

EXCHANGE

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The Alexander Technique and Poker

Ashley P. Adams

My wife's an Alexander teacher. I'm a poker player. She's a damn good teacher. Everyone says so and I believe them. I'm a solid poker player. I don't know if anyone says so, but my bank account is the only index that matters to me. And it says I'm pretty good.

What's interesting to me is that our professional worlds intersect around the concept of inhibiting habitual response. It's what I gather to be the core of the Alexander Technique. And it is the heart of playing solid poker. Let me explain.

I pick up bits and pieces from my wife about what the Alexander Technique is all about. From what I've gathered, as a non-student and surely as a non-teacher of the Technique, at an early age, our bodies learn to respond to varied stimuli. We don't learn this consciously. But our startle reflex, early on, caused many of us to adopt many bad habits of movement and posture that, over time, bite us in the ass.

For example, many of us, when we first started to make presentations to our fellow elementary classmates, we "learned" to hold our shoulders up, arch our backs, or do other sometimes subtle movements that little children make to compensate for their unease and anxiety. Similarly, when the child musicians among us practiced a difficult piece of music we tended to compress our heads into our necks or otherwise hold and tense ourselves in needless though temporarily comforting ways. We tensed up at the plate before we hit a baseball, compressed our back before shooting a basketball, and we scrunched up our bodies when we were on the phone. None of these things actually helped us do what it was we were trying to do. But they became our habit, and we became slaves to them, eventually suffering injury, pain, lack of mobility, and/or efficiency as a result.

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ATI Vision and Mission

To establish an open means of global communication for people to discuss, apply, research, and experiment with the discoveries of F.M. Alexander.

To foster the use of the F.M. Alexander Technique in social and environmental interrelationships.

To create a vital organization whose structure and means of operation are consistent with the principles of the F.M. Alexander Technique.

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From the Chair

*Catherine Kettrick
ATI Chair*

“...parents of every class will admit the fact not only that children imitate those who are with them during those early plastic years, but that the child's first efforts to adapt itself to the conditions surrounding it are based almost exclusively on imitation.”¹

Our understanding of the process of imitation and the role it plays in learning is more sophisticated now than during Alexander's lifetime, but it is undeniably true that people imitate. We imitate how others dress, how they talk, what they do, and how they move. And imitation starts soon after birth. Babies as young as two to three weeks old will imitate facial expressions made by an adult, and some babies as young as forty-two minutes to three days old can mimic an adult's facial expressions.²

Clearly the skill of imitation begins very early in life. And we are very good at it. Why? And how does it work?

Since 1996, scientists have been investigating a kind of neuron in the brain called mirror neurons. First discovered in macaque monkeys, these neurons are active when monkeys perform an action, or when they simply *watch* someone perform an action, for example picking up an orange. In addition, the neurons can fire if the monkey hears the sound of an action it previously both saw and heard. For example, if a monkey watches someone tear a piece of paper, and then later hears a recording of someone tearing a piece of paper, some mirror neurons will fire.³

People also have motor neurons. As with other animals, motor neurons are active in people both when we do something, or when we watch someone do something, especially when it is something we can do ourselves.⁴ Thus when a toddler learns to walk, she is using her motor neurons both when she tries to walk, and when she watches other people walk. In fact, it is possible that her mirror neuron/imitation system lets her “walk” when she is just watching.

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EXCHANGE

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Thus, mirror neurons seem to be active in goal-oriented actions. When the monkeys just heard the sound of paper tearing, their mirror neurons didn't fire. But when they recognized the sound as something attached to an action they had seen, their mirror neurons did fire. When adults try to imitate a series of hand gestures, they are more successful if the experimenter shows them the final hand position in the sequence. Seeing the final hand position—the goal of the series of gestures—makes it easier for a person to remember and do each gesture in the series.⁵

This use of mirror neurons is unconscious, of course, and imitation itself is largely unconscious. We have all probably had the experience of sitting in a group and after a while noticing that most of the people are sitting in the same way—the same leg crossed or hands held in similar positions. People naturally and unconsciously imitate.

But why should we imitate in the first place? Obviously it might help us learn how to do things—walk, use tools, etc. And if mirror neurons are involved when we hear something we previously saw and heard, it might also help us learn spoken language.⁶ But are there other advantages?

Scientists also believe that the mirror neuron system underlies our ability to feel empathy for others.⁷ When infants and toddlers imitate the people around them, they become involved in social interactions. This experience then helps them realize that other people have thoughts, feelings, and desires just as the toddler does. Thus when people unconsciously imitate the expressions or actions of others, they develop their empathetic skills.⁸ By moving the way someone else moves, we start to feel the way they feel. Knowing how someone else feels makes it easier to “put ourselves in their shoes” and understand them—and if you are an animal that lives in groups, as people do, being able to know what someone else is thinking by knowing how they are probably feeling is a huge advantage. It lets us read—or at least make a good guess at—the intentions of other people. And from empathy comes moral values, how we react to and treat other people.⁹

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From what I gather, Alexander teachers (my wife, for example) work with students to teach them about these unnecessary, stressing, and ultimately injurious habits of movement and posture that we have unwittingly practiced for much of our lives. And then, through words and some light hands-on work, they help the student inhibit these habits and learn a more easeful and eventually less injurious way of being and doing. Over time, the successful teacher helps the students learn how to inhibit their habitual responses on their own, so they can free themselves from these injurious routines on their own—thus freeing themselves physically and perhaps even emotionally and psychologically.

Though my fellow poker players would rarely put it in quite these terms, this process is at the heart of becoming successful at my profession.

Most of us, when we start to play poker, bring to the game many habits of being and doing. Some of us are naturally aggressive. We like to bully others at the table. We get into the habit of initiating the betting, raising, or re-raising—irrespective of the true value of our hands or our opponents' hands. Our opponents check* and we bet; they bet and we raise. Some poker players learned early on to be more passive when playing the game—checking and calling bets made by others became habitual. Still others became, for one reason or another, timid at the table. They learned to fold even their good hands if they faced any aggression from their opponents.

Whatever our natural tendency was—aggressive, passive, timid, or some other habit of play—it determined, to a large degree, what our action would be, regardless of the particular situation we were in.

(As an aside, let me note that these “poker habits” are not always indicative of our general “posture” in the non-poker world. Many players who are timid at the table are bold in real life. Similarly, some of the most aggressive players in a poker game tend to be enormously conservative and restrained in their day-to-day lives. But I digress.)

