An Anticipatory View of Bowtech[1]

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Abstract
Bowtech (*the Bowen Technique*) is a dynamic system of muscle and connective tissue therapy developed by Ossie and Elaine Rentsch, Victoria, Australia from the work of Tom Bowen. Many health problems, both acute and chronic, were solved worldwide using Bowtech which, most likely, triggers the body's healing mechanisms. As in many other types of treatment, the relation patient – therapist leads to an individual treatment model, based on both the patient and therapist models of the problem(s) to solve. All these three models include anticipatory aspects, related to the future states of both human systems involved – patient and therapist.
The paper presents the authors view of Bowtech as an anticipatory system, including relevant examples from the authors practice.
Keywords: anticipatory systems, weak anticipation, Bowtech, healing mechanism, relaxation

1   Introduction

This paper is the result of questions arising from the practical experience, as Bowtech practitioners, of the authors. For us, as researchers and also full or part-time practitioners of complementary therapies, graduates of technical universities, with doctoral degrees – the first two authors in Complementary Medicine and the third in Computer Science -, it is an obvious issue to try to explain the action mechanism of a recently acquired technique - Bowtech, which gave good to excellent results in a wide range of cases.

The paper presents the main elements of the Bowen technique (section 2), considerations on the models involved by any therapeutic act (section 3) and anticipatory aspects of Bowtech (section 4).

2   The Bowen Technique (Bowtech)[2]

Bowtech is a very gentle and non-invasive but extremely powerful body balancing technique. It is based on the idea that once total relaxation of the body has been achieved, the inner ability to address any problems in the body and mind by bringing

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them back to balance and harmony is activated. Simply stated, Bowtech allows the body to reset and heal itself. This technique addresses the body as a whole, as a complex system of interacting components. The physical, chemical, emotional and mental aspects of each person receiving Bowtech can all respond as needed.

2.1 The Bowen Technique Framework

The work consists of several series of gently rolling, connective tissue moves. The basic Bowen "move" distorts a muscle or tendon that is not under load and then rolls over it without sliding on the skin. As a result, the spindle cells and Golgi tendon bodies down-regulate the muscle's resting tension level. The surrounding fascia becomes less solid and more fluid, allowing greater movement of blood and lymph through the tissue and enhancing nutrition to - and waste removal from - the site of injury. The lack of distracting skin stimulation and the limited number of precise moves focus the nervous system's attention on the essential points.

There are frequent important pauses between sets of moves, which give the body time to benefit from each set. Pausing at certain crucial times allows time for the nervous system and fascia to respond and begin the healing process.

By selecting appropriate combinations and sequences of moves, the practitioner is able to address the body as a whole, and/or to target one or more specific problems. The practitioner discerns stress build-up in muscle groups and utilizes Bowen moves to release that stress. The body continues to respond for several days afterwards unless interrupted by injury or strong external stimulation (including new trauma, heat, and additional bodywork - even additional Bowtech).

Bowtech is appropriate and useful for everyone from newborn to the aged. It offers relief to athletes, pregnant women and people with special needs. The Bowen Technique improves rehabilitation time, regardless of how old or recent the injury may be. It provides more energy and an overall sense of well being.

2.2 Bowtech Session

The ideal time for a Bowtech session is immediately after an injury. Within three days is also fine for the quickest and most complete recovery. That way, the body can overcome the trauma before it begins to compensate for it. The compensations often create more problems in the long run than the initial trauma itself. Many people don't find out about Bowtech until weeks, months, or even years of trying other approaches or "learning to live with it." A Bowtech session consists of several series of gentle moves through light-weight clothing (or on skin). In a Bowtech office or clinic, the patient usually lies on a bed or bodywork table or, for comfort, in a chair. However, Bowen technique can be done anywhere - on the sports field, in a hospital room, at the site of an accident, on an airplane or train.

