

Retrieval of Autobiographical Information

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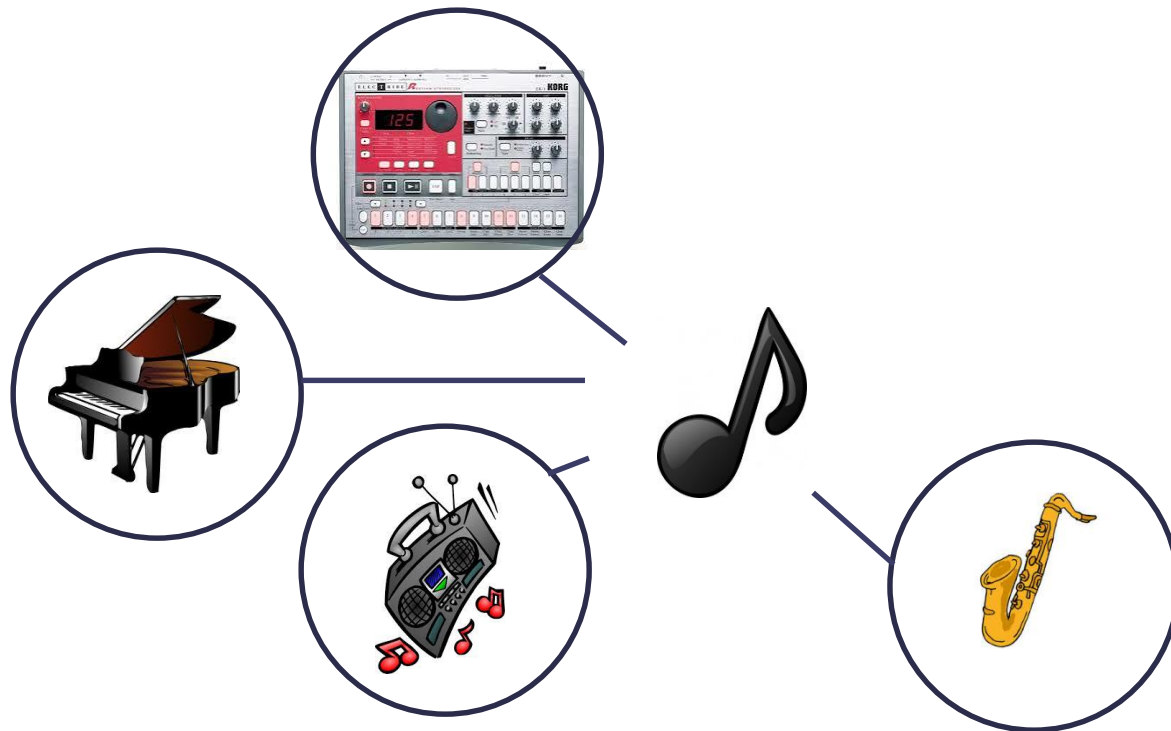
The Consumer Expenditure Survey

Since the first of February, have you or any members of your household purchased for you or your household or for someone outside of your household any sofas?

- Organized in sections of similar items
 - ▶ “Home furnishings and related household items”
 - ▶ “Vehicle operating expenses”
 - ▶ “Clothing and clothing expenses”
- The survey is designed for interviewers to proceed linearly through the survey in a fixed order
- Is this how respondents store and recall from memory information about expenses?

