

# PHYSICAL DISTANCE AND COMMUNICATION IN BIODANZA: THE SUPPORT OF NEUROSCIENCES

**AIPOB**  
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# Topics of the conference

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- My experience
- Physical distancing and mirror neurons
- Physical distancing and the autonomic nervous system: the polyvagal theory of S. Porges
- Discussion

# Distancing

Distancing:

- physical
- emotional-relational – affective
  - from covid 19
  - From other people
- social
  - From other people
  - Of «class»

# Biodanza and neuroscience module

*Milan, 17-18 October 2020*

- *With a two meter physical distancing*
- *Always with a mask (even the conductor during theoretical lessons )*

## **Personal considerations:**

- *it is possible (one of the 7 powers is missing, the others remain), with:*
    - ▣ *clear communications*
    - ▣ **Clear intention** from the operator: ***a secure envirnment***
    - ▣ *Careful choice of exercises*
  - *Difficulty and opportunity of physical distancing*
  - *Difficulty and opportunity of the mask*
- Can the new environmental situation be integrated into the Biodanza model?***

# The seven powers of Biodanza

- 1. the power of music
- 2. the power of integrative dance
- 3. the power of the vivencial methodology
- 4. the power of caress
- 5. the power of trance
- 6. the power of expanded consciousness
- 7. the power of the group

# Affective communication at a distance

Thanks to **mirror neurons** we can **understand and communicate** in a very profound way **with our fellow humans** even at **a distance**, without any **contact physical** being necessary

***This is not a theory: neurophysiological data tells us we function as social beings***

# Mirror Neurons

**Why are they  
important in  
Biodanza???**

**How to use them  
in Biodanza ???**



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# Mirror neurons

They are *multimodal neurons*

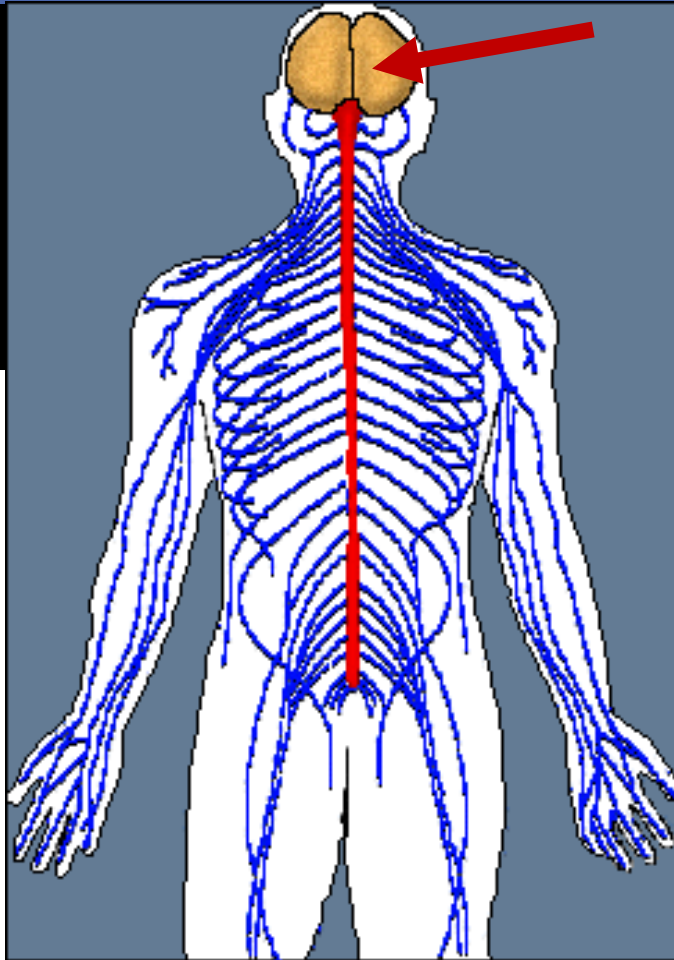
**perceptive** (sight, hearing, word, image) and **motor**