At the first typical session the practitioner asks about the patient health history and reason for the visit so as to find out if there are any moves or procedures that are contraindicated, the best procedures to apply, how much of the work the body is likely to be able to assimilate without overloading the patient. The hands-on work usually lasts

between 15 and 45 minutes. The pressure used by the practitioner is almost always less than the patient would expect. On occasion, the patient might feel a momentary twinge. That is why the practitioner asks the patient to tell if he is uncomfortable at any time, and permanently observes the patient state

Application of the technique involves stimulation of precise points on the body, in groups of 2 - 8 points at a time. The practitioner leaves the room between groups of moves, to allow the body time to assimilate the work. Points generally progress from the torso/core of the body outward. The most common reaction to Bowtech is a deep sense of overall relaxation and lessening of muscular tension and pain. This results from the body's balancing and improved flow of internal energy. The restorative process begins once the body is relaxed. It is common for people to fall asleep during a session.

The Bowen technique encourages proper functioning of all body systems, including those responsible for eliminating toxins. If the patient body has stored unnecessary materials, he may experience, for a day or after a Bowtech session, detoxification reactions, which can include sensations of: aching muscles, mild nausea, mild headache, changes in sensation of temperature, minor changes in elimination. The body will function more effectively when the toxins have been released. During the detoxification, the best way to minimize discomfort is stimulate the lymphatic system to increase the elimination of toxins by increasing water intake (even taking distilled water for a few days only), and walking 30 minutes each day in fresh air.

3   Models Involved in the Therapeutic Act

In what follows the meaning of some of the terms used is:
- treatment - care by procedures or applications that are intended to relieve illness or injury, to enhance well-being
- therapy – any clearly defined system of treatment, meant to solve health and well-being problems: allopathic medicine, homeopathy, psychotherapy, kinetotherapy, acupuncture, traditional eastern medicine, Bowen technique, etc.
- practitioner – a person trained and certified to apply one or more types of therapy, either permanently or part-time (even as a hobby)
- patient – any suffering person, willing to improve his/her health and well-being state and thus addressing a practitioner

3.1   Patient Models

In most cases each patient presents a *self-model* (figure 1) built essentially on symptoms expressed as qualitative data: acute or chronic back pain, irregular heart beat (palpitations), fatigue (a common health complaint, one of the hardest terms to define, and a symptom of many different conditions), movement restrictions at different articulations (joints), etc., as well as quantitative data resulting from clinical tests. This model can also include knowledge or suppositions relative to the causes of those des-eases and their location in space (work/ home/ traffic/ sport accident or activity) and

time. According to the patient psychological profile the perspective offered by this model can be an optimistic or pessimistic one.
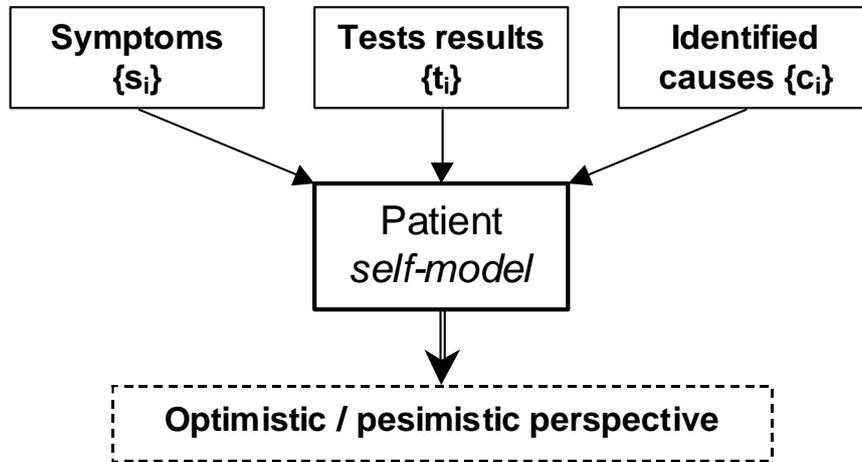
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Figure 1: Patient self-model.

