

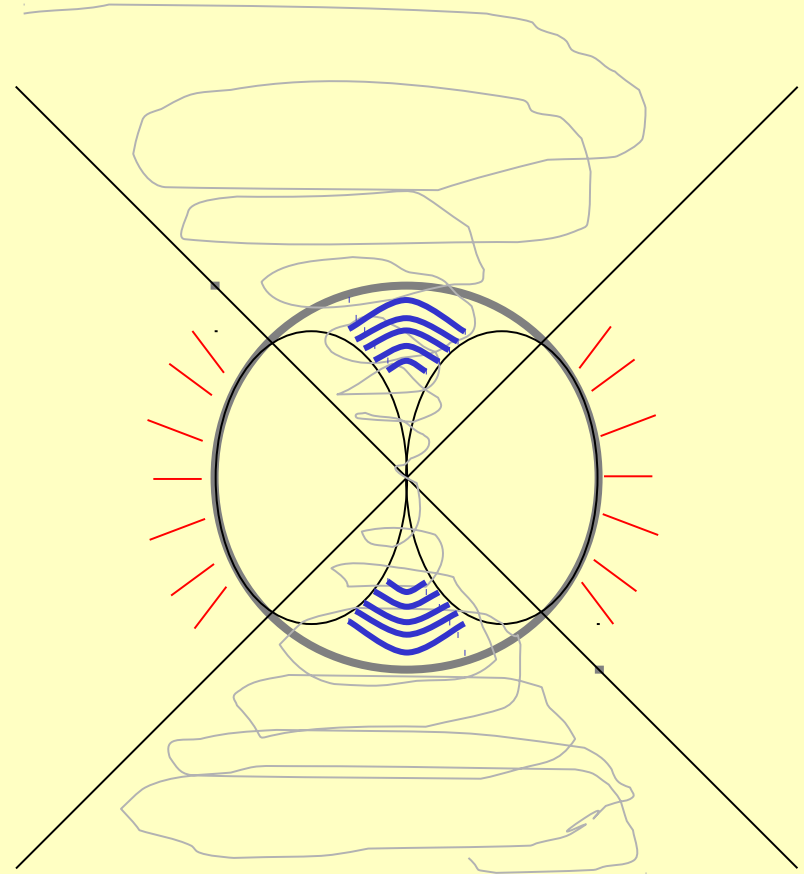
# Weekend 2

## Connectedness & Neurons

ir O#o van Nieuwenhuijze, arts

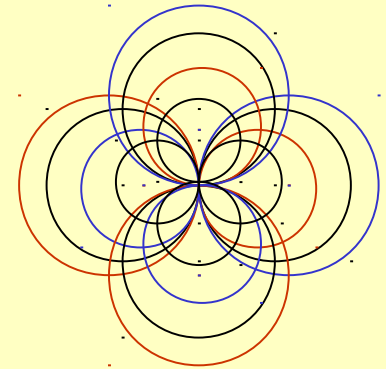
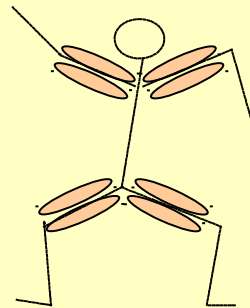
# The 1<sup>st</sup> Cleavage Division

- Once the Zygote multiplies by division the parts still remain part of the whole by communi(cat)ion



# Weekend Modules

1. Nerve System & Body Regulation
2. Systems Theory & Cybernetics
3. Reflexes: Sensory Awareness & Consciousness
4. PsychoLogics

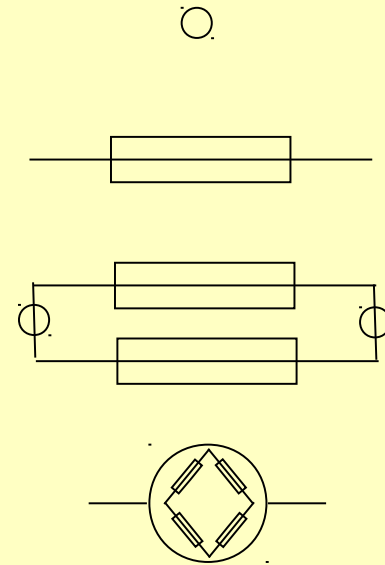


## 2) Nervous System

- Neuron – Axon – Dendrite – Synapse
- Sensor – Nerve – Plexus – Brain
- Reflex – Arc – Balance – Calibration
- Elemental – Vegetative – Animal –  
Cognitive

# 1) Systems Theory

- Object State
- Process Dynamics
- Transformation Conditions
- Integration Integrity



### 3) Reflexes & Sensory System

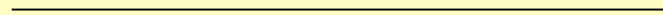
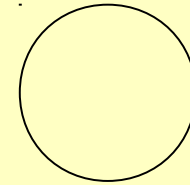
- By embryologic inversion:  
The Solar Plexus relocated at the Lunar Plexus
- The Cerebellum integrates all autonomous body functions
- The Brain offers integration with remote sensing
- The Cortex offers a personal perspective

## 4) PsychoLogics

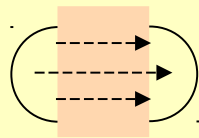
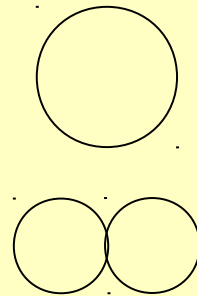
- Personal
- Interpersonal
- Representative
- Collective

# Cell Communication 'First Principles'

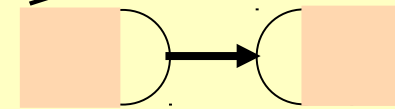
- Egg – sperm => muscle
- Sperm – egg => nerve



**Zygote (Weekend 1)**



Hormone (Weekend 7)



Neurone (Weekend 2)



# 1) Systems Theory

# Systems Theory

- Biologist **Ludwig von Bertalanfi** realised that physics and mathematics had advanced to the level where it can be applied to living beings.
- (Differential) **Mathematics** had come to describe interdependence.  
(Quantum) **Physics** had also realised that we are co-creators of the reality we perceive.

