

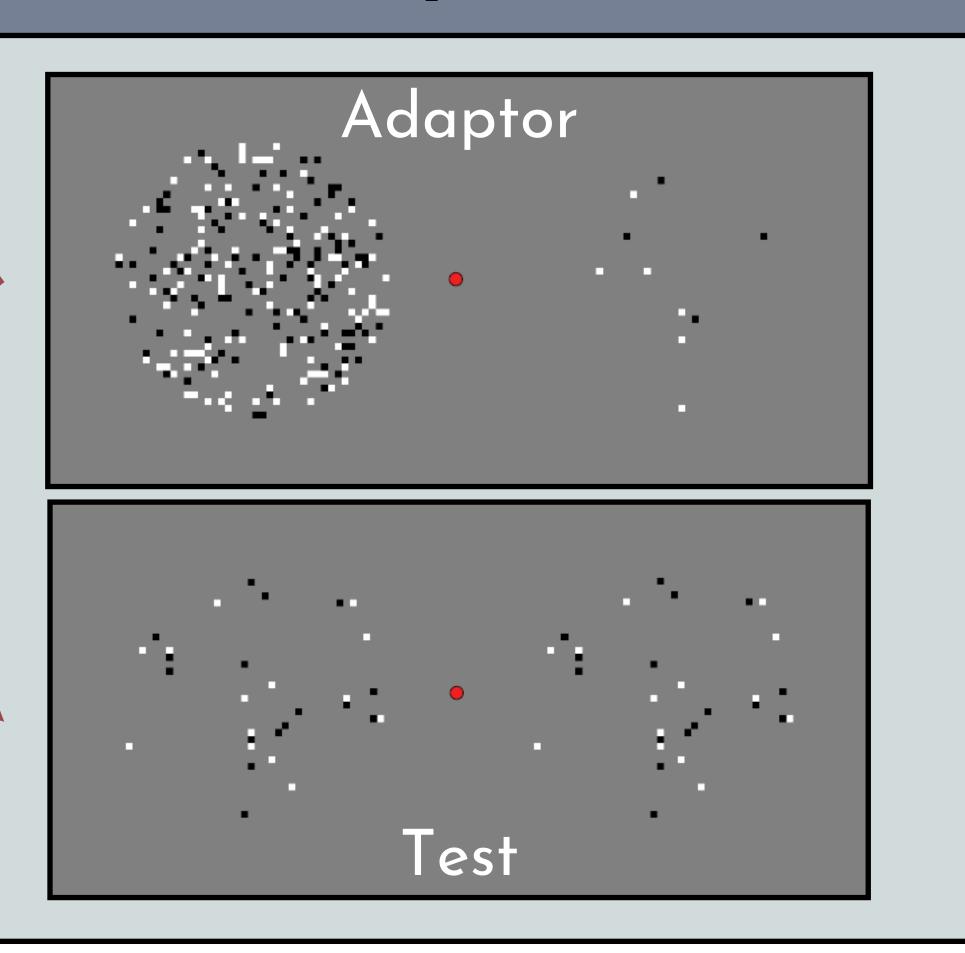
Strong evidence against number adaptation

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Number adaptation'

adaptor makes the subsequent stimulus look less numerous!



The argument for

Phenomenologically compelling demonstrations! (Burr & Ross, 2008)

> Operates on perceived number (Fornaciai et al., 2016)

Multiple cross-modal effects (Arrighi et al., 2014; Anobile et al., 2016)

Supported by 30+ studies (for review, see Anobile et al., 2016)

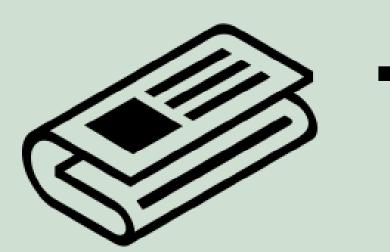
The argument against

Number adaptation is surprisingly brittle (Grasso et al., 2022)

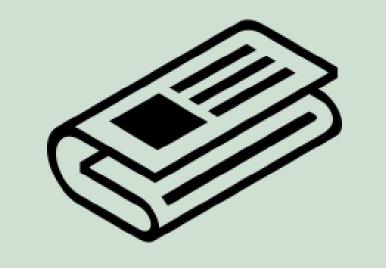
Number adaptation is unlike canonical cases (e.g., Grasso et al., 2021)

Some instances are underwhelming

What's the alternative?