The patient seeking for a solution to his problems (we do not address here the case of patients unwilling to cure) acts according to an *adaptive action model* (figure 2), which implies the search for a therapy, considered appropriate from several points of view: well known results for similar cases, comfort, duration, financial effort implied, availability (existence of practitioners). In some cases the first choice does not give the expected results and the patient will adapt the model accordingly.
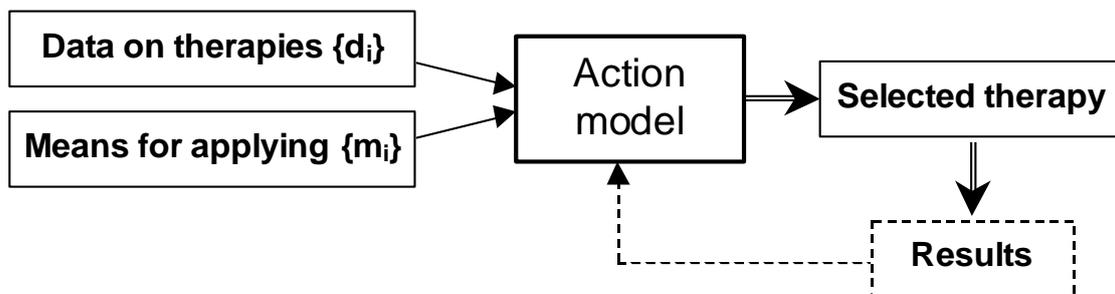
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Figure 2: Patient action model.

Last but not least, once the therapy chosen, the patient has or builds-up a *practitioner model*, based mostly on qualitative data, gathered from different sources: medical advice, media, friends or family talk, or acquired through direct observation. These data concern, in general, proofs of scientific knowledge, experience and professional probity, recognition by professional associations, successful case stories (especially if presented by the involved persons), as well as data related to work

conditions - clinic/office location, size, equipment, environment - and relational data - mainly the practitioner's appearance, attitude and way of talking.

The *practitioner model developed by the patient* (figure 3) provides an anticipation of the results that could have the treatment performed by the considered practitioner, results ranging from complete problem solving to none or, in the worst case, anticipated as damaging. According to this anticipation the patient will take the appropriate decision: to start the treatment or to search for another practitioner.
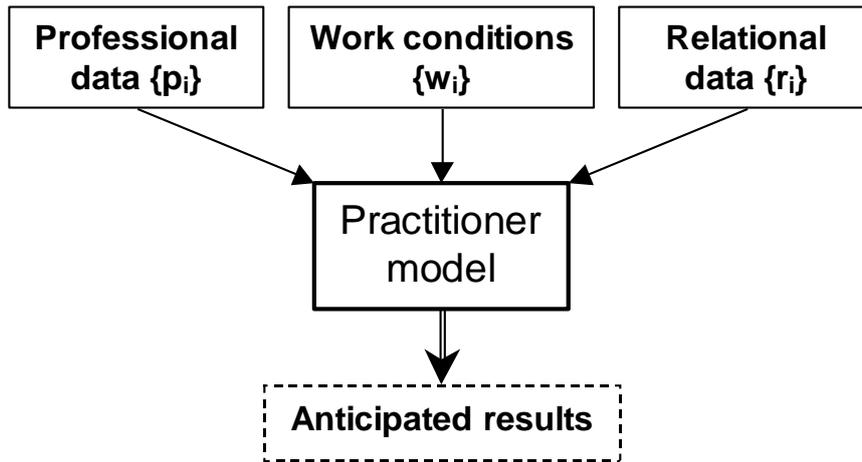
Figure 3: Practitioner model developed by the patient.

3.2 Practitioner Models

For each of his/her patients the practitioner develops a *case model*, using the specific data offered by the patient and those acquired through direct observation and/or tests. These data are processed according to the practitioner knowledge and experience, leading in some cases to the necessity of additional tests, performed by the practitioner itself or in a specialized laboratory/clinic.
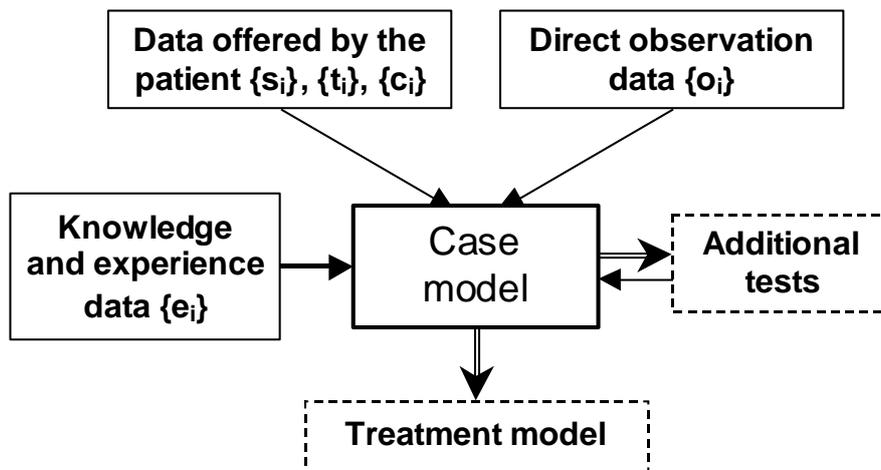
Figure 4: Case model developed by the practitioner.

