A Manuscript Microscope 'Sentence Audit' of:

Avoiding attack: How dune wasps leverage colour and motion to detect their cryptic spider predators

What is the Manuscript Microscope Sentence Audit?

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.
- Superior Proofreading: Detect subtle errors that are invisible to traditional methods.
- Focused Proofreading: Inspect each individual sentence component in isolation.
- Reliable Proofreading: Ensure every single word of your manuscript is correct.
- Easier Proofreading: Take the hardship out of crafting academic papers.

Bonus 1: Improved Productivity: Rapidly refine rough drafts to polished papers.
Bonus 2: Improved Authorship: Cultivate a clear, concise, consistent, writing style.
Bonus 3: Improved Reputation: Become known for rigorously precise publications.

Manuscript Source: https://www.biorxiv.org/content/10.1101/2021.03.20.436281v1

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Audit Date: 31/03/21 **Audit Identifier:** N007KBD5FP24GE6 **Code Version:** 3.6

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.

Section No.	Headings	Sentences
Section: 1	ABSTRACT	10
Section: 2	INTRODUCTION	17
N/A	--- --- --- --- --- --- ---	0
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The Sentence Audit Of The Research Paper

Title	**Avoiding attack: How dune wasps leverage colour and motion to detect their cryptic spider predators**

S1 [001] ABSTRACT

S1 [002] Ambush predators depend on cryptic body colouration, stillness and a suitable hunting location to optimise the probability of prey capture.

Ambush predators depend ...
... on cryptic body colouration, ...
... stillness ...
... and a suitable hunting location ...
... to optimise the probability ...
... of prey capture.

S1 [003] Detection of cryptic predators, such as crab spiders, by flower seeking wasps may also be hindered by wind induced movement of the flowers themselves.

Detection ...
... of cryptic predators, ...
... such as crab spiders, ...
... by flower seeking wasps ...
... may also be hindered ...
... by wind induced movement ...
... of the flowers themselves.

S1 [004] In a beach dune habitat, Microbembex nigrifrons wasps approaching flowerheads of the Palafoxia lindenii plant need to evaluate the flowers to avoid spider attack.

In a beach dune habitat, ...
... Microbembex nigrifrons wasps approaching flowerheads ...
... of the Palafoxia lindenii plant need ...
... to evaluate the flowers ...
... to avoid spider attack.

S1 [005] Wasps may detect spiders through colour and movement cues.

Wasps ...
... may detect spiders ...
... through colour ...
... and movement cues.

S1 [006] We tracked the flight trajectories of dune wasps as they approached occupied and unoccupied flowers under two movement conditions; when the flowers were still or moving.

We tracked the flight trajectories ...
... of dune wasps ...
... as they approached occupied ...
... and unoccupied flowers ...

... under two movement conditions; ...
... when the flowers were still ...
... or moving.

S1 [007] We simulated the appearance of the spider and the flower using psychophysical visual modelling techniques and related it to the decisions made by the wasp to land or avoid the flower.

We simulated the appearance ...
... of the spider ...
... and the flower ...
... using psychophysical visual modelling techniques ...
... and related it ...
... to the decisions made ...
... by the wasp ...
... to land ...
... or avoid the flower.

S1 [008] Wasps could discriminate spiders only at a very close range, and this was reflected in the shape of their trajectories.

Wasps could discriminate spiders ...
... only ...
... at a very close range, ...
... and this was reflected ...
... in the shape ...
... of their trajectories.

S1 [009] Wasps were more prone to making errors in threat assessment when the flowers are moving.

Wasps were more prone ...
... to making errors ...
... in threat assessment ...
... when the flowers are moving.

S1 [010] Our results suggest that dune wasp predation risk is augmented by abiotic conditions such as wind and compromises their early detection capabilities.

Our results suggest ...
... that dune wasp predation risk is augmented ...
... by abiotic conditions ...
... such as wind ...
... and compromises their early detection capabilities.

