Welcome to DAA 1000 and a personal experience that initiates your introduction to the challenging and fulfilling world of dance!

What is dance? This world of dance reaches into so many different aspects of the human experience that narrowing it down to a single definition is simply going to waste too much paper! Let your instructor be your guide towards that definition. So, for now, enjoy dance as the pure and simple experience it is intended to be.

The holistic nature of dance has dubbed it the Mother of the Arts, but, even this maternal title lacks credence when compared to the youthful influence it generates to every gender and generation. Dance evokes a power and life almost complete in itself. Apparently its charisma has reached out to you. You have enough interest in movement to follow the urge to learn about the world of dance. Its primal and ritual aspects make it possible to explore the mysteries of the self. The social aspects unite our energies into communal experience. As an art, it is a response to how our internal touches our external nature. It reaches and probes all our limits and boundaries and, at the same time, encourages us to push further.

The primal, individual, social, and artistic levels will be explored through a variety of dance experiences, discussions, and demonstrations. Your intellect will understand, appreciate, and apply those historical, theoretical facts and principles introduced. Yet, the muse of dance, Terpsichore, demands your participation. It is she (with your instructor) who will lead you through the range of the dance experience.

You want to take a dance class to clarify for yourself how to enrich your movement potential. The agenda behind this class is to make the technique and appreciation of various dance styles assessable to you. Like most of your experiences at the university level, you will finish the class with exactly what you put into it.

The text is for the enhancement of what you will learn through experience. What is discussed in class, even historical data, culminates in what you will be doing on the dance floor. You may not leave at the end of the semester able to be accepted into a famous dance company, but, you will train as a professional. You will end up defining dance in very clear, well-defined movements. By the completion of the semester you are left with wondrous choices on how you will employ your definition of dance.

But, as you can well guess, before we arrive at those wondrous choices, you must begin. Welcome to Fundamentals of Dance.
TOOLS OF THE TRADE

The tools of the trade are simple. You require space and a safe floor. Add to that the mirror and the barre - appropriate dance clothes - for the sake of argument, I'll add some music to the list. Anything else? Ah, yes. I nearly forgot - your discipline.

The bulk of this text is designed for you to get the most out of dance. There is information printed that many professional dancers may not be aware of. It is, however, only an introduction to many aspects, which, if you are interested, can be learned with further study.

As indicated earlier, dance has many facets that make its definition difficult to pin down. Not surprisingly, this doesn't stop one from getting up (or getting down) on the dance floor. This is where this course steps in. What appeals to you about this course is its discipline, excuse me, your discipline. Random dance movements, like at a club in downtown Gainesville, have a place but you are aware of something more. You need a chance to use your entire body toward a unified commitment; call it dance. Your spirit, your emotions, your mental and physical awareness - all need to be connected. That objective is what gives the fundamentals of dance its initiative. Discipline needs to be initiated at this juncture in your dance education because it needs to be placed in front of your goals. Goals will be developed as you learn more; discipline is something that needs to precede you as you step onto the dance floor.

We are working towards dance as a shared experience. What you will experience in class is not unlike a day in the life of a professional company. Do not put excess pressure on yourself if this is your first dance experience. You are not alone! The class is a dancing body. It is in the classroom, like the rehearsal space, where you will learn that the risk of making a mistake is the path to improvement. That last point is very important. This course is giving you the rare opportunity to make a mistake. Anything that allows you to luxury of making a mistake, places you on the path to improvement. More on this later. Basically, the only aspect of your work that is judged is your discipline.

We are about to delve into some simple but important aspects of dance. Class discussion will cover the primal roots of dance that will make its world immediate to today's needs. At its core, dance is communication.

At almost any level of dance study, a student (and even the famous and phenomenal Baryshnikov, while taking his daily class) may find himself "spinning his wheels" without making any progress. This can happen when he reaches one of the natural learning plateaus - to use an old cliche as an analogy - when he becomes so caught up in climbing a particular tree that he forgets about the forest and where his tree fits in. The text can serve as a bird's eye view of the forest and a reminder that if we work with tangible goals that are coupled with your awareness and patience, we will find our way though the proverbial woods. Let's start with some aspects of dance that will come into play no matter where in the forest you may find yourself. (p.s. - even your teacher has those plateaus, just not Baryshnikov's salary.)
Some people are happy to take dance class for its own sake. Some take it with the intent to perform. Since our path will veer towards dance as art, rather than for its own sake, let us place some layers on the field that will make it more visible. We are working towards defining dance as human movement as an object for perception - an image. It is this definition that will spur further discussion.

Another area of discussion/participation is the wide world of CHOREOGRAPHY, the craft of making a dance. The choreographer is the person who uses the craft to put the dance together. The methods that are used to "put a dance together" are as varied as the artists and styles of dance they represent. The issues that make the choreographer an artist and the dance art, is the stuff of yet another fun filled talk.

For the sake of argument - "a dance" can be seen as a specific "hunk" of particular human movement that has been selected for perception and presented to an audience. There are at least three general areas involved in the realization of the final dance product. These areas are "performed" by the choreographer, dancer(s), and an audience. The choreographer's role is to make the "specific image" by conceiving of that image, selecting and structuring movement capable of creating that image and, traditionally, by teaching the movement and structure to the dancer(s). The dancer's role is to make the image perceivable by performing the movement and structure as choreographed. Each audience member then completes the process and product by perceiving the image, i.e.; by seeing the movement and structure as performed by the dancer through his own eyes.

The choreographer, within his/her creative process, does not put together steps, but rather finds movement - manipulates movement elements. Every medium has elements which the artist manipulates to create the desired image. In dance, these elements are SPACE, TIME and FORCE. Each element is present in every movement. Although one element doesn't exist without the other, we can experiment with each individual element to better understand what makes a dance.

THE ELEMENTS OF DANCE

SPACE.
This element includes all visual designs: both static shapes (the kind seen in a photograph of a dance at a given moment) and lines followed by movement (what you see in a multiple exposure photo). Static and movement shapes and relationships exist in both the personal space surrounding each dancer and the general space in which the dance is performed.

There are many aspects involved in spatial design.
*Levels. Movement may occur on low, medium, or high levels. In one, two, or three dimensions.
*It may vary in size, shape or contour, and/or direction in relation to the performer and the audience.
And it may have various relationships to the body's axes, center and personal space edges, as well as take various pathways in the general performance space.

While words to describe levels, size, and direction are used frequently in everyday life, beginning dancers may find some initial difficulty in the transition of these concepts to the dance arena. Static and movement shapes are often complicated, but the student may find some comfort (and aid in learning to reproduce a particular shape) by being able to classify them as either:

SYMMETRICAL (mirror image, or at least balanced) or
ASYMMETRICAL (unbalanced in any way);

CURVED, LINEAR, CURVILINEAR, or ANGULAR;

SUCCESSIONAL (leading the eye in one direction) or
OPPOSITIONAL (causing the eye to change directions).

Some illustrations of these categories of designs are in Appendix A.

Knowledge of stage directional terms is essential to the dance student to communicate and understand spacial arrangements. Like an actor, he/she must perform specific movements in positions planned to have some specific relation to another performer and/or to the audience, and he/she must allow movement to follow a specific path. Although dance performance is not restricted to a traditional proscenium stage, this stage arrangement supplies the basic terminology that assists in communication of directions. The following is a description of those directions.

The proscenium arch is the picture frame that separates the back stage areas from the audience's view and directs its vision toward the movement occurring within that frame. The part of the stage that projects in front of the proscenium is called the apron and the unseen areas of the stage behind the proscenium on either side are called the wings. The back part of the generally rectangular performance area is called upstage; the front is called downstage. Right and left are defined by the performer's perspective as he/she faces the audience. The stage floor (all that is seen by the audience) is sub-divided into areas that is included on the labeled diagram included in Appendix A. Do not read any further until you understand these basic stage directions. You could be lost in SPACE.

SPEAKING OF SPACE and related areas - Early in this century, Rudolf von Laban, a name you will come to know and appreciate, developed a system for movement analysis. [If any of your course work includes time management study, you will run into his (and Warren Lamb's) name.] The school that furthers his work to this day calls the work Laban Movement Analysis (Labananaalysis) which includes a method of dance notation called Labannnotation. A central term you will hear associated with his work is Effort-Shape. His work is a way of observing and describing shapes in personal space and exploring ways to discover one's movement potential. The brilliance of his work is in the myriad of ways that LMA can be applied. The dance world is an obvious benefactor of his work. Although a thorough understanding of the system requires more study than
necessary here, a nodding acquaintance can be quite helpful to the beginner dancer. Here's the nod -

First, you must imagine your personal space as a sphere surrounding your body with some specific reference points on the surface of that sphere. When these points are connected, they form a three-dimensional figure called an icosohedron. Next, we must become aware of the three axes of the body and personal space: the vertical, the horizontal, and the saggital; and of three basic planes: vertical, horizontal, and saggital.

Illustrations of the icosohedron, axes, and planes are in Appendix A.

**TIME.**
(Yes, there is more to this element then getting to class on time, but not much!)
As a choreographic element, time refers to the general pace of the movement (tempo), the weight and timing of the underlying pulse (beat), the weight and timing of the accents and the relative duration’s of movements to one another and to the basic pulse. Perhaps the first step to understanding the movement element of time is to acknowledge the fact that every movement takes a certain amount of time to be accomplished. A number of movements performed in sequence therefore create a design in time (rhythm). This design may create for the perceiver the impression of a leisurely, moderate, or hurried pace; of an insistent and regular to non-existent or highly irregular pulse; of insistent and regular to non-existent or highly irregular accents; of even or uneven progression.

Since music works so extensively in time, it has developed a complete and accurate system for describing time design. Dancers, like yourself, can be greatly aided by an acquaintance with the musical time language. Allow me to introduce you.

**TEMPO** refers specifically to the speed of the underlying **BEAT**, which is used to measure durations (much as a ruler is used to measure distance). It is this beat which teacher’s count when they show you the time design of class exercise. The underlying beat of a piece of music, or dance phrase, is broken into units of a specific number of beats by accents. The units are called **MEASURES** and the number of beats in each measure is the **METER**. For example, you may be taught a movement pattern that lasts for 32 beats, broken into eight units (measures) of four counts.

Most Western music has units with numbers of beats that are divisible by two (duple meter) or by three (triple meter). There are, of course, other meters, like fives and sevens and a 6/8 time signature which can be used as either a duple (two sets of three quick counts) or a triple (3 sets of 2 counts or all six counts) meter.

**AS TIME GOES BY...** The above discussion of musical rhythmic terminology is not meant to imply that all dances are set to music or that those which are set to music owe their time designs to their accompaniments. In fact, twentieth century aesthetics practically require all concert dances to make their own rhythmic statement, and some
contemporary music is too rhythmically complex to be used by dancers to measure their movement timings. However, when it is possible, teachers and choreographers may use the underlying beat of the musical accompaniment to help dancers perform their movement with rhythmic accuracy.

For example, instead of giving the vague direction to perform movement A slowly and movement B quickly, your teacher may tell you to perform movement A over a period of three counts and complete movement B in one count. In other words, while other methods, such as developing kinesthetic awareness of specific movement timings are often employed, using the musical beat can provide a short-cut to attaining clarity in the element of time.

An illustration of musical rhythmic terminology is in Appendix B.

**FORCE.**
Force refers to the quality with which movement is accomplished. Energy, effort, dynamics and movement quality are other terms indicating the same element. All movement requires some energy in order to occur. Factors such as the amount of energy, the speed of its application and completion, its degree of freedom of flow, etc. allows for a great variety in the specific feel and appearance of energy use.

To better understand this concept, move your arm in a circle. Start by moving it very freely and gradually add imagined resistance. Imagine your arm is moving through air, then through water, then through molasses, then through taffy, then against a wall. Notice, through your senses, how differently the movement feels as you progress. Then try the same thing watching yourself in a mirror and notice how differently the movement actually looks.

USE THE FORCE... Here are a few other specific movement qualities that dancers, such as yourself, must master. Many of these we will be doing in class, often without specific identification.

**SWINGING** movement is pendular. It begins with a quick impulse followed by free -- allowed rather than produced -- light movement. The amplitude of a swing depends upon the strength of the initiating impulse, the size of the pendulum, the arc over which the movement travels, and the speed of both the impulse and the allowed movement.

**PERCUSSIVE** movement has a quick forceful impulse which stops flowing rather quickly. It is the type of movement you would use to beat a drum or knock on a door.

**SUSTAINED** movement may use a lot or a little energy that is released in a slow, continuous, unaccented fashion.

**COLLAPSING** movement is like doing the first part of a swing without continuing with the "allowed" follow-through. It feels downward and weighted. On the other hand...
**SUSPENDED** movement feels upward, light, and effortless. It is like being "caught" at the uppermost point of a swing when the downward pull of gravity and the upward momentum of the swing are equal.

**VIBRATORY** movement is like a series of percussive movements done in such a rapid succession that the result is a shaking, trembling action.

Other words which a dancer, such as yourself, might find helpful in producing a given movement quality include:

- sharp, staccato (sharp), smooth, lyrical (smooth and flowing), bouncy, resisted, restrained, restricted, gooey (somewhat restricted), jerky (sharp and uneven), etc.

Punch, float, glide, press, slash, dab, wring, and flick are some of the "official: movement quality words coming from Labanalysis which terms this movement element "effort". this more exact system of specifying differences in energy use recognizes four aspects of effort. Weight. Flow. Time. Space.

**WEIGHT** refers to the amount of energy applied from light or little to heavy or great. A punch is heavy or high energy, for example, while a floating movement is light or low energy.

**FLOW**, which may be very free to ver restricted, describes how the impulse travels to complete its motion. A press is restricted while a glide is free flowing.

The **TIME** aspect of effort in the LMA system differs slightly from time design discussed earlier. Here it is used to describe the time factor in the release of energy to create a single movement. For example, a punch or a dab happens instantaneously while a float or a press requires a sustained release of energy.

**SPACE** as an aspect of effort means only "spacial intent" ranging from direct, as in a punch, press, glide, or a dab, to flexible or meandering as in float, slash, wring, and flick.

Appendix C contains an outline of the Labananalysis of effort.

Force, to borrow from Laban (remember him?), is also detected through the following four factors of **IMPULSE**. How a movement is initiated, or what starts a movement is considered an impulse. Right after you read this sentence, quickly look at something else in the room, then, slowly return.

Done so soon? You experienced two impulses; one to look away and one to return.

Now, apply the following four impulse factors to your movement experience.

The strength of the impulse exists on a continuum from very strong to very weak. How did the strength of your impulses differ?

The timing of the impulse, likewise, ranges from instantaneous to sustained. The flow or follow-through of the energy impulse may progress freely or with varying degrees of resistance (for example, a gooey movement has more resistance than a suspended one and less resistance than a movement done as if pushing against a brick wall) as well as having no flow -- being stopped immediately, as in a sudden tensing of the muscles or a reverse flow.

Reverse flow can best be illustrated by jumping movements which are actually initiated by a downward energy impulse. Since the floor will not move downward, it supplies an "equal and opposite reaction" resulting in a jump -- movement flowing upward.
You initiated your look with one energy - did you follow through with the same energy, or did it change?

The last component is the constancy of the impulse which varies in degrees. For example, a sustained movement, as described above, is accomplished with a completely constant impulse while a swing occurs when the initial instantaneous impulse stops and the movement continues without energy application from the mover. (Try it, you'll love it, you looker, you!)

In dance, sometimes the actual force required to make a certain movement is not meant to be the same as the first impression the audience receives. For example, a jump requires a quick strong downward application of force, but a ballet dancer learns to perform jumps so they give the audience the impression of lightness and elevation. Therefore, the dancer must learn to control the actual and the apparent.

