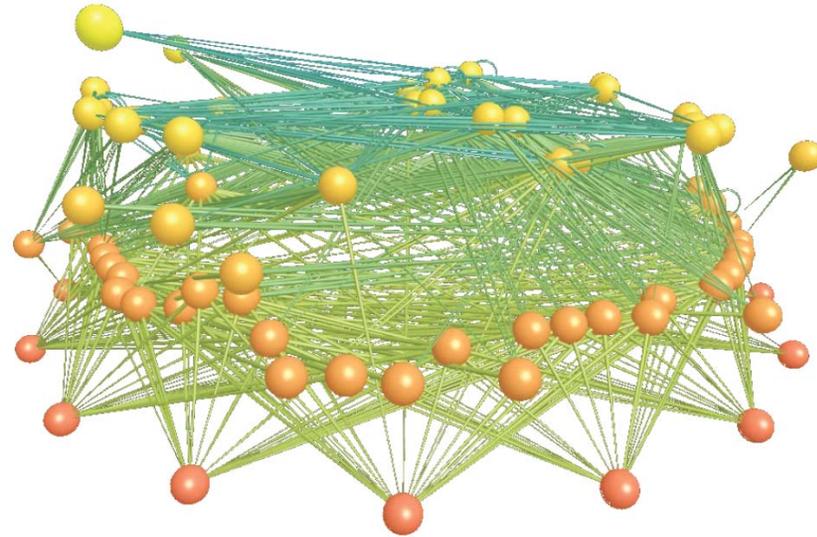
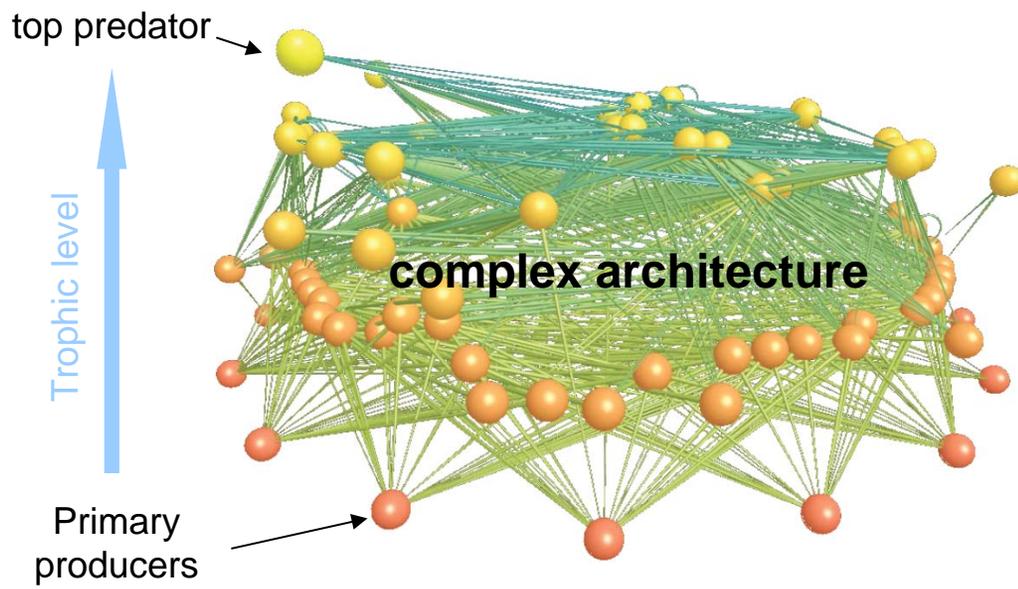


