A Manuscript Microscope 'Sentence Audit' of:

A Kiosk Station for the Assessment of Multiple Cognitive Domains and Enrichment of Monkeys

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.
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- 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/10.1101/2021.03.06.434198v1
Manuscript Authors:	Thilo Womelsdorf, Christopher Thomas, Adam Neumann, Marcus Watson, Kianoush Banaie Boroujeni, Seyed A. Hassani, Jeremy M. Parker & Kari L. Hoffman

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	20
Section: 2	1. Introduction	7
N/A	--- --- --- --- --- --- ---	0
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Title

A Kiosk Station for the Assessment of Multiple Cognitive Domains and Enrichment of Monkeys

S1 [001] Abstract

S1 [002]   Background

Background

S1 [003]   Nonhuman primates (NHPs) are self-motivated to perform cognitive tasks on touchscreens in their animal housing setting.

Nonhuman primates ...

... (NHPs) ...

... are self-motivated ...

... to perform cognitive tasks ...

... on touchscreens ...

... in their animal housing setting.

S1 [004]   To leverage this ability, fully integrated hardware and software solutions are needed, that work within housing and husbandry routines while also spanning cognitive task constructs of the Research Domain Criteria (RDoC).

To leverage this ability, ...

... fully integrated hardware ...

... and software solutions are needed, ...

... that work ...

... within housing ...

... and husbandry routines ...

... while also spanning cognitive task constructs ...

... of the Research Domain Criteria ...

... (RDoC).

S1 [005]   New Method

New Method

S1 [006]   We describe a Kiosk Station (KS-1) that provides robust hardware and software solutions for running cognitive tasks in cage-housed NHPs.

We describe a Kiosk Station ...

... (KS-1) ...

... that provides robust hardware ...

... and software solutions ...

... for running cognitive tasks ...

... in cage-housed NHPs.

S1 [007] KS-1 consists of a frame for mounting flexibly on housing cages, a touchscreen animal interface with mounts for receptables, reward pumps and cameras, and a compact computer cabinet with an interface for controlling behavior.

> KS-1 consists ...
>
> ... of a frame ...
>
> ... for mounting flexibly ...
>
> ... on housing cages, ...
>
> ... a touchscreen animal interface ...
>
> ... with mounts ...
>
> ... for receptables, ...
>
> ... reward pumps ...
>
> ... and cameras, ...
>
> ... and a compact computer cabinet ...
>
> ... with an interface ...
>
> ... for controlling behavior.

S1 [008] Behavioral control is achieved with a unity3D program that is virtual-reality capable, allowing semi-naturalistic visual tasks to assess multiple cognitive domains.

> Behavioral control is achieved ...
>
> ... with a unity3D program ...
>
> ... that is virtual-reality capable, ...
>
> ... allowing semi-naturalistic visual tasks ...
>
> ... to assess multiple cognitive domains.

S1 [009] Results

> Results

S1 [010] KS-1 is fully integrated into the regular housing routines of monkeys.

> KS-1 is fully integrated ...
>
> ... into the regular housing routines ...
>
> ... of monkeys.

S1 [011] A single person can operate multiple KS-1s.

> A single person can operate multiple KS-1s.

S1 [012] Monkeys engage with KS-1 at high motivation and cognitive performance levels at high intra-individual consistency.

> Monkeys engage ...
>
> ... with KS-1 ...
>
> ... at high motivation ...
>
> ... and cognitive performance levels ...
>
> ... at high intra-individual consistency.

S1 [013] Comparison with Existing Methods

> Comparison ...
>
> ... with Existing Methods

S1 [014] KS-1 is optimized for flexible mounting onto standard apartment cage systems.

> KS-1 is optimized ...
>
> ... for flexible mounting ...
>
> ... onto standard apartment cage systems.

S1 [015] KS-1 has a robust animal interface with options for gaze/reach monitoring.

> KS-1 has a robust animal interface ...
>
> ... with options ...
>
> ... for gaze/reach monitoring.

S1 [016] It has an integrated user interface for controlling multiple cognitive task using a common naturalistic object space designed to enhance task engagement.

> It has an integrated user interface ...
>
> ... for controlling multiple cognitive task ...
>
> ... using a common naturalistic object space designed ...
>
> ... to enhance task engagement.

S1 [017] All custom KS-1 components are open-sourced.

> All custom KS-1 components are open-sourced.

S1 [018] Conclusions

> Conclusions

S1 [019] KS-1 is a versatile tool for cognitive profiling and enrichment of cage-housed monkeys.

> KS-1 is a versatile tool ...
>
> ... for cognitive profiling ...
>
> ... and enrichment ...
>
> ... of cage-housed monkeys.

S1 [020] It reliably measures multiple cognitive domains which promises to advance our understanding of animal cognition, inter-individual differences and underlying neurobiology in refined, ethologically meaningful behavioral foraging contexts.

> It reliably measures multiple cognitive domains ...
>
> ... which promises ...
>
> ... to advance our understanding ...
>
> ... of animal cognition, ...
>
> ... inter-individual differences ...
>
> ... and underlying neurobiology ...
>
> ... in refined, ...
>
> ... ethologically meaningful behavioral foraging contexts.

S2 [021] **1. Introduction**

S2 [022]   Monkeys are housed in captive settings in zoos, primate service centers and research institutions.

> Monkeys are housed ...
>
> ... in captive settings ...
>
> ... in zoos, ...
>
> ... primate service centers ...
>
> ... and research institutions.

S2 [023]   A rich, >30 years long history has shown that in these settings monkeys willingly engage in complex computerized cognitive tasks (Rumbaugh et al., 1989; Perdue et al., 2018).

> A rich, ...
>
> ... >30 years long history has shown ...
>
> ... that in these settings monkeys willingly engage ...
>
> ... in complex computerized cognitive tasks ...
>
> ... (Rumbaugh et al., 1989; ...
>
> ... Perdue et al., 2018).

S2 [024]   In their regular housing environments, monkeys (nonhuman primates, NHP's) engage with joysticks or touchscreens, can semi-automatically train themselves on visual discrimination tasks, and when offered to freely choose amongst different tasks, they show motivation and insights into which cognitive tasks are most rewarding for them (Washburn et al., 1991; Gazes et al., 2013; Calapai et al., 2017; Fizet et al., 2017; Berger et al., 2018; Sacchetti et al., 2021).

> In their regular housing environments, ...
>
> ... monkeys ...
>
> ... (nonhuman primates, ...
>
> ... NHP's) ...
>
> ... engage ...
>
> ... with joysticks ...
>
> ... or touchscreens, ...
>
> ... can semi-automatically train themselves ...
>
> ... on visual discrimination tasks, ...
>
> ... and ...
>
> ... when offered ...
>
> ... to freely choose amongst different tasks, ...
>
> ... they show motivation ...
>
> ... and insights ...
>
> ... into ...
>
> ... which cognitive tasks are most rewarding ...
>
> ... for them ...
>
> ... (Washburn et al., 1991; ...
>
> ... Gazes et al., 2013; ...
>
> ... Calapai et al., 2017; ...
>
> ... Fizet et al., 2017; ...
>
> ... Berger et al., 2018; ...
>
> ... Sacchetti et al., 2021).

End of Sample Audit