You are receiving information about the elements of dance - Space, Time and Force, probably before we have explored them in class. You may or may not be familiar with all the concepts introduced in this chapter, but, regardless, you will be. If you know them already, a safe bet is that you have had movement experience(s) that gave meaning to the words. Words are meaningless until the experience. There is a very real difference between intellectual understanding and experiential knowledge. In the eyes and mind of a dancer, you do not "know" something until you have experienced it or created it yourself.

This brings us to a very important point that will act as a segue to the next chapter - Learning to Dance. You would not be at this level of education if you did not jump through a series of academic hoops proving your intellectual strengths - We're darn proud of you. Now comes this dance class and the nightmare begins. Things might not come as quick as they do for you when you are holed up in the library or dorm room. It's bad enough you're made to wear tights and leotards but now you are made to move in front of others. My God! What hell hath I wrought! (or something dramatic like that) You think that your intelligence is reflected in how well you pick up a dance phrase or understand a certain movement. Wrong. Your body has had eighteen plus years moving the way it has moved and now it is being asked to move the way your instructor says. Is he for real?? He wants me to do what?? Mommy!!! Your body will not respond until you train it. You will not "get it" until you get it in the muscles and they require experience. You will probably succeed in this class by failing first. There are always the hot shots who came into this world spinning or jumping or whatever. The rest of us, including your instructor, had/have to put in the time and energy into this dance space to get it right. You are afraid that people will look at you as a klutz when you do something wrong - let alone be corrected for not being perfect. We are conditioned to laugh at people's mistakes. There are moments when the movement is challenging and you won't get it and it might look funny. Aren't you here to learn? The only thing you need to get it right is your discipline, not your ego! Besides, your ego can use the workout. There is nothing more powerful than the Fundamentals. They must be mastered, but you first need to know what to practice. Now, let's learn to dance.
CHAPTER TWO
LEARNING TO DANCE

Dance vs Everyday Movement

Sit on a brick wall or bench somewhere outside on campus and watch the dance. See the repetition of movement, the variety of movement, the movement patterns, the various levels of movement, the choreography of people traffic, the endless parade of movement choices, the jerk on the bike. Now enter a dance concert and you can run through the same list (less the bike - maybe!). It is sometimes difficult to draw the line between the dance outside the studio and what happens within. One of the things you are certainly going to take from this course is how dance relates to your everyday life. The choices you make in your everyday movement life can only be enhanced by the awareness you will build as you examine your own movement preferences. Becoming aware of the daily dance of life is as much a part of learning how to dance as is the proper technique behind doing a plie. Dance is extended walking as much as singing is extended talking. You have just entered a room where you are going to learn how to walk extremely well! Bring your observations with you.

Dance is for everyone and everyone can be a dancer – looks good on paper, anyhow! Perhaps it is the awareness that everyday we are involved in a dance that helps us draw the line. You are going to become very aware of how you move as an individual and how this effects your everyday life. We will explore how this everyday movement becomes the stuff of dance. Your once random movement choices are going to be honed towards a mentality that will lead you to success. Regardless of your reason for taking this class, what you will learn about yourself and your human movement potential will last you a lifetime. The limit as to what you can learn about dance is only limited by your imagination and energy.

Now, for the important question everyone asks of this course - who is this dancer inside me and what does he or she have to do to get a good grade? Let's hold on the grade issue and deal that "dancer inside me" thing. You are now in the process of learning how to dance. Even if you don't have aspirations to perform on stage, you still need to train towards perfecting your movement ability. It is also useful to see the dancer as the tool of the choreographer and work towards being as versatile as possible.

In order to make the dance image perceivable, you are going to learn about the instrument. Since the dancer must perform the choreographer's manipulations, he/she must prepared to use each movement in any human way possible -- to do theoretically anything. The dance instrument is the human body. The dancer must have an instrument capable of using time, space and force in limitless ways and with exceptional clarity. Unfortunately we can't go down to the body shop and purchase one of these instruments. We must build one and we must maintain it. And again, unfortunately, there is no equivalent to cork grease, or a new E string, etc. for the dancer.
Not only must the dancer build and maintain his instrument, he/she must, like the musician, learn to tune and play it. Dance skill is called **TECHNIQUE**, and a strong technique is the basis for participation within the choreographer's vision. To change analogies, technique compares to an actor's abilities in pronunciation and enunciation, and perhaps even in using dialects (styles). In the words of your instructor, and good words they are to remember, *Technique is the ability to do something - consistently.* Technique is the skill of the dancer to perform the dance. It is not the dance. Technique is not the imitation of movement, but the intimate understanding of how the muscles work to produce the desired movement safely and with clarity. Today's dance world places a lot of emphasis on technique. Years are spent achieving sometimes even a modest amount of it. **Technique presented by itself is sometimes impressive but does not a dancer make.**

We all enjoy the childlike freedom associated with dance movement. Along with striving (and sweating) for technical proficiency, the dancer, such as yourself, strives not to lose that joy which got them into the field to begin with. Other factors involved in a dance career will be talked about in class. One is not (usually) forced into a dance career. Dancers are a unique breed - enough said for now.

**THE ‘BRASS TACKS’ OF THE DANCER'S WORLD**

*An overview of the profession of dance*

Technique classes are the arena where dancers build and maintain the instrument as well as learn to tune it and play it with technical skill and performance sensitivity. The amount of class time needed to be adequately trained for today's dance market varies with the individual and the area in which they specialize. Dancers regularly take from 4 to 12 technique classes per week. Usually 5 to 8 per week is a workable number for a serious dancer. Beginners and hobbyists can usually benefit from three classes per week.

**HOW DO YOU GET TO CARNEGIE HALL?**

You are in the right place to learn the fundamentals of dance. However, as much information as you are going to experience in this class is only as valuable as how much time you spend in PRACTICE. You are receiving the information and some practice time in class for the skills needed to begin your apprenticeship in dance. The semester isn't long enough to give you enough time for practice within the class itself. Don't think for a minute that because you learned something in class one day, it will automatically be there the next time we do it. Once you are taught something, it becomes yours to develop. As you get use to the structure of class, treat each class more like a performance rather than a rehearsal and you will get a lot more out of each session.

“I DON'T CARE HOW THEY DO IT IN NEW YORK...”

Looking at the professional side of field might help you understand what you are striving towards...

To do the dancer's job in the creation of a specific dance means to perform the specific movements, structure, and intent of the choreography. The ability to do this is gained in
Technique class and strengthened through individual technique practice, but learning to apply the craft to the specific dance is done outside the class - rehearsal. In a sense, you could say that taking class is like studying science - the engineering of dance. This is where instruction in what movement to do, when, and where to do them is given. In addition, this is where information on the choreographer's intent for the image is imparted. In dance, unlike drama or music, it is seldom possible for the performers to learn the specific movements (for drama - words, for music - notes) by individual study of a score or script. However, serious dancers individually practice the material imparted in rehearsal, returning to rehearsal to coordinate their individual roles with the group and to perfect and polish.

Many serious dancers and dance enthusiasts find it beneficial to their development to augment their dance training with study of other physical activities, mind-body therapies or studies in other arts, in philosophy and/or physiology. It is common for dancers to broaden their physical conditioning and movement base by weight training, aerobic activities and studying martial arts, yoga and various body/mind therapies. In addition, a dancer who wished to be well prepared for some kind of professional career will study (formally or informally) improvisation, composition and supportive arts such as music, acting, design, etc.

**General Objectives of a Dance Class**

As discussed above, the dance instrument must be capable of making, with clarity, movement that use space, time and force in just about any way that is at all possible for the human body. So, all that you are working on in your dance class is developing the capacity to do anything and capacity to do it! Piece of cake, huh? At this point, you must be sure the author is trying to discourage you. The answer is, "not at all". In fact, the following discussion will use analysis, categorization and other academic tricks to bring the task into perspective (and probably rob you of all the glamour the idea of a dance class may have held for you!).

To understand this analysis, you will need to be familiar with two terms and a "law" from the world of physics. The terms are simple but to fully understand them costs a dancer, like yourself and myself, plenty of time in the practice hall.

The **CENTER OF GRAVITY** of an object is an imaginary point about which all parts exactly balance each other. In human beings, it falls in the center of the body somewhere around the belly button level.

An object's **BASE OF SUPPORT** is that part of the object that is in contact with the supporting surface. When you are standing in the dance studio, your feet are in contact with the floor and, therefore, are your base of support.

The "law" of physics to which I referred above is really one of the conditions of equilibrium, or balance: Mechanical balance will exist when the object's center of gravity is over the base of support. You may now proceed to the next paragraph.
Several of the objectives of your dance class will be involved with developing the abilities to support yourself over specific bases of support, and to perform these basic types of axial movements with specific parts of the body, alone, and in combination. The human body is anatomically constructed to make movements falling into two very general categories:

**SUPPORTING ITS WEIGHT** or **CHANGING ITS BASE OF WEIGHT SUPPORT**.

The former category is called **AXIAL** movement while the latter is **LOCOMOTOR**.

Axial movements of flexion, extension, rotation, hyperextension, circumduction, adduction and abduction are derived from various combinations of flexions, extensions, rotations, and circumductions of the body's separate joints. **FLEXION** decreases the angle between bones (for separate joints, e.g., bending the elbow) or body parts (bending forward at the hips); **EXTENSION** increases the angle (e.g., straightening the elbow, returning to vertical from the forward bend); and **HYPEREXTENSION** extends a bone at a joint past the normal degree of extension in body parts (as in hyperextension of the lumbar spine known as sway back).

**ROTATION** is the turning of a bone around an axis in the joint and may occur in one or several planes, inward (toward the body's center line) or outward (away from the body's center line), clockwise or counterclockwise. For example, the outward rotation of the femur (thighbone) in the hip socket, which we call "turn-out" is used extensively in dance.

**CIRCUMDUCTION** is movement of a bone or body part to draw a cone with the circular base at the end farthest from the body's center. An example of circumduction of the leg is the ballet *rond de jambe* (circle of the leg) in which the leg is first extended front and then moves in a semi-circle to the back (this may also be done from back to front). Circumduction may be inward or outward, clockwise or counterclockwise.

Anatomically, the movement toward the center line of the body is called **ADDUCTION** while the movement away from this line is called **ABDUCTION**.

Locomotor movement are combinations and/or stylization of a few basic types of traveling steps, such as the walk, run, leap, hop, jump, slide, gallop and skip. These in turn are representative of more precise ways in which weight changes are made: gradual or *simultaneous*; and level, vertical, undercurve, or overcurve. In *simultaneous*, or sudden, weight changes, like the run, the center of gravity starts over one base of support, whereas in a gradual weight change, like a slide, the center of gravity takes some time to accomplish the change to the destination base or seems to go through several intermediary bases on the way.
Level weight changes are accomplished with the center of gravity remaining on the original spatial level while traveling directly up or down. The walk is a simple but accurate example of the former; the jump of the latter.

For some weight changes the center of gravity travels in a curve. If it dips initially to rise as the weight change is completed, it is described as an undercurve, as with the slide and the skip. The overcurve is the opposite: an initial rise with the center of gravity lowering as it completes the change. The leap and the run are good examples of overcurving weight changes. Jumps, which land on both feet and hops, which start and finish on the same single foot, are both considered in locomotor movements because they change form support to no support to support. An additional objective for your dance class is developing the capacity and skill to control all the basic types of weight changes, alone and in combinations, and to control possible stylizations (e.g., walks on half-toe) and variations (e.g., walks backwards and with directional changes).

Since all the possible human movements exist in space, time and force, and since these commodities are actually the elements of choreography, further objectives of dance classes involve:

1) developing the awareness of space, time and force in general,
2) of the way the elements are used in each movement practice, and
3) developing the skill to control the way these elements are used.

For example, you may be practicing a gradual undercurving weight change like a slide in class. Besides mastering the weight change, you will eventually be asked to control direction, specifics of design of the whole body, timing, and energy used while doing the slide. Sounds like fun to me!

In addition, technique classes generally intend to work (at least for a little) toward the objective of developing a knowledge of, capacity and skill for moving with performance quality. In general, more stress is placed in this area in more advance classes, while introductory courses may only touch briefly on this important but highly complex area. Some of the components of performance quality include abilities as control of force, flow or continuity, phrasing, focus, sensitivity to choreographic elements and intent, sensitivity to the aesthetic stand of the piece, to the relationships among the dancers, etc..

Movement phrasing can be compared to verbal or written phrasing or sentence structure. A movement phrase, like a sentence, has a beginning, middle and ending with an emphasis point falling somewhere in the phrase. Diagrams of generic phrasing structures are in Appendix D. Focus can have two meanings: the place, degree of directness, and degree of intensity of the focus of the dancer’s eyes; or the place toward which the view of the audience is directed by the dancer’s action. Sensitivity to the choreographic intent may perhaps be more easily understood with an illustration. Two different dances may use an identical movement pattern, such as two jazz walks followed by a step ball-change (or something like that). Dance A is a spectacular night club act while Dance B is part of a 1940’s story ballet and its dancer is portraying a man dreaming of his dead lover (or something like that). Don’t you imagine that these identical
movement patterns would be performed differently? Sensitivity to the aesthetic stance may require illustration.

The aesthetic of the romantic period in ballet, for example, valued escapism and beauty as connoted by the classic Greek ideals of harmony and proportion. A dancer in a romantic ballet must attempt to make the appearance of his movement “of this world” or aesthetically pleasing. The contemporary aesthetic, however, demands that to be “good” the movement must always match the particular and individual expressive demands of the piece. So, in a dance about female insects who devour their mates (and there is such a dance!), the movement is not designed to be pretty and the dancer who is concerned with finding the pretty line within the given movement will probably be re-cast.

To review and continue the analysis, we have so far discovered that objectives of dance classes involve developing axial and locomotor control, control of use of movement elements during axial and locomotor movements and making all these movements, not only clear, but also alive through performance quality. Some conventional dance axial and locomotor skills include alignment, balance, turn-out, extension, level changes (jumping and falling), directional changes (including turns), giving and taking weight (including lifts), and complex patterns of weight changes. In terms of physics, these skills involve control of the relationship of the center of gravity to the base of support: the location, pathway and characteristics of the movement impulse and the abilities to use the forces of gravity, inertia, momentum, equal and opposite reaction, etc. In turn, capabilities in these movement mechanics requires one thing, a good instrument: a body with strength, endurance, power, speed and flexibility, at least!

Each style of dance tends to expect certain types of movement that fit its particular aesthetic values. Discussions of stylistic differences among ballet, jazz and modern are included later in the text. Today, styles regularly borrow from each other and a dancer must be versatile. Many take classes in ballet, jazz and several styles of modern, and, as discussed in the preceding section, may augment this training in numerous other physical, mental, and/or spiritual areas.

**CHAPTER THREE: BUILDING THE INSTRUMENT—BODYWORK**

During the second half of the twentieth century, much research has been done on the anatomy, physiology, and mechanics of movement and of physical conditioning and skill acquisition. Dance technique began developing before much of this relatively new body of information was available. In many instances, dance training found by trial and error methods that have since been validated by research. In other cases, dance training has consciously sought to take advantage of new knowledge by modifying methods now thought to be unsound and by incorporating current ideas into its methods for developing the instrument. Understanding of the principles for developing the physical conditioning aspects of dance may help you in achieving this conditioning both by influencing the way you perceive material given in class and in helping you select means of augmenting class study.
A Super Simplified Guide to How the Body Moves

The framework for the human body’s motion is supplied by the skeleton. Movement occurs at the joints where bones meet and are held together by ligaments. Some joints involve several bones and/or additional cushioning structures like bursa, cartilage, etc. Muscles are attached to bones by tendons above and below the joint. Muscles are composed of fibers that interlock. When muscle fibers have the least amount of overlap, the muscle is totally relaxed. When a muscle works, or contracts, its fibers slide over each other to a greater overlap. This contraction pulls one bone to which the muscle is attached toward the other bone. Generally, it is the bone farther from the body’s center that moves.