These habitual responses at the poker table injure us in two significant ways that I'd like to explore. And then I'd like to show you how to do what an Alexander teacher trains her students to do: inhibit those habitual responses and replace them with more thoughtful action.

The first injury caused by habitual responses in a poker game is self-inflicted. We hurt our bottom line by failing to properly think about and weigh all of the many factors that should go into determining our action.

Let's say, for example, that you are playing 7-card stud, a type of poker with exposed (“up”) and hidden cards. The highest-ranking up cards determine

who has the option of initiating the betting in the game. Some players, given the option of betting because they have the high hand showing, invariably bet. For whatever reason, they seldom decline the option by checking. If someone raises their initial bet they routinely re-raise. Perhaps they think that doing otherwise is an unwanted sign of weakness. Perhaps they want to always look as strong as they can—who knows? But their habit is to begin or escalate betting every time they have the option. They do so automatically.

In so doing, they are failing to properly weigh all of the factors that should go into making the important decision of whether to bet or check. Sometimes, for example, the best move based on the exposed cards, the type of players you're up against, and the cards you hold, is to check rather than to bet. But if a player's natural inclination to bet goes uninhibited, they don't give themselves the ability to cipher out the *best* action—settling for their automatic action. This will cost them money in the long run.

There are countless variations of this. Any player who raises, calls, checks, or folds out of reflex rather than reason clearly prevents himself from figuring out and taking the action which makes the most sense, tactically and strategically. By failing to employ a thoughtful strategy or a useful tactic, these players deprive themselves of the useful tool of thought, sacrificing potential profit in the process.

The other injury the uninhibited player will suffer will come at the hands of his more thoughtful and observant opponents. Good players—that is, players who do not respond habitually—will notice what type of player they are up against. In other words, your general habits at the table—your inclination to be, for example, aggressive, passive, or timid—will be exploited by the better player to your disadvantage. Good players exploit your habitual play by using it to figure out what cards you are likely to have based on your pattern of response. Hence, a player who is properly typed as timid who actually raises will be known to hold a truly powerful hand—causing the good player to fold and thus depriving the habitual player of money he would have received had his opponent called his bet. Players who habitually raise, and are thus categorized by their observant opponents as aggressive, will find that good opponents will steal pots from them when they don't initiate or escalate the bet—since the good player will properly conclude that the habitual player must have absolutely nothing if he doesn't bet—and bluff mercilessly to win the pot.

The best players are those who can inhibit their habitual response and replace it with a thoughtful and appropriate betting action. These players will notice how their opponents seem to be responding to their cards, couple that with the quality of their own cards, and then, using that and any other information they have gleaned, determine the best action to take to further their objective of maximizing their winnings and minimizing their losses.

In poker, as in life, there may be nothing we can do about our immediate and visceral reaction to things. We all have impulses. But when I'm sitting at the poker table, I have learned to listen to the voice of my imaginary Alexander teacher on my shoulder whispering that I should think first about what I should do before I act. I have profited from those whispered lessons—literally.

* For those of us not familiar with the terms of poker: "raise" means to increase a bet, "check" means to pass up an opportunity to bet or raise a previous bet, "call" means to match the previous bet, "fold" means to drop out of a hand (abandoning whatever one has bet so far), and a "pot" is the total money bet on a hand of poker.

The Origins and Theory of Body Mapping

William Conable

Introduction

Our ideas about body mapping are not central to understanding the Technique, nor do they substitute for its essential teachings: primary control, inhibition, orders, and the like; but they can be important pedagogical tools. They are also not wholly original with us. They are clearly implied in Alexander's writings; both of our principal teachers, Marjorie Barstow and Frank Pierce Jones, occasionally used them in teaching us. They are suggested in David Gorman's work and in the pedagogy of many of our colleagues. What this chapter hopes to contribute is systematic exploration and a theoretical framework.

In trying to understand the difficulties people have in learning the Alexander Technique it is useful to observe that the words by which we refer to the parts of our bodies do not mean the same thing to all of us. This being true, what we do to carry out intentions related to the parts of our bodies is not consistent among all of us. This can easily be demonstrated in any group of people by asking them to point to their shoulders or their hips. Even among people very sophisticated in their appreciation of the human body (such as Alexander teachers) there is often a wide range of answers to such a question. It is noteworthy that in general all of these answers will be correct—that is, they will each refer to what people sometimes agree that these words mean.

Alexander frequently referred to what he called people's "imperfect sensory appreciation." What did he mean by this term? Although sometimes he maintains that he is referring to all the senses, the main thrust of his discussion refers to kinesthesia. There are two possible sources of the distortion Alexander describes. The first is that undue pressure on or tension in the kinesthetic receptors leads to a distortion of the information they send back to the brain; or perhaps that by the phenomenon of sensory accommodation the information they send is screened out. This is, in other words, the transmission of an imperfect or "debauched" kinesthetic message to the centers where it is interpreted.

The second possibility is that the information sent to the brain is indeed accurate, but is misinterpreted in experience. This would lay the emphasis in Alexander's statement on the word appreciation. This second possibility is the subject of this chapter.

Body Maps

We all seem to have in our minds maps of our bodies and their workings. They include size, shape, and mechanics. These maps are what we use to

interpret our kinesthetic and visceral sensations; at least to some extent, we also guide our movement by them. This is not the same thing as the well-known neurological correspondence of various parts of the brain to various parts of the body. That is simply physiological; the map being discussed here is something constructed in consciousness.

The function of creating these maps may be in some way innate, but their contents are not. It is easy to understand that this must be so. Our bodies change in size and shape so radically and so continually throughout the course of our lives that if our maps of them could not change, the maps would almost always be erroneous.

Because the maps must be able to be changed, they must be learned. They are created from the experience of movement, of touching and being touched, and maybe from other things as well. They are our memories of our interpretations of our experience. But because these interpretations may not be accurate, the maps based on them may also not be accurate.

Indeed, inaccuracy in this regard seems almost inevitable. Knowledge of the complex details of the structure and function of the human body is not available to an infant mapping his or her body. Misunderstood or erroneous verbal and pictorial information, imitation of others' idiosyncrasies, and emotional charging or rejection of various body parts may play a distorting role. Fantasy and simple guessing are important sources for the details of the map. Details may be mistaken; neither is there any guarantee that the map will be consistent. Since it is formed out of many experiences over a long period of time and on the basis of an incomplete awareness of the totality of the body (or indeed, of the self) it is quite usual for different aspects of the body map to be, if not grossly contradictory, at least subtly inconsistent.

