

Accounting for dispersal improves the understanding of species abundance patterns

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.
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Bonus 2: **Improved Authorship:** Cultivate a clear, concise, consistent, writing style.

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Manuscript Source: <https://www.biorxiv.org/content/10.1101/2021.03.05.434182v1>

Manuscript Authors: Xiao Feng & Huijie Qiao

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 **Accounting for dispersal improves the understanding of species abundance patterns**

S1 [001] Abstract

S1 [002] A long-standing question in ecology is how are species' population distributed across space.

A long-standing question ...
... in ecology is how are species' population distributed ...
... across space.

S1 [003] The highest abundance has been hypothesized to be in the spatial or niche center, though mixed patterns from empirical studies has triggered a recent debate.

The highest abundance has been hypothesized ...
... to be ...
... in the spatial ...
... or niche center, ...
... though mixed patterns ...
... from empirical studies has triggered a recent debate.

S1 [004] Here we propose a conceptual framework based on environmental suitability and dispersal to interpret the mixed evidence.

Here we propose a conceptual framework based ...
... on environmental suitability ...
... and dispersal ...
... to interpret the mixed evidence.

S1 [005] We demonstrate that the highest abundance could occur in the spatial center, in the niche center, or somewhere in-between the two centers, depending on the environmental setup and dispersal ability.

We demonstrate ...
... that the highest abundance could occur ...
... in the spatial center, ...
... in the niche center, ...
... or somewhere in-between the two centers, ...
... depending ...
... on the environmental setup ...
... and dispersal ability.

S1 [006] We found that spatial and niche centers rarely overlap, suggesting the counteracting effect between the two factors, rather than reinforcement, is the norm in determining abundance patterns.

We found ...
... that spatial ...

... and niche centers rarely overlap, ...
... suggesting the counteracting effect ...
... between the two factors, ...
... rather than reinforcement, ...
... is the norm ...
... in determining abundance patterns.

S1 [007] The varied locations of highest abundance mirror the mixed evidence in literature, suggesting the “abundant-centre” and “abundant-niche centre” hypotheses are not mutually exclusive.

The varied locations ...
... of highest abundance mirror the mixed evidence ...
... in literature, ...
... suggesting the “abundant-centre” ...
... and “abundant-niche centre” ...
... hypotheses are not mutually exclusive.

S1 [008] This highlights the importance in understanding the biogeographic patterns through the lens of underlying mechanisms.

This highlights the importance ...
... in understanding the biogeographic patterns ...
... through the lens ...
... of underlying mechanisms.

S2 [009] 1. Introduction

S2 [010] 1.1 The debate of abundance pattern

1.1 The debate ...
... of abundance pattern

S2 [011] A long standing question in ecology and biogeography is how are species' populations distributed across geographic space (Brown 1984).

A long standing question ...
... in ecology ...
... and biogeography is how are species' populations distributed ...
... across geographic space ...
... (Brown 1984).

S2 [012] Two hypotheses have been proposed to explain the location with highest abundance.

Two hypotheses have been proposed ...
... to explain the location ...
... with highest abundance.

- S2 [013]** The “abundant-centre” hypothesis predicts that the highest abundance occurs in the center of a species’ geographic range (Hengeveld & Haeck 1982).
- The “abundant-centre” ...
... hypothesis predicts ...
... that the highest abundance occurs ...
... in the center ...
... of a species’ geographic range ...
... (Hengeveld & Haeck 1982).
- S2 [014]** This hypothesis has received mixed empirical evidence (Tuya et al. 2008; Osorio-Olvera et al. 2019).
- This hypothesis has received mixed empirical evidence ...
... (Tuya et al. 2008; ...
... Osorio-Olvera et al. 2019).
- S2 [015]** The other hypothesis predicts that the abundance is highest in the center of a species’ ecological niche (Maguire 1973; Brown et al. 1995; Martínez-Meyer et al. 2013; Osorio-Olvera et al. 2020).
- The other hypothesis predicts ...
... that the abundance is highest ...
... in the center ...
... of a species’ ecological niche ...
... (Maguire 1973; ...
... Brown et al. 1995; ...
... Martínez-Meyer et al. 2013; ...
... Osorio-Olvera et al. 2020).
- S2 [016]** The relationship between niche center and highest abundance is termed “abundant-niche centre” hypothesis, but which also received mixed evidence and is still debated in recent literature (Dallas et al. 2017, 2020; Dallas & Hastings 2018; Osorio-Olvera et al. 2019; Dallas & Santini 2020; Osorio-Olvera et al. 2020).
- The relationship ...
... between niche center ...
... and highest abundance is termed “abundant-niche centre” ...
... hypothesis, ...
... but ...
... which also received mixed evidence ...
... and is still debated ...
... in recent literature ...
... (Dallas et al. 2017, 2020; ...
... Dallas & Hastings 2018; ...
... Osorio-Olvera et al. 2019; ...
... Dallas & Santini 2020; ...
... Osorio-Olvera et al. 2020).
- S2 [017]** The mixed empirical evidence for the “abundant-centre” and “abundant-niche centre” hypothesis could be partly explained by differences in data and methodology.
- The mixed empirical evidence ...
... for the “abundant-centre” ...

... and "abundant-niche centre" ...
... hypothesis could be partly explained ...
... by differences ...
... in data ...
... and methodology.

S2 [018] Not until recently, few studies have fully included the entire range of a species, dissipating that a species' geographic range could always be dynamic (Schurr et al. 2012), thus limiting the ability to fully test the abundance hypotheses (Fenberg & Rivadeneira 2011; Dallas et al. 2017).

Not until recently, ...
... few studies have fully included the entire range ...
... of a species, ...
... dissipating ...
... that a species' geographic range could always be dynamic ...
... (Schurr et al. 2012), ...
... thus limiting the ability ...
... to fully test the abundance hypotheses ...
... (Fenberg & Rivadeneira 2011; ...
... Dallas et al. 2017).

S2 [019] The rise of citizen-science projects, as well as digitization of museum collections and long-term monitoring networks, notably eBird (Sullivan et al. 2009), have greatly improved the data coverage and stimulated a series of interesting investigations (Martínez-Meyer et al. 2013; Dallas et al. 2017; Osorio-Olvera et al. 2020).

The rise ...
... of citizen-science projects, ...
... as well ...
... as digitization ...
... of museum collections ...
... and long-term monitoring networks, ...
... notably eBird ...
... (Sullivan et al. 2009), ...
... have greatly improved the data coverage ...
... and stimulated a series ...
... of interesting investigations ...
... (Martínez-Meyer et al. 2013; ...
... Dallas et al. 2017; ...
... Osorio-Olvera et al. 2020).

S2 [020] The differences in methodology among the investigations could be a major explanation for the mixed evidence among the series of explorations, e.g., how the distance is calculated, how the spatial or niche center is quantified, how statistical models are implemented and interpreted (Dallas et al. 2017, 2020; Osorio-Olvera et al. 2019; Santini et al. 2019; Osorio-Olvera et al. 2020).

The differences ...
... in methodology ...
... among the investigations could be a major explanation ...
... for the mixed evidence ...
... among the series ...
... of explorations, ...

End of Sample Audit

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