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The visual system and his influence on our own presence

On the integration of the visual system in speech training

Foreword

Eyebody has become a valuable addition to my speech training work which encompasses voice formation, phonetics, and text.

In the meanwhile various things have worked themselves out for me logically. Albeit I am still at the beginning with this method, I can say I trust the process.

Even though the individual relationship patterns established by Peter Grunwald have not yet been developed by science, the method provides practical tools for our work. [1] Science devotes itself increasingly to the additional functions of the visual system that have not yet been described.

As already mentioned in the preceding text, the individual techniques contribute towards finding oneself alert and in one's own presence. Peter Grunwald also calls this deep perception, an important aspect in the permeability of our body. Effective results for the voice and speech formation are:

- Bodily extension
- Losing tension in neck and shoulders
- Losing tension in the face, jaw, tongue
- Full usage of breathing capacity
- Empathy

This doesn't just have an effect on the workshop-partner or communications partner but also on an audience or the general public.

1. Introduction

Peter Grunwald, the Alexander-Technique instructor from Bonn, developed a method over the last 30 years, which optimizes - among other things – physical functions, one's own presence, and the imagination**.** To this end, he works through visualizations of the visual system by imagining its movements. He developed this method as a result of a personal experience, just as Frederick Matthias Alexander did. Peter Grunwald describes this in his first book "Eyebody – The integration of Eye, Brain, and Body."

In my work with Eyebody I discovered, more and more, the essence of the work for a speech trainer. "The ability to use the visual system without exertion, relaxes the muscles of the face, throat, and shoulders, and thus facilitates a natural expression of intent or emotions."[2]

The regressive work in the area of phonetics and voice formation requires a compre-

[1] Cranz in Grunwald, p. 15

[2] Grunwald, p. 146

hensive perception of the person to be trained. The recognition of causes is an unending field, and every clue or new background about what makes people use their body **suboptimally**, is welcome towards my quest for answers.

To what extent do we use our body uneconomically or suboptimally *and thus lose permeability and presence?*

It is about reactivating the sovereignty of individuals and making them aware of already present competencies. The path to this goal can consist of very different methods.

The methodical element of Eyebody is imagination.

2. Imagination

"The visual imagination describes the ability of the brain to recall images from memory and then hold these up in the short-term memory"[3]. "Imaginings allow themselves to be interpreted as reactivations of perceived-representations." [4] They are activated in the same areas which are responsible for perception. Research by Goldenberg resulted in, "with reference to two patterns, namely the visual imagination and the non-visual imagination, the regional cerebral circulation of the visual system grew in the case of visual imagination."[5] This means, both processes can affect each other.

Visual imagination consists of a process which is created from the present and from our inner images. The recognizing and recalling of experiences depends on their availability.

Imaginary images can be generated in at least two ways:

1. "Sensory information from actual images seen to date can be recalled, reconsolidated (freshly put together) and possibly with confabulation (personal development) examined i.e. when recalling earlier events or things that were perceived earlier.

2. Saved images are recreated into new, never seen images, creatively and transmuted i.e. active imagination."[6]

See what you say!

This is what I prompt my students to do in the performing arts alongside with situational clarification and the intention of the figures.

But what does it mean?

A prerequisite for this is that our imagination prepares an image.

How much does the visual process influence our perception?

Put differently:

How much does seeing influence the memory process and vice-versa?

"We see the things best, which we can recall well, directly or indirectly."[7]

Paul Valery describes how this can be related exclusively to our own experiences.

"My eye wants a particular green. My understanding assesses the situation and explains this green through his memory. It generates a tree. I have created a tree."[8]

An important fact is, that our memory does not perform well when overly exerted and this always has an effect on what we see and perceive.

"Perception means selection. The last process is recognition."[9]

To what extend do these criteria affect the speech process?

[3] Kaplan: p. 75

[4] Farah, M.J. in Kaplan, p. 83

[5] Kaplan, p. 82

[6] Schmid, p. 26

[7] Huxley, p. 107

[8] Valéry, p.235

[9] Huxley, p. 27

3. The constricted breath

In my experience with speech training for the performing arts, a major theme is the breath regulation of the students. This presents itself again and again along with many questions.

On stage, Presence is the basic requirement for the understanding of the individual, and here breath is the stuff that reveals us. “It is the material which - through its movement - has the deepest contact with our impulses, emotions, imagination, and speech.”[10] In public speaking and on stage, it is about goals coming across plausibly to the partner or public. “A successful communication is a mixture of emotions, intellect, and voice. The basis material for that is breath.”[11] Optimal breath regulation for authentic speech is achievable for all healthy individuals.

