

Spring 5-1-2011

Two Lecture Recitals of Percussion Music: "Notation for Stroke-Type Analyses" and "Tabla and Indian Musical Concepts in Modern Drum Set Performance"

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The University of Southern Mississippi

TWO LECTURE RECITALS OF PERCUSSION MUSIC: “NOTATION FOR
STROKE-TYPE ANALYSES” AND “TABLA AND INDIAN MUSICAL
CONCEPTS IN MODERN DRUM SET PERFORMANCE”

by

David Robert Whitman

Abstract of a Dissertation
Submitted to the Graduate School
of The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Musical Arts

May 2011

ABSTRACT

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by David Robert Whitman

May 2011

Two lecture recitals were presented in lieu of a written dissertation. This document combines two formal paper presentations, each of which corresponds to a single lecture recital.

Sunday, May 2, 2010, 4:00 p.m., Mannoni Performing Arts Center. Program: *Two Mexican Dances for Marimba* by Gordon Stout; *Marimba Spiritual* by Minoru Miki.

“Notation for Stroke-Type Analyses” presents a method for notating stroke types in four-mallet keyboard percussion mechanics. A discussion of various applications of stroke type notation follows, including the pedagogical value of engaging in stroke-type analyses as a supplement to traditional harmonic and formal analyses, the effect of stroke-type analyses on performance preparation, and the effect of stroke-type analyses on the performance itself.

Thursday, February 24, 2011, 6:00 p.m., Mannoni Performing Arts Center. Program: *Three Classical Compositions for Tabla* transmitted by Pandit Arup Chattopadhyay, trans. David Whitman; *Palta* by Bob Becker. “Tabla and Indian Musical Concepts in Modern Drum Set Performance” deals with the adaptation of tabla compositions for Western drum set. Fixed classical compositions for solo tabla from the Farrukhabad gharana of the central Uttar Pradesh region of India are transcribed for drum

set. The application of North Indian musical concepts such as *tihai*, *tal*, and *jhati* are also discussed and applied to a performance of *Palta* – a composition for either solo tabla or solo drum set and percussion ensemble by Bob Becker. The author’s studies with Calcutta-based master tabla artist Pandit Arup Chattopadhyay form the basis of much of the material presented in the second chapter.

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ACKNOWLEDGMENTS

I would like to thank the dissertation director, Dr. John Wooton, and the other committee members, Dr. Ed Hafer, Dr. Joseph Brumbeloe, Dr. Thomas Fraschillo, and Dr. Jennifer Shank, for their advice and support throughout this process. I am also grateful for the continued support and assistance from Dr. Kurt Gartner at Kansas State University and Dr. Jeffery Crowell at the University of Wisconsin-Eau Claire. I would like to thank C. Alan Publications, Marimba Productions, Inc., ProPercussao Brasil, and Zen-On Music for granting me permission to reproduce the musical excerpts found within.

Special thanks goes to guru-ji Arup Chattopadhyay for taking the writer under his wing and selflessly giving his time and knowledge, and Katie Scherman for her assistance in negotiating Geisel Library at the University of California-San Diego. Also, thanks to Dr. Justin DeHart, Jason Mathena, and Nathaniel Bartlett for their honest opinions and quality feedback. Finally, extra special thanks to Rhonda, Marvin, and Kurt Whitman; without your love and support I would never have made it this far.

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CHAPTER I
NOTATION FOR STROKE-TYPE ANALYSES

Introduction

When I began my study of marimba . . . the basic stroke possibilities were: 1) both mallets striking together, or 2) one mallet striking at a time.

Leigh Howard Stevens¹

In 1979, Stevens codified for the first time four fundamental strokes involved in the execution of four-mallet keyboard-percussion technique. This codification was in the first portion of his book, *Method of Movement for Marimba with 590 Exercises*, hereafter referred to as *Method of Movement*, which is a detailed treatise on four-mallet marimba technique. The second portion of the book consists of notated musical fragments designed to strengthen and isolate these strokes or various combinations thereof, as well as develop other aspects of four-mallet mechanics, such as interval control and manipulation. Due to clarity of presentation, thoroughness, massive acceptance by the percussion community, and the introduction of a new grip that rose to prevalence (which Stevens describes as a “child of Musser grip”²), this book may stand as the most significant advancement in the history of mallet percussion technique and pedagogy. Prior to 1979, descriptions of percussion grips of any kind are generally limited to, at the most, a few pages of text and a picture or two.