The muscles are arranged around the joints in pairs called antagonistic groupings. They work on opposite sides of the joint and their respective contractions cause opposite movements. For example, one will extend a joint and the other will flex it. In order for movement to occur, while one muscle is contracting, and its antagonist must relax. If both muscles in the group contract—as in tension or isometric exercises—little or no movement will occur.

Muscles receive their messages to relax or to contract from nerves. The antagonistic relationship of the muscles is supported by “reciprocal innervations”. i.e.; the nerves are arranged to give opposite messages to the separate muscles in the pairing.

In order to do their work, muscles need oxygen and nutrients. These are carried to them in the blood, which is, of course, pumped by the heart. Blood receives its oxygen from the lungs and its nutrients from the digestive system.

Just as a car produces exhaust from burning gasoline, our muscles produce by-products (such as lactic acid) from burning their nutrients. These by-products must be carried away in the order for the muscles to continue functioning efficiently. This job is also done by the blood and circulatory system that carry the by-products to the kidneys and colon where they are processed for elimination.

Thus we see that the efficient movement we are learning to make in our dance classes requires healthy bones, muscles and connective tissue, nervous system, pulmonary system, cardiovascular system, digestive system, and excretory system!

Warm-Up

Warming up for a workout or class means raising the body’s internal temperature by getting the blood flowing faster than normal. This brings more oxygen and nutrients to the muscles and connective tissues and the warmer environment allows the gelatinous substance around the joints (synovial fluid) to “melt” to a liquid state. Warm-up thus prepares the body to move efficiently. Attempting large vigorous movements before the body is properly prepared can result in injuries and does decrease possible developmental gains because the various tissues cannot meet their oxygen and nutritional needs.
This physical warm-up is accomplished by movement that does not use the body’s full range of motion or requires great force, but which does require enough exertion to break a sweat or raise the heart rate. Mild aerobic exercises and active stretches (see section on flexibility) are good warm-ups.

Since many of the objectives of dance classes involve “awareness” and concentration, and since movement efficiency is required for dance skills, mental preparation is also important. Just giving your mind time to leave math class before asking it to help your body make fine kinesthetic distinctions can be very helpful to your performance in your dance class. Perhaps the need to “think in dance” is why some dance teachers do not completely separate warm-up material from technical material. Some class structures may rather use one small range of exercises not only for its technical goals, but also as a warm-up for the next larger range exercise, and so on.

Cool Down

Going quickly from vigorous exercise and heightened body temperature to complete relaxation and very cool temperatures can sometimes cause dizziness, fainting and tight muscles because the blood needs a little time to redistribute itself throughout the body. It is best to taper off gradually, like a reverse warm-up, in the same air temperature in which you have been working. Doing slower and less forceful movement at the end of a class or practice session is a good way to cool down. This is a good time to do static, passive of facilitated stretches (see section on flexibility) or relaxation exercises (see Chap. 4). A good cool-down (some teachers use the term warm-down) may help prevent muscle soreness caused by the pooling of lactic acid, one of the by-products of muscle metabolism, and it definitely promotes a feeling of relaxation and completion at the end of a class.

Injury Prevention and Care

When people, especially grown up people (as opposed to children who are made of rubber) are learning new movement skills or working hard to increase their physical conditioning, or sometimes just get unlucky doing everyday movements, injuries can occur. There are, fortunately, ways to minimize the risk of injury. These include moving with proper body mechanics (try to use the form your teacher recommends), maintaining general fitness, maintaining a balance of strength and flexibility on both sides of joints, warming up properly, cooling down, resisting overuse and over-stretching, resting when fatigued, maintaining good nutrition and a good psychological outlook and environment. You are probably thinking that it is impossible to maintain all of these conditions throughout your life and you are probably right. But we can all try!

When injuries do occur, use the acronym R.I.C.E to guide immediate treatment: rest, ice, compression, and elevation. First of all stop doing the movement that hurts. Then make an ice pack, get into a position that elevates the injured area and apply the ice using an ace bandage and hold the pack in place. If you are not in a situation where all of
this is possible, at least use ice. This immediate treatment helps prevent painful swelling by keeping blood from flooding the injured area. A good rule for icing is 20 minutes on and 40 minutes off for the first 24 to 48 hours. After that, if the pain persists, try heat and/or alternating heat and ice applications. When the injury is in the healing stage and you are beginning to exercise again, try heat before working and ice afterwards. Some injuries can benefit from massage, ice massage, pressure, or mild stretching exercises. An excellent book, *Dance Injuries: Their Prevention and Care* gives detailed information for specific injuries. If you should contract an injury accompanied by sharp, extreme pain, severe swelling, inability to support weight, extreme movement limitations, extreme bruising, loss of feeling in an extremity, please get medical assistance as soon as possible.

**Cardiovascular Endurance**

Cardiovascular endurance, or aerobic fitness, is built by exercise that uses most of the body and is vigorous and continuous over a period of time. The activity should make you sweat and breath more deeply than usual. The movement should not be something that taxes your strength, or you may be unable to continue it for reasons other than aerobic ones. The movement should be vigorous enough to tax your cardiovascular system. That is, it must demand a large amount of oxygen. Using the pulse rate system developed by Dr. Kenneth Cooper is an excellent way to determine the rate at which you should exercise to become aerobically fit. The formula is to subtract your age from 220. Seventy percent of that number is the minimum heart rate to maintain during aerobic exercise and eighty five percent is the maximum. More is not better; it is dangerous! Exercise should start out at an even pace while the heart rate climbs and eventually levels off within this range. The principle for improving cardiovascular endurance is to maintain this level (where you can talk at the same time) of exercise for 20 to 45 minutes. After five to ten minutes of rest, your heart rate should return to 120, 100, or lower. Working this way three times a week is generally been considered sufficient to reach and maintain maximum health benefits. Anything beyond this moves toward competitive training or toward a professional’s level.

It is rare for a beginning or elementary level dance class to demand anything more than this “average” level of aerobic fitness, and traditionally, even higher-level dance classes challenge this level only slightly. Achieving correct mechanics often demands highly concentrated slow movement with time taken between repetitions to make corrections. This stopping does tend to lessen the effectiveness of movement toward achieving aerobic fitness. Besides, until recently, dance image making did not require marathon endurance, and with so many other very demanding areas to work on, extreme aerobic challenges have not assumed a high priority in dance classes. However, during the latter half of this century, American dance has become increasingly athletic and more demanding aerobically. Therefore contemporary dancers have increasingly begun to augment their dance training with various kinds of aerobic programs.

If a dance student finds himself consistently and significantly challenging his present aerobic capacity (heart rate near 85%, not sufficiently declining with rest, pain or gasping with breathing for completing a given exercise or movement pattern) in class, or
if he finds himself cast in a particularly aerobically demanding dance, he might well consider starting a program to improve his aerobic fitness.

If you wish to start an aerobic program to augment your dance training, there are many activities from which to choose: running or jogging, bicycling, rope-jumping, swimming, skating, cross-country skiing, fast walking or hiking, rowing, bench stepping or stair climbing, continuous bouncing on a trampoline, aerobic exercise and dance classes. Whatever your choice, you should initially take time to determine your work level. Use a watch to check your pulse as you begin your activity and at 15 minute intervals. Also time your workout. Start slowly, gradually speeding up and trying to stay at your 70-75% rate. When your pulse rate begins to climb and/or you gasp for breath, record the time elapsed since you began and gradually slow down to a stop. After five to ten minutes, check your heart rate again. If your heart rate has lowered to 120, 100, or lower, you were exercising too vigorously for your present level even your exercising pulse rate or breathing did not cause concern.

Once you have found the best level for your exercising, you will know how to structure your life for your individual exercise or how to select the best-supervised situation for you. If you are working in a supervised situation, be sure to follow all cautionary suggestions given by the instructor, and in all cases, research your chosen activity enough to know what equipment you need. Footwear, for example, can be especially important in any activity that involves a lot of impact on the feet, and clothing that restricts movement, is not appropriate for the temperature, or is uncomfortable may cause you to move inefficiently, which could inhibit your attempts to improve your fitness and in extreme cases lead to injury potential.

If for whatever reason, you decide to work above the health level (because it burns more calories, because it is more interesting to prepare for a race, because it is simply more interesting to be fore fit, etc.) you should be aware that there is an increased potential for injury as the body is pushed farther with less recuperative time. Recent evidence shows that competitive female athletes, particularly those in endurance sports, sometimes stop menstruating and their bone density declines. This may result from lower estrogen levels that these women develop. Dr. Art Ulene recommended on the Today Show that women run no more than 25 miles per week and that female athletes train under the supervision not only of a coach but also of a sports physician.

Strength, Muscular Endurance, Speed, and Power

We know that exercising a muscle makes it larger and stronger, by increasing the size of its contractile fibers, the amount of sarcoplasm, the amount of connective tissue, and the ability to store core nutrients. This, along with improved neuromuscular coordination will make it a more efficient worker so that it converts more energy into movement and less into heat. Strength, muscular endurance, speed and power depend on this sort of muscle efficiency and thus are built by overloading—or working beyond what is already comfortable. This can be done in a number of ways.
Strength is the power of a muscle’s contraction. To build strength, the amount of resistance to movement may be increased by the use of weights, assuming the body position which resists the particular movement because the pull of gravity or because it is at a stage of motion where movement is more difficult (at any stage, the more acute the angle of attachment of muscle to bone, the less rotary force the muscle can exert on the body lever*), or by pitting on one part of the body against another. Additional overload can be created by using any of the above with slower movements or by holding the most difficult position longer. In general, you can overload sufficiently for strength building by using from two to six repetitions for the greatest resistance you can manage. When a muscle group is working at that capacity, you will feel as if the area is hot and/or the muscles will shake involuntarily (only slightly). This is the burn Jane Fonda tells us to go for! Recently, some gyms and health clubs have been using overload to the point of fatigue—muscle failure. As far as physicians and movement scientists are concerned, the verdict is not yet in on the safety of this method, although there is no doubt that it does cause significant increases in strength. It is very significant that the places which advocate this principle use weight machines, like Nautilus, which work very isolated muscle groups in simple (as opposed to complex) motions with very finite conditions, and provide one-on-one instructors who work with the exerciser to insure proper form and even help with the last repetition. Dance classes never use this degree of overload because the motions are complex, not isolated or finite, there are too many individuals in the class to ever come up with one level or exhaustion, and there will always be numerous activities which will require strength from any one particular muscle group.

Muscular endurance refers to the muscle’s ability to delay the onset of fatigue by balancing the way it metabolizes nutrients. For muscular endurance, the overload is to increase the number of repetitions of a movement whose strength requirement for one performance is just under the body maximum capacity. In such motion you will feel the muscles tighten but there will be only a slight sensation of heat. A general formula is use a resistance that allows you to do from 40 to 50 repetitions.

For increasing the muscle definition and the size of the belly of the muscle, exercises for either muscular strength or endurance can be done with explosive action. Similar exercises using smooth and preferable large movements will build strength without emphasizing bulk. Neither a muscle’s strength nor its endurance can be measured by its size. Large muscles can sometimes be the products of over development, in which the contractile fibers become bulky, the sarcoplasm becomes thick and the connective tissue not only increases but also becomes tough. This condition may bring decreased elasticity and therefore a decreased range of movement. Over development is generally caused by overemphasis on isolated actions and lack of balanced practice for strength and flexibility.

As an example of applications of the above principles, let us use the goal of strengthening the quadriceps (thigh muscles), abdominals, lower back muscles and ileopsoas (a pair of deep muscles attached to the spine, hip girdle and femur which cause the leg to torso angle to decrease). Dance classes will often do some sort of exercise in which one leg extends fully and rises toward the torso. This motion uses the quads to
keep the leg extended, the psoas to lift the leg, and the abdominals and lower back muscles (and a few others) to stabilize the torso. If this motion is performed standing, gravity provides the resistance to movement, with this resistance being greatest at or near the 90-degree level (the leg would be parallel to the floor). If it is possible to raise the leg above this level, increased resistance will probably occur because the range of motion is nearing its limit. If the motion is done slowly and smoothly and the leg is held for a few seconds at its highest point, overload for strength will generally occur somewhere between the second and eighth repetition. If the movement is done more quickly, perhaps lying down to lessen the pull of gravity, there will be less effort necessary for one performance of the movement and 40 or 50 repetitions will cause the muscular endurance to be challenged. For thigh muscle definition, it might be advisable to modify the exercise to involve some explosive leg extensions from a flexed knee position.

Working for speed and power involves the additional element of time. (Power is strength plus speed and is necessary for such movements as jumps and some turns). Muscles have both slow and fast contractile fibers and each of us is endowed with a different ratio of these types. Obviously, people with a higher percentage of the fast fibers will naturally have more speed and therefore power potential, but all of us can increase our body’s abilities to use its fast fibers through training. The muscle fibers must learn to respond to nervous stimulation quickly and the nerves must become able to send signals rapidly. This speed of transmission can be improved somewhat just through practice—even mental practice—by making the nerve pathway more accessible. In general, you need to find not only your maximum resistance but also your minimum time for a specific movement. To overload from there, work to decrease the time and to increase the resistance. Large explosive movements work best. Because the complex movements requiring speed and power involve a complicated series of neural transmissions, it is best to work on specific movements you wish to improve. To improve the power of your jumps, practice, practice, practice—jumping.

Movements done with explosive action do have the potential to cause such injuries as muscle pulls, strains and spasms. Even tendon and ligament injuries can occur because a great amount of force is exerted all at once. Therefore, it is especially important to make sure that the areas of the body being exercised for power are also kept flexible, that the opposite muscle groups are well kept and equally strong, and that at least the area and preferably the whole body is well warmed up before doing power exercises.

Strength, muscular endurance, speed, and power are challenged in different ways by a number of activities, including dance. Some others include various calisthenics, weight training with free weights and machines, gymnastics, swimming, boxing, wrestling, hitting a heavy bag, karate, running, stair climbing, mountain climbing, throwing activities, jumping activities, skiing, etc. These capacities are relatively easy to work on outside of class, either as supplementary or for maintaining conditioning during a class hiatus, because it is possible to use non-complex calisthenics which require little space, and/or work under the supervision provided by a local health club with various weights and machines to pinpoint specific areas of the body. No matter how you choose
to work, it is important to use correct form, so limit yourself to those exercises that you feel sure you can do correctly without supervision, or to supervised work.

For a beginner, probably the most important area in which strength must be maintained is the region around the center of gravity, the abdominals. It is also unlikely that any health club instructor will force you to do abdominal strength exercises with the particular form that works best for dance because it not only strengthens the muscles but also uses them in a particular order and direction. Therefore you must take responsibility yourself for working on this area. Two abdominal exercises are described below:

1: Start lying on the floor with your knees bent and your feet on the floor. Take a breath in, expanding the entire torso, and a breath out, flattening the abdominal area from the legs upward toward the belly button. The motion should flow in an upward direction and the belly muscles should be flat or concave. With the arms extending diagonally upward from the shoulders, think of movement traveling from the center of your torso into your shoulders and neck and from there into the arms and head to cause these extremities to move off the ground, curving upward as if to eventually encircle the space above you. Hold the position in which your back from the waist or just above it to the sacrum remains on the floor and the lower abdominal muscles maintain their flatness. Reverse the motion to return to the original position. Using a slow motion and long hold, repeat 4-8 times for strength, or using a quicker motion with little holding, repeat 40-50 times for muscular endurance.