It also seems to be true that the interpretations forming the basis of the map are often unconsciously performed. They often take place early in life, well before the development of a sophisticated adult consciousness. Therefore the map based on them is often at least partly unconscious and often initially accessible to adult scrutiny only with some difficulty. Once this difficulty is overcome, it is possible to learn to change the map with surprising ease and with surprisingly powerful results.

An Example

The following story is a good introduction to the use of the mapping concept (in fact the incident led me to develop the idea) and illustrates a number of its implications. Some years ago a colleague asked me to observe a violin student who was having difficulty bending her bow arm at the elbow. Nothing the student or the teacher could think of was effective in helping her to solve this problem. Watching her play, I asked myself what I would have to think in order to move that way. It looked to me as if a possible answer was that she was thinking of her elbow joint about two inches higher on her arm than it really was. I thought that a plausible reason for this would be that that was the distance of her elbow from her shoulder when she started the violin as a child and that perhaps she had not changed her thinking as she grew.* When I proposed this to her and showed her where her elbow joint really moved, she said, "Oh, I can do that," and immediately proceeded to play with a freely moving elbow.

This story is significant in several ways. First is the issue of how the student's map influenced her behavior. Because she felt her elbow joint to be located where in truth there was nothing but solid bone, when she tried to bend it there no movement could occur. Further, since she interpreted the sensations from the area where the joint actually existed as being in the middle of her forearm, it became important for her to prevent any movement there—if you bend in the middle of a bone, something is broken! Yet the moment she was made aware of these unconscious assumptions

The Origins and Theory of Body Mapping

and revised them, she was able to move in a very different way. This reveals an important underlying principle which seems to operate consistently: if there is a conflict between the way the body is mapped and the way it actually is, people will behave as if the map were true. I believe that this is because the map is the interface between conscious awareness and the bodily mechanisms: it is literally how we know ourselves. Although it is amenable to observation on a meta-level of consciousness, most of the time we simply accept it. And yet such is the power of the mapping function that simply changing the map can effect an instantaneous change in experience and behavior.

Next it is interesting that although this student was apparently unable to bend her elbow when playing the violin, she bent it over and over again in other activities of her life: eating, combing her hair, driving a car, and so on. This illustrates the apparent fact that the body map need not be internally consistent. In this it is no different from any other mental representation that people make of the world. Indeed, by its very nature any mental representation of the world is not the same as what it represents, and thus is necessarily flawed. Much of the time this is insignificant and even beneficial; sometimes it leads to difficulties.

Types of Mismapping

There are various common types of mapping errors. People map their bodies erroneously as regards size, structure, and function; they leave things out; and they are prone to vagueness and blankness. Illustrating these sorts of problems allows the discussion of a number of interesting examples without the necessity of offering a detailed description of the complete map.

Size is one of the most widespread inaccuracies in the map. A particularly prevalent mismapping is a result of the adolescent growth spurt. At the very time when rapid changes are occurring in the size, shape, and proportions of the body (and thus when the map is in strong need of revision) typical American students spend hours sitting still in school. The map is unconsciously revised through experience of movement and contact: the two things least likely to happen in junior high school. If this were not enough, children of this age are likely to feel awkward or self-conscious about their bodies and bewildered by their changing sexuality, as it affects both their internal and their social experience. Small wonder that many of us responded by saying in effect “Body? What body? I don’t want to know about it!” and thus interfered with the automatic re-mapping process at a crucial developmental moment.

This can be observed in the demeanor of gawky adolescents of both sexes, awkwardly trying to operate an adult-sized body on the basis of a child-sized map. Sometimes they try to force the body down to the size their self-concept tells them it is—we often try to adjust the territory to fit the map!—stooping to get the head down to the level of smaller peers, or pulling the shoulders down in a way that gives the impression of a huge long neck on a spindly body. The hip joints are often operated as if they were the old distance from the head, and there seems to be no right place for the arms. Strange distortions are imposed in an effort to increase or decrease the size of the body as a whole or of various parts which are considered too large or too small. Many of these awkwardnesses are gradually eliminated as the map is unconsciously revised; but many adults manifest the discomforts of early adolescence in their body maps through life.

Other examples of sizing errors have other sources. We have found that most people greatly underestimate the diameter of the spine. When asked to demonstrate the size of one of their own cervical vertebrae, people will typically show diameters ranging from two to four centimeters. Rarely will anyone get close to the true dimension (a minimum of five centimeters for a small adult) and almost everyone is astonished when shown how to feel the transverse

processes of his or her own atlas. Realizing the true size of the spinal column gives almost anyone an increased sense of strength and stability.

The most frequent example of structural mismapping is the wrong location of joints. The story of the violin student above is an instance of this problem. Another common example which effects musicians and others who depend on finger dexterity is the mislocation of the joint between the proximal phalanges of the fingers and their respective metacarpals. This is not placed at the line at the base of the fingers (on the palm side) but from one to two centimeters further down into the palm. Going back in forth in one's mind between these two maps and wiggling the fingers is a highly revealing experiment in the power of the map.

The words hip and shoulder each have several meanings in English, and it is quite common for people to think of the hip and shoulder joints in ways which combine several of these meanings. People often try to move their arms as if there were no sterno-clavicular or gleno-humeral joints but at a notional joint at the inner border of the deltoid muscle (see the drawing on page 53 [of *How to Learn the Alexander Technique*]). Similarly, they try to move their legs from the very top of the pelvis, or from an imagined joint at the bottom of the ischia or at the pelvic attachment of the gracilis muscle. Each of these misconceptions has its own characteristically distorted gait. There are dozens more of these confusions about joint placement.

Functional misconceptions also abound. One very common one is important for people who practice manual skills. When the forearm is rotated, the ulna is stable, while the radius rotates around it. This creates an axis of rotation approximately in line with the little finger. Few people realize this, but instead try to stabilize the radius and rotate the ulna on a putative axis in line with the thumb, the first finger, or the middle finger. This mistake can cause severe problems of awkwardness and even tendinitis.

