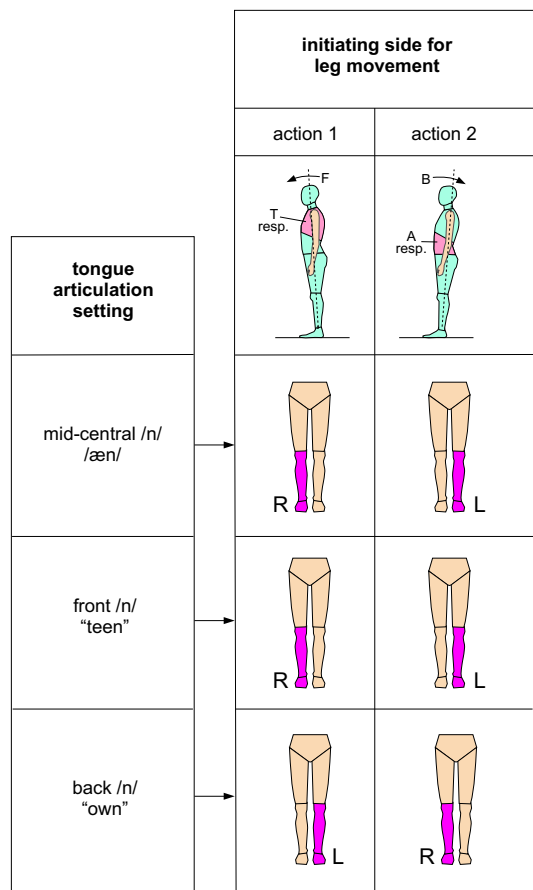


## Experiment 1C: coaction of phoneme articulation, respiratory region and lateral stride bias

### Experiment 1a

**Setup** (for English speakers): stand comfortably but perfectly balanced. Articulate and hold the tongue to produce the phoneme /n/ in three positions: mid-centrally (/n/ +neutral vowel e), fronted, as in “teen”, and backed as in “own”.

**Actions:** alternately tilt body forward and backward pivoting at ankles.

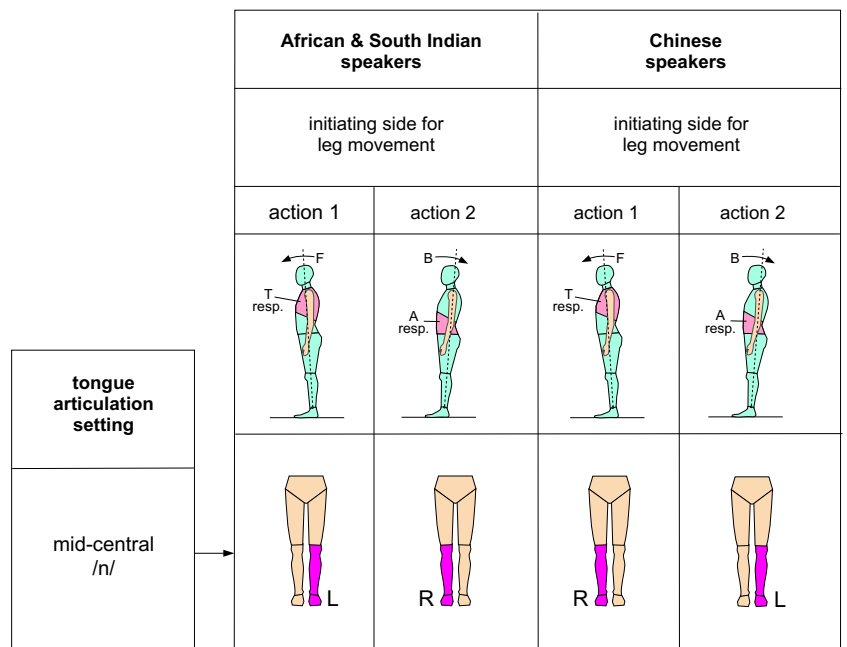


**Observe:** mid-central and front /n/ for English speaker: a) forward tilt causes **thoracic** respiration and initial **right** leg stepping forward; (b) backward tilt causes **abdominal** respiration and **left** leg initial step, and (c) behavior with back /n/ produces the opposite.