2: Start sitting upright with your knees bent and your feet on the floor. Take a breath in, expanding the entire torso, and a breath out, flattening the abdominal area from the legs upward toward the belly button. The motion should flow in an upward direction and the belly muscles should be flat or concave. Deepening the abdominal “hollow”, roll the lower spine toward the floor until the entire lower back to the waist is touching the floor. Keep the entire torso rounded, hold, and bring the curved torso forward to that only the buttocks are on the floor. Repeat until overload occurs—slowly for strength and more quickly with more repetitions for muscular endurance.

Flexibility

Degree of flexibility in a particular area determines the range of motion in that area. The shape of the bones forming determines the degree of flexibility the joint involved, the length of the ligaments, the length and elasticity of the tendons, and the degree to which the muscles around the joint are able to relax. The first factor cannot be changed by training and the second, should not be changed by training, for ligaments do not have the elasticity of tendons. Once a ligament is stretched, it retains the added length, which often makes the joint unstable and leads to other injuries. The degree to which the muscles can relax is, however, quite open to improvement through training, and even the elasticity of tendons and other connective tissue can be increased.

Improvement in flexibility involves finding a position in which the muscle group to be stretched is relaxed. There are usually many such possibilities, some of which may
not be particularly useful. In order for a position to “work” for increasing flexibility, you should be able to reach it without having to use a great degree of strength in the opposing muscle group, and the position must tax your present flexibility in the desired area without unduly overloading the flexibility of another area. In addition, it is best that you be able to control the range that the stretch position will assume. Following are some examples of positions that will not work for stretching the hamstring (the muscles on the back of the thigh). This muscle group is relaxed—that is, at its longest—when the leg is straight and moving toward the front of the trunk.

#1: Standing, raising one leg in front. This will not work well because gravity will overload the strength in the quads and abdominals before the position can overload the flexibility of the hamstring.

#2: Bending forward at the hips and trying to touch the hands to the floor. This may work perfectly for many people. Others may have their motion in this direction limited by tight back muscles before a position overloading hamstring flexibility can be reached.

#3: Placing the leg on a high object (such as a ballet barre, or a fireplace mantel) positioning the body so that the leg must be straight and in front. In this case, the height of the object determines the range of position you will assume. You must find an object that will fit your range (not too high, not too low) in order to make this method of stretching safe and useful.

There are about six types of stretching exercises, all of which involve finding an appropriate and challenging position. **The first type that is described below, you should not do!**

Ballistic stretches are fast, strong bounces into a fully stretched position, usually from a position quite near that extreme range. These do not improve flexibility because of the stretch reflex. This reflex is a device our bodies use to protect themselves from muscle pulls. When a muscle is being pushed forcefully to attain a greater than already possible length, its fibers will “rebel” and lock, thus preventing any increasing the length the muscle can reach. When this reflex fails for some reason, the fibers may rip apart causing a muscle pull. Again, **do not do ballistic stretches.** (Note: some styles of dance use light bouncing movements in moderate range positions during the warm-up section of the class. These are not to be confused with ballistic stretches and should not be harmful unless you get carried away and turn them into ballistic stretches by overdoing the position range and the force.)

Active stretches are repeated, easy, smooth, moderate tempo movements into and out of a stretched position, using a full range of motion in the area. These do not really increase flexibility, but are rather used to warm-up the muscles to use the full extent of their present flexibility. Remember to use a stretched position not limited by the strength of the opposing muscle and to keep the movement smooth. These are good to use as warm-ups for almost any activity.
Moderately slow stretching is not an official title, but rather a description of a way of stretching that many sports physicians and movement scientists advocate as a part of a warm-up or cool-down for more strenuous activities. It is generally recommended that these stretches be used after some light aerobic warm-up movements. For this type of stretching, you move into the stretched position and hold it for about ten seconds. You may repeat the same stretch about four times.

The next three types of stretches should be done only after a thorough warm-up, and some experts feel that they should be done only at the end of a workout to avoid overstretching or traumatizing the stretched muscle by calling upon them to contract strongly. All three types will increase flexibility by “teaching” the muscles involved to reach a greater length than presently possible, and in some cases by increasing the length that the connective tissue around the muscles can stretch.

Static stretches are done by simply holding a fully stretched position for approximately 50 to 60 seconds. Remember to get into your stretched position in such a way as not to tax the strength of the opposing muscles and not to risk a muscle pull by using too much force. Whenever possible, try to use gravity and the weight of your body to attain and hold the position. Relax into it, using a breath in, and a breath out as you reach the depth of the position. When you feel a burning sensation of the muscle, you are on the threshold of increasing that muscles future ability to relax—to attain a greater length. So try to relax through the burn with additional deep breaths, think positively etc. Soon the burn will go away and the muscle will release its grip to relax further than it has previously been able to do. If the burning should return before your 50-60 seconds are up, stop stretching anyway. Find a way to get out of the position without using the muscles you just stretched. If you feel no burning, if the burning never goes away, or if it never returns, just use the 50-60 second hold.

Passive stretches are the same as static stretches except that a partner helps you get into, hold, and get out of your stretched position.

Facilitated stretches are static or passive stretches preceded by a “trick” to get the muscle you wish to stretch to relax totally. The trick depends upon the antagonistic grouping/reciprocal innervations structures and functions explained earlier; i.e., if one muscle of a pair is totally contracted, then its antagonistic will be totally relaxed. To see the principle, first define the area to be stretched and determine the action of the antagonist. Then provide resistance to that action somewhere in the middle of its range and work the muscle as hard as possible. Last relax into a static or passive stretch using the same etc. guidelines as stated above.

For example, if the area to be stretched is the hamstring the antagonists are the quadriceps that extend the leg at the knee and help raise the thigh toward the torso. To resist this action, you can lie on your back with both knees bent, feet on the floor. Extend
the leg to be stretched at about a 30-45 degree angle to keep your hips and have a friend hold the shin and thigh. Keeping your leg straight, try to raise it while your friend resists the action. When you just have no more “push” left, relax, extend your other leg on the floor and have your partner lift your straight leg as high as possible and hold it for the 50-60 seconds or “return of the burn”, whichever comes first.

**WORDS OF CAUTION:** This is an extremely effective method for improving flexibility, sometimes achieving dramatic results on the first try. Therefore, it has seductive powers which can lead to overuse and therefore to overstretching. **Do not repeat this same procedure on the same area during the same day and do not attempt to use this method to stretch the antagonist on the same day.**

Providing that you warm-up properly and follow other cautionary procedures, it is quite possible to do valuable supplementary work on increasing your flexibility. You don’t need much room, and in fact don’t need to move at all to do static or passive stretches. If you work with a partner, be sure it is someone who is also familiar with the proper ways of stretching and/or is unquestionably able to follow your instructions and is unquestionably trustworthy. Appendix E shows positions for stretching various areas of the body.

**CHAPTER FOUR: TUNING AND PLAYING—BODY AND MIND**

In your dance class, at the same time that you are building your instrument, you are also learning to play it. That is why so many of the things you do in your class, unlike the exercises you may do on weight machines, for example, involve complex patterns and/or concentration on the movement mechanics of the whole body rather than on isolated parts. Playing the instrument requires skill in a number of general ways of using the body. Thus, the mind’s role is important, in not only remembering a movement sequence and giving you the will power to keep trying, but even more importantly, in conceptualizing the whole movement, its shape, timing and energy factors. The first few topics discussed in this chapter are skills for making good movement, which, as we mentioned earlier, is a prerequisite for making good dance. The latter few topics relate to skills that are more specifically associated with dance.

**Efficiency, Agility, Coordination**

Whenever you see difficult motions performed with apparent ease—whether it be one of Dale Murphy’s homers, or one of Baryshnikov’s great turning leaps—you are seeing movement done with the proper mechanics, i.e.; efficiently. According to a local chiropractor, even the common movement we call walking is accomplished by an incredibly complex combination of muscle contraction-relaxation processes. It would ogle the mind to have to consciously direct each muscle action necessary to take one step. So just imagine what must happen at that level when you ask your body to perform the obviously more complicated movement patterns found in dances. Luckily, we don’t have to do that. Our bodies are organized so that muscles work in groups and sequences. If we allow these sequences to occur, our movements will be mechanically correct and
therefore less likely to fail, look clumsy, or cause pain or injury, that if we think in terms of isolated or discreet areas or actions.

However, this “allowing” is not always automatic, and indeed is often difficult. In dance, we may be asked to produce movement that, on the surface at least, seems to bear no resemblance to the everyday actions that our bodies are already programmed to perform and/or takes basic human movement patterns to extreme ranges of size, complexity, etc. Then too, most every human being develops some sort of tension area that can block the flow of movement through the most efficient path. In addition to these difficulties, dance sometimes puts together actions which use part of one motion sequence and part of another, or in some other way complicate the movement mechanics involved. This may happen to produce a desired design or because the two “contradictory” motions are needed for the whole skill. An example of this kind of “efficiency-boggling” movement that exists for both these reasons is the ballet arabesque, in which one leg is extended to the back. The leg is pulled toward the back of the body by muscles in the hamstrings, gluteal and adjacent groups, and muscles in the lower back. Since muscles are arranged antagonistically, these contractions make the opposite muscles relax. That means that the quads, psoas, other hip stabilizers, and abdominals will all want to relax, which would result in a bent knee on the lifted leg, inability to stabilize the center of gravity’s position, and an extreme arch in the lower and even mid-back. In order to achieve a line that is pleasing from ballet’s aesthetic values, dancers are asked to retain some contraction in the quads, so that the extended leg is straight and the torso is stable and “lifted.” It so happens that the latter two “appearances” must also be physically present if the dancer is going to be able to maintain the position balanced over one foot (not to mention over one toe while turning).

All the above is meant to explain why we must actually work in classes to make our movements occur in mechanically correct and efficient ways. How each movement is made is extremely important in dance, and all good classes will work on developing good movement mechanics. Some classes will concentrate on memorizing correct form for specific movements, while others may stress general efficiency to be applied to particular movements, and some classes will work on this quality from a variety of viewpoints. What all ways of working toward efficiency have in common is the primary importance of developing an image of the correct way to produce the movement. Almost all dance teachers instinctively use images or metaphors to explain how movements should be accomplished, and relatively recently, several scientifically based systems for achieving movement efficiency have developed, each using the mind’s powers to conceive of movement images as a means to its end.

Among these mind-body therapies are Irmagaard Bartenieff’s Fundamentals, Mabel Todd and Lulu Sweigard’s Ideokinetic Facilitation, Moshe Feldenkrais’s technique and F.M. Alexander’s technique. These methods each employ their own images and display other individual orientations, such as more or less use of manipulation, movement, or observation. They all stress the primary importance of the center of gravity region of the body for producing movement and the necessity of proper skeletal alignment for allowing efficient movement flow. These techniques use a lot of
one-on-one manipulation and observation to help students achieve the alignment needed for efficiency.

Bartenieff’s Fundamentals are a series of exercises, done mostly lying on the floor, to give the body practice in doing basic types of movement efficiently. It starts with experiencing the basic types of movements possible in the joints, with breathing exercises, and with work on awareness of the center of the body. From there it progresses to basic actions like forward flexion at the hip, passing the weight from the center through the legs, shifting weight, strengthening the cross-extensor reflex (when your right leg takes a step forward, your right arm will naturally swing back), rotating the body about its center etc. Bartenieff uses the term “connectedness” to describe the ease or grace of motion that is done efficiently. Although these exercises are excellent for individual practice once you are quite familiar with them, they must be done with absolutely the correct form (internally as well as externally) to be effective. I do not feel completely confident that they can be learned from verbal descriptions alone, and therefore will not supply such descriptions here. However, if you should learn these in your dance class, or have an opportunity to study this excellent therapy, you will find that supplemental practice very beneficial. Please wait, however, until your teacher indicates that you are doing the exercises properly before doing them without supervision. They are designed to establish good habits, but incorrect execution could backfire by creating poor habits instead.

Ideokinetic Facilitation uses imagery to establish mechanically correct lines of movement and includes a particularly effective mental exercise for properly aligning the skeleton (see alignment section of Chap. 7) called “constructive rest.” The system operates on the following principles: that the center of gravity is the center of movement control, that the skeleton must be balanced or excess energy will be used, and that the only voluntary contribution to making correct movement is the idea of the movement. It stresses that we must only initiate movement and then leave it alone. The most basic “exercise” (I’ve used the quotes because there is really no movement involved) of this system is called “constructive rest”, and is designed especially to establish the muscle tone habits for good body alignment. Therefore, a description of constructive rest will appear in the alignment section of this chapter. It is an extremely beneficial exercise to use as a supplement to dance classes, as well as for life in general, BUT ONLY IF YOU ARE VERY CLEAR ON THE CORRECT IMAGES. You might find it helpful to tape yourself reading the images so that you can be sure you are using the correct ones as you practice.

The Feldenkrais method also stresses the importance of the mental component to making good movement, working toward teaching us to allow movement to happen in the proper sequences. It is careful to provide students with clear pictures of how movement is supposed to happen and uses mental practice alone as well as mental with physical practice. Its “secrets” include moving from the center toward the periphery, using breath (breathing out with effort), using the cross-extensor reflex, and thinking of movement in arcs or circles. Studying Feldenkrais with a knowledgeable instructor would be an extremely beneficial supplement to dance classes. But the cautions for individual
practice given above for Bartenieff Fundamentals also apply here: plenty of repetition, but only when the “exercises” and images are absolutely clear.

Coordination and agility are concepts closely related (if not identical) to each other and to overall efficiency. Traditionally, coordination has connoted the ability to move various parts of the body at the same time in desired patterns, while agility has indicated the combined qualities of flexibility and speed or the ability to make quick directional changes and/or quick, precisely placed weight changes. And traditionally, these abilities have been challenged as means to improvement. For example, jumping jacks done with a series of four or more arm movements are supposed to work on coordination, and the famous football training exercise of stepping through the centers of tires has long been a favorite for improving agility. Time has shown that repetition of these and similar exercises does improve performance of these particular actions, but personally I am not convinced that they can alone improve coordination and agility in general. Contemporary experts use a combination of techniques to improve coordination and agility includes work on balance, kinesthetic awareness, etc. Contemporary thinking views these abilities as two manifestations of movement efficiency that are necessary for complex skills. The traditional exercises do give us some valuable tips however: 1. To master the coordination and agility needed in the complex skills, it is necessary to practice the skill as a whole; 2. It is helpful to establish a rhythm with movement of one part of the body and then add other body movements; 3. The importance of the mental component in complex actions is primary.

Students should not be surprised if they seem to find certain types of movement harder than others and therefore perform some things with less grace than others. The best course of action is not to get discouraged or angry at yourself but rather to continue to work on such general areas as overall movement efficiency, concentration, kinesthetic awareness, relaxation, alignment and balance (all to be discussed in this chapter) and to analyze the problem movement and practice both the problem area and the movement as a whole. Appendix F includes an illustration of energy lines, or lines of motion, which can serve as a useful image for movement efficiency.

Concentration and Kinesthetic Awareness

Training the mind seems to be more complex task than conditioning the body because the way the brain works is still not quite as well understood as some of our more “physical” systems. Yet it is quite obvious that our minds are extremely trainable, and we have all experienced learning and learning to learn, at least in the traditional educational ways, and have heard of the old adage: “use it or loose it.” Thus, the good old principle of overload seems to apply here as well.

