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Introduction to Structural Integration

Summary: Sometimes people interested in the field of structural integration like to be informed about the conceptual background of the field. This is done the easiest way by lining up the most important and relevant questions pertaining to the field. Definitions of the basic concepts are necessary. They allow to formulate pertinent questions and possibly find sensible answers.

1. How do Rolfing and Structural Integration relate?

If Rolfing is what Rolfers do and communicate what they do, it has accumulated a wide variety of procedures and goals on many levels over the years. The term "Structural Integration" points in the opposite direction as it calls for more clarity and definition of what it actually means and what it does not mean. "Structural Integration" as it is practiced today by the members of the SGSI has been mainly developed during the past twenty years by Hans Flury in the "Notes on Structural Integration" published and financed solely by him.

In 1992 I presented photographs before and after a ten-series of randomly selected 73 of my clients to Hans Flury[1]. At that time I faithfully followed "the recipe" as taught to us by Peter Melchior in our practitioner class. Peter Melchior has been trained and selected to be a teacher by Ida Rolf herself. So it can be assumed that my work was in accordance with true orthodoxy of Rolfing. Applying the criteria of Structural Integration defined in this introduction Hans Flury found no structural improvement in 18% of the pictures, in 63% some improvement, in 19% good improvement. The clients who returned a questionnaire reported lasting improvement of physical

symptoms in 37% of the cases, 46% reported psychological benefits. No correlation between structural improvement and reported improvement of physical or psychological symptoms could be established.

Apparently, sensitive bodywork without noticeably raising the degree of structural integrity can have beneficial physical or psychological effects. This should not be surprising as there exist a multitude of bodywork modalities which produce good, sometimes excellent results without integrating the body structurally. But also the opposite is true: In cases where we can assess a remarkable degree of structural integration for good reasons, ailments, dysfunction, or personality are hardly affected sometimes.

The decision whether we have successfully integrated structure or not cannot be delegated to the presence, or the lack of it, of therapeutic or personality improvement. This leaves us with the tautological statement that we can prove Structural Integration only by showing that we have integrated structure. This directs attention to clarifying the terminology by which we describe what we mean by Structural Integration.

2. What is structure?

If we go from Ida Rolf's statement that Structural Integration "is a physical method for producing better human functioning…" it is obvious that the goal of better human functioning is shared with many, sometimes very old methods[2]. (It is granted that she meant "functioning" on many levels, from biochemical to movement to emotional to personality and perhaps spiritual.) The absolute novelty – which can be called a paradigm change – is the introduction of the structural level. Since the body is more than the structure of the body it becomes necessary to clearly understand what is structural and what is not structural about the body. This is a condition for understanding better how structure interacts with other levels of the body and the person. Structure is determined mainly by the fascial network, the "organ of form".

Fasciae function mainly as containers. The usually semiliquid content is under pressure which is checked by passive tension in the fascial walls. The functional element, islands of contractile cells or cell groups embedded in the fascial network, continuously adds active tension to this in intricate ways.

3. What is integration?

"Integration" generally means bringing parts together into a whole. How the parts should relate to form the whole of "normal structure" is dictated by the field of gravity. This is Ida Rolf's second fundamental innovation.

It must be noted that the structural view is at a severe disadvantage compared to the anatomical view of the body. Macroscopic anatomy uses organs which can be well defined, and which are then put together to form organ systems and eventually the organism. Structurally, if parts are defined exactly, they are highly abstract "parts" as the blocks in the block model. Or they are somewhat diffuse, not defined exactly, as when one looks at the relationship of foot to lower leg. And if one starts with the fascial network it is not to be seen how parts can be defined sensibly. This is illustrated by Ida Rolf's most reductionist model as "an elastic sack" in which "our blocks as well as our man are enclosed".

Integration consists of bringing a "patterned order" to the fascial network, changing it as a whole in the direction of "normal structure".

4. What is a structurally integrated body in the field of gravity?

Practically speaking, gravity is the force exerted by the planet's mass which accelerates all matter toward its center until it meets resistance. This resistance comes from firm ground on which one stands and moves. It can be called normal force (in physics ground reaction force). The "normal" is an old name for a line which is perpendicular to another line or a plane. Normal force acts upward on the feet at a right angle to the ground which means it is vertical only if the ground surface is exactly horizontal. Its point of action at the soles of the feet can be called the point of support (in physics center of pressure) because it actually supports the body against the gravitational force.

