

SPECIFIC ADJUSTING TECHNIQUE

by Gerald Lamb

INTRODUCTION

The concept of Specific Adjusting Technique started as an accident of fate. The story goes that one day back in the 1950's Parnall Bradbury found himself to be the only practitioner on duty during a flu epidemic. The clinic was for people of limited means and despite the epidemic there were still almost forty patients to be seen. There was of course only time to find a key lesion and make a single adjustment per person but the clinical results were astounding, especially in those patients who had been adjusted in the atypical areas of the spine; the upper cervicals and the pelvis. This moment of chance experiment with the application of technique enabled Parnall Bradbury to establish a practice of osteopathic principles that exemplified the very best in Still's dictum to 'Find it, fix it, and leave it alone'. Within the model of minimal treatment 'Specific Adjusting Technique' had been born.

Parnall Bradbury had trained at the BSO at the end of the Littlejohn era and went on to do a postgraduate study of Chiropractic during which he was fascinated by the Palmer school of 'hole-in one' adjusting of the upper cervicals. He developed a system of diagnosis which he called 'spinology' which he felt embodied Still's principles and enabled the selection of the 'key segmental lesion' to be made. He developed the concept of 'positional lesions' which are traumatically induced mobility restrictions affecting primarily the atypical areas of the spine which when addressed with precision exactly reverses the force vectors held in the lesion and produces a resolution not achieved by ordinary facet gapping manoeuvres.

The attention to detail and the precision of the adjustments enabled Bradbury to observe remarkable changes in the body mechanics of his patients and in the resolution of their pain patterns. He began a research project with Dr Dudley Tee to try to find indicators in blood chemistry that would show up when positional lesions were adjusted with specific intention but not when ordinary mobilisations were performed. Much to everyone's delight there was clear evidence of rises in blood sugar levels when the upper cervicals were adjusted with a specific positional intention. The inference drawn was that levels of adrenaline rise in such instances and that the prolonged presence of adrenaline in the blood is responsible for a more profound healing effect. Bradbury published these findings and discussed the healing response in his book 'Mechanics of Healing' in 1967. He would have gone on to further experiment with adjustments in the lumbar spine and sacrum but ill health and an untimely death prevented the research from going further.

During this time Tom Dummer was associated with Parnall Bradbury and he is responsible for the teaching and development of SAT through the years until his death in May 1998. Tom Dummer was able to refine the technique whilst teaching it at the ESO in Maidstone and finally achieved a sublime marriage of structural and functional technique so that the element of high velocity thrust was so skilfully applied that the 'mobility restriction' and the practitioners hands were able to meet at the 'still point' within the force vectors and glide through the resistance as if meeting only the space in-between. The results were astounding and although the technique is practised only by the few it deserves to come into its own as an osteopathic procedure for the new millennium.

Tom Dummer was able to publish a book on SAT towards the end of his life and completed a textbook on osteopathy which was published after his death. These two scripts contain the wealth of his forty years plus of experience in osteopathy and embody the wisdom that he so skilfully put into practise in his demonstration of specificity in adjustment technique. This chapter is dedicated to his memory and is a tribute to his generosity and humility in the manner in which he so freely gave his knowledge to all who asked and to all who had the privilege to see him in action.

SPECIFICITY AND MINIMAL TREATMENT

The principle of minimal treatment is as old as the original precepts of our founder A.T. Still who by all accounts treated his patients by identifying the exact and precise nature of the somatic dysfunction and then by performing some specific manoeuvre managed to reset the proprioceptors towards normal. In the same manner the principle of SAT seeks to identify the key lesion (usually a spinal somatic dysfunction, but not always) and then by a very precise mobilisation ensures that the proprioceptors are returned towards normal. The principle of minimal treatment is inevitably served in such a singular mobilisation but the degree of specificity depends upon other factors which shall become clearer in the course of the chapter.