# 1.1 Systems of Equations

- $A=A$  *Postulate of Logic*
- $x = A$  *Statement of mathematics*
- $x = a + b.y + c.z$  *Equation of mathematics*
- $x = a_1.x + b_1.y + c_1.z$  *System of Equations*  
 $y = a_2.x + b_2.y + c_2.z$   
 $z = a_3.x + b_3.y + c_3.z$

# 1.2 Notation Systems

1. Scalar *Classical* ■
  - *Absolute* cf. Anatomy
2. Vector *Relativistic* →
  - *Relative* cf. Physiology
3. Matrix *Probabilistic* ↘
  - *Transformational* cf. Neurocrine regulation
4. Spinor *Unified* ↙
  - *Integrative* cf. Psycho-immunology

# 1.3 Systems Notation

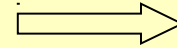
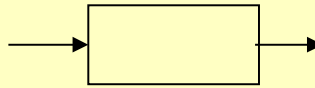
## 1. Object

- *Identity*



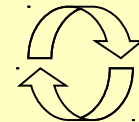
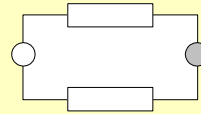
## 2. Process

- *Relationship*



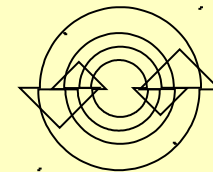
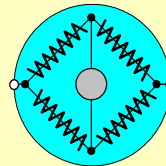
## 3. Transformation

- *Interaction*



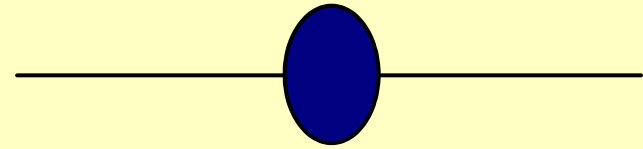
## 4. Integration

- *Creation*

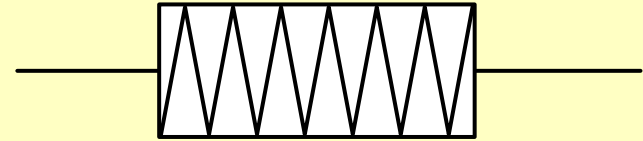


# 1.4 Fundamental System Elements

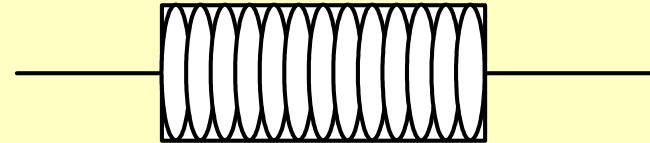
1. Source



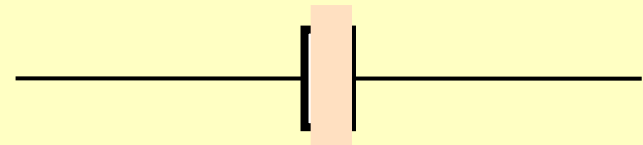
2. Transformer (resistor)



3. Attenuator (coil)



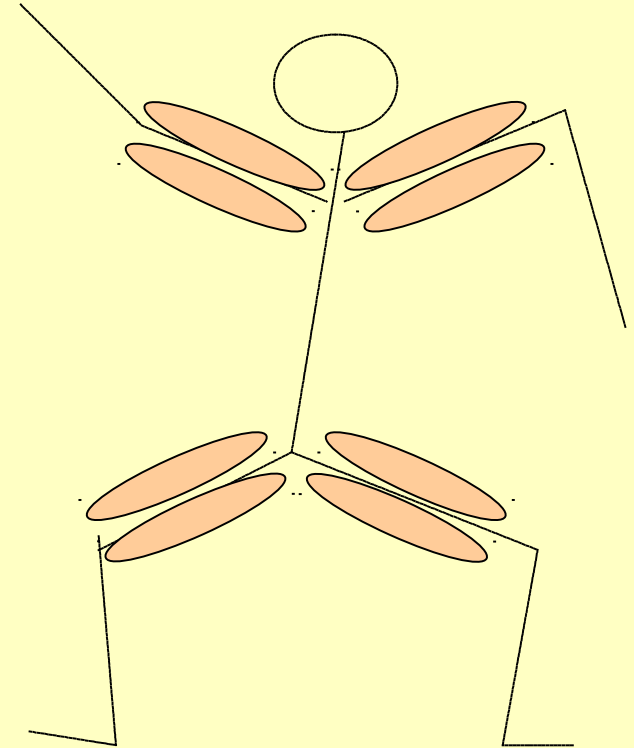
4. Storage (Capacitor)



## 2) The Nervous System

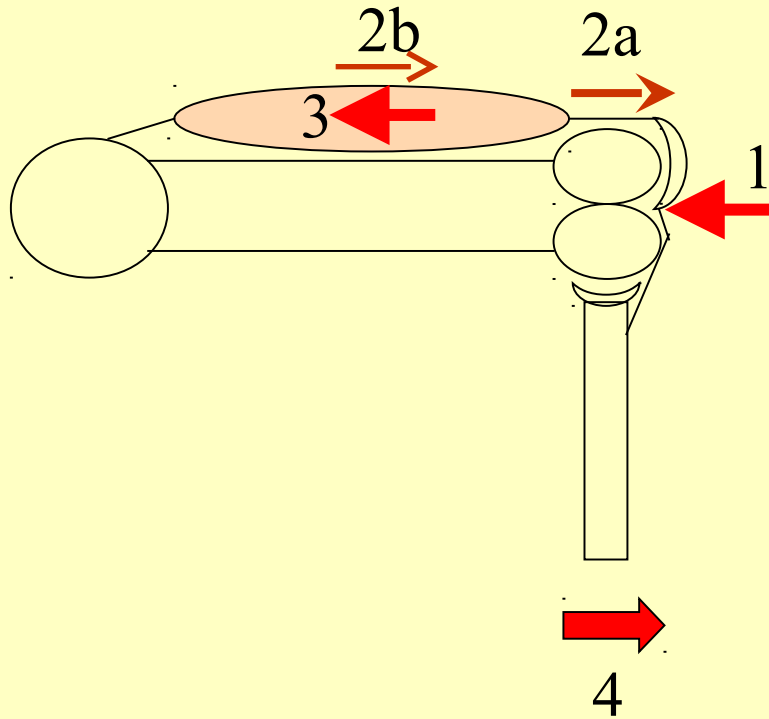
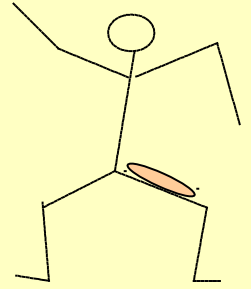
# Nervous System Systemics