In the block model, each block or segment has its own center of gravity and its point of support. In the normal or ideal arrangement, all the segmental centers of gravity and all the segmental points of support are on the same vertical line. Structure is normal with this arrangement when we have "a strain-free system" in the "elastic sack" as Ida Rolf puts it. Energy expenditure for maintaining upright stance then approaches zero.

If the segmental centers of gravity or the segmental points of support or both are not in line, normal force does not neutralize gravity completely. Rotational and shearing net forces appear which must be neutralized by active tension coming from muscles. When such displacements become permanent fascia adapts by shortening and rigidifying to help saving upright stance. Structure is not normal anymore.

In reality, a perfect arrangement and an absolutely strain-free system are not possible. Normal structure is an ideal. Structural Integration in this gross approach means bringing the structure of the body closer to normal, not reaching it.

5. How do we integrate structure?

If one of the blocks in the block model is displaced the elastic sack on the convex side is strained. Passive tension is higher there. This helps to keep the block from being displaced further. Active tension from muscles is necessary in addition. With the displacement becoming permanent fascia, which is a little longer than it would be in the normal arrangement, adapts by thickening and rigidifying. This is called secondary shortness since the contractile tissue keeps it shorter than it otherwise would be and has a function in maintaining the structural state as it is.

On the opposite concave side, the elastic sack is slack and a little shorter. It also shortens and thickens and can be said to be in primary shortness. If the blocks are to be in the normal arrangement it presents a resistance which must be overcome by muscular effort on the opposite side. Lengthening primary shortness reduces the effort necessary and therefore serves the purpose of structural integration.

Tension and pain are more often obvious in secondary shortness. When the focus of treatment is there this cannot be expected to lead to integration in the long run. The basic procedure can be said to consist of bringing parts or areas of the fascial network somewhat closer to the normal arrangement and looking for what restricts this. This is usually fascia in primary shortness on the concave side, and work is needed there. This allows the whole structure to grow longer and transport the lift from the ground up through the whole body.

6. What are typical aberrations?

There are different perspectives from which one can assess in which direction a body's structure deviates from normal. In the segmental view, the pelvic segment plays a key role as the connecting segment of trunk and legs. The pelvis should be in line, and there should be no tilt. The direction of deviation indicates a predilection on how the body above and below deviates from normal although there exists a wide range of variations[3].

In the front/back dimension, the pelvic segment can be taken as the starting point because Ida Rolf emphasized that the pelvis should be horizontal. It never is exactly horizontal but the tilt is in either one or the other of two entirely different directions. With an anterior tilt (internal type), the weight of the trunk comes down more in the front of the leg and in front of the hip-axis, increasing the tilt. This leads to partly foreseeable and typical aberrations in the body below and above as Jan Sultan has pointed out[4]. One example is internal rotation of the legs. While some of these consequential aberrations can be seen as an effect of the anterior tilt, others must be understood as compensations, minimizing the effect of the anterior tilt disturbance.

With a posterior pelvic tilt (external type), effects and adaptive compensations will be very different, of course.

With the pelvic segment as the starting point, we always find that it is also shifted forward or back. With the structural anterior shift, the body is bent forward from knees up to about the costal arch. With a posterior pelvic shift, the body is bent backward. In either case, there are very different adaptations and compensations. This leads to a diagram of four types:

	Tension dominated balance	Compression dominated balance
	Posterior pelvic shift	Anterior pelvic shift
Anterior pelvic tilt	Regular internal (largely held by passive and active tension)	Locked-knee internal (largely held by compression)
Posterior pelvic tilt	Symmetrical external (largely held by passive and active tension)	Regular external (largely held by compression)

In the left/right dimension, the pelvis will shift and tilt toward the side of the shorter leg. In the body above there will be a counter curve as it has to curve back somewhat over the longer leg to maintain balance. In the upper trunk or the neck the midline will usually curve to the other side again to get the head horizontal.