### Experiment 1b

**Setup:** (for speakers of African or South Indian languages): repeat setup 1. Articulate and hold the tongue to produce the mid-central /n/.

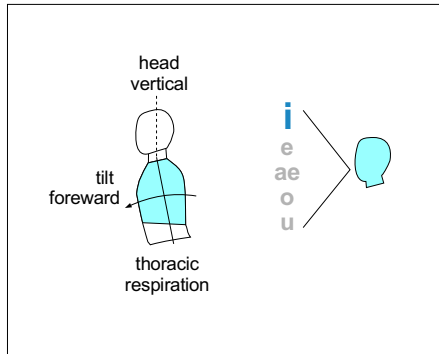
**Actions:** alternately tilt body forward and backward pivoting at ankles.



**Observe:** same affect on respiration, and (a) for African and South Indian speaker forward tilt triggers left foot action and backward tilt triggers the right foot, (b) the Chinese speaker's response parallels the English one.

**Conclusion:** This shows monadic unity of body tilt, respiratory region, articulatory setting of language, and lateral bias in walk initiation, i.e., coordination of axial and transverse body movements. The involvement of articulatory basis exhibits the fundamental subtle effects language on body behaviors.

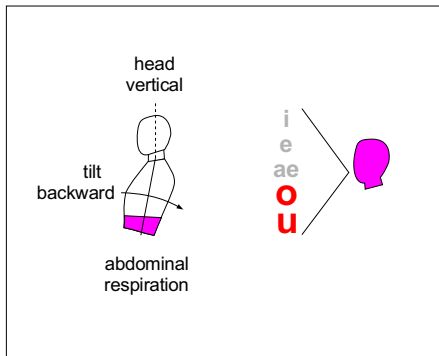
## Experiment 1C: monadic coaction of body, respiratory region and vocalization



**Setup:** sit or stand comfortably erect.

**Action 1:** with eyes closed, holding head and neck vertical, minimally tilt the body forward to initiate fully thoracic respiration.

**Observe 1:** the speech frame shapes to articulate the cardinal front vowel /i/.



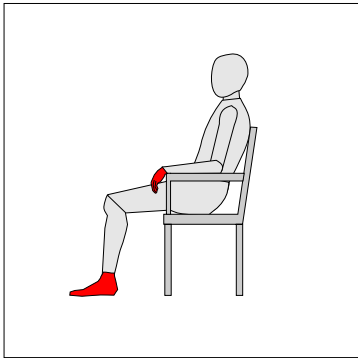
**Action 2:** repeat action 1, but minimally tilt the body backward for fully abdominal respiration.

**Observe 2:** the speech frame shapes to articulate the cardinal back vowels /o/ or /u/.

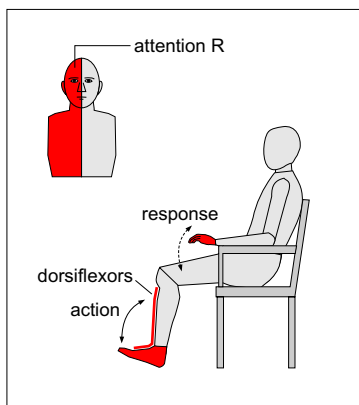
Conversely, the articulation of these vowel activates a particular the respiration region.

**Conclusion:** this composite frame shows monadic coactivity between three subframes: (a) body position; (b) respiratory region; and (c) vocalization.