Some aspects of concentration that relate to overall performance include such things as motivation (drive, will power, commitment), self-confidence, mental flexibility, focusing on the task, and awareness of the body, its movement in space and its use of time and force.
Methods of working specifically toward aiding mind power may use any of a number of means for dealing with some or all of the aspects of concentration. Some may deal with strategies to confront specific problems like self doubt, etc. and may require the supervision of a trained professional. Many deal with focusing and relaxation. Yoga, the various schools of meditation and some mind-body therapies work this way. Visualizations and imaging are used by the body therapies and by coaches and teachers who stress mental practice. Mental practice is really hard just “going through the motion sequence in your head” and it really works to improve performance in a number of ways. First of all, it can obviously help you remember the sequence. But, if it is done with concentrated visualization of the self doing the movement properly, it will actually improve the physical performance of the sequence. This improvement occurs because the visualization and thinking process activates the same nerve pathways that actually carry the signals to the muscles that physically make the movement.

Dance classes deal with concentration, generally, by simply demanding it. We learn to focus on particular problems, like memorizing the movement shapes, timing, and energy patterns or trying to keep the hip on the working side from rising with a leg extension, for example, by having those problems presented to us. When a dance teacher stresses a particular area in his explanation of the movement, the wise student concentrates on that area before worrying about others. Some dance classes will use exercises that require a degree of self-direction by the student that may help him gain self-confidence, for example, or allow him to use his visualizations, etc. perhaps more easily than in completely teacher directed movement sequences. Some classes may even include exercises from the body therapies, etc. that are meant solely to help develop the student's capacity to tap his mental resources.

Following are some ideas for focusing and visualization exercises that can be done with a minimum of instruction. All these exercises require patience and practice, repeated and regular. But once you get the general idea, you can make up your own “problems” and will benefit in all areas of your life.

1. Try focusing on your vision on a part of your body (your fingers for example) and become so familiar with it that when you close your eyes you can “see” it in detail.
2. Look at a small object (a circle, a TV screen, etc.) until your peripheral vision blurs and you see only that object clearly. Then look away from the object and imagine it.
3. Concentrate on a part of your body (with or without looking) trying to make it feel warm.
4. Practice focusing your attention on some areas of your body and be extra sensitive to how it feels.
5. Imagine yourself at a past time or in an unfamiliar situation.
6. Imagine yourself performing some movement that is difficult for you to do. Do this in great detail, feeling the movement and visualizing a perfect performance.
Kinesthetic awareness, or the ability to sense the spatial, timing and energy aspects of the movement as it is performed, is one area of concentration and is of crucial importance to developing dance skill. It allows the dancer to sense errors, correct them, and to accurately reproduce movement. Dance classes, again, improve this ability by challenging it. Mirrors are helpful devices, as in an eye-focusing technique used in turning, for working on kinesthetic awareness. When particular movement shapes are demanded in class, the student can use the mirror to check his accuracy. If he can concentrate on his muscular sensing as he makes corrections, or confirms his accuracy, he may be able to reach the correct shapes without the mirror some day. Dance teachers also regularly give feedback on inaccurate uses of time and energy. Again, if the student uses this feedback thoughtfully, he can in time improve his ability to sense his use of these elements.

Here are some specific suggestions for self-directed exercises to improve kinesthetic awareness:

1. Try to make a certain shape with your body, or to cover a certain amount of space, or to make a specific degree of directional change, with your eyes closed. Use a mirror and or a partner for a pre- and post check.

2. For internal sensing of your body’s use of time, try to accomplish a specific series in a certain time frame (1min., 16 cts. etc.) Practice many times until you think that you can sense the exact speed of your movement. You could use a metronome to keep the tempo of counts constant. Then try to duplicate the movement timing without hearing the metronome and having a partner check your timing.

3. For internal awareness of your body’s use of force try to move (it does not have to be full body movement if space is limited) with different movement qualities, and having a partner give you feedback on your success in differentiating. If you have trouble with restrained movement, your partner could provide you with some actual resistance to movement. If you have trouble with stopped action (like percussive movement) your partner could actually stop your motion. If, on the other hand, you have trouble with continuous movement, your partner might be able to help you lengthen the movement flow.

If you have already experienced the techniques of any of the various schools of meditation, yoga or mind/body therapies, continuing such work would be the best way to maintain or enhance your mind powers for use in your dance class. These techniques are often very helpful for relaxation as well. Some programs of martial arts include instruction in the philosophical/mental aspects as well as the physical, and could be useful supplemental studies. That is one of several reasons that many contemporary dancers study Tai Chi. However, before you rush out to sign up for more classes, you should know that dance classes are often recommended as concentration and kinesthetic awareness builders to athletes of various sports, including the martial arts. This is true of any well taught class in
ballet, jazz, modern or tap, but modern dance is particularly likely to explicitly stress the mental components of movement.

Relaxation

It may seem strange to discuss relaxation in a context of other topics that involve challenges to the active capabilities of the mind and body. But efficiency of movement can be enhanced by the ability to relax at specific times and places. Unnecessary tension can block the efficient flow of movement so that it is not “allowed” to proceed, but must rather be enforced. This is not only a waste of good energy, but also tends to make the movement look less than “graceful.”

Relaxation is a wonderful example of the mind-body connection, for the physical relaxation can help relieve mental tension and vice versa. And there are both physical and mental techniques to improve relaxation abilities. Meditative exercises are similar (or even identical) to concentration exercises in their use of focusing and visualizing. Stretching and breathing exercises are effective physical relaxation techniques and strenuous aerobic activity is often just the ticket for relieving mental tension.

Dance classes can help contemporary adults dispel mental tension through physical and often include stretches which not only increase flexibility but also break up tension that is held in specific areas. Some classes will include visualization and focusing exercises specifically meant to aid relaxation. This is not necessarily a philanthropic effort to aid mankind in general, but rather to aid dancing ability. The fact that it may make you better able to cope with life’s tensions is just one of those fortunate accidents! Following are suggestions for some specific self-directed relaxation exercises:

1. Lie on your back or side. Tense and then relax small areas of your body. Then larger areas. Then the whole body. You may also want to try going from whole to part.
2. Lie on your back or side. Think yourself through the progressive relaxation of parts of your body. Start with your feet and work your way up to your head. Think, “my feet are heavy. They are sinking to the floor;” or, “my feet are warm.”
3. Breathing exercise: imagine your torso as a balloon. As you breath in, imagine your torso-balloon filling with air equally in all directions. As you exhale, imagine the air being squeezed from the bottom of the balloon to come out the top of your head.
4. The constructive rest exercise for alignment is also very relaxing.
5. Get a massage!

Alignment

As mentioned earlier, movement cannot progress efficiently without proper skeletal alignment: head, rib cage, pelvis, hip joints and knees should be placed one
directly above the other along a plumb line that falls roughly on the ventral side of the spine. Many of us develop little postural idiosyncrasies in our stances or walks that become habits. Since alignment of some sort is always with us, these individual habits become so ingrained they feel correct, even if they are far from anatomically balanced. In addition, dance requires more than good posture. It requires a use of the postural muscles for defying gravity enough to appear fluid, controlled, perhaps even light. At the same time, these muscles must not become tense. Rather they must be relaxed enough to remain responsive to external forces—to allow movement flow. This postural quality is what many dance teachers have termed “pulling up” or “energized.” Its prerequisite is the anatomically balanced alignment, but its appearance and muscular demands often cause dance students to develop an incorrect image of the desired posture. This can change a perfectly good alignment into an unworkable one. Poor alignment can interface with the function of the spinal column by making it accomplish movement that should occur in other joints, especially the hip; by reducing the flexibility of the ribs, usually from extensive use of the “chest out” concept of good posture; by inhibiting movement in the shoulder girdle from neck tension. It is important that the spine be able to function properly, for it ties together movement of the upper and lower extremities, reacts to all body movement, and transports nerves to their proper organs. For these reasons, it seems that dance teachers can never stop reminding students to concentrate on alignment.

Improvement in alignment for dance (posture, centering, placement) can mean more closely approaching the ideal, maintaining the ideal while “pulling up” or “energizing”, attaining that energized-without-tension posture more frequently, and/or during more difficult tasks. The latter three improvements cannot be made until the former is at least understood and felt kinesthetically. This means that the first step is to discover in you a centered, anatomically balanced posture. When it comes to this first step, I feel that overload does not apply. Do everything possible to make it easy to find your center and its best relation to the rest of your skeleton. The body therapies all begin with this, and many dance classes will begin with relatively simple exercises that stress, or at least allow, students to find this beginning place. The first step is to find center and to align the spine. It will help to use the mirror and then to concentrate on the feeling of proper alignment. Concentration and kinesthetic awareness are the most important tools at this stage and for most people, once they have the correct alignment image, will be enough to establish proper placement.

However, there will be some students who cannot physically get their bodies into a functionally correct alignment no matter what. In the majority of cases, this will be the result of chronically too tight and/or too loose muscles in various areas. These conditions are, in turn, caused by a habitual stance in which the muscles are used or not used in those ways. For example, a forward tilted pelvis that cannot be placed in the proper vertical position may be caused by tight lower back muscles and loose abdominal muscles which result from constantly being respectively contracted and relaxed to hold a sway-backed position. In such cases stretching and strengthening exercises will be helpful. In a few cases, there may be structural spinal curvatures that cannot be sufficiently improved through exercises. If such a curvature is severe enough to cause
movement problems, it will generally have been noticed prior to enrolling in a dance course, and may need attention from a chiropractor, osteopathic or orthopedic physician.

Once you have found a centered, anatomically balanced posture, you must learn to energize it without causing tension, and then you can improve your ability to use your alignment by small challenges. For finding the energized state, concentration and kinesthetic awareness are once again the key factors used to establish the center. The subsequent challenges given in dance classes usually include using body positions that are harder to maintain—that is they challenge not only alignment, but balance. Other types of challenges may involve removing alignment finding aids like the use of the mirror, or adding the problem of changing weight (also a balance challenge in some ways).

These latter steps in improving alignment are very difficult, since posture is a habit. It takes a great deal of concentration and patience to get to a point where only good alignment feels right, and that is where you need to be with your centering skill in order for it to improve your general movement abilities and/or health. But the benefits are worth the efforts.

The first step to improvement is to analyze your present alignment. Try looking at yourself sideways in a mirror. You can draw a straight vertical line with soap on the mirror and stand so that it represents a plumb line through the center of your body. Is there an angle at the hip joint? Are your ribs ahead or behind your hips? Is your chin forward or tilted up? Are your shoulders tilted forward or pinched back? Then try various movements to approach alignment along the plumb line. Then try the same sort of assessment facing the mirror and checking for the lateral balance. If any of the movements which may be necessary to approach the plumb line are difficult to accomplish or result in less than sufficient changes, you may have some minor strength and flexibility problems as discussed above. In such cases, you can help your alignment by working on these problems, using principles discussed in Chapter Three, while you work on finding center, etc.

Following are some suggestions for finding center:

1. Lie on your back, knees bent and feet on the floor, arms and shoulders relaxed, back of the neck long. (Since this position is used in a number of exercises, let us name it the neutral position.) Use the breathing exercise described under relaxation and exaggerate the hollowing effect of the exhale so that the stomach muscles seem to press upward from the thighs toward the bellybutton from there, inward toward the backbone. Everything above the waist should remain relaxed: long back of neck, shoulders unpinched, ribs open but not stretched.

2. Starting with exercise #1, retain this hollow feeling while sliding the feet along the floor as if trying to straighten the legs. Slide both feet at the same time. This will be possible only if the stomach muscles are working properly to locate your weight somewhat below the waist.

3. Constructive rest: This is an important part of Todd-Sweigard’s Ideokinetic Facilitation. I have used the official images to guide the following descriptions and have
included some variations or suggestions of my own. Start the neutral position, arms folded across the chest. (If your knees want to open to the side, prop them against each other, tie them together, or put your lower legs on the seat of a chair. The purpose of this exercise is to relax areas of habitual tension that cause imperfect alignment, and to send the correct postural messages to the appropriate nerves. It uses mental images with deep concentration. No overt movement is necessary. There are at least two “image packages” which are used for constructive rest. Give yourself time to really experience each part of the package fully. When you are done thinking yourself through the complete package. Just relax a little and then roll to your side before slowly getting up.

a. The empty suit: Imagine your body as a wrinkled suit of cloths. Imagine a hanger under the knees: the legs and feet drop toward the floor and flatten out. The hip line sinks into the floor. There are vertical wrinkles in the back of the pants. Smooth them outward from the center seam. There are also horizontal wrinkles. Smooth them downwards from the waistband toward the hips. Now zip up the pants—with great difficulty—snap and snap and let the center of the waistband drop toward the floor. Zip up the jacket from the waist to the neck. It zips easily. Drop the zipper to the floor and feel the shoulders spread out along the floor. Imagine the sleeves lifted up vertically and dropped in the position your arms are in. Smooth out horizontal and vertical wrinkles in the back of the jacket as you did for the pants. Imagine that there is a very high collar that is wrinkled horizontally in the back. Smooth the wrinkles in upward motions. A cap is dropped back touching the collar. Glide it slowly to the top of the head. Imagine that your face is very hot and that the hat is full of cool water that flows refreshingly down over your face.

b. The sack of sand: Imagine your body as a body-shaped sack of sand with holes for the sand to run out. There are holes at the heels, the hip joints, the fingertips, the shoulder joints and the base of the skull. Imagine the sand leaving parts through the holes: feet and lower legs through the heels; thigh and torso from shoulder blades through the hip joints; lower arm and hand through fingertips; upper arm, shoulders through shoulder joints; neck, head, and face through base of skull. The sand seeps out or in is raked or swept toward the holes.

4. Try any of the above exercises sitting in a chair or standing with your back against a wall.

5. Some images to use during movement: hanging from a rope attached to the top of your head, aligning a broomstick representing a plumb line with a coconut representing your head, pulling a string through the center of your
body and out the top of your head, hanging on a hanger, hanging the pelvis on a plumb line, the five energy lines. (Appendix F).

Finding the right degree of “energizing”, or “pulling up” is the next alignment skill to challenge. It is quite possible—and common for beginners—to have too little gravity-defying energy or to have too little in one particular area of the body. It is likewise possible—and common for intermediate level dancers—to use too much of this energy or to trap too much energy in a particular part of the body. If your problem is one of low energy, think of elongating your spine from both the front and the back. This means using equally, the muscles of the middle and upper back and the abdominal muscles in the front of the pelvis. It is also common to have too little energy in the legs, especially when standing on only one of them. In the latter case, all the muscles in the thigh need to be used more or less equally to maintain a desirable center of gravity to base of support relationship. Since it is impossible to consciously command all these specific muscles to contract to specific degrees, using images, which will allow the body to send out, the proper nervous signals are extremely helpful. Following are some images for elongating the spine.

1. Think of growing taller like Alice in Wonderland.
2. Think of being suspended from the ceiling by a rope attached to the top of your head.
3. Think of your vertebrae stacked one on top of the other with expanding cushions between them.
4. Think of bubbles rising from the base of your central energy line in the pelvis and leaving your body through the top of your head.
5. Think you your pelvis hanging from a string passing through the center of your ribcage out the top of your head.
6. Think of the energy constantly moving through your torso in a figure-8 pathway. (See Appendix F)

Some images to help energize the leg(s) include:

1. Think of standing on a fountain shooting from the ground. The water sprays through the center of your foot, center of your ankle, center of your knee, and up the inside of the thigh to the center of the hip joint so that the pelvis floats on the top of it. If you tuck under, you can imagine that the thrusts more powerfully on the back to lift you up high under the buttocks. If, on the other hand, you overarch your lower back, think of the fountain pushing upwards with so much force that it jets up in front of the pelvis and the spine.

2. Think of your center as the reel of a fishing rod with line extending through guides in the center of the hip joint (which is actually quite close to the center line of the body), the center of the knees, and the center of the ankles to the center of the feet. Imagine reeling the line into the center until it is nicely taut.
For those whose alignment problems arise from excess energy, the following images may be useful:

1. Think of your head as floating upward like a helium filled balloon.

2. Imagine your rib cage filling with the spray from the fountain, which expands and softens as it dissipates and evaporates.