The last kind of mapping errors which I will mention are those of vagueness, blankness, or absence of a part of the body in the map. These lacunae can come from simple ignorance or imitation. Frequently, however, they are the result of withdrawing from an injury and never entirely re-establishing contact with the injured part. Also, unfortunately, they can be the result of physical or psychological abuse which leads the sufferer to disown or distort part of the body. In such cases there may be a resistance to correcting the map, or there may be a resurfacing of repressed traumatic experiences which requires emotional support or treatment as an adjunct to the work of the teacher.

* I am no longer confident of this interpretation. I now believe it more likely that the student was interpreting the kinesthetic sensations from the triceps tendon as if they came from the elbow joint itself; but the results were the same, both for the student and for my future thinking.

William Conable is Professor of Music at Ohio State University and former Principal Cellist of the Columbus Symphony Orchestra. His course in the Alexander Technique at OSU, established in 1973, was one of the first university courses in the Technique. This article was revised from a paper presented by William Conable at the Third International Alexander Congress in Engelberg, Switzerland in August, 1991, and was printed in its original form in the Congress papers, published by Direction, Bondi, Australia, 1992. It is reprinted here from the book How to Learn the Alexander Technique (3rd edition, 1995) and the Andover Educators website (www.bodymap.org) with the kind permission of the author and Barbara Conable, Alexander teacher and founder of Andover Educators. ☺

What Every Teacher Needs to Know: An Interview with Barbara Conable

*During her years as an Alexander Technique teacher and member, consecutively, of ACAT, NASTAT, AmSAT, and ATI, Barbara Conable developed the theory and practice of Body Mapping and spelled out its application to AT teaching in *How to Learn the Alexander Technique: A Manual for Students* and to making music in *What Every Musician Needs to Know About the Body* (available from Andover Educators at www.bodymap.org). Her book *The Structures and Movement of Breathing: A Primer for Choirs and Choruses* is available from GIA Publications, Chicago (www.giamusic.com). Barbara is founder of Andover Educators, a network of music teachers saving, securing, and enhancing musical careers with accurate information about the body in movement. Retired now, Barbara lives in Portland, Oregon, where she writes, gardens, and relishes being a grandmother.*

Andrea Matthews: How would you define Body Mapping?

Barbara Conable: Body Mapping is the conscious correcting and refining of one's body map to produce efficient, graceful, and coordinated movement. The body map (often called "internal representation" by scientists) is one's self-representation in one's own brain. If the representation is accurate, movement is good. If the representation is faulty, movement suffers in proportion to the inaccuracy. When one's map is corrected, the movement improves. Progress can be quite rapid and a musician can, over time, learn to play with great freedom and efficiency.

AM: The story of how William Conable came to the idea of Body Mapping is fairly well known from your books *How to Learn the Alexander Technique* and *What Every Musician Needs to Know About the Body*. Our readers can learn more from his article "The Origins and Theory of Mapping" reprinted in this issue (from *How to Learn the Alexander Technique*). What made you decide to run with those ideas and focus your energy on developing them into the "What Every Musician Needs to Know About the Body" course, and then starting Andover Educators?

BC: The more I used Body Mapping in my Alexander Technique teaching, the more interested I became in it as something effective in its own right. I was impressed with how far toward freedom and efficiency people could go on their own using Body Mapping in situations in which they couldn't have AT lessons, or couldn't have them regularly. I had taught a lot of musicians, and I began to see that Body Mapping had the potential to transform music education, which was in a sorry state with regard to movement. If music teachers could cultivate excellent body maps in their students, just as a matter of course in the studio, then injuries could be prevented, along with the technical limitations that stunt so many musical careers. I just followed that interest where it took me, and I created the network of music teachers called Andover Educators to that end.

AM: As I understand it, some of the Andover Educators are already Alexander teachers, but many are not. What do you see as the relationship between Body Mapping and Alexander Technique? How do you characterize the difference and/or similarities to your trainees? Do you feel training and working as an Andover Educator is different depending on those different backgrounds, and if so, how?

BC: Alexander Technique teacher training is usually regarded as professional training, for a life work, a vocation. Andover Educator trainees already have a profession. They are musicians, and they train as Andover Educators in order to enhance the profession they already have, not make a new one. A few Andover Educator trainees were already Alexander Technique teachers, so even as AT trainees they had been the exception to the rule. They were using the Alexander Technique, too, to enhance their musicianship and their music teaching, as they now also use Body Mapping.

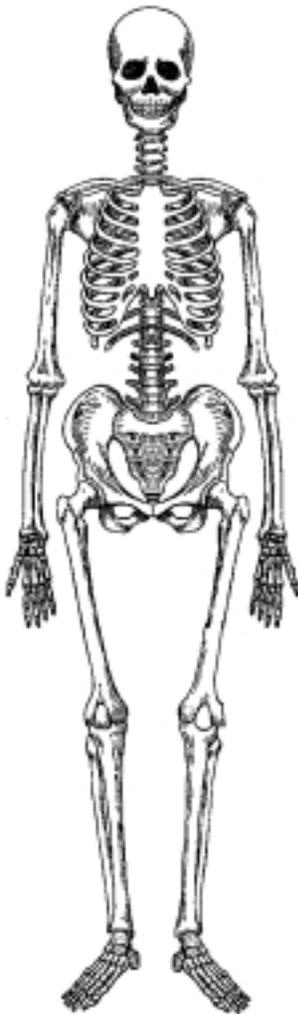
While a Body Mapping lesson and an Alexander lesson might contain similar information—about the importance of freeing neck muscles, for instance—a Body Mapping teacher does not do hands-on teaching, relying instead on changes in the student's body map to achieve improved movement. Changes in the body map are brought about by verbal coaching, by extensive use of visual aids like anatomical models, and by demonstration. The Body Mapping teacher carefully observes the student's movement and gives active positive feedback about the changes in movement that occur as changes are made in the body map.

The Alexander Technique, by contrast, generally makes extensive use of hands-on instruction and employs a strenuous mental process called constructive conscious control, in which a maladaptive postural pattern is "inhibited" while a more constructive pattern is learned, a process akin to changing or breaking a habit. Body Mapping is an easier process in that it bypasses the matter of habit altogether and simply corrects the body map to correct the movement.

The Alexander Technique often uses procedures developed by Alexander and his first-generation teachers such as "lying-down work," "chairwork," "monkey," "whispered ahhh," none of which appears in Body Mapping lessons, though, actually, Body Mapping is usually used as a resource in other lessons, such as music lessons. The Alexander Technique is less often used this way.