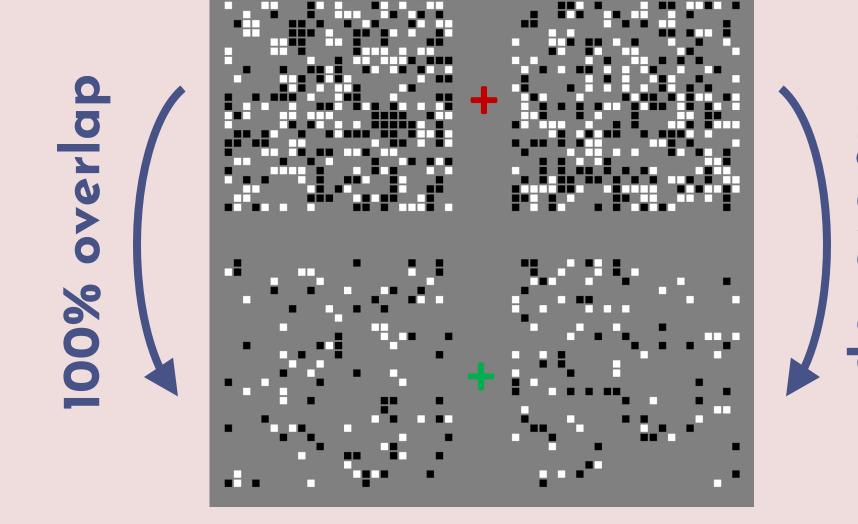


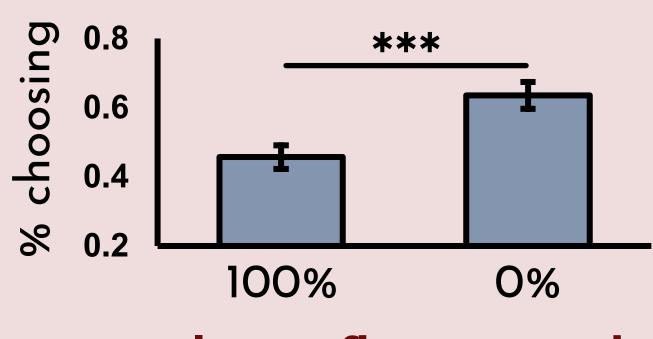
The visual system is delivering the news!



Effects that look like number adaptation actually reflect a fundamental property of the visual system whereby information that is constant will fade from awareness. It isn't news!