I daresay it is not sufficient to be familiar only with the steps of physiological breath regulation; its stages and related organs. What comes through practical experience is the learning of innumerable patterns of restricted breathing and the limited presence resulting from it. It is not our profession to be occupied with the deep underlying causes for these patterns, but we should recognize and hear suboptimal movement patterns, in order to steer the person in question in the right direction.

All colleagues who guide their students daily in voice and speech work could know about this lengthy process for each individual, as best they can, as the field of saved behavior patterns is large.

So it occurs in training, that students do not make decisions relevant to the situation. Language, with its formality and content can ultimately be ‘content-free’ when verbalized.

For instance, a conspicuous symptom of that is one breathes too much or too little while formulating the text. This is not helpful on stage. The point being implied gets lost.

“The expression doesn’t give the necessary impression.”[12]

“Language makes it possible for us to not have to look.”[13]

Just lack of knowledge among the students of their natural breath regulation and handling of text formulation is not sufficient as a reason for failure.

And so, over the years, more questions emerged for me, such as:

How does the *body* make itself available **for** a purpose?

A big part of our work – I limit myself to colleagues whom I know – is the deconstruction of uneconomical habits.

Since the deconstruction of these habits brings one’s own presence – or as I often call it ‘own essence’ – to the core, it poses a question:

How large is the area where I employ unnecessary movements, which reduce my attention and vitality?

This uneconomical usage of one’s own body happens unconsciously. It is both the small and big movements in our body which impair us.[14] Unneeded pain, limited resilience, and a lack of alertness can emerge from this. The fact is, anyone who wishes to improve their personal expression, be it on stage, in daily life, or other arenas, needs to know their breathing habits, in order to arrive in direct contact with themselves.

200 years ago, Kleist – in his work “On the Marionette Theater” – described that a reflective understanding is obstructive and blocks out the totality of a situation. I do not come into direct contact with myself - and

[10] Boston, Cook p. 32

[11] Boston, Cook, p. 14

[12] Hofer, p. 13

[13] Valery, p. 240

[14] This is why I speak of movements at this point, since our body is always in a state of movement

that is also why I do not arrive at my instinctive behavior.

"... The seriousness of the bear came,

To steal my composure,

Blows and feints were exchanged,

My sweat was dripping: for nothing!

Not merely that the bear

Like the best fencer of the world

Parried all my blows

But my feints (which no fencer of can match him in)

He did not even bother

Eye to eye, as though he could read my soul there

He stood, his paw raised, ready to strike

And when my blows were not meant seriously

He did not move."[15]

4. Eyebody

During my involvement with the Alexander-Technique, I learnt about the Eyebody method, a method which integrates the visual system into the usage of the body. As already mentioned at the beginning, this method was developed by Peter Grunwald. He researched the relationships between eye, brain, and body, which he described in the so-called Eyebody Patterns®.

This interested me, since all too often I observed a reaction and stiffening of the eye and neck region in my students, which stripped the idea that the body is not permeable of credibility, in that moment. We know that the visual system, as well as the auditory system[16], is responsible for balancing the body in space and time. So, I asked myself the question:

Can the visual system influence alertness and concentration in the Here and Now?

Experiences with Eyebody verify this claim:

Yes, the visual system, the manner of looking, can positively and negatively influence my sense of being in the here and now.

Peter Grunwald – Eyebody

According to Peter Grunwald, in our culture, we concentrate too much on details and clarity. "We have forgotten to also perceive surroundings and the periphery, and keep our vision open for the comprehensive picture."[17]

Research with his students and on his own body revealed a systematic correlation between eye and body.

These relationships stretch across the entire visual system. "The visual system stretches from the eyelids to the visual cortex and is an integral part of the brain."[18]

Grunwald developed his method based on the Alexander Technique, the work of Janet Goodrich and the William H. Bates method.

Frederick Matthias Alexander (1869-1955), in his work as reciter, recognized uneconomical habits in speech. He was frequently plagued with hoarseness and on the strength of his own observations he developed a method to "use the Self" which based itself on a holding-in, and letting go, of unwanted habits.[19]

Dr. William H. Bates (1860-1931) was an eye doctor in New York. He demonstrated after 30 years of private and clinical practice, that most people with prescribed glasses see better without them. Using relaxation and movement exercises he was able to reactivate the natural visual ability of the individuals.

Dr. Janet Goodrich (1942-1999) developed the Bates method further. Her focus lay in

[15] Kleist, p. 345

[16] Balancing organ in the inner ear is the labyrinth

[17] Cranz in Grunwald, p. 13

[18] Grunwald, p. 43

[19] Alexander, p. 4

the improvement of visual ability in a natural manner, nutritional therapy, and therapies associated with Wilhelm Reich.