There are big differences in how training is done. The Andover Educator trainees' contract states that much of their work toward certification will be done on their own. Certification depended on three criteria: one, that they can reliably demonstrate what is being advocated with their own instruments; two, that they have a clear conception of the manner in which they will teach the course, and to whom; three, that they give an acceptable trial course. There is no time limit in achieving certification, and some people take many years, often to meet criterion one, but also because trainees fit their training comfortably into their busy lives. We accept for training only mature and self-directed musicians who are capable of working this way and who have a good chance of contributing to the theory and practice of Body Mapping in the future.

One other difference has to do with what it means to be certified. Andover Educators are certified to teach the course *What Every Musician Needs to Know About the Body*, for which we strive to maintain a very high quality of presentation. Music teachers don't need certification to teach Body Mapping, which anyone who understands it can use in the studio. We want every music teacher using Body Mapping as soon as possible in the studio because it works so well there.



Conable Interview

AM: In the discussion of the structures and movement of breathing in Body Mapping materials, it is noted that the spine “gathers” on the inhale and lengthens on the exhale. How did you come to this conclusion, and what do you see as the mechanism for that?

BC: I learned about gathering and lengthening of the spine in breathing from Don Zuckerman, an Alexander Technique teacher and psychotherapist in the [Washington,] D.C. area. I do not know how he came to understand it so well, but I suspect it was chiefly from his own observation, probably informed by his expectation of an lengthening aspect to breathing based on his Alexander training and his own singing. I do not remember what Don claims as “the mechanism” for gathering and lengthening, but the lengthening is the one we are all familiar with as AT teachers, a complex coordination led by the head, with gathering as its prerequisite.

AM: How do you see the “gathering” phase fitting in (or not) with the Alexandrian view of the overall lengthening of the spine throughout breathing and movement?

BC: Well, I’m troubled by the word “throughout” in your question. A spine could not, of course, gather on inhalation if it were lengthening throughout breathing, and how could a spine lengthen throughout movement? We’d reach to the treetops, and beyond. The human spine lengthens periodically in movement, as does a cat’s. The cat’s spine gathers up when the cat is resting in a chair and lengthens out as the cat gets up and leaps off the chair. You would never see a cat’s spine lengthen as the cat settles in for a nap. That’s its gathering time, which prepares for its eventual lengthening. Likewise a cat’s running: a cat’s spine gathers at one point in each stride in running and lengthens at another, as does the spine of a human runner who is free and nicely coordinated. It’s a problem, I think, that an Alexander student is so often invited to sense the lengthening and so infrequently invited to sense the gathering. Next time you’re guiding a student in and out of a chair, ask him or her to notice not just the lengthening on getting up but also the gathering on sitting down. A student can learn to perceive the gathering and to distinguish gathering from pulling down, which is a very different phenomenon. Gathering involves no tension, just a natural resilience in the spine, a flexibility, as Marjorie Barstow used to say, top to bottom.

We’re speaking here of a body-mapping issue. Many people have the spine mapped as moveable in bending and spiraling and twisting but not as mobile up and down, constantly changing its length. Once the student has corrected the body map in this regard, he or she displays an increase in natural spinal movement.

The gathering of the spine makes the lengthening possible. No gathering, no lengthening. It's that simple. I learned from Don Zuckerman in a weekend workshop in Columbus many years ago that I had inhibited my gathering on inhalation out of fear that it was downward pull, when it really was the natural deepening (some people prefer to call it) that is partly just the product of getting bigger around on inhalation. When I stopped inhibiting the perfectly natural and normal gathering, I had the natural and normal lengthening on exhalation completely available to me. This was a tremendous revelation for me, and I have since found other AT teachers and students in the same pickle I was in, inhibiting the natural along with the unnatural. In the natural gathering, the vertebrae come closer together without compression, the curves of the spine change, deepen, and the stage is set for their springing apart on exhalation, thus the spine's lengthening.

Last year I had a chance to watch my own breathing using the world's fanciest movement analysis program in the Balance Lab in the Center for the Study of Posture in the Neuroscience Institute at Oregon Health Sciences University. It was very exciting because we could all see the gathering and lengthening with perfect clarity on the monitors, no matter how the movement was being represented, and it could have easily been measured. The neuroscientists present were speculating as they watched on the complexity of this natural coordination of spine and respiration. Some of it, as I said, is just an artifact of greater circumference (pull out the sides of a balloon and it gets shorter top to bottom). There may be some effect on the spine from rib movement and the descent of the diaphragm, and there is almost certainly the presence of an automatic postural pattern, what scientists used to call a postural reflex. Of course, the gathering and lengthening of the spine coordinates and supports the breath when that is the most important thing happening, when we are singing, for instance. If we stop singing and go out and run or walk, the spinal gathering and lengthening coordinates the gait, becoming independent of breathing. It is servant to whatever is happening.

AM: Do you discuss Primary Control in training Andover Educators, and if so, a) is it important to AE training, and b) how do you describe it?

BC: Oh, sure, but we treat it as a body mapping issue, that is, does the music student have the spine mapped as gathering and lengthening and as being led into length by the head, and does the student have the head and spine as central, or primary, to any local movement at the instrument.

AM: Has your study and development of Body Mapping changed your thinking about Alexandrian principles and/or priorities? If so, how?

BC: Yes. First of all, I have come to believe that almost all downward pull and muscular tension is the direct result of body-mapping errors, which is why the tension goes away when the errors are corrected. This makes life much simpler for students than it is when no cause for their tension is known.

Second, I am confirmed by my experience in the conviction that much too much is made of inhibition in most AT teaching, and here I will tell a little story. I walked into an AT training school one morning to see a circle of people sitting bolt upright with blank faces and their hands turned upward on their thighs. "What on earth are you doing?" I asked. After a time, one said, "Inhibiting." "Oh, my god, so you are," I said. I went to a blackboard, saying, "I'm going to list here what I see you inhibiting," and I wrote in big letters: Life. Breath. Impulse. Emotion. Expression. Movement. Conversation. Fortunately, I got a good laugh out of them, and then I said, "Honestly, folks, what are the chances F.M. Alexander ever did for one second what you were doing as I came into this room?" The students had to admit that the likelihood of that was zero, given what a dramatic, vivid, lively person he was. I said, "Look

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here, Alexander inhibited the bad stuff. You're inhibiting the good stuff. Just stop it. Don't do that ever again. It's awful."

