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Discussion of: Investor Memory and Biased Beliefs: Evidence from the Field

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ABFER
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On the origins of beliefs

Where do beliefs come from?

1. Past experiences
   - Depression: Malmendier and Nagel (2011)
   - Fatal disasters: Bernile, Bhagwat, and Rao (2017)
   - SNL crisis affects bank CEO risk taking: Yu (2023)

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2. Current experiences
   - Global Warming: Choi, Gao, and Jiang (2020)
     - Exposure to abnormal weather experiences
     - Attracts attention to global warming
     - Affects the pricing of local carbon risk.

On the origins of beliefs

Memory is a natural next step in this literature.

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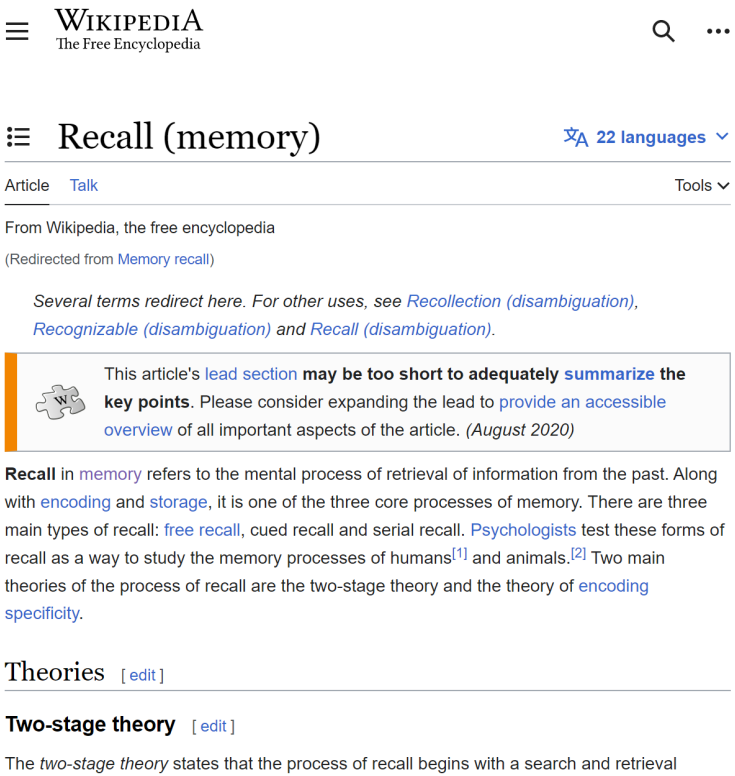
How to access investor's memory?

- Authors run a field experiment:
  1. Survey Chinese investors
  2. Ask investors to recall past experiences.
  3. Ask for expectations of market & own portfolio return.
  4. Link survey to participant's brokerage accounts.

Scientific evidence on encoding and recall of memories



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Recall (memory)

22 languages

Article Talk Tools

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(Redirected from Memory recall)

Several terms redirect here. For other uses, see Recollection (disambiguation), Recognizable (disambiguation) and Recall (disambiguation).

This article's lead section **may be too short to adequately summarize the key points**. Please consider expanding the lead to provide an accessible overview of all important aspects of the article. *(August 2020)*

Recall in memory refers to the mental process of retrieval of information from the past. Along with encoding and storage, it is one of the three core processes of memory. There are three main types of recall: free recall, cued recall and serial recall. Psychologists test these forms of recall as a way to study the memory processes of humans[1] and animals.[2] Two main theories of the process of recall are the two-stage theory and the theory of encoding specificity.

Theories [edit]

Two-stage theory [edit]

The *two-stage theory* states that the process of recall begins with a search and retrieval

