

How to design natural dynamics that are easy to exploit?



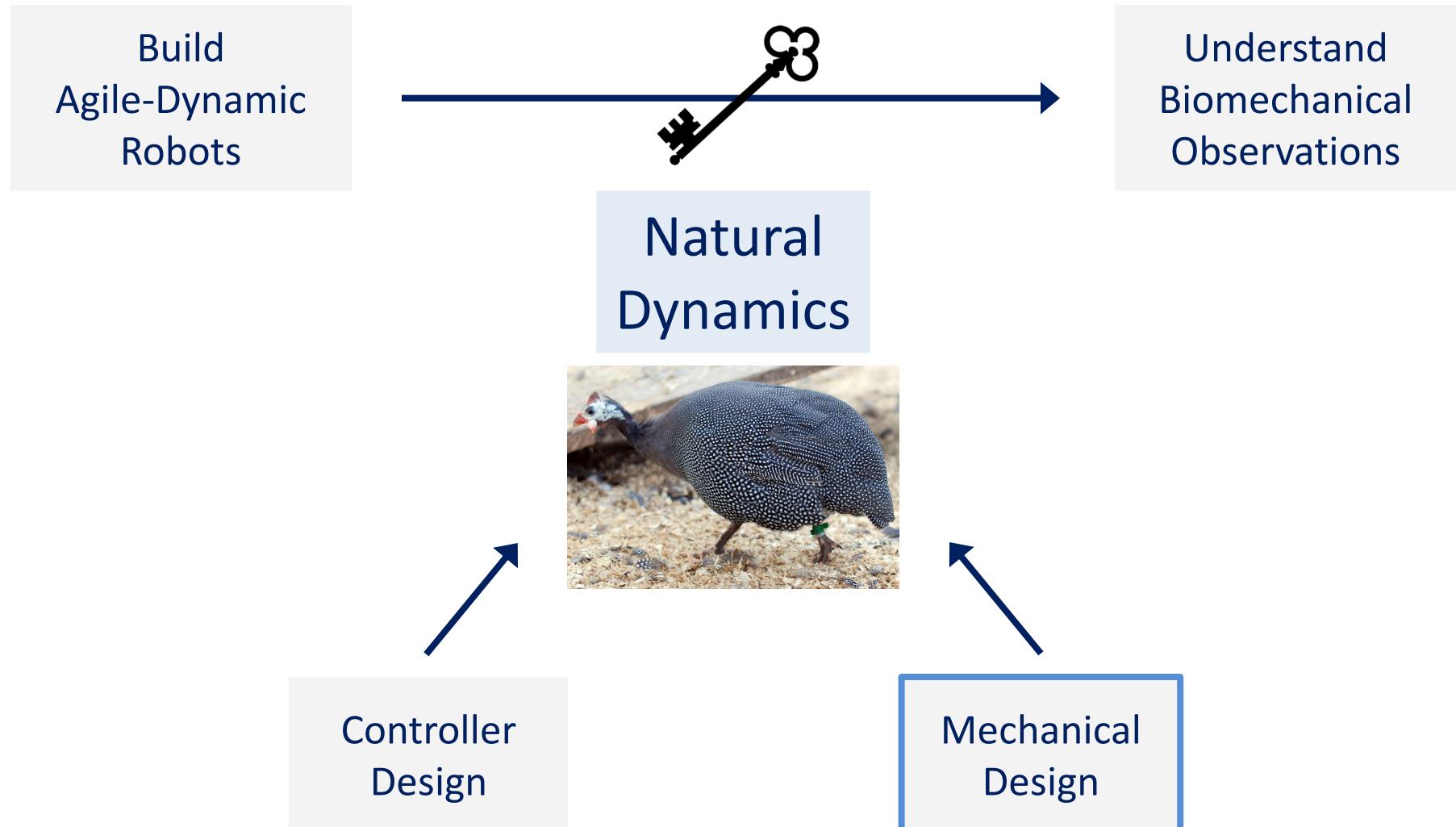
Dynamic Locomotion Group

Steve Heim
Özge Drama
Felix Grimmiger
Alexander Spröwitz



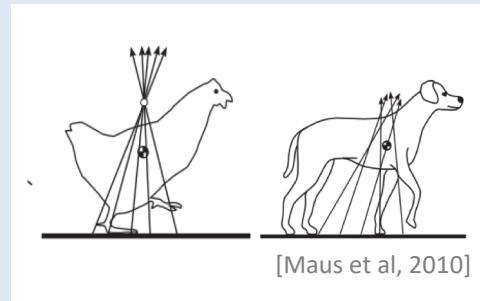
MAX-PLANCK-GESELLSCHAFT

Motivation



Virtual Pivot Point (VPP)