Peter Grunwald is a trained Alexander-Technique-Practitioner. Similar to F. M. Alexander, he was impaired by deviating body functions in posture, speech, and vision.

The Alexander-Technique allowed him, through conscious usage of his psycho-physiological unit, to be free from these deviations in the present day i.e. to 'let go' his stuttering and stigmatism. He asked himself: If, by letting go of unneeded habits one gains a new awareness for posture and speech, can this awareness also have an influence on other body functions? It came to a situation, in which he deliberately spoilt his eyesight and this was his premonition about the relationship between body and seeing, and their beneficial utilization.

Through this - for me a valuable – outcome; that the work with the visual system improves and optimizes the usage of the body[20], and usage of the body influences the visual system, I saw possible answers to my questions about breath regulation.

Before I discuss the initial realizations that I had using this method, I would like to present a few fundamentals regarding our visual system.

5. The Visual System

The primary function of the visual system is the coordination of our physical, emotional, and mental condition.

This results from the fact that the visual system and the visual pathway are connected with all three brains. In the course of evolution, the oldest part of the brain formed itself from the brain stem, the thalamus, and the hypothalamus with the individual glands. We have this part of the brain in common with vertebrates. Peter Grunwald named this area "reptile brain" in his research. "Apart from the reptile brain, the brain is also divided into the limbic system and the cerebral cortex."[21]

There emerges an interrelationship between the visual system and the three brains (see figure 1 on the following page).

Apart from the visual pathway, the entire eye belongs to our visual system.

If we observe the process of sight, it is important to know, that it is not the eye which sees, but the brain. More specifically, the visual cortex. It is "not only responsible for seeing with the help of the eyes, but also for further aspects of seeing such as visual memory, visual imagination, dream images, and visual associations of all kinds."[22]

The eyes are organs which gather information for the brain, which can then be interpreted by the brain. This is comparable to all sense organs. In the first weeks, a short time after conception, the eye begins to develop in the mother's body from various layers of the growing brain tissue, and is thus a part of the brain.

For consequent practical applications it is necessary to describe the outer eye and visual system in broader strokes.

Let us begin with the outer eye, the visible part of the visual system:

To this belongs the conjunctiva, which lies on the sclera on the inner side of the eyelids, the eyelashes, and the tear-ducts.

The second layer after the conjunctiva is the cornea. Behind the cornea is the aqueous liquid. When the eye is relaxed it washes the lenses as well. It stretches up to the vitreous body. The lens is behind the iris and connected with the ciliary body (see figure 2 on the following page).

[20] in this case both body and mind are implied

[21] Grunwald, p. 61

[22] Grunwald, p. 53

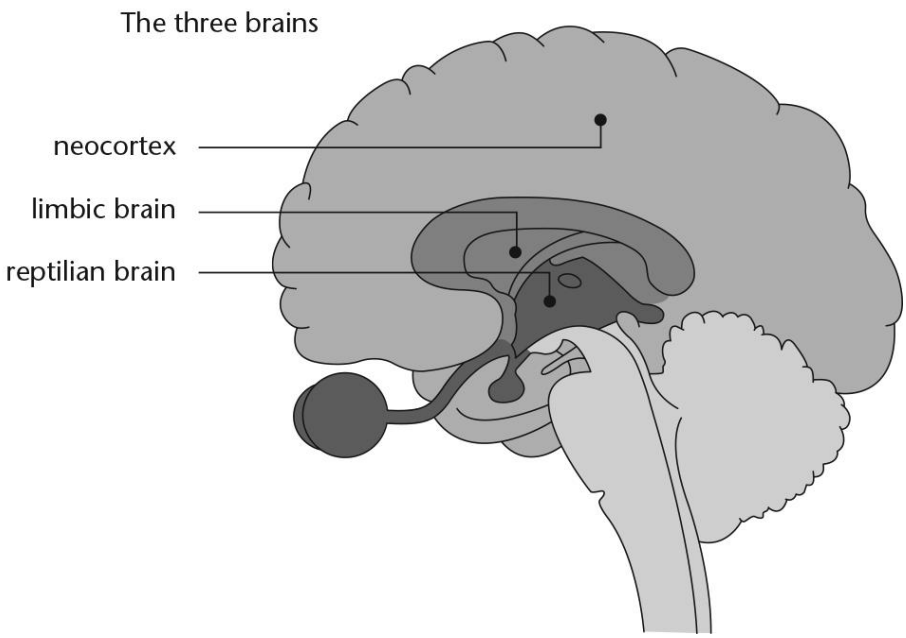

Figure 1 © Eyebody Int. Ltd.

