Intelligent information systems composed of machines and people

P. Perona - Caltech
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CDS XXth anniversary symposium

from John Stevenson <solarjack@gmail.com>
to Pietro Perona <perona@vision.caltech.edu>
date Thu, Aug 6, 2009 at 7:50 AM
subject Mushrooms galore at Caumsett

Can I eat this one? - Love John

Sent from my iPhone

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Mushroom

From Wikipedia, the free encyclopedia

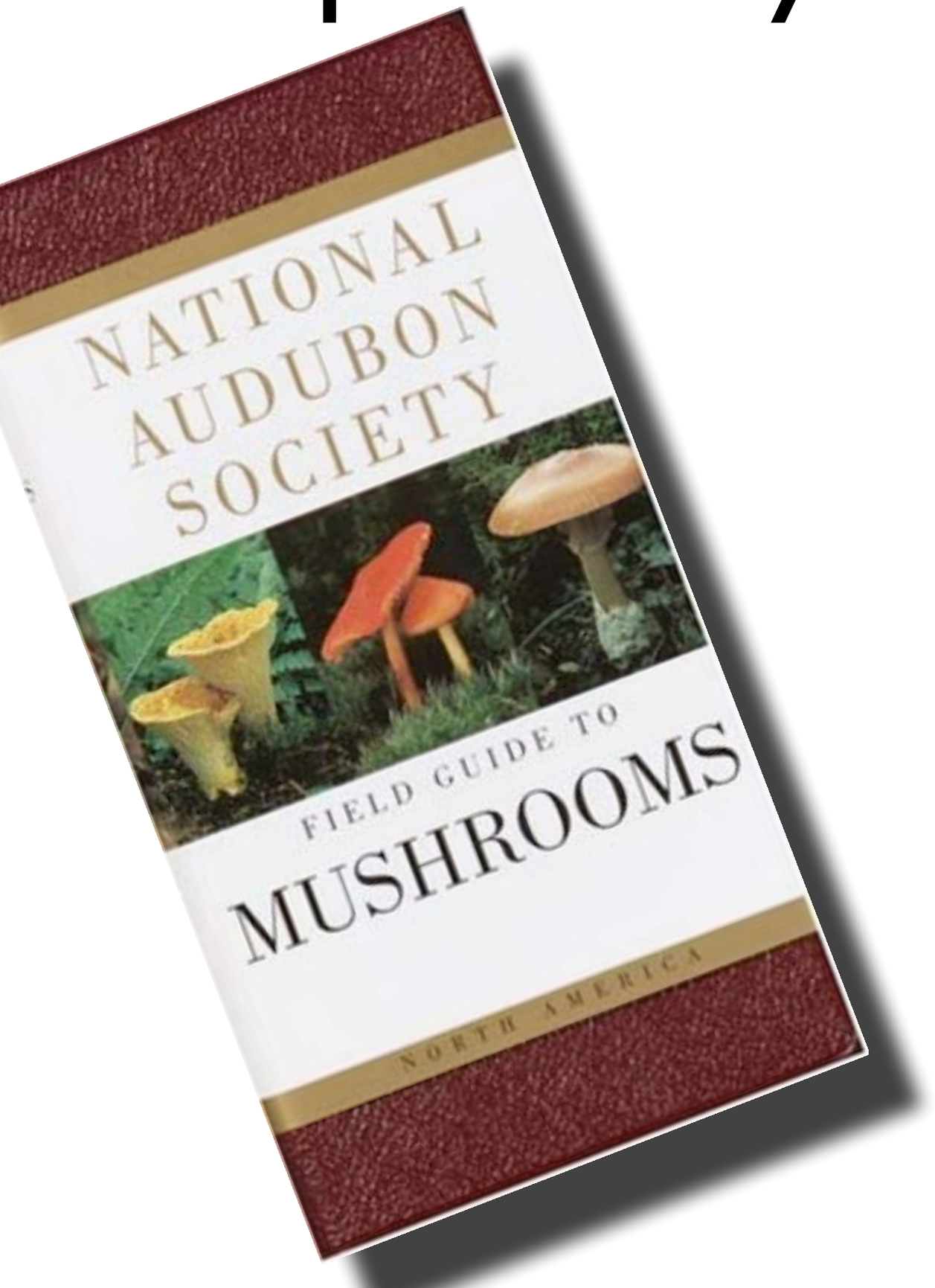
For other uses, see Mushroom (disambiguation).

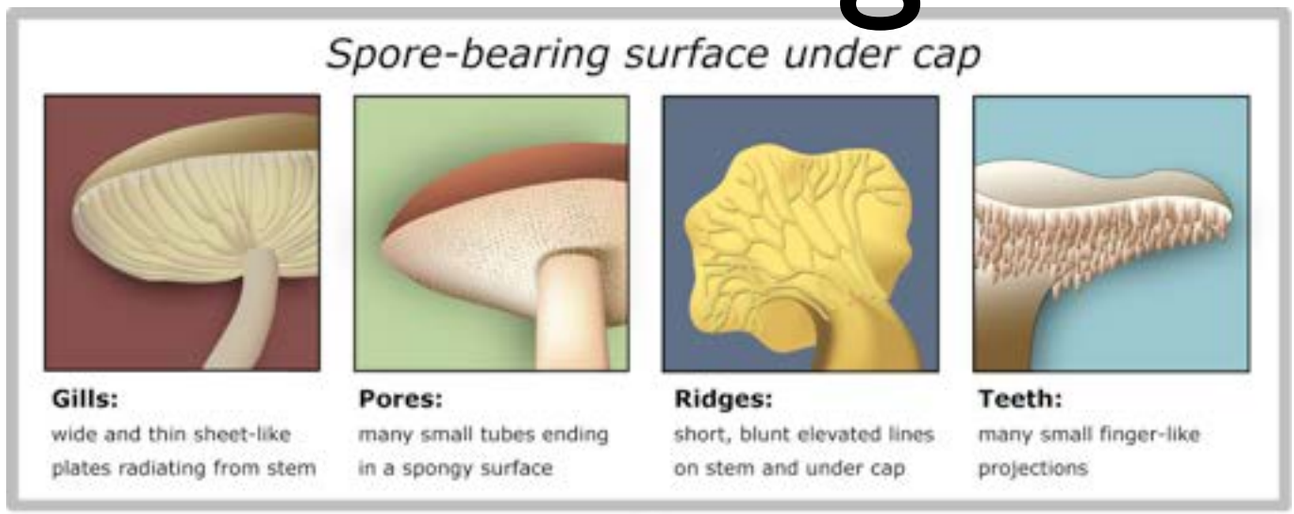
A **mushroom** is the fleshy, spore-bearing fruiting body of a fungus, typically produced above ground on soil or on its food source. The standard for the name "mushroom" is the cultivated white button mushroom, *Agaricus bisporus*, hence the word mushroom is most often applied to those fungi (Basidiomycota, Agaricomycetes) that have a stem (*stipe*), a cap (*pileus*), and gills (lamellae, sing. lamella) on the underside of the cap, just as do store-bought white mushrooms.