Mechanical Design



[Maus et al, 2010]

Compliance

Leg Segmentation

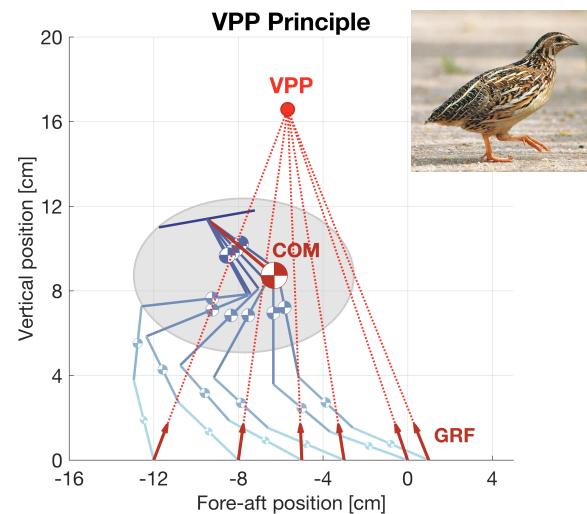
Dampers
Springs

Mass-Length
Distribution



Observation

Quail Morphology



Hypothesis

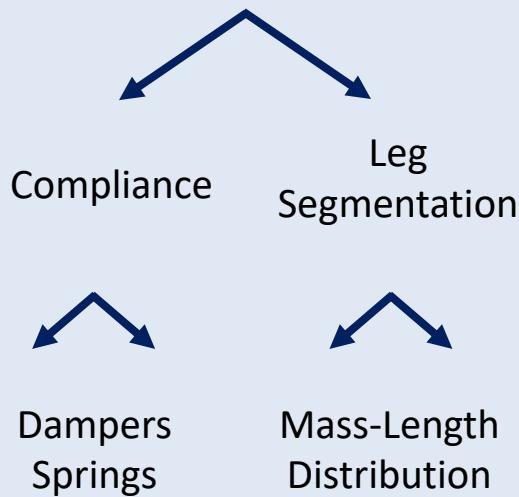
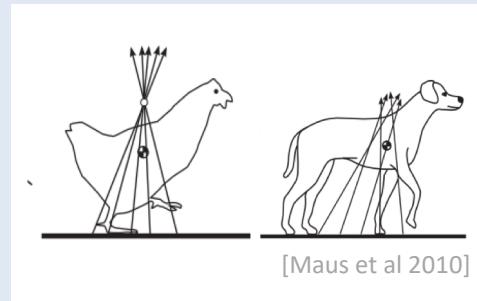
VPP as a
Controller
Concept

Trunk
Stability

[Maus, 2008]
[Andrade, 2014]

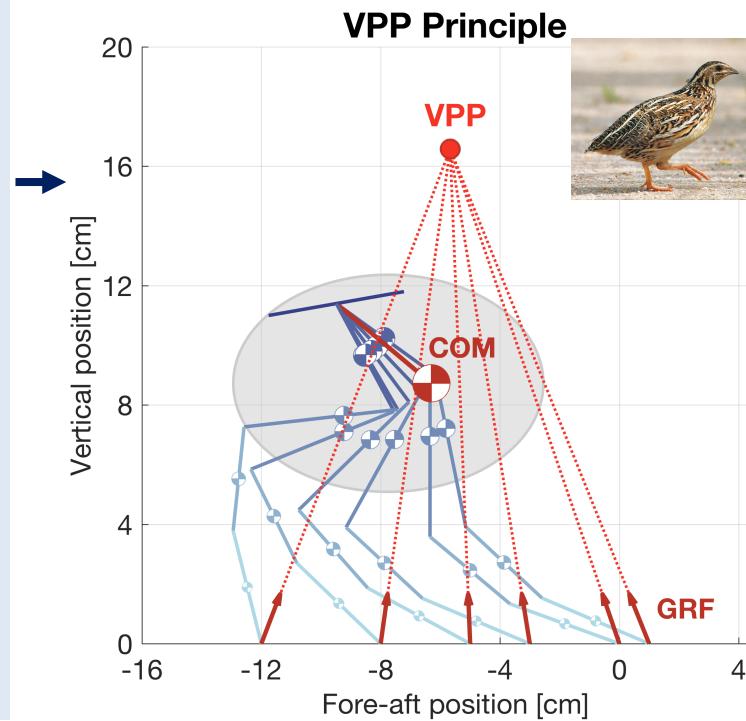
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Mechanical Design



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[Andrade, 2014]