### Experiment 3(a) - monadic hand-foot coordination

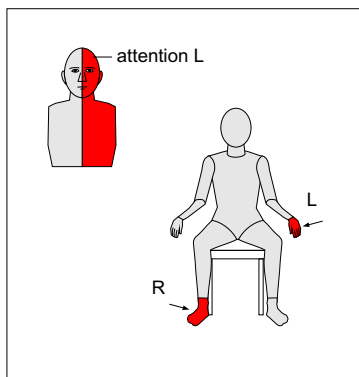


**Setup:** sitting in armchair fully relax (neutralize) legs and arms supported on arm rest, with hands hanging freely.



**Action 1:** fix neutral attention on the **right** and with legs held relaxed rotate up the right foot using only the ankle extensors (dorsiflexors). Optionally rotate in any direction.

**Observe 1:** the neutral hand respond with identical movements.



**Action 2:** repeat right foot movements but fix attention generally on the left.

**Observe 2:** the left leg responds.

**Conclusion:** this shows monadic coaction between united hand-foot frame and bodily-mental attention frame.

**Note:** the frame of unrelated thinking cancels the responses.

### Experiment 3 - Monadic coaction between the mechanical frames of the feet, hands and respiration

**Setup 1:** stand straight and turn feet outward. Arms hang relaxed.

**Action 1a:** breathe **thoracically** (T) and slowly tilt body (or only head) forward.

**Observe:** arms and hands respond by turning inward.

**Action 1b:** breathe **abdominally** and slowly tilt backward.

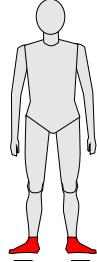
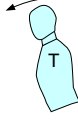
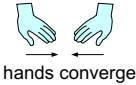
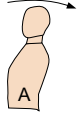
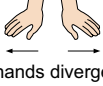
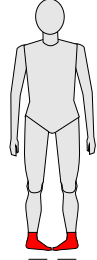
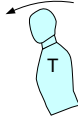
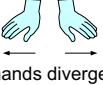
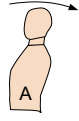
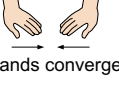
**Observe:** arms and hands turn outward.

**Setup 2:** stand straight and turn feet inward.

In this setup, repeating the two actions generates results contrary to ones in Action 1.

(Note: if tilting continues, the arms and hands, after their initial responses, rotate again, in the opposite direction. See Experiment 1, note).

**Conclusion:** this demonstration shows system and symmetries in two aspects of body-mind monadism: arm-hand axial rotation varies with (a) rotation of feet, and with (b) respiratory region. Such innate behavior is masked by normal global movement complexity.

<b>Experiment 3</b>		<b>Action</b>	<b>Observation</b>
<b>setup 1</b>  feet lateral	1a	 forward tilt	 hands converge
	1b	 backward tilt	 hands diverge
<b>setup 2</b>  feet medial	2a	 forward tilt	 hands diverge
	2b	 backward tilt	 hands converge

## Experiment 4 - mechanical coaction of five behavioral frames

**Setup 1:** sit with head and body in line, with legs and feet turned **outward**. Hands, with interlaced fingers rest on the lap or thighs. Jaw, face, head, neck shoulders, upper visceral body should be relaxed.

**Action 1:** from a perfectly balanced posture slowly tilt forward the body and the head as one.

**Observe:** immediately as tilt begins a bias (or actual action) appears for:

- (a) eyes to converge
- (b) eyelids to close
- (c) tongue to pull forward and horizontally narrows
- (d) mouth to close