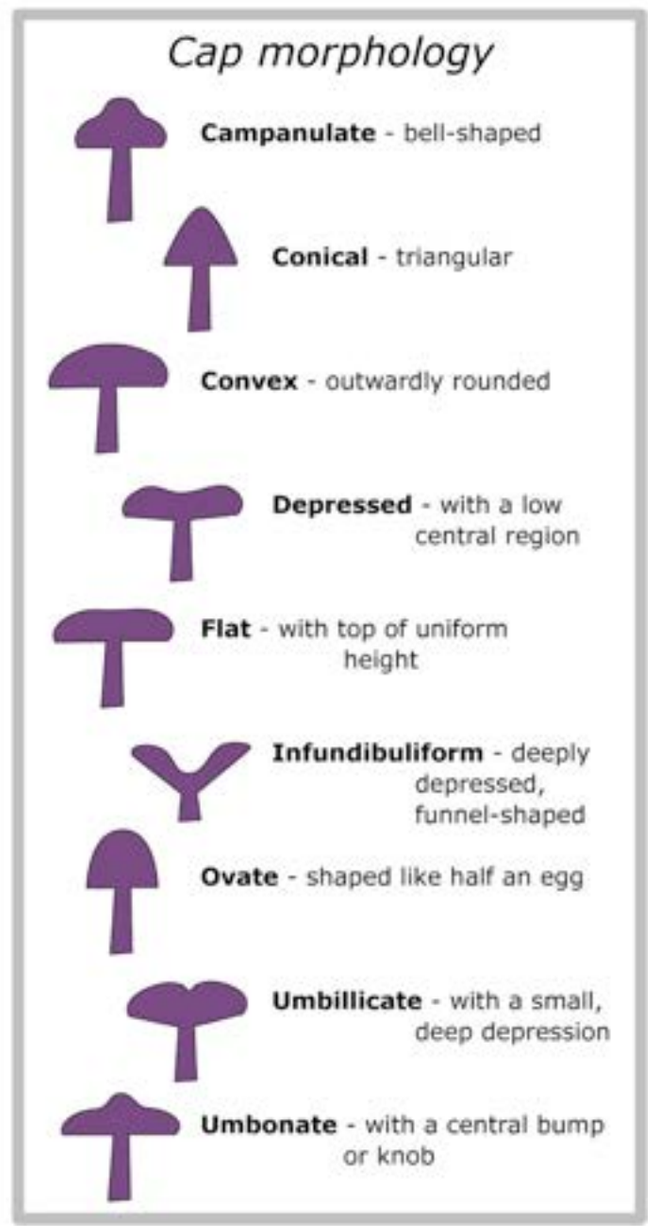
The word "mushroom" can also be used for a wide variety of gilled fungi, with or without stems, and the term is used even more generally, to describe both the fleshy fruiting bodies of some Ascomycota and the woody or leathery fruiting bodies of some Basidiomycota

The mushroom *Amanita muscaria*, commonly

Wikipedia says: use a field guide







Yet, the info is there...

Amanita pantherina var. *pantherina*

From Wikipedia, the free encyclopedia

(Redirected from Amanita pantherina)

Amanita pantherina var. pantherina, also known as the *"European Panther"* and *"False Blusher"* due to its similarity to the true Blusher *(Amanita rubescens)*, is a species of Europe and western Asia. Material described as *A. pantherina* in the Americas seems to belong to a number of distinct taxa only some of which have been described.

Contents [hide]

1 Description
2 Habitat and distribution
3 Biochemistry
4 See also
5 References
6 External links

European Panther

Wikipedia Forever Our shared knowledge. Our shared treasure. Help us protect it. [Show]

Femur

From Wikipedia, the free encyclopedia

For the invertebrate femur, see Arthropod leg.

The **femur**, or **thigh bone**, is the most proximal (closest to the body) bone of the leg in vertebrates capable of walking or jumping, such as most land mammals, birds, many reptiles such as lizards, and amphibians such as frogs. In vertebrates with four legs such as dogs and horses, the femur is found only in the rear legs.

Contents [hide]

1 Human anatomy
2 Evolutionary variation
3 Etymology
4 Additional images
5 References
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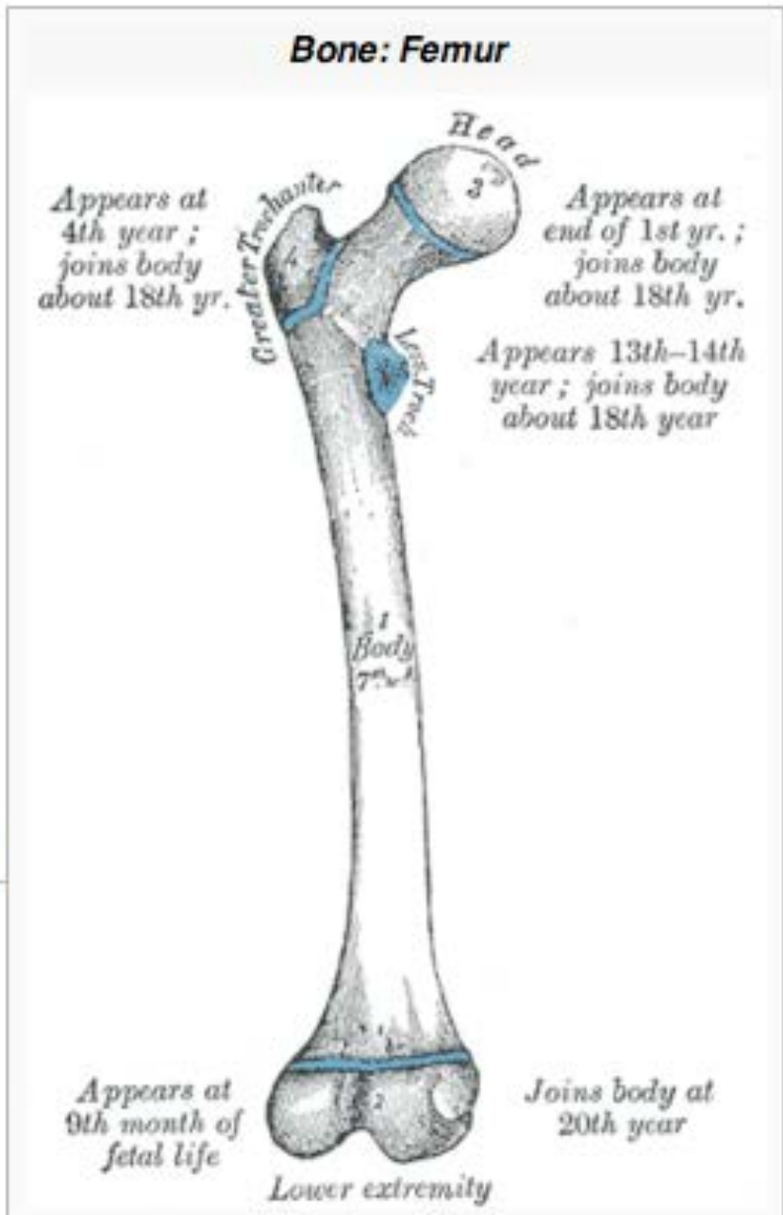
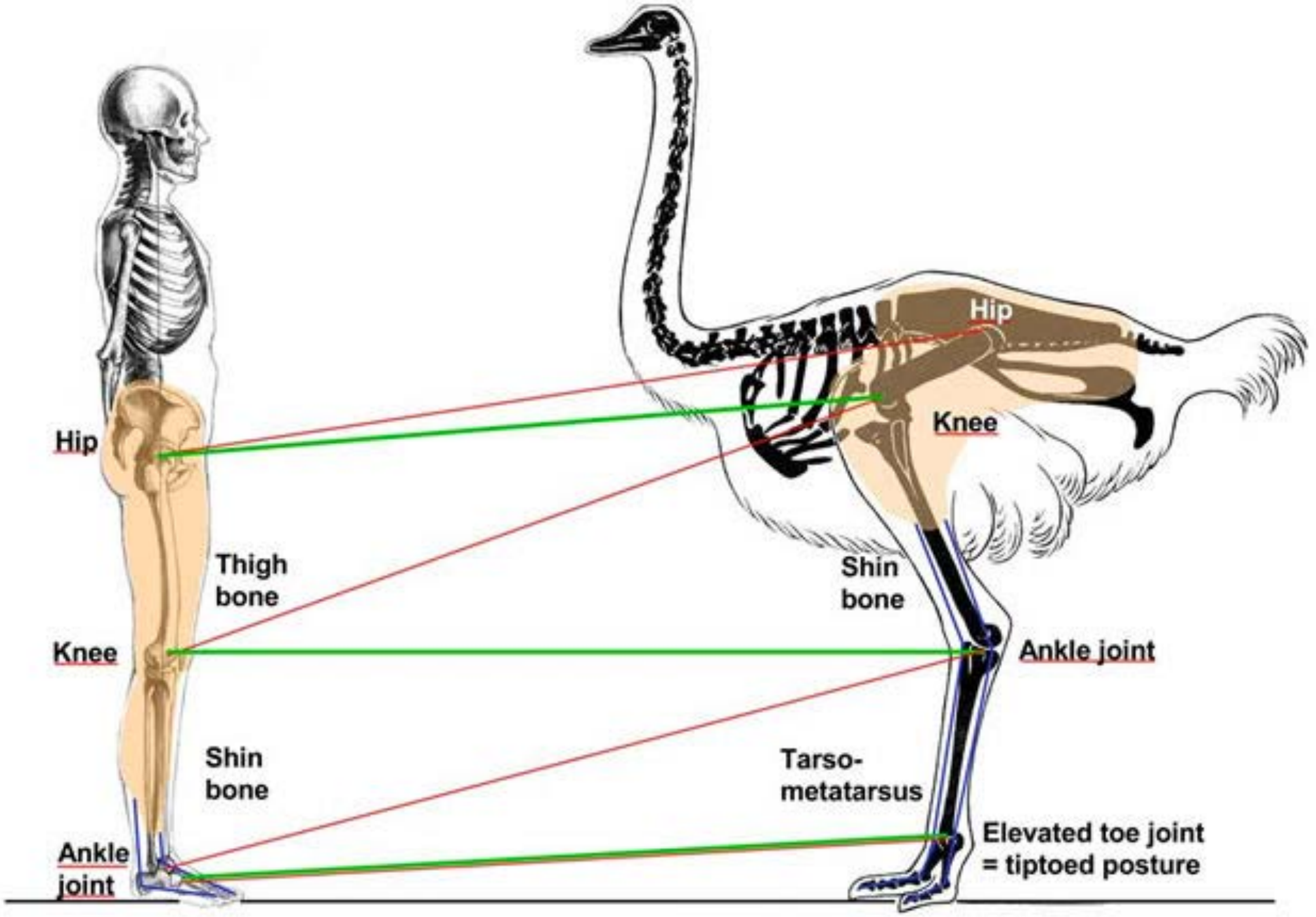
Human anatomy [edit]