The ideal in minimalist treatment is to do that which is just enough to return the body toward a comfortable homeostasis and in the case of a more immediate trauma, that has overlaid a previously comfortable disposition, it is often a simple matter to identify the components of the induced somatic dysfunction and then address that problem per se. However where the passage of time has given the body time to adapt whether in response to a trauma or just to the more mundane forces of posture and habitual usage, the key to the undoing of the adaptations requires a precise assessment of primary and secondary lesioning and then a restoration of segmental functioning by a series of unique mobilisations, one by one, treatment by treatment, until homeostasis is restored.

The genuine appeal of such a precise and minimal treatment approach lies not so much in the ideal of doing just that which is required to return the body to normal but in the fact that when such precision is achieved the body not only rebalances the musculo-skeletal components but that the intelligence that responds to the treatment does so to the fullest using all the energy available for the treatment and in a manner which is in keeping with the deepest needs of the patient. In short there is a minimal interference on behalf of the practitioner and a maximum response on behalf of the patient and their body's needs.

The principle is simple enough to state, but to be minimal in one's application of treatment requires an insight into just that which the body needs in order to achieve a better balance, and that the least that the osteopath does leaves the body a full potential for change, according to the inherent intelligence. In this respect any technique or treatment approach could be used with attention to when enough had been done to allow the body to maximise its response. In the case of SAT the minimal input is applied to a single vertebral segment, in functional technique to a joint or a limb or to a fascia, in visceral technique to a single organ, and in the involuntary mechanism to a key pattern or a single articulation. The mode of treatment matters very little but the judgement of when or not enough has been done is of paramount importance. The application of just enough really does maximise the body's response and leaves all the compensatory mechanisms free to express themselves. It requires practise and intention to make such an approach work but it pays great dividends in health and stability.

DEFINITION OF SAT

The term **specific** means '**clearly defined**' or '**definite**' and as such should conjure-up images of precision and accuracy beyond that normally required for general osteopathic practise.

The term **adjusting** implies '**putting in the correct order**' or '**arranging**' in some manner that implies order and efficiency. Of course in osteopathic parlance the term **adjustment** is used to mean anything that the osteopath chooses it to mean, from a simple articulation to a spectacular release of vertebral muscular and ligamentous tension usually accompanied with a resounding and often satisfying click or cracking sound. In the case of SAT, **adjustment**, implies such a significant change in segmental relationship that a **physiological normalisation** is achieved between two adjacent vertebral segments. This concept becomes paramount in the normalisation of traumatically induced lesioning of the atypical segments of the spine, especially the upper cervicals, and will be discussed in detail when considering **positional lesions**.

As for the term **technique** the Oxford Dictionary definitions are:

- 1) **mechanical skill in an art or**
- 2) **a means or method of achieving one's purpose, especially skilfully.**

Here in essence we are considering an approach to the mobilisation of the spine by resolving the somatic dysfunction of just one segment at a time. Since this is all that is done each treatment session, one can presume that it is important to have an efficient system by which the single segment is selected, and a method of resolving the articular restriction that leaves the spine in no doubt that the segment is not supposed to tighten again, at least not until the treatment plan has been effectively implemented, so that the original 'lesion pattern' will not return again. Of course life goes on even after successful resolution of the presenting symptoms so it is not suggested that SAT is a cure-all for all time. But it is an effective approach to the stabilising of an unstable pattern that leaves the patient with a chance to be normal.

So in taking a closer look at how SAT is practised it is important to consider:

- 1) **How to choose the segment to adjust**
- 2) **The concept of Positional Lesions**
- 3) **How to perform the adjustments and**
- 4) **Typical treatment scenarios**

1) Choosing the segment

Specific adjusting technique implies single segment adjusting (as opposed to segmental mobilising which produces a qualitatively different response in the physiology and resolution of segmental forces) and therefore it is essential that the chosen segment is the key to the body's needs at the time and that the diagnostic routine used to select the segment has a form and application that leads consistently to making the right choice. The routine that Tom Dummer taught was based on Bradbury's system of spinology but through the years he added his own very special refinements that enabled the truly functional significance of the lesion pattern to emerge. Although it is not possible to describe the diagnostic routine in detail here it should be made clear that the routine uses standard mobility testing procedures with one or two particular refinements to assess the key lesions of the spine. Particular attention is paid to key or pivotal segments of the spine which requires a practical understanding of body mechanics which need to be considered here first.

