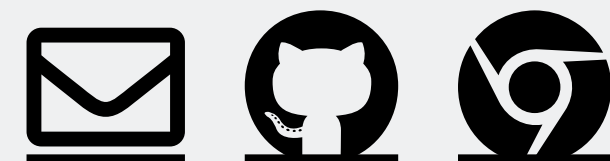


Second Language Acquisition

LG 376 — Semester 2, 2021 (Jan-May 2022)

CLASS 11: COGNITION

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Outline

- Recap: Cognition
- “Test your vocabulary” results
- Excursus: Working memory
- L2 learning and cognition
 - Implicit vs. explicit learning
- PsychoPy: Lesson 1
- Looking ahead: Week 12

The slide features a central white rounded rectangle with a double black border. The word "Recap" is centered within this rectangle in a large, bold, pink-to-red gradient font. On the left side of the slide, there are three vertical bars: a thin green one, a thin blue one, and a thicker grey one. At the bottom, there are two horizontal bars: a thin grey one and a thicker orange one.

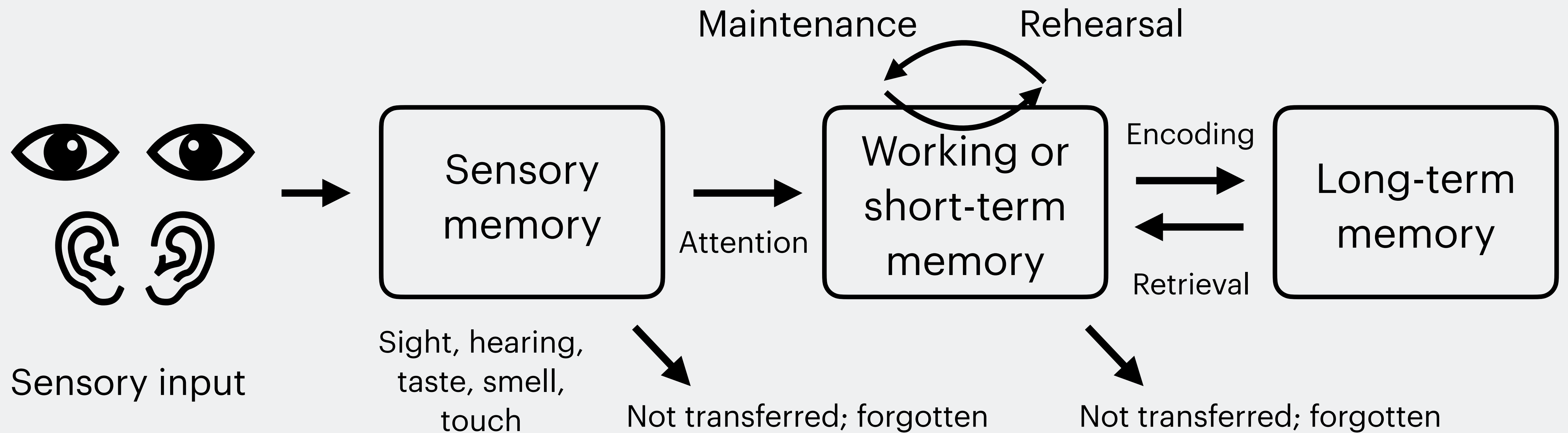
Recap

Setting the scene

- Memory processes
 - **Encoding:** transforming information into a form that can be entered and stored in the system
 - **Storage:** retaining information in memory for later use
 - **Retrieval:** recovering information stored in memory so that we are consciously aware of it

Setting the scene

- Three “stages” of memory:



Long-term memory (LTM)

- Types or systems of long-term memory
 - **Explicit-declarative memory**
 - Encyclopedic knowledge of facts and events
 - Dictionary of words
 - **Implicit-procedural memory**
 - Memory for skills and procedures



Define.... “absurd”



Declarative/procedural model



Michael Ullman

- When adults acquire an L2, both words and grammar are supported by declarative memory systems
- but how we initially learn an L2 influences how it is encoded!