The care that *Method of Movement* takes to provide such a detailed and comprehensive examination of four-mallet technique, specifically the four fundamental

¹ Leigh Howard Stevens, “Rolls and Notation,” *Percussive Notes* 19, no. 1 (Fall 1980): 60.

² Leigh Howard Stevens, *Method of Movement for Marimba: With 590 Exercises*, Rev. ed. (Asbury Park, NJ: Keyboard Percussion Publications, 1997), 8.

stroke types, invites further discussion from analytical pedagogues and performers. The treatise identifies four distinct stroke types but does not fully explore the application of these mechanics to learning, teaching, and performing. This statement is not a criticism, but rather a testament to the significance of Stevens's stroke-type mechanics. The objective of this chapter is to present an effective method of notating various stroke types and explore their application to performance and pedagogy.

Definition of Stroke Types

The definitions of the four stroke types as presented in *Method of Movement* follow, although it should be noted that Stevens explains each stroke type in great mechanical detail through copious amounts of text and numerous pictures.³ The definitions herein are much more concise. Stevens's treatise also presents the mechanics of these stroke types as they relate to his, at the time, new four-mallet grip, which was introduced in the same text. The mechanics are presented below as they relate to all four-mallet grips. Technical considerations unique to what is now known as "Stevens grip" are omitted.

Double Vertical

The double vertical is a single wrist stroke that produces two pitches simultaneously. Two mallets in one hand strike the instrument at the same time. Consequently, two pitches very far apart from each other cannot be executed with a double vertical. The maximum interval that can be spanned by two mallets in the same hand varies depending on tessitura, mallet length, the technical facility of the performer, and the size of the bars.

³ Ibid., 24-37.

Single Independent

In this stroke, single notes are played with either the inside or outside mallet. If a Stevens grip is used, the unused mallet functions as an axis of rotation in conjunction with the wrist, resulting in minimal movement of the unused mallet. Other grips may result in increased movement of the unused mallet, especially at fast speeds.

Single Alternating

Successive notes are executed between the inside and outside mallets of a single hand. The defining characteristic of the single alternating stroke is that the down portion of one mallet raises the other. This motion is akin to a teeter-totter; when one mallet moves down to strike the bar, the other mallet rises. At quick speeds, the single-alternating stroke becomes unwieldy and gives way to the double lateral. This is extremely important, as there is a transitional range of speed in which a marimbist may use both single-alternating and double-lateral mechanics.

Double Lateral

This is a single curvaceous wrist motion that produces two separate attacks. The double lateral comes in two forms; the outside mallet strikes first or the inside mallet strikes first. As described by Stevens, the “stroke starts as a double vertical stroke but goes through a split second metamorphosis just as the outside [or inside] mallet strikes the bar. At this point the motion changes into a single independent stroke.”⁴ An excellent analogy to describe this motion in simplified terms is that of flinging popcorn kernels from the bottom of a popcorn bowl with the outer edge of the hand. Flinging kernels to

⁴ Ibid., 35.

the outside of one's body results in an outside-inside double lateral; flinging kernels to the inside results in an inside-outside double lateral.

In some instances, which are becoming more prevalent in modern repertory, this motion is continued to create more than just two successive notes. Some percussionists classify this motion a fifth stroke type called "alternating rotational," although here it will be classified as a continuation of double-lateral mechanics. This situation is comparable to single-alternating strokes in succession, which are mechanically bound.