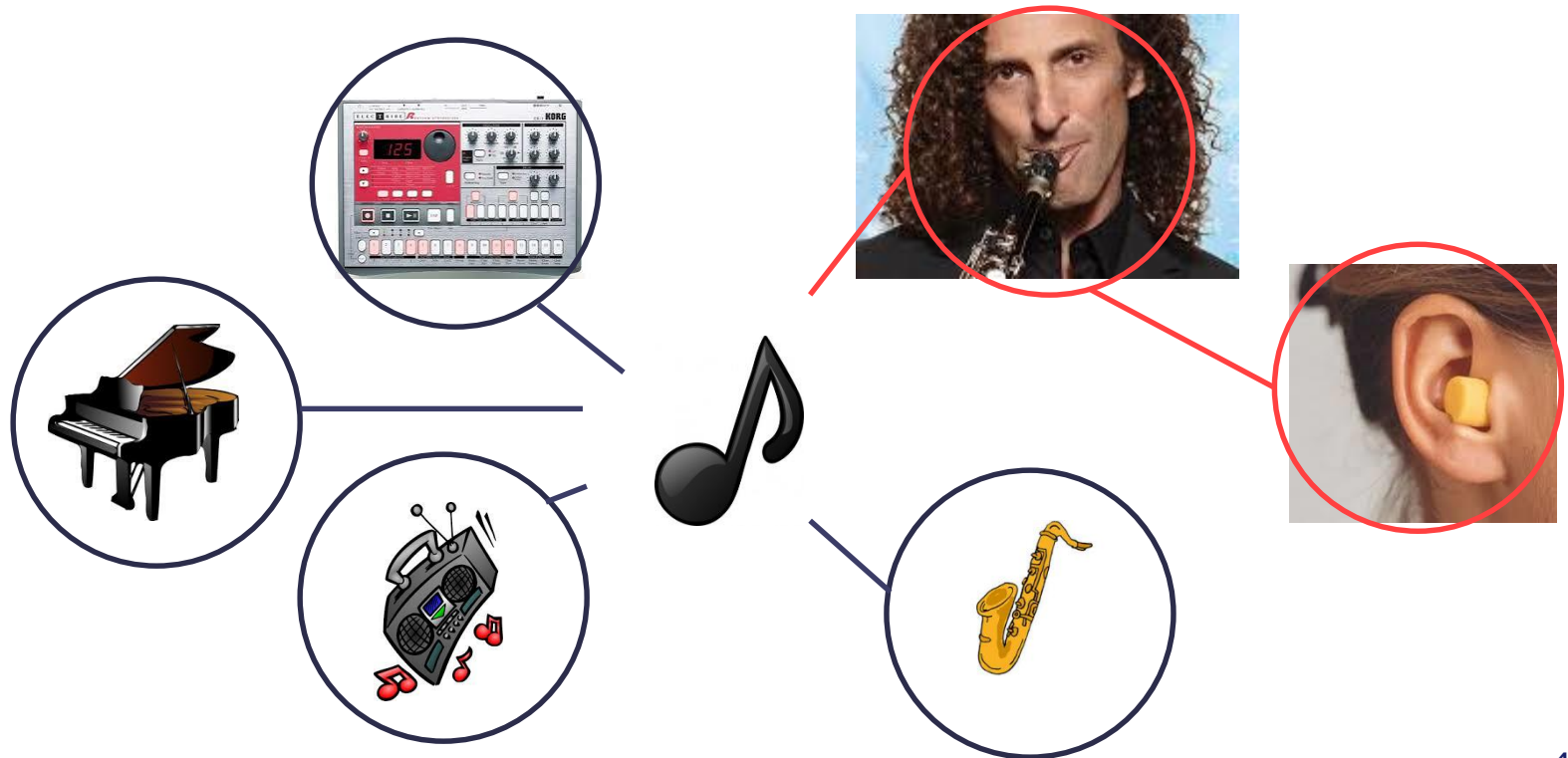
Retrieval of information from memory

- Retrieval is thought to be based on association
- Probability of recall is proportionate to the strength of the association



