EXPERIMENT IN HUMAN MAGNETIC ALIGNMENT

ITS RELATION TO BEGALL, ET. AL., 2012 and 2014

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INTRODUCTION

The experiment shows that **MA** in humans increases the **facility**, or efficiency of muscular movements, and that this effect can be related to MA in animals. The findings help to clarify several questions: (1) the biological use of MA, i.e., energy saving, (2) whether human MA experience is relatable to animals, (3) why MA is useful in both action and in resting and sleeping, (4) the reason why MA data shows a degree of dispersion around cardinal pole alignments, (5) the possible mechanism behind MA.

Your animal data lists **resting** as paradigm in three out of five animal classes. Resting is the lowest energy state of the body; it is relaxation, from which muscular actions are most readily initiated and where respiration is also facilitated to the greatest degree. The fact that MA is present in resting supports the notion that MA relates to **energy saving**.

Complexity of experimental conditions

The experimental conditions and action are somewhat complex but necessary since magnetoception is hidden and only special body manipulations can reveal it. Initially there is a basic body **setup** over which **five** factors, or body behaviors are executed.

The setup is defined as a neutral body status, and a specific polar alignment.

The factors

(1) Respiratory mode (the central point in the body of respiratory action)

(2) Magnetic axis (relaxation and alignment with a magnetic pole)

(3) Execution of specific vocalization

(4) Execution of accompanying gesticulation

(5) Miscellaneous secondary factors: eye position, mental state, etc.

Note on respiration factor: This is important as it necessarily involves a muscular movement essential to the body, **respiration**. Respiration, like blood flow must be continuous and must require the minimal energy expenditure appropriate to circumstances. Animals and we share this faculty, but how MA affects it is only externally documentable for animals. For first hand information this needs to be experienced by ourselves and that is what the experiment is designed for.

Respiratory modes: this pertains to where the breathing mechanism forces are centered. These can be isolated as fully thoracic, abdominal or centered, (i.e., shared by the adjacent musculatures of the thorax and abdomen.)

Note on vocal-gestural factor:

Gesticulation is automatically generated by the utterance, which, in turn, is a function of respiration, so the three form a unit action. Your paradigms on artiodactyls include oral behaviors, namely, grazing and cud-chewing, and, of course, breathing. These can be substituted for human vocal-gestural factor since they also involve respiration, combined with tongue and jaw motions.

Note on body state: The body with a well balanced, and therefore, equalized force frame can relax, enter a neutral muscular state. This permits easy isolation of specific factors, and shuts out interfering elements, it minimizes variables. A relaxed body state also offers a basis for the respiratory mode and the vocal-gesture modes to be executed in the experiment. Maintaining such as body state as the action substrate, when we execute certain phrases along with associated gesticulation, the facility generated is maximal in cardinal pole alignments.

Respiration and body movement

How respiration relates to movements of the body is very interesting and the topic relates to the experiment. It was proposed by the American zoologist A. S. **Romer** that there are two more or less distinct bodies in vertebrates; one has that has evolved from the primitive feeding apparatus, and the other is the somatic apparatus surrounding it, which enables movement. Breathing connects to both systems.

(If interested see Romer, Alfred Sherwood. 1972. "The Vertebrate as a Dual Organism: The Somato-Visceral Animal." Evolutionary Biology 6:121-156. This may or may not be available online, I have only found a review by J. R. Whittaker in American Zoologist 1997 37(3):237-249; doi:10.1093/icb/37.3.237. The topic is also summarized by A. S. Romer, in his The Vertebrate Body [Philadelphia: W. B. Saunders, 1970] page 29.) ATTACHMENTS.

In breathing air passes through the feeding apparatus, and the connection between it and the somatic muscles is evident in that **tension** in **respiration** is directly related to tension in musculature. A tight body impedes breathing, it tightens the glottis, while a relaxed body liberates it. This relationship helps to absolutely clarify many of our bodily functions and activities, but cannot be covered here.

Of course, air pumping is handled by somatic musculature, but that of the respiratory flow controls, oral cross section, larynx, glottis, velum, etc. are all derived from the gill system, which is located in the pharynx, that is, in the food channel.

