George Ellett Coghill and the Alexander Technique

Gerald Foley 21 March 2012

George Ellett Coghill was a developmental biologist. His special area of study was the early development of a small American newt known to biologists as amblystoma.

He first heard of the Alexander Technique (AT) in 1939 when he was already a seriously ill man. He was immediately struck by the fact that Alexander, via a completely different route, had come to conclusions that he believed were startlingly similar to his own. He met and worked with Alexander over a weekend and as a result wrote an Appreciation for Alexander's book *Constructive conscious control of the individual.*

Coghill's direct involvement with the AT was thus relatively minor. Alexander was, of course, pleased with Coghill's support but there is no evidence that his work had any significant effect on Alexander's thinking. The interesting question is why Coghill, having spent the greater part of his working life investigating the early development of amblystoma was so convinced his findings supported those of Alexander.

To understand this it is necessary to know that it was not just the early development of amblystoma that interested Coghill but how this related to the behaviour of the mature creature – and ultimately what this revealed about the behaviour of human adults. From an early age he saw his life's work as an attempt to investigate …*the fundamental principles of psychology – the nature and interrelation of sensation, perception and thought.*[1]

He came upon Alexander when the bulk of his research had been completed and his mind was turning to the big question of what it all meant. He died before he was able to produce his final synthesis and it is debatable whether it was even possible within the terms he envisaged. But the body of his work, particularly some of his later papers, the detailed biography by his close friend and colleague, C. Judson Herrick, and the *Appreciation* he contributed to Alexander's book remain a fruitful source of ideas for those interested in Coghill and his contribution to the scientific underpinnings of the AT.

A difficult life

Life was never easy for Coghill. His own temperament and behaviour contributed significantly to his difficulties but were probably essential to his scientific achievements.

He was born in Illinois in 1872 and grew up as a sensitive and intelligent boy in a poor farming family. Religion was an important part of community life and he thought he wanted to become a Baptist preacher. In preparation for that he undertook a degree course at Brown University in Providence, Rhode Island, with the funding provided by his mother, and obtained an arts degree in 1896. He then transferred to a theological college where he found increasing difficulty reconciling the dogmatism of his teachers with his own inquiring attitudes. He had a crisis of conscience when he asked one of the teachers what he thought was a reasonable

[1] Coghill (1929)pv

question. The teacher became extremely angry with him and told him that to question the Bible was to insult the Lord.[2]

It was too much for Coghill and he left the theological college after six months and had a fundamental think about what he wanted to do with his life. He was interested in psychology and at the age twenty-five he envisaged his task as carrying out

> *…a systematic investigation of the natural history of the human mind by application of scientific method to psychological problems, with the hope of ultimately reaching a satisfying naturalistic philosophy.*[3]

Throughout his life, Coghill was nothing if not thorough – not say obsessive – in his various undertakings. In order to carry out this study, he felt he needed to know a great more than he did about the human brain and nervous system. He therefore began to study for a primary degree in biology at the University of New Mexico where the newly appointed President, Clarence Luther Herrick, turned out to be a major source of support and encouragement. Coghill was an apt student and was soon employed as an instructor at the University. He gained an MSc degree and was appointed assistant professor of biology. During this time he was also a cornet player which led to him falling in love and marrying his accompanist Muriel Anderson in 1900. She was a loyal co-operator in Coghill's enterprises over the years.

He then won a fellowship that enabled him to return to Brown University to work for a PhD. While there, he took courses in anatomy as well as psychology and philosophy and began research for his PhD dissertation on the cranial nerves of amblystoma. During this time and throughout his whole working life, he read widely and thoughtfully.[4] The philosopher John Dewey, who had such an important role in promoting Alexander's work, was one of the authors who influenced his thinking.[5]

Coghill's academic career

Coghill was awarded his doctorate in 1902 and found ill-paid employment for the next four years in an impoverished college of the Pacific University in Oregon. He then worked for a year at another small university in Oregon, following which he was appointed Professor of Zoology in Denison University in Ohio in 1907 though again the position was poorly paid.

When the Coghill family, which by now included three little boys, got to Denison there was no suitable accommodation available. Coghill, ever-determined in looking after his family and ingenious in making the best of the circumstances in which he found himself, bought a plot of land that sloped away from the road, and to the consternation of the neighbours, built an upside- down house, with the living rooms under the roof at the street entrance and stairs down to the bedrooms; he also developed a vacuum cleaner system with a centralised suction motor and pipes to all the rooms.

