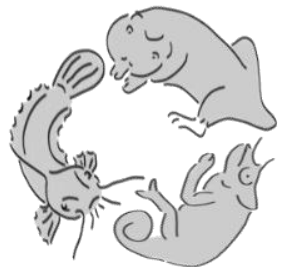




The feeding apparatus of first feeding European eel larvae: A mouth full of teeth



*Evolutionary
Morphology of
Vertebrates*

Mathias BOUILLIART

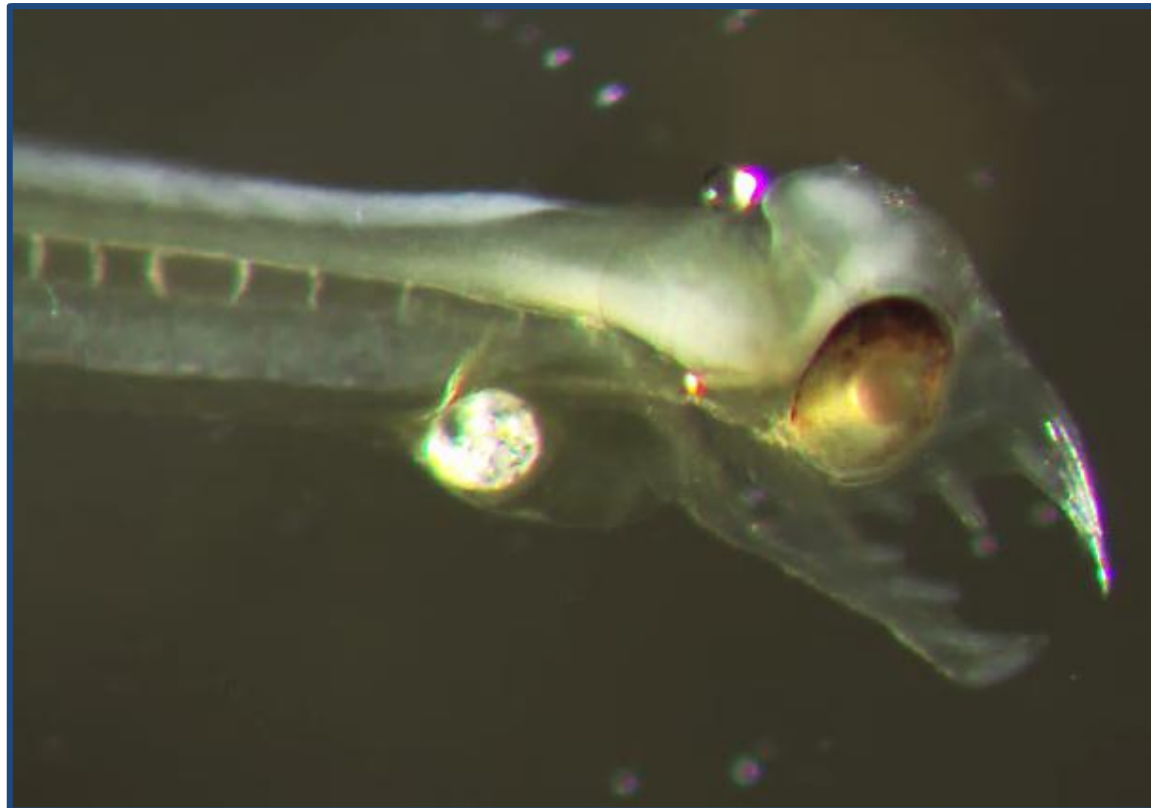
Dominique ADRIAENS