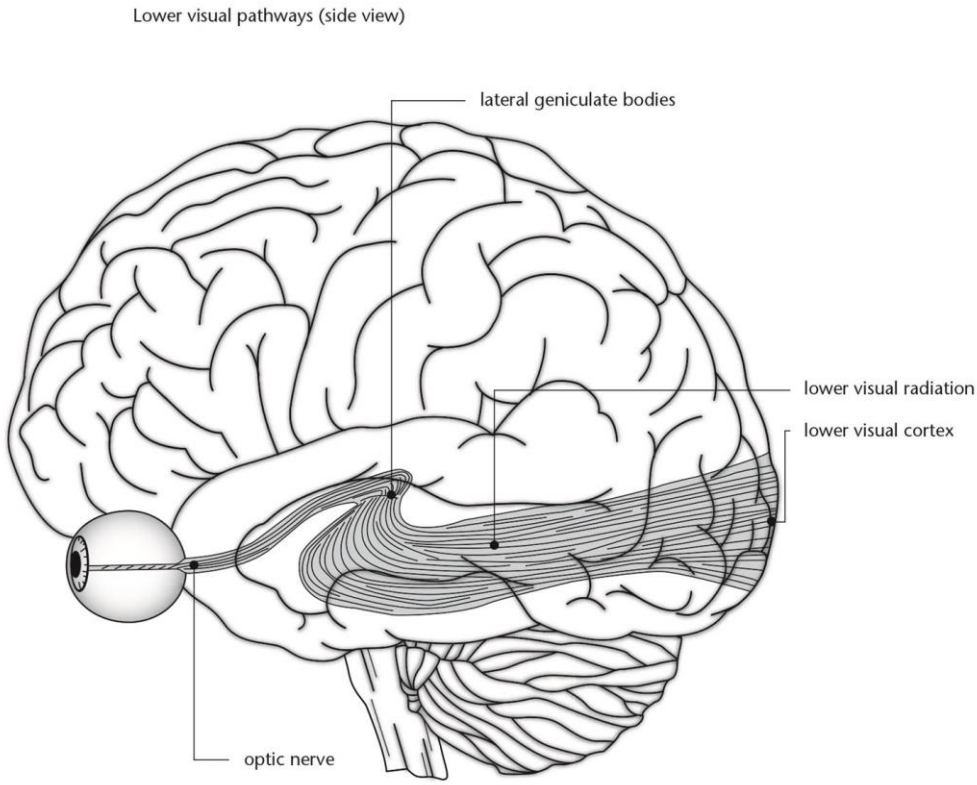

Figure 2 © Eyebody Int. Ltd

The vitreous body is a bilious, transparent liquid, which gives the eye its spherical shape from the inside. Spatially speaking, it is the largest part of the eye. The retina, with which the eye is lined on the inside, comprises of several layers.[23] It is supported by the vitreous body. “Before light falls on our retina, it streams through tissue, structures, and liquids.”[24]

The retina is a part of the brain. It separates from it quite early during development, but still stays connected to it via a bundle of cables, the optic nerve.[25] The optic nerve goes into the optic radiation and with the optic radiation in the visual cortex. The retinal layers comprise of light receptors, which are simulated by falling light and send this information onward to the brain. The light receptors comprise of 130 million rods and 7 million cones. The cones are overwhelmingly to be found in the fovea and are “responsible for a high-definition clear-seeing and the perception of colors”[26] (see figure 3 on the following page).

Information from the fovea is first forwarded to the *lateral geniculate body*. From there it arrives, through further nerve cables, at the visual cortex.

Peter Grunwald draws a distinction between the upper and lower visual cortex.

While the information from the fovea is forwarded to the lower visual cortex, in order to ensure clear vision, the remaining 95% of the information from the light receptors goes over the hypothalamus to the upper visual cortex. [27]

Strained vision reduces comprehensive usage of the complete set of light receptors on the retina, and thus impairs perception. Similarly, a shortened neck or sloppy posture can lead to over-compensation by the visual system, with too much tension.

6. My own experiences

I got my first contact with relationship patterns between eye and body in an intensive course in New Zealand.

It occurred to me, that most of the participants were taking the course to improve their communication ability, but I was there because I thought it was related to physical and visual problems. The participants had already understood, that the usage of the visual system influences physical functions and associated contact with other people.

The methodical process of Eyebody, as already mentioned, touches upon the imagination. We imagine the individual regions of the outer eye, and the visual pathway. While doing that, we try to perceive the state of the individual parts and the balance of both sides while steering mentally.

For someone on the outside this might initially seem less practicable, but it is self-evident in our professional circles, that the imagination can set images - and through that, movements - free in our body.

