

# Intuition, deduction, and the art of picking up the pieces

## Citation for published version (APA):

Senden, M. (2016). *Intuition, deduction, and the art of picking up the pieces: reciprocal gains of computational modeling and fMRI*. Ridderprint. <https://doi.org/10.26481/dis.20161104ms>

## Document status and date:

Published: 01/01/2016

## DOI:

[10.26481/dis.20161104ms](https://doi.org/10.26481/dis.20161104ms)

## Document Version:

Publisher's PDF, also known as Version of record

## Please check the document version of this publication:

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Gedanken ohne Inhalte sind leer, Anschauungen ohne Begriffe sind blind. (*Thoughts without intuitions are empty, intuitions without thoughts are blind; Immanuel Kant*)

There is no falsification before the emergence of a better theory. (*Imre Lakatos*)

For the utilization of receptive fields as a bridging principle between simulated and empirical data, it is necessary that they are measured to a high degree of precision. (*This thesis*)

The common brain space is an idealized, retinotopically organized, surface representation of visual cortex which allows for the integration of empirical and simulated data based on anatomical or functional correspondence between voxels and model units. (*This thesis*)

Early visual cortex might utilize a spatial filtering as well as an edge integration mechanism when processing surface luminance. (*This thesis*)

C'est par la logique qu'on démontre, c'est par l'intuition qu'on invente. (*It is by logic that we prove, but by intuition that we discover; Henri Poincare*)

Presence of a rich club in a system's topology enhances its capability to functionally integrate nodes of low structural degree. (*This thesis*)

Rich club regions might utilize oscillations as a local control mechanism to organize brain regions into functional networks as they dynamically adjust their oscillatory behavior in response to changing task demands. (*This thesis*)

The rich club and its oscillations might respectively be the structural underpinning and dynamic mechanism of what at a cognitive level might be termed the global workspace. (*This thesis*)

It is equally important to abstract away irrelevant details as it is to include relevant ones. We must always keep the particular epistemic purpose of our model in mind.

Knowledge, everywhere, is coming to be regarded not as a good in itself, or as a means of creating a broad and humane outlook on life in general, but as merely an ingredient in technical skill. (*Bertrand Russell*)