15 page Wiki article

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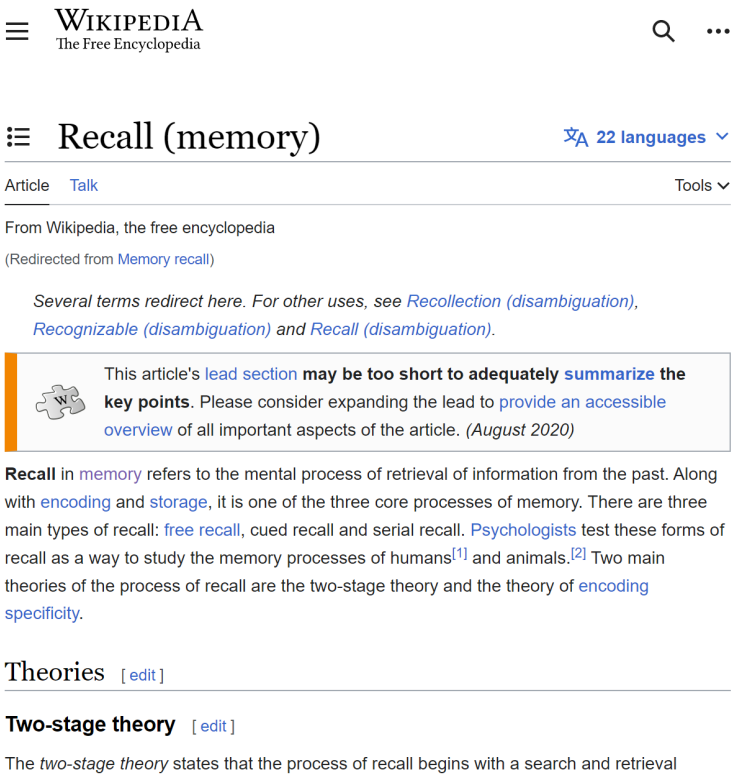

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- Attention
- Emotion
- Subsequent suggestions

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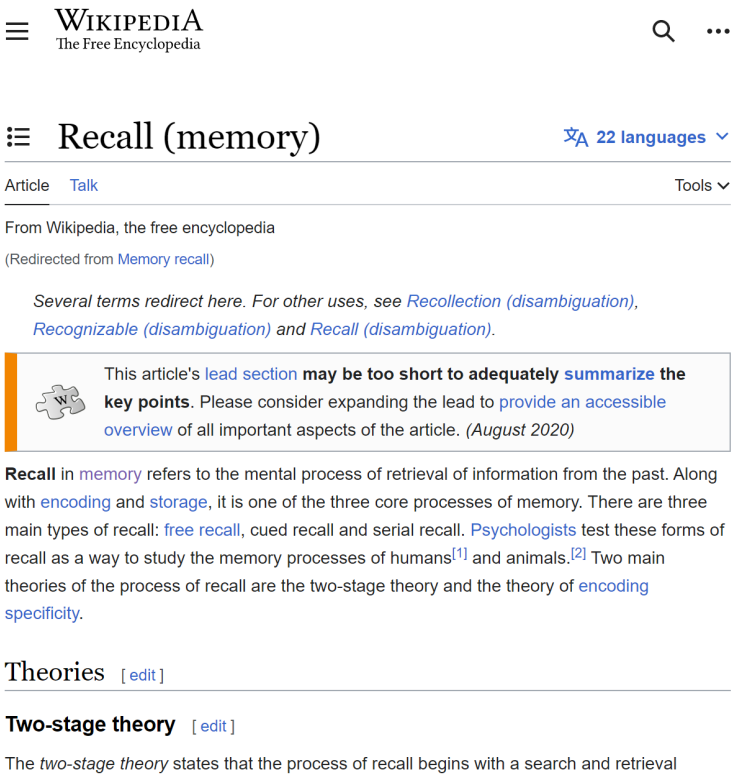

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Encoding of memory depends on:

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Recall of memory depends on:

- Recency of the event
- Motivation
- Working memory

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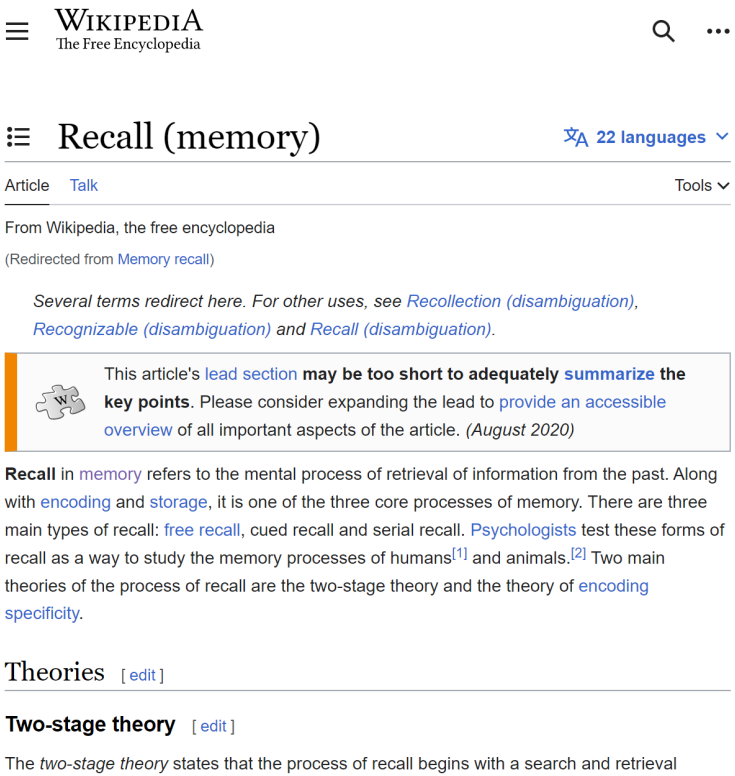