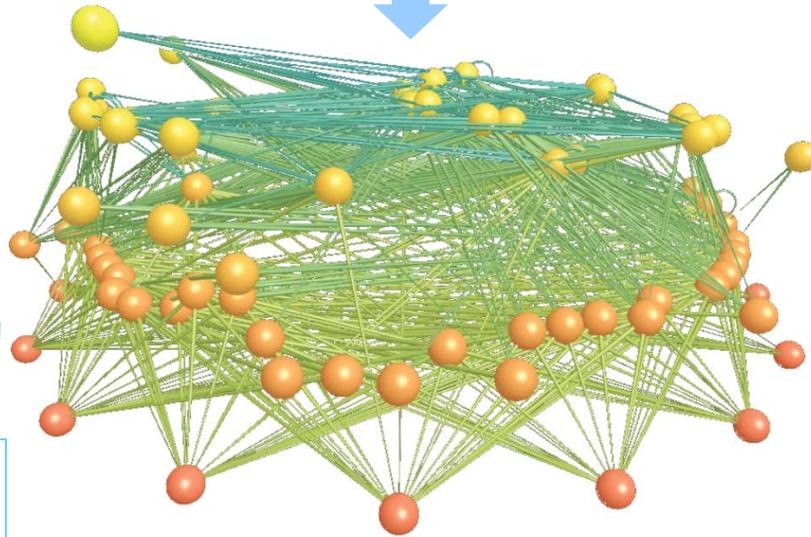
# Interaction network and interaction type

structural aspects





**Perturbations**  
extinctions and colonisations linked to global change



**Evolutionary processes**

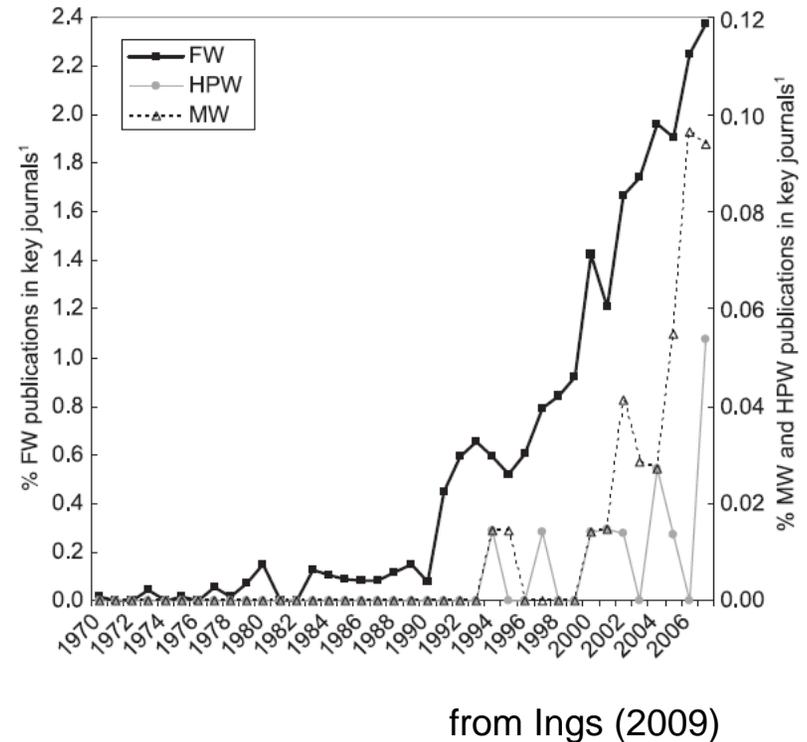
Evolutionary history  
Co-evolution

**Ecological processes**

Functioning  
Stability

# Different type of interaction networks

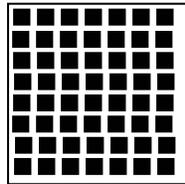
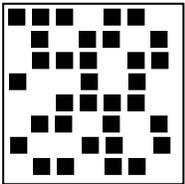
- Trophic networks
  - predator – prey
  - plant – herbivore
- Parasitic networks
  - host – parasite
  - host – parasitoid
- Mutualistic networks
  - plant – pollinator
  - plant – seed disperser
  - plant – ant
  - anemone – fish



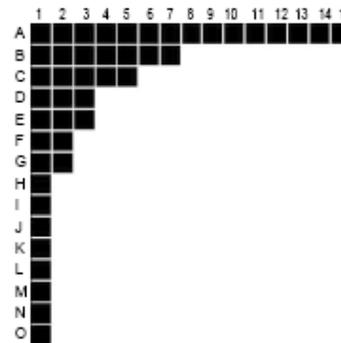
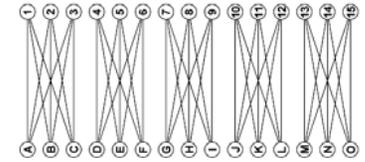
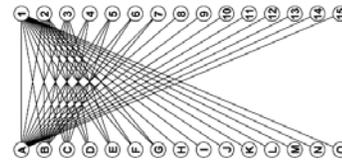
Do all these networks have similar architecture ?