1. Reflex (Knee Jerk)
2. Reflex arc
3. Gait & Stance
4. Posture





# 1.1) Knee Jerk Reflex

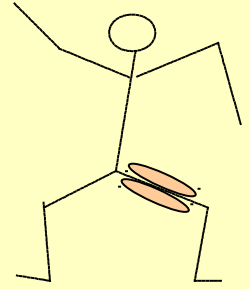


1. Extending the tendon below the patella induced a shortening of the muscle
2. This stretches the muscle
3. which auto-contracts
4. which extends the lower leg

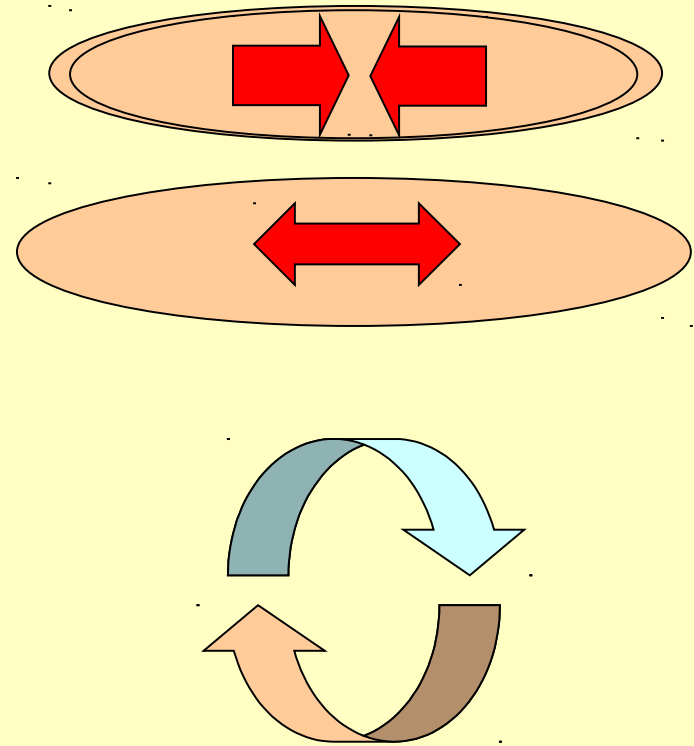
## 1.2) Knee Jerk Reflex

- Extending the tendon below the patella induced a shortening of the muscle: **muscles maintain their own tonus.**
- Muscle **Agonist and Antagonists** also maintain a mutual tension balance
- **Homolateral and contralateral** muscles are coupled systems
- **Arm and leg** muscles are likewise balanced

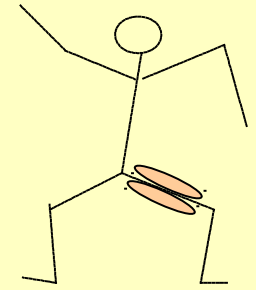
# Reflex Arcs



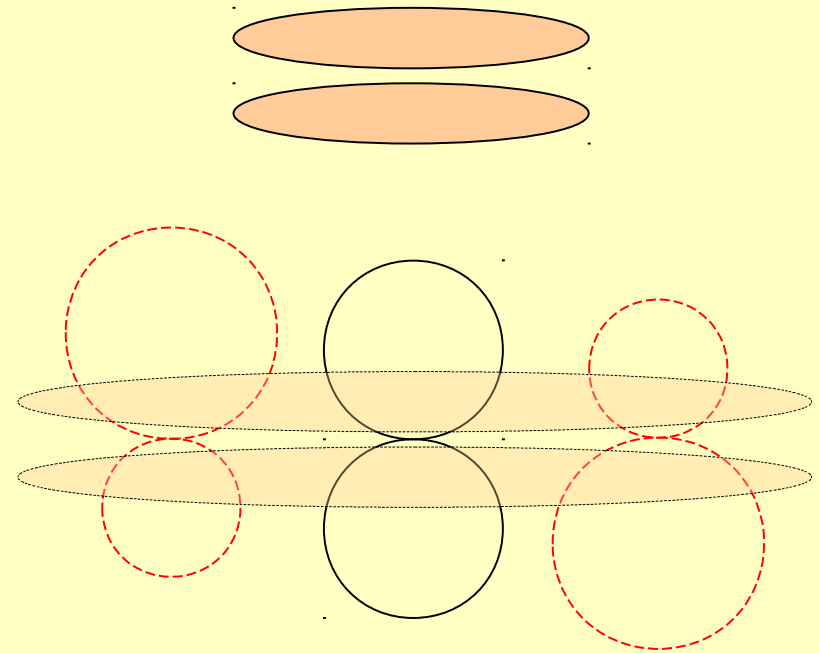
- Agonist and antagonists maintain mutual **tonus balance**
- Tonus balance is continuously maintained: the movement results from **shift between one muscle and the other.**



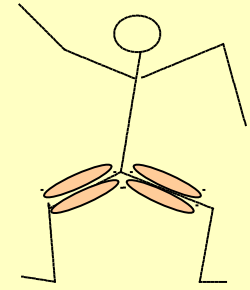
# Mutual Balance



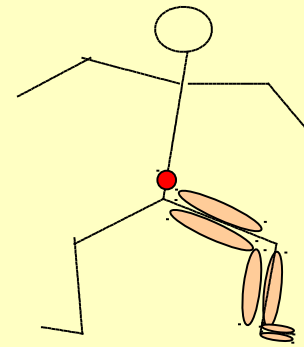
- The shift in balance between Agonist & Antagonist can be represented by a **lemniscate**: and the change in eccentricity from the centre.