Retrieval of information from memory

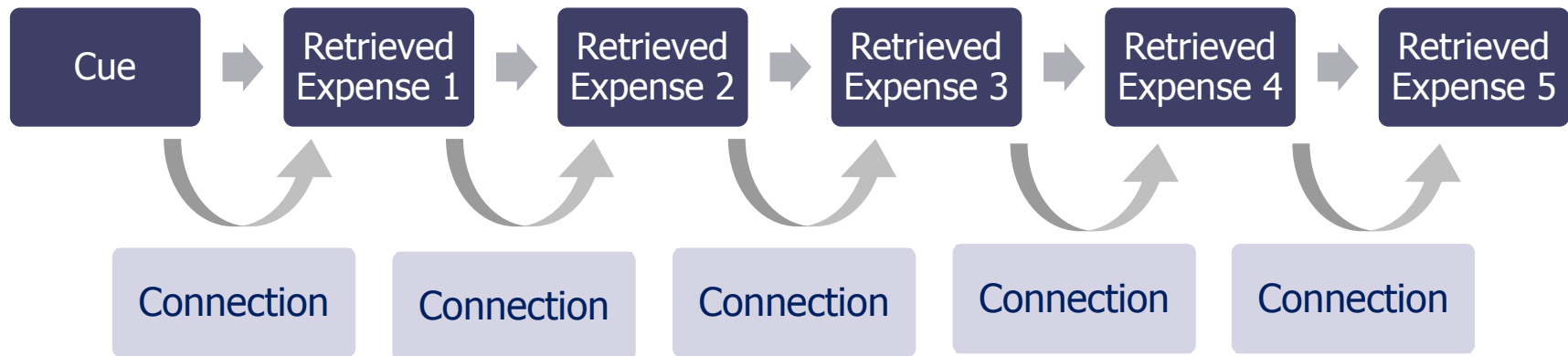
- What happens when personal information is relevant?



Participants

- Recruited from Amazon mTurk
- $n = 825$ Amazon mTurk workers
 - ▶ Excluded $n = 79$ (9%) based on data quality
 - ▶ Age: Mean = 34 years (SD=11.3)
 - ▶ HH size: Mean = 2.74 people (SD=1.36)
 - ▶ Education: Median = Bachelor's degree
- Task duration about 10 minutes
- Incentive = \$2.20 (effective \sim \$13/hr)

The Task



- Each participant is provided a cue to start recall
- Started with one of five retrieval cues, to give us a range of retrieval contexts
 - Cue assignment varied between groups
- If no more related expenses to report, instructed to report whatever comes to mind next

Retrievals driven by autobiographical associations

Shirts

The last item like this I bought was a Seahawks hoodie.

Seahawks hoodie

[...] I have to order the NFL's direct ticket package so I can watch [the Seahawks] on tv here in Indiana.

NFL Direct Ticket

I don't have a cable ready tv, so thinking about the direct ticket package made me think of buying a tv

New HD TV

Watching tv, especially football made me think about relaxing in a new chair

Lazy Boy Chair

Relaxing in a new lazy boy chair made me think about drinking cool beverages.

Cooler for beverages

Coding Open-ended Responses

- Two independent coders coded the item descriptions and retrieval reasons
 - ▶ Split full data set of participants between the two coders; each coded half
 - ▶ 20% double coded
 - ▶ Expenditure category overall kappa = 0.894
 - ▶ Reasons overall kappa = 0.633

Alignment of Recalled Items and Expenditure Category

	Mean
Unique Expenditure Categories, Item 1	12.8
Unique Expenditure Categories per Sequence	2.85
Switches Between Expenditure Categories	2.01
Switches Back to Original Expenditure Category	0.17

n = 825

- Participants recalled items from a range of expenditure categories other than cued
- Some participants returned to the cued expenditure category after switching away

Reasons Coding

Shirts

The last item like this I bought was a Seahawks hoodie.

Seahawks hoodie

[...] I have to order the NFL's direct ticket package so I can watch [the Seahawks] on tv here in Indiana.

NFL Direct Ticket

I don't have a cable ready tv, so thinking about the direct ticket package made me think of buying a tv

New HD TV

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Lazy Boy Chair

Relaxing in a new lazy boy chair made me think about drinking cool beverages.

Cooler for beverages

Reasons Coding

Similarity

The last item like this I bought was a Seahawks hoodie.

Shared Activity

[...] I have to order the NFL's direct ticket package so I can watch [the Seahawks] on tv here in Indiana.

Similarity

I don't have a cable ready tv, so thinking about the direct ticket package made me think of buying a tv

Shared Goal

Watching tv, especially football made me think about relaxing in a new chair

Similarity

Relaxing in a new lazy boy chair made me think about drinking cool beverages.