The Problem of Notation

Although Stevens defined his new stroke types in great detail, he did not establish a practical method of notating them in a manner that would effectively portray all the various combinations. In a brief diagram, he does combine mallet numbers (numbering the mallets 1-4 from left to right) and letters to designate stroke type (Example 1).⁵



Sticking	2 3 2 3	2 4 4 4	1 4 2 3	1 4 2 3	1 2 3 4	1 2 3 4	2 1 3	4 3 2 1
Stroke Type	A A A A	A B B B	C C C C	C C C C	C C C C	C C C C	D D	F E
Fast Tempo					F E	F E		

Example 1. Stevens's Stroke-Type Chart.

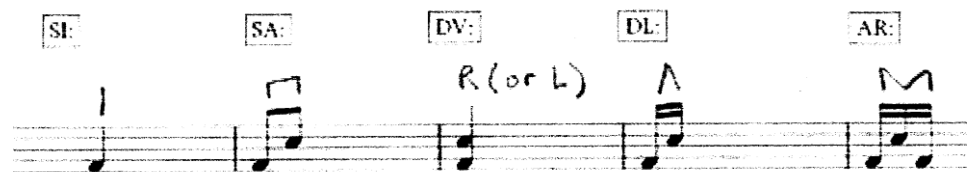
In this system, "A" means single independent inside, "B" means single independent outside, "C" means single alternating, "D" means double vertical, "E" means inside-outside double lateral, and "F" means outside-inside double lateral. Because

⁵ Ibid., 24.

Stevens intended to create a visual aid for the *Method of Movement* reader rather than a practical method of notation, applying this system to repertory proves cumbersome. The performer has difficulty quickly processing a combination of letters between and directly underneath noteheads. Confusion may also arise between letters designating stroke type and traditional note names.

Numbering the notes according to which mallet executes the stroke would be an acceptable degree of demarcation if single independents and double verticals were the whole of the stroke-type arsenal. However, mallet specifications alone do not provide enough information to differentiate single-alternating strokes from double-lateral strokes. The argument at hand is that easily recognizable symbols can be much more effective for use in repertory than the system used in Stevens's visual aid.

In 2002, marimbist Nathaniel Bartlett attempted to solve this problem in his essay "A Notation System for Stroke Types and Shifts" (Example 2).⁶



Example 2. Bartlett Notation System Key.

Bartlett improved upon Stevens's foundation. He recognized that separate symbols for inside-outside and outside-inside double-lateral strokes were avoidable; that information is implicit. He recognized that distinction between inside and outside single-

⁶ Nathaniel Bartlett, "A Notational System for Stroke Types and Shifts and the Acoustics of Bar Percussion" (Lecture Handout, Wisconsin Percussive Arts Society Day of Percussion, Eau Claire, WI, April 9, 2005), 3.

independent strokes was also unnecessary. He also recognized that a single symbol for single-alternating strokes is appropriate, creating a symbol that reflects the fundamental nature of the movement involved and reduces the total number of symbols needed for a passage of music. Much like the double lateral, single-alternating strokes are connected by mechanics; while one mallet goes up, the other goes down.

However, when Bartlett's method of stroke-type notation is applied to entire works, it becomes evident that further modifications are needed. The system has three primary shortcomings. First, Bartlett's essay offers no means by which to notate three or more consecutive single-alternating strokes executed by the same hand. In a telephone conversation with me on May 16, 2010, Bartlett acknowledged that although the essay did not explicitly address this issue, he extended the horizontal line in practice (Example 3).



Example 3. Consecutive Single-Alternating Strokes.

Second, he did not create a symbol for the double vertical stroke, choosing to simply use the letters “R” and “L” to identify a right-hand or left-hand rendition thereof. A symbol for the double vertical stroke eliminates the possibility of confusion between an “R” or “L” intended to indicate stroke type and traditional left-hand and right-hand

indications frequently applied to the notation of all manner of percussion instruments, including keyboards.

Finally, the Bartlett system places all symbols above the notes. Overlapping stroke types result in a convoluted presentation (Example 4). Lower layers of stroke-type notation hinder the performer's correlation of the upper layer with the appropriate noteheads.



Example 4. Situations Involving Overlapping Stroke Types.

Although Bartlett's system of symbols (and application thereof) represents a worthy achievement and a significant advance in stroke-type notation, the adaptation of his system presented below alleviates the problems addressed above (Example 5).