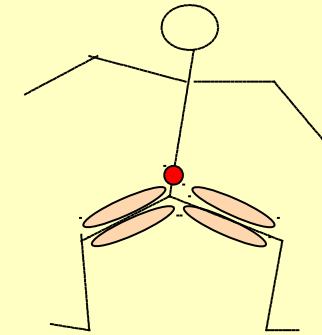
# Pivot of Balance: legs



- The point of regulation of balance of Agonist-Antagonist lies in the spine.
- The point of regulation of balance of homo- / and contralateral muscles lies in the spine.

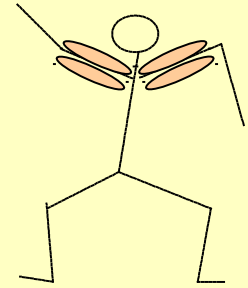


Limb

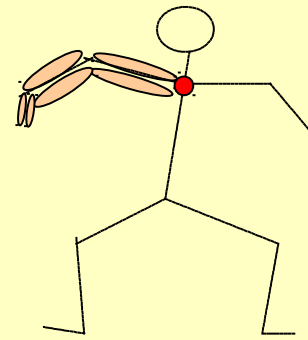


Contra-Lateral

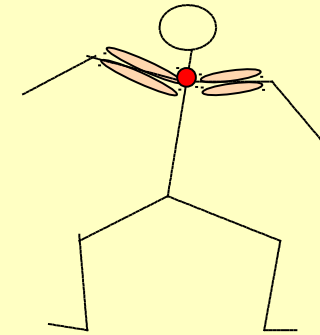
# Pivot of Balance: arms



- The point of regulation of balance of Agonist-Antagonist lies in the spine.
- The point of regulation of balance of homo- / and contralateral muscles lies in the spine.

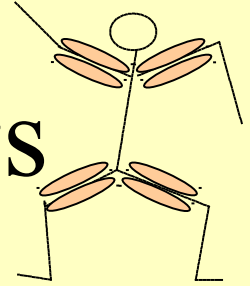


Limb

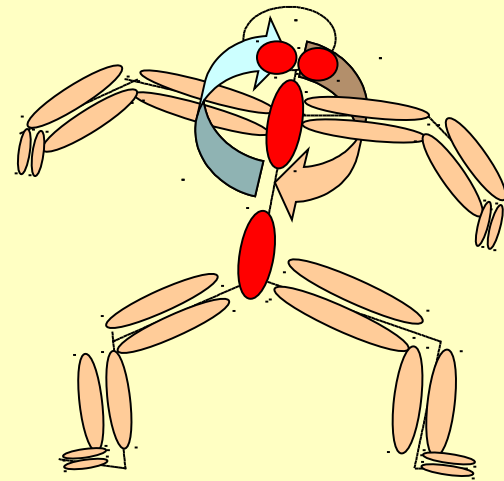


Contra-Lateral

# Balancing Arms and Legs

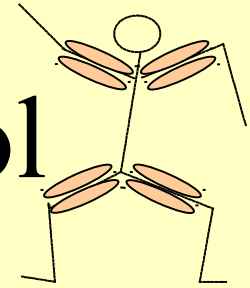


- It could be expected that the point of regulation of arms with respect to legs would be between: behind the plexus solaris. In the embryo this inverted to become the lunar plexus (cerebellum)

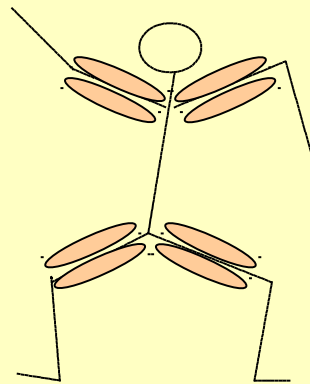


- At the same time the heart moved down into the chest

# 4 levels of muscle control



- Muscle tonus
- Agonist-Antagonist loop (Spine)
- Homolateral-contralateral limb (Spine)
- Arm-leg complementarity (Cerebellum)



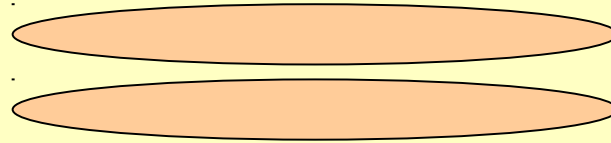


# As much nerve as there is muscle

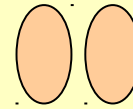
- Every muscle bundle has a nerve ending to change it's charge, and set of a change in reflex (tonus, arc reflex, cross-correlate reflex, complementary limb loop)

# Repetition of Principle

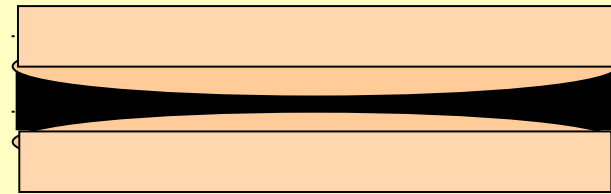
- Muscle



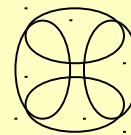
- Bone-Joint



- Nerve



- Plexus



## 3) Reflexes

# Complementarity

- The Muscles, Sinews, Nerves and Plexus form a complementary set
- Compare the Muscle to the Ovum
- Compare the Sinews to the Sperm
- The Nerves are inside-out sinew-muscles
- The Nexus inside-out muscle-sinews