The initial *treatment model* (figure 4), developed for the case under consideration, usually refers to a reasonable time interval after which significant results should be noticed. This model can be refined all along the treatment, according to newly acquired data - effects either reported by the patient, or observed by the practitioner, results of additional tests, etc.

3.3   Treatment Model

Each therapy has a general treatment model that is adapted by the practitioner as to suit any particular case. For instance, in allopathic medicine and homeopathy, the practitioner prescribes remedies intended to induce changes of given body variable values – reduce the cholesterol level, increase haemoglobin level, etc.

The influence of a given remedy $\mathbf{j}$ on body variable $\mathbf{x_i}$ is, in many cases, reflected by the equation

$$x_i(t+n) = x_i(t) * (1 + c_{i,j} * y_{i,j}(t)) , n > 0, c_{i,j} <> 0, y_{i,j}(t) > 0 \tag{1}$$

where: $x_i(t)$, $x_i(t+n)$ are the current and future value of the body variable

$c_{i,j}$ represents the specific influence of remedy $\mathbf{j}$ on $\mathbf{x_i}$

$y_{i,j}(t)$ is the amount (quantity) of remedy $\mathbf{j}$ currently used to adjust $\mathbf{x_i}$

Typically, the practitioner prescription is based on $x_i^*(t+n)$ - the *anticipated* value of the considered body variable, derived from eq. 1

$$y_{i,j}(t) = (x_i^*(t+n) - x_i(t)) / (c_{i,j} * x_i(t)) \tag{2}$$

and the results are evaluated by comparing $x_i(t+n)$ with $x_i^*(t+n)$.

Equations 1, 2 are also valid for therapies using sequences of procedures applied to the body, where the body variables of interest are joint mobility, anatomic parts posture, etc. Let us look closer to eq. 1: it presents $\mathbf{c_{i,j}}$ as a constant with influence on variable $\mathbf{x_i}$. But it is well known that the use of some remedies or procedures could be conditioned by several body variables and have side-effects on others. It follows that, in order to cover all these aspects, a system of equations is needed.

If we consider $X(t)$, the state of the body at time t, defined by the set of observable variables $\{x_i(t)\}$ and $X^*(t+n)$ the anticipation of a future state, than the specific influence of remedy $\mathbf{j}$ on variable $\mathbf{x_i}$ is defined by a function $C_{i,j}(X(t))$. Consequently, in the general case, the prescribed amount of $\mathbf{j}$ is determined by applying a specific function, A_j, to the current state, the anticipated states, and the value returned by $C_{i,j}$:

$$Y_j(t) = A_j(X(t), X^*(t+n), C_{i,j}(X(t))) \tag{3}$$

Since, in general, a set of remedies $Y(t)$ is prescribed not only for time t, but for an interval starting from $\mathbf{t}$ and ending at $\mathbf{t+n}$, we have to consider ordered sets of sets for both prescriptions Y and states X:

$$Y^+(t,n) = \{Y(t+k)\}, k = 0, 1, \ldots, n-1 \tag{4a}$$

$$X^+(t,n) = \{X(t+k)\}, \ k = 0, 1, \ldots, n\text{-}1 \tag{4b}$$

These sets determine the sequential transitions from state X(t) until state X(t+n), as shown in figure 5

