String Choreography: Clarifying the Motions That Connect Notes and Bow Strokes

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Abstract
In the world of dance, expression arises through the artistic organization of movement. Motions that recur frequently throughout a dance or scene, when combined with intermediate or linking steps, are collectively referred to as choreography, or the art of setting body motion to music. Dancers memorize, through careful thought and repetition, the sequence of steps that will be required not only to execute their own roles gracefully, but also to interact with the other dancers on stage.

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String Choreography: Clarifying the Motions That Connect Notes and Bow Strokes

Jonathan Sturm

In the world of dance, expression arises through the artistic organization of movement. Motions that recur frequently throughout a dance or scene, when combined with intermediate or linking steps, are collectively referred to as choreography, or the art of setting body motion to music. Dancers memorize, through careful thought and repetition, the sequence of steps that will be required not only to execute their own roles gracefully, but also to interact with the other dancers on stage.

Arabesque-chassé-jeté entre lâcè-sissone-soutenu—these terms direct the dancers to perform certain combinations of movements and bring a passage of music to life through motion. Without the choreographed directions, however, dancers would face two immediate problems: possible injury and chaotic performance.

Direct comparisons can be made between the carefully choreographed motions of dance and the motions that lead to artistic performance on stringed instruments. A string player who understands and applies the concepts of muscular control underlying ballet choreography will acquire greater consistency as a performer. Choreography, therefore, is a term that can apply to the motions of arms, hands, and fingers combining to enhance accuracy, grace, and style in the performance of string music. Choreography can be applied to both the left and right hands in violin playing to improve ease and consistency of motion.

Learning to Anticipate the Feel of a Musical Event

The need for linking violinistic motion to dance stems from a problem that lies behind many students' approaches to practicing: they focus almost entirely on hearing whether or not they have just played a passage in tune or with good tone. Hearing in this context is hindsight, past tense. Performer—and audience, if present—hear that a judgment error just occurred.

Consistent playing requires foresight, involving an ability to hear a musical event in advance of playing it, and to anticipate the feel of the musical event on the instrument. When students can predict their intonation and tone quality based upon the expected feel of a passage, they have finally acquired control over their instruments.

The first steps toward learning to feel the instrument arise during the technique-building portion of the practice session. They are akin to the dancer’s warm-up routine. As the dancer holds the bar and puts her body through a series of drills, either programmed or improvised, she learns to shape her body to the demands of the choreographed routines required for the performance.

The violinist should approach scales in a similar fashion, alternating between repetition of the scales' programmed patterns and newly improvised technical cells. These cells are spontaneously created passages of two or more notes that direct the students' attention to a specific technical problem, such as a particular shift or bowing. The following example of improvised cells might arise from a missed shift while practicing a D minor arpeggio (Diagram 1):

![Diagram 1](image-url)

Improvased cells emphasize the most basic muscular gestures needed to accomplish consistent playing. They focus attention upon the feel of the instrument, as, in Diagram 1, the way it feels to shift a minor third from third position on the A string, compared to the same shift on another string or another position. Improvised cells warm up the body using minimal material so that errors can be quickly noticed and corrected. They train the ear to associate specific intervals with distinct muscle motions, or specific tone qualities with distinct balances in the right arm. And, because they are spontaneously created, cells keep the brain active, the student interested, and forestall the detrimental lapse into rote repetition that characterizes much student practice.¹

As a dancer learns each move that comprises his choreographed routines individually, a violinist must also acquire a choreographed technique by first focusing attention on the feel of each technical drill. If the violinist cannot render each individual movement accurately, then in the context of an entire passage the choreography needed to perform the composition successfully will break down. The first phase of developing a

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choreographed technique, then, involves increasing the mental awareness of the muscular effort required to play the violin.

Along with acquiring a conscious feel for the shapes and muscular demands in violin technique, choreography requires three other steps of awareness and directed practice: becoming aware of the time and space between any two consecutive notes; establishing a series of commands that bring the brain actively into control of a technical problem; and synthesizing the commands for individual passages into a complete performance.

**Developing an Awareness of Time and Space**

First, students must become aware of the relatively large amounts of time and space between notes in a piece. Whether passages are fast or slow, a quantifiable amount of time and a specific distance on the fingerboard exists between each note. Fast, tense shifts may be called straight-line shifts, because the finger does not release its grip on the note immediately prior to the shift. This requires the left arm to jerk the finger straight up the string to its next location against the finger's friction on the fingerboard (Diagram 2). The jerking motion is so fast, often, because the shift is left until the last instant before the next pitch, which does not allow the brain enough time to process the components of the motion. The shift’s distance, timing, and musicianship are then subject to elements of chance.