On one training day, we were asked to imagine moving our vitreous body towards the back in the direction of the retina, to allow the aqueous body to better wash the lenses. At the time I still knew little about the individual relationships between body, eye, and visual system. Our work with the lenses went on the whole day. In the evening I had an obvious stiffness in the diaphragm, near the costal arch.

In Peter Grunwald’s research there is a relationship between the flexibility of the diaphragm and the lenses. And at this point my decision was made to pursue this method further. The feeling of letting the vitreous body go back towards the retina, so that the aqueous body can better wash the lenses, influences the breathing process and the

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[23] Grunewald, p. 48

[24] Grunwald, p. 46

[25] Hubel, p. 45

[26] Grunwald, p. 48

[27] Grunwald, p. 57

tasks of the diaphragm. We can compare this process to allowing something to be let into the eyes. The result is a growing alertness. We can take in our onstage-partner with our eyes, in the truest sense of the phrase.

Serenity, in association with alertness, allows breath volume to increase. Concentration is often associated with a strong effort and a so-called “staring” with the eyes – this has to do with a pressure of the vitreous body on the lenses which leads to a tense and inflexible diaphragm.

We recall Kleist’s work “On the marionette theater” in which he describes that a high amount of contemplation on one’s own alertness is not beneficial.

What value do these correlations have for us in speech and voice formation?

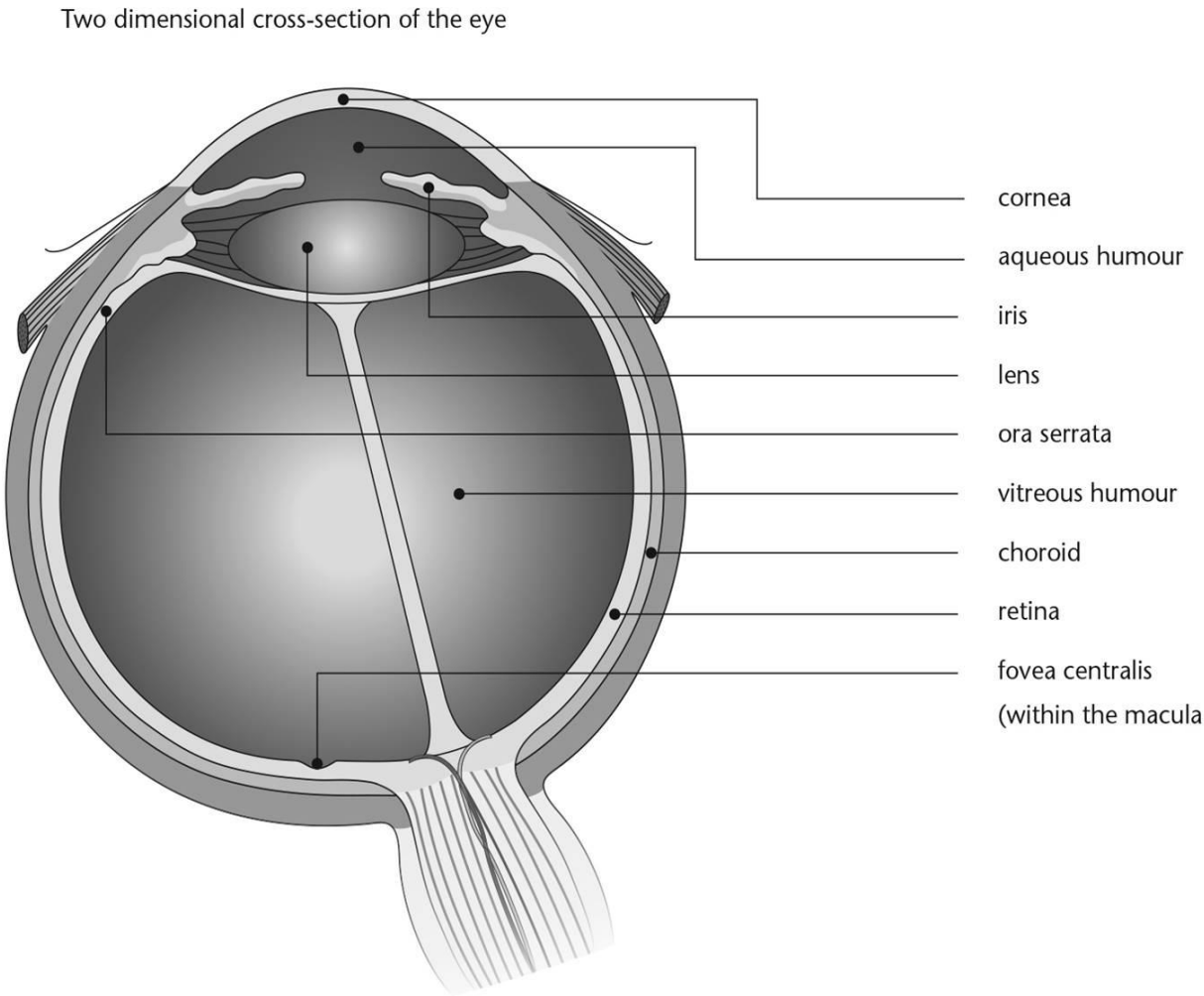

Figure 3 © Eyebody Int. Ltd.