$$X(t+n) = F^+(X^+(t,n), Y^+(t,n)) \tag{5}$$

where F^+ should model all remedy-variable correlations. Unfortunately such a function is far from being defined for any therapy and most of the existing correlations are based on experimental data.
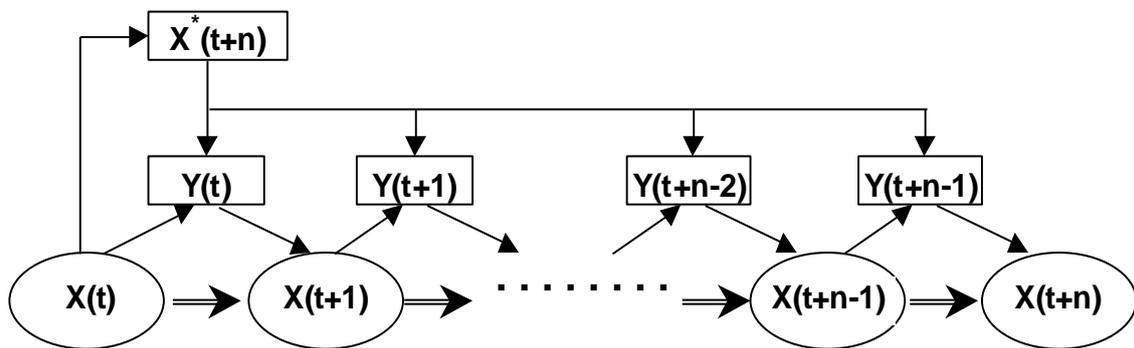

Figure 5: State transitions.

4   Anticipatory Aspects of the Bowen Technique

The first and surely the most important anticipatory aspect of Bowen technique, as well as of other therapies, is a philosophical one − the idea that the body possesses a representation of its state of balance and harmony, the latent ability to address any inner disturbance and means to detect signals that will activate this ability, especially if total relaxation of the body has been achieved.

In other words, once the appropriate input signals I (t) received, the body puts into focus, as anticipation of a future state, the ideal state of balance XX and starts looking for changes that will lead to a state closer to it than the current state X(t).

$$X(t+1) = F(X(t), XX, I(t)) \tag{6}$$

What distinguishes Bowtech from other therapies is mainly the way signals are transmitted to the "main control". Tom Bowen discovered where and how to apply Bowen moves in order to transmit correctly the appropriate signals. He did not bother to explain scientifically how and why his technique had such amazing results, he just refined the procedures and passed the acquired knowledge to his disciples.

A careful study of the Bowen moves sequences and of their effects reveals that each set of moves anticipates a specific state of the body and that the Bowen procedures have prerequisites because they are effective only when the body has reached an appropriate state.

At the beginning of session **k** the Bowtech practitioner evaluates the patient initial state X^k_0, anticipates XE^* - the state that could be reached at the end of the session, and applies the sequence of moves required $\{I^k_i\}$.

The state transitions determined by the sequence of Bowen moves performed during a session can be represented as follows:

$$X^k_{i+1} = F(X^k_i, XE^*, I^k_i) , i = 0,1,\ldots, n \tag{7}$$

The length of the moves sequence (n) depends on the problem addressed during the current session. An usual Bowen session addressed only one problem, by applying sets of prerequisite Bowen Relaxation Moves (BRMs – maximum 11 sets of 2 to 8 moves: 4 sets for lower back, 4 for upper back, 3 for neck problems) and problem oriented moves, combined according to the Bowen technique protocol. There are also procedures that address several types of problems and thus, the practitioner will choose for the current session the procedures considered most appropriate – the one that addresses the main problem or subset of problems. It is important to keep in mind not to overload the patient body, giving it to much work to do.

By leaving the room during the pauses between sets of moves the practitioner gives to the patient the opportunity to observe the body activity, to notice if a change has occurred. This is a very important element of the Bowen technique, since many patients are not used to really pay attention to themselves. Furthermore, for many patients it is very difficult to clearly describe their sensations – some simply say that there is some kind of activity inside a leg, ankle, etc. or that they still feel the practitioner fingers at the spot of the last set of moves. In such cases the body should not be disturbed until completion of its activity and the respective pauses will be extended as much as needed.