	Procedural LTM	Declarative LTM
L1	Grammar	Words
L2		Grammar & Words

Test your vocabulary

Test your vocabulary

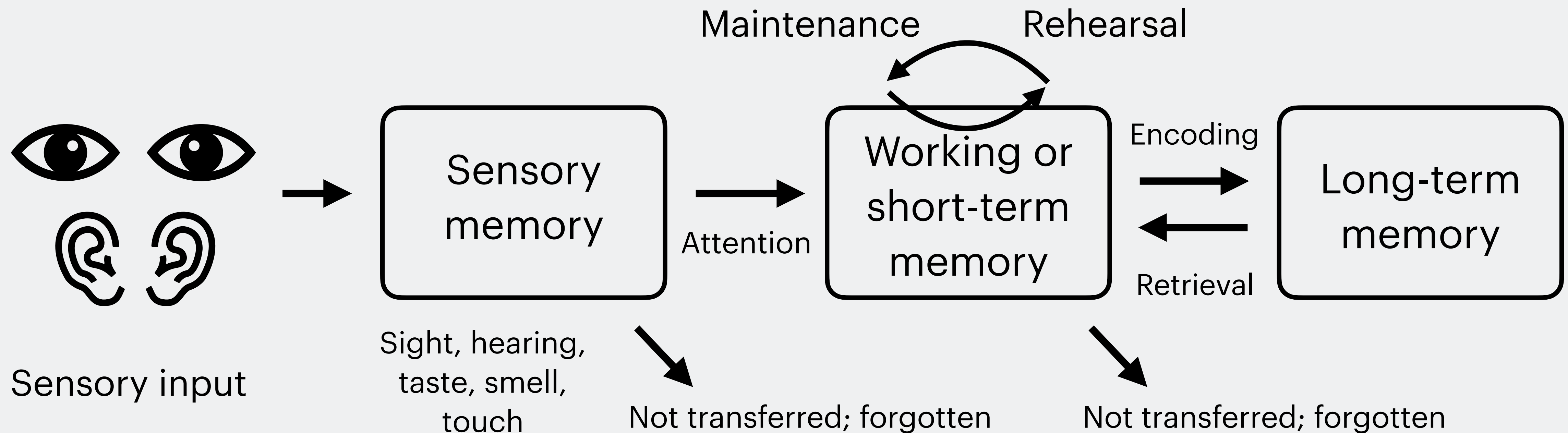
Questions:

- What level/band are you?
- What aspect of your vocabulary knowledge is tested? How?
- Based on what you see, does the test assess knowledge of word families?
- Does the test assess receptive or productive knowledge? Why?

Excursus: Working memory

Working memory (WM)