Not only do many AT people inhibit the good stuff, they gone on inhibiting long after the bad thing is no longer active. Once you've got your primary control going, just enjoy it. No need to go on inhibiting. Inhibition is a strategy, not a lifestyle, and it is much overused. When in doubt, choose direction over inhibition, in my view.

AM: From watching Lea Pearson's workshop as well as your own briefer one at Longy School of Music (Cambridge, MA), I can see that Body Mapping is more than just a body of information; the delivery of it (particularly in working with individuals) is critical. How does your training address that, and does that aspect of the work largely derive from Alexander Technique training, or are there other influences as well?

BC: Yes, Body Mapping is more than just a body of information. In the first place, ours are not anatomy classes, though a lot of anatomy is taught, because the whole point is getting the truth into the body map, so we have to invite students to constantly compare their own maps with the truth and then resolutely begin to assimilate the truth into their body maps, not just intellectually. This requires more of the student than an anatomy class would demand.

You say "the delivery of it is critical." Yes, I use still images, moving images, and anatomical models. I ask the students to experiment, and I try to keep everything as engaging as possible. We Andover Educators demonstrate a lot, and we use lots of humor. Of course, whenever we are working with the musicians with their instruments, we have their attention. Time with the instruments is crucial. Another factor is what I call "hootin' and hollerin'" — by which I mean active feedback. I am constantly naming and celebrating the changes that I see.

You ask, "How does your training address that, and does that aspect of the work largely derive from Alexander Technique training, or are there other influences as well?" We actively work on presentation skills. As far as I know, none of the Andover Educator training derives from AT training. For one thing, in AT training there seems to be a high value placed on the student teaching like the teacher, whereas in Body Mapping training the emphasis is on individuality, on finding your own way, and on contribution to the body of knowledge. There is so much to learn about mapping errors and how to correct them that we need everybody making and communicating their discoveries.



AM: Do you feel there is an optimal order (or natural progression) in which to teach the information of Body Mapping? If so, what and why?

BC: In teaching our Body Mapping course, we have an order. Hour One is devoted to defining a body map and describing how a body map can be corrected. Hour Two is about balance and weight distribution through the core of the body. Hour Three is about mapping the arms; Hour Four, the breathing; Hour Five, the legs; and in Hour Six we work with instruments. In two-day courses, there is an hour of exploration after each hour of instruction, and in a five-day course we sometimes teach the material in spiral fashion, a little about each thing each day, and most of each day is devoted to work with instruments.

Now, it's entirely different in work with individuals. First of all, in AT teaching you would use Body Mapping only when you perceive that there is a body mapping error that needs to be corrected in order for the student to readily learn the Technique, of the neck, for instance. Many beginning AT students have very destructive errors in the mapping of their necks. In the music studio, a teacher uses Body Mapping to solve problems that will be difficult or impossible to solve otherwise, and you always start with the body map error that is causing the most trouble. "What will make the most difference?" That's always the question that creates the priorities.

If you are teaching music lessons to children, you introduce the body mapping material as each new skill is being cultivated, so that the student never has to do anything with a mistaken map.

AM: In your book on *The Structures and Movement of Breathing*, you discuss breathing in great detail, and you've noted that in the What Every Musician course at least an hour is devoted to the topic. Are there key ideas about breathing that you could summarize for us?

BC: The structures of breathing need to be mapped correctly with regard to structure, function, and size. Of all the structures of the body, musicians tend to mismap the structures of breathing most egregiously and most frequently. Just ask a musician who is not breathing well about the nature and location of lungs, for instance, or the diaphragm, and you are likely to hear something truly bizarre that will, fortunately, explain why the breathing is so compromised. The function errors are often, if possible, worse than the structure errors. It's not uncommon, for instance, for a musician to describe the ribs as moving because air has come into or out of the lungs, the exact opposite of the truth. This is a very costly mismapping, and mapping the truth always dramatically improves the quality of breathing. Damaging size errors are common, too.

Then the movement of breathing needs to be correctly mapped. Many of our students have mapped the movement of breathing as bottom to top, for instance, and some almost make it look that way by manipulating the abdominal wall, so we have to get that misconception cleared up so that the students allow the natural top to bottom sequencing of the movement of breathing: the ribs sweep up and out in coordination with the diaphragm's descent which pushes the abdominal and pelvic viscera outward against the abdominal wall, front, sides, and back, and downward against the pelvic floor. This is a wavelike movement top to bottom, as is the exhalation, starting with the descent of the ribs and their coordination with the doming back up to neutral of the diaphragm, allowing the viscera to come back up and in, aided by the springing back (rebound, recoil) of the abdominal wall and pelvic floor.

Thirdly, the students must come to understand the vitally important role the spine plays, but that has already been discussed.

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A word of caution: sometimes singers and wind and brass players who have studied the Alexander Technique fail to make all the choices a musician must make about the breath because they are afraid to do so is end gaining. I say, “Making those choices is not end gaining, it’s your job.” They must, for instance, inhale the right amount of air for the phrase. This is a skill they must learn. Since the amount of air they take in is determined by how much their ribs move, they must learn to monitor rib movement so that they can make the correct judgment.

Likewise, they must control the exhalation so that the sound is even, consistent, and sustained, and so that the phrase ends just as they want it to, as the exhalation ends. This is done by moving the ribs downward and inward at just the appropriate rate, which may be very slowly at the beginning, as compared with an ordinary breath, and faster at the end. This, too, is a skill that must be learned, not end gaining.

All Alexander Technique students can learn to allow a normal breath for the circumstances. In giving table lessons, I always watched the student’s breathing very carefully. It is not uncommon for a tense student just getting onto the table to be breathing twenty, twenty-one, twenty-two breaths per minute, which I always determined by use of a very large clock with a minute hand. As the student’s muscles relax so that the ribs move through a more normal excursion, the student’s breathing generally slows to six, seven, or eight breaths per minute, a much more enjoyable experience. A student who learns a normal excursion for sustaining life on the table is more likely to allow a normal excursion for strenuous activity and for playing very long phrases as a musician.

AM: I understand you’ve recently been introduced to the work of Tom Myers (the author of *Anatomy Trains*), who includes the concept of tensegrity in his work (as does David Gorman). In this model, the bones share the work of weight-bearing with postural muscle and connective tissues, in such a way that the bones act as spacers for the muscles and connective tissue, while the latter suspend the former up off of each other, evenly “tuning” the system as a whole and allowing for optimally reflex-facilitated, integrated movement. Has your outlook on Body Mapping (or way of teaching it) changed in light of these ideas?