SAT owes its understanding of the mechanics of the spine to John Martin Littlejohn, who proposed a model of spinal mechanics to explain the effects of gravity on the spine. Although there has been much criticism of his ideas especially in the light of modern biomechanics, there are certain principles that are substantiated in practise. We owe him a debt for the terms; **pivots, curves, atypical vertebrae, centre of gravity, antero-posterior balance, keystones (of arches), and upper and lower triangles of force.** The practical elements that serve the SAT approach may be summarised in a diagram embodying the essence of the Littlejohn model to show the interarch pivots and other segments of importance in the functioning of the spine (see figure 1). Our true concern as osteopaths from the point of view of the spine is to balance the curves such that they may function in harmony, without strain. If we interpret the diagram carefully we find a method for balancing the curves.

The role of a true pivot in the spine is to be the segment that links the changeover from a backward-bending curve to a forward-bending curve. It is the segment that in functional terms accommodates the forces as they change from lordosis to kyphosis and back again. Grays anatomy defines the curves of the spine in a structural sense, in terms of the change from lordosis to kyphosis. These curves are from Atlas to T2, from T2 to T12, from T12 to L5 (or sacral angle), and from L5 to the tip of the coccyx. Littlejohn however defines the curves from the point of view of how they function,

thus; C2 to C4 with a functional pivot at **C5**, from C6 to T8 with a functional pivot at **T9**, from T10 to L4 with a functional pivot at **L5**, and a fixed sacral curve to the coccyx. These pivots **C5**, **T9**, **L5**, he calls **interarch pivots**. We could using the same logic define the **Atlas** as a pivot between occiput and cervical curve. Littlejohn however regarded the atlas as a ring of bone functioning as one with the occiput and therefore not to be regarded as part of the cervical curve.

There is another use of the term '**pivot**' which means '**important**' or '**significant**' because of the way they function in the spine. The upper cervical segments **C2/C3** are important or pivotal both because of their atypical structure and because of the exceptionally fine control of the highly sensitive musculature of the sub-occipital triangle. Likewise the **T3/T4** articulation is functionally significant in Littlejohn's model since this articulation is the cross-over point of his lines of force and therefore becomes the point of balance between above and below. Then finally there is the **L3** which Littlejohn identifies as the **Centre of Gravity** for the whole body, based on the lines of force passing through the spine.

The functional significance of these segments in the Littlejohn model depend totally upon an acceptance of the principle of gravitational lines of force and inferences about function based on the shape of the segments and the action of muscles on small groups of vertebrae. However it is possible to view these same segments using a more practical assessment of their role and function in the spine and still concur in the main with Littlejohn's model.

I am sure we would all agree that the **upper cervicals C1, C2, C3**, are exceptional in their function due to their atypical muscular control as well as their atypical shape, and that they are so often restricted in mobility and can be significantly affected in trauma to the head and neck.

Then there is the change-over between neck and thoracic spine where the general mobility changes from the free and unrestricted cervical vertebrae to the relatively constrained thoracic curve which is bounded by the ribcage. We could easily postulate that the **C5, C6**, would be the pivot at this cross-over point.

Then consider the rotation of the head to look over your shoulder without moving the shoulders. Have you noticed that rotation must take place down to the **T3/T4** and that this may be reason enough to regard the **T3/T4** as a pivotal area. We may also regard these segments as the lowest point of compression of the neck into the thoracic spine.

Now to the lower back for a moment. When testing the action of the lumbar spine we use the hip-drop test, first one knee bends and we mark the centre of the lumbar sidebending, and then the other knee for the opposite sidebending. Ideally the centre of the sidebending of the lumbar curve should coincide at **L3**. Even if Littlejohn was wrong about the centre of gravity being at **L3** we will always find this an important segment for the smooth functioning of the lumbar sidebending and as the central vertebra of the lumbar curve.

