

Minimal interplay between explicit knowledge, dynamics of learning and temporal expectations in different, complex uni- and multisensory contexts

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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.

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- **Accelerated Proofreading:** Examine long technical texts in a fraction of the usual time.
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Manuscript Source: <https://www.biorxiv.org/content/10.1101/2021.03.06.434202v1>

Manuscript Authors: Felix Ball, Inga Spuerck & Toemme Noesselt

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 **Minimal interplay between explicit knowledge, dynamics of learning and temporal expectations in different, complex uni- and multisensory contexts**

S1 [001] Abstract

S1 [002] While temporal expectations (TE) generally improve reactions to temporally predictable events, it remains unknown how temporal rule learning and explicit knowledge about temporal rules contribute to performance improvements and whether any contributions generalise across modalities.

While temporal expectations ...
... (TE) ...
... generally improve reactions ...
... to temporally predictable events, ...
... it remains unknown how temporal rule learning ...
... and explicit knowledge ...
... about temporal rules contribute ...
... to performance improvements ...
... and ...
... whether any contributions generalise ...
... across modalities.

S1 [003] Here, participants discriminated the frequency of diverging auditory, visual or audiovisual targets embedded in auditory, visual or audiovisual distractor sequences.

Here, ...
... participants discriminated the frequency ...
... of diverging auditory, ...
... visual ...
... or audiovisual targets embedded ...
... in auditory, ...
... visual ...
... or audiovisual distractor sequences.

S1 [004] Temporal regularities were manipulated run-wise (early vs. late target within sequence).

Temporal regularities were manipulated run-wise ...
... (early vs. late target ...
... within sequence).

S1 [005] Behavioural performance (accuracy, RT) plus measures from a computational learning model all suggest that temporal rule learning occurred but did not generalise across modalities, that dynamics of learning (size of TE effect across runs) and explicit knowledge have little to no effect on the strength of TE, and that explicit knowledge affects performance – if at all – in a context dependent manner: only under complex task regimes (unknown target modality) might it partially help to resolve response conflict while it is lowering performance in less complex environments..

Behavioural performance ...
 ... (accuracy, ...
 ... RT) ...
 ... plus measures ...
 ... from a computational learning model all suggest ...
 ... that temporal rule learning occurred ...
 ... but did not generalise ...
 ... across modalities, ...
 ... that dynamics ...
 ... of learning ...
 ... (size ...
 ... of TE effect ...
 ... across runs) ...
 ... and explicit knowledge have little ...
 ... to no effect ...
 ... on the strength ...
 ... of TE, ...
 ... and that explicit knowledge affects performance – ...
 ... if ...
 ... at all – ...
 ... in a context dependent manner: ...
 ... only ...
 ... under complex task regimes ...
 ... (unknown target modality) ...
 ... might it partially help ...
 ... to resolve response conflict ...
 ... while it is lowering performance ...
 ... in less complex environments..

S2 [006] 1. Introduction

S2 [007] Gathering temporal information is an essential aspect of our life.

Gathering temporal information is an essential aspect ...
 ... of our life.

S2 [008] Every day, we use temporal information as to when it is most likely to catch the bus, or in sports, we estimate when and where a ball has to be kicked, hit or caught.

Every day, ...
 ... we use temporal information ...
 ... as to ...
 ... when it is most likely ...
 ... to catch the bus, ...
 ... or in sports, ...
 ... we estimate ...
 ... when ...
 ... and ...
 ... where a ball has ...
 ... to be kicked, ...

... hit ...
... or caught.

S2 [009] Computations resulting in temporal expectations and predictions have been studied in various different experimental paradigms and sensory systems (Nobre & Rohenkohl, 2014).

Computations resulting ...
... in temporal expectations ...
... and predictions have been studied ...
... in various different experimental paradigms ...
... and sensory systems ...
... (Nobre & Rohenkohl, 2014).

S2 [010] There is converging evidence that temporal expectations (TE), at least in the younger population, improve performance for targets expected in time (Ball, Fuehrmann, Stratil, & Noesselt, 2018; Ball, Michels, Thiele, & Noesselt, 2018; Correa, Lupiáñez, & Tudela, 2005; Mathewson, Fabiani, Gratton, Beck, & Lleras, 2010; Nobre & Rohenkohl, 2014; Roach, Heron, & McGraw, 2006; Rohenkohl, Cravo, Wyart, & Nobre, 2012; Vatakis, Bayliss, Zampini, & Spence, 2007; Zanto et al., 2011).

There is converging evidence ...
... that temporal expectations ...
... (TE), ...
... at least ...
... in the younger population, ...
... improve performance ...
... for targets expected ...
... in time ...
... (Ball, ...
... Fuehrmann, ...
... Stratil, ...
... & Noesselt, 2018; ...
... Ball, ...
... Michels, ...
... Thiele, ...
... & Noesselt, 2018; ...
... Correa, ...
... Lupiáñez, ...
... & Tudela, 2005; ...
... Mathewson, ...
... Fabiani, ...
... Gratton, ...
... Beck, ...
... & Lleras, 2010; ...
... Nobre & Rohenkohl, 2014; ...
... Roach, ...
... Heron, ...
... & McGraw, 2006; ...
... Rohenkohl, ...
... Cravo, ...
... Wyart, ...
... & Nobre, 2012; ...
... Vatakis, ...
... Bayliss, ...

... Zampini, ...
... & Spence, 2007; ...
... Zanto et al., 2011).

S2 [011] However, little is known about (1) how temporal rule learning develops over time (as reflected by learning onsets as well as the probability of correct responses on each trial), and (2) whether explicit knowledge about learned temporal regularities influences the strength of temporal expectations.

However, ...
... little is known ...
... about ...
... (1) ...
... how temporal rule learning develops ...
... over time ...
... (as reflected ...
... by learning onsets ...
... as well ...
... as the probability ...
... of correct responses ...
... on each trial), ...
... and ...
... (2) ...
... whether explicit knowledge ...
... about learned temporal regularities influences the strength ...
... of temporal expectations.

S2 [012] TE effects (faster and more accurate responses for targets expected in time) are traditionally determined by contrasting the average performance scores of expected and unexpected trials.

TE effects ...
... (faster ...
... and more accurate responses ...
... for targets expected ...
... in time) ...
... are traditionally determined ...
... by contrasting the average performance scores ...
... of expected ...
... and unexpected trials.

S2 [013] However, this type of analyses ignores the fact that learning of certain features (here temporal rules) is a highly dynamic process.

However, ...
... this type ...
... of analyses ignores the fact ...
... that learning ...
... of certain features ...
... (here temporal rules) ...
... is a highly dynamic process.

End of Sample Audit

This is a truncated Manuscript Microscope Sample Audit.

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