**Action 2:** repeat action 1 but now tilt backwards.

**Observe** bias or actual action for:

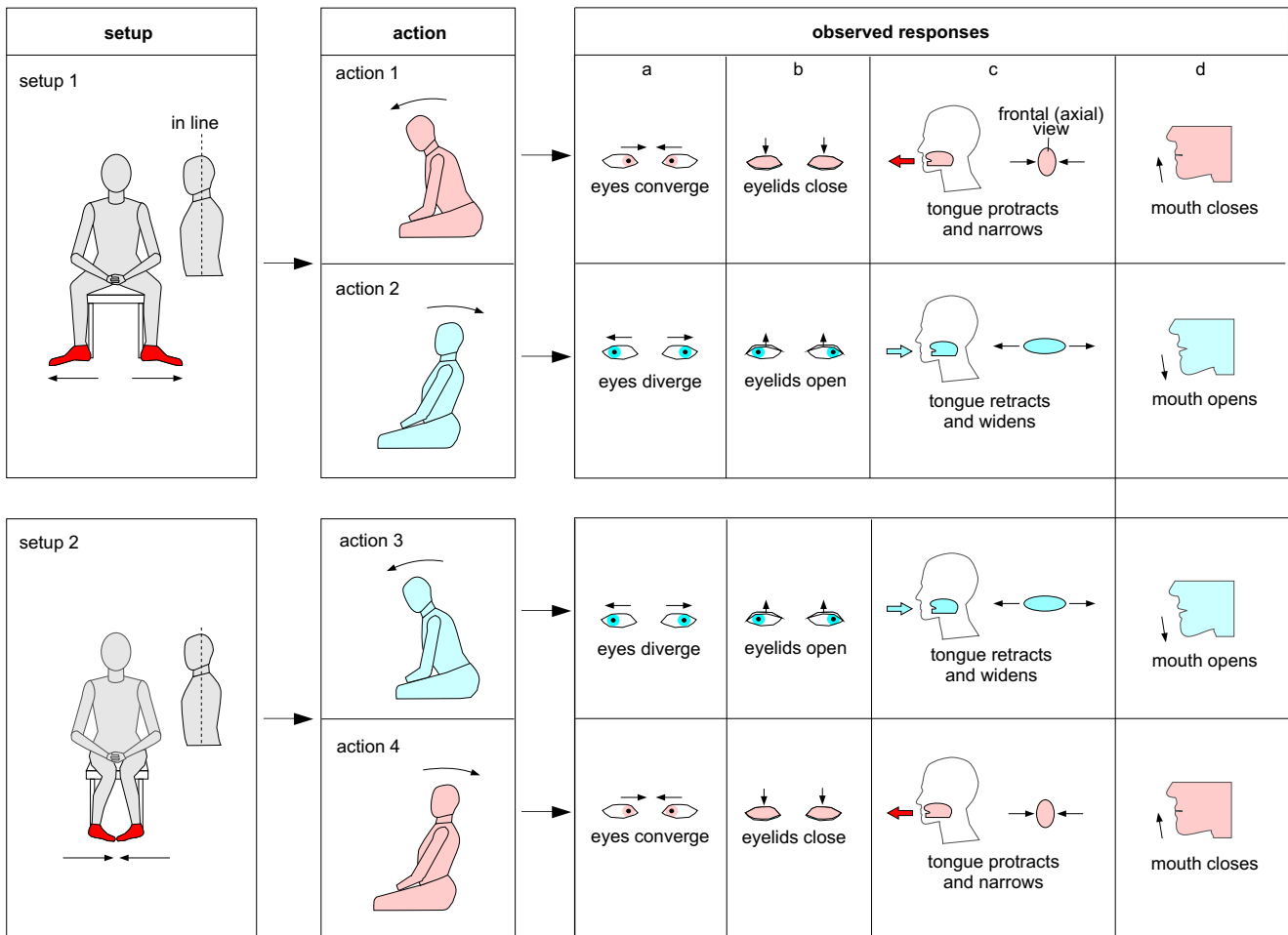
- (a) eyes to diverge
- (b) eyelids to open
- (c) tongue to retract and horizontally expand
- (d) mouth to open

**Setup 2:** repeat setup 1, but with legs pulled together and feet turned **inwards**.

In this setup repeating the two actions generates responses as mirror opposites of the previous ones.