The **L5** should pose no problem as a clear pivot between the flexible lumbar curve and the fixed sacral curve.

We are now left trying to justify the **T9** as the true pivot between the thoracic kyphosis and the lumbar lordosis which Littlejohn justifies in functional terms by describing the change in shape of the thoracic vertebrae starting to become more like lumbar vertebrae at **T10**. Therefore the lumbar curve really starts at **T10**, which makes the **T9** the interarch pivot. In practise I have found the **T9** often shows as a significant pivot in balancing the curves. But we can keep an open mind as to where the thoraco-lumbar crossover takes place.

So now we have a model of pivots and important segments from a functional point of view. The curves are defined as those areas of the spine between these pivots. Where the pivots may be said to function individually the curves often function as groups unless they are broken-up by significant functional change.

In practise the choice of where to begin is a matter of assessing the mobility of the pivots and the general function and co-ordination (or not) of the curves, and then deciding which segment when adjusted will enable the spine to function in a more balanced way. The model itself does not help in making this choice, but it is found in practice that a few rules apply.

If there has been a traumatic input to the neck or the pelvis then it is essential to correct the primary disturbance, usually the upper cervicals or the L5/S1 articulation. This brings us to the possibility of a positional lesion which I shall consider in a moment. Then it is common to work from above down since we find that the spine often localises the next significant restriction of mobility at a lower pivot. It is usual to work through the spine until the curves are balanced and the pivots are working without strain. It is rare to have to work through all the pivots since the spine is usually so dynamic in its response that there is a natural rebalancing taking place as the body unravels its secondary pattern in response to adjustment of the primary restrictions.

So here now it is seen that the model guides the selection of the pivotal segments that in practice seem to hold the key to the successful rebalancing of the spinal curves. A word of caution and common sense must be added here however since as with all models they must be tempered with experience. A pivotal segment is only significant in treatment if it is truly playing the role of the pivot in the patient being assessed. The model is an ideal and must be viewed as such in that it only guides the choice of segments. The final decision must be made from the evidence before the practitioner although it is found in practise that the pivots only vary by a segment, either one up or one down. There are times when no individual segment is ready for change and in such cases there is invariably a group curve that needs to be treated as a curve before the pivots begin to become available for direct treatment.

Diagnosis through the unities

With the mechanics in mind Tom Dummer devised a diagnostic routine which is used to assess the primary vertebral lesion in each of three mechanical unities. Each unity is defined by its function in body mechanics. So unity one comprises the pelvis and lower extremities, unity two comprises the head, neck, shoulders and upper extremities, and unity three comprises the thorax and trunk with which unities one and two articulate. There is some overlap between the unities but each may be seen to be defined by a unique function; unity one by locomotion, unity two by the creativity of the head, arms and hands, and unity three by the vegetative functions of thorax and abdomen.

The routine of assessment is lengthy to describe in words and has been fully expressed in Tom Dummer's 'Textbook of Osteopathy' (Volume One). But the aim of the routine is essentially to assess for significant mobility restrictions in each unity and thereby judge the primary in each. Thereafter a judgement has to be made to decide upon the overall primary and thereby the relative secondary lesions. Most usually these primaries are either the lumbo-sacral or sacro-iliac articulations in unity one, either the upper cervical or lower cervical/cervico-thoracic junction in unity two, and most probably a group postural lesion in unity three. Special attention is paid to the quality of motion and degree of mobility restriction of the key or pivotal segments since the specific mobilisations are most often applied to the pivots (see treatment scenarios below).

Once the hierarchy of primary and secondaries is established then the judgement on where to begin and how to proceed, adjusting only one segment per treatment session, is a matter for experience but is guided by some principles that are discussed below in considering some treatment scenarios.

However there is one concept that is unique to SAT and derives its success in symptom resolution because of the precision accorded to it and especially because the high velocity thrust manipulation is performed singly and uniquely to the offended segment and then the body is left to find its own equilibrium without further interference from the practitioner. This concept is the 'positional lesion'.