7. Integration of Eyebody in Speech Training

Awareness 1: *Go with the Head!*

Relationship pattern:[28]

Upper visual cortex	Higher-ranked coordination
Lower visual cortex	Clear sight, focus, presence, feet

In the Alexander-Technique the contact of the head to the first cervical vertebra is essential, so that the anti-gravity reflex can be triggered. For this, the throat has to be held as free as possible so that the head can rise to the front and above. The dynamic balance of the head-throat joint can reset itself. Just this generates a new balance in the entire body.

The repeatedly arising uneconomical body postures of individuals in the lessons, prompted me to take an important fundamental from the work of Peter Grunwald:

Today, I push my students to go forward with the back of the head, rather than the feet. (see figure 4 on the following page).

This obviously triggers amazement at first, but the student realizes fairly soon, how hard they let their feet fall, thus pushing the entire skeleton downwards.

The balance point of the body does not change when doing this. When the body is held upright this point is found under the navel. The orientation of the head promotes balance.

The imagination, to go forward with the entire body, orients the entire body in the up-down axis. It becomes longer, and the functionality of the body follows its needs. It is less impaired through uneconomical habits.

In this situation, the motor activity of the forward movement feels easier.

A tense neck-part is frequently the reason for a collapsed body. It is related to a pressure on the nervus vagus (10. Cranial nerve) which serves the inner organs. The vagus nerve is the biggest nerve of the parasympathetic nervous system and belongs to the vegetative (involuntary) nervous system.

Inducing an extension of the neck through awareness of the upper visual cortex, improves the processes of the inner organs, and therefore also my concentration.

The orientation of the head above the back of the head creates a further positive effect on the superficial back line, which belongs to the myofascial pathways. The so-called sub-occipital star, the individual capitis muscles, which emerge from the occipital bone are determining factors for the entire opening of the superficial back line. Musculus rectus capitis posterior and musculous obliquus capitis also play a role with their high number of stretch receptors. They are the connection between eye movements and the coordination of the remaining back musculature.

This means, every eye movement invokes a tone change of the Mm. Occipital.[29]

Again, it is worth it to try the physiological aspect:

The sight leads, the body follows.[30]

As we know in our profession, among other things, that the body follows the thoughts, and not the other way around.

Since we work situationally in speech and voice formation, this awareness can be easily trained in a space with differing goals.