A rotation of the pelvic segment around the long axis of the body will cause necessary counter rotations above and below. Examination has shown that there exists a standard rotation which is the same for everyone. The pelvis, and the head and the lower legs, are always rotated clockwise. The thorax, the thighs, and the feet are rotated counter-clockwise.

Since the segments of the body are somewhat compressible, the perspective of structural dynamics becomes interesting. Abstractly speaking, a segment can be too high or too low on the segment below. In the first case, the segmental transition is “constricted”, too narrow and too tight. In the second case, in structural “collapse”, it is too wide and slack.

7. How do we determine types?

Sometimes the structural type is very obvious, but often it is not easy to see.

One way to decide the question is in standing. The difficulty here is the fact that in standing everybody's pelvis is shifted forward regardless of whether structurally the shift is anterior or posterior. In order to have a somewhat vertical arrangement of the body, the pelvis must go back to some degree, the upper body must come forward. Generally people don't feel that they are standing straight in this more vertical arrangement. A mirror can be helpful.

The person is then asked to slowly tilt the pelvis forward and back a few times. Hands may be needed to instruct this movement, they also help to avoid the usual shifting forward and back of the pelvis. The rest of the body, especially the upper trunk, should be disturbed as little as possible. Pelvic rotation in the direction of the structural tilt will be easier and smoother than in the opposite direction. It will go farther and disturb the whole body less. The movement can be said to go with the structure. When it goes in the opposite direction, against the bias set by structure, it meets resistance earlier, needing effort to overcome it. The body as a whole will have to adapt more.

With experience, the structural state of the pelvis can be diagnosed reliably in habitual walking. The decisive moment is when the weight of the trunk comes down on the front leg. This leg resists the impulse of the weight of the trunk coming down on it, and – depending on the structural type - the pelvis will slightly tilt forward or back and be pushed forward or back on the leg. Because of pelvic standard torsion, anterior tilt and shift are more visible on the right side, posterior tilt and shift on the left side.

8. What is the relationship of Structural Integration to treating symptoms?

The unspoken assumption, but often also the explicit opinion of clients and many therapists is that the area in distress and pain is weak or somehow damaged and therefore unable to function normally. Opposed to this, the understanding in the context of Structural Integration assumes that this area is on overload and required to perform functions it is not designed for.

In cases of lower back pain it is sometimes very obvious that the hips are so restricted that it is not possible for them to do what they are supposed to do. This may result in the lower back being twisted and sidebent with every step, something for which it is neither equipped nor designed for. The impression is then that the hip (function) is in the lumbar area.

Another example of an undue load on the lower back are persons with a strongly anteriorly shifted pelvis. Their body is bent in a forward convexity. With every step they take the body is compressed between gravity and normal force. This compression is at its maximum on the concave side of the body, in the lower back and in the pelvic area around the sacrum.

Another frequent complaint is tension in the upper back and the neck. It often shows that head and neck are not supported from below, especially when the head is clearly forward. Increased tension in the muscles which go from the upper back to neck and head is then necessary. Over time, fascia in which these muscles are embedded thickens, tightens and hardens.

In short, areas in distress are often not weak or playing evil tricks to make life hard but are actually doing everything to keep the body functional.

9. What about touch in Structural Integration?

Touch which integrates structure is very different from touch following other intentions. Both hands “land” softly on the body, preferably on opposite sides, establishing contact with a sense of holding the body in one’s hands. If both hands are on the upper side, the table plays the role of the “third hand”[5].

The hands slowly sink into the body, looking for a way the client’s body lets them in. The desired layer is reached not by pushing, i.e. muscle force, but by the Rolfer using the weight of his body. With one or both hands underneath, the weight of the client’s body is used to let the hands sink into the mattress more. Extending hands and fingers slightly allows them to go deeper. Attention is to the reaction, the hands being pressed into the mattress more.

Forearm, hand, or fingers travel slowly through the tissue with the other hand holding the body open and long. Often it is preferable to not move with the “working hand” but keep it still, while the other alone or by performing passive motions with the client’s body makes the tissue stream around the “working hand”. It’s frequently advantageous that the two hands – aided at times by the table as a “third hand” - produce a shearing tensional force through the body. Generally, one is not on the body, and there is not so much a sense of working in the body but through it.