Though he had a hugely heavy teaching load he also doggedly continued his research. Some of this was on opossums but the bulk of his interest then and for the rest of his career was in amblystoma. Given his broader ambitions, it might be wondered why Coghill chose such a simple creature as amblystoma as the focus of his research. As he explained himself, it was a readily available and extremely simple form of

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[2] Herrick (1949)pp15
[3] Ibid.18
[4] Ibid.168
[5] Ibid.168

vertebrate life which could be collected from the wild in various parts of the United States and

> *…there is probably no other animal that offers better advantages than Amblystoma presents for the search after general principles of behaviour and nervous function in the vertebrates.*[6]

The very simplicity of amblystoma made it easier for Coghill to focus on the underlying principles of its behaviour.

Despite the various pressures on his time and the scarcity of laboratory resources, he still managed to publish his research results and speak at scientific conferences, and word about the quality of his work began to circulate in the scientific community. He also maintained a long-term association with the *Journal of Comparative Neurology* which is still published. Coghill contributed his first paper in 1898 and remained associated with journal for the rest of his life, serving as managing editor for the period 1927-33.[7]

In 1913 he was able to obtain the position of associate Professor of Anatomy in the University of Kansas. Again the salary was small and to supplement his income he bought a tract of land near his laboratory on which he kept some cows. With the help of two of his boys, he managed to run the farm for four years until he was appointed to a full professorship.

He was promoted to Head of the Department of Anatomy in 1916 and seems to have been a formidable presence. One of his students wrote later

> *…he impressed his students with his seriousness and absolute intolerance of laziness or foolishness. His quiet steps, his sober demeanour, his stern and penetrating look always caused a calm to fall over the laboratory full of students.*[8]

He took leave of absence from Kansas to carry out his most famous set of experiments in 1922. The work, which was carried out in the University of Chicago, consisted of an extremely detailed study of the development of the nervous system in amblystoma from the time they hatched out of their eggs until they had reached the stage of being able to swim. The observational team was led by Coghill himself with some assistants, among whom was his future biographer C. Judson Herrick, the younger brother of his earlier mentor in the University of New Mexico.

In the experiments, thirty specimens of newly hatched amblystoma each in a separate dish of nutrients were set in a circle on a round table. There was an overhead microscope which could be swung around from dish to dish. Looking through the microscope, the researchers made notes on the state of each of the growing specimens, and how they responded to tactile stimuli, generally applied by stroking them gently with a human hair. They then swung the microscope on the next dish and repeated the observations. It took about 15 minutes to go round the whole thirty specimens on the table. This was repeated day and night until the newly hatched amblystoma had reached the stage of actually swimming, which occurred about 60 hours after hatching. They did four sets of these experiments.[9]

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[6] Coghill (1929)p5
[7] Herrick (1949)pp44
[8] Ibid.p33
[9] Ibid.p34

Herrick, who was to become a close friend, colleague and supporter of Coghill, recalled:

> *For many years thereafter the floor of this room was marked by a circle worn by the feet of these indefatigable workers. Day after day and night after night this dreary round of careful testing and close observation under the microscope continued without interruption.* [10]

This exercise provided Coghill with solid detailed information on the early development of motility, the capacity for movement, in these little creatures. At the same time, by dissecting control specimens at a similar stage of development to those being examined in the nutrient dishes, he could establish how the observed changes in the capacity for movement were related to the development of the nervous system. The end result of all the work was that he had an extraordinarily detailed knowledge of how the neuromuscular system of the amblystoma developed in the early stages of its life.

At a practical level, given the available equipment of the time this was a seriously difficult undertaking. The newly hatched amblystoma is only about 3 mm (just over a tenth of an inch) long and is 7 mm long when it begins to swim. Establishing the exact state of its brain and nervous system at each developmental stage required some very delicate dissection work. By any normal standards, the whole enterprise was obsessive in its thoroughness but Coghill knew what he was after and this was the way to get it.

In addition to his experimental work and his teaching duties, Coghill maintained his interest in psychology, collaborating on seminars and courses with colleagues in other departments in Kansas University and in Ohio State University. In 1925 he was appointed Professor of Comparative Anatomy at the Wistar Institute – a long-established medical research centre in Philadelphia. By then he was aged fifty four. It was the first time he was financially secure and he was also free of teaching duties.

His scientific reputation was spreading and he received a variety of honorary degrees and awards. He gave a set of three lectures in University College London in 1928 and these, together with a preface by Coghill, were published in book form the following year as *Anatomy and the problem of behaviour.* This generated considerable scientific interest and contributed to his international reputation. The Wistar Institute was proud of its new star and ambitious plans were made to expand his laboratory and the scope of his research. There were also plans to establish links with leading research centres, creating a role for the Wistar Institute as an *"international clearing house and reference center."*[11]

The downhill slope

Then things started to go badly wrong. Coghill's health was deteriorating and he had already suffered a number of heart attacks. Work on his new laboratory ran into serious construction problems. In 1931, he and the Director of the Institute had a major falling out. It was a conflict between similarly inflexible personalities. Coghill's scientific success was largely a result of his single-minded determination in pursuit of his objectives. The problem was that the Director of the Wistar Institute had exactly the same temperament; neither was capable of compromise.