[28] Grunwald, p. 225

[29] Myers, p. 108

[30] Grunwald, p. 72

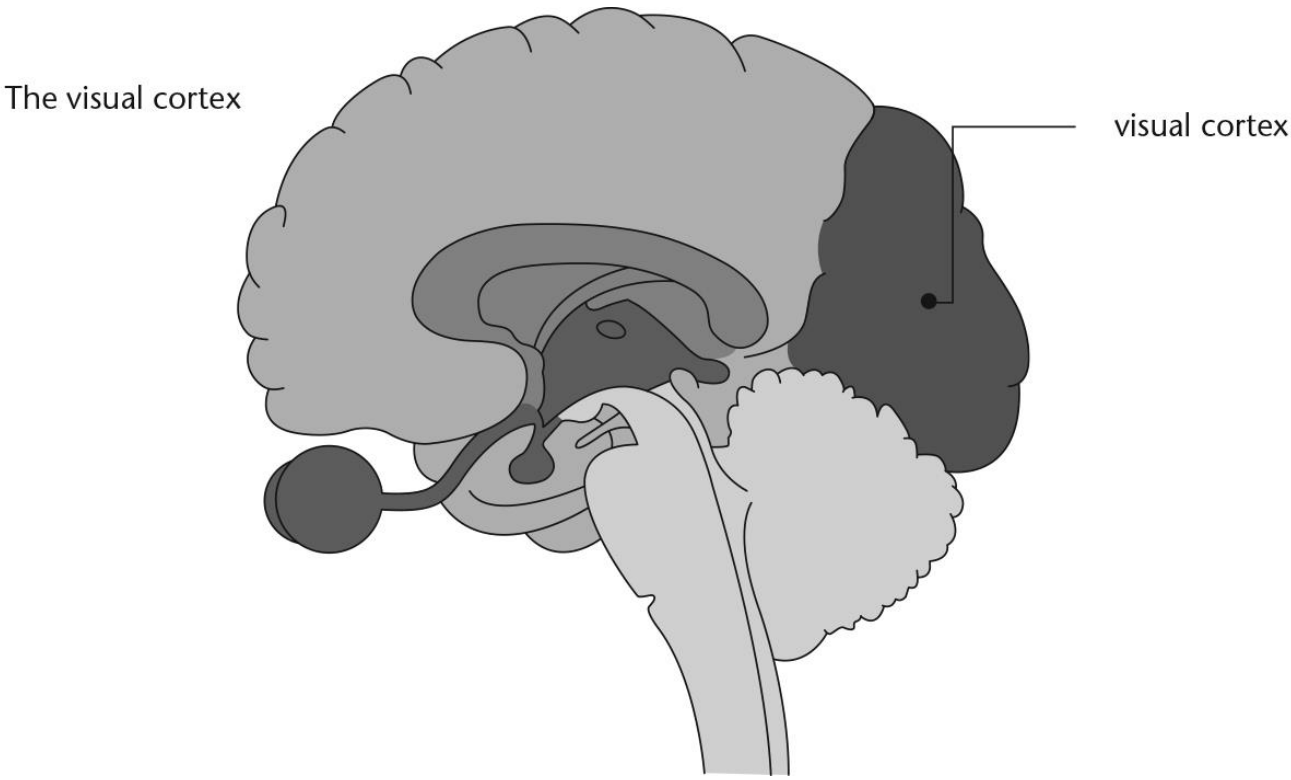

Figure 4 © Eyebody Int. Ltd.

Awareness 2: Line-Movement – Far and Near

Relationship pattern[1]

Optic disc	Hip joint
Optic nerve	Upper leg
lateral geniculate bodies	Knee
Lower visual radiation	Lower leg
Lower visual cortex	Feet

Our body is constantly in movement. Even when it appears to be at rest, there is a constant interchange of tension-building and tension-releasing, between the individual physical regions and motor activity.[2] Similarly, the visual system is best stimulated with movement and can thus coordinate body functions optimally.

A possible movement for the visual system is far-near-seeing. In Section 5, I mentioned that it is not the eyes which see, but the brain – or to be more precise, the visual cortex.

In order to promote attentiveness, we can animate the visual cortex – which Peter Grunwald distinguishes as the upper and the lower – through far-near-seeing.

We pick out a point far away, and wander with the eyes, straight down an imaginary or visible line, steadily to a point near our body. We can practice this visual movement for a while.

The result is an awareness via the extended neck, by way of the visual cortex, as well as the complete animation of my visual system.

This awareness can, among other things, promote an upright posture and an upright

[1] Grunwald, p. 225

[2] Hofer, p. 25

gait. My attentiveness and body functions are supported.

The Scottish doctor Lindsay assumes, as a result of his research, that the neck receptors have more to do with the upright posture, than the labyrinth in the auditory system.[3]

In his classical study “La psychologie de l’attention” Théobold Ribot writes, that without motor activity, perception would be impossible.[4] This means, that *movement* in the perceptive organs facilitates perception.

A further effect of the far-near-seeing is that our eyes, due to the swinging, do not fall into the “stare”. This always results in a relaxed face, a fixed jaw, a fixed tongue and a fixed body center. Prof. Russel Eppstein of Pennsylvania University found out, that watching scenes makes the visual system more active, than looking at individual objects. The visual system performs weakly in this case. The lowest activity occurs when faces are being looked at.[5]

Prof. Bates already presented in his book “Better eyesight without glasses” the necessity of eyes to move, to swing and change, in order to optimally transform information.

Russel confirmed this 100 years later in his study.

Awareness 3: Panoramic Seeing

Relationship pattern[6]

Retina	Pelvis, pelvic floor, lower back, stomach wall up to the lungs

Seeing means, forgetting the names of the things that we see.[7]

An overfocus, the so-called “staring” can bring a blocked breath with it. This happens in daily life, in public appearances, or on the stage. Auditions or casting calls are examples of how “being in the moment” can get lost, with this and the committee.