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# How they function





# Il cervello in azione

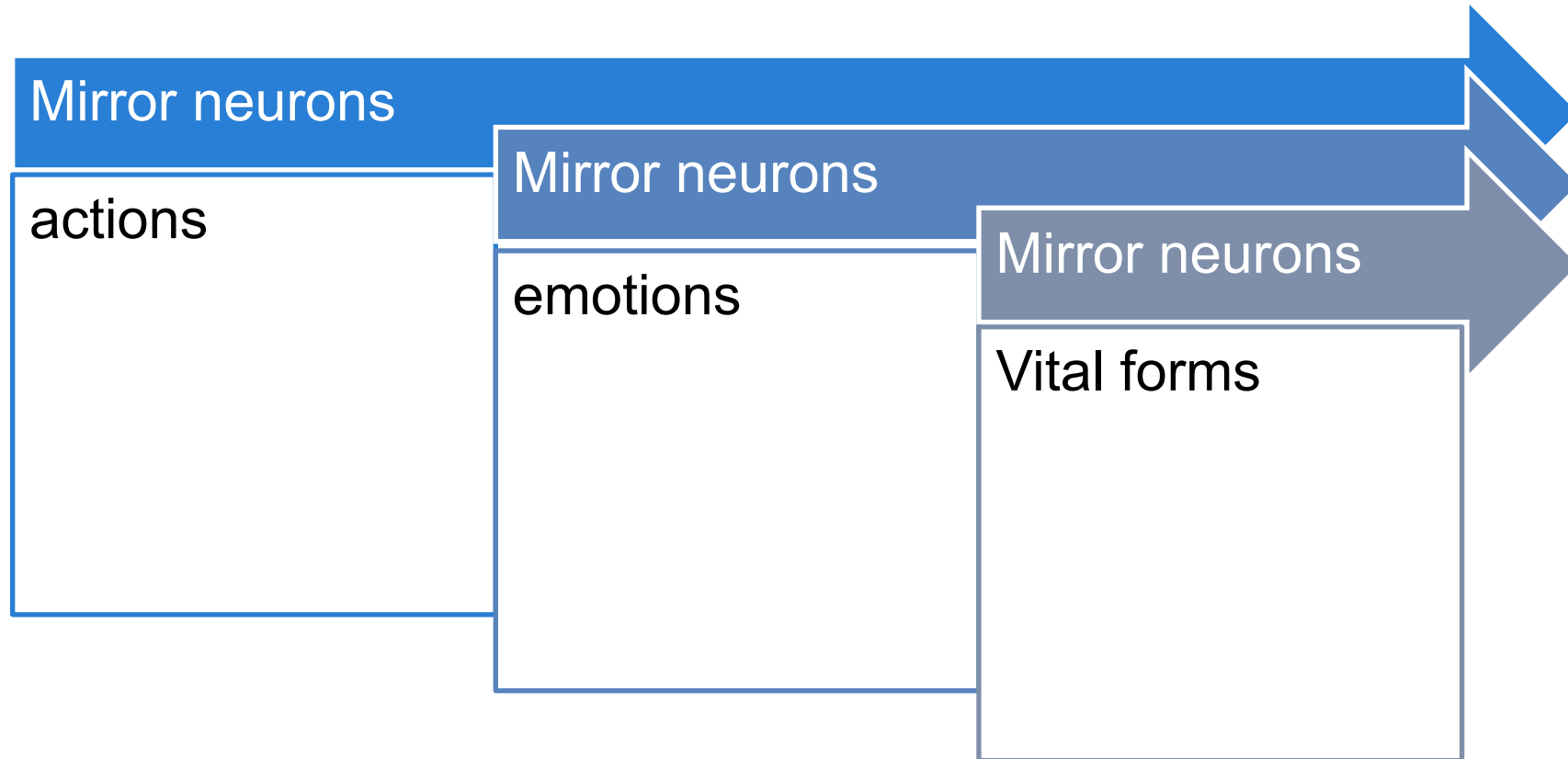
Fausto Caruana  
Anna Borghi



il Mulino Upm



# From the 90' to today



# Mirror properties (Rizzolatti, 2019)

It is a **property** that affects different types of neurons, with different functional characteristics

The mirror mechanism is a **fundamental principle of the organization and functioning of the nervous system**

**We are social beings**



# Fundamental principle of the mirror system

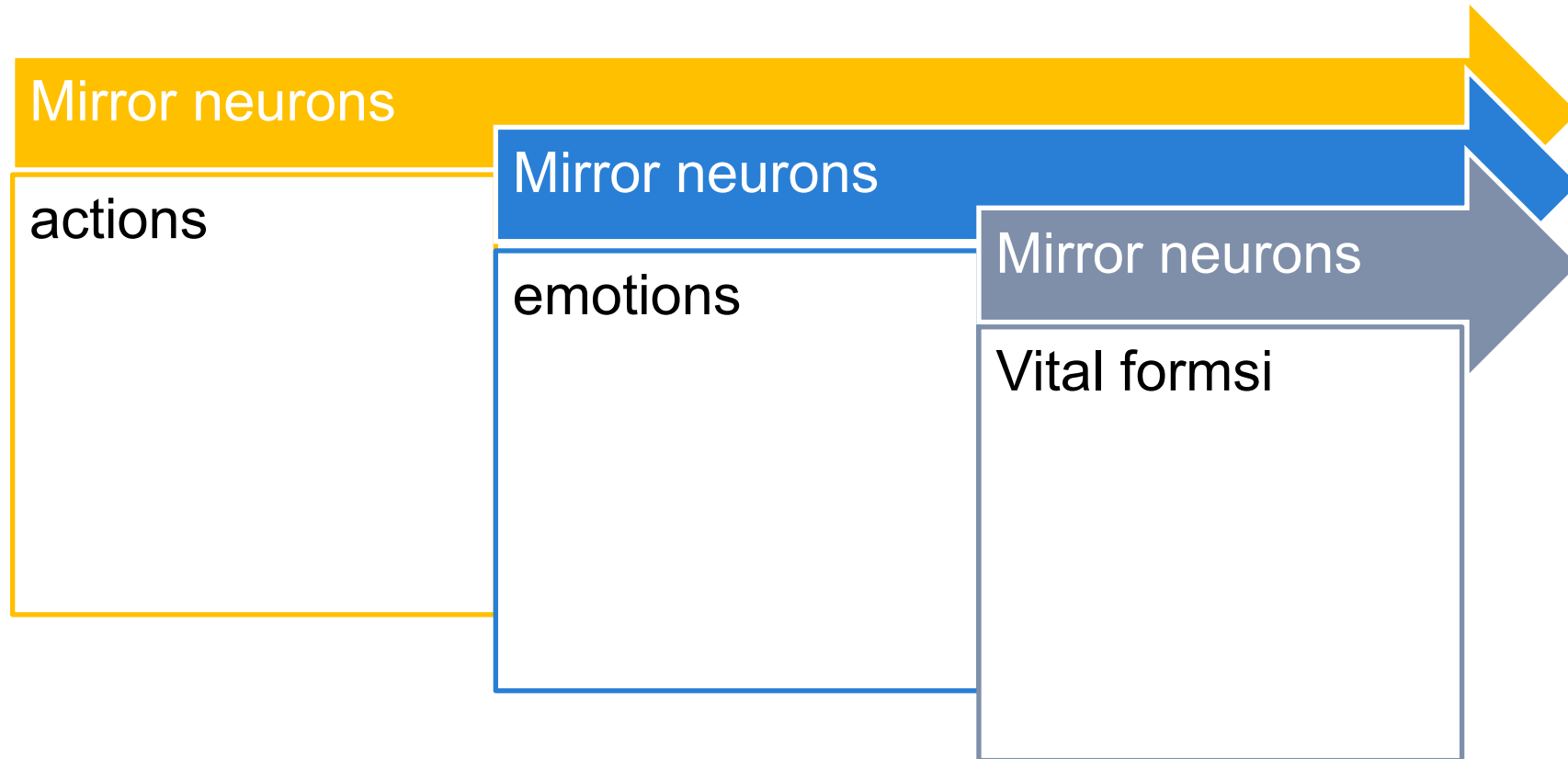


- **Perception and action** (emotion, vital form) have, thanks to mirror neurons, a **common representational code**
- Sensory input (**visual**, auditory (noise, word, phrase connected to the action, tactile) L'input sensoriale (**visivo**, uditivo (rumore, parola, frase connessa all'azione, tattile) **is motor or visceromotor representation right from the beginning : we create a «representation from within»** (Jeannerod, 2001) **of what is perceived externally**

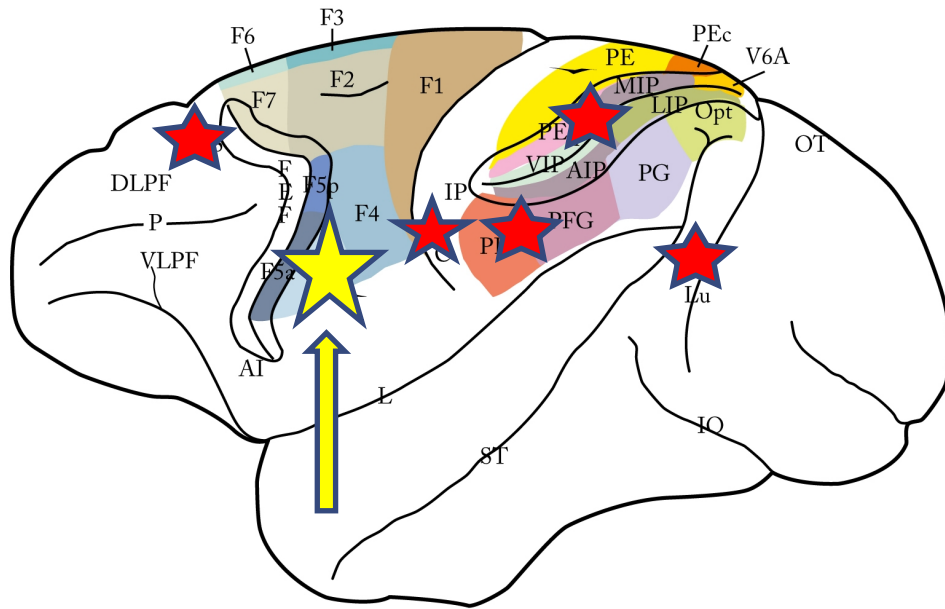
# Basic imitation, comprehension and feedback