In human anatomy, the femur is the longest and largest bone. Along with the temporal bone of the skull, it is one of the two strongest bones in the body. The average adult male femur is 48 centimeters (18.9 in) in length and 2.34 cm (0.92 in) in diameter and can support up to 30 times the weight of an adult.[1] It forms part of the hip (at the acetabulum) and part of the knee, which is located above. There are four eminences, or protuberances, in the human femur: the head, the greater trochanter, the lesser trochanter, and the lower extremity. They appear at various times from just before birth to about age 14. Initially, they are joined to the main body of the femur with cartilage, which gradually



Anterior view of the femur

Latin	*os femoris*
Gray's	*subject #59 242*

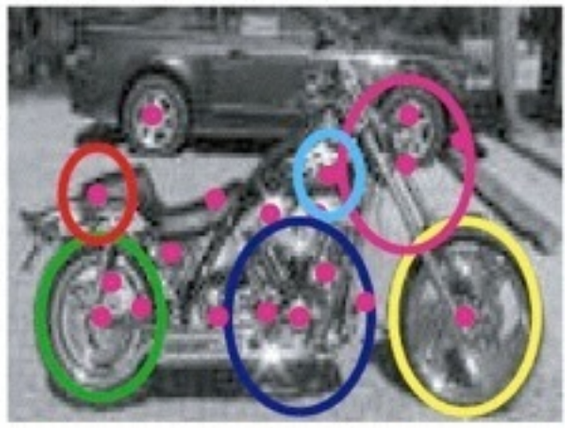


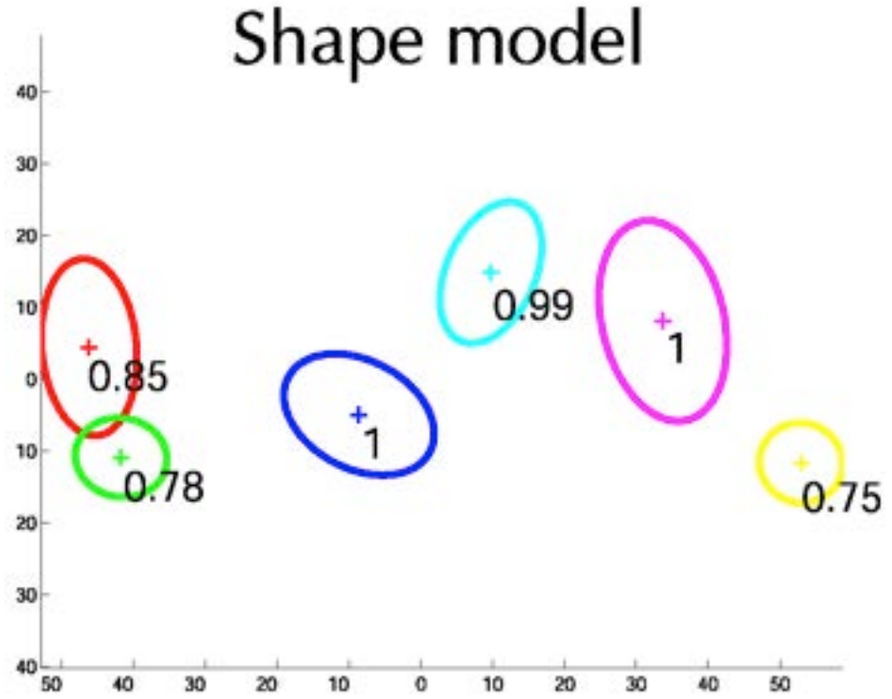
[picture credit: http://www.rvc.ac.uk/SML/Projects/Evolution3DDinos.cfm]

Lessons:

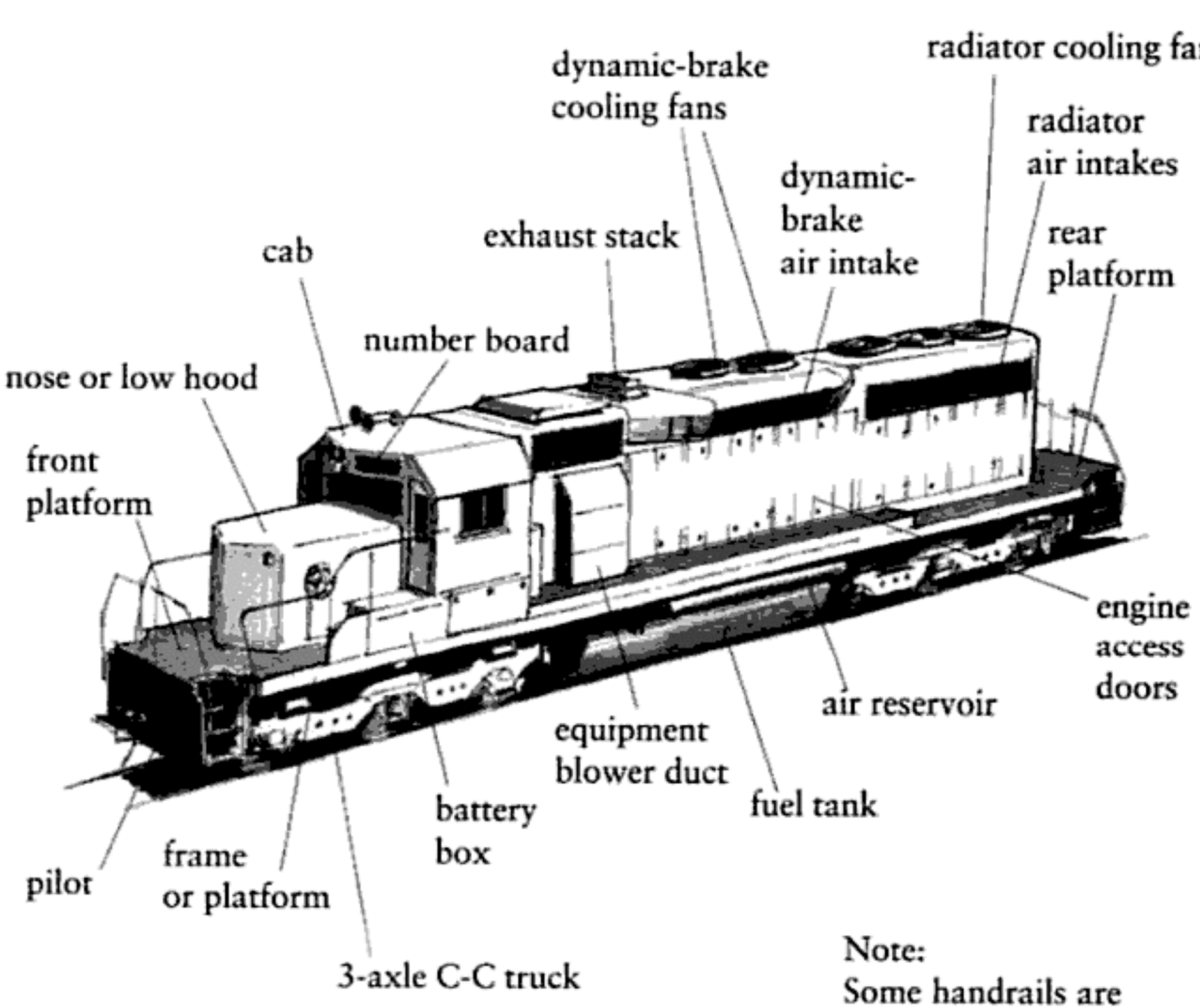
- *Visual* queries
  - Easy for humans
  - Difficult for machines
- Pictures are *digital dark matter*
- Expert knowledge - how to collect, organize, learn?

