Quelques remarques sur les modèles scientifiques
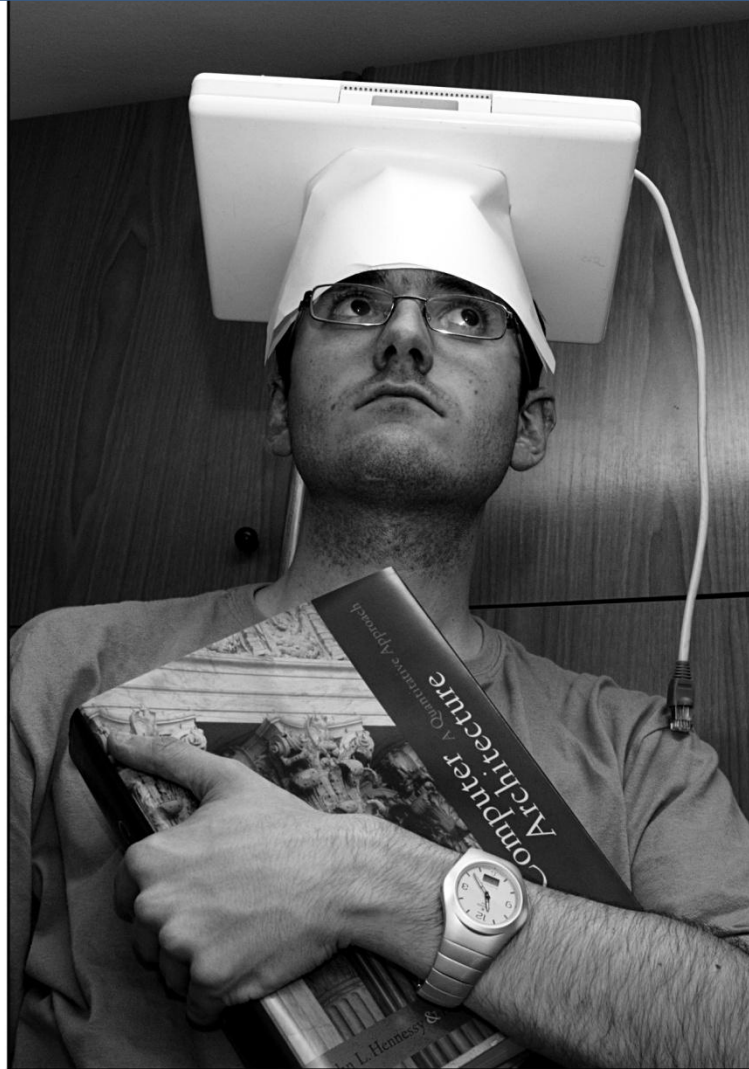
UMR 1273

Laurent Pérochon
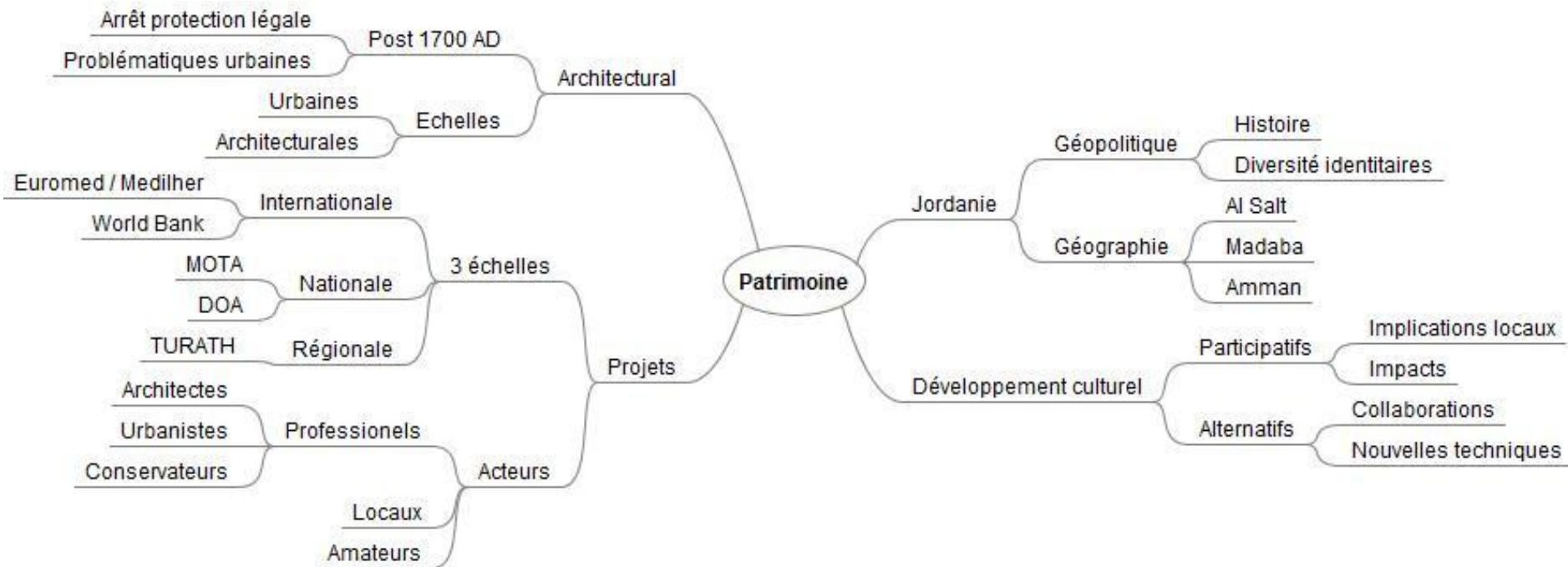Laurent.perochon(at)vetagro-sup.fr