# From the 90's to today

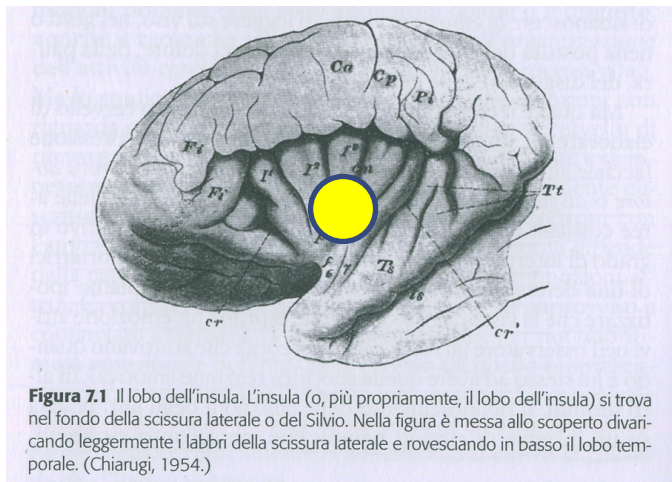
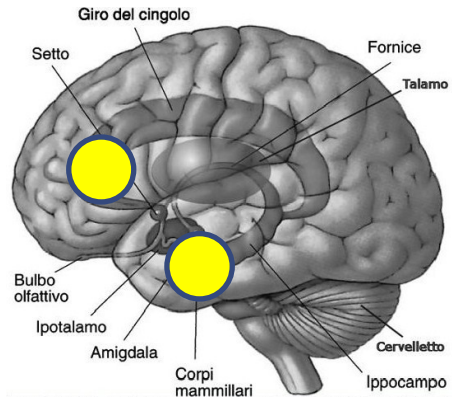


# Mirror neurons for actions: motor system



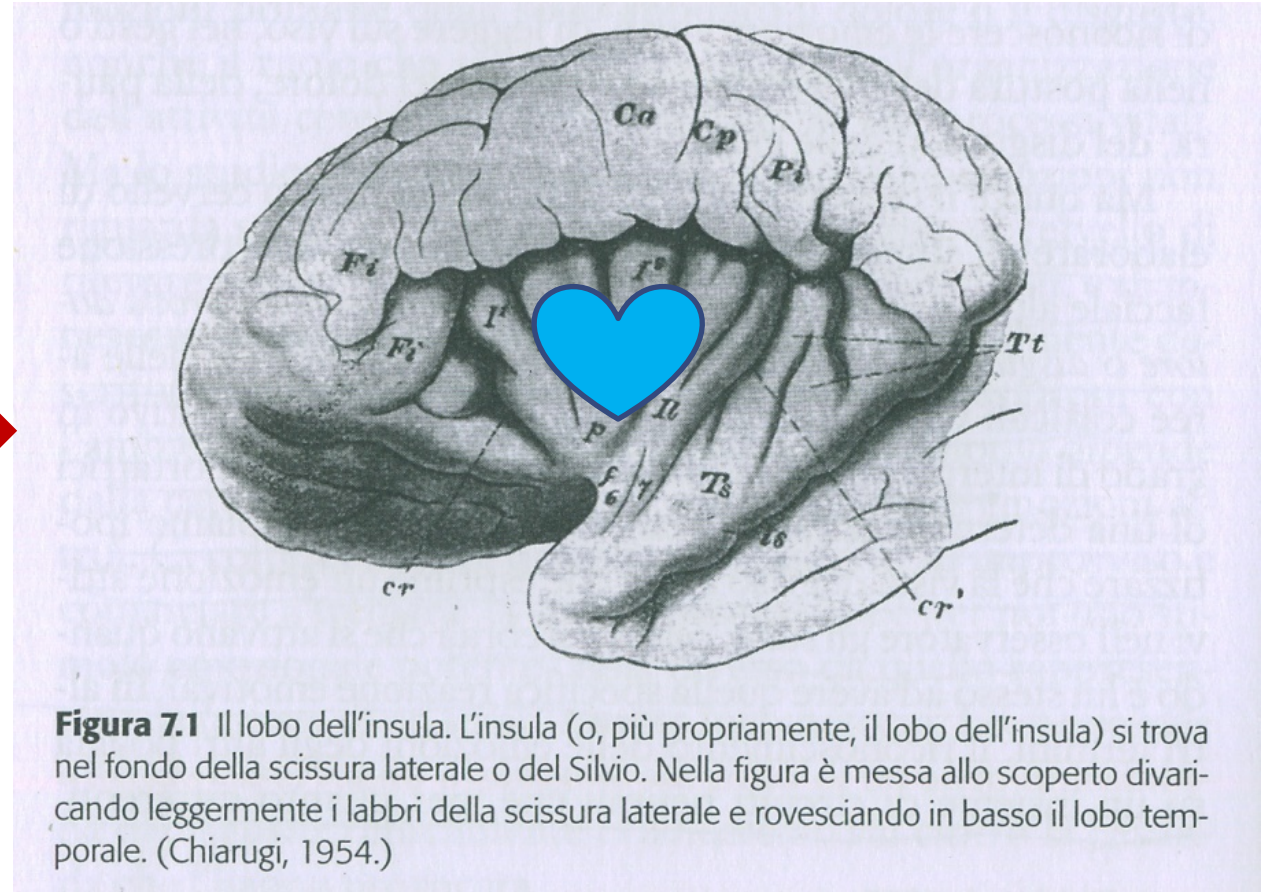
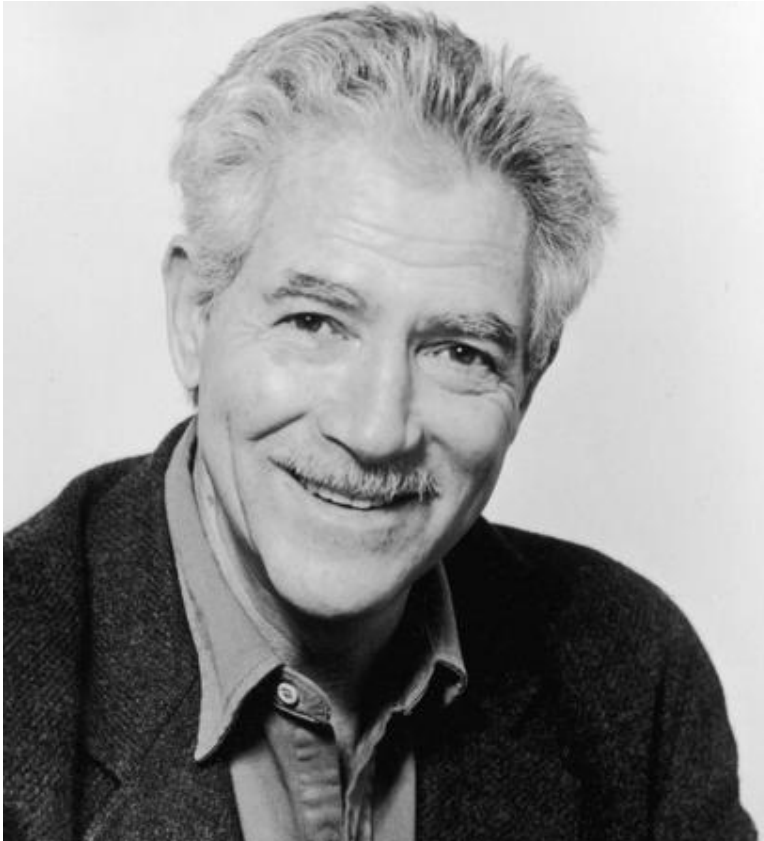