2) The Concept of Positional Lesions

Central to SAT is the concept of **Positional Lesions**. The term '**positional**' is being used in a unique way to refer to the exceptional manner in which the atypical areas of the spine respond to traumatic forces such as those sustained in blows to the head, whiplash injuries, and falls onto the pelvis. Every osteopath knows that traumatically induced mobility restrictions present in a manner entirely differently to the mobility changes that occur in the everyday use of the body. One would however probably find very little agreement between osteopaths as to how to describe these differences. SAT practitioners therefore use an agreed language which shall become clear in the description that follows.

When taking the case history, special attention is given to the patient's accident history. Even accidents 20 or 30 years previously will still respond to the SAT approach, (providing the tissues are still physiologically responsive to the osteopath's administrations). Often there is evidence that the patient has never quite been as healthy from the time of the accident, and even despite excellent osteopathic work there seems to be a persistence of problems, which can only mean that something has not yet been corrected or properly adjusted. SAT practitioners have addressed upper cervical segments in an ordinary way only to be frustrated by no clear resolution of symptoms, but when eventually they have realised that there is a positional lesion and have adjusted it as such, then the results follow.

Upon palpation of a post traumatised neck the positional disturbance is evident from the 'feel' of the tissues and the particular lack of mobility of the articulations. We use terms like **very restricted, boney, cold, wooden, lacking vitality, holding energy within**, and so on, word pictures to describe a palpation experience that alerts the practitioner to the differences in physiology, mobility and motility that is characteristic of a segment that has gone beyond the normal changes that occur in segmental adaptation to everyday living.

It is then necessary to take X-rays of the neck in order to read the relative '**position**' of one segment in relation to the other. One needs, **antero-posterior, lateral, and through the mouth** (centred on the odontoid peg to realise the relationship between occiput, atlas and axis). Such X-rays show that in the case of a traumatically disturbed upper neck the term '**positional**' may be used to refer to the relationship between the C1, C2, C3, as well as the '**attitude**' of the individual segments expressed as **flexed, extended, rotated, sidebent, or side-slipped**. Although it is conventional to express mobility findings in terms of motion of the segment, as in **flexing, extending, rotating etc.**, in the case of **positional** findings the static terms **flexed, extended, rotated, etc.** are used to indicate that there is a relative permanence to the relationship between the segments, and that they will be addressed in terms of their '**position**' and not in terms of their mobility.

This last point is the key to the thinking behind **positional lesions** and the justification for requiring X-rays since the mobility findings are often contrary to the positional findings. The success of the technique relies upon addressing **position** and not **mobility**. This is of course quite the opposite philosophy from the adjustment of ordinary mobility restrictions which we address by reversing the mobility findings. Thus a segment found to rotate more easily to the **left** will be adjusted by a thrust technique that takes it towards the **right**, and so on.

The justification for addressing position is of course in the main empirical. It is found simply that it works. My speculation is that this exception is required because something exceptional happens in the upper neck in response to traumatic force. As we all know the muscles of the **sub-occipital triangle** are essentially **modified muscle spindles**. They are more like sensory organs (**muscle spindles**) with a **few muscle fibres** and are therefore highly responsive to minor changes in vertebral position, which is essential for the fine-tuning of the head balanced on the neck. So when a force is applied to the neck or head such as in an accident, this highly sensitive upper neck will have very little opportunity to adapt, and ends-up with the equivalent of a spasm in these sensitive muscles. This I believe effectively '**freezes**' the upper neck in such a manner that a **positional disturbance** occurs.

Since mobility is also significantly reduced, much more so than occurs in the general adaptation of the upper neck, it makes sense to look to the probable cause of these exceptional findings. In this manner therefore the attention to the detail of relative position is found to bring results where all else has failed.

The same care needs to be shown to the pelvis or more likely the L5/S1 articulation following traumatic force to the lower back. In this case again the sense of positional disturbance lies in the quality of the lack of mobility and in the position of the pelvis which stays the same between standing, sitting and lying. Again positional findings and not mobility findings are addressed in order to be successful.

3) How to Perform the Adjustments

So having looked at the model of spinal mechanics that leads towards **specificity**, and having considered the unique concept of **positional lesion** following trauma, now all that remains is to describe how the segments are adjusted.