# Network structure

*Connectance : number of observed interactions / number of possible interactions if all species interact together*

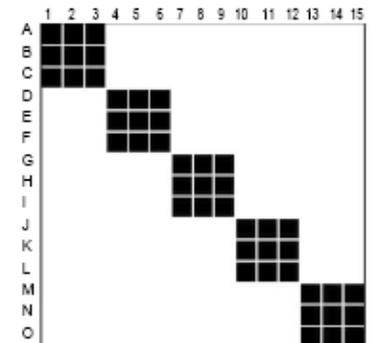


## *Fine architecture of networks*



nested

Bascompte et al. 2003



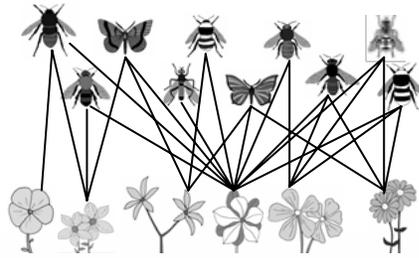
compartmented

Prado & Lewinsohn 2004

# Comparing pollination and herbivory webs

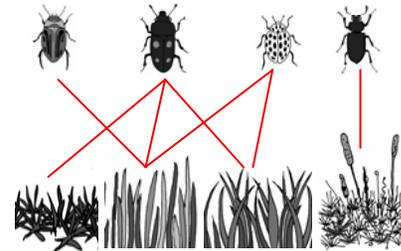
Interaction type

mutualism

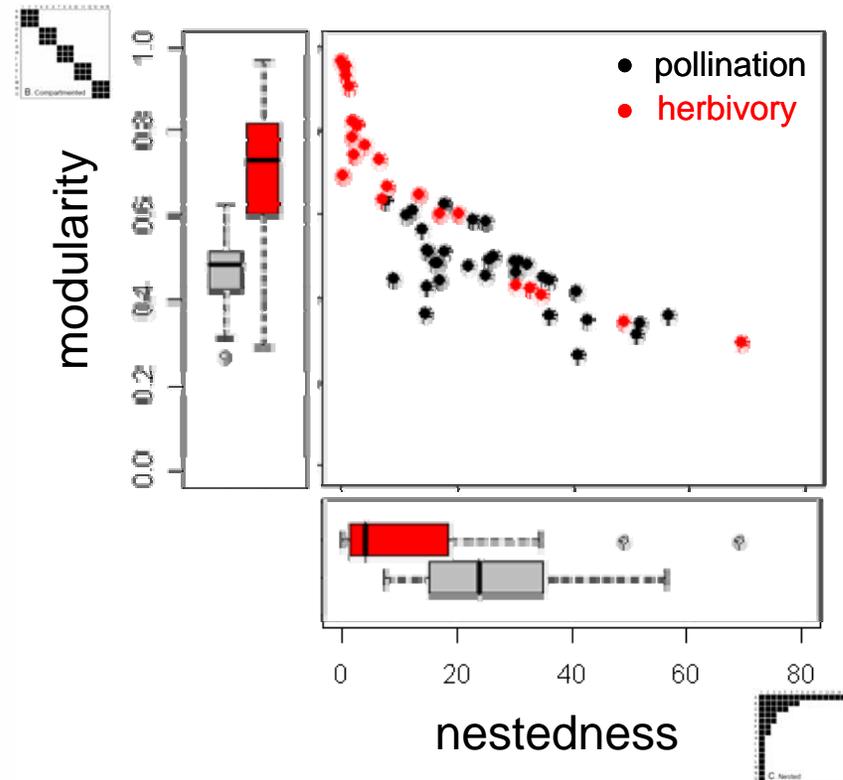
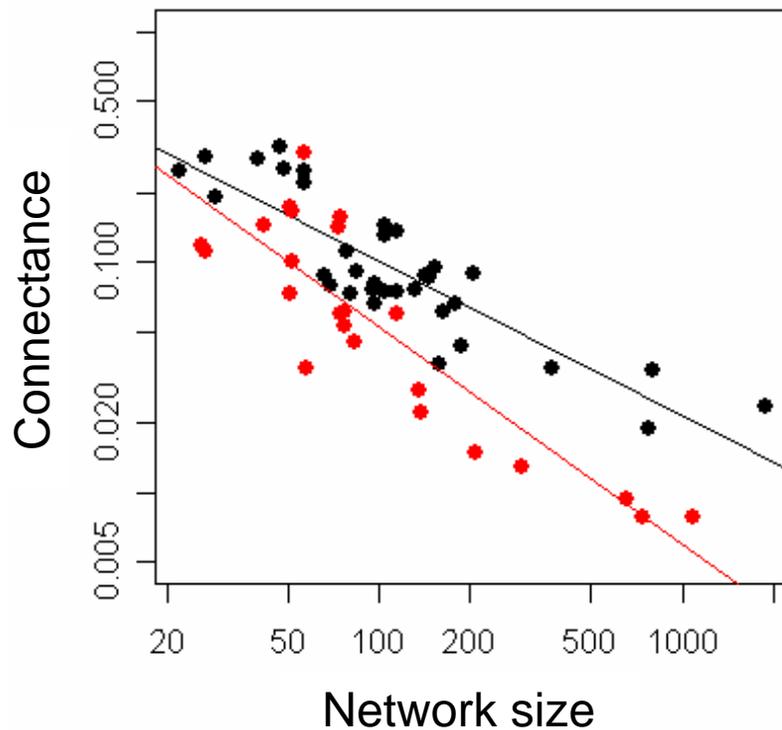