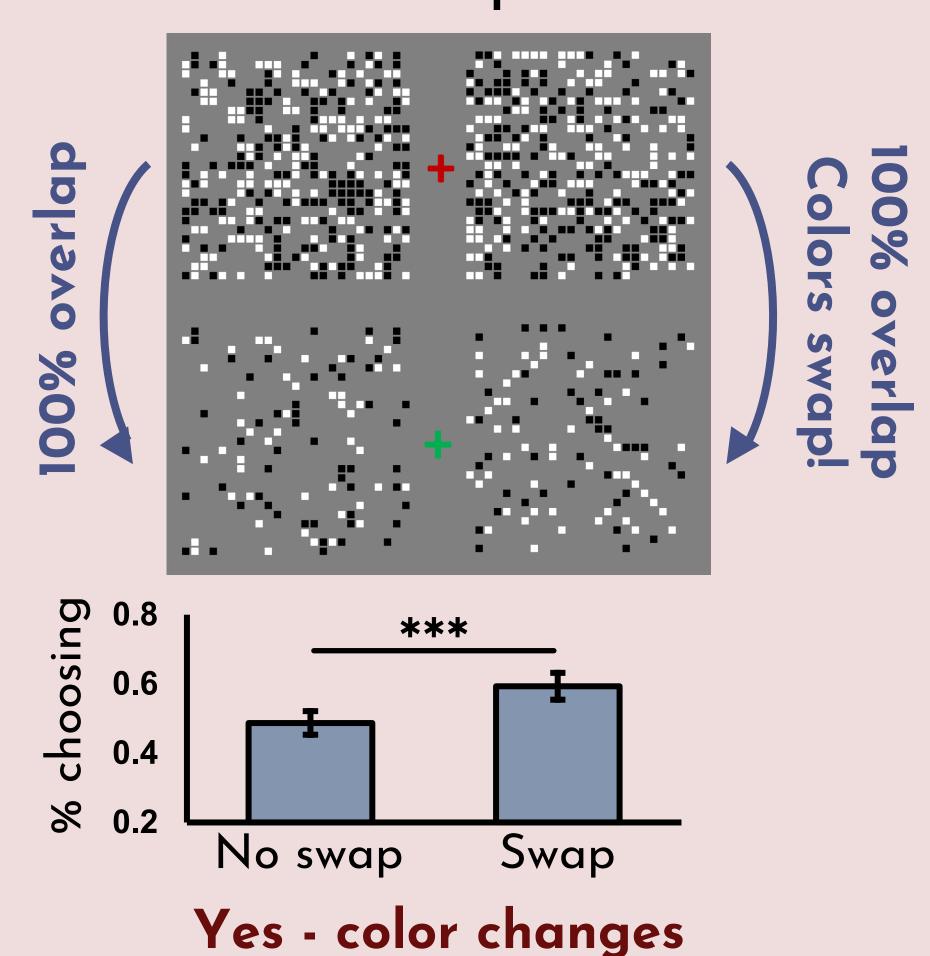
Expt. 1: Does overlap increase adaptation?





Yes - overlap influences adaptation.

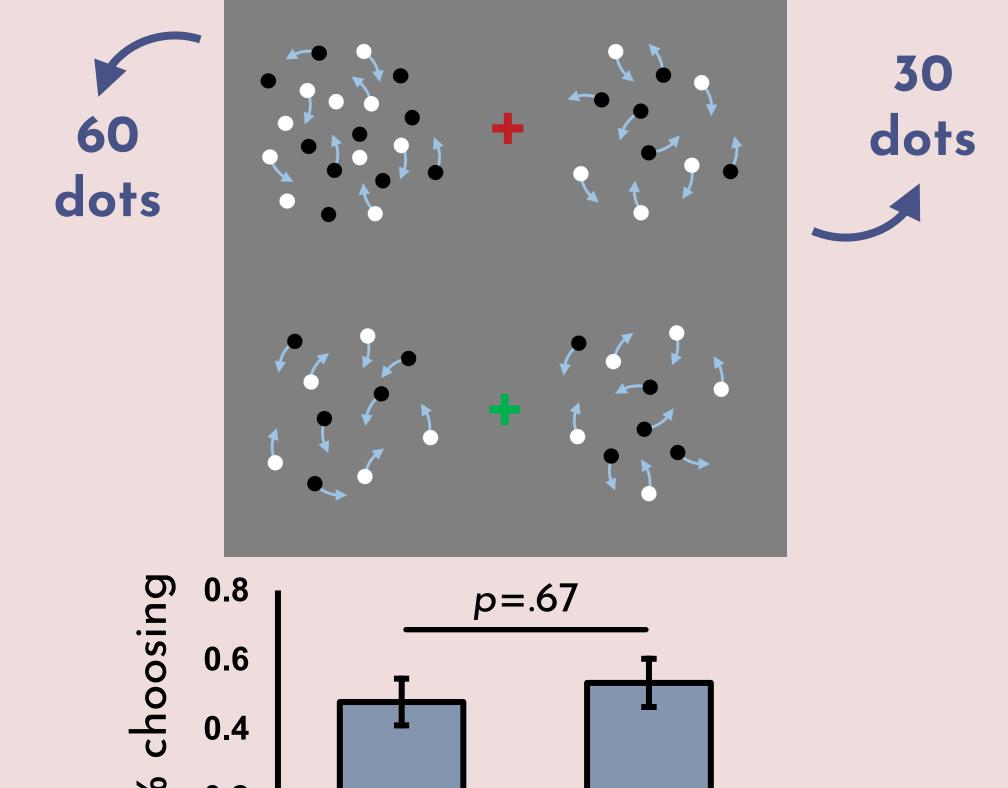
Expt. 2: Do changes reduce adaptation?