(The relationship can be demonstrated by two simple experiments?. See... bike and vacuum

cleaner.)

EXPERIMENT and INSTRUCTIONS

A "factor" is a certain body action that produces facility of some muscular function. "Facility" is the ease with which an action can be executed. In the experiment the subject is set up in the physically most relaxed manner, it is aligned with the **north**, or other pole, and then executes a speech phrase and its accompanying gesticulation. Then the subject either (a) continues the action, or (b) holds to position, and then turns from the north-south axis to various degrees. It can then be observed that the facility decreases, but returns when the subject once more faces north. Thus, north MA is generated with a specific bodily action.

Experiment complexity

This experiment is **not as simple** as we might like since several variables must be simultaneously controlled. If MA depended on only one or two factors magnetoception would not be as well hidden as it is, therefore, to detect it the experiment must necessarily be cumbersome.

At least two **other** demonstration of human MA are available, one involves the external eye muscles, the other requires perception of subtle tensions arising in certain body regions. These are the ones I prefer in practice, but they could **not** be **related** to your analyses of animal MA as easily as the one proposed here.

SETUP: Stand or sit.

Adjust body, head, eyes, oral, respiratory regions and limbs to be as relaxed and comfortable as possible. This means maximal ease of **respiration**, which should be **nasal**. There need to be adjustments to the positions and rotations of the head, torso, appendages, respiratory mechanism to feel maximum comfort and muscular neutrality.

Note on sitting:

In the sitting mode the **chair** needs to be adjustable, like a typical office chair. The seat should also revolve, to enable rapid comparison between facing in different directions. Both the height of the seat, position of the chair back should be ideally adjusted. The chair back should **not press** against the lumbar ribs or the lower half of the rib cage. An **armchair** can also be used, but since it does not revolve in most models, quick comparison of MA facing in opposing directions is not available. Again, these conditions are needed for optimal breathing.

FACTORS:

1. Respiration modes

The breathing volume resides in the thorax and the abdomen. The entire volume is divisible into **abdominal**, **central** and **thoracic** spaces, abbreviated as **A**, **C** and **T**. (This is related to the triadic structuring I had mentioned earlier.) We normally breathe in a mixture using all three spaces, variously proportioned according to kind of activity. In the experiment one must be isolated to minimize variables. Thoracic and abdominal respiration is often spoken of, but not so the central one. The centrally anchored mode is one that we employ when relaxed, tranquil, or engaged in quiet attention, or in falling sleep. To isolate the modes it is necessary to adjust positions and rotations of body parts. (I am not offering advice on this at this point, but can if requested.) The position and rotation of the eyes will naturally follow the isolated respiration mode if allowed to act spontaneously. For **T** the eyes should be open and relaxed in a position where their visual axes are parallel. For **C** the eyes are open and diverge and experience a slight backward pull. (This is how the eyes behave when we engage in thought.) For **A** the eyes should be closed and allowed to move as they wish, somewhat backward and downward. It may help to note that there is a relationship between eye positioning and the shaping of the tongue—e. g., T = protraction, C = central, A = retraction. T, C, and A are also associated, respectively, with producing the phonemes /h/, /n/, and /m/.

2. MA direction

The experiment is performed facing **north**. This alignment facilitates by isolating a single direction from among the many possible remaining ones, and it presents the MA associated the behavior generated by the factors. Turning away from north immediately reduces the facility.

3. Vocalization

The vocalization consists of producing, in the T respiratory mode, the spoken English "I don't know", or German "ich weiss", or Czech "nevím". Underscoring indicate stress. If the stress is changed the result is the opposite and the facility is lost.

The mental mood should light, neutral. Authentic **native** pronunciation is necessary.

The vocalizations "natürlich", "ich möchte", "je mi zima" or "je mi líto" can also be used. Whether a vocalization can act as a factor of facilitation is determined by certain phonetic rules.

A note: Why does the phrase produce the same effect in different languages? The reason appears to be that it is the identity of feeling or concept, which goes deeper than speech, that underlies the choice of both the vocalization and gesture. For example, the words "I", "you", "yes", "no", "but", "at least", etc., although expressed in different phonetic forms, primarily exist as concepts, and only secondarily as aggregations of phonemes.