plant-pollinator

antagonism



plant-herbivore



# Comparing plant-plant networks

## Interaction type

commensal



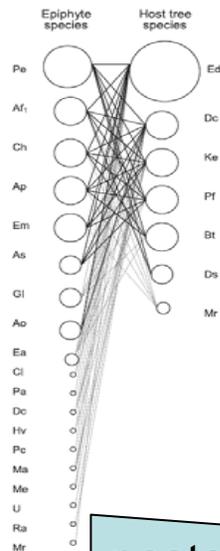
commensal / parasitic



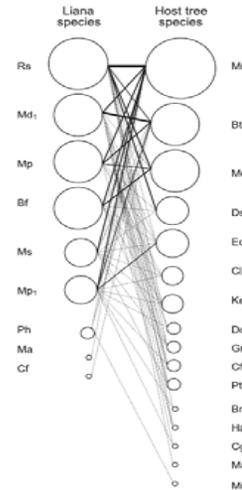
parasitic



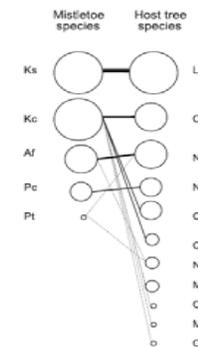
epiphytes



liana



mistletoe



nestedness

connectance

# Comparing plant-ant networks

Interaction intimacy in mutualistic networks

intimacy

symbiotic ants



non-symbiotic ants  
(seed disperser)



# Comparing plant-ant networks

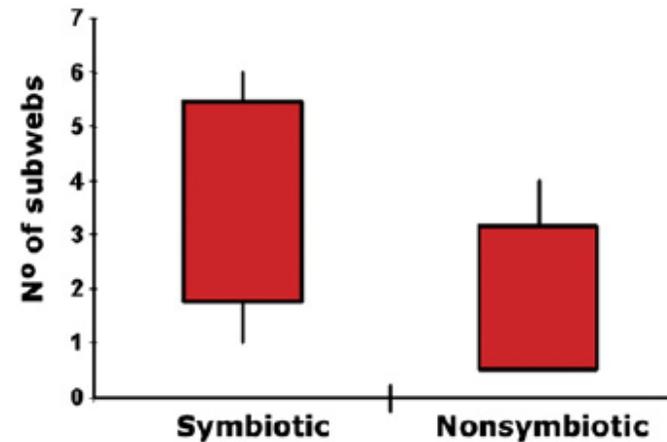
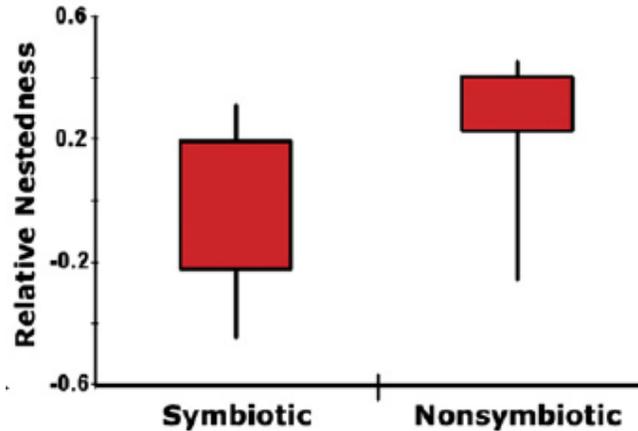
Interaction intimacy in mutualistic networks