reduce/eliminate adaptation.

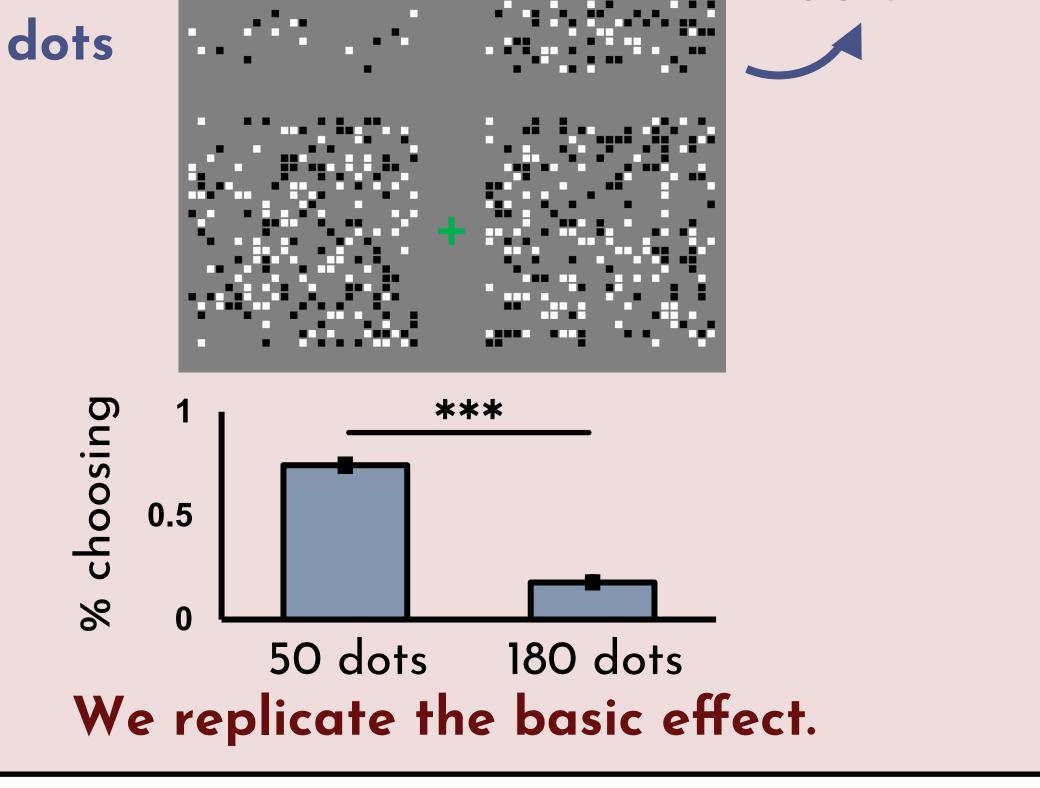
Against number adaptation

Expt. 3: Dynamic adaptation?