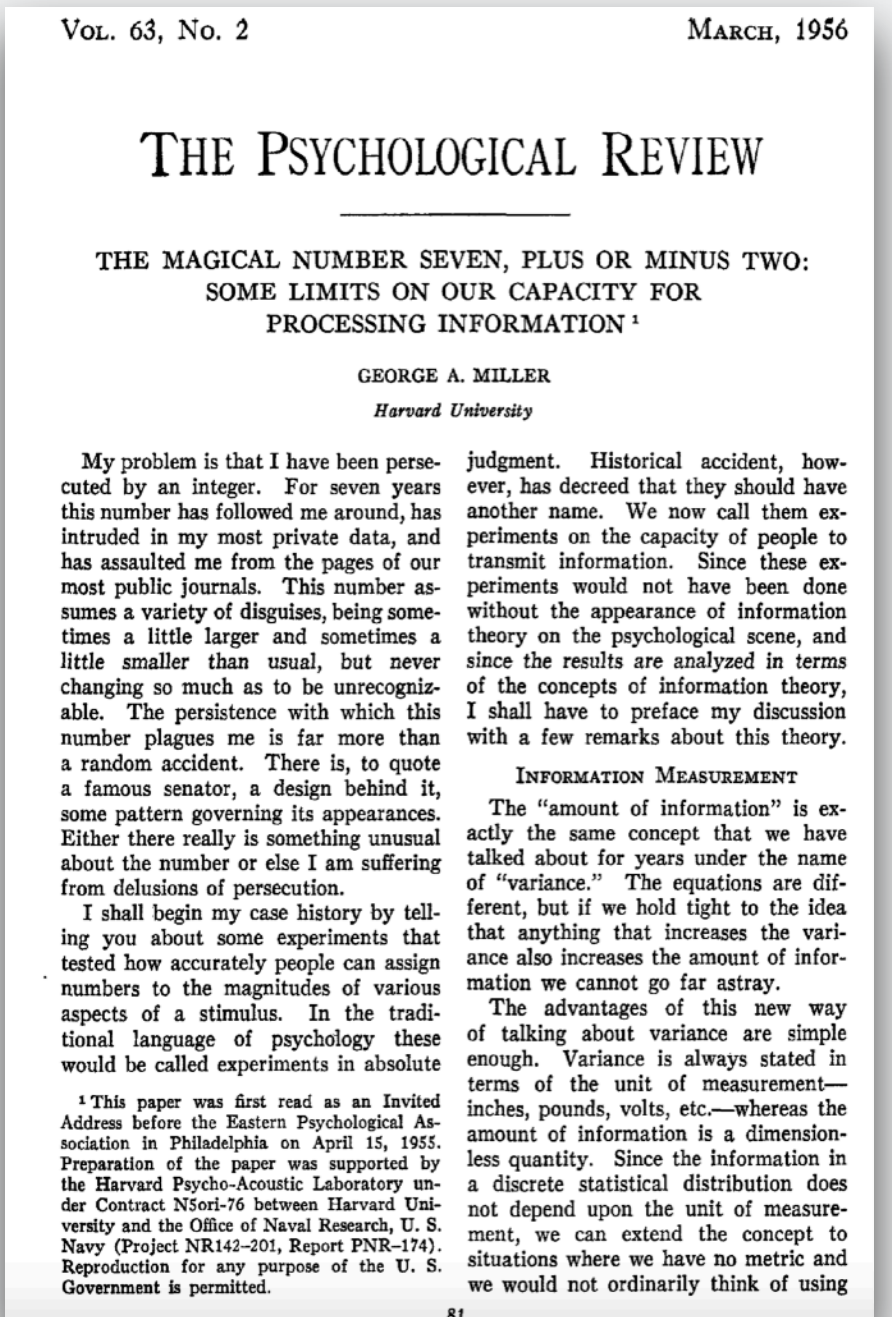
- Three “stages” of memory:



Working memory (WM)

- Function: conscious processing of information (“processing”)
 - A place where information is actively worked on
- Capacity: limited (holds 7 ± 2 “items”; see Miller [1956])
 - Some ways to expand capacity (chunking, etc.)
- Duration: brief storage (about 30 seconds)

“When you pass the gas station on the left, take a slight right and exit”



Working memory (WM)

- Alan Baddeley's **multi-component model** of working memory
- **Central executive:**
 - supports and regulates attentional processes
 - selects and manipulates material in two systems:
 - **Phonological loop:** holds sequences of acoustic or speech-based items
 - **Visuo-spatial sketchpad:** holds visually and/or spatially encoded items and arrays
- Episodic buffer in a newer version of the model

L2 learning & cognition

Attention and L2 learning

- Attention came into L2 researchers' awareness as part of the **Noticing Hypothesis...**
- Some key characteristics of attention:
 - limited in its capacity-wise
 - selective (*bottleneck* or *filter* metaphors)
 - voluntary
 - regulating access to consciousness



Incidental

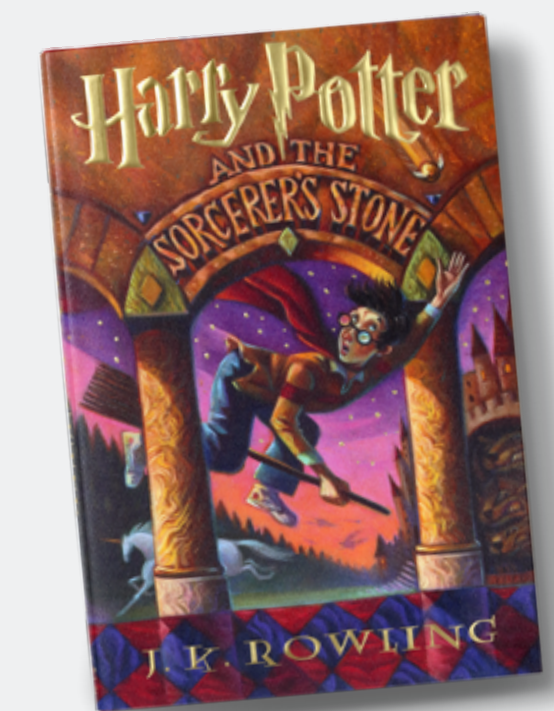
Explicit

Implicit

Learning without intention?