For a dancer, a direction in the choreography might state that at one point in the music she must execute a grand jeté, a high, arc-shaped leap similar in shape to the ideal shift in the left hand on the violin. On stage, the dancer will have to prepare herself immediately prior to the leap by judging the distance she must travel, the height she must achieve, the positions on stage where the leap should begin and end, and the synchronization of the leap with the music. Then she must finally summon the energy to accomplish the leap with grace and accuracy. These thoughts are the minimum required to do the dancer’s most basic task: connect two points on the stage (the take-off and arrival points) by a smooth, graceful arc.

During a shift, the violinist’s job is similar to that of the dancer: connect two notes—points on the fingerboard—by a smooth graceful arc. Shifts are actually a simple arcing motion of the arm from a point of release to a point of landing. Both hand and finger release upward from the fingerboard just prior to the shift, though keeping light contact with the string. Then the finger traces a carefully planned distance between two pitches and lands with poise upon the next pitch, having used all of the available time between the two pitches to cover the distance. There are thus three parts to a well-choreographed shift: the release, the glide, and the arrival (Diagram 3).

As with dance, choreography of the left hand requires coordinating the distance moved with the time allowed for the move. One can demonstrate the length of time between two notes in the following way. Set the metronome so that a quarter note equals 60. On the A string play in eighth notes:

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\[ \text{Diagram 3} \]
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Do this twice. The first time leave the shift to the last minute and make it as fast as possible. The second time, give the first finger enough time to speak with a strong tone, yet allow the shift to grow out of the note so that a gentle arc connects the first finger with the following first finger in fifth position. The metronome will beat the same tempo, yet the shift will have taken considerably more time to execute. The second shift will probably sound more sure, and more musical.

A diagram illustrates this process with vertical ticks that symbolize the clicks of a metronome. In Diagram 4, the pitches are the same distance apart on both timelines, thus the arrival time at the second pitch is the same in both cases. The first example, however, spends virtually the entire time between the clicks on the first note, shifting just in time to arrive by the second click. The second example allows the first note time to speak musically, yet leaves ample time to effect a smooth, consistent, and musical shift to the second pitch, still arriving on time. By extending the idea in these diagrams, ample time at any tempo is available between notes for a shift to occur at a calculated pace. This should ensure consistent accuracy and musicianship, provided the player has developed an awareness of the space and time between the notes.

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\[ \text{Diagram 4} \]
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Straight-line shifts lack consistency, accuracy, and grace because they move too quickly, with too much finger pressure, and without allowing the brain ample time to determine the correct distance of the shift. In spite of this, students remain reluctant to enlarge the shifting process for fear of altering the tempo.
of the passage they are playing. If, however, students learn that they can utilize the entire time between two notes to create a stable, consistent, and predictable shift without altering the tempo of a passage, they soon realize that shifts are less of a problem.

**CREATING A SERIES OF COMMANDS**

The second step in the process of acquiring a choreographed technique is to use the time and space between each note to create a series of commands that will be recalled whenever those notes are approached—either in practice sessions or concerts. Again, recall the dancer. Each step either has a name or connects other steps with names, so that she can memorize a sequence of verbal commands that she will transfer into motion. Similarly for the violinist, commands are crucial for consistent playing because they allow a shift or bowing decision to be analyzed and categorized.

Instead of saying “That shift was out of tune, do it again,” the process of a bad shift can be clarified in the following way: “In order to make that shift in tune, I need to anticipate the shift two notes ahead by slightly moving my left elbow toward my chest; start the shift earlier and use the entire time and space between the two notes on either side of the shift. During the note prior to the shift, I will light the finger, then pull the hand up using the arm, while making a gentle arc along the string with the finger. As I arrive at the clue pitch I have decided upon, I will ready the next finger and place it on the final note.”

This lengthy series of instructions easily reduces to, “Elbow, light finger, early arcing shift, clue pitch, final pitch.” Diagram 5 illustrates this process going from G—second position on the E string—to the same pitch an octave higher, in which case the first finger plays the clue pitch D above the staff.

With repetition, the shift and commands will become a part of the passage that can be recalled during any performance. The commands will help to increase the feel of the passage and will make the passage predictable because the brain has actively engaged in the process of achieving its consistency. With the commands and the feel of the notes in place, a passage is said to be choreographed.

**A RIGHT-HAND EXAMPLE OF CHOREOGRAPHY**

Choreography does not apply only to the left hand. If the bow changes strings, is lifted through the air, or changes articulation, choreography will affect the control of the stroke and the grace of the results. A graceful arc shape that uses all available time between musical events for its motion will reduce the incidence of accidental error in bowing as much as in shifting.