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[10] Ibid.p35
[11] Herrick (1942)p48

After his row with the Director, Coghill was more or less ostracised in the Institute and was refused any further research funding and assistance. But although he had to do everything himself he continued with his research. Then he had a major heart attack. In 1935, when he was making a recovery from that and was beginning to get back into his research work, he went on holiday. While on holiday, he was told he had been sacked from the Wistar Institute and his salary was stopped. He was sixty-three at the time. His wife asked that a member of the family be allowed to go to his laboratory and sort out his papers but they were dumped at his home.

Because of his poor health, he was medically advised to move to a better climate and he retired to Gainesville in Florida where he used a small inheritance to buy about 20 acres (8 ha) of farmland near the University of Florida. Because of his scientific reputation, he managed to get a small research grant and he built himself a house and a laboratory. Although he had no official connection with the University, some of the students used to walk the three miles to his farm, carrying their microscopes to examine his slides and *"absorb something of his philosophy."*[12]

His daughter Muriel went to live with him but his wife stayed in Pennsylvania. He patched things up to a certain extent with the Wistar Institute and they agreed to lend him papers and research material that had been prepared under his direction.

After all the troubles he had been through, Coghill had a peaceful and productive time in Gainesville. He got the farm working and trebled it in size so that he could earn an income from it. He managed a substantial amount of research, moving from amblystoma back to the study of opossums which he had begun in Ohio, and produced a number of papers on them. As his biographer Judson Herrick said of his response to the way he had been treated by the Wistar Institute *"He came out of the unequal contest crippled but victorious."*[13] But Herrick goes on to say that the consequences for the reputation and research programme of the Wistar Institute were *"disastrous".* It now operates as a cancer-research centre but there is no mention of Coghill in any of its on-line archives. He has apparently been written out of its history.

During the six years he spent in Gainesville, Coghill's health steadily deteriorated. He suffered increasingly from arthritis and heart problems and withdrew from public engagements. He suffered a severe heart attack in June 1941 and a month later, on 23 July 1941, he suffered another, this time a fatal one. He was sixty nine years old.

Coghill's scientific work

In looking at Coghill's scientific output, is essential to bear in mind his broader ambitions. In his introduction to the 1964 reprint of Coghill's London lectures, Paul Roofe of the University of Kansas wrote

> *Since he was primarily a naturalist and philosopher seeking basic data on development of both structure and behaviour we have in these three lectures the initial expressions of a comprehensive law that governs the coming into being of organisms. His final statements of this law may be summarized thus: all organisms develop in an integrated and orderly manner reacting from the beginning as a total pattern of behaviour with*

[12] Herrick (1949)pp69
[13] Herrick (1942)p57

discrete movements of parts (reflexes etc) individuating but always under the dominance of the organism-as-a-whole.[14]

All through his years of research on the tiny amblystoma Coghill was thinking of how what he was learning fitted into the big picture he was assembling. That big picture was about behaviour. In the sense used by Coghill, behaviour has none of the moral connotations it has in popular use when people talk of good or bad behaviour. It is simply the way a creature goes about doing what it does, how it uses itself in the activities of its daily life.

Coghill wanted to know how behaviour develops in an animal. He talked of

…my curiosity about the question of how the behaviour of vertebrates comes to be what it is in adult life.[15]

In the introduction to his book *Anatomy and the problem of behaviour* he said:

It seemed to me basic to a scientific study of behaviour to know whether the behaviour pattern of an animal develops haphazard or in an orderly manner;[16]

and goes on to say:

…and that, if it should be found that behaviour develops in an orderly manner, then there should be a corresponding order of development structurally and functionally in the nervous system.[17]

He thus wanted to know if the various neuromuscular capabilities that a creature acquires in the initial stages of its growth developed separately, subsequently coming under central control, or are under central control from the beginning so that they develop, as he said, in an orderly manner. In the case of a human infant the question would be whether the movements of the limbs are initially random, gradually coming under central control, or are part of an orderly pattern from the beginning.

The total pattern and freedom of choice

Coghill's conclusion was that the development of behaviour is not haphazard or random but rather that:

Behaviour develops from the beginning through the progressive expansion of a perfectly integrated total pattern and the individuation within it of partial patterns which acquire various degrees of discreteness.[18]

His original question had been about how does behaviour develop. His answer was that the organisational pattern for it is there from the beginning. Probably this would now be described by saying that behaviour is genetically determined but Coghill was interested in something broader and more dynamic. He wanted to understand how this innate organisational pattern comes to be realised in the muscular and neurological development of the creature.