 A musical staff in treble clef with a common time signature (C). The staff contains a sequence of notes: a quarter note, a quarter note with a flat, a quarter note, a quarter note, a quarter note, a quarter note, a quarter note, and a quarter note. Below the staff, there are eight distinct symbols, each corresponding to a note above it. These symbols are: a vertical line, a vertical line with a horizontal bar at the bottom, a vertical line with a horizontal bar at the top, a vertical line with a horizontal bar at the top and a horizontal bar at the bottom, a vertical line with a horizontal bar at the top and a horizontal bar at the bottom, a vertical line with a horizontal bar at the top and a horizontal bar at the bottom, two parallel vertical lines, and two parallel vertical lines.

R.H. S.I. L.H. S.I. L.H. S.A. R.H. S.A. R.H. D.L. L.H. D.L. R.H. D.V. L.H. D.V.

Example 5. Adaptation of Bartlett System.

In the new approach, two parallel vertical lines denote the double vertical. This is a natural representation of the stroke's mechanics and eliminates unnecessary confusion

with traditional right-hand and left-hand indications. Moreover, this symbol is necessary to differentiate between two simultaneously executed single-independent strokes and a double vertical (Example 6).



Example 6. Two Single-Independent Strokes Versus Double Vertical.

Example 6 also illustrates the convenience of notating left-hand strokes below the staff and right-hand strokes above; traditional right-hand and left-hand sticking is conveyed to the performer without the addition of extra letters, and confusion resulting from overlapping stroke types is eliminated. Illustrating the later, Example 4 is subjected to this notation system below (Example 7).



Example 7. Right-Hand and Left-Hand Differentiation Applied to Example 4.

Not only is the notation in Example 7 less convoluted, but the performer can infer a greater amount of specific information. A performer reading Example 4 might naturally

assume the first two single-alternating strokes are to be executed with the left hand in light of the subsequent two beats of sixteenth notes. If a performer or composer wishes the strokes to be performed with the right hand to achieve subtle dynamic emphasis, regulate mechanical context, or create a certain aesthetic, the Bartlett system does not allow this without additional mallet numbers or R's and L's—which are also his indications for double verticals.

Finally, Bartlett creates a symbol for an alternating-rotational stroke, but the system presented in Example 5 identifies these notes as continuations of double-lateral motion. Consecutive double laterals are treated much like consecutive single-alternating strokes; the V-shaped symbols are joined together, just as the mechanics of the strokes themselves are joined together. This eliminates the need for an additional symbol and accurately represents the mechanics of the strokes. In summation, the system of stroke-type notation presented in Example 5 is more efficient, concise, and effective than the Bartlett system or Stevens's stroke-type diagram.

Pedagogical Application of Stroke-Type Analysis

Having a candidate for a standardized method of stroke-type notation is important from a pedagogical standpoint. As Bartlett states, marks added to the score “help remind the player of critical technical or musical information that is not plainly obvious on the musical score itself, or is of an individual nature.”⁷ Violinists have bowings; brass and woodwind performers have fingerings; percussionists have stickings; and all musicians have phrase markings, articulations, and dynamics.

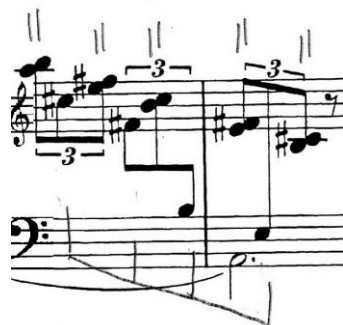
⁷ Ibid., 1.

In the realm of mallet percussion, musical phrase, articulation, and dynamics may all be affected by the performer's selection of stroke type. The majority of musical situations demand that the performer correctly decide which stroke type to use. Yet formal stroke-type analysis of repertory has yet to be widely applied in mallet-percussion pedagogy. This type of analysis is difficult, if not impossible, without an acceptable means of notation. Assuming the system set forth in Example 5 is such a means, the remainder of this chapter is dedicated to its application.

