A Six-Step-Schema

By Willi Harder

A rational analysis of structure, based on the theories developed in the *Notes on Structural Integration*

Introduction

The following was presented at the Annual Meeting 1991 in Boulder, Colorado.

Within Rolfing there is an abundance of ideas which nobody has systematically developed. The intention of this contribution is to show an example of such an undertaking. Here for the particular problem of describing the shape or the structure, which of course are not the same, of a body.

Definition of Structure

There are many possible ways to look at a human being. We can perceive it in its whole "beingness" or, as it is usually the case with people who have made a profession out of dealing with people, we can take a particular point of view as an approach to the whole.

Our approach is of course the structure, just as it is the nervous system for the neurologist, the bones for the osteopath, the social setting for the social-worker and so forth.

Structure can be defined as the "spatial relationship of the parts of the body". The expression "parts" should not be confined to conventional parts like forearm, pelvis, or to individual muscles and bones, nor just to segments. For the following the term will be left open to any meaningful definition in the context of structure.

Ida Rolf has introduced the relevance of forces determining the "spatial relationships of the parts of the body". Three forces can be distinguished which act on a body at all times:

1. The gravity induced weight of the parts of the body.
2. The passive tension in the Fascial Net (FN).
3. The active tension of the Tonus Pattern (TP) of the muscles.

Gravity is always there and acts with complete impartiality as to the causes of structural deviations. The FN, meaning the whole of all membranes which are made up mostly of collagen fibers and which possess mechanical relevance, can be defined as the structural element because it remains constant at least over a short period of time. The third factor, the TP, is always tensing muscles and thereby distorting and altering constantly the visible appearance of a hypothetical "pure structure". This leaves us with the consequence that we can't just look at a body and see structure. Structure can never be seen directly but must be deduced from a larger whole which includes the functional element.

Going back to the definition of structure as "the spatial relationship of the parts of the body" and our claim to be integrating it brings us to the following questions we have to answer:

1. What in detail are our general premises?
2. How do we describe the spatial relationships?
3. How do we identify the structural part of the above?
4. What are the structural consequences of a random arrangement of the parts?
5. How do we go about integrating the parts?

Here I will confine myself to the attempt of shedding some light on the second question, of how to describe the spatial relationship of the parts. Always under the assumption that I have already solved the third question, how do we distinguish between structure and function, and that I talk about pure structure. For this so called "functional problem" a theory and a set of testing methods have already been developed in the *Notes on Structural Integration.*

Spatial Relationships: A Six-Step-Schema for the Analysis of Structure

The appropriate grid to describe anything in space is given by geometry. Relationships can be described by the three axes of dimension and the three incidental axes of rotation. Superimposition of these six elements brings us back to the actual appearance. The schema was developed by Hans Flury and starts with:

1. General
   A. subjective impressions (What a high pitched voice; wow, what an attractive man)
   B. objective impressions (Is there a certain style, e.g. the style of a ballet dancer; how is the tissue, relation of surface to depth, core-sleeve, etc.)

2. Front/Back

With this point we start the description of spatial relationships. Of the six elements of space we are dealing here with the shift in the sagittal plane and the rotation, or tilt, around the transverse axis.

For anatomical reasons the sagittal plane and the transverse axis allow the most possibilities for deviations. These deviations and the relative position of the pelvic segment are the heuristic starting point for the classification of four basic structural types.

Imagine a banana with a pelvis:

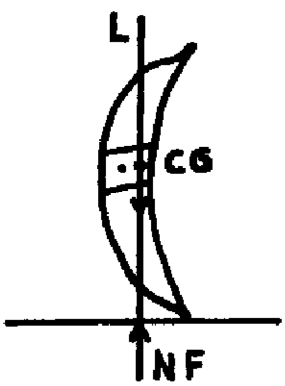

Figure 1

The center of gravity (CG) where the weight, and the point where the supporting Normal Force (NF) act are but definition exactly on a vertical line, defined by the field of gravity. This is called the Line of the body, or here of the banana. Structurally the center of the pelvic segment can now be either anterior or posterior to the Line. This is called anterior or posterior shift.

Looking at the deviations around the transverse axis we have again two possibilities for the segmental tilt around the CG of the pelvic segment:

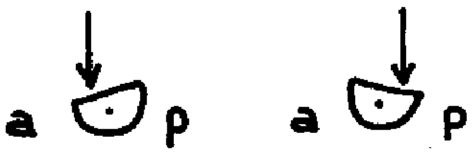

Figure 2

With the weight from above bearing down in front of the CG of the pelvis we get an anterior tilt, coming down in back of it results in a posterior tilt. These are all the possible structural variables for the pelvic segment in the sagittal plane and around the transverse axis.

These four variables then lead to four Structural Types:

Shift

Tilt	Anterior	Posterior
Anterior	Locked Knee Internal	Regular Internal
Posterior	Regular External	Symmetrical External

The identification of structural shift and tilt then allow a consistent description of the adaptions down - and upwards. They are described and analyzed in detail in the *Notes on Structural Integration*.

3. Left/Right

Here we describe deviations in the next two elements of space, the shift in the frontal plane (side-shift) and the rotation (side-tilt) around the sagittal axis.