We need to keep coming back to the core of Coghill's interests and reminding ourselves than he was not primarily interested in amblystoma but in how what he

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[14] Coghill (1929)piii
[15] Herrick (1949)pp 78
[16] Coghill (1929)pvi
[17] Ibid.vi
[18] Ibid.38

identified in this little creature contributed to his understanding of the behaviour of all vertebrates and, especially, humankind. Discussing his finding that there is a dominant unity present from the beginning of a creature's active life he says:

> *This principle is thoroughly demonstrated for Amblystoma, a typical vertebrate, and there is nothing in our knowledge of the development of behaviour to indicate that the principle does not prevail universally in vertebrates, including man. There is no direct evidence for the hypothesis that behaviour, in so far as the form of the pattern is concerned, is simply a combination or co-ordination of reflexes. On the contrary, there is conclusive evidence of a dominant organic unity from the beginning.*[19]

But if animals, especially humans, are completely determined from the beginning by the total pattern, where does this leave freedom and responsibility? Whatever the biology and physiology told him, this was not where Coghill the philosopher wanted to be. He believed in some degree of freedom of choice even for amblystoma. This is something he shared with Sherrington who, when he was discussing René Descartes view that non-human animals behaved as automata, purely automatic or mechanical beings, said that this

> *… lets us feel Descartes can never have kept an animal pet.*[20]

Coghill. moreover, believed he had identified a biological basis for this freedom. It was to be found in the phenomenon that he called *neurological overgrowth*. He said that at any given stage in the development of amblystoma and other vertebrates there is an *"overgrowth of neural mechanisms beyond the capacity of the animal to express their full nervous potential in behaviour."*[21] The fact that the nervous system colonises, as it were, the different areas of the body before the development of muscle tissue in them ensures the preservation of the total pattern. Coghill remarks that:

> *Such growth of the already conducting neurones accomplishes, then, the primary function of the nervous system: the maintenance of the integrity of the individual while the behaviour pattern expands.*[22]

He also referred to this advance growth of the nervous system as *"forward reference".* It means that once the necessary muscular capacity has developed in the growing creature it already has the neurological wiring that enables it do new and different things.

Even the simple little amblystoma by reason of its neurological overgrowth, acquires new possibilities for controlling its muscular system as it develops and therefore it has an increasing range of possible ways of responding to different stimuli, always within the constraints imposed by the total pattern. The way Coghill puts it is that the organism

> *…grows according to its own intrinsic pattern. Within the limitation of this intrinsic pattern of growth it is autonomous both in its reaction to its environment and its action upon its environment; and in this autonomy is the natural source of initiative or freedom in behaviour…*[23]

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[19] Ibid. 89
[20] Sherrington (1906)pxiv
[21] Coghill (1929)p92
[22] Ibid. 91
[23] Herrick (1949)p222

The more complex the creature, the greater the degree of neurological overgrowth and hence the greater freedom it has. This means that a cat, for example, is able to behave very differently depending on the environment in which it develops. In the wild, for example, it grows into the capacity to do what is necessary to find food, protect and reproduce itself. But if it grows up in a cat-loving family, is neutered by the vet, is equipped with a collar and a bell, and a magnetic key to the cat-flap, it has the capacity, by utilising its neurological overgrowth in a different way, to develop a totally different pattern of behaviour – acting like it is the boss of the house, for example.

Humans have greater freedom still. In Coghill's view neurological overgrowth provides the basis for a dynamic system in which

> *…may be found, I believe, a natural basis for the interpretation of reflexes and instincts, and for* that *individual initiative, autonomy or freedom which appears to be essential to psychology and sociology as sciences.*[24]

He goes on to say that:

> *…man is, indeed, a mechanism, but he is a mechanism which, within his limitations of life, sensitivity and growth, is creating and operating himself.*[25]

The next question for Coghill was how, in practice, the organism could exercise the freedom to create and operate itself within the total pattern. This, he saw being provided by what he called the *individuation* of body parts.