Unsupervised learning

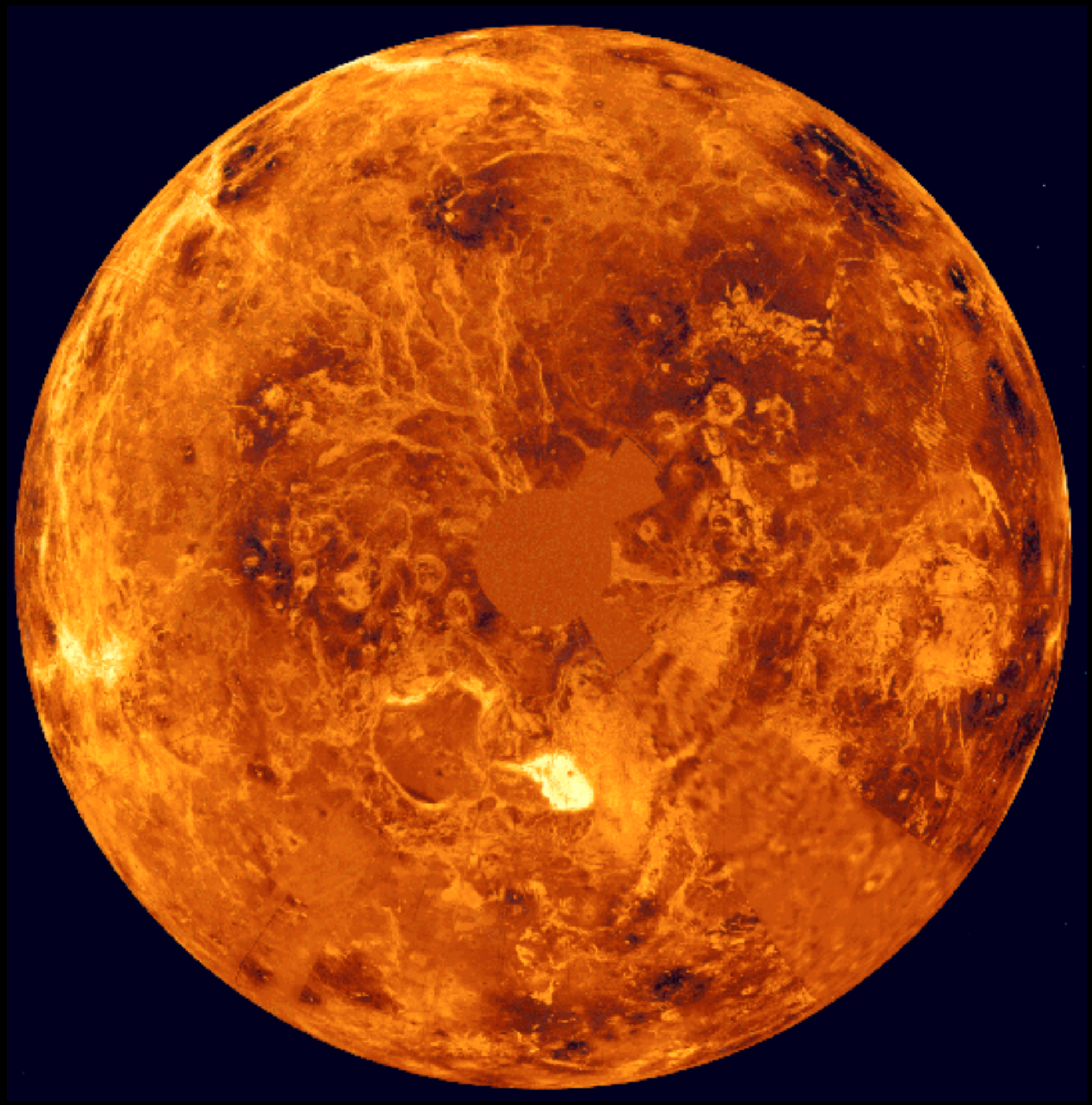


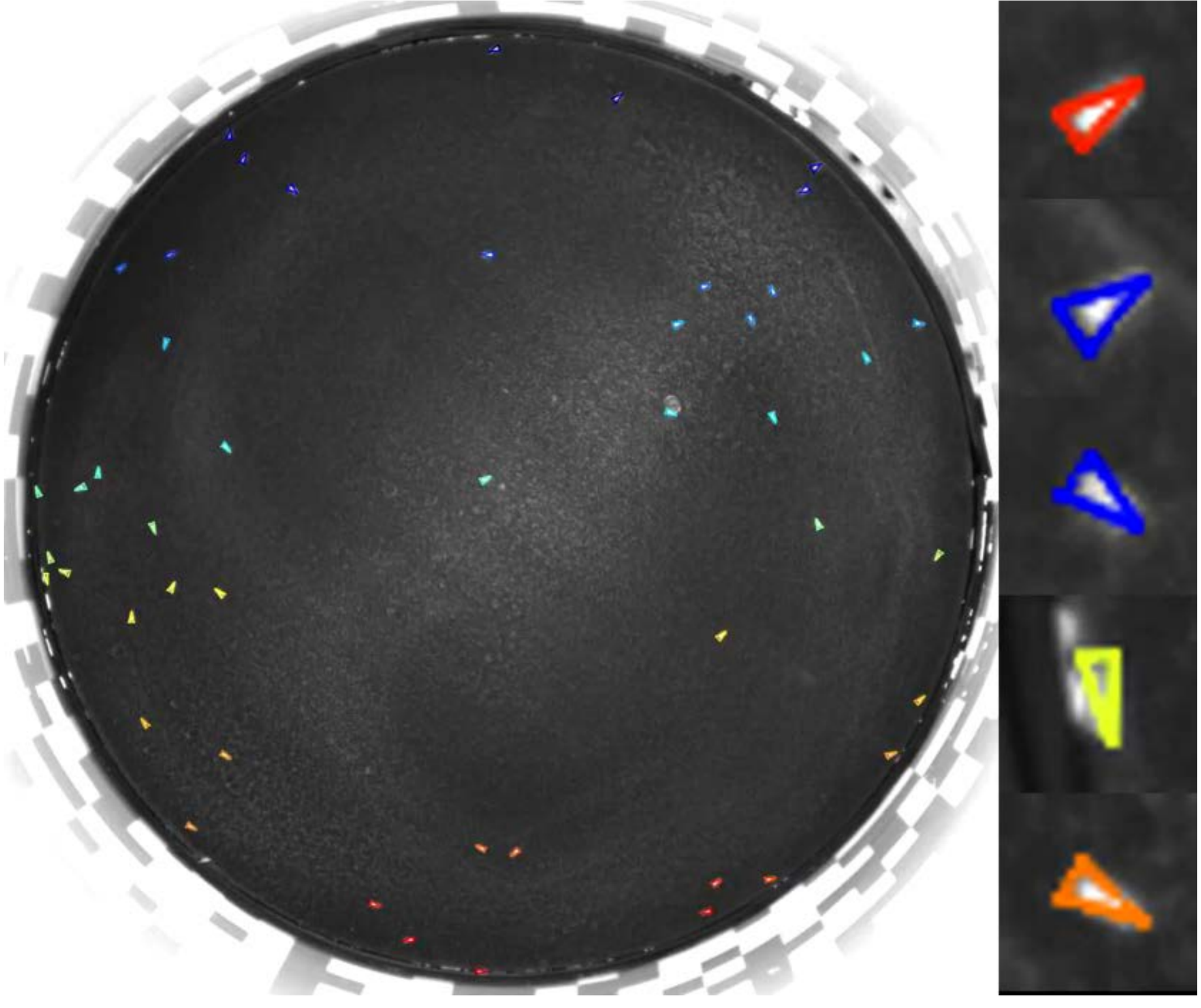


[Fergus et al., CVPR03]

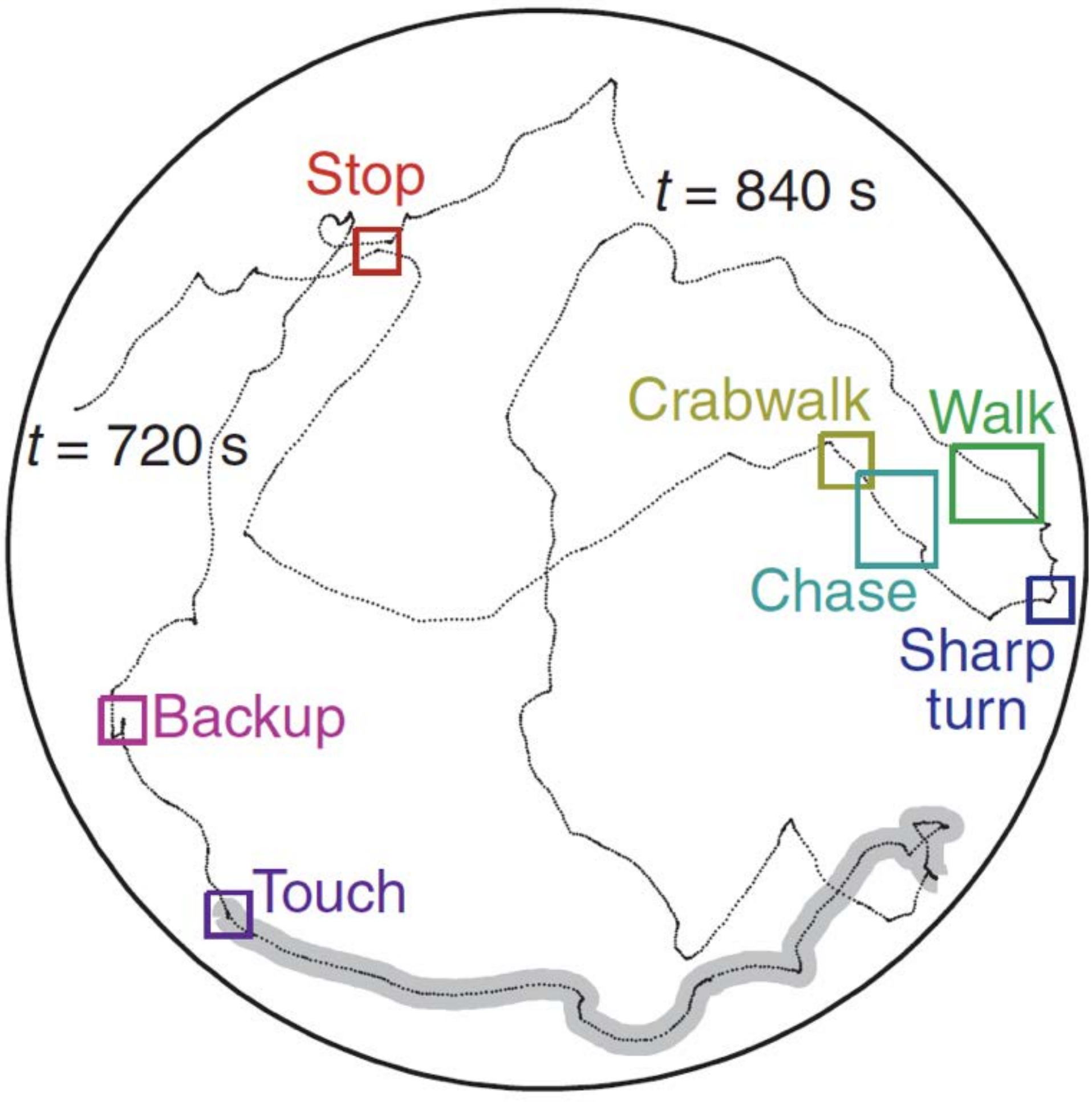


THE PARTS OF A LOCOMOTIVE





[Branson et al. Nature Methods, Jun. ’09]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t = 720 s
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Chase
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turn
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Touch