Application of this principle occurs in repeated down bows at the frog. The notes themselves become consistent, rapid, and strong only when the motions of the entire right arm are consistent. String crossings, in which the bow leaves the string, also require a series of brain commands to be consistently successful.

One training bow stroke that is particularly useful in developing the arc-shaped motions necessary for graceful bow use is the collé stroke. Arc shapes can be taught along any length of

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**Exercises for Developing Choreography in Violin Playing**

One of the joys of acquiring a choreographed technique lies in the infinite variety of drills and exercises that can be developed to train the mind and muscles into an awareness of the timing of technique in music. Here are some ideas that may spark individual thought toward more comprehensive applications.

- **Have students leap in an arc** from one point on the floor to another, as a dancer might. Mark the beginning and ending points a modest distance from each other, and tell the student to land on one foot, exactly on the arrival point. This exercise imprints the arc shape on the entire body.
- **Next, have students place the violin in playing position,** then support the scroll so that no weight is on the student’s hand, and with your own hand, guide the student’s left hand through a series of arc-shaped motions on one string.
- **Continue to support the scroll,** but allow the student to control his own hand motions. Establish first the arc-shaped motions, the release of tension during the shift, and most importantly the supremacy of the left arm in making the motion.
- **Turn on the metronome at a very slow setting** and begin to show the student how the shift can take the entire time between clicks. The release and arrival notes should be like hot points that are touched but quickly released as the arm then slowly slides through the shift.
- **Teach and practice these drills with each finger on each string,** starting on an upper string and moving to the thicker, lower strings later. Utilize the concept of improvising cells.
- **The collé bow stroke emphasizes arc shapes beautifully,** as do repeated down bows or up bows. The right arm must prescribe either graceful semicircles or full circles to successfully complete any of these strokes.

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the bow using this stroke, because during most of the stroke the bow is in the air (Diagram 6).

![Diagram 6](image)

Ultimately, choreography will join the movements of the left and right hands and the arms so that technique in any passage is measured out through the available time that the music allows for it to happen. Diagram 7 shows two pitches and the choreographed shapes needed to successfully play them.

![Diagram 7](image)

**SYNTHESIZING COMMANDS**

A chain of commands can be assigned to any note or bow stroke within a piece of music, and the more commands a piece contains, the more consistent it will become. These commands can pertain to shifting, bow control, vibrato, and other aspects of musicianship, because they all deal at their most fundamental level with timing.

The third and final step in the application of choreography to performance, therefore, is to synthesize the series of commands that have been carefully applied to individual passages into a complete, well-timed performance, so that the brain anticipates problem spots and uses all of the time between notes to complete any technical difficulty. The result is greater assurance in technique, resulting in an increased freedom to concentrate upon spontaneous music making.

A question regarding spontaneity may arise at this point: "If a performer spends significant time assigning commands to notes in order to ensure predictability, then what room is left for spontaneity?" The answer is that choreography ultimately enables spontaneity by de-emphasizing rote practice in favor of a more alert and active learning experience that brings shifting and bowing problems to the brain's awareness.

Once the brain discovers and processes the commands required to perform a passage, its difficulties lose their mystique. The passage then becomes a manageable series of decisions and motions. As students realize that what had once been a technically unmanageable section is now acquiring increasing consistency, the tremendous energy that they had devoted to worrying about the passage can then be released and dedicated to exploring that passage's potential for spontaneous performance.

Teachers can easily recognize students who need to learn the timing and shaping of their gestures because they move too abruptly and without feeling an arc in their motions. When students are taught to feel the benefits of choreographed gestures, they replace tension with smooth movements, come alive with their new freedom, and approach their instruments with increased confidence and ease.

**REFERENCES**

1. For a more in-depth discussion of improvisation as it applies to the technique and interpretation of classical music, see Jonathan Sturm, "Improvisation: Bringing Performer and Instrument Closer Together," *American String Teacher* Vol. 40, No. 3 (Summer 1990): 56–58.

2. A cue pitch is essentially an auxiliary note heard only to the performer during a shift. It ultimately sounds as a whistle tone, because the finger sounding the cue pitch does not weigh heavily enough on the string to connect the string to the fingerboard. Cue pitches are practiced first as sounded auxiliary notes to establish their importance and locate their placement. Then they are gradually faded away by decreasing finger pressure and bow weight during shifts until the shifts sound musical to a listener; the performer still has access to the information that the cue pitches provide about the finger’s location on the instrument relative to where the shift will end.

**Jonathan Sturm** is concertmaster of the Des Moines Symphony Orchestra, violist in the Fine Arts Trio, and head of strings at Drake University, where he teaches violin and viola. He has performed across the United States as recitalist and concerto soloist and is in demand for his master classes. His articles on violin pedagogy have been published in *AST* and the American Music Teacher.

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