BC: Tom Myers has done for connective tissue what Harvey did for the circulation of the blood, that is, described it definitively. The connective tissue just does seem to be organized as Myers says it is, and that’s a great discovery, very concrete, and I trust it will be absorbed into mainstream anatomy and medicine. I have certainly placed more emphasis on the mapping of connective tissue and its organization than I did before I read his work, with very good result.

[However, it] worries me that his linking what he has learned about the organization of the connective tissue to other ideas [such as tensegrity] will prevent his discovery from being widely accepted and widely used. I wish so much that he would confine himself to the concrete and submit a paper to a reputable journal of anatomy or science, titled something like, “The Organization of the Connective Tissue,” or “Connective Tissue: Its Distribution and Organization.” I truly believe he would be given a significant place in science and his name would be taught to fourth graders, as Harvey’s now is, and his discovery could be absorbed into medical science. It’s fairly rare for someone with his training to do that, but it would be given consideration if it were written in a scholarly way. I’m afraid he’s making the same mistake Alexander made, so that what should by now be common knowledge—the global effects of neck tension and their alleviation—is instead the little-explored secret of fewer than a million people.

Tensegrity[...] has always made me uncomfortable, not as applied to non-living materials, as it originally was, but as applied to living tissue. I just don’t think living tissue works very much like non-living stuff. A non-living tensegrity structure stands alone, but a human body collapses when it is no longer living. An elderly victim of osteoporosis can

think tensegrity thoughts till she's blue and her nose will still approach her navel, so her deteriorated bones sure seem to have been a lot more than spacers. Tensegrity as I have heard it applied to living systems disturbs me, too, because it is so abstract it would be very difficult to determine whether it is true or not. So, in my teaching, thumbs up for Myers, thumbs pretty much down for tensegrity.

[The concept of tensegrity] doesn't fit with Body Mapping. We don't map models. I've seen [Dr. Donald Ingber's] article [in *Scientific American*, January 1998], but I didn't find it convincing beyond what I couldn't possibly know anything about, the cellular level. It's irrelevant to our work if cells work that way. The delivery of weight through the bony structure is so kinesthetically clear. We have sense receptors to feel it and musicians are marvelously grounded and mobile when they use those sense receptors and they can learn to discern when they compromise that delivery even a little bit so that they can come right back on balance, using the bony structure optimally. I have seen magic returned to movement so many times this way I don't see any need for something more abstract. Bones are phenomenally effective bearers and deliverers of weight. Their internal anatomy in this regard has been understood for a long time and is sufficient to explain what I value in movement, with no need for something more abstract.

We include in what we teach only what we have proven to ourselves to be highly beneficial to musicians in action, with regard to their body maps. Nothing else. There are no contradictions with established science, so far as I know. Richard Nichols, world-renowned neurophysiologist at Emory University, and wonderful flute player, has been science advisor from the beginning. He has watched the course twice to be certain we have included nothing that is not scientifically verified. I have wanted to be sure that scientists and physicians can watch the course without the slightest discomfort about what we are teaching, and that has turned out to be the case. In fact, we are often praised in that regard, and we have been able to present in places where others who are not so scrupulous have not been welcomed. [For more information,] read the article he wrote for the [Andover Educators] web site (www.bodymap.org). Each sentence in that article represents many books and articles, many of which I have read. It's a wonderful distillation of what is known.

We hope to establish in Andover Educators an organization that will, over time, contribute to the body of learning about the body map. So far, we can contribute the purely practical observation that when musicians correct their body maps, they effectively correct their movement problems, but in the long run we hope our role is more than that.

AM: Is your understanding or teaching of Body Mapping evolving in new directions since your book *What Every Musician Needs to Know About the Body* came out, based on new information you're encountering?

BC: Well, I have been nearly obsessed with trying to figure out the relationship between the body map, which governs movement, and what we might call a self map, which governs (presumably) behavior otherwise. Psychiatrist Hans Peter, in Switzerland, married to a fine AT teacher whom some of you know, assures me that the term self map is a reasonable one and that the self map is simply part of the body map and can be judged for its soundness by its congruity with the body map. For our modest purposes as Andover Educators, the self map is examined only with regard to a person's ability to learn to move well as a musician and with regard to operating effectively as an artist.

Thomas Mark, an Andover Educator who wrote *What Every Pianist Needs to Know about the Body*, was a philosophy professor at Columbia before he went back into music. He is studying the neurophysiology of the body map, and he is now writing a book on the philosophical implications of the existence of the body map. The beginning of the book is brilliant and extremely well written. I can't wait until it is done, because I think it is going to be a great benefit to

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everyone who reads it. Tom Mark's work is a good example of how the evolving new directions in Body Mapping are coming now from the people I have trained rather than from me. That is, of course, what I had hoped for.

AM: Are there aspects of Body Mapping, or stories from your teaching of Body Mapping (or training Andover Educators) that I haven't touched on that you would like our readers to be aware of?

BC: I want to emphasize that body map errors can show up in function and size as well as in structure. Some AT teachers who use Body Mapping miss important errors because they look only to structure and never to function or size. A good example of a function error: a young violinist came to me with serious recurring tendonitis in her left wrist. I saw immediately that she had mapped her wrist as the location of supination to the strings, and her attempt to supinate at her wrist was putting a visible strain on her left wrist that was causing the tendonitis. I said to her, "Oh, look here, that movement to the strings occurs at the elbow, not at the wrist." She said, "That's the stupidest thing I ever heard." I said, patiently, "Well, I know why you think it's stupid. You think it's stupid because it's contrary to your body map, but it is nevertheless true, and I will prove it to you." I used two anatomy books and an anatomical model of the forearm, and eventually I had to challenge her. "Okay," I said, "let me see you do it. Hold your left forearm in front of you, palm down, and turn your hand up at your wrist without moving your forearm." Of course, she couldn't do it, and she eventually relinquished her major attitude and became curious about her own structure. By the time she left that day, after an hour, she was moving her forearm quite nicely at her elbow, leaving her poor wrist alone. Her tendonitis quickly healed, and it has never come back, and it never will. This was purely a function error. She had attributed to the wrist a movement that actually occurs at the elbow. I wouldn't have caught this devastating error in her body map if I had been looking only to structure.