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Encoding of memory depends on:

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Recall of memory depends on:

- Recency of the event
- Motivation
- Working memory
- Females recall more accurately
- Females exhibit more negative recall

Field experiment design

Survey completed through computer or mobile app:

- Unpaid
- Around December 2021
- 3 waves over 6 weeks

Field experiment design

Survey completed through computer or mobile app:

- Unpaid
- Around December 2021
- 3 waves over 6 weeks
- Typical participant is 35 years old, bachelors degree
- Many are wealthy $>$ \$1M RMB
- 17,000+ Chinese investor participants
- 3,000 to 7,000 participants in most analysis
- 1,000+ participants in linked account analysis
- Survey has 3 blocks: Free recall, probed recall, and give expectations

Block 1: Free Recall - *What comes to mind?*

- Task 1: Recall a memory

  "First think about the overall stock market movement since you opened an account."

  "Since you started trading, what is the episode of market movement that first comes to mind? Please enter the starting month and ending month of this episode."

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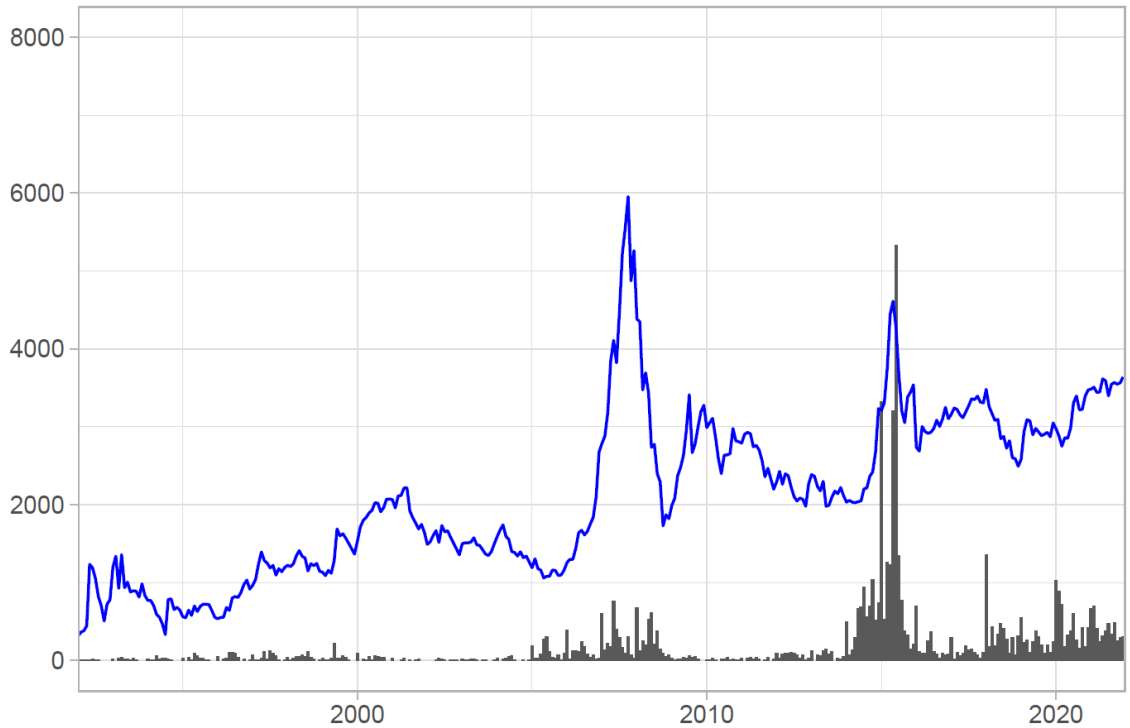
- Task 2: Recall the return of this memory (MCQ)

  "How much did the market move during this period?"
  "What was your total RMB investment during this period?"
  "What was your total RMB return during this period?"