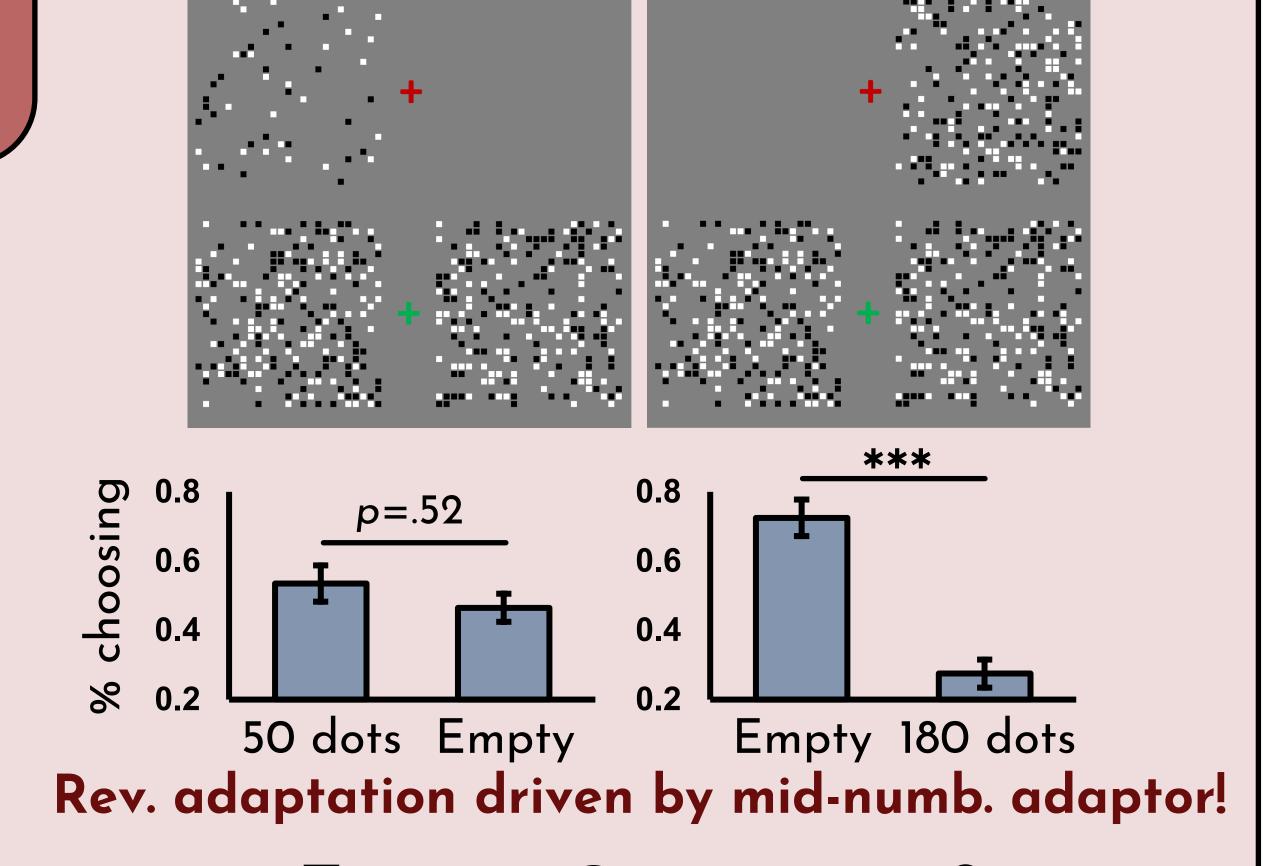


No adaptation for dynamic stimuli.