In the case of **positional lesions** it is usual to use **High Velocity Low Amplitude Thrusts**, although it is possible to address them by more functional means in certain circumstances. However it is usually necessary to meet like with like, and in the case of a positional lesion something is required to overcome the inertia of the significantly traumatised segment. It has been found to be very effective to correct all the components of the lesion in one manoeuvre which may be done most effectively in a single thrust.

At this point words alone are inadequate to describe a reflex skill but the intention in the adjustment is to reverse the **positional components** whilst overcoming the force in the tissues. So for example in the case of a **flexed and left rotated** axis vertebra one would seek to **extend and rotate to the right** using **speed and recoil**. Although this sounds heavy, the execution of the manoeuvre is very light and requires only a **hint of physiological locking**. It is usually performed in the prone position so that the practitioner has both hands free to work together and to enable the hands to be lifted away from the body to allow a natural recoil of the tissues.

In the final analysis, the practitioner, after due consideration of all the mechanics of the adjustment, allows their mind to be still so that the reflexes of the practitioner and of the patient's tissues work in harmony to bring about a change that will release the patient's healing potential in a unique way. Normalisation of mobility is usually achieved in this manner as well as a release of secondary tissue tensions. But more significantly the patient realises that they will never be the same again. At an inner level something changes that enables the patient to release more than a physiological dependency on their lesion pattern and they often feel better in themselves both psychologically and emotionally.

Following the correction of the positional lesion it is usual to leave the body to settle-down for two or three weeks before the next treatment. Then the practitioner assesses the spinal mechanics again and chooses the next segment to adjust. Each treatment session only one segment is adjusted. The execution of the adjustment is usually a thrust technique or a lift but may also be achieved by any means that leaves the segment free to function again. Especially where thrust techniques are contraindicated functional techniques are applied to the chosen segment until good function has been restored.

In general treatment is only given until the symptoms have resolved or until the practitioner is satisfied that balance has been achieved.

A few words on the efficacy of manipulative thrust technique as used in specific adjusting technique may be appropriate here. It is assumed that with experience the choice of the segment is a matter of being able to read the spine and the body mechanics so that the segment being adjusted is the segment through which the body is attempting to bring about change. In fact it helps to assume that what one is observing is the body's best attempt to be well and that given the natural law for the body, in that it works through reflexes, then if it had been able to be better organised it would surely

have done so before the osteopath gets his or her hands on it. Thereby should the osteopath be intelligent enough to see the process that the body is trying to complete at this point in time, and assuming that this process is being focused through a single spinal segment, then mobilisation by the osteopath, by some means, manipulative or otherwise, would surely help the body help itself further. Therefore once a segment is chosen the success of the technique lies not so much in the fact of adjusting just that segment but in the manner in which the segment is addressed. This usually requires accuracy of alignment and an application of a fluid and minimal input by the operator's hands executed both with speed and an intention to match the forces holding the segment with an equanimity and respect for the supreme intelligence of the body. This then engenders a response quite unlike that produced by more casual mobilisations and it is this response that ensures the success of the technique.

At first there is a swell of activity in the primary respiratory mechanism which feels like a tidal surge which is often accompanied by evidence of heightened adrenal activity and a sense of a release of shock that has been held in some manner by the body from previous trauma. After a few minutes the mechanism settles into a still point and may go through several cycles of change, each resolving through a still point until finally settling into a uniform rhythm. The treatment is regarded as self sufficient and does not require any other intervention by the osteopath at that time. Treatments are spaced at two or three week intervals and will follow the same regime of single-segment adjusting until the body requires no further intervention.

It is clear that this approach to treatment of the spine requires that manipulative thrust is not contraindicated and that the spine is able to respond to the changes by stabilising the improvement in mobility; since at the end of the process the spinal curves must be in balance and this will only be maintained through adequate mobility of the pivots.