- **Incidental learning**
 - *Can L2 be learned incidentally? In other words, can L2 users learn new L2 materials without intention, while doing something else?*

I'm going to bed, before either of you come up with another clever idea to get us killed. Or worse, expelled.



Learning without attention?



- **Incidental learning**
 - *Can L2 be learned incidentally? In other words, can L2 users learn new L2 materials without intention, while doing something else?*
- Intention ≠ attention
 - Can new L2 materials be learned without attention?
 - Schmidt's **Noticing Hypothesis**
 - Strong version: What learners notice in the input becomes intake
 - Weak version: More noticing leads to more learning

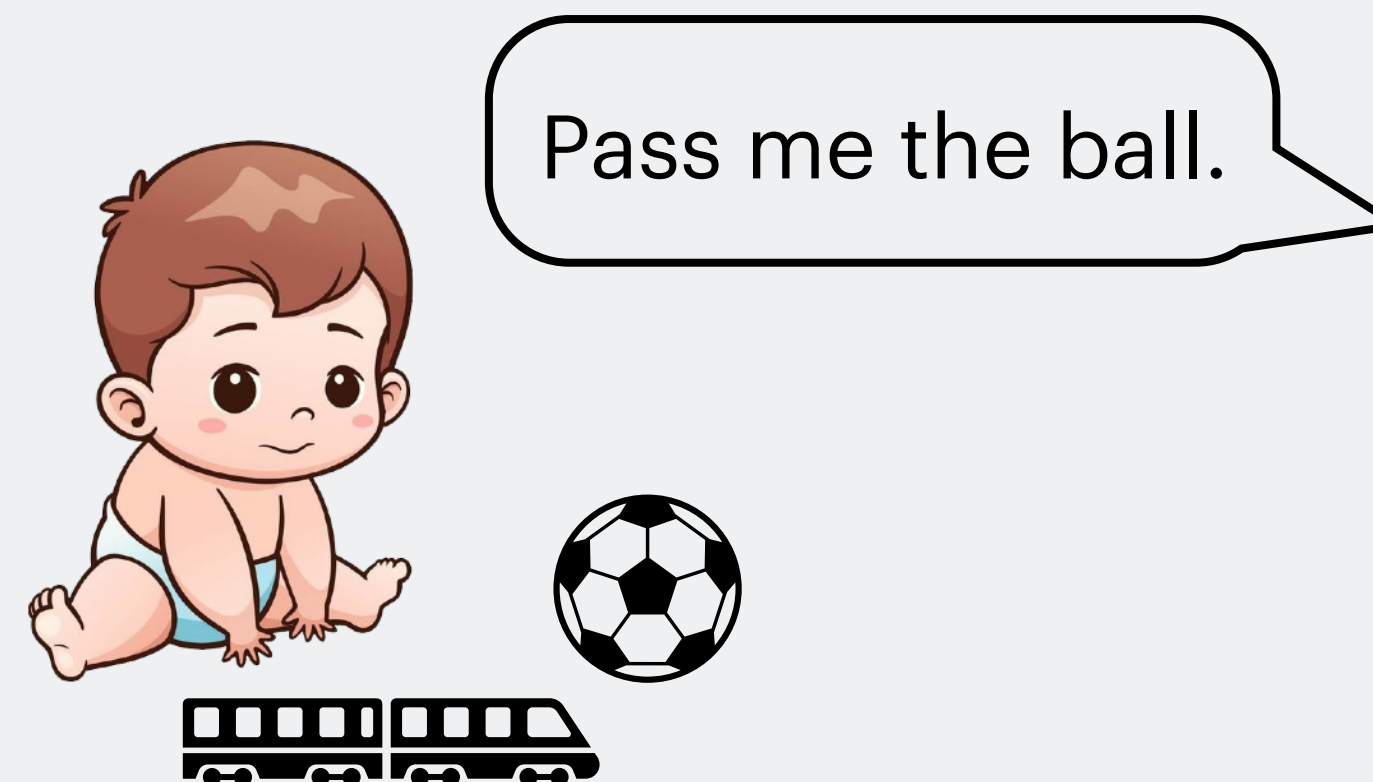
Learning without rules?

