

Implicit and explicit learning of Bayesian priors differently impacts bias during perceptual decision-making

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The Manuscript Microscope Sentence Audit is a research paper introspection system that parses the text of your manuscript into minimal sentence components for faster, more accurate, enhanced proofreading.

Why use a Sentence Audit to proofread your manuscript?

- **Accelerated Proofreading:** Examine long technical texts in a fraction of the usual time.
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Manuscript Source: <https://www.biorxiv.org/content/10.1101/2021.03.05.434141v1>

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Features of the Sentence Audit:

The Sentence Audit combines two complementary proofreading approaches:

1. Each sentence of your text is parsed and displayed in isolation for focused inspection.
2. Each individual sentence is further parsed into Minimal Sentence Components for a deeper review of the clarity, composition and consistency of the language you used.

The Minimal Sentence Components shown are the smallest coherent elements of each sentence of your text as derived from it's conjunctions, prepositions and selected punctuation symbols (i.e. commas, semicolons, round and square brackets).

The combined approaches ensure easier, faster, more effective proofreading.

Comments and Caveats:

- The sentence parsing is achieved using a prototype natural language processing pipeline written in Python and may include occasional errors in sentence segmentation.
- Depending on the source of the input text, the Sentence Audit may contain occasional html artefacts that are parsed as sentences (E.g. "Download figure. Open in new tab").
- Always consult the original research paper as the true reference source for the text.

Contact Information:

To get a Manuscript Microscope Sentence Audit of any other research paper, simply forward any copy of the text to John.James@OxfordResearchServices.com.

All queries, feedback or suggestions are also very welcome.

Research Paper Sections:

The sections of the research paper input text parsed in this audit.

[illegible]

Title **Implicit and explicit learning of Bayesian priors differently impacts bias during perceptual decision-making**

S1 [001] ABSTRACT

S1 [002] Knowledge without awareness, or implicit knowledge, influences a variety of behaviors.

Knowledge ...
... without awareness, ...
... or implicit knowledge, ...
... influences a variety ...
... of behaviors.

S1 [003] It is unknown however, whether implicit knowledge of statistical structure informs visual perceptual decisions or whether explicit knowledge of statistical probabilities is required.

It is unknown however, ...
... whether implicit knowledge ...
... of statistical structure informs visual perceptual decisions ...
... or ...
... whether explicit knowledge ...
... of statistical probabilities is required.

S1 [004] Here, we measured visual decision-making performance using a novel task in which humans reported the orientation of two differently colored translational Glass patterns; each color associated with different orientation probabilities.

Here, ...
... we measured visual decision-making performance ...
... using a novel task ...
... in which humans reported the orientation ...
... of two differently colored translational Glass patterns; ...
... each color associated ...
... with different orientation probabilities.

S1 [005] The task design allowed us to assess participants' ability to learn and use a general orientation prior as well as a color specific feature prior.

The task design allowed us ...
... to assess participants' ability ...
... to learn ...
... and use a general orientation ...
... prior ...
... as well ...
... as a color specific feature prior.

S1 [006] Classifying decision-makers based on a questionnaire revealed that both implicit and explicit learners implemented a general orientation bias by adjusting the starting point of evidence accumulation in the drift diffusion model framework.

Classifying decision-makers based ...
... on a questionnaire revealed ...
... that both implicit ...
... and explicit learners implemented a general orientation bias ...
... by adjusting the starting point ...
... of evidence accumulation ...
... in the drift diffusion model framework.

S1 [007] Explicit learners additionally adjusted the drift rate offset.

Explicit learners additionally adjusted the drift rate offset.

S1 [008] When subjects implemented a stimulus specific bias, they did so by adjusting primarily the drift rate offset.

When subjects implemented a stimulus specific bias, ...
... they did ...
... so ...
... by adjusting primarily the drift rate offset.

S1 [009] We conclude that humans can learn priors implicitly for perceptual decision-making and depending on awareness implement the priors using different mechanisms.

We conclude ...
... that humans can learn priors implicitly ...
... for perceptual decision-making ...
... and depending ...
... on awareness implement the priors ...
... using different mechanisms.

S1 [010] Regularities in the environment can be learned implicitly and can bias judgments, preferences or fluency of movement^{1–7}.

Regularities ...
... in the environment can be learned implicitly ...
... and can bias judgments, ...
... preferences ...
... or fluency ...
... of movement^{1–7}.

S1 [011] For example, the statistical regularities of one's native language are readily acquired by infants ⁸.

For example, ...
... the statistical regularities ...
... of one's native language are readily acquired ...
... by infants ⁸.

S1 [012] Humans are also able to learn to use contextual information to search the location of a target in a display when the location is correlated with contextual features.

Humans are also able ...
... to learn ...
... to use contextual information ...
... to search the location ...
... of a target ...
... in a display ...
... when the location is correlated ...
... with contextual features.

S1 [013] Contextual cuing can occur without awareness of the correlation⁹.

Contextual cuing can occur ...
... without awareness ...
... of the correlation⁹.

S1 [014] Implicit learning of regularities in finite-state artificial grammars also occurs through exposure to exemplars formed according to the grammar.

Implicit learning ...
... of regularities ...
... in finite-state artificial grammars also occurs ...
... through exposure ...
... to exemplars formed according ...
... to the grammar.

S1 [015] After such exposure, participants classify new items as grammatical despite lacking awareness for the grammatical rules 5,10–12.

After ...
... such exposure, ...
... participants classify new items ...
... as grammatical ...
... despite lacking awareness ...
... for the grammatical rules 5,10–12.

S1 [016] Artificial grammar learning is intact in patients with amnesia, indicating independence from declarative learning.

Artificial grammar learning is intact ...
... in patients ...
... with amnesia, ...
... indicating independence ...
... from declarative learning.

S1 [017] Perceptuo-motor behavior is also influenced by implicitly learned statistical regularity.

Perceptuo-motor behavior is also influenced ...
... by implicitly learned statistical regularity.

S1 [018] In the Serial Reaction Time task, participants press keys on a keypad corresponding to cued locations.

In the Serial Reaction Time task, ...
... participants press keys ...
... on a keypad corresponding ...
... to cued locations.

S1 [019] After practice, participants show reduced reaction times for locations occurring according to a sequence despite a lack of explicit knowledge of the sequence.

After practice, ...
... participants show reduced reaction times ...
... for locations occurring according ...
... to a sequence ...
... despite a lack ...
... of explicit knowledge ...
... of the sequence.

S1 [020] Amnesic patients who have no awareness of the learning, show similar levels of sequence learning in this task compared to healthy control participants 13,14.

Amnesic patients ...
... who have no awareness ...
... of the learning, ...
... show similar levels ...
... of sequence learning ...
... in this task compared ...
... to healthy control participants 13,14.

S1 [021] Although implicit knowledge can influence cognitive processes like attention-shifting and judgments of goodness-of-fit in an artificial grammar learning procedure, it is less clear whether implicit knowledge could become integrated with diagnostic information that is present to influence a judgement.

Although implicit knowledge can influence cognitive processes like attention-shifting ...
... and judgments ...
... of goodness-of-fit ...
... in an artificial grammar learning procedure, ...
... it is less clear ...
... whether implicit knowledge could become integrated ...
... with diagnostic information ...
... that is present ...
... to influence a judgement.

S1 [022] In many circumstances, base rates, or Bayesian priors, influence judgements15–23.

In many circumstances, ...
... base rates, ...
... or Bayesian priors, ...
... influence judgements15–23.

End of Sample Audit

This is a truncated Manuscript Microscope Sample Audit.

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