Jonna TOMKIEWICZ

Peter LAUESEN



Introduction





1. The feeding-problem

Video-recording

- Jaw angles





2. The size-problem

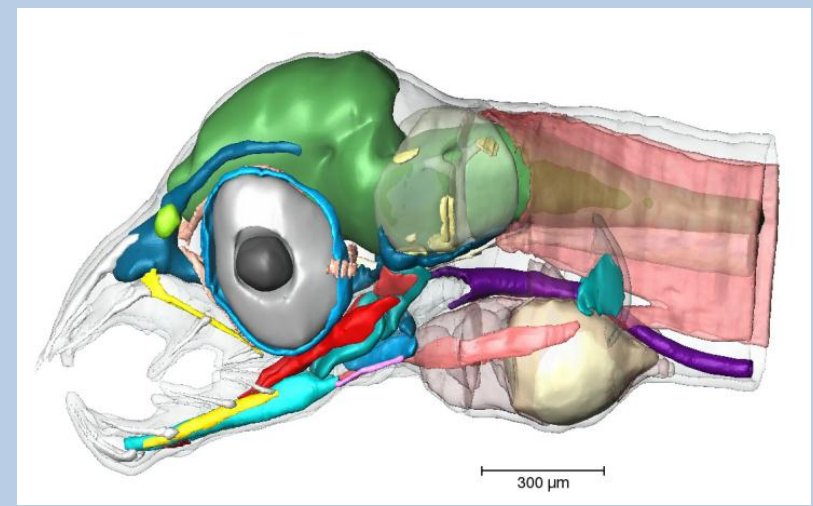
Video-recording

- Jaw angles



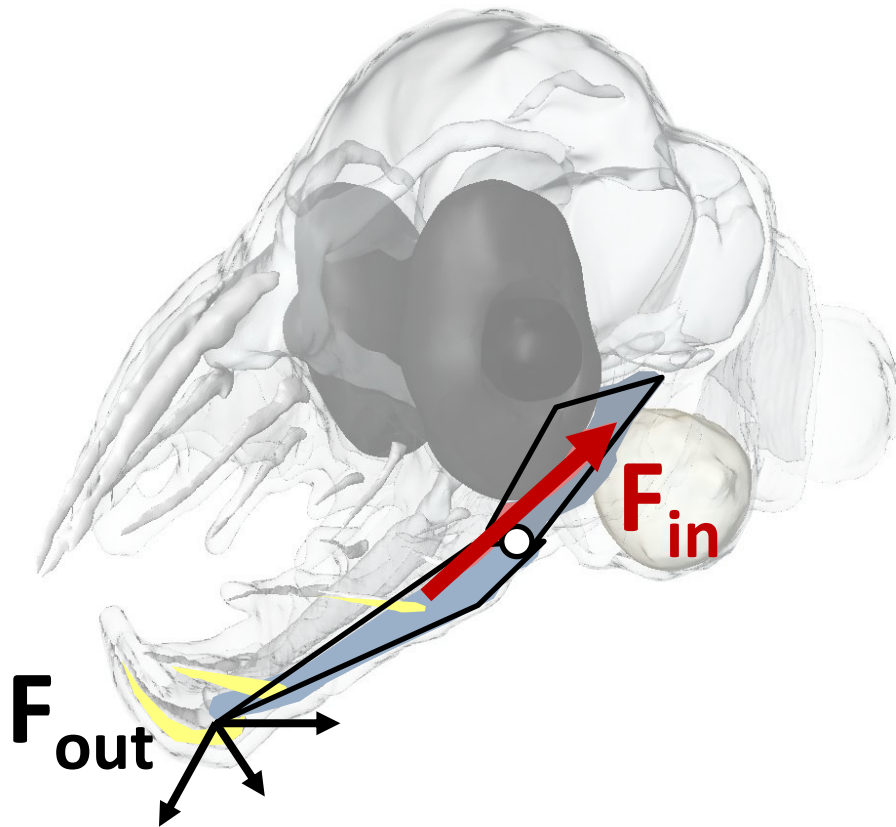