**Conclusion:** on p. 4

### Experiment 4

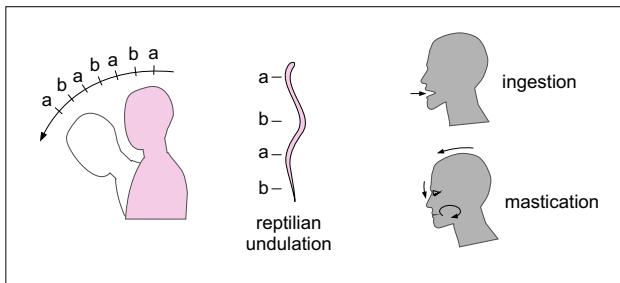


### Conclusion - Experiment 4

This demonstrates symmetries in mechanical behaviors: angle of leg and foot rotation triggers contrasting changes in (a) eye and (b) eyelid positions, (c) tongue position and shape, and (d) size of mouth aperture.

Any of the behaviors triggers the others, but smaller parts (eyes, eyelids or tongue) only minimally affect more massive part (legs and feet).

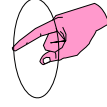


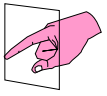


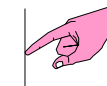


With increased tilting, divergence replaces convergence, and vice versa, continuing in a series of alternating configurations. This alternation is fundamental, as in breathing, walking, climbing, handshaking, laughing, syllabification, etc. The mouth aperture alternation series serve biological functions in feeding. To start mastication the mouth closes, and either the head tilts, or the eyelids close, or the eyes look down; without one of these actions, the respiratory tract, closed during ingestion, remains blocked. The nature of this alternation, related to ancestral vertebrate locomotive undulation, (cf. wave pattern in fish, reptile and marine mammal movement ) can not be covered here.



### Experiment 5 - mind-finger coactivity

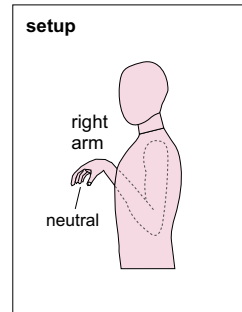
**Action:** sitting balanced, with eyes closed, focusing attention on the eyes and/or tongue and **without** breathing continually trace a circle, square, or line with **index finger** and observe identical small movements by the **tongue** and/or the **eyes**.

**Conclusion:** this shows **hand** motions generating **mirror** movements in **tongue** and **eye** muscles.

action	observed	
	tongue	eyes
trace circle 	 front view	
trace square 		
trace line 		

## Experiment 6 - mental action and finger movement

**Setup:** hold relaxed arm, hand and fingers as in fig. 000. Keep head level and balanced. Ceasing respiration is not necessary, but enhances the effect.



**Action and observations:** performing the actions can be observed to trigger the finger movements as illustrated and as listed in Table 2.

action		
thinking/ future  upward finger rotation	remembering/ past  downward finger rotation	waiting/ present  no finger rotation

Table 2

action		response
<i>mental function</i>	<i>time conceived</i>	<i>observed finger movement direction</i>
thinking	future	up
waiting	present	none
no thoughts	past	down

**Conclusion:** this demonstrates monadism between mental actions and hand-finger movements. The numerous interesting inferences are not discussed here.

Figure 00 shows other observable associations

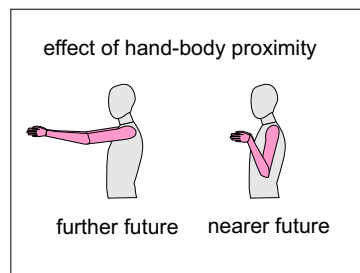


fig. 00

## Experiment 8 - phoneme articulation and finger coactivity

**Setup:** hold arm with forearm horizontal and hand palm up, **maximally** relaxed. Rotate forearm to enter range where fingers partly open. See figs. (a), (b) and (c).

**Action 1:** with attention on the fingers, but without looking at them, separately produce forcefully the three phonemes /h/, /n/, and /m/, without vowels.

Alternatively, produce the syllables /hi/, /n+neutral vowel), and /ma/ and note the same results.