VetAgro Sup

Niveau d'abstraction, formalisme, Agilité

Niveaux d'abstraction et formalismes

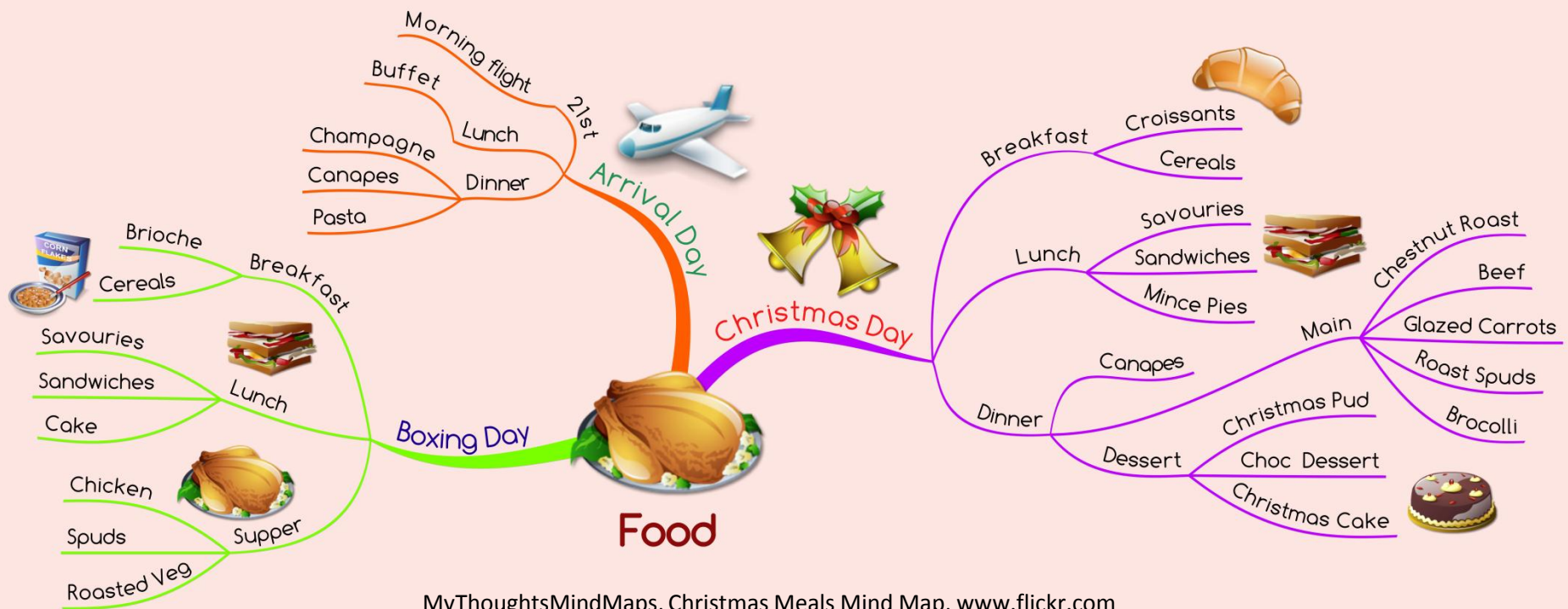Master in Computer Architecture, Network and Systems, Roger Ferrer Ibáñez, www.flickr.com

Mind Map

Mind map centrée sur le projet de thèse

Mind Map

MyThoughtsMindMaps, Christmas Meals Mind Map, www.flickr.com

Concept Map

A concept map prepared to present ideas dealing with mitochondrial death channels as a factor in heart attack. Icons show resources that illustrate and elaborate on concepts presented that can be accessed by clicking on the icons.