# Mirror neurons for emotions: motor system and **autonomic system**



# Mirror neurons for the **vital forms** : insula

**Daniel Stern**



**Figura 7.1** Il lobo dell'insula. L'insula (o, più propriamente, il lobo dell'insula) si trova nel fondo della scissura laterale o del Silvio. Nella figura è messa allo scoperto divaricando leggermente i labbri della scissura laterale e rovesciando in basso il lobo temporale. (Chiarugi, 1954.)

# Video of Rolando



# Vital forms

"The **sense of vitality**  
**that** permeates our  
experience" (pag.5)

"The vital experience  
is intrinsic to the act of  
**moviment**» (pag.10)

## □ *moviment*

happens in a certain **time** interval

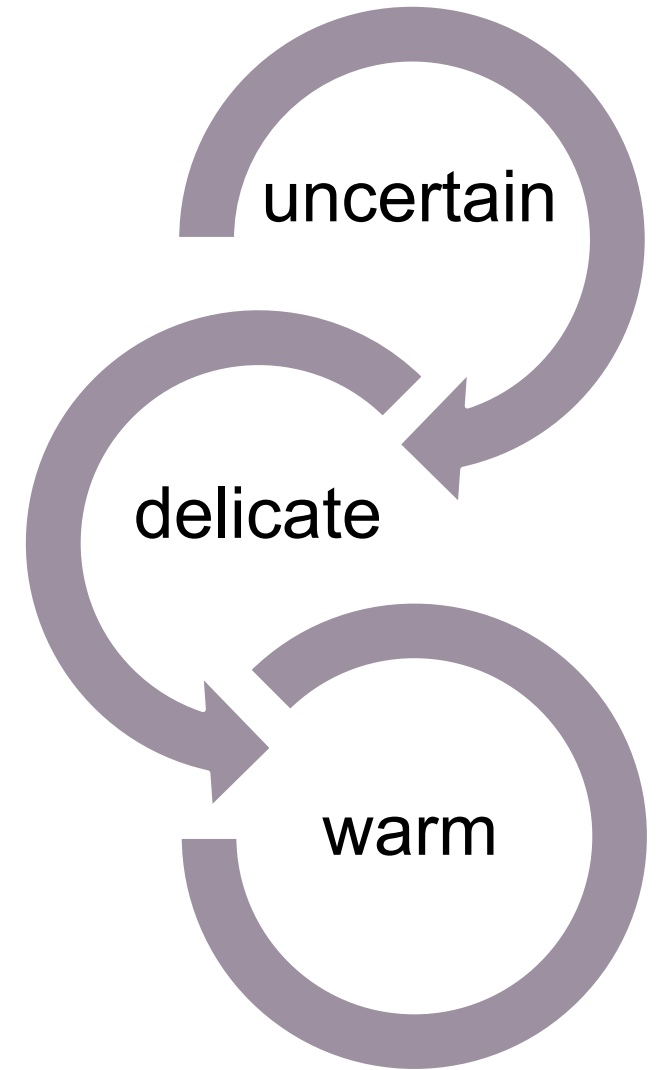
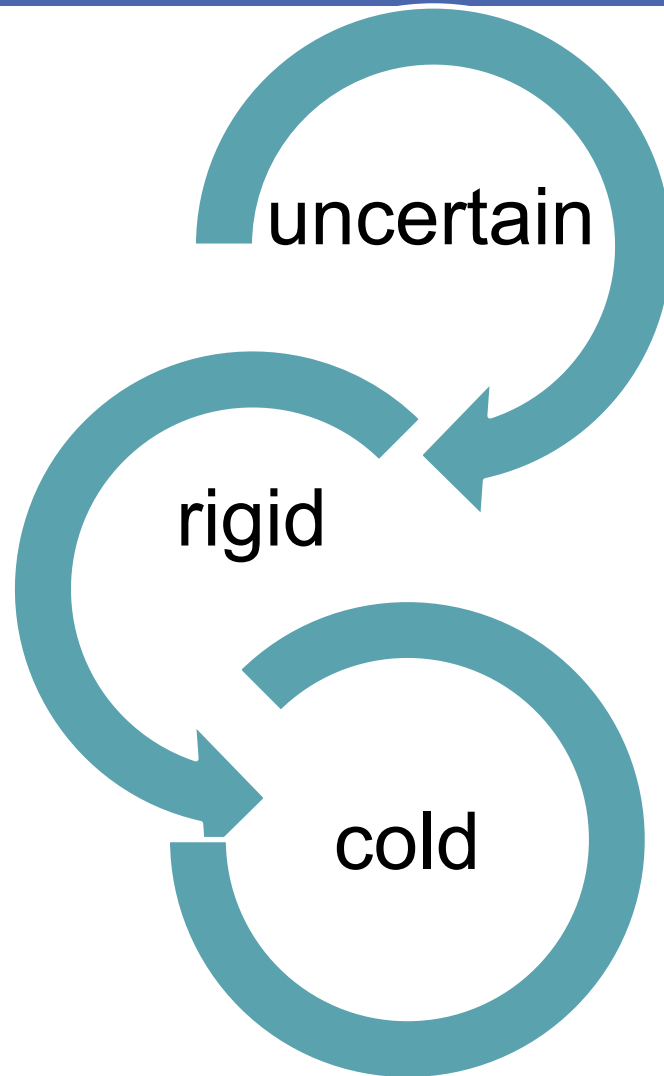
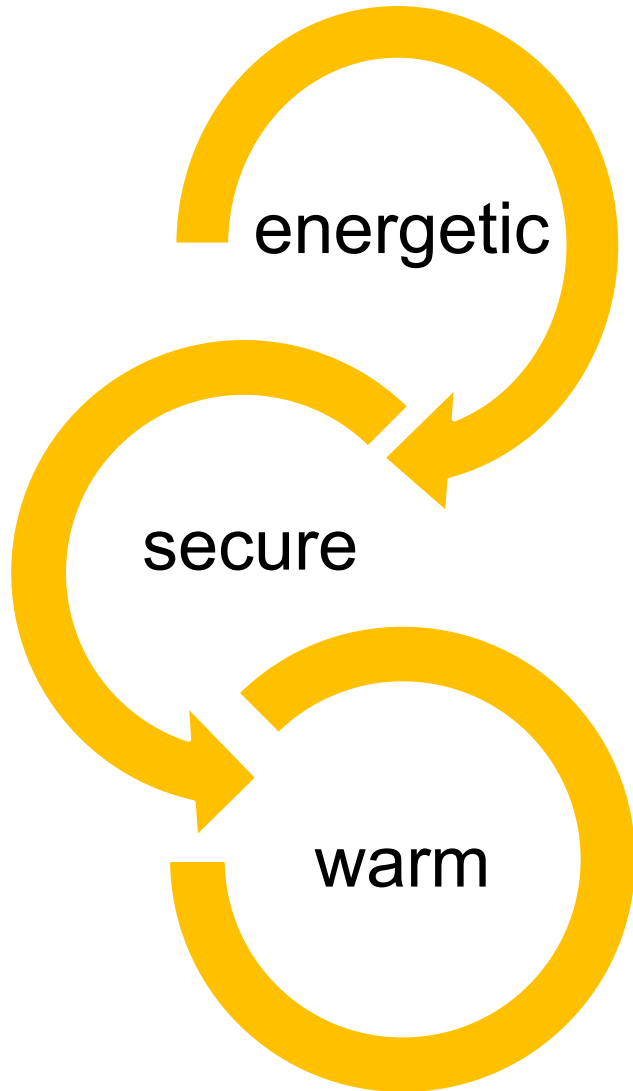
it is accompanied by the perception  
of internal or underlying **forces**

