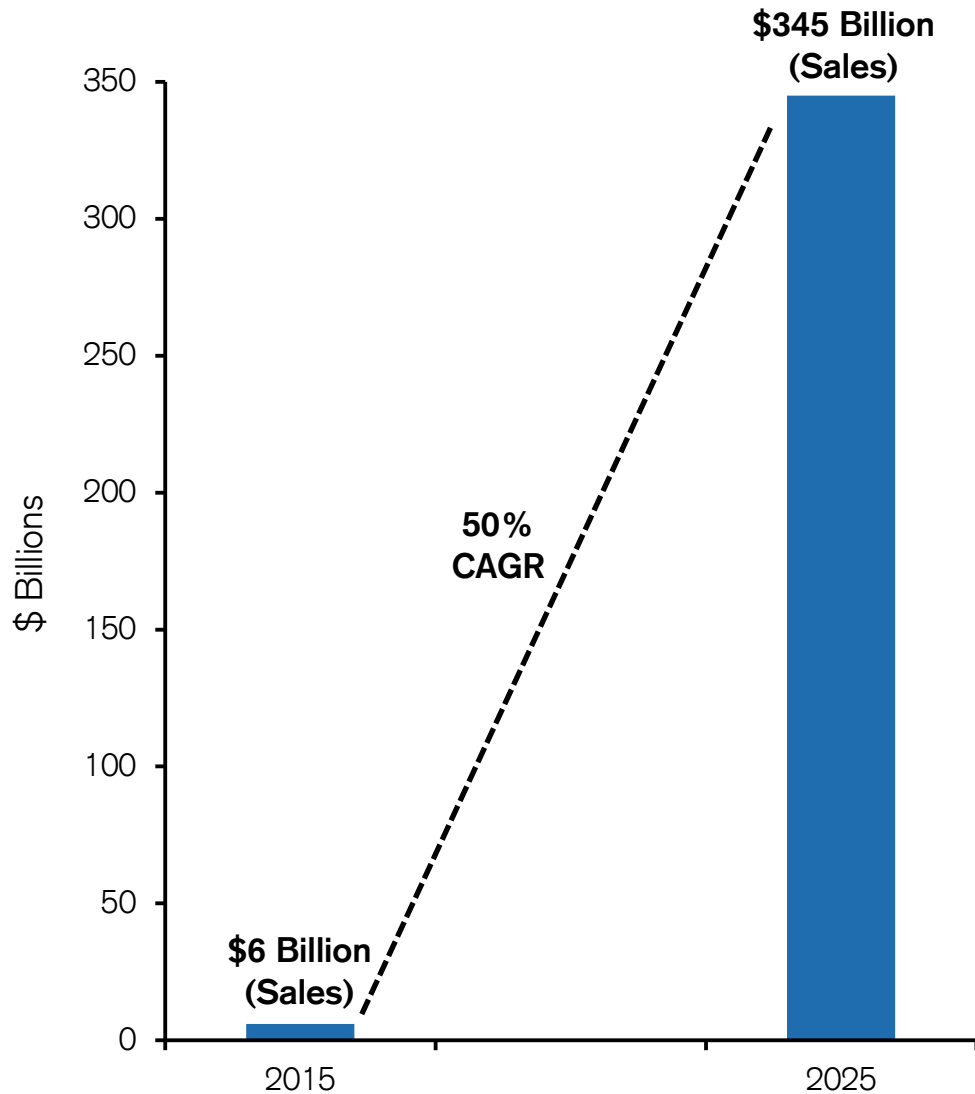
versus

Outside



Source: Eirik Solheim.

# De-Biasing Training

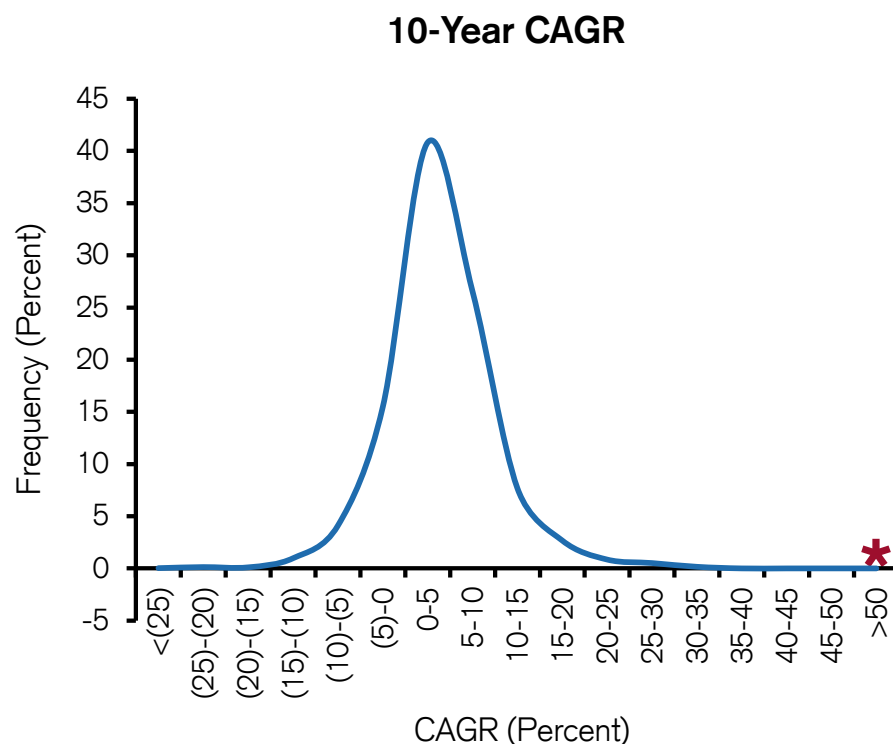


Source: Tesla Motors, Inc. Q4 2014 Earnings Call, February 11, 2015. See FactSet: callstreet Transcript, 7.

# De-Biasing Training

“People who have information about an individual case rarely feel the need to know the statistics of the class to which the case belongs.”

Sales: \$4,500-7,000 Mn	Observations			
Sales CAGR (%)	1-Yr	3-Yr	5-Yr	10-Yr
<(25)	105	24	11	1
(25)-(20)	58	36	9	5
(20)-(15)	93	54	31	4
(15)-(10)	218	139	89	38
(10)-(5)	378	294	215	160
(5)-0	732	772	747	603
0-5	1,239	1,484	1,595	1,591
5-10	1,080	1,090	1,110	1,034
10-15	634	575	504	299
15-20	363	322	267	104
20-25	215	189	106	33
25-30	159	99	51	20
30-35	98	58	28	6
35-40	53	25	13	0
40-45	43	20	8	0
>45	216	50	15	0
<b>Total</b>	5,684	5,231	4,799	3,898
<b>Mean</b>	7.9%	5.7%	5.0%	3.9%
<b>Median</b>	5.1%	4.4%	4.1%	3.7%
<b>StDev</b>	23.0%	11.6%	8.7%	6.0%



Source: Daniel Kahneman, *Thinking, Fast and Slow* (New York: Farrar, Straus and Giroux, 2011), 249; Michael J. Mauboussin, Dan Callahan, and Darius Majd, “The Base Rate Book—Sales Growth: Integrating the Past to Better Anticipate the Future,” *Credit Suisse Global Financial Strategies*, February 23, 2016.

# Summary

- Foresight is a real and measurable skill
- Superforecasters are actively-open minded, intellectually humble, numerate, thoughtful updaters, and hard working
- Teams can be better than individuals, but only under the right conditions
- Integrating base rates can sharpen forecasts
- Getting good answers is different than asking good questions

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