Retrieval Strategies

Retrieval Strategy		
Similarity		
Shared Activity		
Shared Goal		
Same Shopping Episode		
Narrative		
Visualization		
By or For Same Person		
Not Codeable		

Retrieval Strategies

Retrieval Strategy	Overall Frequency	Overall Proportion
Similarity	2499	60.6%
Shared Activity	681	16.5%
Shared Goal	299	7.2%
Same Shopping Episode	258	6.3%
Narrative	151	3.7%
Visualization	91	2.2%
By or For Same Person	75	1.8%
Not Codeable	71	1.7%

Retrieval Strategies Can Be Context-Driven

Retrieval Strategy	Cue = Hospitals Proportion	Overall Proportion
Similarity		60.6%
Shared Activity		16.5%
Shared Goal		7.2%
Same Shopping Episode		6.3%
Narrative		3.7%
Visualization		2.2%
By or For Same Person		1.8%
Not Codeable		1.7%

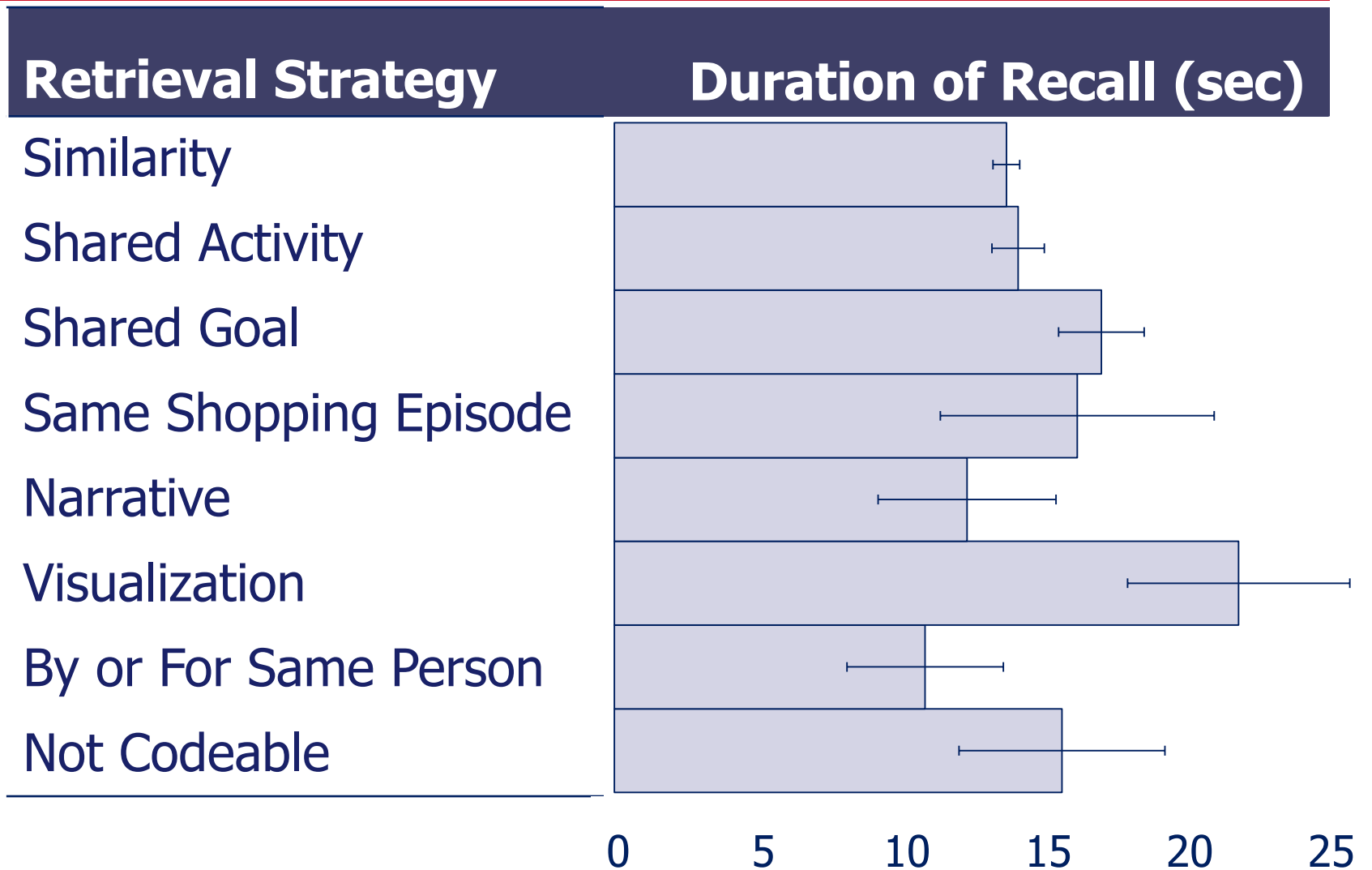
Retrieval Strategies Can Be Context-Driven