Block 1: What did investors free recall?



Panel (a) Distribution of start dates

Bubbles (salient events) and recent events (recency bias)

Block 2: Probed Recall (Guided)

Ask the participant for an specific past return.

"To the best of your recollection, what was the cumulative return rate of your equity investment over:"

- yesterday?
- past month?
- past year?
- past five year?

Block 3: Expectations

Please give an expectation on:

- Future market returns
    1. Mean
    2. Probability of negative tail event
- Future own portfolio returns

Summary of the key results

Free recall:

- Age (+) return
- Female (-) return
- Frequency of checking the account (-) return

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Beliefs of future market and own returns are explained by:

- Free recall memories
- Probed recall memories have stronger effects than free recall memories
- Recall memories dominate actual episode returns

Comment 1: Free recall and recent market returns

	Dependent variable: Recalled episode return		
	Panel A: Full		
	(1)	(2)	(3)
Market return, today	0.32		−0.21
	(1.35)		(1.49)
Market return, past month		−0.61	−0.57
		(0.53)	(0.58)
Observations	3,443	3,612	3,443
R^2	0.04	0.04	0.04
Adjusted R^2	0.01	0.01	0.01
	Panel B: Recalled episode end $\leq$ 5 years		
	(4)	(5)	(6)
Market return, today	2.08*		3.27***
	(1.21)		(1.16)
Market return, past month		0.86**	1.36***
		(0.41)	(0.44)
Observations	880	916	880
R^2	0.14	0.14	0.15
Adjusted R^2	0.02	0.02	0.03

Table 5 of 18

"The null results may initially appear surprising and running counter to the hypothesis of similarity-based recall."

Panel B uses a subsample to identify this association.

Comment 1: Free recall and recent market returns

Economic theory versus science theory.

- Your economic model builds-in similarity-effect on beliefs.
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Comment 1: Free recall and recent market returns

Economic theory versus science theory.

- Your economic model builds-in similarity-effect on beliefs.
- In the data, you predict an association between free recall and recent market returns.
- But science research says *working memory* is required to trigger similarity recall.
- Block 1 asks: *"First think about the overall stock market movement since you opened an account."*
  - You trigger the participant to think about the entire period.
  - Recent market returns might not be in working memory.
  - The null result is *not* surprising.
  - Also panel B has the econometric issue of conditioning on the Y-variable.

Comment 2: Linking beliefs to actions

Classic empirical approach vs survey approach

- Classic studies cannot observe beliefs (*weakness*) but can identify outcomes (*strength*).
- Survey approach elicits beliefs (*strength*), but does it affect actions?

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Table 16 links expectations to actions (trading)

- Important test
- Addresses the *motivation* concern. Are investors seriously providing answers? They are unpaid.
- This shows it affects actions.

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- Can you do more here? It seems the prediction should be directional, not just trading.
- Recall $\rightarrow$ Expectation $\rightarrow$ Action. Is there a way to estimate a reduced form/simultaneous regression?

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Comment 3: Does accuracy of memory relate to performance?

Behavioral theories of biased beliefs (salience, extrapolation, prospect theory) imply that bias causes investment errors.

- This paper links to many of these theories.
- Perhaps in a different paper, can you test whether accuracy of memory relates to performance?

Additional comments to the authors

- Why do participants in free recall tend to remember bubbles, but the median recalled return episode has a median return of 0.0%?
- Table 3/4: The age-return association could be due to survivorship bias. Older people stay in the sample if they have had higher returns.
- Table 3/4: Does checking the account just proxy for poor past performance?
- Why does Table 5 not have actual own return yesterday and past month?
- Table 6 & 7 are very similar. Combine?
- Table 11-14 seems like robustness/verification
- Do people recall their first experience once they started investing?

Final remarks

Economic agents act on beliefs $\sim f(memoryrecall)$.

- This is a foundational paper to study memory, experiences, and beliefs.
- Results are consistent with scientific research, which is good!
- Science is open to replication.
- We need this evidence in finance research.