4. Gesticulation

These phrases automatically generate specific gesticulation behaviors, which will spontaneously match the mental setting, that is, the arm behavior should be light, loose and relaxed. The final position of the arms and hands should be maintained after finishing the phrase and gesturing as one turns away from the setup direction. Alternately the action can be continuous. The execution of the vocalization and the gesture form a single united facilitating factor and they also eliminate the possible variables from among the many other possible phrases and arm movements.

4. Miscellaneous associated factors

If the body is set up in a neutral architecture, these factors are spontaneously generated when vocalization and gesticulation occur. They include the position of the eyes, as well as the general mental state.

Experimental controls

Once facility is perceived, when facing in a polar direction, turning the body axis or changing the vocal-gestural action immediately cancels the facility. Turning to fully face the opposite pole similarly removes facility, but the effect returns if the respiratory mode is appropriately changed.

OBSERVATIONS

1. When facing north, with full **T** (thoracic) breathing, the experiment would show that the gestural action is **positively** facilitated, and when turning away from the north, the facilitation **decreases**. But when still facing north, if the action is performed with A (abdominal) respiration, the muscular facility similarly decreases.

1a. If the muscular state occurring with the last syllable is maintained, the gestural facility remains present. The movement can be continuously repeated. If that state is generated without any vocalization, the results are the same. Animals do not speak, but in their combined respiratory-feeding actions can produce the necessary states that conform to facilitation.

2. If the subject, maintaining **T** respiration continues the vocal-gestural action and turns to the south, the facility **decreases**, but when mode it changed to **A** respiration, it **increases**.

3. Thus, we see a symmetrical relationship between the **N** vs **S** alignment as determined by **A** or **T** respiration.

4. To gain **E** and **W** alignments, the respiration mode must be either **A** or **T**, and the eyes need to rotate to laterally directed setting. From normal experience we know that the certain

convergence settings of the eyes are semi-stable, they can be maintained if forces are kept minimal. The option of **E** vs **W** depends on **A** vs **T**.

5. In **C** respiration mode the MA directions facilitated are half way between the cardinal poles.

VARIATIONS in the experiment

The action can be **modified** in two ways.

1. In the assigned gesticulation act the **humeri** are spontaneously **adducted** from the thorax. But they can be consciously **abducted**, as well, **simulating** the limiting of lateral extension abilities of legs in **ungulates** and their predators. With adduction the facility appears increased, and it may be that the human experience reflects that of cows and horses.

2. Standing on **tip-toes** we simulate the way ungulates and their predators stand on their phalanges, and we can find that this also maintains facility.

DISCUSSION

It can be observed that isolating certain body settings and muscular behaviors in accordance with certain factors enables similarly isolating a setting that senses the magnetic field. As demonstrated, the various possible positions, regional activities, and other factors present in everyday behaviors are not likely to go into such coordinated accord that would enable this.

Question: **How does the cow get to match the factors?**

Answer: Most probably the cow arrives at this statistically. If grazing, resting and sleeping is facilitated when oriented in a certain direction, the animal is likely to keep to that direction.

Note on vocal-gesture action

This action is integrated with a global body setting. Both vocalization and gesticulation are muscular actions in the upper respiratory system. The two are physically united, mutually responsive, derived from the direct muscular connection between them. The larynx is attached without any intermediaries to the scapula through the omohyoid muscle, and thus through the shoulder girdle also to the arms all the way to the hands, and this is why the arms tend to go into action during speech. The semantic meaning of the phrase is not a factor, but rather, the factor is the muscular state present in its execution of the syllable carrying the main stress.

DEVIATIONS

Deviations by animals from exact cardinal MAs

Asymmetries

Why is there a systematic deviation from perfect cardinal directions in the animals studied? The experiment shows that altering the factor conditions also changes the MA direction. Slight change in head turn when facing 0º, in a setting of maximal facility, if there is a slight tilt or turn of the head, the angle of optimal facility also changes by some degrees. Head turning brings an **asymmetry**. In the cow's behavior several asymmetries can be present, relating to the head, tail, legs, cud chewing. etc. Particular asymmetries in the factors, then, can explain the scope of divergence: cows in a herd individually can vary in the settings of factors. Ultimately, your statistical analysis indicates that the mean vector of MA is close to the N-S axis.