3. Think of your shoulder girdle resting on and supported by your rib cage.

4. Envision your shoulder joints floating apart from each other to the sides.

5. Imagine your rib cage hanging over the front of your pelvis like an awning that shades it.

6. Think of your foot as a triangle—from big toe to little toe to heel—with the base of the triangle expanding like a rainbow.

Further improvements to alignment should include small challenges. For example, from the floor lying neutral position, hollow the stomach muscles and bring one knee toward the chest. Then move that knee around while maintaining your spinal alignment. Of find your best alignment using a mirror. Then close your eyes and demi plie trying to maintain your posture. Open your eyes to check in the mirror and fix any problems. Then close your eyes to feel the corrections. Repeat this until there are no problems.

Balance

Since balance results from aligning the center of gravity with the base of support, the first step toward improving balance is improving alignment. Weight is passed from the torso to the legs through the hip joint which is actually located toward the inside of the thigh rather than toward the outside where you can feel the protrusion from the thigh bone (the head of the femur is the part that fits into the hip socket). So, to help balance, it is important to visualize and/or feel the energy or weight travel toward the inside of the thighs through the middle of the knees and the lower legs passing into the ankles and out of the middle of the feet.

After finding the center and proper alignment, balance must be challenged in order to improve it beyond its present condition. This is regularly done in dance classes by making the base of support smaller (standing on the balls of the feet, on one foot, on the tip of one toe), assuming a position in which one or more body parts reaches from center, combining the above with changes of weight and/or with the use of an unusual base of support (hands, knees, shoulders, etc.), with an unusual or moving surface of support (a partner), or by closing the eyes, thus eliminating the visual cues which help us sense our positions in space. The most universal aid to balancing in difficult positions is the correct and energized posture. Additional aids include fixing the focus on one spot,
preferably at eye level, and counterbalancing. The former seems to aid concentration and the kinesthetic awareness of spatial positions while the latter, which involves equal and opposite extensions away from the center (like the gymnastics scale), physically promotes equilibrium. In dance there are, unfortunately perhaps, many positions and motions in which these latter devices cannot operate. Therefore the use of images, such as the body, part of the body, hanging along a plumb line, and the energized center are the best bet. From there, further improvement is achieved by repetition and further challenges.

Turnout

Turnout is a particular skill used almost exclusively by dance. It really refers to the outward rotation of the femur (thigh bone) within the hip socket. Ballet uses this rotation all the time and jazz and modern use it in varying degrees. It is an efficient way to accomplish sideward movement, but it does put a good deal of strain on the muscles of the hip and the tendons and ligaments of the upper front thigh. When improperly done, usually by rotating farther outward in the foot than the thigh can accomplish and/or by tilting the pelvis, much strain occurs in the knees, ankles, hips, and lower back. When incorrect use of turnout becomes chronic, injuries to one or more of these areas almost always occur. Therefore it is extremely important to understand how to execute turnout properly and to practice it only this way, no matter how much pressure you may feel from yourself or others to attain a degree of rotation that is beyond your body’s correctly possible range.

First of all, correct turnout can occur only if proper alignment is maintained. Use the mirror, alignment images, etc. to find your best alignment. Think especially of the pelvis as hanging from the ceiling. By using the mirror and/or placing your hands in front of the hips where the leg and hip meet, make sure that this verticality is maintained as you rotate the thighs outward. You may first want to attempt this rotation without actually allowing the feet to move, allowing them to follow only after you have felt the muscles on the outside of the hips contract. Never begin by placing your feet into what you think might be your best turnout and then “wiggling” the rest of your body into place. Never allow the straight line at the hip-thigh junction to turn into an acute angle as you rotate outward. And never allow your feet to roll inward at the arches in order to achieve what may appear to be a greater turnout. Any of these errors will cause a misalignment in the leg which will pull on the inside ligaments and tendons at the knees and ankles and/or cause tension in muscles and ligaments in front of the thigh and in the lower back.

Turnout may be used standing on both legs or on one leg, with or without the supporting knee(s) flexed. Some variations in the muscles used, and therefore the sensation felt occur in the different positions. When standing upright on two straight legs, the muscles causing the outward rotation of the thigh are 6 deep muscles that lie underneath the gluteus maximus (large buttock muscle) and pass from the back of the pelvis to the outside of the thigh bone. Turning out while standing on one leg adds the work two muscles on the side of the hip (gluteus medius and minimi) and one on the
outside of the thigh (tensor fascia latae) of the supporting leg. When flexing the knee and hip as in a ballet pile, the sartorius, which crosses the thigh to the outside of the knee, is added. Once a turned out position is reached, you will feel the gluteus maximus working to maintain it, but only if the knees are kept straight.

Improvement in the range of turnout available may occur with improved flexibility of the inner thigh muscles and the deep muscles and connective tissue in front of the thigh at the hip. However this must be accompanied by an increased ability to maintain alignment. To improve the ability to reach and maintain this turnout range, it is necessary to strengthen the above named muscles as well. Some specific suggestions for finding and strengthening the turnout muscles follow:

1. Lie on the floor on your side with your torso aligned and hips and knees bent so that the knees are in front of you and the feet are in line with the spine. Leave your toes together and rotate the knee of your top leg upward toward the ceiling. Do not shift any other part of the body. The pelvis must remain perpendicular to the floor as you isolate and maximize the rotation at the hip. Return to the starting position and repeat. To add more resistance to the movement, place your free hand on your upper thigh, pressing down to resist the motion as your thigh tries to rotate, or have a partner provide the resistance the same way. The pressure should not prevent the movement altogether. Repeat until you feel a burning across the back of the pelvis and underneath the buttock muscles. Next, extend the top leg in a straight line from the spine and rotate it outward and inward as you keep the pelvis still. A partner can resistance by pressing the thigh above the knee.

2. Standing with the legs in parallel first position, attempt to rotate the legs outward without moving the feet (as described above) and release. Repeat until you feel the burning as above.

3. To find and strengthen the turnout muscles while standing on one leg, stand in parallel second position in relevé and facing the barre. Slowly turn out both legs equally feeling the work underneath the buttocks and around the tops of the thighs. Stay in relevé and shift the weight to one leg raising the other leg so that its foot touches the knee of the supporting leg (passé). Stabilize the supporting leg so that the pelvis remains square to the front and the working hip stays down. Keep turning both legs out.

With any plan for improving your turnout, you should also consider alignment strengthening work and stretches. After working the turnout muscles very hard, you should remember to stretch them.

Other Skills

There are numerous other skills involved in dance, such as: extension (literally extending a joint, in dance the term is used to mean high lifting of a leg in any direction),
level changing (jumping, falling), weight changing, and direction changing including complete turns. Each of them will involve some combination of the previously mentioned abilities. For example, extending the leg thigh in front demands flexibility in the hamstring group of the working leg and in the psoas and quad group of the standing leg as well as strength in the psoas and the quad group of the working leg and strength in the abdominals, lower back and later leg muscles of the standing let. In addition, concentration and kinesthetic awareness are necessary to maintain alignment that is in turn necessary for balance and line. Also, movement efficiency is needed to activate the right muscles to work in the right order. Dance classes will work on these skills with both “part” and “whole” methods. That is, some days, your teacher may give you exercises that stress the strength and flexibility needed for front leg extension. Another exercise may work to challenge alignment and balance, while another may be designed specifically to help your body learn to activate the psoas for more efficient lifting of the thighbone toward the torso. The class will also have movement patterns designed to pull at all the parts together—you will learn to have a better front leg extension by practicing front leg extensions.

Rather than attempting to thoroughly analyze all the component abilities of all the possible variations of the above skills, I will list a general principle for which more less defines that skill. For extension in any direction, think of movement starting out at your center and stretching through the hip sockets, out to the toes and from they’re drawing an arc in the air to reach your leg’s final destination. For efficient and springy jumping, remember Newton’s law of action-reaction. Think of your center as a basketball. If you push the basketball straight down to the floor, the floor will send its straight back up with an upward force equal to your downward push. Remember to keep your body energized but not tense and simply allow the rest to happen. Thinking of your legs as springs may help attain the right degree of energy. Falling can be accomplished safely and easily either by using a spiral path of descent while keeping your center over your base of support, or by counterbalancing the downward impulse with some part of your body stretching upward. Rising from the floor often employs spiraling or diagonal paths and building momentum with pushing, rolling or spiraling movement.

The key to weight changing is feeling the weight’s “path” from the center of gravity to the base of support and remembering that wherever the movement may be initiated, it must reach the center of gravity and bring that area over the new base of support. Directional changes, likewise, cannot be complete without movement occurring at the center of gravity. Such physical factors as momentum, for example, may make some specific weight or directional changes difficult. Remember to try to map a movement pathway for the complete pattern and find a way to round of any angles that may occur. For example, if you are to take four leaps forward followed by four steps backward, think of your movement pathway as including a slight downward curve at the end of the last leap to help dissipate some of the forward force and thus allow you to take those backward steps without stumbling.

If you are having problems with a particular skill, your best course of action is to determine what component abilities are necessary and if any one or two of those
components is keeping you from accomplishing your desired movement with the quality you are seeking. This may require observation with a mirror, film, or by an outside observer. If you can isolate a component or two to work on separately, this will be a first step. At some time, however, you will need to put it all together in order to master the problem. The good old “practice makes perfect” adage. This should be done at a difficulty level for which you know you are capable in all the component abilities. The overload occurs from putting them together. You should also practice with a clear knowledge of exactly what the movement should be and how it should be accomplished. Mental practice and images can help. Both mental and physical practice must involve concentration on correct performance, and it may be best to at least check your progress with knowledgeable observers to avoid forming incorrect habits that could undermine all your work. For a beginner, it is best to check with your instructor before undertaking any unsupervised practice of a complex skill.

Control

In dance, we say that a person has control when he can execute slow movement with balance, high leg extension, and the desired torso-limb relationships. We may also speak of good control in landing from jumps or turns or in reaching desired positions with great precision. If you reflect upon the component abilities involved in these things, I think you will discover, as I have, that control really means doing exactly what you want to do when, where, and how you (or your choreographer) wish.

Dance requires that we make movements happen in specific shapes, rhythms and with particular energy characteristics, thereby giving us the idea that we can and must at all times be in control. And this is, in the broad sense true. Unfortunately, the word “control” connotes for some of us a sense of confinement, or at least of constant guidance. This may be why the striving for control sometimes gets out of hand and becomes nothing but movement blocking tension. The experts on movement efficiency tell us to “allow” rather than “force” movement. But dance movement certainly appears to be more than, or at least different from everyday efficient movement. It appears to, and in fact actually does, involve intent.

Combining the apparently dichotomous ideas of “intent” and “allowing” which provides a key to my overall principle of dance and life, which I sometimes call the rubber ball theory. It may help all of us if we replace the idea of dance needing constant control to dance needing constant awareness. To make good honest dance movement involves mental activity leading to physical allowing, which, in turn, leads to physical activity. This much is not just a philosophy, but is a real physiological process. The mental activity in dance is not just “I think I’ll walk”, but is much more specific, “I think I’ll take three spatially long and low, high energy walks forward, bringing my energy down at the end.” The mind and body must learn to work together in an “active allowing” sort of way. We must not only allow the internal movement making process to work (nerves to muscles, etc.), but also be prepared to recognize and work with such external (outside our own bodies) forces as gravity, inertia, momentum, etc. We must use ourselves as both an actor and a reactor (action—push down, reaction—allow the jump to
happen by the law of equal and opposite reaction), as both source and user of energy. In practical terms, we must energize our bodies to cause motion without creating tension that could block that motion’s flow—create an impulse and allow it to flow—become as resilient yet shape retaining as a rubber ball. That’s all there is to it. Good luck.

CHAPTER FIVE: CONCERT DANCE HISTORY AND STYLES

Ballets, modern, and jazz are the types of dance that are presently used as concert forms in the Western hemisphere. All three can be used to express contemporary concerns either literally or abstractly. There are, of course, differences and relationships among the forms that can be revealed by examining their developmental patterns, aesthetic premises and technical systems. Although the following discussions may begin elsewhere, they will ultimately focus on dance in the United States.

Ballet and jazz both developed from folk and social sources—dances of the people. The social dance forms where incorporated into entertainment forms that were further modified to transform the characteristic movements for expressive use as concert dance. There were, however, great differences in the original folk and social sources from which these styles developed. Hence their aesthetics (i.e., values, what is considered to look good) are different and these differences are reflected in the characteristics of their movements. Modern dance, on the other hand, had no such folk origins, but rather was created from the very beginning with a sense of purpose. It was first and foremost meant to be an art with the ability to maintain its vitality by its freedom to find new forms. Its aesthetic premises are the results of a self-conscious search.

Ballet

Ballet first appeared in the Renaissance (about 1400 to about 1650) courts. Even during the Middle Ages, the upper classes had begun to refine peasant folk dances for social gatherings in their courtyards, and by the time a scholar employed by the Italian Medici family had re-discovered documents dating back to the Golden Age of Greece (an event which some historians feel marked the beginning of the Renaissance), these dances had been further sophisticated to be suitable for the highly structured and lavish indoor parties given by the nobility.

Italy was the first country to display an intense interest in dance and “court ballets.” The latter term refers to entertainments planned for guests at the balls of the noble houses. These included songs, recitations, social dancing by the guests, and choreographed social dances performed by select courtiers. It was the common practice for noble houses to hire dancing masters to teach the extended family social graces and dancing as well as to direct and choreograph court ballets. The dances themselves were
highly intricate, using only foot movements. They reflected the Renaissance interest in the ancient Greek ideals of harmony and proportion with their gently curved lines that never went to extremes in size or angle. They also reflected the interest in social position and decorum of the day with their emphasis on plan and structure and their upright and somewhat rigid use (or rather non-use) of the torso. As we continue, we shall discover that ballet’s royal birth had a lasting influence on its aesthetic attitude and its technical development. The regal carriage which seemingly unaffected by movements on the periphery, the highly mannered or stylized movement, the interest in clarity of line and design, and the value of Renaissance proportions are still integral premises of the ballet aesthetic.

France became the center of ballet activity during the baroque period (about 1650 to about 1800) due primarily to the patronage of King Louis XIV. The renowned Sun King founded the Royal Academy of Music and Dance as both a training center and a performance hall. Thus, ballet was no longer solely an entertainment by nobility and for nobility, but became an art practiced by professionals trained at the academy and available as entertainment to anyone with the price of a ticket. The performances were thus no longer planned for a long ballroom with the audience seated all around, but rather for a wide stage with the audience on only the open side. Therefore, ballets’ movement design became more frontally oriented with more side-to-side movement. During this period the ballet terminology that is still used today developed, as did the core of its technique: five positions of the feet and a turnout of the legs. The structure of the form strayed somewhat from its social dance origin by using more solo work, including movements of somewhat larger size, and adding intricate hand motions. In addition the structure of the ballet as a work became more unified, finally discarding masks, using costumes more related to the theme or story line, and eliminating most of the spoken interludes included in the earlier court ballets.

The romantic period (begins about 1800, peaks in the 1830’s and 1840’s and then declines) added a concern for a gravity-dominating quality that led to the addition of more aerial steps and to pointe work. During this period all spoken text was eliminated and ballets were regularly structured in four acts. Romantic ballets viewed the woman as almost a spiritual being and had story lines featuring non-corporeal females such as “willies” (ghosts of maidens who have died before their wedding days) and “sylphs” (forest spirits). Pointe work, the filmy and free-moving romantic tutu (calf-length tulle skirt), along with this “exalted” view of womankind led choreographers to concentrate their inventions on women’s roles.