It may be seen that the ideal response through the involuntary mechanism is the most likely reason for the success of the treatment and the osteopath should never be satisfied with less than these indicators of response at the subtle level. The manipulation in and of itself is not enough, it is imperative that the deeper responses are present and accepted by the body.

4) Typical treatment scenarios

In order to understand the logic behind typical treatments given in the SAT mode it is important to know the a priori assumptions that the practitioner keeps in mind. These comprise the following:-

- a) Positional lesions are usually corrected first
- b) Pivotal segments are usually adjusted from above down
- c) Primary lesions are most commonly found in the upper cervicals or the pelvis (the atypical areas)
- d) If the thoracic curve is primary then it should be worked on first, before addressing the pivots
- e) If starting in the pelvis go to the lower c's and upper t's before correcting the upper neck

Therefore the most typical treatment begins with correction of an upper cervical positional lesion (or just a simple mobility restriction but deemed to be primary). Then at each follow-through session the next significant segment lower in the spine is adjusted. This often follows the order of the pivots and so would proceed by C5/C6, T3, T9, possibly L3 and then a simple aligning of the pelvis. Thereafter one would proceed according to the remaining significant mobility restrictions, but only single mobilisations per treatment.

If starting in the pelvis with a positional correction of the sacrum within the ilia or some other primary presentation one would proceed in the next session to the lower cervical pivot and then the T3. At this point it would be appropriate to address the upper neck (here assuming that the upper neck was secondary to the original pelvic presentation). Usually after this routine the remaining significant restrictions become apparent.

In the case of a primary group curve in the thoracic spine, this would be addressed first, most often by gentle articulation but specifically to the curve, and may take two or three treatments. Thereafter addressing the pivots according to good judgement will bring about a fresh balance to the spine.

A common exception to working through the pivots from above down is when having mobilised the upper neck, lower neck and upper thoracic pivot, it is found by the next session that the pelvis has gone into lesion. It is imperative that the pelvis be corrected and then the next time the lower neck again (for it most often goes into lesion following the correction of the pelvis). Thereafter the remaining significant segments become plain.

These scenarios are based on the most common presentations and by no means exhaust the possibilities and permutations met in practice. For in essence the segments to be mobilised are presented by the body according to its needs, but the guidelines here presented do arise from years of observation of what works and what does not work.

SAT and the IVM

Usually there is very little need for preparation of the tissues before an SAT mobilisation. The ideal is that all the potency should be available for the treatment and therefore a specific mobilisation of the key segment will in itself be enough to enable the body to find a new equilibrium. In fact, as mentioned a little earlier, a mobilisation done in this manner with the right intention usually sets the primary respiratory mechanism into a surge of flexion/extension and the body gives itself a cranio-sacral treatment without the need for the practitioner's hands to be on the body. As the practitioner monitors the response to the adjustment it will be found that the mechanism goes through a series of changes often settling into minor still-points and ending with a profound still-point followed by a long extension, then flexion, gradually normalising in rhythm but with more strength, amplitude and potency.

There is a case for gentle specific preparation using the primary respiratory mechanism to prime the body for the specific mobilisation to follow. The decision to do so needs to be taken by the experienced practitioner according to the state of the tissues and the preparedness of the body for a change through boney manipulation.

The ideal however is always to try to affect the whole through the segmental manipulation and the success of this approach depends on the readiness of the body to respond through manipulation of the spine. The skill of the practitioner is always a factor and is a study in itself which is outside the remit of this chapter.

OTHER MODES of TREATMENT

Specificity does not in itself imply spinal manipulation and it is possible to be very specific in ones treatment using any treatment mode. The point to remember is that the change that is initiated needs to be just enough for the body to complete the essential changes for itself in order to move forward in the healing continuum. The decision as to how much to do and just when to stop treating is an art rather than a science and requires a level of attention to body responses that only the practitioner is in a position to judge. The effort to refine these palpatory skills however is rewarded many times over in the treatment results.

CONCLUSION

In conclusion SAT's remarkable contribution is in the field of traumatically induced lesioning in the atypical areas of the spine, notably the upper neck and pelvis. These lesions are positional in nature and therefore need to be corrected as such and not according to the mobility findings. Once corrected then the specifics practitioner will attend to one segment per treatment, usually the pivots of the spine, until a satisfactory balance has been achieved.