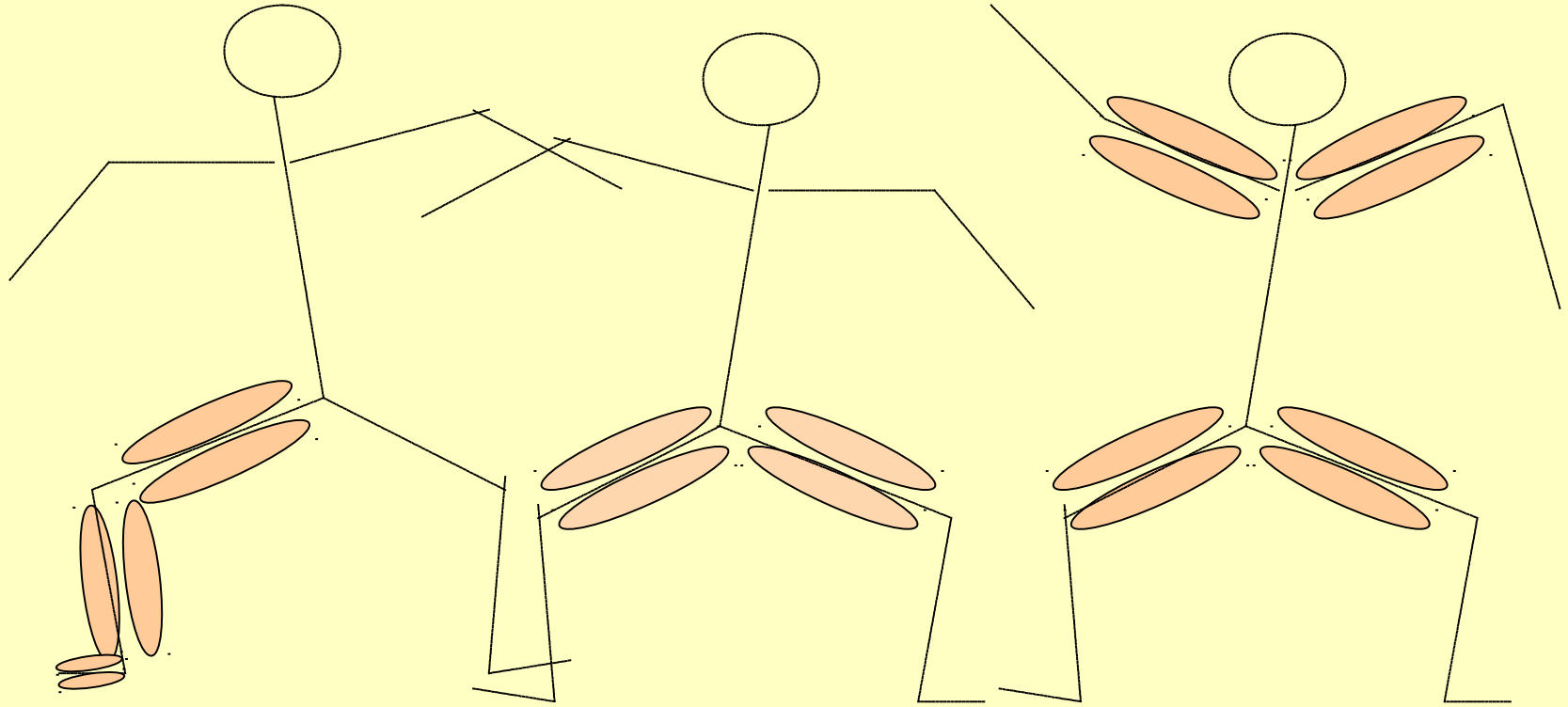
# Triggering Reflexes

- The Body is a very precisely balanced set of reflexes; any ‘jerk’ will set them in motion.
- A nerve firing a synapse suffices to trigger large responses.
- Voluntary Motor Neurons provide such triggers; making use of those reflexes.
- Changes in Mental states set the charge in the motor neurons

# Reflex Levels

- Tonus of the muscle
- Tension on the Agonist-Antagonist loop
- Momentum of the homo-hetero lateral couple
- Off-set of the arm/leg complementary set

# Muscle Complementarity



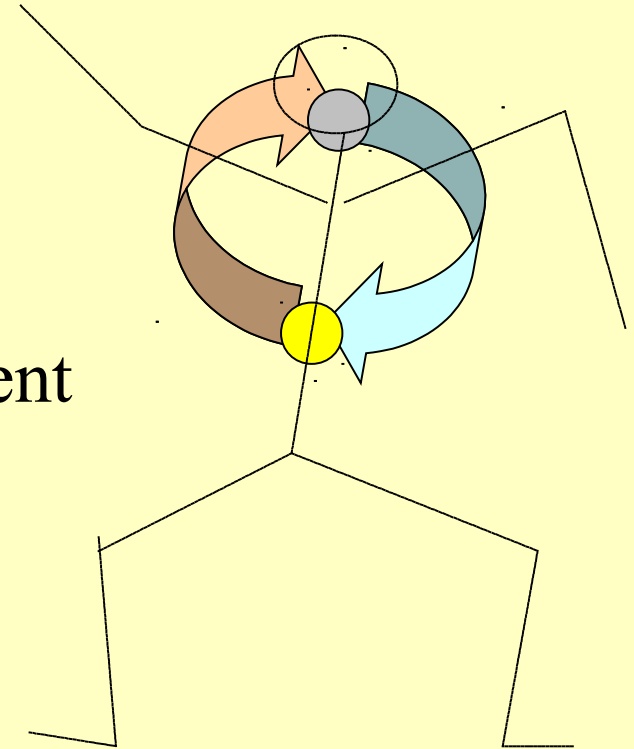
Limb

Contra-Lateral

Cross-connected

# The 'hidden' control point

- The Solar Plexus relocated as the Lunar Plexus during embryologic development
- This is where the integration of the vegetative and animal system takes place