Individuation

By i*ndividuation* Coghill meant the emergence of the ability to use particular body parts in a purposeful and independent way within the constraints imposed by the total pattern. This implies a tension between the functioning of the whole and the parts. It is a delicately balanced process which is easily interfered with or distorted. In fact, the optimum balance is rarely achieved. As Coghill put it:

> *But since the parts are constantly struggling to maintain their individuality, and since they return under the dominance of the total pattern only through the reversibility of individuation, those periods of perfect integration of the organism-as-a-whole probably are ordinarily brief in most individuals.*[26]

Rare though such moments of complete harmony might be, Coghill nevertheless believed that a proper balance between the functioning of the parts and the totality was fundamental to the health of the organism, particularly in the case of human beings. He says:

> *This variable and relative dominance of the organism-as-a-whole over its parts is the key to psychosomatic medicine. The relationship is real and physiological, not imaginary and vitalistic or spiritualistic.*[27]

If the balance goes wrong, the degree of freedom of the parts

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[24] Ibid.p222
[25] Ibid.222
[26] Ibid.161
[27] Ibid.p161

> *…may become so great that it interferes with the welfare of the individual-as-a-whole. In that case it is pathological. This pathological condition may vary in scope from secretory and contractile reflexes to the personality of the individual. But as long as the individual-as-a-whole can prevail over the forces of individuation, a normal pattern of health and behaviour can be re-established. In this capacity the organism-as-a-whole is supreme.* [28]

The simpler the animal, the easier it is for it to achieve the optimum balance between the actions of the whole and the parts; it is unlikely amblystoma furrows its brow as it moves its limbs in the correct order for swimming. In humans, where voluntary actions, which can easily turn into habits, can distort the natural functioning of the body and its parts, the task of achieving the optimum relationship between the whole and the parts is much harder and more rarely achieved

Here, as the AT recognises, humans have a greater degree of freedom of behaviour than other creatures, including that of developing damaging or unnecessary habits of using themselves. When some people, for example, sign their names they tighten their jaws and distort their whole body; others sit in a rigid twisted pose when they are using a computer; some car drivers hold on to the steering wheel as though it were in danger of escaping from them; brushing the teeth is an exercise which for many involves the thighs and buttocks; and so on. In all such cases, the individual movements of the body parts required to carry out an action are accompanied by a series of unnecessary or parasitic muscle actions which interfere with the body's efficiency and can lead to a variety of health problems.

One of the key capabilities required for the achievement of the proper balance between the whole and the parts is the ability to inhibit the action of body parts when necessary. This applies to every neuromuscular organism, whether amblystoma or a human being but is of particular importance in the case of humans; it is a topic in which AT people are greatly interested.

Take the example of when a particular part of the body, say the arm, is used to do something. If this is to happen effectively and efficiently, the neuromuscular system needs to inhibit the parts of the body that are not involved in the arm movement. If there is no inhibition of the parts of the body not involved, the whole of the body flops about in an uncoordinated way as can be seen in various muscular or nervous disorders.

The way Coghill expresses it is that:

> *The major division of the total pattern must be under inhibition when a part acquires independence of action, and the same part can be inhibited while the major segment of the total pattern acts. So that the whole individual probably acts in every response, either in an excitatory or inhibitory way.*[29]

This was a topic which Sherrington had discussed extensively in *The integrative action of the nervous* system twenty years earlier and it led to his formulation of what came to be known as Sherrington's Law of Reciprocal Innervation. Simply put, this said that when excitatory signals are being sent to muscles to perform an action, inhibitory signals are automatically sent to the muscles in the rest of the body which are not part of the action or would interfere with it. In his 1936 Rede Lecture, Sherrington remarked:

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[28] Ibid.p163
[29] Ibid.p122

> *…to refrain from an act is no less an act than to commit one, because inhibition is coequally with excitation a nervous activity.*[30]

Normally, therefore the inhibition of the muscles not required for a particular action takes place automatically. But the roots of human versatility, and freedom of action, lie in the extent to which the cortex, the thinking part of the brain, can be used to override automatic or reflex functioning; this is also why individuation can come into conflict with the total pattern. This enables humans to perform actions which are beyond the remotest bounds of animal behaviour; it equally enables them to develop habits of behaviour which affect the individual-as-a-whole in uniquely self-damaging and destructive ways.

Mentation

Coghill had planned to write a book called *Principles of development in psycho-organismal behaviour*[31] and had prepared a highly ambitious outline structure for it but he died before he had made any progress in writing it. It is extremely doubtful if he could ever have managed to do so; the plan shows all the signs of someone firmly stuck in his writing. The outline for Part III, for example, reads:

> *Space-time as a pattern of mentation. Movement; mnemonic characteristics; recapitulation; amalgamation; epitomization; basis of space-time. Psycho-organismal posture; attitude; attention; compensation. Emotion; motivated feeling; sentiment. Motor-learning; habit; skill. Perception; perceiving-knowing; believing-understanding; logic-explaining; learning as acquired knowledge.*[32]

He did, however, publish a paper in 1938 which sets out some of his basic ideas.[33] The paper is entitled *Space-time as a pattern of psycho-organismal mentation* and as might be inferred from its title it is not easy to understand; even his ever-sympathetic biographer, Judson Herrick, found difficulties with it and remarks that it contains *…elliptical and cryptic passages that puzzle the reader.*[34] In his biography of Coghill, Herrick also reproduces the text of a manuscript paper on broadly similar lines, written around 1939 but unpublished when he died.