Reconstruction

- 3D coordinates
- Morphometric data



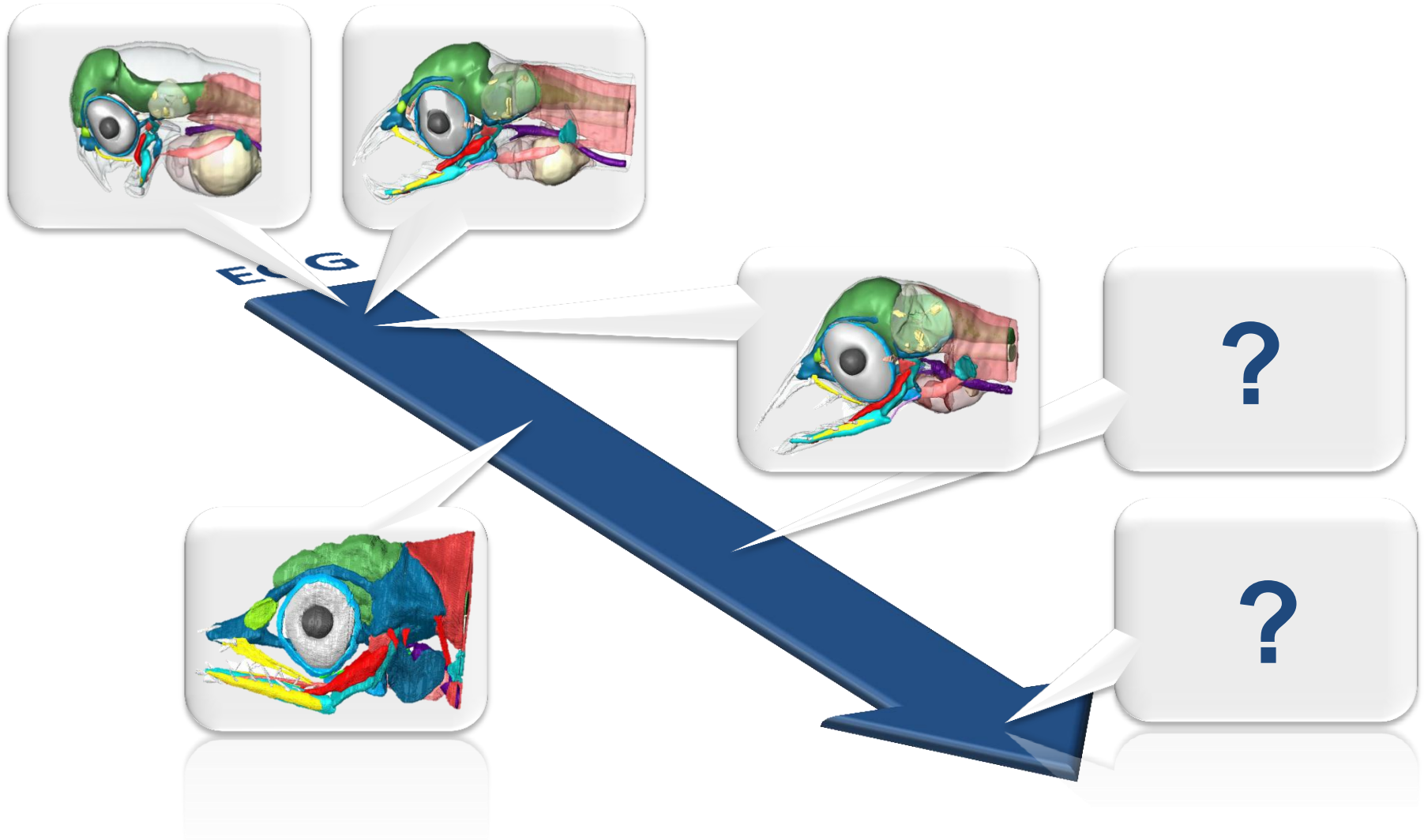


2. The size-problem





Material & Methods

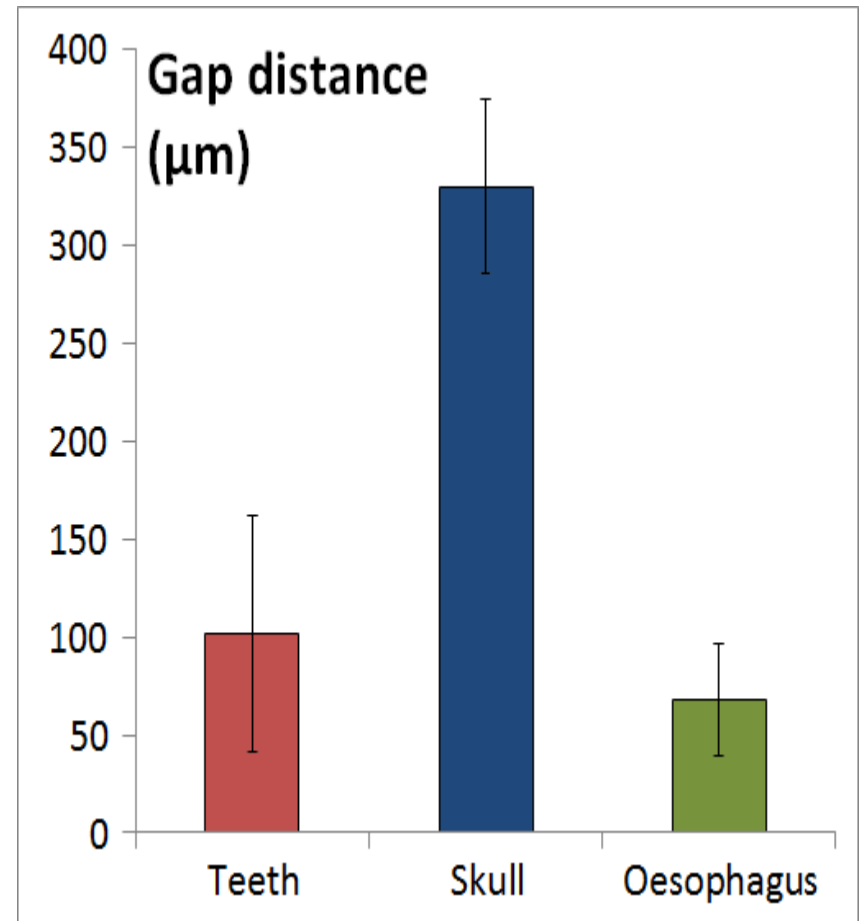
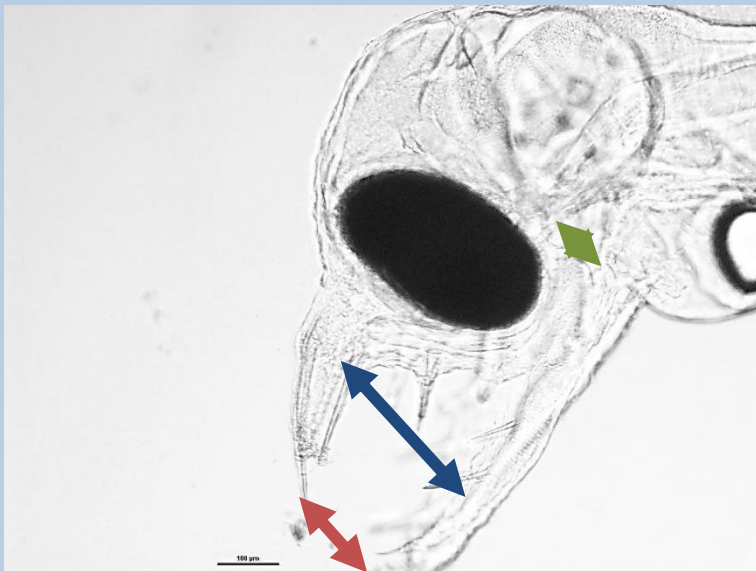