(b)

PLANTS
- use
- absorb
- use

WATER → absorbed by → **OSMOSIS**
WATER → transported in → **XYLEM**
XYLEM → from → **ROOTS**
XYLEM → to → **LEAVES**

CO₂ → pass through → **STOMATA**
STOMATA → holes on → **LEAVES**

PHOTOSYNTHESIS → produces → **ENERGY**
ENERGY → used as → **FOOD**
FOOD → made in → **LEAVES**

1. Plants absorb water
2. Plants absorb CO₂
3. Water is transported to leaves — 30%
4. Water absorbed by osmosis
5. Water transported in xylem
6. Xylem goes from roots
7. Xylem goes to leaves
8. CO₂ passes through stomata
9. Stomata are holes on leaves
10. Plants use photosynthesis
11. Food is made in leaves — 110%
12. Photosynthesis produces energy
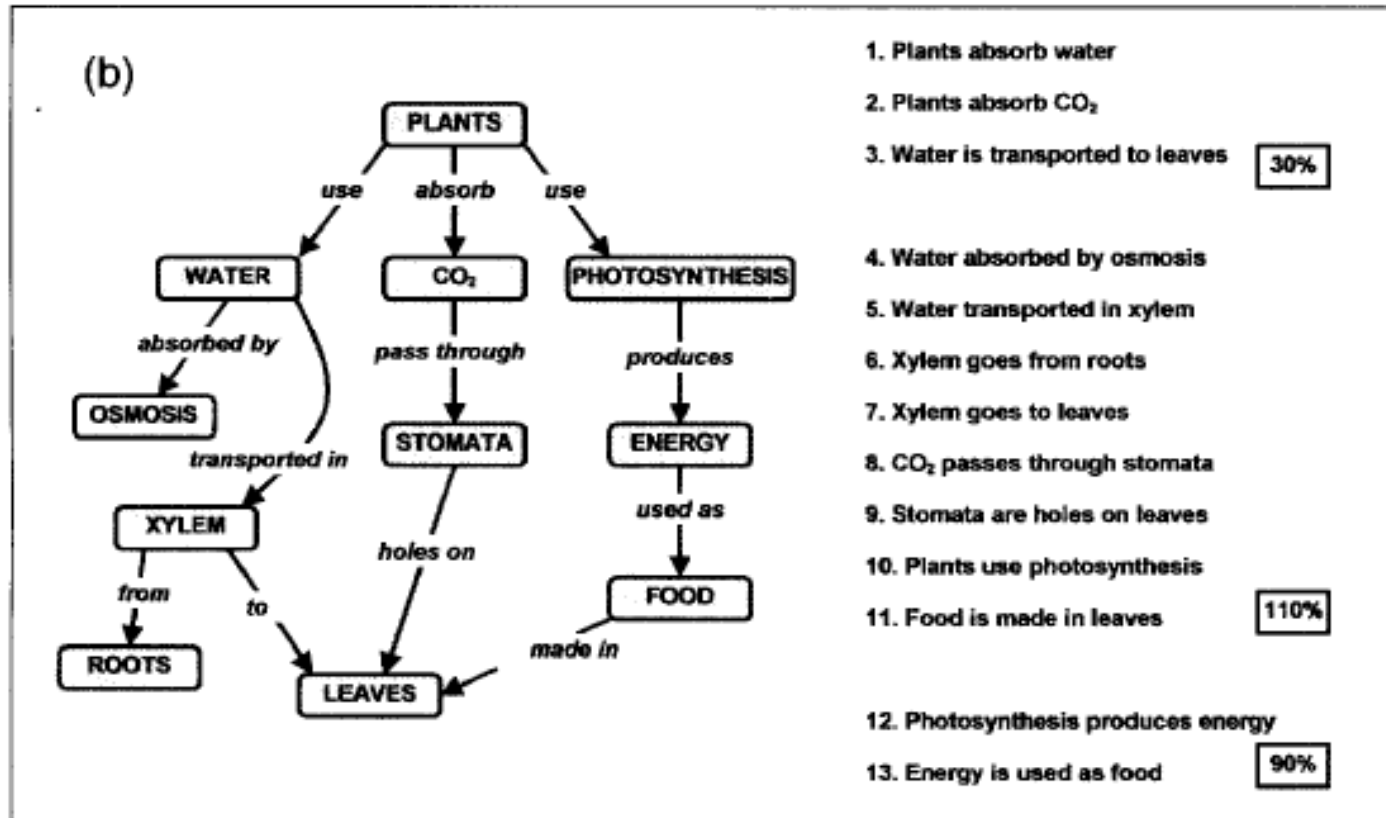13. Energy is used as food — 90%