intimacy

symbiotic ants

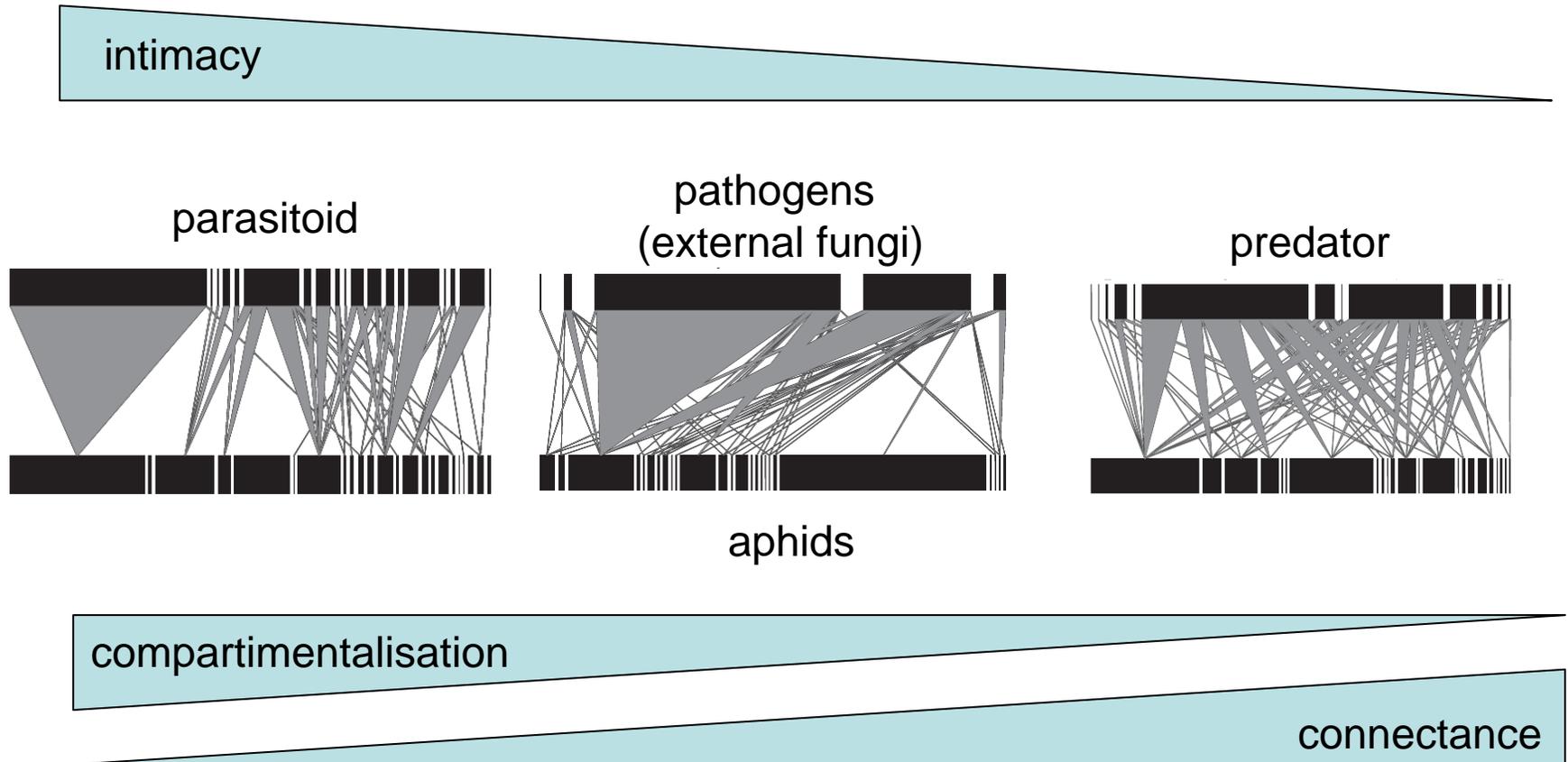


non-symbiotic ants  
(seed disperser)