With the help of peripheral vision I can actively stimulate the retina. To this end I begin to use the peripheral area of the eye. Grunwald names this “panoramic seeing”.[8]

To begin, I stretch both arms out, left and right, as though extending my shoulders - then try to include the left and right hands in my view while looking straight ahead. In a very short time we do not require the hands any more, as the right and left fields of view become natural to integrate. With the help of panoramic seeing the retina relaxes. “The pelvis changes itself, simultaneously with the lower back. Both body regions become freer.”[9]

In my training I can, keeping in mind panoramic seeing, observe the incoming breath. The jaw and tongue are audibly lighter and are available for expression. The tongue, and especially the tongue root, is often in too high tension and this is one way to regulate breath non-physiologically.[10]

With panoramic seeing, students come into a state of attentiveness, which is revealed in their text work, the structure and logical associations. Similarly unnatural breathing modes, are unconsciously avoided. The facial expression changes itself and appears more open and less forcibly concentrated. I connect these results with the alertness of the individual, which reveals itself in the moment.

The knowledge of the relationship pattern between eyes, visual system, and body shows further paths to train and optimize impromptu speaking.

[3] Stevens, p. 89

[4] Huxley, p. 42

[5] Sternberg, p. 31

[6] Grunwald, p. 225

[7] Valery, p. 240

[8] Grunwald, p. 80

[9] Grunwald, p. 80

[10] McCallion, p. 82

In her essays from “Living, Thinking, Seeing” Siri Hustvedt writes:

“Looking and not seeing[11], is an old problem. Mostly indicates a lacking comprehension, an inability to intuitively recognize the meaning of something in our environment.”[12]

Awareness 4: The Lens

Relationship pattern:[13]

Conjunctiva	Throat
Aqueous Body	Lymph system
Lens	Diaphragm
Cornea	Shoulder

The following awareness direction can be expressed in many ways. In New Zealand we spoke of it as: *Let the light waves come in.*

From a technical standpoint this means, allowing the subtle movement of the vitreous body toward the back i.e. away from the lens.

That this process is given to all of us in a simple manner, is described by Shakespeare in a sonnet:

Mine eye hath play’d the painter and hath stell’d

Thy beauty’s form in table of my heart;

My body is the frame wherein ’tis held,

And perspective it is best painter’s art.[14]

We return at this point, to the process which revealed the relationship pattern between lens and diaphragm. As already mentioned in the other three awareness-directions, this also promotes attentiveness - and thus alertness - in the moment.

Experimental psychologists from the circles of Théodule Ribot realized a relatively constant relationship between the degree of attentiveness and the frequency and depth of breathing.[15]

Our concentration on something, be it a single person or a situation, should not emerge arbitrarily, but should be the consequence of a need.

The writer and philosopher Aldous Huxley name willful concentration a *cultivated mutation.*[16]

As mentioned several times, most of the Eyebody exercises are practiced with the power of imagination. Although I referred to this - in relation to Peter Grunwald - with closed eyelids, it is just as possible with open eyelids.

Here, the natural process of blinking is advisable, in order to keep the eyes moist through the eyelids.

We imagine the vitreous body moving further back in the direction of the retina. In this way, the distance between lens and vitreous body grows and the aqueous body can wash the lens better. Simultaneously I can also imagine the situation, the partner, or the light entering the eyes.

It creates a free feeling in the middle of my body and thus a freer diaphragm movement. My students have confirmed in this regard, that their intents and thoughts became more concrete. Some confirmed, yet again, a loosening of the jaw musculature.

For me this appears logical, that the letting in of the environment allows a stronger blending-in of the “I” with the environment

[11] To clear possible misunderstandings relating to the term „seeing“, it is implied with the sense of „recognizing“ or „understanding“. This does not contradict Hustvedt’s conclusion, as her context has a similar view and only uses looking and seeing differently

[12] Hustvedt, p. 293

[13] Grunwald, p. 225

[14] Shakespeare, Sonett 24

[15] Huxley, p. 59

[16] Huxley, p. 42

or the situation. I rediscover a natural attentiveness, which I have always possessed.

Too often we claim to appropriately - and adequately - react to a situation and perhaps fail to notice many of our intuitions.

This active process naturally doesn't stay active, because loosening tension in the eyes could become a habitual need. Over time we develop a sensitivity about unneeded tensions in our eyes and visual system.

End

The purpose of this article is not to write about me, but every trainer integrates methods after first seeing the value with their own experiences.

I can confirm, that ever since I have been employing the Peter Grunwald method, I understand my ability to communicate in daily life and in training. Parallel to that, I haven't needed to use my prescription eyeglasses, prescribed four years ago with a strength of 3.0 diopters, for the past two years. My sight has improved and I need to use my pinhole spectacles only in certain situations, which have been further developed by Peter Grunwald in his pinhole size, and promote presence for the brain.

This pays homage to his work.

About

Steffi Hofer is a graduate in speech sciences and clinical sciences. She is currently working as a professor in the Department of Drama and Musical Theater at MUK (Music and Arts Private University of the City of Vienna) and is a research associate at the Institute for Science and Research of MUK on the subject of contact and space.

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