AM: Currently, *What Every Musician Needs to Know About the Body* is available in versions by other Andover Educators specifically for flutists (by Lea Pearson), pianists (by Thomas Mark, with video), and dancers (by Robin Gilmore). I plan to review the currently available materials in the next issue of *ExChange*. Are other versions in the works? And are you planning a new edition of the original anytime?

BC: *What Every Singer...* is being co-authored by Kurt Zeller, Melissa Malde, and MaryJean Allen. Their goal is to have it done by the end of the summer. Stephen Caplan means to finish *What Every Oboist* by that time, and *What Every Violinist* (by Jennifer Johnson) should be done by October. [Also,] one of the finest hammered dulcimer players in the world is doing a book. As for *What Every Musician* itself, no; the idea always was that it would gradually disappear as the versions for individual instruments are completed. ☺

***Don't forget to register for the ATI AGM in
Scottsdale, Arizona, November 13-17, 2006!***

From the Chair

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Where will research on mirror neurons go? Hard to say, but next time you watch a movie or read a book and feel emotionally involved, or get excited cheering for your favorite sports team, or find pleasure in the company of good friends, thank your mirror neurons for some of the richness we experience in life.

ENDNOTES

¹ Alexander, F.M. *Man's Supreme Inheritance*, 1996, Mouritz, p. 68.

² "Repeat after me: 'imitation is the sincerest form of perception.'" *Science News*, 5/24/2003, p. 330. (For more about the recent research on imitation, see *The Imitative Mind* (A.N. Meltzoff and W. Prinz, eds., 2002, Cambridge University Press).

³ *Ibid.*, p. 331.

⁴ People who can't do something—for example dance classical ballet—don't have their mirror neurons activated when they watch someone dancing classical ballet. But a trained dancer will have their mirror neurons become active when watching someone dance their style of dancing. Daniel Glaser, the author of this research, speculates that an injured dancer may recover faster by watching other dancers dance. (NOVA Science NOW, Mirror Neuron Research Update, <http://www.pbs.org/wgbh/nova/sciencenow>).

⁵ *Science News*, 5/24/2003, p. 331.

⁶ In fact, in people, mirror neurons seem to be located in Broca's area, a part of the brain involved in speech production. (*Ibid.*)

⁷ *Ibid.*

⁸ "The mental butler did it." *Science News*, 10/30/1999, p. 280.

⁹ Interestingly, the mirror neurons of children with autism show little or no activity when the children imitate facial expressions. These were children who scored normally on intelligence tests and have only mild to moderate social difficulties. ("Mirrors cells' fading spark: empathy-related neurons may turn off in autism." *Science News*, 12/10/2005, p. 373). ☺

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Worldwide Offices of Alexander Technique International

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Norway

Nesttunbrekka 26
5221 Nesttun
(+47) 55 13 08 63 (ph/fax)
(+47) 922 42413 (cell)
ati-norway@ati-net.com

Switzerland

Dammerkirchstr. 14
CH-4056 Basel
(+41) 61322 6879
ati-switzerland@ati-net.com

UK

28 Marshal's Drive
St. Albans AL1 4RQ
Herts.
01727 760067
ati-uk@ati-net.com

Alexander Technique International (ATI) is a worldwide organization of teachers, students, and friends of the Alexander Technique created to promote and advance the work begun by F. Matthias Alexander.

ATI embraces the diversity of the international Alexander community and works to promote international dialogue.

About the Alexander Technique

Experience of the Technique has led to praise from George Bernard Shaw, Aldous Huxley, Prof. John Dewey, Sir Charles Sherrington, Julian Bream, John Cleese, Kevin Kline, Roald Dahl, Robertson Davies, and many others. It is taught at the Juilliard School of Performing Arts in New York, and the Royal College of Music and the Royal Academy of Dramatic Art in London, the Stratford Shakespeare Festival and the Shaw Festivals in Canada, Boston University, Brandeis University, and many other centers.

The common factor in all aspects of life is that how we are using ourselves—the way we do things—affects the result we get. The Alexander Technique is a means of improving that use. It has been called a “pre-technique” that people can apply to furthering their own special skills and activities. It is also essentially a preventive technique with which we can learn to improve and maintain our health.

The individual is the focus of the Alexander Technique. We are all unique, with different bodies, different experiences, and different problems. We go about the process of change in different ways and at different rates. For these reasons, what happens in an Alexander Technique lesson depends very much on the needs of the student at the time. In the basic sense, though, you will learn an attitude of not trying to gain your ends at any cost, and, at the same time, how to prevent your harmful habits that cause unnecessary stress and restrict your capabilities. Obviously, since what you are changing are patterns built up over many years, a permanent change will not be brought about overnight. However, the person who learns to stop and take time, to think constructively about how he or she uses him- or herself in everyday life, will find that this simple procedure can have far-reaching results.

Further information about the Alexander Technique can best be gained from a teacher near you (see the list at right for the nearest ATI office, or visit www.ati-net.com for teacher listings), as your changing experiences through lessons are the only real way to understand the nature of the work and what change is possible.

Worldwide Offices of Alexander Technique International

Main Office, USA

1692 Massachusetts Avenue
Cambridge, MA 02138 USA
(+1) 617-497-5151
(+1) 617-497-2615 (fax)
1-888-668-8996
ati-usa@ati-net.com

Australia

29 Nareen Parade
North Narrabeen, NSW 2101
02-9913-2480
ati-australia@ati-net.com

Austria

Schubertstrasse 46
A-4020 Linz
43-(0)732-605 849
ati-austria@ati-net.com

France

10 Rue Froidevaux
75014 Paris
(+33) 01 43 35 10 48
ati-usa@ati-net.com

Germany

Dielmannstrasse 1
60599 Frankfurt
(+49) 69 60 32 55 77
ati-germany@ati-net.com

Hungary

Zsolna u. 12/A
Budapest 1125
(+36) 1 2258581
(+36) 1 2258582
ati-hungary@ati-net.com

Ireland

Kirkullen Lodge
Toreeny, Moycullen, Co. Galway
(+353) (0)91.555800 (also fax)
ati-eire@ati-net.com

Israel

31/4 Jabutinski Street
Givatayim 53360
972-3-731-6358
ati-israel@ati-net.com

Japan

Hiedaira 3- chome 19-13
Otsu-Shi, Shiga-Ken
(+81) (0)77-529-2881 (also fax)
ati-japan@ati-net.com