S2 [011] INTRODUCTION

S2 [012] Prey strategies to avoid attack by ambush predators are more effective in the early part of the predation sequence (Pembury Smith and Ruxton, 2020; Ruxton et al., 2018).

Prey strategies ...
... to avoid attack ...
... by ambush predators are more effective ...
... in the early part ...
... of the predation sequence ...
... (Pembury Smith ...
... and Ruxton, 2020; ...
... Ruxton et al., 2018).

S2 [013] Ambush predators are often cryptic, with their body colouration matching their environment (Anderson and Dodson, 2015); they are very still since movement can break their crypsis (Gonzálvez and Rodríguez-Gironés, 2013); they often have venom to debilitate their prey (Schwantes et al., 2018) and most importantly they hunt at a moment when the prey is vulnerable, i.e., during foraging or mating -- when prey awareness is compromised (Pembury Smith and Ruxton, 2020).

Ambush predators are often cryptic, ...
... with their body colouration matching their environment ...
... (Anderson ...
... and Dodson, 2015); ...
... they are very still ...
... since movement can break their crypsis ...
... (Gonzálvez ...
... and Rodríguez-Gironés, 2013); ...
... they often have venom ...
... to debilitate their prey ...
... (Schwantes et al., 2018) ...
... and most importantly they hunt ...
... at a moment ...
... when the prey is vulnerable, ...
... i.e., ...
... during foraging ...
... or mating -- ...
... when prey awareness is compromised ...
... (Pembury Smith ...
... and Ruxton, 2020).

S2 [014] Therefore, for a prey to overcome an ambush predator’s strategy, evaluation of a risky site is crucial.

Therefore, ...
... for a prey ...
... to overcome an ambush predator’s strategy, ...
... evaluation ...
... of a risky site is crucial.

S2 [015] A prey’s ability to detect an ambush predator is constrained by its perceptual capabilities either through chemical or visual mechanisms (Gonzálvez and Rodríguez-Gironés, 2013).

A prey’s ability ...
... to detect an ambush predator is constrained ...
... by its perceptual capabilities either ...
... through chemical ...
... or visual mechanisms ...

... (Gonzálvez ...
... and Rodríguez-Gironés, 2013).

S2 [016] Visual detection of a predator depends on the spectral sensitivity of the prey's eye (the ability of the eye to respond to specific wavelengths of the light spectrum; Cronin et al., (2014)), spatial acuity (the capacity to discriminate shape and pattern details; Caves et al., (2018)) and temporal resolution (time taken to process visual information; Cronin et al., (2014)).

Visual detection ...
... of a predator depends ...
... on the spectral sensitivity ...
... of the prey's eye ...
... (the ability ...
... of the eye ...
... to respond ...
... to specific wavelengths ...
... of the light spectrum; ...
... Cronin et al., ...
... (2014)), ...
... spatial acuity ...
... (the capacity ...
... to discriminate shape ...
... and pattern details; ...
... Caves et al., ...
... (2018)) ...
... and temporal resolution ...
... (time taken ...
... to process visual information; ...
... Cronin et al., ...
... (2014)).

S2 [017] Furthermore, abiotic factors such as wind or obstacles can add to the visual clutter in a habitat (Burnett et al., 2020; Hennessy et al., 2020) and consequently hinder predator detection.

Furthermore, ...
... abiotic factors ...
... such as wind ...
... or obstacles can add ...
... to the visual clutter ...
... in a habitat ...
... (Burnett et al., 2020; ...
... Hennessy et al., 2020) ...
... and consequently hinder predator detection.

S2 [018] The problem of detecting ambush predators is commonly faced by pollinating insects that approach flowers harbouring crab spiders (Araneae: Thomisidae) (Morse, 1986).

The problem ...
... of detecting ambush predators is commonly faced ...
... by pollinating insects ...
... that approach flowers harbouring crab spiders ...
... (Araneae: ...

End of Sample Audit

This is a truncated Manuscript Microscope Sample Audit.

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