A Manuscript Microscope 'Sentence Audit' of:

Top-down acetylcholine contributes to social discrimination via enabling action potentials in olfactory bulb vasopressin cells

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/10.1101/2020.11.09.373845v4

Manuscript Authors: Hajime Suyama, Veronica Egger & Michael Lukas

Audit Date: 31/03/21 **Audit Identifier:** KR495EXK0NZ7L42 **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	6
Section: 2	Introduction	21
N/A	--- --- --- --- --- --- ---	0
N/A	--- --- --- --- --- --- ---	0
N/A	--- --- --- --- --- --- ---	0
N/A	--- --- --- --- --- --- ---	0
N/A	--- --- --- --- --- --- ---	0
N/A	--- --- --- --- --- --- ---	0
N/A	--- --- --- --- --- --- ---	0
N/A	--- --- --- --- --- --- ---	0
N/A	--- --- --- --- --- --- ---	0
N/A	--- --- --- --- --- --- ---	0

The Sentence Audit Of The Research Paper

Title # Top-down acetylcholine contributes to social discrimination via enabling action potentials in olfactory bulb vasopressin cells

S1 [001] Abstract

S1 [002] Social discrimination in rats requires activation of the intrinsic bulbar vasopressin system, but it is unclear how this system comes into operation, as olfactory nerve stimulation primarily inhibits bulbar vasopressin cells (VPCs).

Social discrimination ...
... in rats requires activation ...
... of the intrinsic bulbar vasopressin system, ...
... but it is unclear how this system comes ...
... into operation, ...
... as olfactory nerve stimulation primarily inhibits bulbar vasopressin cells ...
... (VPCs).

S1 [003] Here we show that stimulation with a conspecific can activate bulbar VPCs, indicating that VPC activation depends on more than olfactory cues during social interaction.

Here we show ...
... that stimulation ...
... with a conspecific can activate bulbar VPCs, ...
... indicating ...
... that VPC activation depends ...
... on more than olfactory cues ...
... during social interaction.

S1 [004] A series of in-vitro electrophysiology, pharmacology and immunohistochemistry experiments implies that acetylcholine probably originating from centrifugal projections can enable olfactory nerve-evoked action potentials in VPCs.

A series ...
... of in-vitro electrophysiology, ...
... pharmacology ...
... and immunohistochemistry experiments implies ...
... that acetylcholine probably originating ...
... from centrifugal projections can enable olfactory nerve-evoked action potentials ...
... in VPCs.

S1 [005] Finally, cholinergic activation of the vasopressin system contributes to vasopressin-dependent social discrimination, since recognition of a known rat was blocked by bulbar infusion of the muscarinic acetylcholine receptor antagonist atropine and rescued by additional bulbar application of vasopressin.

Finally, ...
... cholinergic activation ...
... of the vasopressin system contributes ...

... to vasopressin-dependent social discrimination, ...
... since recognition ...
... of a known rat was blocked ...
... by bulbar infusion ...
... of the muscarinic acetylcholine receptor antagonist atropine ...
... and rescued ...
... by additional bulbar application ...
... of vasopressin.

S1 [006] Thus, we demonstrated that top-down cholinergic modulation of bulbar VPC activity is involved in social discrimination in rats.

Thus, ...
... we demonstrated ...
... that top-down cholinergic modulation ...
... of bulbar VPC activity is involved ...
... in social discrimination ...
... in rats.

S2 [007] Introduction

S2 [008] Many mammals use olfactory cues as a fundamental communication tool, for the recognition and discrimination of individual conspecifics.

Many mammals use olfactory cues ...
... as a fundamental communication tool, ...
... for the recognition ...
... and discrimination ...
... of individual conspecifics.

S2 [009] A prominent example for a behavioral reaction that depends on olfaction-based discrimination of individuals is that ewes recognize the body odor of their own offspring and as a result, deny strange lambs to suckle 1.