It is sometimes helpful to imagine the hands being soft paws, the preparatory movement originating in the Rolfer’s body and being transmitted through shoulders and arms. Hands and fingers do not do anything by themselves but appear as extensions of the Rolfer’s body, specifying and fine-tuning the movement initiated there. There are some indications that sensing is not so much by surface tactility but by deeper proprioceptive afferences.

Rolfing touch is extremely directive, or “vectorized”, which necessitates an acute awareness of which direction exactly changes the body in the direction of

integration. This means that besides what is happening more locally the whole body and slight changes in its configuration must always be observed. Generally put, a Rolfing move more induces a structural change in the direction of integration of the whole then doing something locally specific.

10. What about the function of a normal structure?

If the goal of Structural Integration is “better human functioning”, the term “better” must be defined. On the physical level, and relying on concepts important to Ida Rolf, the following ideas come to mind: better balance, length, optimal support. All three are hard to objectify or even quantify. Fortunately, a fourth idea is more promising: the idea that function should be economical. With the structural model in mind – the structural body plus the pattern of active tension – an answer can be found to the question of which form of a given movement or posture is the most economical one.

The question is quantitative in nature. If one focuses on how a movement is initiated a qualitative decision becomes possible. In a stationary body all the forces acting on and in the body cancel each other out exactly. If this balanced system of forces is disturbed a net force appears which produces movement. This can happen in two very different ways. Usually, active tension rises by contracting some muscles; more energy is spent compared to before. In Normal Function, the most economical form of movement, active tension is reduced by relaxing appropriate muscles; energy is saved compared to the initial state. Active tension from contracting muscles then only reinforces a movement initiated passively when necessary or desired.

In a moving body, changes of speed or direction happen permanently. The exact formulation of the general condition is: Any change of velocity (speed or direction or both) of the body or a part of it, however defined, is initially

effected by a net force produced by selectively reducing active tension. The net forces acting as prime movers are usually gravity or passive fascial tension or both. Maximum economy of the whole movement derives from the fact that tissue resistance against the movement is minimized.

For moving the body four special conditions must be met whenever possible.

1. The center of gravity is in front of the ideal point of support.

In a person standing, the point of support (center of pressure) is on the Line, the vertical line through the center of gravity. An ideal point can be postulated where energy expenditure is at a minimum. Standing too much forward or back requires more energy. Comparison shows that standing in front of the ideal point is more economical than standing behind it. The weight of the body should be more or less on top of the medial arch from where it is redirected equally to the back pillar (the heel) and to the front pillar (the head of the first metatarsal). Usually the weight is on the heels, and especially in walking this produces a considerable resistance and as a consequence a loss of energy (heel strike).

2. The hip axis is posterior to the Line.

In the ideal arrangement, the hip axis is on the Line. With the hip axis in front of it or behind it the patterns of passive and active tension are completely different. Comparison shows that economy as well as balance and support are clearly better with the hip axis behind the Line.

3. The normal zig-zag line.

The body standing or moving functions best if the hip axis and the ankle axis are posterior, the knee axis and the shoulder axis anterior to the Line.

4. Acmot (anterior convex midline of the trunk).

Ideally, the midline (line of gravity) of the trunk is straight. Comparison shows that economy as well as length and support are better if the midline is slightly bent forward rather than back.

For those who want to study the concepts of Structural Integration in greater detail and depth – especially how the concepts developed – reading the “Notes on Structural Integration” (edited by Hans Flury) is recommended. They can be ordered through “info@sgsi.ch”. For further information check: www.sgsi.ch > Notes on SI > The 7 early issues.

Lit:

1 Wagner Wolf: “The Results of Rolfing and their Relation to Structural Integration”, Notes on SI 92/93

2 Rolf Ida: “Rolfing. The Integration of Human Structures”, Harper & Row, New York, c1977

3 Flury Hans: “Theoretical Aspects and Implications of the Internal/External System”, Notes on SI 89, “The Longer and the Shorter Leg”, Notes on SI 90, “Segmental Standard Rotation”, Notes on SI 91

4 Sultan Jan: “Towards a Structural Logic”, Notes on SI 86

5 Harder Willi: “Seven Elements of Touch”, Notes on SI 92/93