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Automata

Vision
scientists

DUCKS

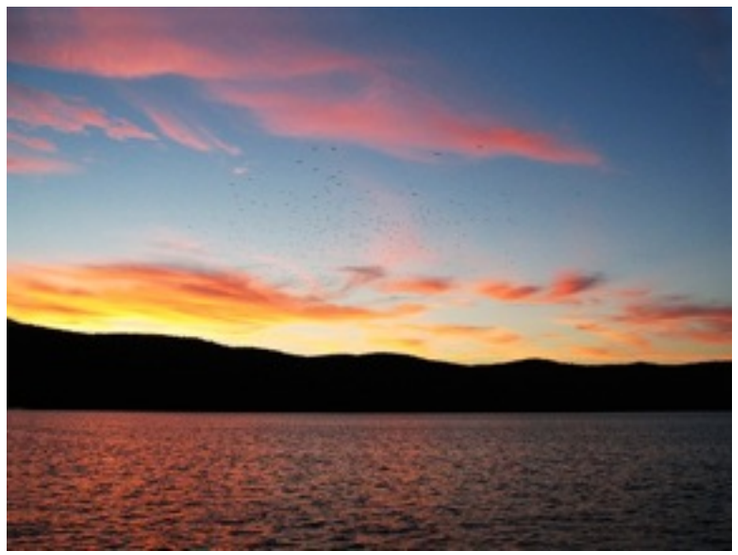
Mallard

American Black Duck

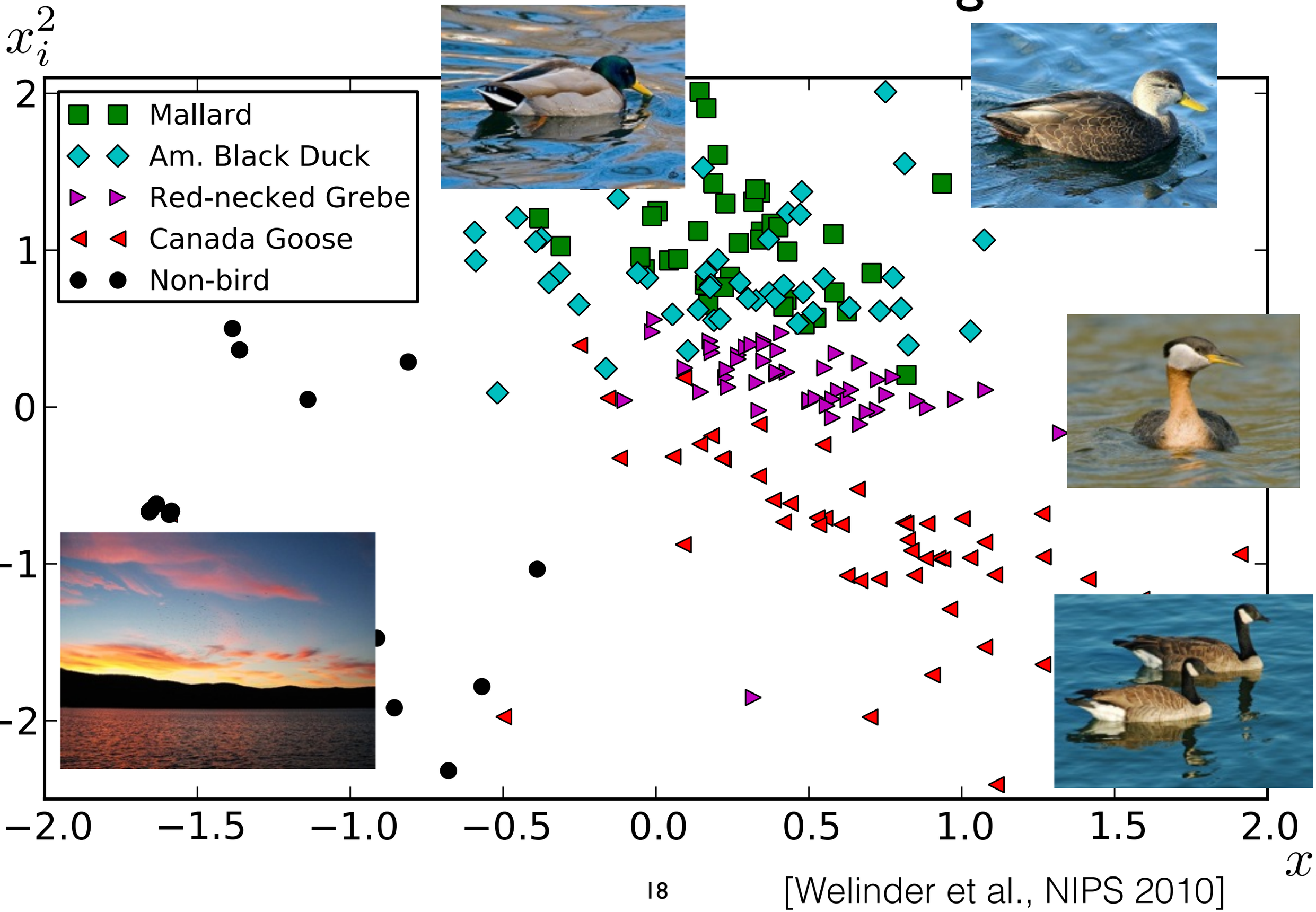
Canada Goose