Again the status of the pelvic segment is taken as the starting point. Taking the Line, passing through the CG of the whole body, as the gravity defined reference, a deviation in the frontal plane to the right is called a right side-shift, to the left a left side-shift. The verticality of the Line also sharply defines horizontal. This reference then allows us to define the rotations around the sagittal axis as either a left side-tilt or a right side-tilt. Left and right indicating where gravity is pushing down the pelvic segment.

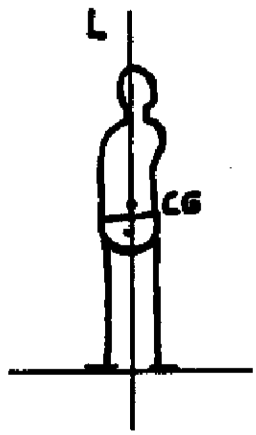

Figure 3

The main factor influencing the position of the pelvic segment is the difference in leg-length. A left-longer leg usually induces a right side-shift and right side-tilt. The standard adaption of the upper body is then a side-shift and a side-tilt to the left.

4. Standard Rotations

The third axis of rotation is the vertical axis. Rotations around the other two axes, the transverse and the sagittal, are usually called tilt. It would not make sense to call the rotations around the vertical tilt as well. This already indicates that these rotations are fundamentally different from the others. They are deviations out of gravity. It doesn't make any difference economically - or balancewise when e.g. the upper body is turned a little to the left or to the right leaving the CG where it is. But the structural rotations do have an influence regarding the economy of function. Segmental rotations take their related axes of movement out of alignment and impede optimal function. A rotated pelvic-segment will take the hip-axis along, preventing the legs from moving easily along a sagittal plane.

The block-model is used to describe the structural rotations around the vertical axis. First two definitions:

1. Clockwise rotations, looking from above, are denoted negative, counter-clockwise rotations are denoted positive. This is a general convention.
2. Direction of rotation is always meant in relation to the adjoining blocks. Different from vertical and horizontal, which are defined exactly by the field of gravity, the frontal plane has no such distinct frame of reference to help us identify the direction of possible deviations around the vertical axis.

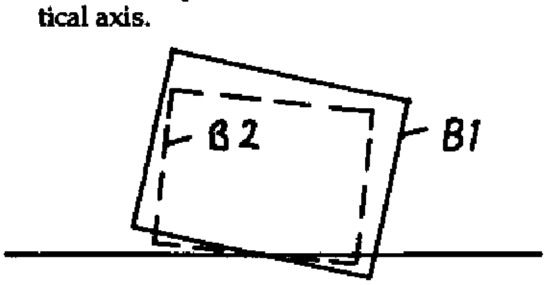

Figure 4

Our subjective perception of the frontal plane

If we define the block B1 to be rotated negatively we then take the block B2 to be rotated positively, relative to B1 that is; even though B2 is rotated negatively regarding our subjective perception of the frontal plane.

Using these criteria one will discover an amazing structural pattern which is standard for all structural types:

Rotation +/-	
-	Lower Leg
+	Thigh
-	Pelvis
+	Upper Thorax and Shouldergirdle
-	Head

There are further refinements to this list which are also standard. One point should be mentioned here. The pelvic segment is a bit tricky. The segmental rotation is overlaid by the intrasegmental standard torsion of the bony pelvis. The standard torsion of this part is right anterior and left posterior, relative to each other. This brings, intersegmentally, the right ASIS, besides lateral and down, forward in a way that the whole segment might appear rotated positively. With a right longer leg, the right ASIS as a reference point can be segmentally higher than the left. But if we keep the six defining elements of space apart and don't confuse intersegmental deviations, we will have no difficulties to detect the described standard pattern.

5. Structural Dynamics

Now there remains one last element of three dimensional space to be investigated; deviations along the vertical axis. Again, this is fundamentally different from shift-considerations in the sagittal or the transverse direction. The vertical axis takes us along the line of action of Gravity and Normal Force. Here, however, we are in the very midst of our field. Looking at structure in terms of gravity-induced weight we can ask how various substructures react to the weight coming from vertically above. Do they give up and collapse or do they fight and overcompensate.

Take as an example the feet, being at the lower end they have to bear the whole weight. With the weight always coming from the same direction one would expect that over time everyone will become flat-footed. But that is not what we see in reality. Some people have high and rigid arches. The foot, or its constituent parts seem to have a choice. The deviation from the ideal "Norm-foot" in this case is then either down, called a "collapse", or up, called an "overcompensation". It is not useful to talk about shifts along the vertical axis, it is more about the dynamical arrangement of distinct parts with gravity. Analogue considerations can be applied to the ankles, knees, bony pelvis, hips, lumbar segment, and so forth.

6. Plans of the Session

Of course this is now simple. We have analyzed all possible deviations from normal in all possible ways and can start to bring everything towards normal.

Conclusion

Out of the five questions formulated at the beginning we now have dealt with one. Leaving aside the question of the premises we are left with three:

1. It is not clear yet how to distinguish between the structural and the functional element. It is e.g. easy to position the pelvis functionally a bit in front or in back. How do we determine its structural position?
2. Once we overcome the problem of structure vs. function, the structural consequences have to be identified and analyzed.
3. Having progressed that far we can start finding out what we can do about it all with Rolfing. □

An expanded version of this paper is planned to be published in the Notes on Structural Integration, *1992.*