In his philosophical thinking, Coghill was acutely conscious of the perennial mind-body problem. Simplistically, if the material body. If there is no immaterial mind, the question is how do the materials substances of the body give rise to thought. Coghill's elusive concept of "mentation" was his way of avoiding the mind-body dualism which gives rise to such problems.

His unpublished 1939 paper comes closest to an explicit statement of what he meant by the word when he says that his work since 1907 had convinced him:

> *…not only that structure and function are one and inseparable, but that mentation with structure and function is one of an inseparable trinity, so to speak, making up the organism as a whole.*[35]

Elsewhere he says:

> *Mentation…conforms to neither space nor time. It is an attribute of the psycho-organismal individual as opposed to the organismal. While it*

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[30] Sherrington (1933)p10
[31] Herrick (1949)pp253.
[32] Ibid.p353
[33] Coghill (1938)
[34] Herrick (1949)p158
[35] Ibid.p153

> *presumably cannot be alienated from the organismal elements of structure and function, it is neither. It is that which perceives structure and function, and constructs science and art out of them.*[36]

Elsewhere Coghill says:

> *Mentation…conforms to neither space nor time. It is an attribute of the psycho-organismal individual as opposed to the organismal. While it presumably cannot be alienated from the organismal elements of structure and function, it is neither.. It is that which perceives structure and function, and constructs science and art out of them.*[37]

Herrick struggles with the concept and is unable to shed much further light on what Coghill meant. He says that:

> *Coghillian mentation, present in all organisms, shows progressive growth by individuation throughout phylogenetic and individual development. It is not clear at what stage in these processes the awareness component of mentation emerges or what may be the mechanism involved in this emergence.*[38]

In addition to his published and completed work, Coghill also left a variety of manuscript notes and incomplete drafts. Using these and his deep personal familiarity with Coghill and his thinking, Herrick does his best to weave these fragments together to provide a basis for the series of imaginary dialogues between himself and Coghill which occupy the final third of the book. As Herrick says:

> *Because so little of Coghill's thinking about psychology and philosophy appeared in print and because his manuscript notes are so tantalizingly disconnected, any attempt to present a systematic exposition of his philosophy would do him great injustice. For this reason the available material is presented informally in conversational style, so as to avoid any appearance of comprehensive organisation.*[39]

Herrick's efforts provide a variety of hints about where Coghill's thoughts may have going but remain far short of the lofty ambitions for a satisfying naturalistic philosophy Coghill had set himself a lifetime earlier. They will continue to tantalise Coghill scholars and specialists. The advantage enjoyed by AT practitioners is that there is no need to attempt to reconstruct his thoughts on the AT. He set them out clearly in the Appreciation he wrote for Alexander's final book *The universal constant in living*.

Coghill and the Alexander Technique

Coghill first learned about the AT in 1939 when he was in Gainesville. A New York journalist, Arthur Busch, a pupil of A. R. Alexander,[40] a brother of F.M. Alexander, was struck by similarities between the work of Alexander and that of Coghill, and published an article in *The Brooklyn Citizen* in which he said that *"Professor Coghill's findings confirm the scientific basis of Alexander's practical work."*[41] This led to a correspondence between Busch, Coghill and Alexander, resulting in Alexander

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[36] Ibid.p759
[37] Ibid.p759
[38] Ibid.p157
[39] Ibid.169
[40] Bloch (2004)p172
[41] Barlow (1978)p256

sending Coghill copies of his first two books, *Man's supreme inheritance* and *Constructive conscious control of the individual*. There is an account of this episode written by Edward H. Owen, one of Alexander's supporters, in the book *More Talk of Alexander* by Wilfred Barlow.[42]

Coghill wrote to Alexander about the books:

> *I am reading these with a great deal of interest and profit, amazed to see how you, years ago, discovered in human physiology and psychology the same principles which I worked out in the behaviour of lower vertebrates.*[43]

After the outbreak of the Second World War, Alexander who was then in his early seventies, was persuaded for his own safety to go to America. There was genuine fear that Britain would be invaded by Germany and Alexander was reputed to be on Hitler's wanted list because of some of the things he had said about Germany and its role in the First World War in *Man's supreme inheritance.* The book includes, for example, an extended discussion of the general failings of the German race in which Alexander describes them as *"an unfortunate and deluded people."*[44]