Red Necked Grebe

Non-bird

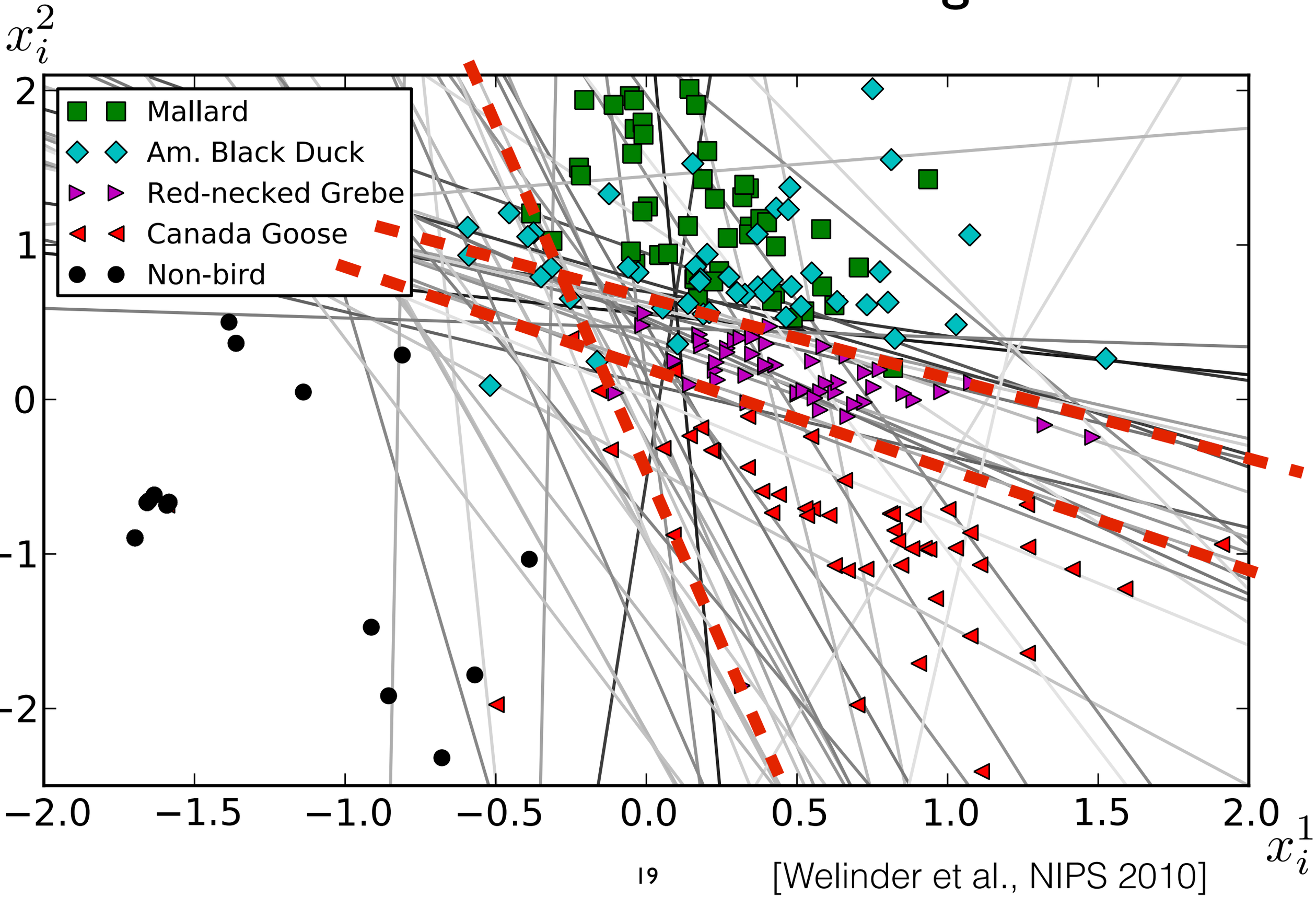


Is there a duck in the image?



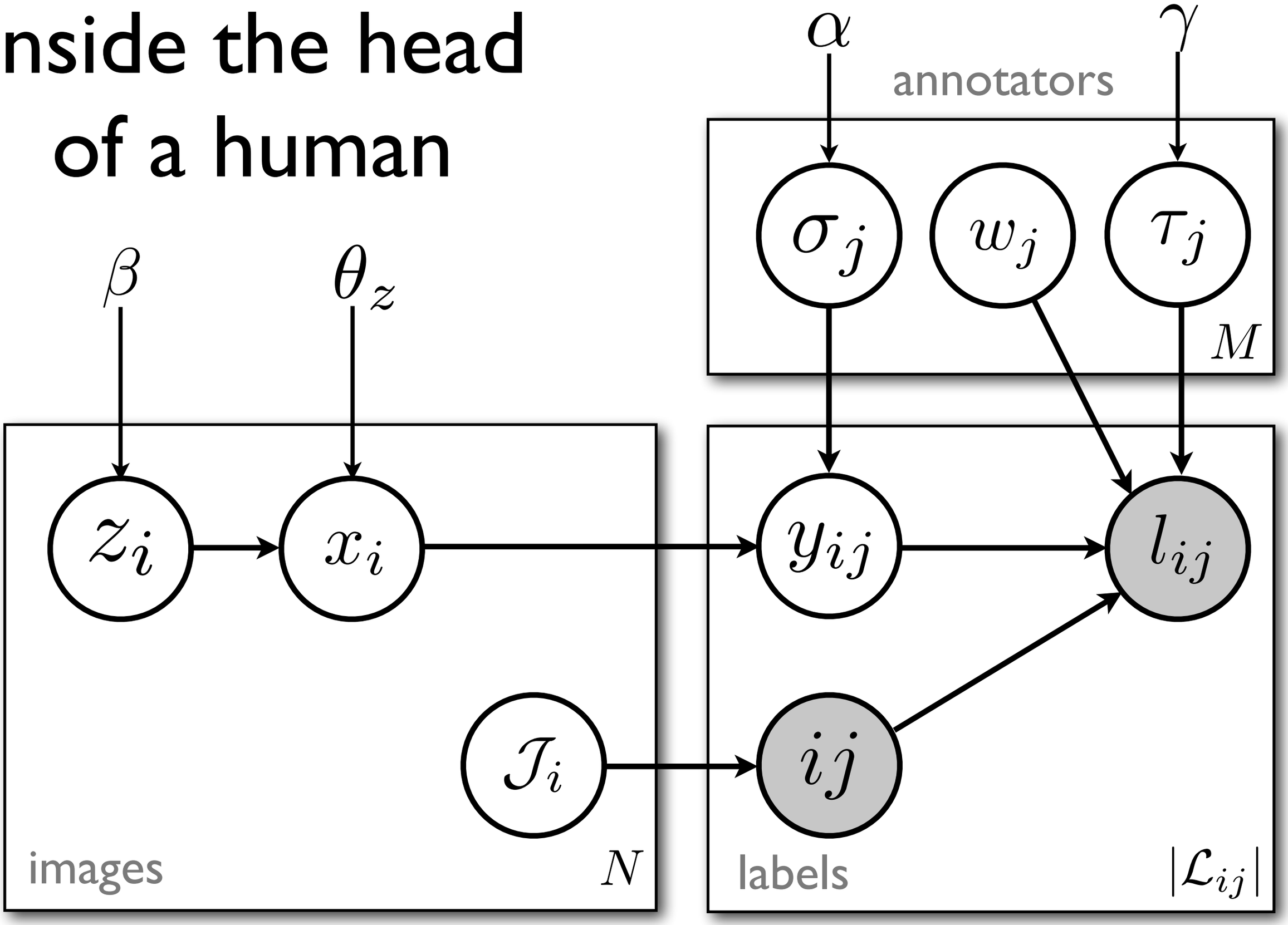
[Welinder et al., NIPS 2010]

Is there a duck in the image?