# The Mineral System

- Local cell function
- Relative interactions
- Circuit cycles
- Open Antenna

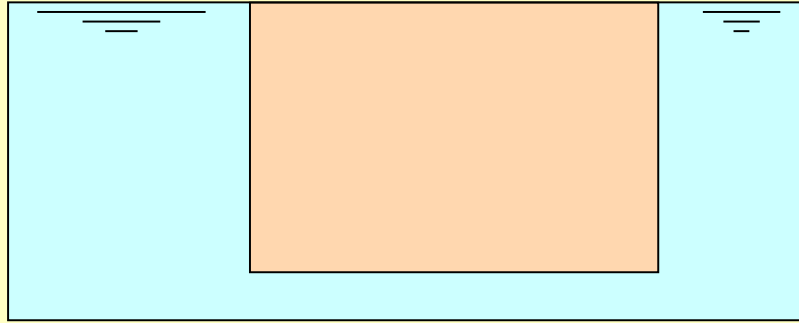
# Vegetative System

- The Organ System is regulates just like the muscles
- Instead of Agonist (Yang) and (Yinn) Antagonist pairs, there is an Sympathetic (Yang) enhancement and (Yinn) parasympathetic inhibition regulation

# Circuit Balancing

- Just as agonists and antagonists are in balance, there is a balance between homo- and contra-lateral muscle circuits.
- The normal regulation is an oscillation between the two.
- The compensational regulation is an oscillation between the circuits of arms versus legs.

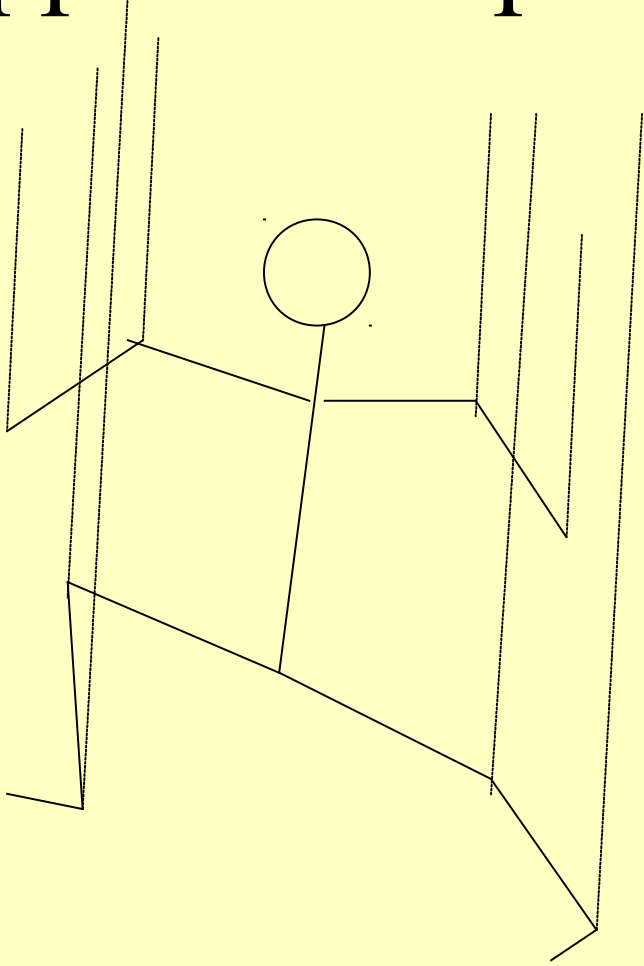
# Communicating Vessels



# Puppeteering the muscles

- The metaregulation is a cross-contra regulation as takes place in the brain: the homo-contra-lateral and the arm-leg complementarity can be interchanged (internal oscillation/turn-over) by which all can be turned on/off
- This can be imagined as (functionally) taking place on the point between the arms and legs.
- Operationally this takes place in the cerebellum

# Puppet Principle



# Interfacing with/in the Environment

- In the Cerebellum, the 4 levels of muscle regulation, the 4 levels of organ regulation, and the 4 levels of sensory system regulation are brought in balance.
- Hereby the inner ability to self-maintenance and the inner/outer capacity for locomotion can be combined to inner/outer adaptation

# Sensory input

- The 12 cranial nerves (cf. the 12 Meridians) recapitulate what is found in the
  - (vegetative) organ
  - and
  - (animal) muscle system
- The sensory system helps discriminate/mediate between the two. This helps specify the body in context.