Mallet-percussion pedagogy, the latter of which the *Concise Oxford English Dictionary* defines as the “profession, science, or theory of teaching,” certainly encompasses musicianship and technique. These are two fundamental divisions of what any music pedagogue attempts to convey. Technique is often the foundation for musicianship, resulting in increased capacity for tempo, dynamics, articulation, and all other expressive elements of music. Stroke-type analysis can help a student or teacher develop, refine, and assess technique, enabling more musical performances.

Simplified Musical Map

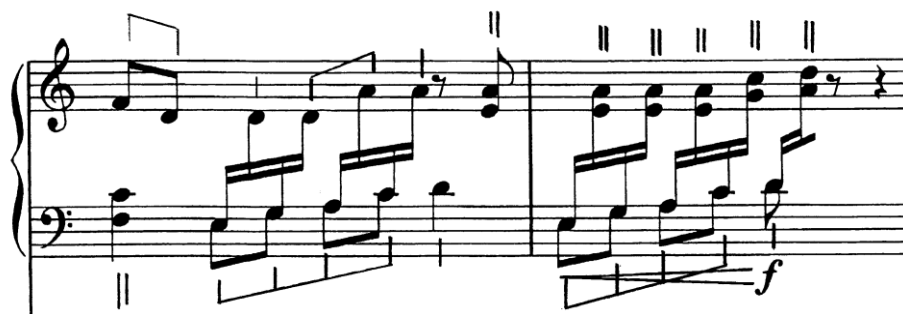
In many situations, the identification of single alternating or double lateral strokes can reduce the number of hand positions required to perform a particular passage. This aids in memorization and limits movement at the instrument. Example 8 is an excerpt from *Marimba Spiritual* by Minoru Miki.



Example 8. MM. 266-267 from *Marimba Spiritual*.⁸

In this example, the left hand plays a series of single-alternating strokes. If the performer analyzes the left hand as four single-independent strokes, four hand positions are required to execute the passage. Selecting single-alternating mechanics, however, limits the number of hand positions to two—one covering C-sharp and F-sharp, and one covering B and E. By limiting hand positions, the performer eliminates shifting. This, in turn, increases accuracy and decreases fatigue. The performer simplifies the musical map by grouping notes together in his or her mind by way of stroke-type mechanics.

Stroke-type analysis reveals another instance of this situation in measures 84-85 from the same composition (Example 9).



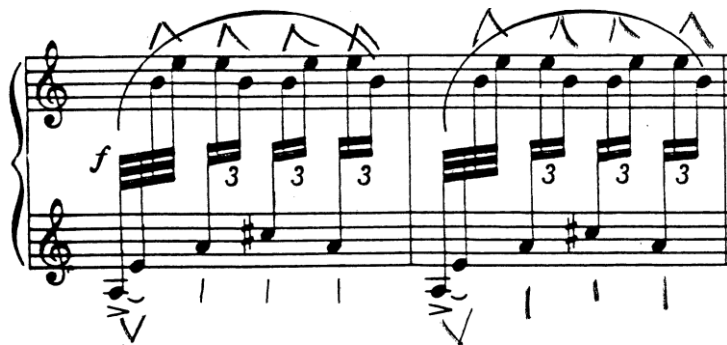
Example 9. MM. 84-85 from *Marimba Spiritual*.

⁸ All *Marimba Spiritual* excerpts are (C) 1984 Minoru Miki. Copyright assigned to Zen-On Music Co., Ltd., 2010. Each excerpt is used with permission from Zen-On.

In both measures, the analysis reduces the ascending sequence of E,G,A, and C to two hand positions instead of four. Additionally, the right-hand F to D in the first beat of the excerpt and the D to A in the same measure are each reduced to one hand position. A performer will not always select these stroke types automatically, and may come to a final decision after much trial and error. A thoughtful stroke-type analysis early on saves time, prevents frustration, and leads to otherwise elusive stroke-type combinations.