The body continues to work between consecutive sessions (see Examples bellow), its state evolving from XE^k – the state at the end of session k, to X^{k+1}_0 - the state at the beginning of the next session. Sometimes these changes concern not only the problem directly addressed during the previous sessions <Ex2>.

It is important for both patient and practitioner to have a record of changes noticed during and between sessions. This helps the patient to realize at rational level that his/her physical state is evolving and induces a positive change in the state of mind. The practitioner uses these data for tuning the treatment and to acquire further knowledge on human body behaviour. For instance, in some cases the body "learns" the technique, anticipates input signals in the current session and takes action beforehand <Ex3>.

Another aspect that we would like to point out is the crucial role played by patient's motivation (<Ex4> - <Ex6>). The strong will to reach an anticipated state (results), existing at the rational level, is transmitted to the subconscious level when deep relaxation is achieved, and an altered state of consciousness is reached. We suppose that the rationally anticipated state is assumed by the subconscious, and appropriate stimuli are sent to the nervous systems. As a response to these stimuli, both somatic changes and psychical balance are noticed.

Examples of Cases

<Ex1> Mrs.H, age 55

History: stiff neck, legs algodystrophy, painful left leg

- $X^1_0 \Rightarrow$ BRMs $\Rightarrow XE^1$ – restored neck mobility
- X^2_0 – more relaxed, amazing neck mobility "better than after 20 kinetotherapy sessions", leg still painful; the patient will leave for holiday and would like to walk better $\Rightarrow$ BRMs + knee and ankle procedures $\Rightarrow$ the patient noticed activity in both legs, but especially in the left heel $\Rightarrow$ XE^2 – feels more comfortable and optimistic

  $\Rightarrow$ During the following week the pain in the left leg gradually disappeared starting from the toes towards heel, but the heel continues to hurt.

<Ex2> Mrs.G, age 59.

History: various and serious problems, gradually addressed

After 6 sessions noticed that the warts on her fingers, not explicitly addressed, disappeared completely.

<Ex3> Mrs.M, age 58

History: various problems, gradually solved with 9 sessions

- X^{10}_0 – sprained left ankle $\Rightarrow$ BRMs + ankle procedure $\Rightarrow XE^{10}$ - ankle improvement
- $X^{11}_0 \Rightarrow$ BRMs + ankle procedure $\Rightarrow XE^{11}$ – the left ankle problems seem completely solved
- 2 months later, new session for maintenance of general well-being $\Rightarrow$ BRMs $\Rightarrow$ after lower back BRM, a prerequisite for ankle procedure, the patient felt activity in the left ankle - probably the body discovered little problems still unsolved and took the appropriate measures.

<Ex4> Mr.C, age 73

History: herniated L4-L5 intervertebral disk, lying in bed, waiting for the scheduled surgery. His wife has an accident, the surgery is postponed and, motivated by the desire to assist his wife, he decides to try Bowtech.

- XE^1 – improvement of the general state
- after 6 sessions the herniated disk symptoms disappeared, the posture has changed (10 cm "gained" in height)

<Ex5> Mrs.F, age 38

History: depression, irascibility, hysteria attacks, psoriasis, all determined by stress, frustrated because cannot procreate − this was the main motivation for trying Bowtech.

After 7 sessions all problems were solved and the patient got pregnant.

<Ex6> F, age 7

History: spastic tetra paresis with extra pyramidal elements.

After 5 sessions gained elasticity of the Achilles tendon, popliteal tendon, hand and palm articulations.

5   Conclusions

In this paper we have presented the Bowen technique (Bowtech), general patient, practitioner and treatment models, and outlined the anticipatory aspects of the presented technique. Probably one of the most profound relaxation techniques existing nowadays, Bowtech is based on the theory that, once deep body relaxation achieved, the inner ability to address any problems in the body and mind by bringing them back to balance and harmony is activated. This body balancing technique, very gentle and non-invasive but extremely powerful, has benefic effects at all levels of the human being.

The dynamic spreading of the Bowen technique all over the world justifies the interest for the research concerning its interaction with the human being, research that the authors intend to continue.

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