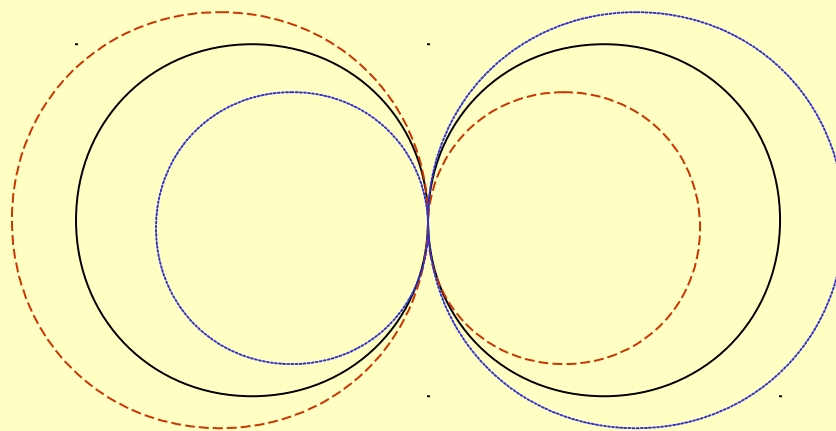


# Our 4 brains

- Reptile Brain
- Cerebellum
- Limbic System
- Cortex

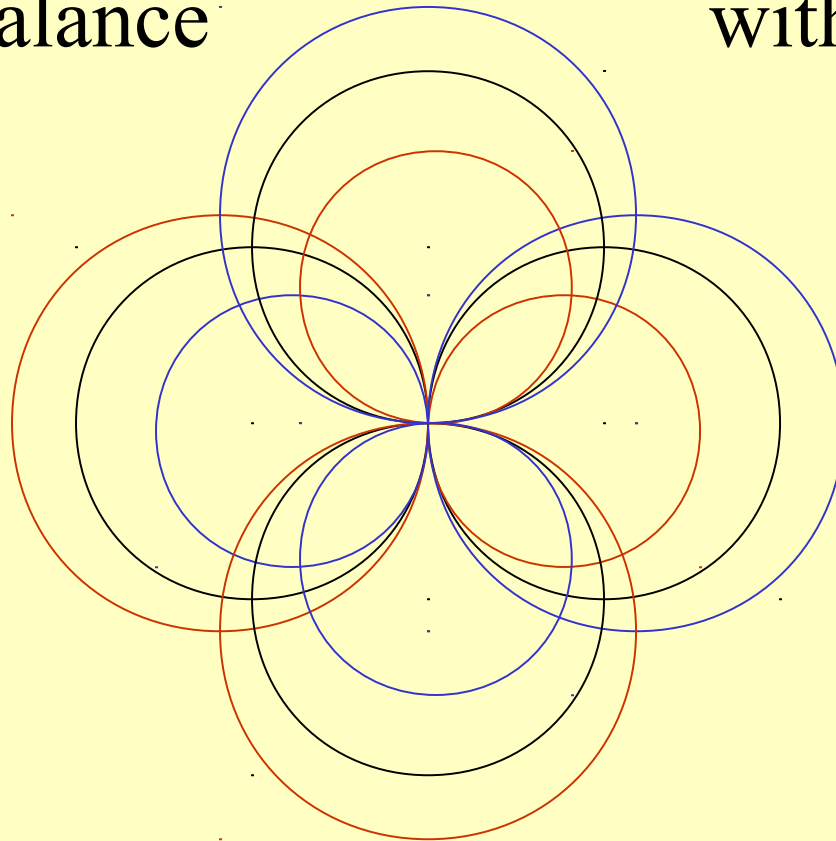
# Changing the Balance

- Oscillation tunes the balance (via a vortex for Cardanic equilibrium calibration)



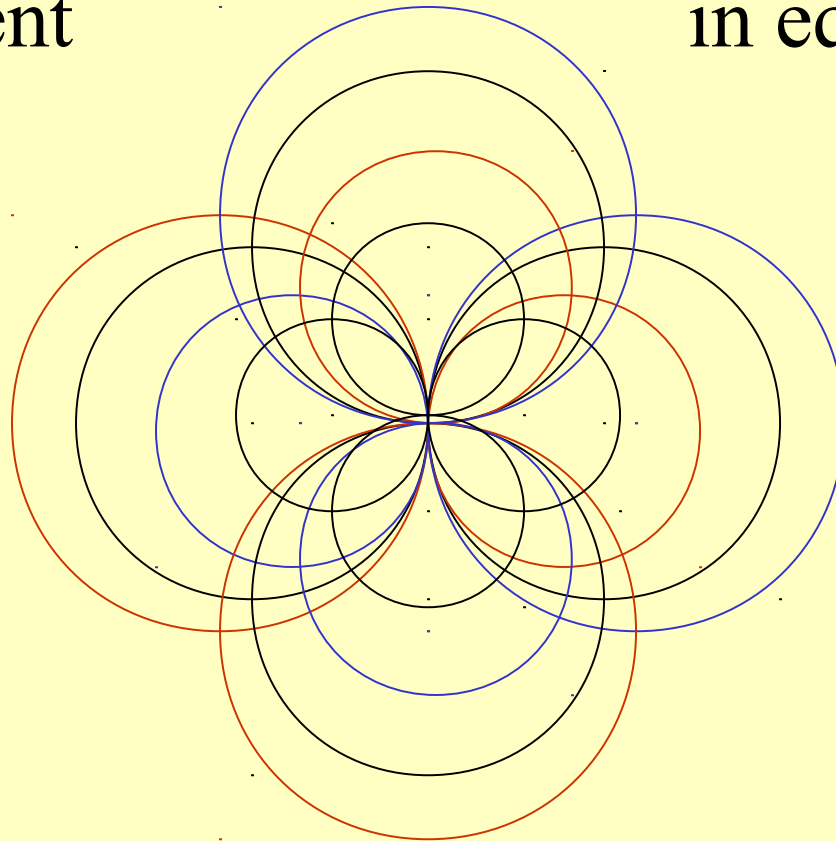
# Vegetative and Motor Circuit control centers

- Each in balance with the other



# Precisioning the Pivot

- Attunement in equilibrium



# Neural Integration

- Proprioceptive      local
- Vegetative          spine
- Motor                spine
- Sensory System    head

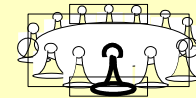
## 4) PsychoLogics

# Multi-faceted Personal Being

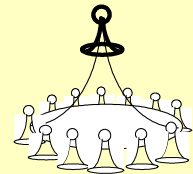
1. The person as an individual



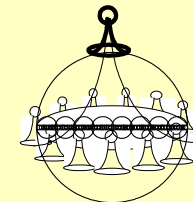
2. The person as a group member



3. The person as group representative



4. The person as being of Earth.



# PsychoLogics

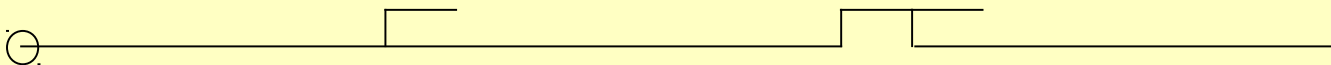
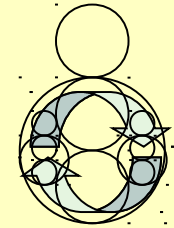
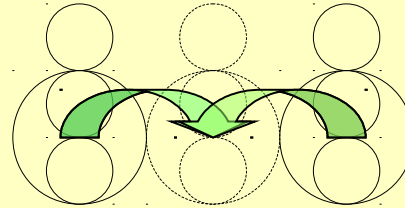
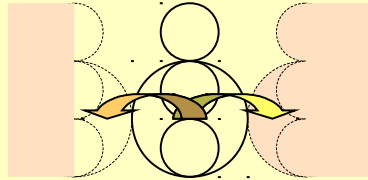
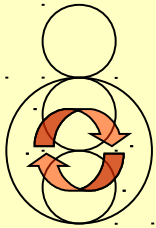
- Humans are part of Humanity  
(cf. cells in a body)