1. Modelling - input

Video-recordings

Gap distance: $\pm 100 \mu\text{m}$

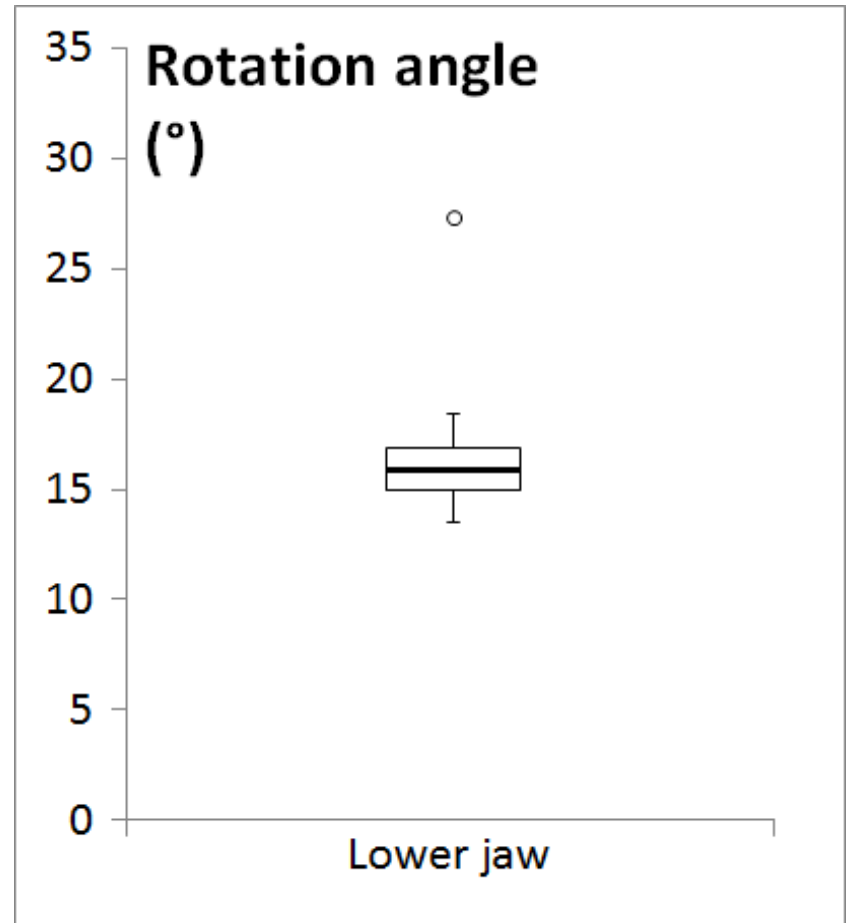




2. Modelling - input

Video-recordings

Rotation angle: $\pm 15^\circ$

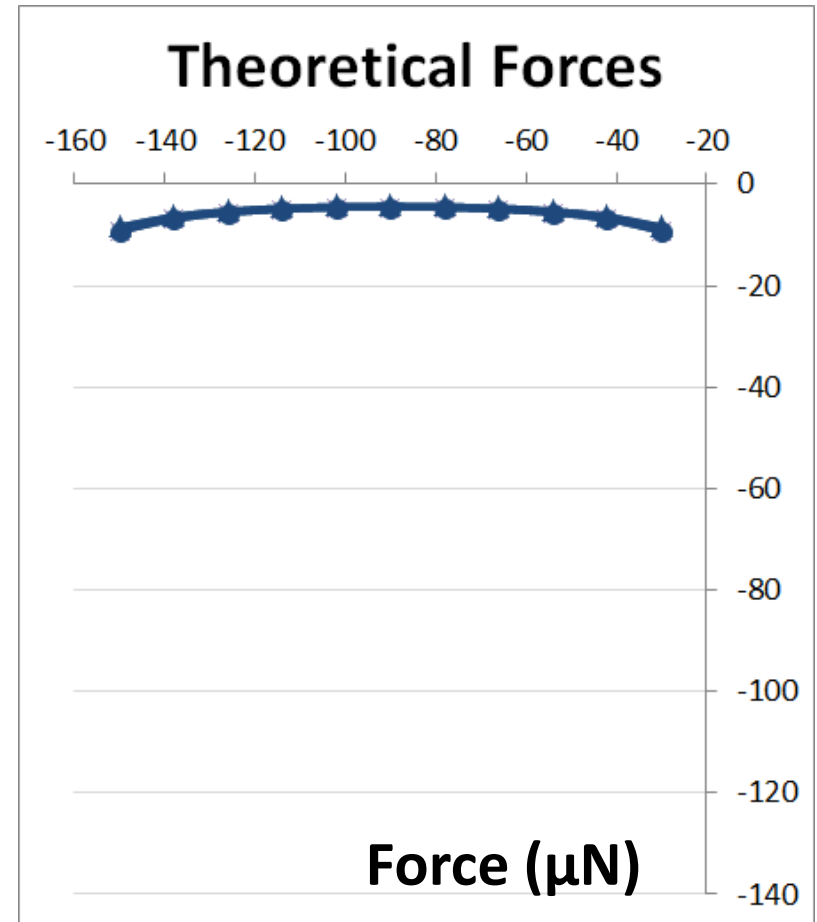
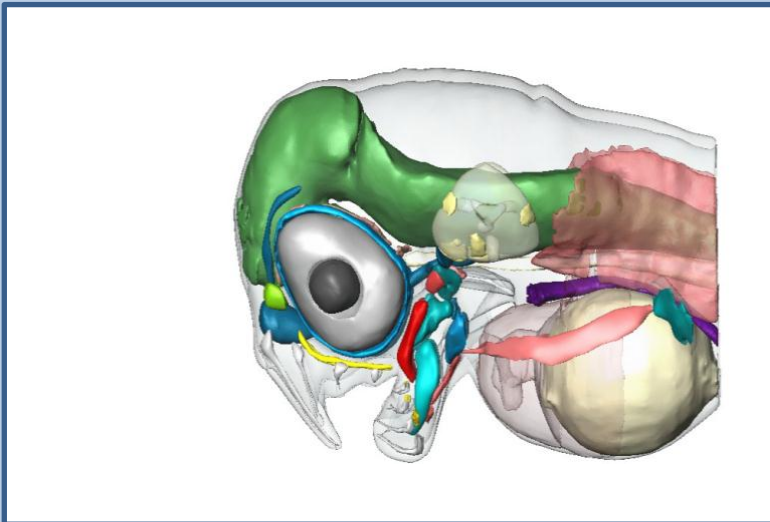