it takes place in a **space** and has a  
number of spatial attributes.

has **directionality** and **possesses**  
**intentionality**



# Vital forms: **how** we move (no emotion)



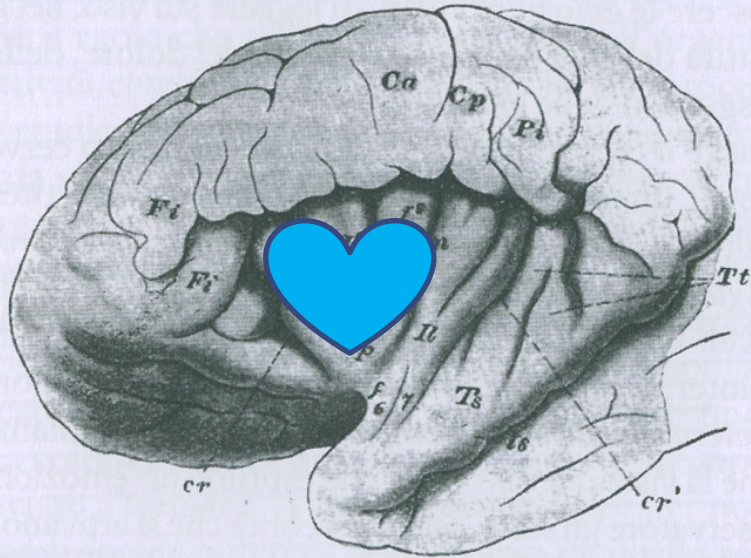
**Mirror neurons :**

**what and how**

Mirror neurons for **actions and emotions** can explain “**what**”  
an act is aiming for .....

the characteristic “dynamic imprint”  
of the other, **the vital form** intrinsic  
to their movement, identification  
based on imitation also asks  
“**how**”: **vital form**

# Mirror neurons for vital forms: motor and autonomic systems



**Figura 7.1** Il lobo dell'insula. L'insula (o, più propriamente, il lobo dell'insula) si trova nel fondo della scissura laterale o del Silvio. Nella figura è messa allo scoperto divaricando leggermente i labbri della scissura laterale e rovesciando in basso il lobo temporale. (Chiarugi, 1954.)



# Mirror neurons and Biodanza

Thanks to the different  
systems of mirror neurons  
we create

**affective harmonization**

with the other



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# Mirror neurons and Biodanza

Thanks to mirror neurons  
we **adapt** our behaviour to  
the situation, even at a  
distance: **feedback**



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# Comprehension and mirror neurons

- **Basic comprehension:** of the **motor purpose** of the action, of the emotion felt and of the vital form expressed.
- **Full comprehension:** includes basic understanding and motivating reasons, mental states (intentions, beliefs, desires)



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# Mirror neurons and the comprehension of the other

**The greater the motor experience, the better the understanding of the other from within, which favors affective communication**



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# In summary: mirror neurons, in Biodanza

They make **affective harmonization, adaptation to the other and relational circularity possible**

***Even at a distance!***

## Biodanza and physical distancing: as operators, we consciously activate all the mirror neurons

- Exercises for personal space or body space: **increase body awareness**
- Presentation of the exercise
- Metaphors: mental images
- Demonstration
- Dividing into groups
- Looking attentively at the other
- .....