As romanticism declined during the mid-nineteenth century, so did the popularity of ballet in France. During this period, many dancers from French ballet companies expatriated to carry ballet traditions to northern and eastern Europe, and significantly, to Russia. It was this latter country that became the center of ballet excellence and innovation from the late nineteenth century into the early twentieth century. Marius Petipa, a French émigré’, injected the fresh masculine vigor he saw in Russian folk dancers into his works, producing both the general characteristics and numerous specific ballets that have become the standard formula still recognized as “classical ballet” today.
The short fluffy classic tutu, the formulaic approach to choreography as well as the emphasis on spectacle and virtuosity (especially multiple turns, very large leaps for men, and acrobatic lifts) are products of the Russian Imperial Ballet era.

The early twentieth century was a time when all the arts were concerned with breaking old traditions and trying out new forms. Ballet was no exception. Due to the efforts of an impresario named Serge Diaghilev, who organized a troupe of Russian dancers, choreographers, etc. to tour the world, ballets straying from the Russian Imperial style and favoring innovative ideas and movements were created. The use of stylized pantomime gestures for story telling was discarded in favor of movement which chosen to be expressive of the theme rather than for its accepted membership in an established vocabulary. Music, costuming, and décor were likewise styled to be appropriate to the central idea of the dance rather than according to convention.

These ideas are consonant with those of all twentieth century art and have allowed ballet, which was an art of the European aristocracy, to assume the ability to speak to the modern middle-class American. In fact, during the 1940s, the young ballet companies and choreographers of the United States began forging a ballet style that was strictly American and this country became the new world leader in dance excellence and innovation. This style includes not only dances with “Americana” themes and movement to match (e.g., Rodeo with stylized horse-riding and roping movements) but also non-representational works. American movement seems to use a larger personal space with more long, straight lines than European ballet. It also tends to make more varied use of general space and to be rather “athletic”. Contemporary ballet choreographers may start with their classic tradition, but feel free to do with it as they wish. They may use rock music (e.g., Tommy to the Who’s opera), high-heels and sneakers (e.g., Fancy Free about sailors picking up girls in a bar), tuned-in knees and angular shapes—anything that they find appropriate to the particular vision they wish to create.

Ballet classes are taught in traditional Russian, French, Italian, Cecchetti, R.A.D styles, and since the 1950s some have included a “therapeutic barre.” All use the same vocabulary, with some slightly differences primarily in preferences for particular arm positions or movements. Cecchetti and R.A.D methods adhere to a specific class sequence and often to specific movement combinations. The therapeutic barre refers to a portion of the class, usually the beginning, which uses exercises mostly done on the floor that are not from ballet vocabulary but are meant to aid in the correct execution of that vocabulary. These exercises are similar to those that we do at the beginning of our classes for centering, strength, etc. All ballet technique stresses torso placement as a control of peripheral movement that must meet quite exacting criteria to be correct. There is a preponderance of positions which exhibit harmonious lines in the classical sense, and much time is spent developing precision, a rebounding quality for jumps and leaps, balance, spectacular turns, high leg extensions, and feats performed sur les pointes.
One of the results of the U.S.A’s fabled cultural melting pot is an influential and unique phenomenon of acculturation—jazz. This blend of cultural blends is present in folk, social, commercial entertainment and concert forms of music and dance in sub styles ranging from primitive to sophisticated and including various jazz-rock/classical amalgams. The blending process was instigated by the institution of slavery and was nurtured by the cross-exposure of slaves and masters to each other’s religious and social customs as well as to the related music and dance. The characteristics of today’s jazz or rock music and dance are embodiments of the effects of European harmonies and footwork on African rhythms and torso movement.

The dances of the Africans who were brought to America as slaves were religious, rural and communal using literal styles of expression and allowing no physical contact between dancers of the opposite sexes. These dances exhibited a number of characteristics that have influenced dance in the U.S. even to the present day: 1. a flat-footed style favoring gliding, dragging or shuffling as might be done with bare feet on the naked earth; 2. a distinctive body posture of a crouch with the torso tilted, knees flexed and the spine being allowed to move fluidly; 3. a tendency to be mimetic, especially of animals; 4. improvisation; 5. movement coming from an initial impulse in the torso and traveling outward to the extremities; 6. propulsive, horizontal rhythms; 7. movement of isolated body parts. African dance indicated in intimate understanding of nature with its feeling of solidarity of body and earth.

The general trend in the U.S has been for African dances to gradually become secular, urban, and solo or coupled, while moving toward individual expressive styles and, at least initially, toward physical contact between partners. This represents a combination of the African dance traits listed above with 18\textsuperscript{th} and 19\textsuperscript{th} century European social dance styles which stressed upright torsos, fancy footwork on the balls of the feet, open and closed partnered positions, and vertical rhythms. Why did African dance change? Probably because copying “white” styles may have seemed socially desirable; because improvisation had always been part of African dance and provided an avenue for creating new movement styles; and because the competition that had been part of some African dances was enhanced in the U.S to become formal contests for which the winners gained some kind of advantage. European folk and social dances likewise changed from exposure to African dance but for the most part this was quite subtle until close to the twentieth century. These changes resulted from the practice of using black social dances, enhanced for performance, in entertainment forms presented to white audiences. The white audiences then re-simplified these “stage” dances for their own enjoyment in their own ballrooms. When both black and white social dancing had changed so much that they were very close to being the same, the style became known as jazz. This occurred in the beginning of the 20\textsuperscript{th} century.

The evolutionary processes began immediately, so that even on antebellum Southern plantations, the original African dance forms had changed. Two important examples of early Afro-competitive couple dancing were the cakewalk and the jig. The former was a competitive couple dance using a strutting step with improvised satirical pantomimes of the “grand manners” of the white masters. It represented a blending of
African body movement with European couple formation. The jig had originally referred to an Irish folk dance, but here in the U.S. came to be associated with the black style of performing jig-like footwork with flexed knees, the torso bent slightly forward from the hips, and the feet beating out a polyrhythmic and syncopated “thunder.” These and other plantation dances came to be used in choreographed versions in minstrel and other traveling shows that were popular between 1845 and the early 1900s. Through this route, the cakewalk eventually was accepted by white audiences and re-adapted by them for social use, becoming the first jazz social dance.

After the civil war, dances entered the above route to popularity not from the plantation, but from the black ballroom. In fact, prior to 1917, much jazz innovation occurred in the “jook houses” of Storyville, New Orleans’ district of legalized prostitution. As demonstrated by the “cakewalk case”, it often took many years to make the circuit from initial innovation to general popularity. During the twentieth century, the length of the time lapse has continually become shorter, due to the wider and quicker accessibility provided by movies and television.

The cakewalk remained popular until about 1910 and from 1910 to 1920, subtlety syncopated pantomimic animal dances (eagle rock, turkey trot, etc.) and dance-songs with instructional lyrics became standard ballroom and show dance fare. The explicitness of the instructions in dance-songs and of pantomimic action in animal dances gradually diminished until the steps of the foxtrot bore no resemblance to the movements of a fox, and the lyrics for the Charleston gave little if any instructional aid in the performance of America’s favorite dance during the ‘20s. With the Charleston, the distinction between dancing to do and dancing to watch was erased, and on a professional level, ballroom and tap merged, with performers inventing tap-Charlestons. This period also saw the beginnings of American musical comedy, and black musicals and revues were produced, providing yet another avenue for early jazz social dances, with their short and sharp rhythm patterns, to make the journey to Broadway.

During the ’30, big bands and swing music became popular, accompanied by the “classic” jazz social dance, the Lindy Hop. This dance had originated in Harlem as early as 1928, and survived under a number of names (e.g., jitterbug, sing, bop) into the days of rock ‘n roll. It’s breakaway from closed partnered position for solo improvisation made the dance adaptable to changing musical styles and to choreographic treatment, and groups of Lindy-hoppers appeared in movies, night clubs, and on vaudeville and Broadway stages.

Beginning in the ‘30s, dance grew in importance in musical films and live shows. The use of ballet choreographers for musicals fostered this trend and created a need for more and better dance in the shows. The trend began in 1936 with On your Toes, the first show to credit its choreographer, George Balanchine, with that title in the program, and was fed by such talents as Busby Berkely, Fred Astaire, Gene Kelly, Agnes DeMille and Jerome Robbins. The latter brought the integration of plot and dance from a pinnacle with West Side Story in 1957. In both stage and film versions, this show used “modern jazz” dance as a means of expressing the actions, characters, and emotions of the plot.
The addition of ballet and modern dance to the jazz melting pot added a greater use of space and a broader range of leg and arm motion.

During the ‘50s, another musical style, rock ‘n’ roll, was growing. Unlike the cool jazz styles of the period, it returned to the roots of jazz and was very danceable, thus creating a renewal of popular jazz social dancing among the youth. Old Afro-American steps performed by rock stars (like Elvis Presley’s own version of the old animal dance, snake hips) became popular with teenagers who eventually danced their own versions of them on such television shows as Dick Clark’s American Bandstand which were avidly watched by other adolescents who wished to insure their knowledge of the latest dance styles. In 1960, one of these dances, the twist, revolutionized social dancing by shifting the emphasis from fancy footwork to torso manipulation and removed all traces of contact between partners. The twist and its immediate successors were performed for spectators by “go-go girls” in discotheques and on television programs like Hullabaloo, and their flavors and characteristics were incorporated into the hybrid modern jazz dance which was and is performed in clubs, on television and in film and stage shows.

Even from its earliest days, jazz rhythms, movements, or spirit appeared in dance works for the concert stage, though the first of these were often self-conscious and viewed as novelties. By the late 50’s, West Side Story gave impetus to an increased use of jazz movement as a means of expression, and since then, literally hundreds of concert dances employing jazz in some form have been produced. In 1967, the rock music and spirit infused two revolutionary theatrical productions: Hair in musical theatre and Astarte in concert dance. Hair was the “logical sequel” to West Side Story due to its sub-surface anger, its dependence upon movement images and its theatrical integration. Astarte was the first ballet to use real rock music and to express its spirit in a highly abstracted way, thus expanding the range of content for which jazz elements could be used.

After the mid-70’s, some rock music (disco, Southern rock, etc.) exhibited a taming and consolidation of the hyperactive and revolutionary forms of the late ‘60s, while other styles (punk, reggae, new wave, etc.) seemed to return to earlier influences and to be expressive of rebellion and anger. Both styles were accompanied by another resurgence of popular social dancing with some types similar to the post-twist dances and some throwbacks to earlier footwork and partner-oriented forms. In the ‘80s, breaking, at first danced informally on street corners as earlier tap was becoming an “overnight” phenomenon through its use in movies. The jazz dances “of the ‘80s people” (social and street) exhibited both the cool, detached, cynical obsession with surface that has been said to characterize the decade’s attitude, as well as the hot, primitive, extraverted soul of the origins of jazz. Although the direct appropriation of social dances for performances has declined somewhat since the late ‘60s, jazz dance for shows, etc. continues to incorporate the characteristics or flavor of currently popular social dance styles. (I think the vogue is a great contemporary example of convoluted route jazz has always taken from street or dance club originators to entertainment back to social.)
Jazz as concert dance today begins with the essence of jazz and feels free to use whatever movement and structure is best for the specific idea at hand.

Descriptions of the movement in today’s theatrical jazz dances include phrases used to describe African dance, like shuffling foot movement, flexed knees, fluid spine, movement impulses beginning in the torso, propulsive rhythms, and movement of isolated body parts arranged successively or oppositionally. They also contain indications of jazz’s incorporation of ballet and modern dance, like use of large arm and leg movements, dynamic contrasts, and awareness of space. Theatrical jazz dance today can be found in both commercial and concert settings. For the former use, the dances may sometimes be termed “routines.” Such dances do not mean to be “expressive” nor to place movement before us as an object of perception, but have other purposes for which their makers feel that the use of traditional jazz movements arranged in a rather traditional sequence are most appropriate. For some commercial dances and all concert dances, where the expression or uniqueness of the movement is the purpose for existence, the choreographers’ work according to the “modernist” aesthetic premise that all the material and structure for the work must be chose because it fits the specific piece.

Formal classes in jazz dance did not appear until the 1940s. Before that, dancers learned their craft from watching their predecessors and then practicing on their own. A lucky and talented young dancer might find an experienced performer to coach him and thus shorten his path to mastery. When musicals began to choreography, a need for jazz training developed. The first jazz classes were modified ballet classes that incorporated isolations, torso movements and tap-like steps. Jack Cole, Luigi, and Gus Giordano are three men who did major work in developing technical training methods for jazz dance. Jazz classes come in a variety of styles and formats. From those that are primarily spent in learning routines, to classes that, like those in ballet and modern, are concerned with teaching students to move well within the style rather than to memorize specific movement combinations. Jazz technique is always done with obvious rhythmically. It also stresses dynamics that often tend to change quickly, and uses movements of the whole body. It works to develop a fluid spine, which along with rib, hip and shoulder movements do much to retain the sensuality of jazz. Much of the movement occurs only in the torso, and the torso can be made to move at the same time as the periphery with seemingly little relation.

Modern Dance

In the early 1900s, it appeared that ballet had entered a period of stagnation. Rather than seeking new expressive potentials, it clung to the safety of traditional formulas. Of course, there arouse a generation of rebellious artists, determined to pull dance out of its comfortable past and flying it into the future. Some of these artists worked within the genre of ballet, but others chose a different and even more difficult path, seeking to forge a new dance art form. These were the pioneers of modern dance. They all wanted to be free to choose their own movements and forms, so that from the very beginning, modern dance was an art of individual symbolic expression.
First Generation (1900 into the ‘30s)

The early rebels who chose to dance outside the world of ballet were all unique personalities with individual ideas of the sort of dance they sought. There were, of course, no teachers of this yet to be established dance style, so they all conducted intense personal searches to find movements and forms suitable to their ideas, both general and specific. However, each was guided by some source of inspiration that provided a direction for the search. Though the inspirational sources, personalities, and resulting movement styles were highly individual, there were some underlying ideals as well as some objective stylistic characteristics of the presentations of these ideals that were common to the artists of this period. They were against restrictions in the type of movement and form, the use of virtuosity for its own sake, and highly stylized movement. They were for freedom of choice, and movement that was more directly expressive of human feelings. Each artist was highly successful within his own terms and times in creating dances in an individual style that lived up to these ideals.

The outward appearances of dances of this era might seem “overblown” or excessively romantic, exotic or emotional to today’s audiences. For example, Isadora Duncan, a Californian who enjoyed most of her success in Europe, sought to rediscover man’s first movements and used nature and the dance of ancient Greece as her inspiration. Her dance was romantic in the sense of “bigger-than-life”, and her performance magnetism was so great that she could dance solos to such large musical accompaniments as Beethoven’s Ninth Symphony. Her inclination to dance barefooted in simple tunics and her “discovery” that movement originated in the soul, which she located in the solar plexus, where influential on the future development of modern dance.

Another artist of this period, Mary Wigman, created a style that has been described as “German expressionist” due to its highly emotionally charged presentation. In her teaching, as well as her choreography, she was guided by the movement analysis work of Rudolf von Laban and is especially known for her work with spatial awareness.

The “parents of American modern dance,” Ruth St. Denis and Ted Shawn, were inspired respectively by the flavors of oriental and American Indian dance. Their company, Denishawn, toured every nook and cranny of this country presenting highly theatrical programs of exotic looking dances. At their school of the same name, they trained their company members, some of who became the “greats” of the next generation, by providing classes in many ethnic styles as well as ballet and Delsartian mime. They felt that a dancer should learn as much dance as possible and then use his trained body, mind, and spirit to discover his own style.