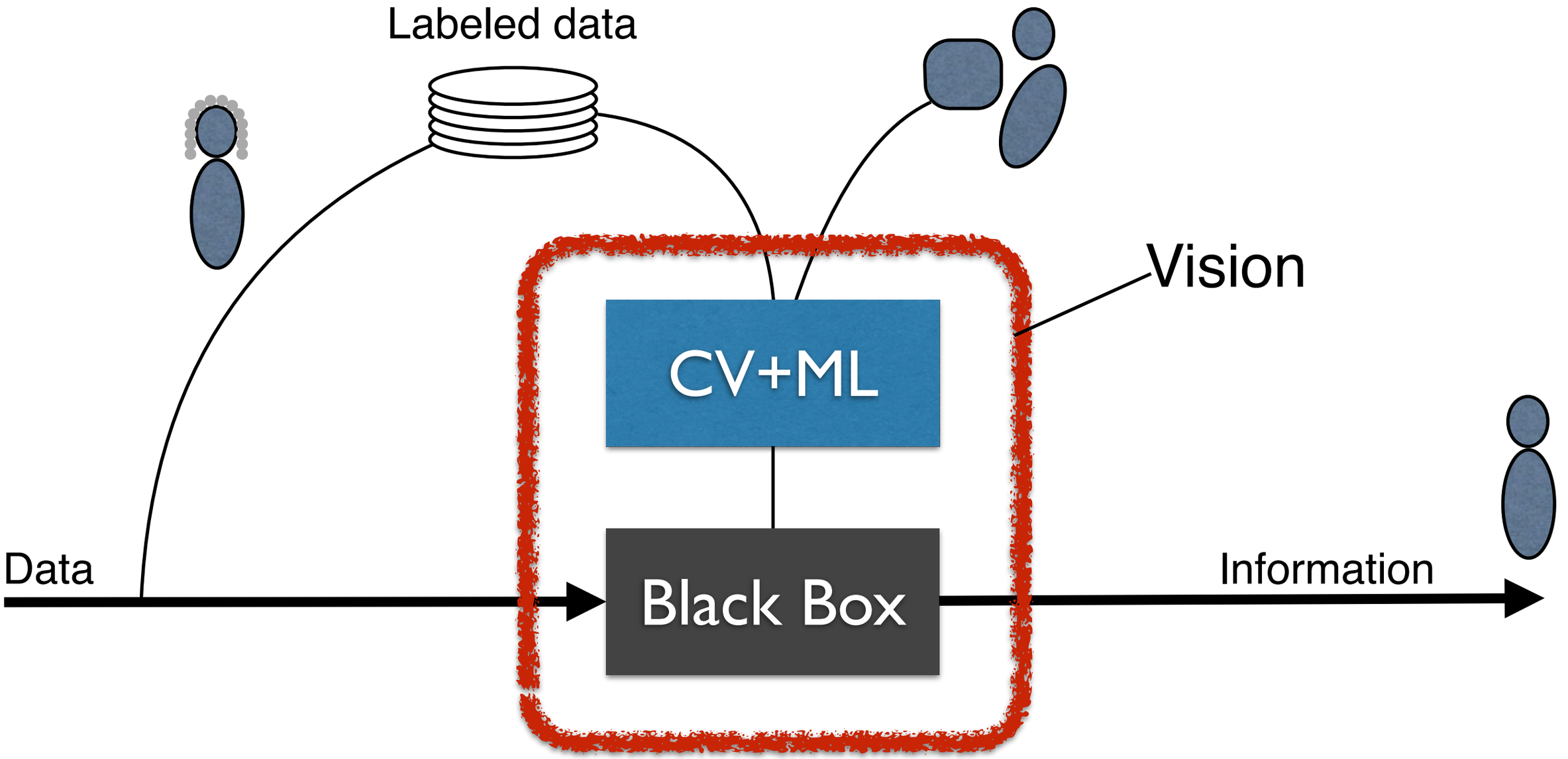


[Welinder et al., NIPS 2010]

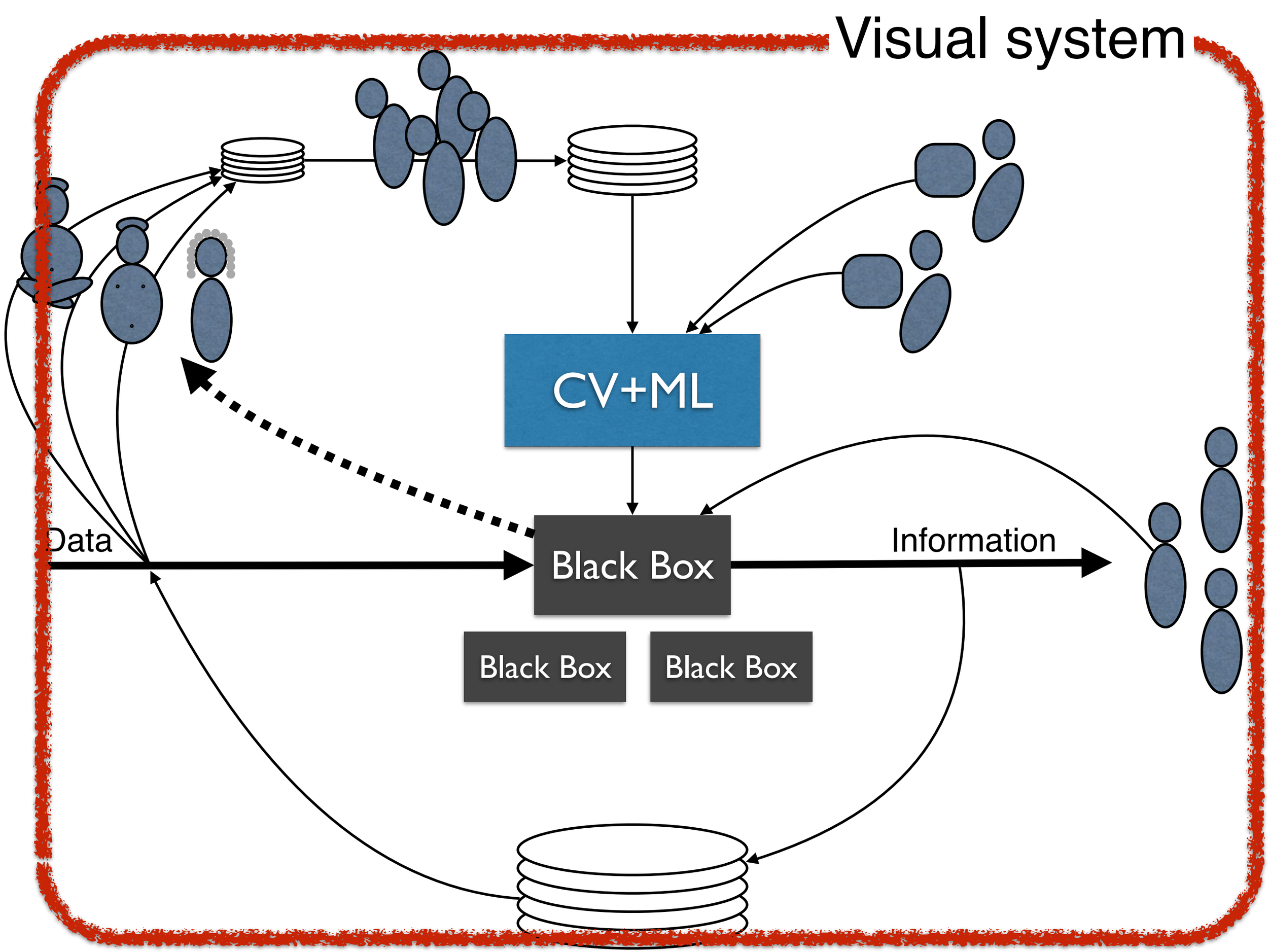
Inside the head of a human



[Welinder et al., NIPS 2010]


Labeled data
Vision
CV+ML
Black Box
Data
Information

Visual system



Intelligent systems

- From data to information
- Unsupervised and supervised learning
- Distributed networks of machines + people