## Polyvagal theory and Biodanza: the safe environment and pulsation

E. Porges

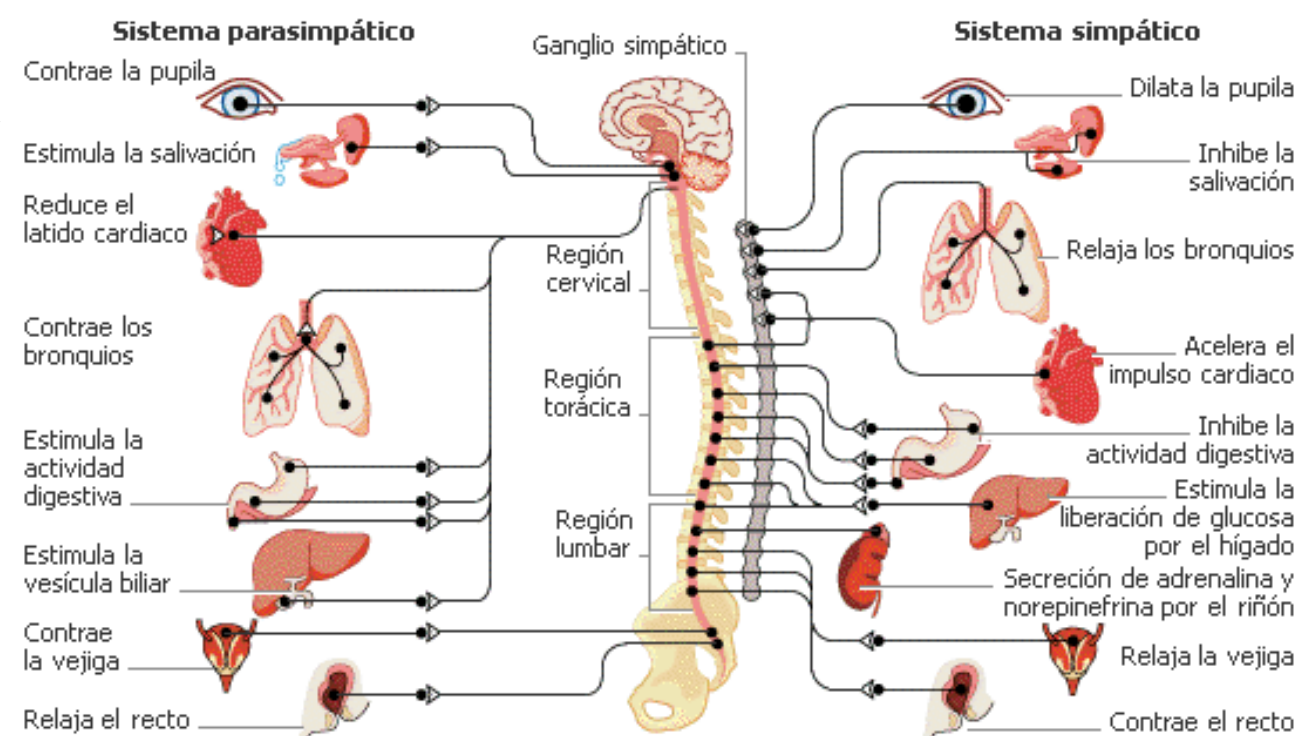
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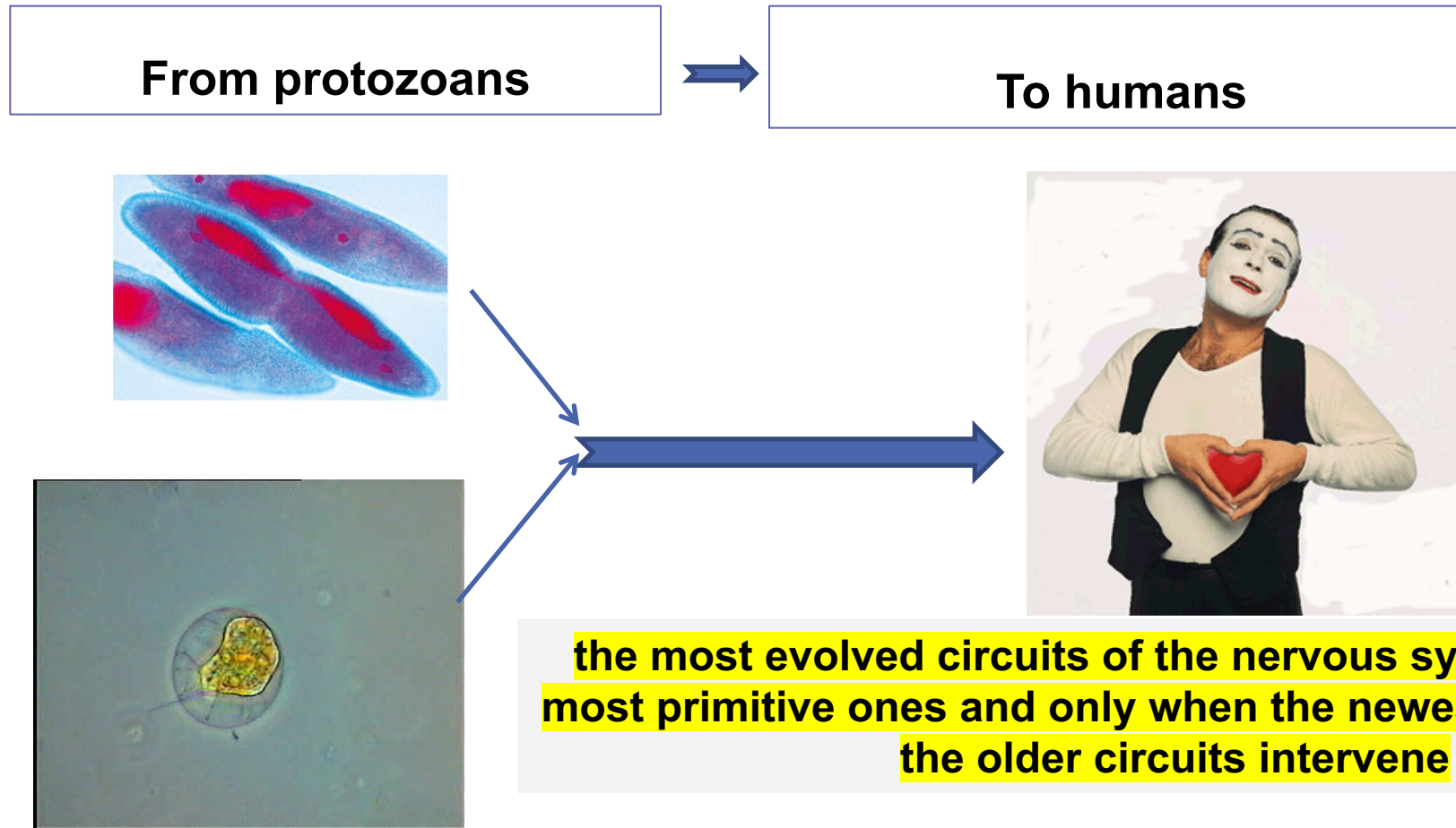
# Autonomic (neurovegetative) nervous system