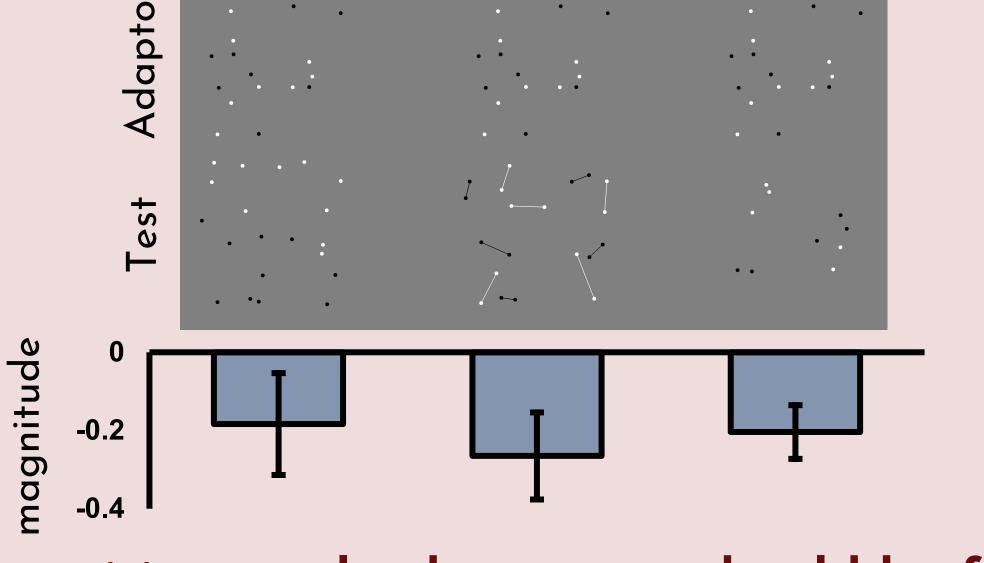
Expt. 4: Reverse adaptation?



Expt. 5: Reverse adaptation??

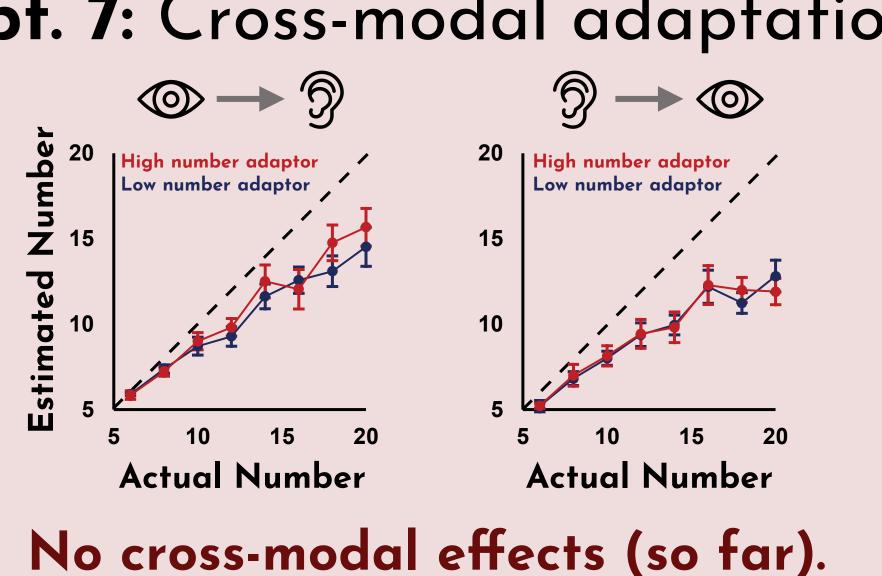


Expt. 6: Connections?



A positive result where none should be found!

Expt. 7: Cross-modal adaptation?



Conclusions

There may be an alternative explanation for known effects of number adaptation.

All of the results shown here support a different possibility: That the visual system is 'delivering the news'.

This evidence is consistent with known visual phenomena, like the idea of 'perceptual scotomas' (New & Scholl, 2008) and the 'Troxler effect'.

We already know that constant information can disappear from visual awareness. That's the parsimonious explanation, not number adaptation.

Is number a primary visual attribute'?

Maybe! But number adaptation, real or not, may not be the best way to answer this question.

However, there may still be other good reasons (e.g., numerical illusions) to say "Yes".