Other elements of asymmetry may come from size inequality of **right-left** body halves, which we know at least for humans, but more significant is the fact that the cow does not stand or graze with its four feet defining a perfect quadrilateral; some legs are ahead of others. This concept may apply to **all** the mammals covered in your Review.

Whereas the experiment relies on axial symmetry, this quality is lost when, an artiodactyl resting on the ground sets its hind legs to one side, and where the hind body, including typically the tail, also becomes laterally distorted; in such situation the body axially curves to some degree. In resting the front legs and head (whenever it remains centered) retain an axial symmetry.

The experiment shows that muscular facilitation in case of bodily asymmetries causes body alignment at an angle away from cardinal directions. Resting grazers tend to ruminate, and cud chewing adds lateral bias when the jaws grind sideways. There is also ear and eye movement which gives ongoing instability to symmetry. In general, the four factors are not necessarily simultaneously present at any one time, and such distortions will produce deviations.

Grazing and rumination

Yet another generator of asymmetry is the neck, head and jaw action in grazing. This brings muscular activity and its tensions toward the front, and can then favor the thoracic (T) respiratory mode. Similarly rumination, cud-chewing implies lateral jaw movements, which, when added to laterally scanning eyes, would cause deviation from perfect N-S alignment.

Asymmetries in resting and sleeping

Asymmetry is present in resting and sleeping ungulates. At rest the hind legs are placed to the side of the body. Because of this the body's axial line becomes somewhat curved. The head and front legs stay relatively forward facing. In deep sleep the animals lies on its side, and the hind and front legs tend to rotate toward the thorax. (This occurs in human sleep, as

well.) If the animal, formerly grazing in an optimally facilitating alignment were to take a rest or go to sleep in the same alignment, then the facility would be present in rest and sleep. The only remaining muscular activity would be respiration, which is typically unobstructed in sleep, and thus would be facilitated. In human sleep the breathing is done by the abdominal forces, the upper structures of respiration become inactive, neutral. This seems to be why snoring occurs: the passive upper passages are no longer adjusting the channel cross-sections as they do in waking hours. Thus, in sleep the **A** respiratory mode would be favored.

The respiratory mode options in animals

The human subject of the experiment breathes in an axis at 90º to that in quadrupeds. For these the thorax does not place a load on the diaphragm, and this decrease in pressures may allow them to move between the three modes with more ease than humans can. Little more can be said about this; this topic may never have been studied.

Bees - asymmetry

If this notion holds for bees, then their kinetic dance language, involving axis directions and body movements and distortions could be interpreted to be instructions for setting the body so as to facilitate flying in a certain direction.

Horses

The experiment indicates that human E-W facility alignment is generated when the eyes are laterally directed. Your data shows horses, in addition to their thermoregulatory factors, to have a slight preference for NE-SW alignment. We might consider this to be caused by the fact that they observe the world with laterally directed attention. This is true for the cow, too, but these animals live in large herds, which means they can pay somewhat less attention to danger. Moreover, being highly domesticated, perhaps they are not strongly motivated to watch for predators? Social of horses are smaller and they may spend more attention to danger coming from the side. This would bias them for lateralized eye position.

Foxes

You write that in foxes aggression "tended to be more successful when oriented" in the north or south direction. This may be a product of the advantages in maximal facilitation afforded by such alignments. The fox action is far more focused, intent in only a single action, in which precision is vital, hence the use of maximum facilitation would be of advantage.

Dogs

Scent marking in dogs brings body asymmetry since one leg is raised, but excretion is clearly symmetrical, as even the tail points straight back in nearly all seventy-five photos I

found on the internet. In such muscular frame settings MA might be facilitating the specific ongoing activity.

The mechanism of MA

The experiment does not explain the mechanism of magnetic sensation. However, it seems to favor not a magnetic particle theory, but one based on polarity and charge manipulation of nerves. This could directly tie to muscular facilitation, whereas whatever actions would involve magnetic particles would still need more clarification.

END