**Sympathetic system:** fight and flight system intended for emergency situations

**Parasympathetic system:** homeostatic shelter system



# Polyvagal theory: the concept of dissolution or neural exploitation





# Polyvagal theory: parasympathetic system

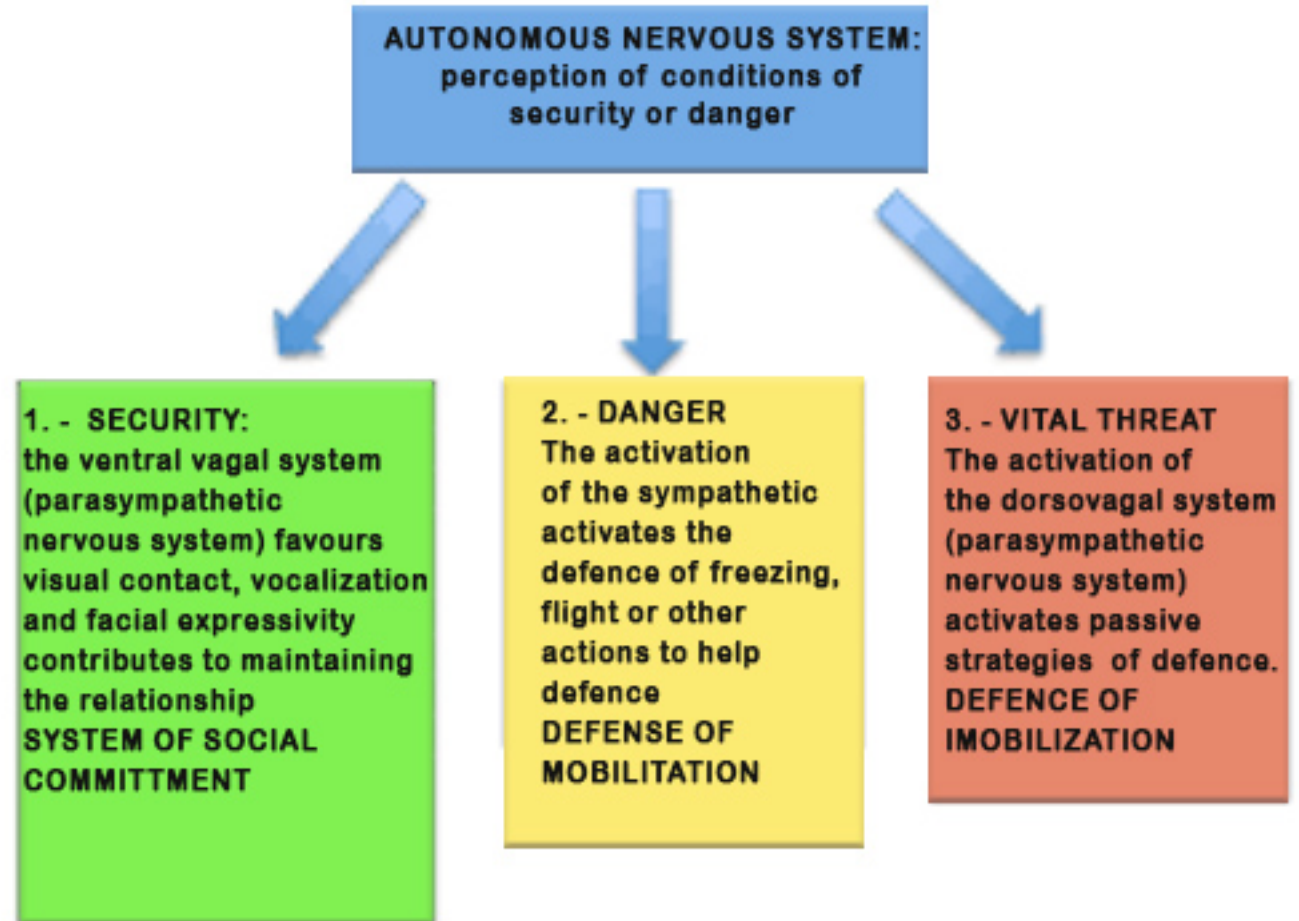
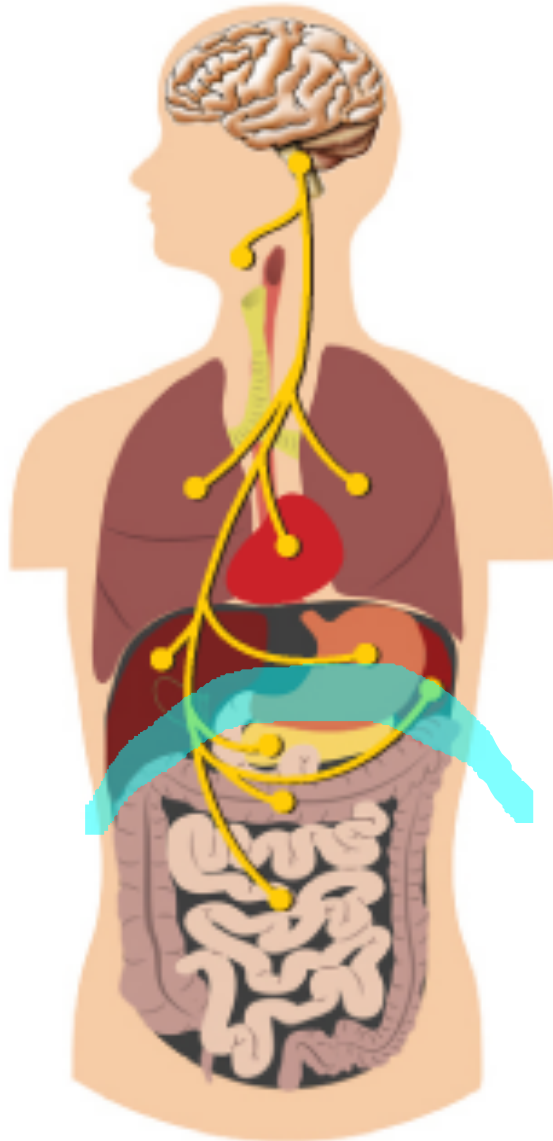
## Primitive, unmyelinated circuit: dorsovagal