Second Generation (‘30s, ‘40s, ‘50s)

The artists of this generation were responsible for nurturing the infant art of modern dance through its adolescence and into the maturity of young adulthood. In all but one case, each studied with a member of the first generation, which provided a
shortcut to the mastery of that artist’s discoveries. They took the ideals of freedom of choice and movement which is directly expressive of human feeling into their own world, for they all felt that their dances should reflect the world rather than some “psychic place” distant in time or space. In addition to developing their own choreographic styles, they each developed teaching systems to train dancers to perform in their styles.

They were very concerned that their work be taken seriously as high art and that it not in any way resemble ballet. Therefore, when the choreographers of this generation first struck out on their own, they tended to use serious subject matter, movement that could not at all be considered “pretty” by the Renaissance standards of ballet, and even costuming that was opposite to that of traditional ballet: dark, heavy, long dresses for women, and full, heavy pants for the men. Later some of the disciples of these artists humorously referred to the period as “early stark.” The manner in which the new modernists expressed their themes was abstract, i.e.; it dealt less with relaying the events of a narrative than it did with objectifying the essence of a subjective reality.

Among the artist of the generation are Martha Graham, Doris Humphrey, Hanya Holm, and Lester Horton. Graham left the exoticism of Denishawn to make her own highly dramatic dances dealing with Jungian psychological interpretations of how the events of her chosen literary sources affected her protagonists. She uses a predominance of angular, percussive and restrained movements that feels result either from “contraction”—a pulling in toward the center, or “release”—a stretching away from the center. Today, her highly codified technique based upon contraction and release is actually copywrited.

Humphrey was also a Denishawn graduate whose slant on themes of various types (literary, natural, musical, emotional, etc.) was sociological, exhibiting her interest in group actions and motivations. Her movement style reflected her theory that motion arises from “fall”—succumbing to gravity and “recovery”—rebouding from gravity, by contrasting weighted with suspended spacious movements.

Holm brought Wigman’s movement ideas to the United States and proceeded to allow them to change according to her own personality and environment. She emphasized asymmetricality and movement that seem to give space substance and texture.

Although Horton did not have a first generation modern dance teacher from whom to learn his “first steps,” his work on the West coast seemed to parallel that of the above artist working in New York. He, too dealt with “adult” socially relevant themes in an abstract way and from his work with authentic American Indian dance, he developed an individual movement style that had a strong, masculine, economical appearance. His teaching technique is likewise economical, emphasizing strength, joint mobility, and a casting or swinging quality from his use of a rounding and arching of the torso.

Third Generation (‘50s, ‘60s, ‘70s, ‘80s)
The third generation inherited a mature art form with clearly established aesthetic premises, a mode of expression and several movement styles. These artists could have simply made more dances in the modes of their mentors and used the same kinds of movement and technical systems. But then, their dance would not have been true to the premises of the pioneers: that each dance must make its own form, that any appropriate movement must be intrinsic to the dance, and that dance can express a wide range of ideas. So, like the good modernists they all were and are, they continued according to the premises and further extended the forms, movement styles, and the range of ideas found in dance. Some did so by continuing the line of direction set by their mentors while others rebelled against their predecessors and set off in totally new directions.

Modern dance had already proven its worth as an art form so that it was no longer necessary to rebel against ballet or to self-consciously strive to counter the possibility of identification with triviality. The third generation artists were free to really explore a wide range of expressive areas in their dance. And they have indeed explored so intensively that it is difficult to characterize their styles collectively. Although dances that revolve around literacy and other literal themes are found in the repertoires of third generation artists, they have shown a tendency to reach toward less representation, even in the abstract style, and toward more “pure dance” in which movement is seen to be intrinsically interesting without attachment to any outside source. These artists have found new ways to use space and explore new relationships between dance and its colleague arts. They have found new movement shapes, used force and time in new ways, and explored new compositional ideas.

Among those who have rebelled against Graham’s psychological choreography and restrained and percussive movement is Merce Cunningham who works exclusively with non-thematic dance. He collaborates with musician John Cage on works that are composed “by chance”—which they explain imitates nature in complete and independent in itself. Lighting, costumes, set, and music are created independently and are often first put together at dress rehearsal. Cunningham uses an uncluttered movement style that is reflected in his teaching method. The lack of obvious mannerisms in this technique has made it a popular method for many contemporary dancers who must prepare themselves to perform in the styles of many choreographers.

Several other third generation artists have traveled further along the roads begun by their mentors. Jose Limon’s style of swinging motions and breath rhythms comes directly from Humphrey’s ideas of “fall and recovery” and continues her work with weight to create large, powerful, free flowing motion. Alwin Nikolais has taken Holm’s quest to make space tangible almost literally by filming his dances with lighting, costumes, sets, sounds, and motion all choreographed together. His “total theatre” makes abstract sensory designs that sometimes create a “magic show” effect. The Alvin Ailey School still has Horton technique as part of the curriculum, along with Graham technique, ballet, and jazz. His movement style has elements of all these. It is visceral, sensual, rhythmic and powerful lyric. Some of his best works are based upon his black cultural heritage, but he has done non-representational works as well.
Beyond the third generation, the lineage of artists becomes less clear, for during the ‘50s and ‘60s it was impossible and likely for a dancer to study with first, second and third generation artists. In addition, it has become more common for performers to dance with several different companies during their careers and therefore to study several modern styles as well as ballet, jazz, and other movement forms such as yoga, Tai Chi, ch’uuan, body therapists, etc. Given the open aesthetic of modern dance and the many areas explored by the second and third generation artists, it is quite possible for contemporary choreographers to continue to make fresh dances throughout their careers without especially trying to break new theoretical ground. However, there are many artists who have consciously sought to expand or alter conceptions of dance and/or art in general. We shall confine our discussion of the most contemporary artists to those belonging to the latter group.

During the late ‘60s, the avant-gardists found a performing home in New York’s Judson Church and a “nurturer” in composition teacher Robert Dunn. Dunn’s classes were structured to be “non-evaluative” and to promote questioning and experimentation. Artists in this group shared Cunningham’s concern for non-literal movement, for non-literal use of literal movement and objects, and for exploring new spatial structures, processes and ways of relating to accompaniments and audiences. They carried these ideas, and others, into realms that challenged generally accepted concepts of dance and theatre. For example, they often used “minimal” movement, perhaps composing a whole dance of different ways of walking. And the audience-dancer relationship might be arranged so that the audience was only able to see part of a dance, or no “real” dancing at all but able to read a “score” in the program (conceptual art). They explored repetition, variation, accumulation, improvisations or performer-made choreography based upon a score that might include images and/or spatial plans, etc. They challenged traditional male and female dance roles and sought new ways of moving by investigating mind-body connections and the effects of not only gravity, but also of inertia, momentum, weight giving and taking, etc. Some worked collaboratively, and some staged spontaneous improvisational events (happenings).

During the Judson era, the artists who worked there, and elsewhere found the country, were searching and breaking molds, much of the first generation had done, and they took themselves just as seriously. By the ‘70s they had become mature artists, with visibly unique characteristics which were different enough from the by now “traditional” modern dance style that the critics began to attach the label “post-modern” to their work. By now, these artists feel free to incorporate such conventional theatrical dance staples as proscenium stages, lots of movement, and even stories, into the new and unique movement styles they had discovered earlier, so that now it is possible to see a work choreographed by a wild-eyed radical of the ‘60s performed by a venerable institution such as the American Ballet Theatre. The movement of each of these choreographers is, of course, unique, but in general tends to be more athletic than earlier styles, perhaps even a little rough-edged as opposed to slick (purposely). The whole of the work, including posture and costumes, aims for a less “dancerly” appearance. Humor,
especially that stemming from surprise or incongruity, is not uncommon, and even when the dance is composed around a theme or story-line, it is likely to be told in terms abstract enough to allow each audience member to attach his own interpretation to the movement he sees. In addition, the rising presence of film and video in everyday life has affected the work of these artists.

Influential artists or companies that began to work in the ‘60s and ’70s include Twyla Tharp, Steve Paxton, and Pilobolus. Tharp is known for her complex choreographic structures, use of electronic technology as choreographic tools, and a unique movement style that is quirky, using very quick footwork under floppy, casual-looking torso and arm movement, with surprising changes in direction and quality. She has choreographed not only for her own company, but also for ballet companies, films, ice skaters, football players, etc. and is presently working in the new eclecticism (discussion below), and has fused her company which works at least partially en pointe, with American Ballet Theatre.

Paxton is the innovator of contact improvisation, which explores momentum, weight support and transference, touch and balance, especially with reference to falling and rolling and to the moving of two bodies together without conventional relationship references. The movement is rough and tumble, like children wrestling, and the performance ambience is extremely causal—almost anti theatrical—involving the audience in the actual physical movement of the performers rather than in an aesthetic “illusion” created by the dance.

Pilobolus is a company of four men and two women who transform contact improvisation into collaboratively choreographed forms. The results are theatrically polished moving sculptures that create intriguing and surprising visual effects.

Not to be outdone by earlier eras, the late ’70s, ‘80s and ‘90s have produced a myriad of young rebels determined to make their marks with new and distinct dance styles. It may be too soon to tell which characteristics and arts of this “next wave” will become the most influential as they mature, but it is nonetheless evident that today’s dance is extremely energetic and athletic. It tends to be more theatrical than the dance of the ’60s and early ’70s and also even more eclectic, including all kinds of movements and art elements. Film and video continue to be used and performance art (non-conventional use of several art media in performance) is a strong influence. Humor has become hard-edged and themes, even when under the surface, are frequently obsessed with the possibility of apocalypse. So far, none of the next wave has made strong inroads into new teaching methods, preferring to use the many dance and movement studies already available. Among the “names in the news” are Melissa Fenley, Mark Morris, Nina Wiener, Jowale Zollar, Bill Erwin, Laurie Anderson, Bebe Miller, Blondell Cummings, David Parsons, David Dorfman, etc.

A modern dance teacher today may use a style developed by one of the artists discussed above, or may use his own system. The range of choreographic styles in modern dance puts quite a demand on a technical system and many different ways of
working exist. Yet in some common tendencies in modern techniques are evident. All styles use the torso as a source of power, the cause of any peripheral movement, and much time is devoted to developing strength and flexibility in the torso area. The play of tensions and the importance of weight in choreography are echoed by a stress on gravity, weight, dynamics, movement quality, and other terms for similar ideas. In order to express the non-proportional, non-affirmative and open, much use is made of parallel position of the legs and of the use of the floor as a movement plane. The student is trained to learn the kinesthetic feeling of the correct use of energy for movement. In addition, many teaching methods include exercises to open the students’ imaginations to make them better performers and prepare them to become innovators in their own rights.

CHAPTER SIX: PERFORMANCE QUALITY—BODY, MIND, SPIRIT

Performance quality, projection, musicality, whatever you want to call it—this is what all the other work is really about. Yet, many a fine technician never experiences the thrill of dancing—really dancing—for lack of this essential ingredient. (There are, of course, natural performers who project like the devil over sloppy movement, and the audience will appreciate their efforts more than those of the non-projecting technician). Some people feel that performance quality cannot be taught, either you have it or you don’t. I am more optimistic, and am positive that it can be at least nurtured if not learned. I think that performance quality is found in a coordination of the realms of body, mind, and spirit—or body, left brain (rational) and right brain (intuitive). The right brain must understand in its pre-rational way the choreographic motivation and aesthetic stance of the movement material. The left brain must translate that knowledge into such things as the correct spatial intent, rhythmic intent, use of force, flow, focus, phrasing, relationship of part to whole, of dancers to each other, etc. The body is only the instrument for showing this knowledge to the outside world.

Dance classes do work toward developing, or uncovering performance quality, with more emphasis placed there as the work becomes more advanced. The most frequent device used is to challenge performance quality with “dancey” movement combinations, (or a part of a dance) for both whole and part, inside and outside approaches are possible to use with such combinations. First, the students are given ample opportunities to thoroughly learn the movement, and then, if the teacher is using the whole, inside approach, the students are asked to “dance it”—perform. Sometimes, teachers will break the class into groups to perform such patterns. This allows each student plenty of room to project into space as well as a small, non-threatening audience of peers who know that they will be in the same boat momentarily. (For many people, simply having viewers brings out their performance abilities, but others may find an audience somewhat intimidating.) In addition, the instructor may try to communicate the internal “stuff” for right brain intuition in some way. For example, he may select specific music, or give the classes images to guide their way of doing the movements. Sometimes even seemingly negative comments (i.e., “Don’t hit it so hard,” or “Don’t hide your movements) can really impart a lot of performance quality information to the study who is really listening from the inside.
If the teacher is using the part, or external approach, he will stress one of the components of performance quality (e.g. phrasing) by thoroughly explaining its use of appearance in the particular pattern to be performed. With this approach, the teacher may wish to help students improve their use of the component in general, and will probably stress it in several different movement combination. Another way of using the part and external approach would be to go through all or at least several of the components of performance quality as they appear within the same combination, so that eventually the student can approach a full performance.

Besides using dance, like movement patterns, teachers may work toward helping students tap their “right brain potentials” with various types of movement exploration exercises. These allow students to solve a problem with movement in their own individual ways. This removes the necessity of using the left-brain to remember specific movement, thus allowing the student to shift these concentration focuses elsewhere—hopefully right! Some of these exercises will specifically require that you do not think about what movement you may want to produce but rather just let it happen. If you find such exercises easy, enjoyable, refreshing, or at least non-problematic, and you are not self-conscious about doing them, skip to the next paragraph. If not read on. Many adults who have become used to using their analytical capacities almost exclusively, may find such exercises uncomfortable at first. But, if you find yourself feeling that way, just try to relax and think of the exercises as games. Here is a chance to let go. No need to remember a series of movements given to you by someone else. Now you can do movement that feels right to your own body. And again, everyone in the class is in the same boat. No one is any more foolish looking than anyone else. You can always do something funny—on purpose! Don’t even worry about what you are supposed to be learning. Right brain learning is sort of unconscious anyway. Just have fun.

It think that a good way to improve your responses to class work on performance quality may be in organizing your thoughts on it. This paragraph is a left-brain analysis. The most essential part of performance quality, the thing that makes performance an art, is that individual internal intuition—right brain. But your job as a dancer is to make your intuition visible—to project it through your body. If your left-brain understands the components of performance quality that were discussed in Chap. 2, it can act as a bridge to help your body with its task of projection. Thus improving performance quality involves, helping the right brain form its intuitions, teaching the left brain the “projection devices” and allowing the body to practice the movement precisely enough to free the brain from thinking about this movement in order to allow the projection devices to work.

And now for a right-brain approach to thinking about performance quality, read on. Primitive man made art in order to make magic, and modern man still seeks experiences to transport him from the earthly existence to another plane. Some of us go to church, some take drugs, some meditate, and some of us seek out art experiences to touch this spiritual part of ourselves. Creating a vision made of movement is magic making on a grand scale, not unlike weaving straw into gold. It requires choreographer(s), dancer(s), and probably musicians, costume, light, and set designers,
numerous technicians, and of course, an audience. It is no wonder that the magic of the theatre cannot happen without extensive work from each magician and extensive rehearsal in coordinating all the parts. And the magic is only in the moment—as quickly as each movement is performed it dies. Reading the choreographer’s score is not meant to be a transcendent experience. But if all goes well, a performance is a perfect synthesis of art and craft: of instrument being played to perfection and with feeling, of all elements blending. The performers become one with the dance to create the magic of the movement, here for an instant and then gone. But for that triumphant instant of true unity, the dancer’s (and maybe even an involved audience member’s) soul leaves the body and flies.

Note:
References to Appendix material – instructor will supply you with the appropriate handouts.