NOTE: the difference between this and skill acquisition theory

- **Implicit vs. explicit learning**

- *Can L2 be learned with no intervention of controlled attention? In other words, can L2 users learn an L2 without being given explicit rules?*

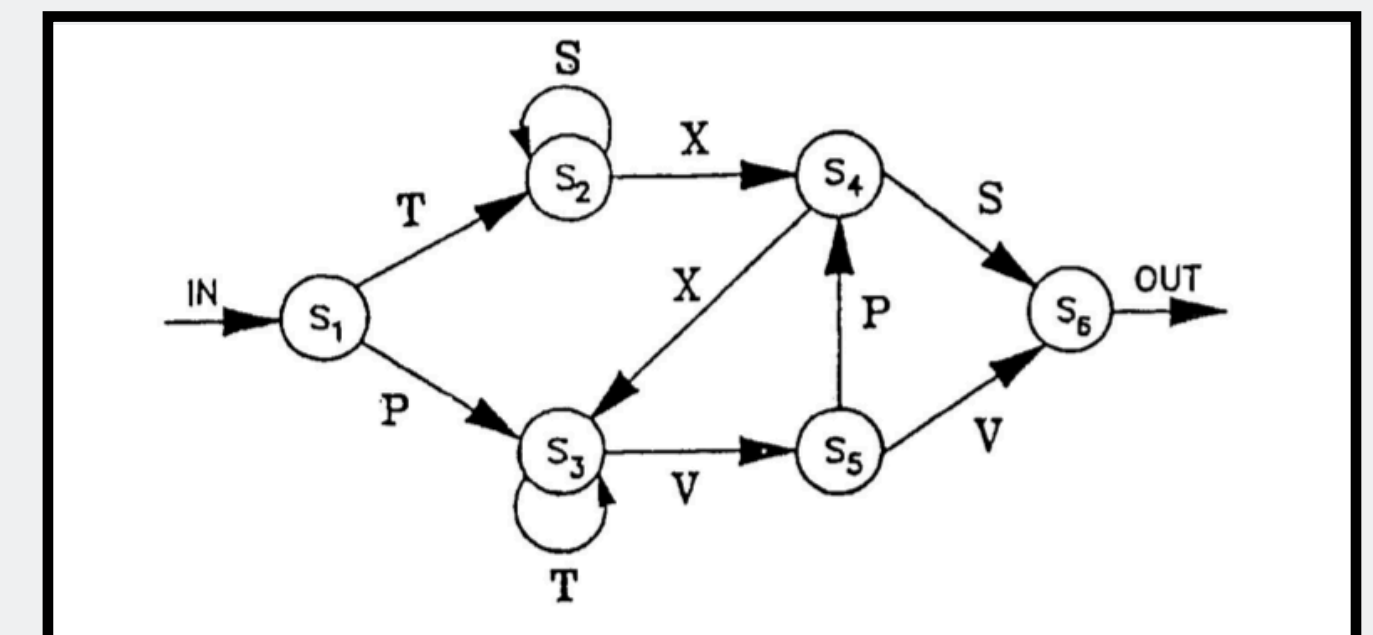
- Motivations:



<p>NOUN</p> <p>Refers to the words or phrases that represent a person, a place, a thing, or a quality or idea.</p> <p>E.g. dog, cat, elephant, school work, town, Manila, teacher, etc.</p>	<p>PRONOUN</p> <p>Refers to the words that are used instead of a noun or noun phrase in a sentence.</p> <p>E.g. he, I, its, me, my, she, that, this, those, etc.</p>	<p>VERB</p> <p>Refers to the words or group words that describe an action, experience, or express a state of being.</p> <p>E.g. run, sit, stand, go, have, got, promise, invite, etc.</p>
<p>ADJECTIVE</p> <p>Refers to the words that describe a noun or pronoun.</p> <p>E.g. angry, brave, careful, healthy, little, old, generous, tall, some, good, big, etc.</p>	<p>ADVERB</p> <p>Refers to the words that describe a verb, an adjective, another adverb, or a whole sentence.</p> <p>E.g. badly, fully, carefully, hardly, nearly, hungrily, never, etc.</p>	<p>ARTICLE</p> <p>Refers to the words that are used before a noun to modify the noun.</p> <p>E.g. the, a, an.</p>
<p>PREPOSITION</p> <p>Refers to the words that are used before a noun, pronoun, or gerund to show place, time, direction, etc.</p> <p>E.g. above, except, from, in, near, of, before, since, etc.</p>	<p>CONJUNCTION</p> <p>Refers to the words that connect words, phrases, or clauses in a sentence.</p> <p>E.g. and, or, so, after, since, before, either, neither, etc.</p>	<p>INTERJECTION</p> <p>Refers to the words or phrases that are used to express a strong feeling or emotion.</p> <p>E.g. ahem! ah! gosh! aw! great! hey! hi!, hooray, etc.</p>