Musical Gesture

In *most* musical situations, the performer is confronted by multiple stroke-type options. Gesture is a peripheral element of performance that a performer would do well to consider as they select stroke types. Situations in which both single-alternating and double-lateral mechanics suffice present the performer with an unavoidable stroke type decision, the outcome of which significantly effects gesture. Audience members are able to visually perceive two notes executed by a double-lateral stroke as a single group. Since the stroke is initiated with double-vertical motion, each double lateral involves a distinct raising of the mallets (stroke preparation). The performer gives the impression that the hands are moving at half the speed of the notes; consequently, the audience perceives a flowing aesthetic. The first two measures of the second dance in Gordon Stout's *Two Mexican Dances for Marimba* can be successfully executed with single-alternating or double-lateral strokes (Example 10).



Example 10. MM. 1-2 from the Second Dance of *Two Mexican Dances*.⁹

If each of the double laterals in Example 10 is analyzed as single-alternating strokes, the aesthetic changes. Single-alternating mechanics do not involve a vertical rise of both mallets. The performer's wrist remains in a consistent vertical orientation to the instrument as it rotates, creating the defining teeter-totter motion of the mallets. It is important to note that both single-alternating and double-lateral mechanics are acceptable decisions in this excerpt; neither choice is inherently wrong. Nonetheless, the visual aesthetic of a performance is important, and should be considered by the performer.

At fast speeds, double laterals become a performer's only option. Similarly, at slow speeds, only single alternating mechanics will do. Performers must make critical decisions between single-alternating and double-lateral mechanics at performance tempos that allow for both possibilities. Stevens, in a sixteenth-note context, recommends single-alternating strokes until the quarter note approaches ninety-six beats per minute.¹⁰ Nonetheless, single alternating strokes can still be executed at speeds of, approximately, one hundred and forty beats per minute provided the same sixteenth-note context. The

⁹ Each excerpt from *Two Mexican Dances* is used with permission of Marimba Productions Inc., (C)1977.

¹⁰ Stevens, 24.

triplet double laterals above (Example 10) fall within this tempo range. A performer may decide to use double lateral motion to match the perceived visual and aural aesthetic.

In many instances, the performer has a choice between double-vertical or single-independent mechanics for the execution of two simultaneous notes. This situation has significant impact on gesture. The following example from *Marimba Spiritual* occurs after a buildup of tension resulting from an extended series of eighth notes.



Example 11. MM. 81-83 from *Marimba Spiritual*.

The second and third beats of the complete measure may easily be performed as two single-independent strokes, in which case the upper notes are executed with the right hand and the lower notes with the left. This analysis is acceptable, but double-vertical strokes create a gesture that differentiates the passage from the running eighth notes leading up to the excerpt. Each double vertical results in a single gesture with a single hand, just as each beat in the example sounds an isolated attack in the midst of a running barrage of eighth-notes.

Ritards and Accelerandos

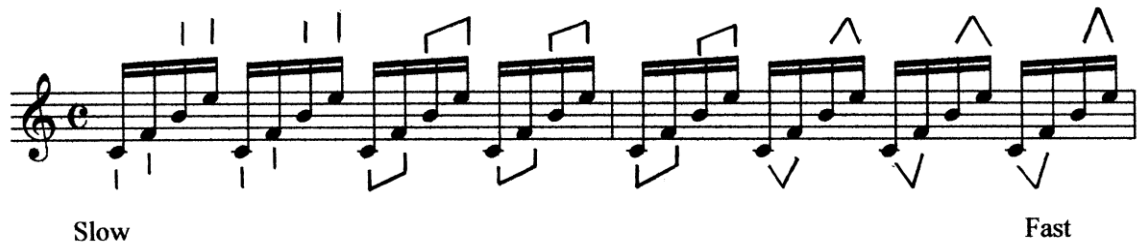
Changing stroke type as tempo decreases or increases facilitates, or is necessitated by, the change in tempo. The first of Stout's *Two Mexican Dances* ends with a prolonged *ritardando* (Example 12).

Example 12. MM. 76-77 from the First Dance of *Two Mexican Dances*.