Because of his contact with Coghill, Alexander made a point of visiting him in Gainesville just before Xmas 1940 but by this time Coghill was in very poor health indeed. Alexander talked with him and worked with him for three days over a weekend and they got on very well together. In a letter to Walter Carrington, Alexander described the work with Coghill as *"his longest session"*.[45] According to Edward H. Owen, who delivered the 1961 F.M Alexander Memorial Lecture, Alexander later wrote to Coghill's biographer, Herrick, saying:

> *My meeting with Coghill was a notable and valuable happening in my 81 years experience.*[46]

The value of his encounter with Coghill for Alexander was that it provided him with further scientific support and validation of his own work in developing the Technique. Coghill, in his turn, wrote to a friend after his meeting with Alexander reiterating his conviction that:

> *Mr Alexander seems to me to be a very unusual man. He has grasped the same scientific principles through practical work with human beings that I have found through my investigations of detailed anatomy in the lower forms.*[47]

Coghill's lifelong concern had been to elucidate what he called *"the problem of behaviour"* – he had used the phrase in the title of his published version of the lectures he gave in London in 1928. His concept of behaviour was a broad one and comes close to what Alexander meant by the word "*use*". In *The use of the self*, for example, Alexander says:

> *…when I employ the word 'use', it is not in that limited sense of the use of any specific part, as, for instance, when we speak of the use of an arm or*

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[42] Ibid.pp256-259
[43] Ibid.257
[44] Alexander (1910)p103
[45] Alexander (1946)p234
[46] Barlow (1978)p258
[47] Alexander (1946)p234

the use of a leg, but in a much wider and more comprehensive sense applying to the working of the organism in general.[48]

Coghill had developed his ideas on the need for the proper balance between the totality and the individual parts of an organism before he had heard of the AT but it is easy to see why, when he did learn of it, that he would find it compatible with his own thinking. After he met Alexander he wrote to a colleague, Dr Millard Smith, in Boston:

> *Mr Matthias Alexander owes me nothing in regard to the principle of the "total pattern" for he and I worked in total ignorance of each other until the last year or two. That he should discover the principle in the human organism is marvellous, and he deserves all the credit that the medical profession and humanity can give him.*[49]

It is also noteworthy that while Coghill believed firmly in the pathological effects of a conflict between excessive individuation and the total pattern, he had no practical idea on how to deal with it when it did arise. The fact that Alexander had identified the same problem, recognised its malign effects on the individual, and had developed his Technique to deal so effectively with it makes it easier to understand why Coghill was so enthusiastic when they met.

Because they had got on so well, Alexander asked Coghill to write an Appreciation or foreword to *The universal constant in living* which Alexander was just completing. Even though he was a desperately ill man Coghill did so, completing it just a few weeks before he died.

Coghill's Appreciation in Constructive Conscious Control of the Individual

On the face of it, the study of the neuromuscular development of tiny newly-hatched newts does not reveal a great deal about the theory or practice of the Alexander Technique as a means for the psycho-physical re-education of fully grown human beings. But having read Alexander's books, talked to him and experienced the AT, this is exactly what Coghill had come to believe.

Although Coghill's Appreciation is a quite dense piece of writing, it is much clearer than most of his later work; the word mentation is not mentioned once. Coghill begins with a firm declaration of support for the scientific validity of Alexander's approach in the Technique. He says:

> *The practice of Mr F. Matthias Alexander in treating the human body is founded, as I understand it, on three well-established biological principles: 1. that of the integration of the whole organism in the performance of particular functions; 2. that of proprioceptive sensitivity as a factor in determining posture; 3. that of the primary importance of posture in determining muscular action. These principles I have established through forty years in anatomical and physiological study of Amblystoma in embryonic and larval stages, and they appear to hold good for other vertebrates as well.*[50]

He adopts a definition of posture as a dynamic, rather than fixed, state while at the same time distinguishing it from movement:

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[48] Alexander (1932)22
[49] Alexander (1946)p114
[50] Ibid.pxix

> *It seems reasonable, therefore, to propose that in posture the individual is mobilized (integrated) for movement according to a definite pattern, and in movement that pattern is being executed. In posture the individual is as truly active as in movement.*[51]

Elsewhere he clarifies this further, adding:

> *Posture, therefore, is a forerunner of action and must be regarded as basic to it.*[52]

He goes on to say that Alexander's

> *...work is concerned with the nature of the influence of the working of the psycho-physical mechanisms upon the general functioning of the human organism (posture), and his technique was evolved as an aid in maintaining the general conditions best suited to this working in those in whom they already exist, and in changing and improving them when this working can be shown to be harmful.*[53]

There is nothing new here for AT practitioners. Coghill is reiterating Alexander's insistence on the need to ensure that the proper overall functioning of the total human being, the psychophysical organism, is addressed before any attempt is made to deal with specific problems. Coghill goes on to say that Alexander