3. Modelling – output (shift)

Reconstruction

Endogenous

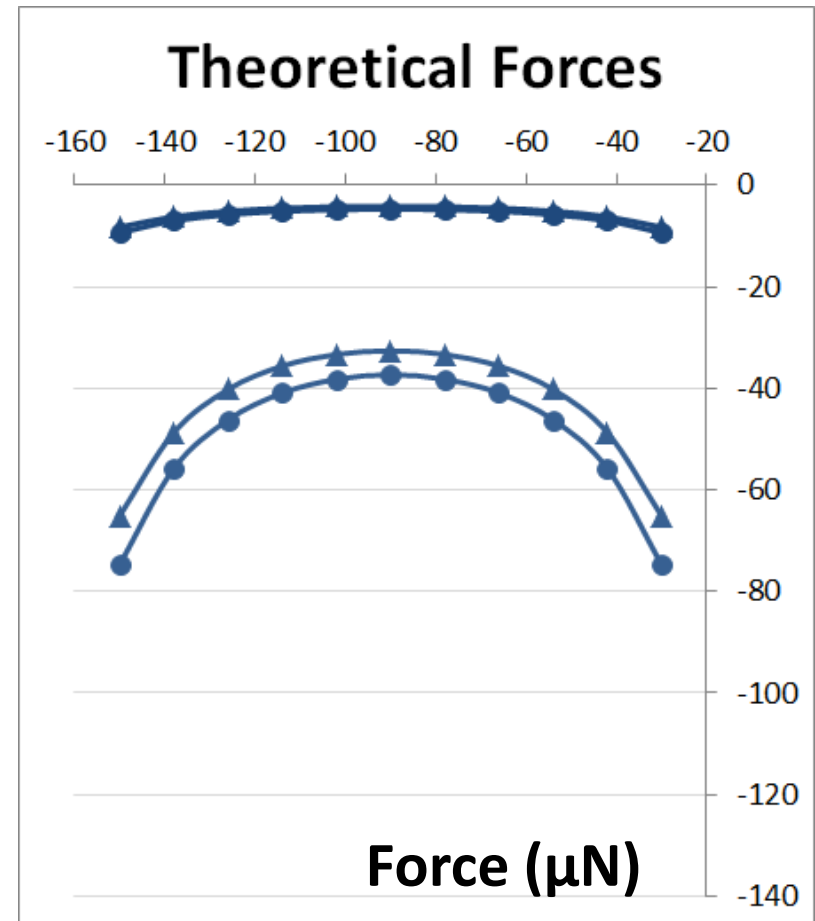
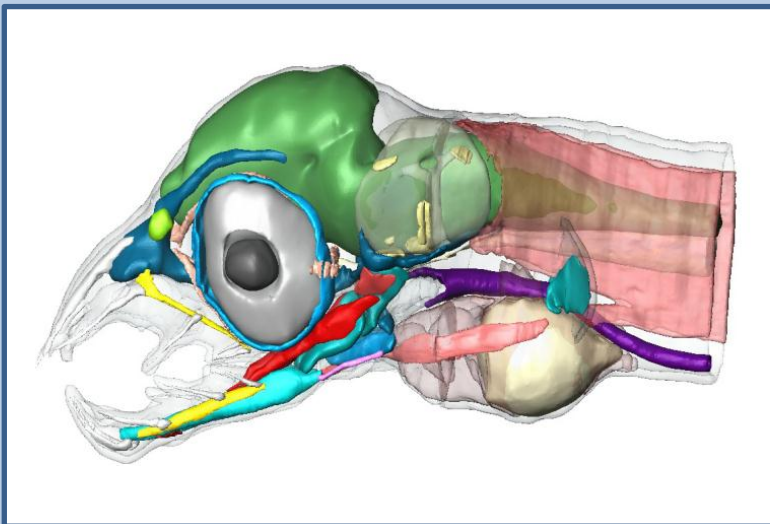