Retrieval Strategy	Cue = Hospitals Proportion	Overall Proportion
Similarity	55.4%	60.6%
Shared Activity	13.1%	16.5%
Shared Goal	11.9%	7.2%
Same Shopping Episode	7.2%	6.3%
Narrative	5.3%	3.7%
Visualization	1.9%	2.2%
By or For Same Person	2.8%	1.8%
Not Codeable	2.4%	1.7%

Retrieval Strategies Can Be Context-Driven

Retrieval Strategy	Expenditure Category Most Frequently Used		Expenditure Category Least Frequently Used	
Shared activity	Sports	28.9%	Shirts, sweaters, blouses, or tops	8.5%
Narrative	Hospital room or hospital services	5.3%	Shirts, sweaters, blouses, or tops	1.6%
Visualization	Room-size rugs or other non-permanent floor coverings	5.7%	Fitness Centers	0.8%

Retrieval Strategy Burden



Autobiographical Cues to Probe Autobiographical Memory

- Retrievals based on goals and activities
 - ▶ Activities and goals connect items in memory (Reiser, Black, & Abelson, 1985)
 - ▶ Such cues work best for prompting retrieval from memory (Brewer, 1988; Wagenaar, 1986)
- Directing retrieval through “probes” may improve recall
 - ▶ Context reinstatement (Fisher & Quigley, 1992)
 - ▶ Memories not activated by one retrieval probe may be accessed with another probe (Anderson & Pichert, 1978)

Understanding Retrieval

Comprehension

Retrieval

Judgment

Response

RETRIEVAL FROM LONG-TERM STORE

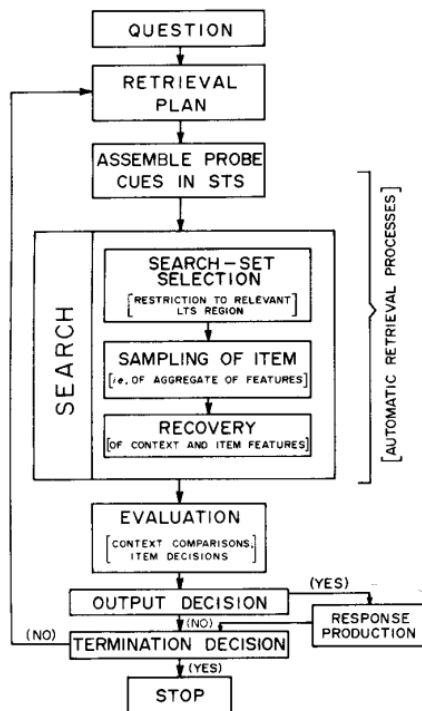


Fig. 2. A generalized depiction of the various phases of retrieval in the theory.

- Start with a cue
- Identify the relevant set of memories
- Search for items that are strongly associated with that cue
- Choose the items that fit best
- Decide whether satisfactory; if not, repeat the process

Raaijmakers & Shiffrin, 1981

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