Learning without rules?

- Implicit vs. explicit learning inside SLA
 - What can't be learned implicitly by adult L2 learners? Why does awareness lead to better learning?
- Implicit learning outside SLA
 - How does implicit, **statistical learning** work in adult L2 learners?
 - Reber's artificial grammar learning (AGL)

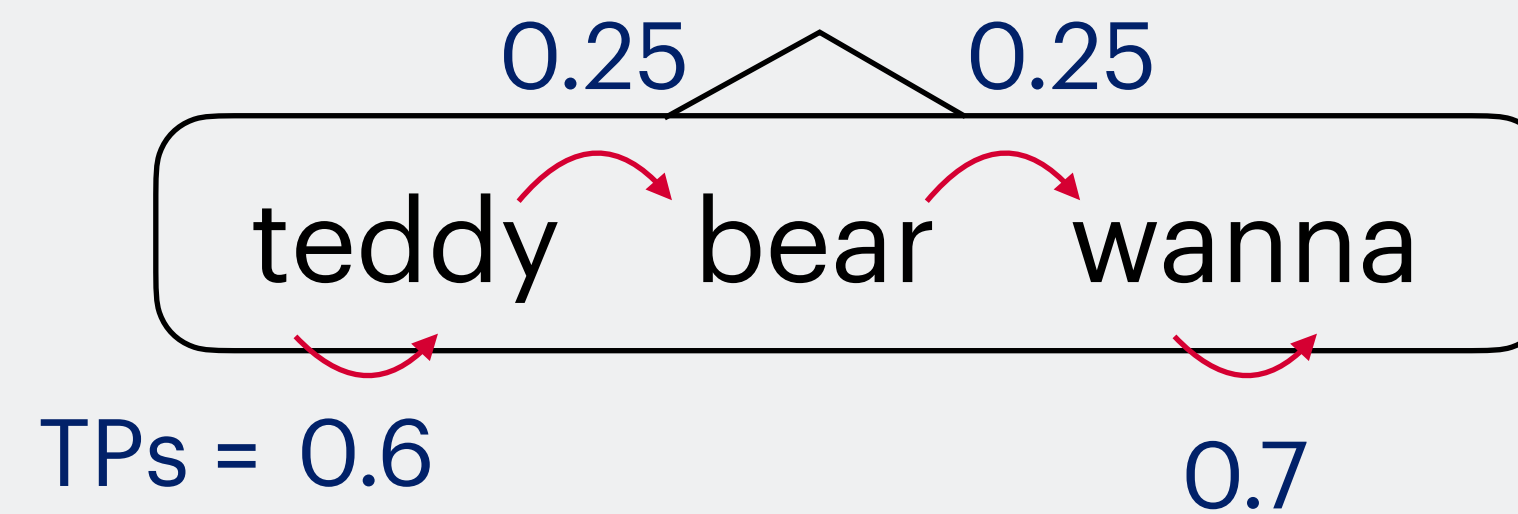


Statistical learning (SL)

e.g., Aslin (2017); Jost & Christiansen (2017); Newport (2016); Thiessen et al. (2016)



....look! ateddybearwannaplaywithyou.....



Test:

teddy dybear
wanna bearwan

PsychoPy: Lesson 1

Next week...

- **Topic**: Learner language
 - How does learner language change over time?
 - What is interlanguage? How does it grow?
- **Reading**:
 - USLA (6.1, 6.2, 6.3, 6.4, 6.5)
- **Assignment**: Reference list [group work]