3. Modelling – output (shift)

Reconstruction

Intermediate

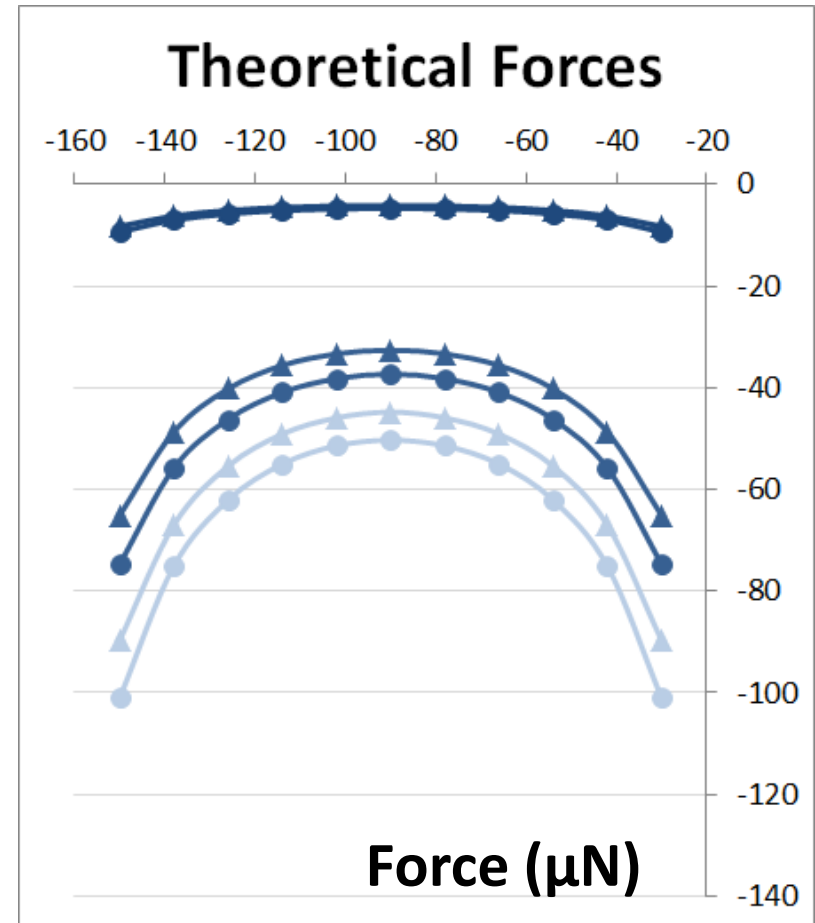
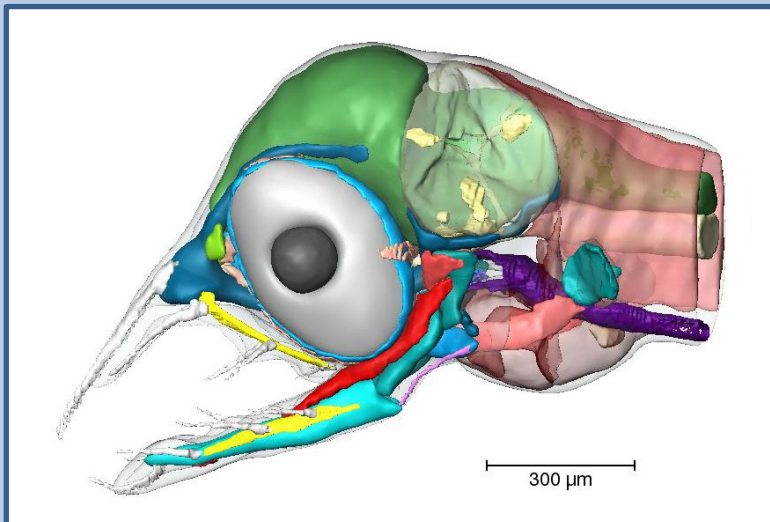