A prominent example ...
... for a behavioral reaction ...
... that depends ...
... on olfaction-based discrimination ...
... of individuals is ...
... that ewes recognize the body odor ...
... of their own offspring ...
... and as a result, ...
... deny strange lambs ...
... to suckle 1.

S2 [010] Moreover, in prairie voles, the olfaction-based recognition of their mating partners enables them to establish monogamous pairbonds 2.

Moreover, ...
... in prairie voles, ...

... the olfaction-based recognition ...
... of their mating partners enables them ...
... to establish monogamous pairbonds 2.

S2 [011] Rats and mice, the most common mammalian laboratory animals, also discriminate individual conspecifics via their odor signatures.

Rats ...
... and mice, ...
... the most common mammalian laboratory animals, ...
... also discriminate individual conspecifics ...
... via their odor signatures.

S2 [012] This discrimination can then lead to various essential behavioral reactions 3.

This discrimination can then lead ...
... to various essential behavioral reactions 3.

S2 [013] To quantify the ability of rats to recognize individuals, so-called social discrimination tests are used 4.

To quantify the ability ...
... of rats ...
... to recognize individuals, ...
... so-called social discrimination tests are used 4.

S2 [014] Briefly, rats are exposed to a conspecific (sampling phase).

Briefly, ...
... rats are exposed ...
... to a conspecific ...
... (sampling phase).

S2 [015] After a short time of separation, rats are exposed to both, the same and a novel conspecific (discrimination phase).

After a short time ...
... of separation, ...
... rats are exposed ...
... to both, ...
... the same ...
... and a novel conspecific ...
... (discrimination phase).

S2 [016] If the rats recognize the known conspecific, they investigate it less compared to the novel conspecific 4.

If the rats recognize the known conspecific, ...
... they investigate it less compared ...
... to the novel conspecific 4.

S2 [017] The peptidergic neuromodulator vasopressin (VP), an important mediator of various social behaviors in the mammalian brain 5, is a major player in facilitating social discrimination.

The peptidergic neuromodulator vasopressin ...

... (VP), ...

... an important mediator ...

... of various social behaviors ...

... in the mammalian brain 5, ...

... is a major player ...

... in facilitating social discrimination.

S2 [018] For example, microinjection of VP into the OB enhances social discrimination 6.

For example, ...

... microinjection ...

... of VP ...

... into the OB enhances social discrimination 6.

S2 [019] Further, Tobin et al. 7 demonstrated the existence of an intrinsic bulbar VP system, consisting of VP-expressing cells (VPCs), and an impairment of social discrimination by the blockade of bulbar V1a receptors.

Further, ...

... Tobin et al. 7 demonstrated the existence ...

... of an intrinsic bulbar VP system, ...

... consisting ...

... of VP-expressing cells ...

... (VPCs), ...

... and an impairment ...

... of social discrimination ...

... by the blockade ...

... of bulbar V1a receptors.

S2 [020] Recently, we classified these bulbar VPCs as non-bursting superficial tufted cells, featuring an apical dendritic tuft within a glomerulus, lateral dendrites along the top part of the EPL and extended axonal ramifications, mostly within the entire EPL8.

Recently, ...

... we classified these bulbar VPCs ...

... as non-bursting superficial tufted cells, ...

... featuring an apical dendritic tuft ...

... within a glomerulus, ...

... lateral dendrites ...

... along the top part ...

... of the EPL ...

... and extended axonal ramifications, ...

... mostly ...

... within the entire EPL8.

S2 [021] The dense apical tuft implies that VPCs receive excitatory inputs from the olfactory nerve (ON) just like other bulbar cells with glomerular tufts such as mitral cells (MCs) 9, e.g. during sampling of a conspecific’s body odors.

The dense apical tuft implies ...

... that VPCs receive excitatory inputs ...

... from the olfactory nerve ...

... (ON) ...

End of Sample Audit

This is a truncated Manuscript Microscope Sample Audit.

To get the full audit of this text (or any other research paper),
forward a copy of the research paper to John James at
John.James@OxfordResearchServices.com