**Observation 1:** each sound activates, or initiates the **flexure** of particular fingers: /h/, /n/, and /m/ respectively move the thumb-plus-index, the middle, and the fourth-plus-fifth fingers. Here respiration combines the thorax and abdomen, but when isolated the two modes differ: in abdominal breathing the fingers **extend**.

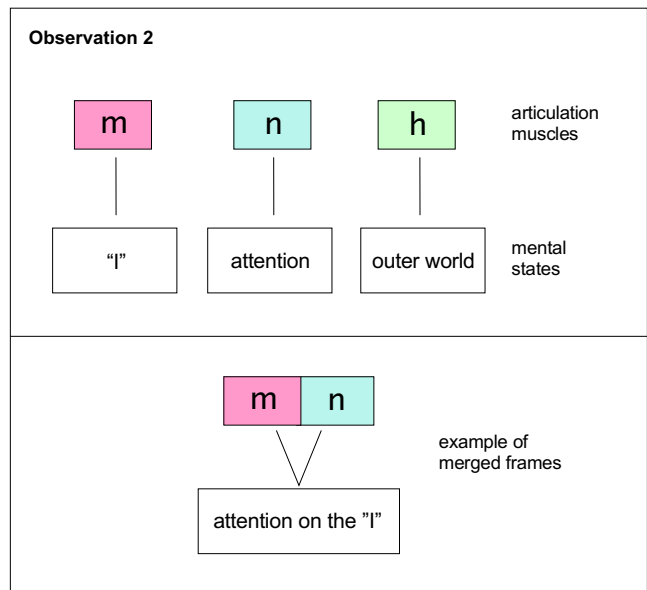
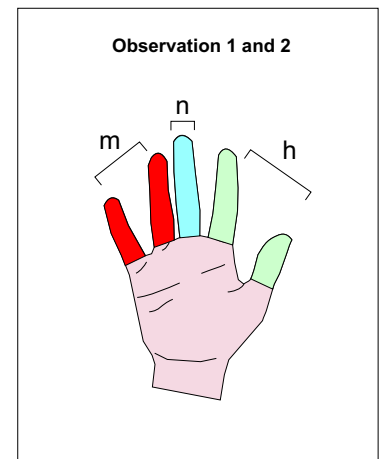
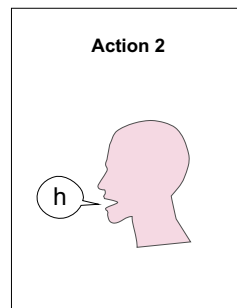
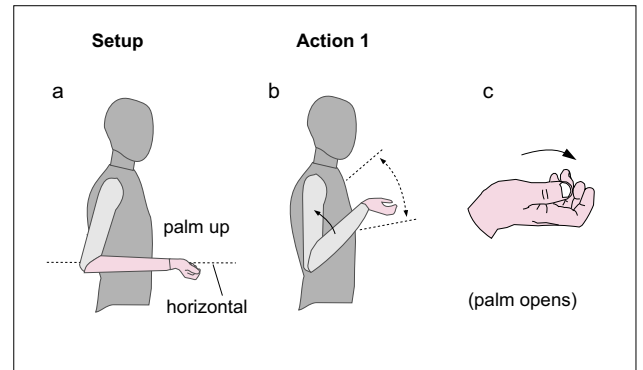
**Action 2:** merely producing the three sounds, examine which of three mental contents, (a) perceiving the outer world, (b) objectless attention, or (c) sense of the "I" (or "self") most spontaneously associates with which particular vocalization.