Individual

Relationship

Group

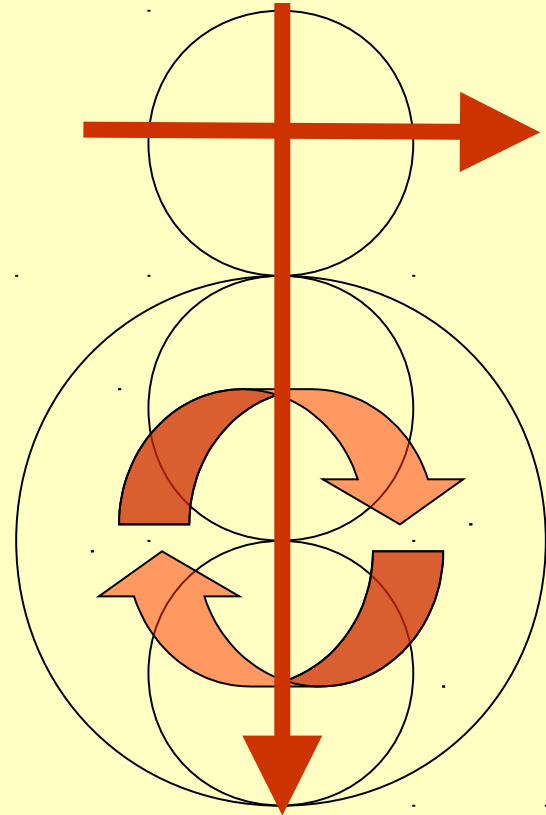
Collective





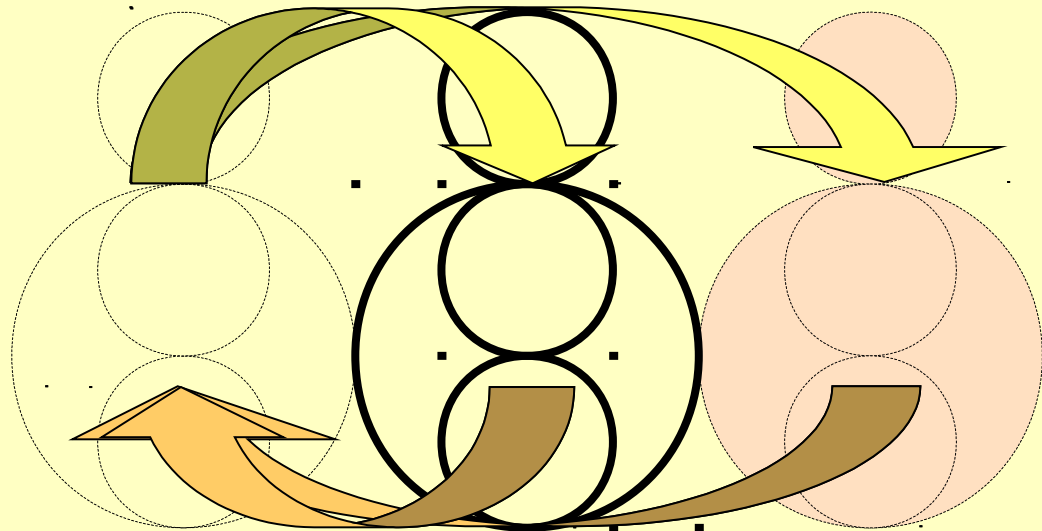
# PsychoLogics - InDividual

- As individuals,  
*Internally*  
we experience  
our choices  
*Externally*  
we experience  
dead skin/reflexes  
of others



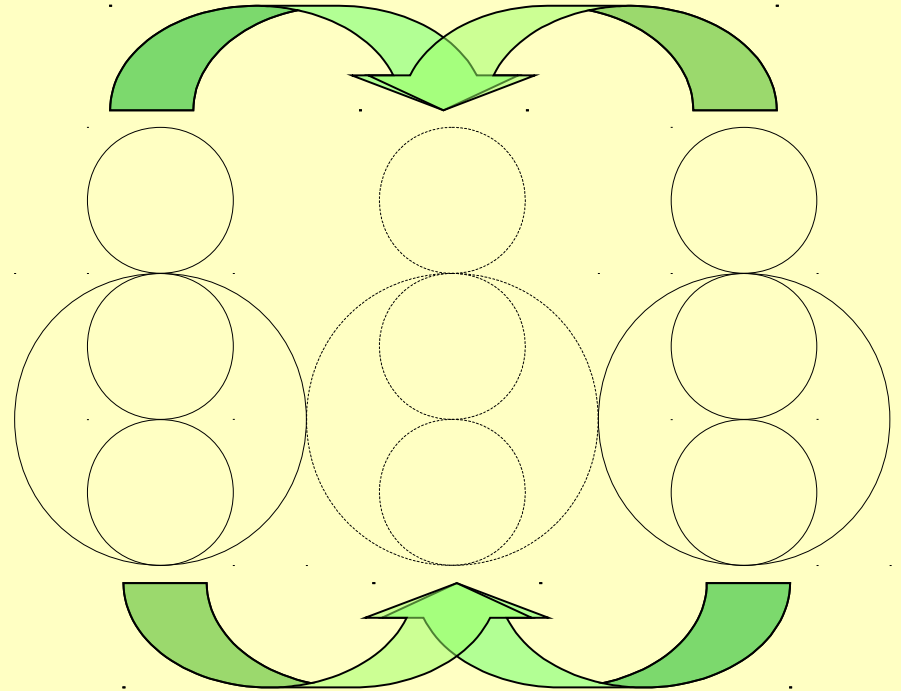
# PsychoLogics - Relationships

- In Relationships, we experience both our **Perception** of the other, and our **Expectations** projected on the other  
(The Middle Person)



# PsychoLogics – Group Identity

- In Groups, the “Middle Person” is a Virtual identity which represents the interactions of all people present.
- Those who express what takes place in this “Middle Person” are automatically leaders for the group.



# PsychoLogics – Human Humanity

- Humans compose Humanity  
In the same way as our  
cells compose our body

By realising we are  
one *and* the other  
humans automatically  
are responsible humans