Figure 5 (a) An 'expert' map of photosynthesis (also shown reduced to a list of 10 propositions). This is not intended to be a comprehensive map for a topic, but only show the points a teacher wishes to cover in a particular lesson sequence, and how they interrelate. (b) A hypothetical student's map which has been marked according to the occurrence of propositions from the 'expert' map in 5(a), showing three possible scores depending upon what the teacher wishes to acknowledge (as described in the text). Note the number of propositions in the list is greater than the number in the map — 'water transported to leaves' has been interpreted from two other propositions forming a chain. The marker needs to decide whether to engage in such interpretation or to simply accept the stated propositions at face value.

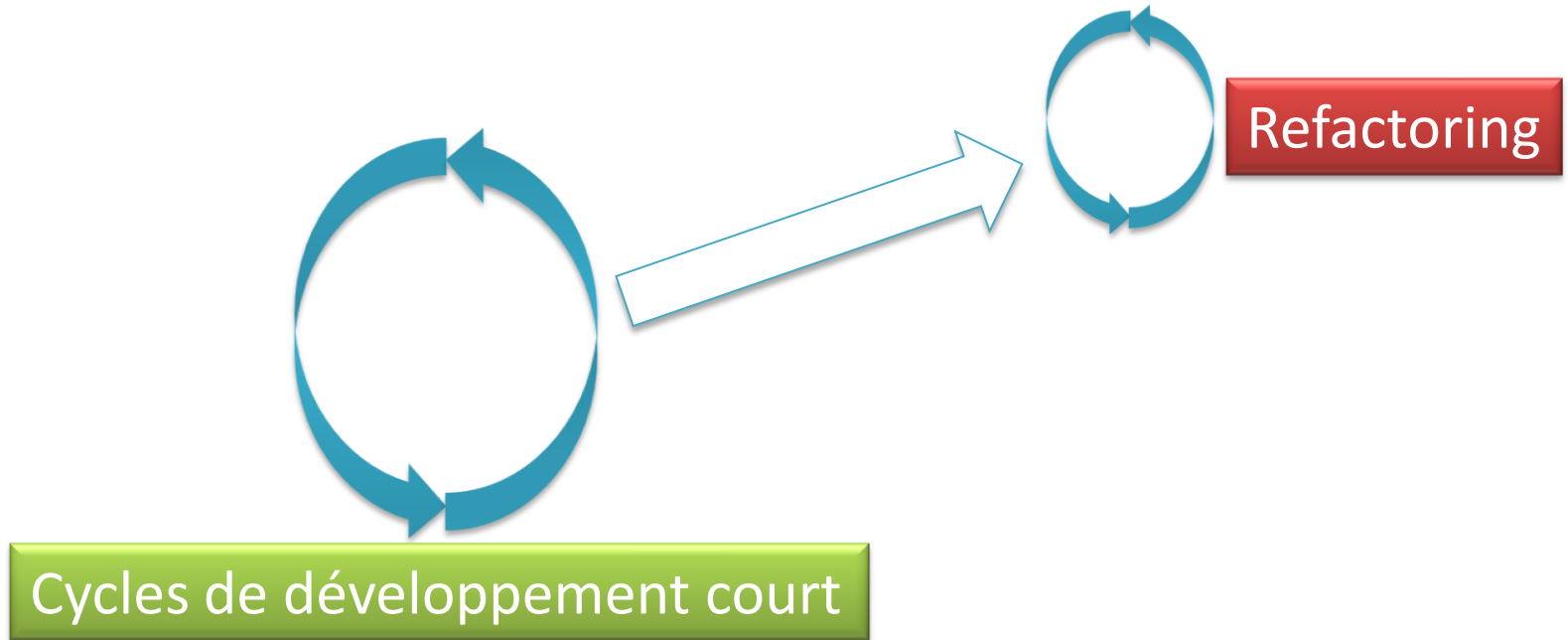Laura dhal, kinchin_map7.png, www.flickr.com

Agilité

Nous découvrons comment mieux développer des logiciels
par la pratique et en aidant les autres à le faire.
Ces expériences nous ont amenés à valoriser :

Les individus et leurs interactions plus que les processus et les outils
Des logiciels opérationnels plus qu'une documentation exhaustive
La collaboration avec les clients plus que la négociation contractuelle
L'adaptation au changement plus que le suivi d'un plan

Nous reconnaissons la valeur des seconds éléments,
mais privilégions les premiers.

Agilité

Refactoring

Cycles de développement court

Questions