Although the practise of positional adjusting requires a little reflex skill on the part of the practitioner it is a skill that can be learned with practise. The follow through one segment at a time effectively gives the body back to itself with very little interference from the practitioner and is true to Still's fundamental precept of 'find it, fix it, and leave it alone'.

POSITIONAL ADJUSTING IN THE FLOATING-FIELD

In the case of traumatically induced upper cervical mobility restrictions it is important to mobilise the primary segment with precise attention to the reversal of the specific force vectors of the lesion. The adjustments are usually performed in the prone position although there are occasions when sitting mobilisations are best especially where there is a gross extension component of the C2 or C3.

The prone position enables the practitioner to be very precise with the lining-up of the segment but also leaves both hands free to work in concert to effect the final de-rotation manoeuvre with the opportunity for recoil of the head and neck as the hands are released.

The secret of the effective mobilisation of the segment is to leave the 'physiological locking' to the momentum of the manoeuvre and this is why it is called a 'floating-field' adjustment. The practitioner lines-up the segment taking into account all the vectors of the lesion (as diagnosed from X-ray) and at first takes the segment into physiological locking. The reversal of the flexion or extension components is achieved by a simple attitude of the practitioner's contact which directs the segment towards extension or flexion respectively by the manner in which the practitioner aligns the hand and arm. Having found the point of physiological locking and having gauged the force contained in the locking, the practitioner backs-off by taking the compression of the hand contact away, but remaining in an attitude of hovering over the engagement of the forces so that in the next moment the locking could be reintroduced by simply squeezing the hands together and thereby reintroducing compression. The final manoeuvre is then performed solely in the attitude of de-rotation, keeping the alignment of the hand and arm to maintain direction of correction of the flexion or extension component, and then through the introduction of speed of de-rotation the physiological locking is induced and overcome by the momentum of the manoeuvre. In the last moment the practitioner lets their hands fly off the head to allow a natural recoil of the head and neck and thereby a final release of the forces contained in the lesion complex.

It is then prudent to allow the patient to rest for five or ten minutes to enable the full response to the adjustment to take place.

THE SACRAL TOGGLE

The adjustment for positional change in the pelvis is performed using the 'sacral toggle'. This is essentially an adjustment of the sacrum within the ilia and requires that the positional findings are the same standing, sitting, and lying prone. The simplest findings of the sacrum is that it is sidebent and rotated to the same side. This in Fryette's terms would be designated a 'first degree' lesion. If however sidebending and rotation are in opposite directions this would be designated a 'second degree' lesion. The principles of the toggle manoeuvre however remain the same providing that the lesion components are reversed in the direction of correction.

The technique is performed as a gentle derotation and desidebending manoeuvre where the operator's hands upon the sacrum describe the direction of correction (that is suggesting to the sacrum the pathway towards neutrality). There is no force applied and certainly no intention to produce joint gaping such as to produce the characteristic 'cracking' or 'popping' sound which so often characterises high velocity thrust adjustments of spinal segments. This manoeuvre is performed in the lightest possible manner albeit with speed and deliberation.

The success of the technique depends upon preparation and for this purpose the patient lies prone with a cushion under the pelvis to create a degree of buoyancy, the practitioner's hands are placed upon the sacrum in a manner that will enable the sacrum to be swivelled in the direction of correction, and then by careful engagement of the force vectors held in the lesion the reflexes are prepared for the moment of change. The patient is asked to breathe deeply and to exhale slowly so that the ideal moment for performance of the manoeuvre may be assessed by the practitioner. Then when all the preparation is done and the practitioner is centred and focused on the tissue forces then upon the right moment during the outbreath the practitioner swivels their hands in the direction of correction thus alerting the reflexes of the patient's body to the ideal resolution of position of the sacrum within the ilia.

The patient is then left to rest for five minutes whilst their body reorganises itself and then as the days go by the body orientates around the new alignment of the pelvis and secures the changes.