> *...has further demonstrated the very important psychological principle that the proprioceptive system can be brought under conscious control, and can be educated to carry to the motor centre the stimulus which is responsible for the muscular activity which brings about the manner of working (use) of the mechanism of correct posture.*[54]

Coghill continues his Appreciation by relating how Alexander provided him with a practical demonstration how misuse of the body can arise from the habitual use of the chair which he excoriates as a late introduction to human living and *...the most atrocious institution, hygienically of civilised life."*[55] He goes on to say that in the demonstration Alexander

> *...enabled me to prevent misdirection of the muscles of my neck and back, and bring about a use of these muscles that determined the relative position of my head and neck to my body and so on to my limbs, bringing my thighs into the abducted position. This led to changes in the muscular and other conditions throughout my body and limbs associated with a pattern of behaviour more natural (in agreement with the total pattern) for the act of getting to my feet.*[56]

He goes on to say that when there is a continuing mismatch between the actual functioning of the neuromuscular system and that dictated by the total pattern both physical and mental problems can ensue. As he put it:

> *It is my opinion that the habitual use of improper reflex mechanisms in sitting, standing and walking introduces conflict in the nervous system,*

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[51] Ibid.pxx
[52] Ibid.pxxii
[53] Ibid.pxx
[54] Ibid.pxxv
[55] Ibid.pxxii
[56] Ibid.pxxiii

and that this conflict is the cause of fatigue and nervous strain, which bring many ills in their train.[57]

He continues:

Mr Alexander, by relieving this conflict between the total pattern which is hereditary and innate and the reflex mechanisms which are individually cultivated, conserves the energies of the nervous system, and by so doing corrects not only postural difficulties but also many other pathological conditions that are not ordinarily recognized as postural. This is a corrective principle that the individual learns for himself and is the work of the self as a whole…

And concludes with the following resounding endorsement of the AT:

Mr Alexander's method lays hold of the individual as a whole, a self-vitalizing agent. He re-conditions and re-educates the reflex mechanisms, and brings their habits into normal relation with the functions of the organism as a whole. I regard his methods as thoroughly scientific and educationally sound.[58]

Conclusion

Coghill was an austere man with an austere view of science. He said:

The spirit of science is the spirit of devout enquiry into the truth of things as opposed to a life of fixed opinion; a life of delayed reactions as opposed to a life of immediate response; a life of suspended judgement as opposed to a life of intolerant, final decision.[59]

From the beginning of his scientific career he recognised that his own detailed findings on the early development of amblystoma, if they were to be relevant to his main concern, the question of human behaviour, needed to be linked to a wider concept of psychophysical unity in which, to use his own words, *the nature and interrelation of sensation, perception and thought,* could be more fruitfully investigated. When he met Alexander, he must have known from his own state of health that even with the ferocious dedication that he brought to everything he did, his ambition to produce the grand synthesis towards which had devoted his intellectual efforts for so long was finally beyond him.

It is therefore easy to see how Alexander's thoughts on the psychophysical unity of the human being, and the necessity for an integrated use of the self, provided an operationally efficacious blending of his unresolved thoughts on how the life-long battle between total pattern and the tendency towards individuation of its constituent parts could be resolved. The discovery of Alexander's work would have represented a radical simplification of the task he had set himself. It was a kind of coming home for Coghill and hence his excitement about it.

The issue of how any organism, and most particularly the psychophysical entity that is the human being, deals with the tension between the whole and the parts is still as relevant as it was in Coghill's day. In the broad sweep of neuroscience, enormous advances continue to be made in understanding the detailed functioning of nerve cells and their interactions at a microscopic and submicroscopic level, but how all

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[57] Ibid.pxxiv
[58] Ibid. xxiv
[59] Herrick (1949)p5

this adds up to the behavioural patterns of a functioning human being, is not always given the attention it deserves.

To his credit Coghill never forgot this broader context. For practitioners of the AT, it is central to what they do. Coghill's recognition of the dichotomy between individuation and the total pattern provides a useful scientific model or metaphor for Alexander's views on the psychophysical unity of the individual, how it can disrupted by habits of misuse and, crucially, how in practical terms the appropriate balance can be maintained, or restored when it has been lost.

Finally, a little thought-provoking anecdote from Walter Carrington's book *A time to remember* in which he recounts that when Coghill was talking to Alexander he compared their two lives. Coghill said that as a healthy young man he had devoted his life to science and ruined his health peering through a microscope to find out the principles which Alexander as an unhealthy youth had discovered by looking in a mirror and used them to improve himself and live to be the healthy seventy-two year old that Coghill had come to know. [60]

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[60] Carrington (1996)p50