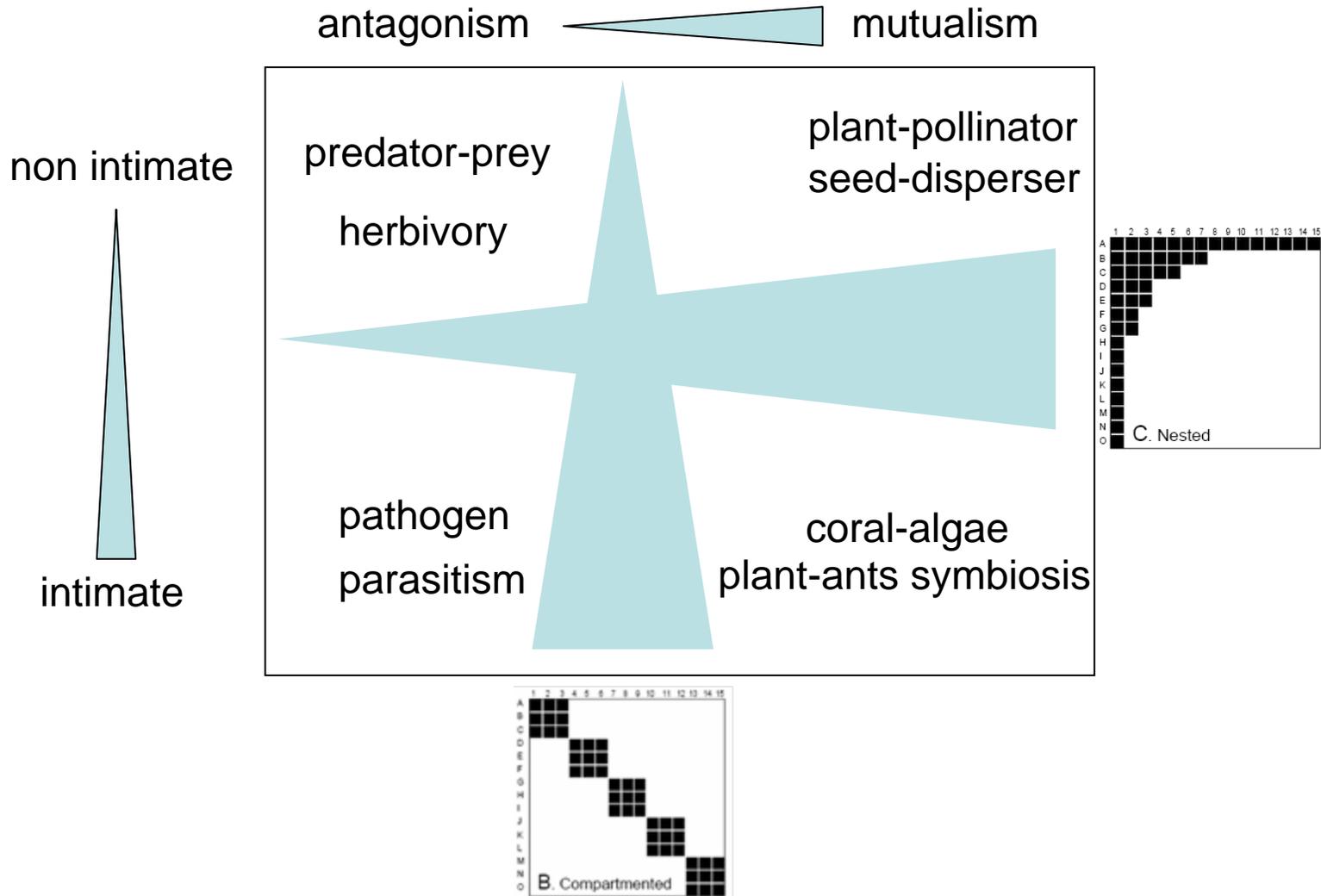


# Comparing aphid-natural enemies networks

Interaction intimacy in antagonistic networks



# Impact of interaction type and intimacy on network structure



What are the ecological implications of such contrasted network architecture ?

How to merge these different types of interactions in a “complete” network ?

What are the evolutionary implications of these different interaction types and network structures ?