UNIVERSITY of ROCHESTER

DEPARTMENT OF
BRAIN AND COGNITIVE SCIENCES

To: Editorial Board of *JEP:LMC*

Dear Editor,

We are submitting our manuscript "Compensation in audiovisual speech perception: discounting the pen in the mouth", jointly authored by Shawn Cummings, Gevher Karboga, Menghan Yang, and Florian Jaeger, for consideration in *JEP:LMC*. This is the first submission of our manuscript. It presents original work.

The manuscript investigates a conjecture about compensation during speech perception made by C. Fowler in 2006, as part of a theoretical debate about *when* listeners are expected to compensate for the (perceived) articulatory consequences of surrounding phonetic context. This debate essentially focused on what types of result would constitute evidence against compensation accounts. Focusing on compensation for lip-rounding, Fowler (2006) pointedly wrote that compensation would be equally expected if a talker "was about to whistle a merry tune or about to kiss a loved one", as "it does not matter why the lips were rounded; it only matters *that* they were rounded". This is the prediction we set out to test in five small perception experiments.

To the best of our knowledge, previous work focused on the effects of auditorily or visually presented *phonetic* context—asking, for instance, whether the lip-rounding associated with the vowel "u" would lead listeners to hear a following "s"-"sh" sound as more "s"-like rather than "sh"-like. To test Fowler's conjecture, we instead used a visually presented non-phonetic context to manipulate lip shape: we test whether listeners compensate for the presence of a pen in the mouth of the speaker (an idea inspired by an unrelated line of research on perceptual recalibration by Kraljic and colleagues that we return to in our discussion).

We originally intended to submit the five experiments as a brief article. That's why we bundled the first three experiments as Experiments 1a-c, and moved Experiment 2b into the SI. Still, with transparent reporting of how we created the materials, procedure, and the Bayesian analysis approach, the manuscript ended up at about 7,500 words. We would be happy to move many of those details into the SI, if you or the reviewers think that would improve the paper.

Sincerely,

Shawn Cummings, Gevher Karboga, Menghan Yang, and Florian Jaeger

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Suggested reviewers

(while Carol Fowler was not involved in this project, she is at the same institution as the first author):

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Currently reviewing other manuscripts of ours:
- Arty Samuel (SUNY / BCBL)

We respectfully would prefer that the following reviewers are *not* invited, as we are not sure they would judge this work objectively:
- Dick Aslin, Bob McMurray, Sarah Creel