**Observation 2:** the following associations will occur:

- /h/ - outer perception
- /n/ - objectless attention
- /m/ - the "I" or "self"

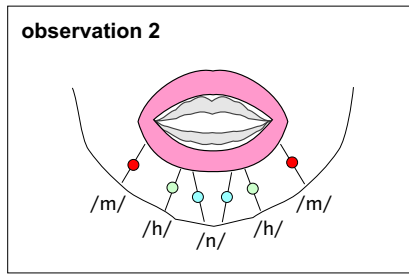
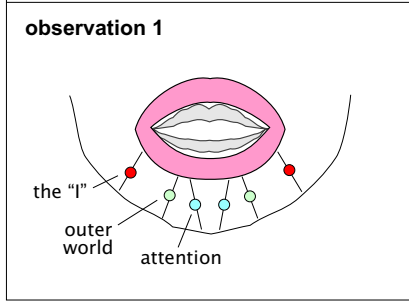
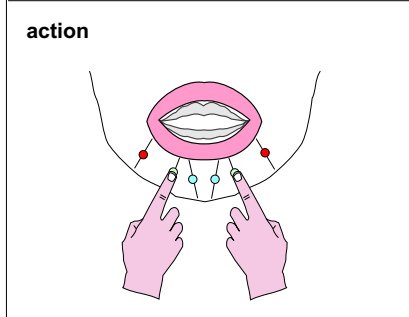
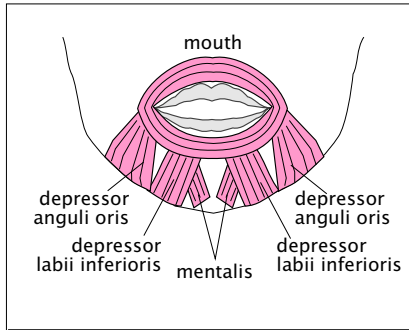
Each configuration comprises a single frame. Combining two or three frames yields mergers, e.g., /m/+n/ = attention on the "I". This topic relates to gesticulation, cognitive embodiments, religious and meditative vocalizations and hand gestures, cf. "hoshannah", "halleluya", "amen", "mu", "om-mani-padme-hum", etc.

**Conclusion:** this experiment documents inherent coactions between particular phoneme articulations, finger movements and mental settings.

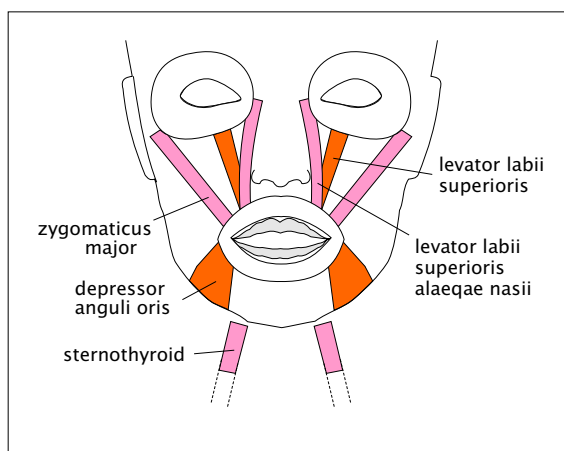




**Experiment 9 - some facial muscles associated with mental states**



**Additional parts of extended /m/ frame**



**Action:** locate and familiarize with the muscles indicated. With eyes closed, and body, head, upper visceral region neutralized continuously press with fingers the symmetrically paired points. Observe which of the following mental states most spontaneously associates with a particular muscle: (a) perceiving the outer world, (b) objectless attention, or (c) the "I" sense .

**Observation 1:** (a) pressure on the *depressor anguli oris* associates with the "I" sense  
 (b) pressure on the *depressor labii inferioris* with outer perception  
 (c) pressure on the *mentalis* with objectless attention.

**Observation 2:** Note that pressure on each muscle is also associated with germinally or fully articulating one of the phonemes /h/, /n/ and /m/.

**Conclusion:** experiments 7 and 8 integrating four frames: (a) sound articulations; (b) facial muscles; (c) finger movements; and ((d) mental states document monadism, frame organization, and connection of mental and bodily functions. The mapping of these frame associations necessarily reflects a corresponding **neuromuscular** dimension of this map.

**Map of four frame associations**