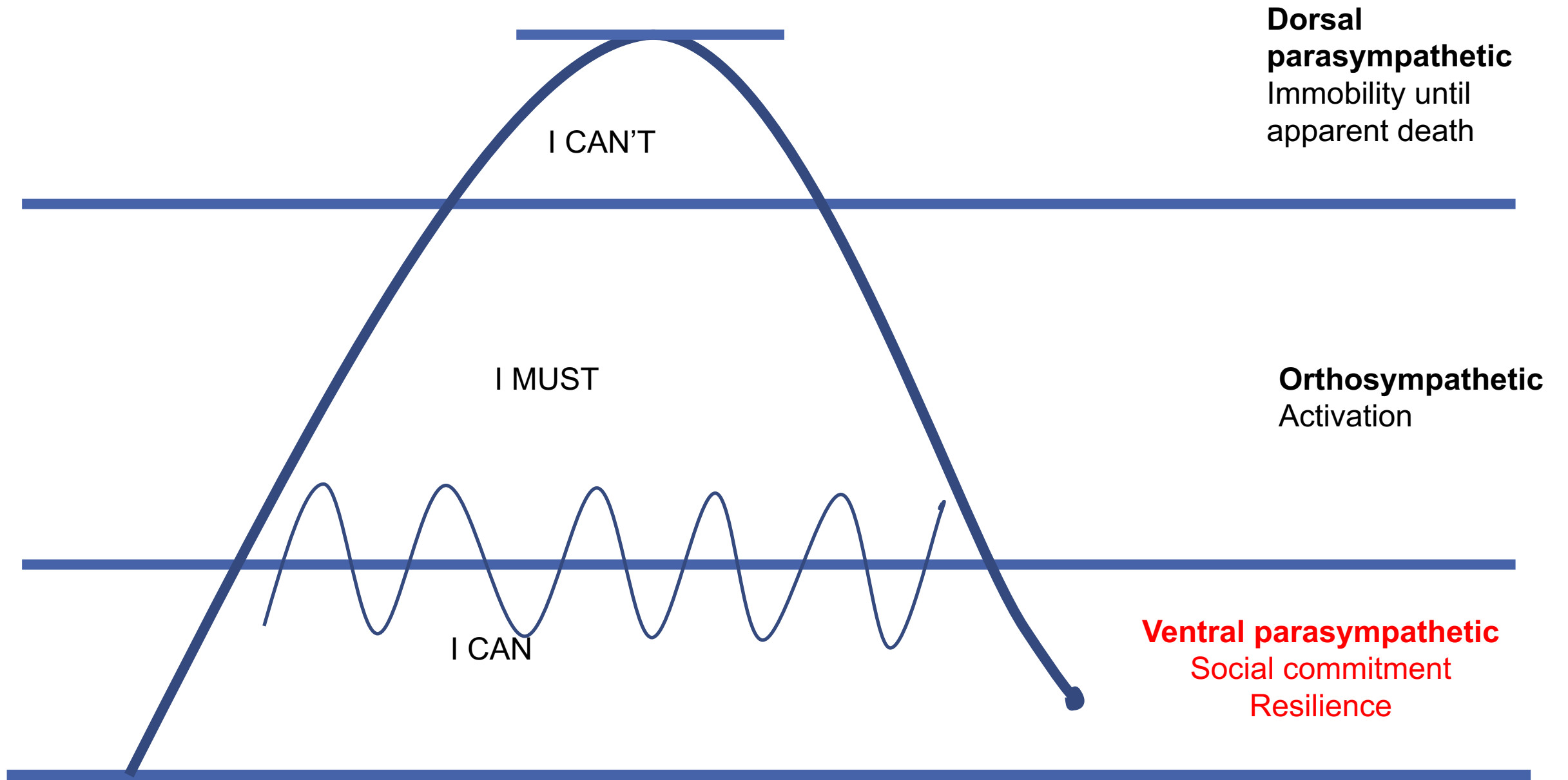
- controls **basic visceral functions** (gastrointestinal system and bladder), **below the diaphragm**

## Evolved myelinated circuit: ventrovagal

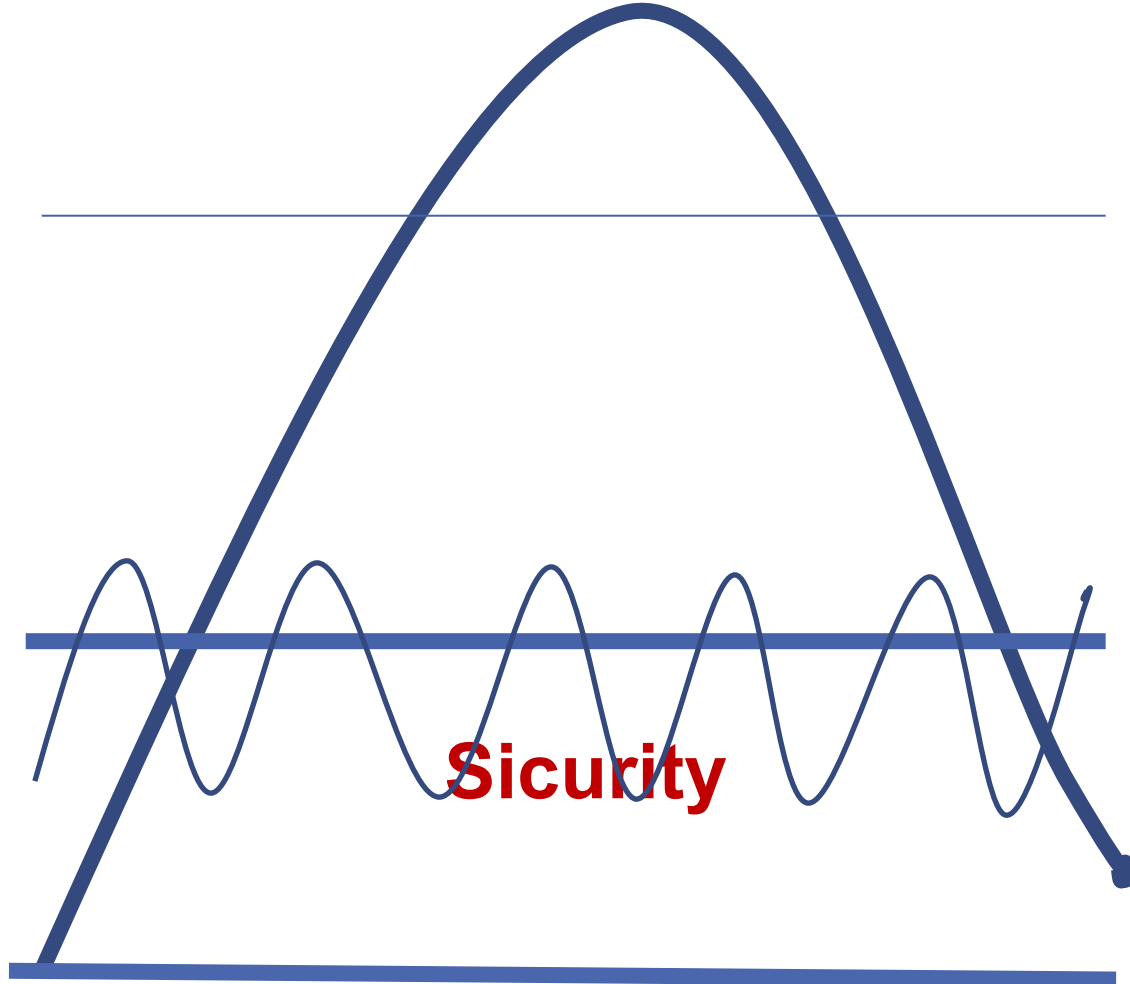
- Controls the **muscles of the face, pharynx, lungs, heart**
- Determines our capacity to **express emotions with the face, the voice, prosody and breath**
- **SOCIAL CIRCUIT**

# The vagal nerve : security and threat





# Polivagale theory and Biodanza



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