3. Modelling – output (shift)

Reconstruction

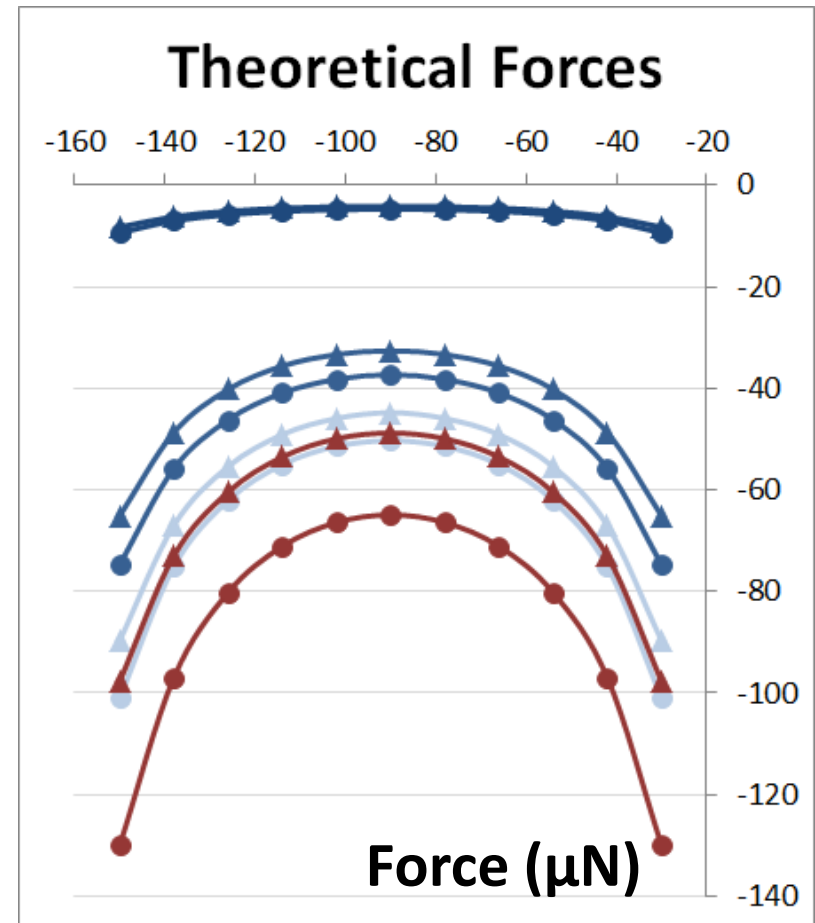
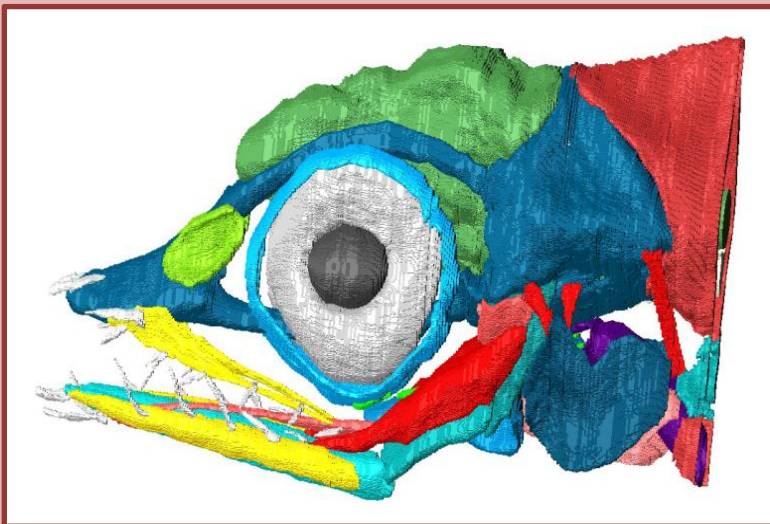
Exogenous





4. Modelling – output (lepto)

Reconstruction



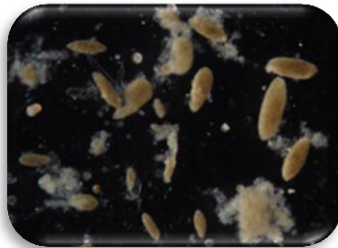


Discussion

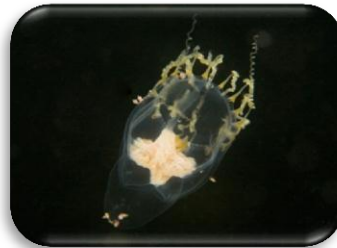
Is the leptocephalus larva capable of biting ?



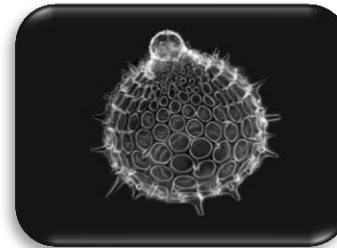
mm



μm



mm



μm



mm

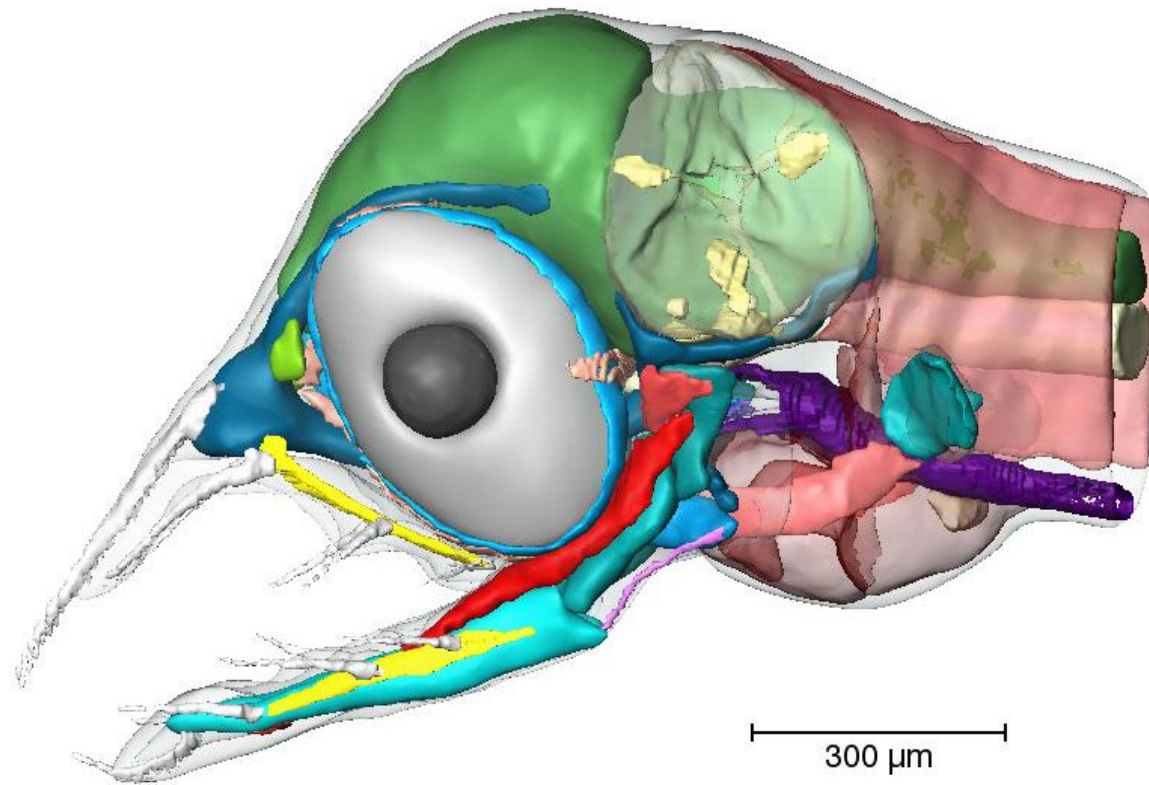


*100 - 700
 μN*

*> 5000
 μN*

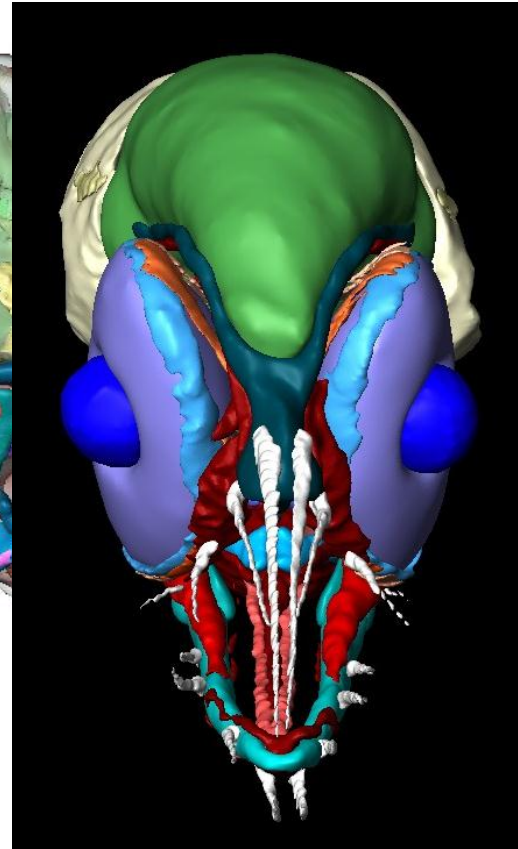
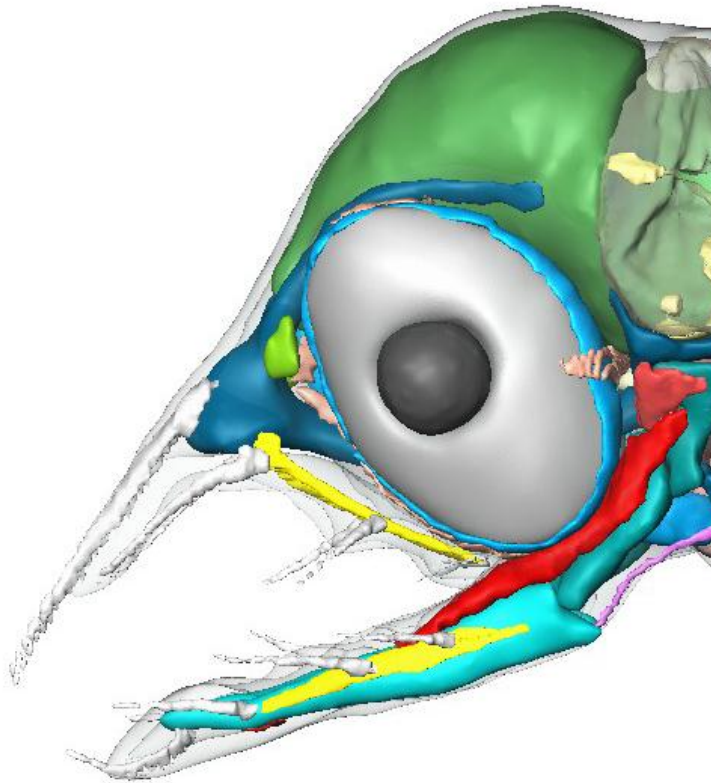


Is the leptocephalus larva capable of biting ?





Is the leptocephalus larva capable of biting ?





Discussion

Is the leptocephalus larva capable of biting ?

FORCES

YES

MORPHOLOGY

NO

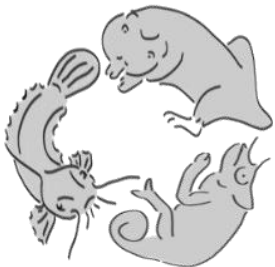
Alternatives:

1. Piercing
2. Cage
3. Defense



Thank you for your attention !

Questions ?



*Evolutionary
Morphology of
Vertebrates*

mathias.bouilliant@ugent.be