As the tempo slows on the final repetition of these two measures, single-alternating strokes become labored. Single-independent strokes work in conjunction with the *ritardando*, adding musical and gestural emphasis to the close of the dance. A decision to continue or discontinue single-alternating mechanics until the final note may depend on the degree one wishes to slow. Extremely slow single-alternating strokes are awkward, and clearly better suited to single-independent mechanics. Additionally, the subtle change in gesture that accompanies changing mechanics may not be desirable to performers who seek to avoid emphasis where none is explicitly indicated.

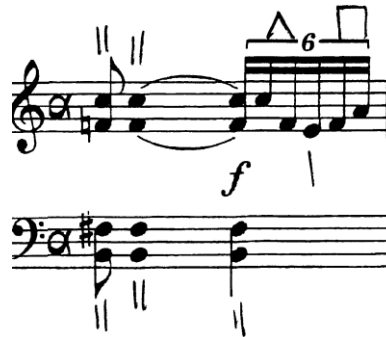
Accelerandos relate to stroke type in a similar manner. Example 13 shows a series of sixteenth notes along a hypothetical tempo continuum subjected to a stroke-type

analysis. The performer must decide the exact point at which to transition from one stroke type to another. If tempo change is not extreme, the performer may be faced with deciding whether or not to change stroke mechanics at all.



Example 13. Stroke Mechanics on a Tempo Continuum.

The analysis below, an excerpt from *Marimba Spiritual*, uses stroke mechanics to create a natural slowing at the end of the measure (Example 14).



Example 14. M. 19 from *Marimba Spiritual*.

Although a *ritard* is not explicitly indicated, slowing this sextuplet is a common liberty taken by performers. Changing stroke types create a natural and subtle hesitation; they are used here as a tool to create emotional affect.

Mixed Stroke Situations

Stroke-type analysis helps a performer identify and refine musical passages with complex stroke mechanics. Single-independent and single-alternating strokes are fundamentally horizontal rotary motions around an axis perpendicular to the performer. Double-vertical strokes, and to some extent double-lateral strokes, are mechanically rooted in vertical rotation around an axis running *parallel* to the performer. Beginning and intermediate four-mallet students often struggle with executing both opposing motions simultaneously. By engaging in a stroke-type analysis of a work, the student can identify these situations in music. The excerpt below, from *Two Mexican Dances*, provides an illustration (Example 15).



Example 15. M. 8 from the Second Dance of *Two Mexican Dances*.

New students may not recognize these opposing motions without the specific identification of stroke types. Even for the advanced performer, notating stroke types serves as a reminder of proper mechanics, either during a performance or throughout the preparation process.

Percussionists have long been isolating hands individually to aid in the development of technique. They frequently practice standard snare drum rudiments, such as the flam accent or single paradiddle, broken apart “hand-to-hand.” Developing first one hand and then the other is an excellent way to develop muscle memory and technique, especially if the hands execute different stroke types. Keyboard percussionists and pedagogues frequently isolate individual hands to aid in note accuracy or memorization, but isolating hands to refine stroke mechanics is also effective.

The earlier example from the opening two measures of the second movement of *Two Mexican Dances* is another passage illustrating opposing horizontal and vertical motion (Example 10). In the second, third, and fourth beats of each measure, double laterals in the right hand are juxtaposed with single independents in the left hand. The right-hand strokes begin with the same vertical rotation of double-vertical strokes; the left-hand strokes are based solely on horizontal rotary motion.

Dynamics and Emphasis

Stroke types affect dynamics and accents in subtle ways. In measure 9 of *Marimba Spiritual* (also rehearsal number two), the attacks that follow each beat are analyzed as right-hand double verticals (Example 16).

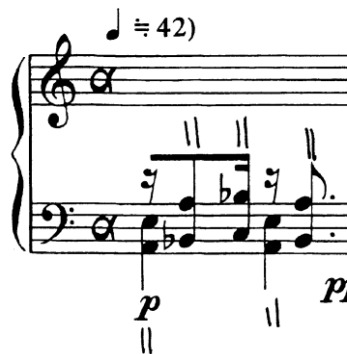


Example 16. M. 9 from *Marimba Spiritual*.

The performer may also choose to execute these attacks as two single-independent strokes. Despite the *poco più mosso* marking, the tempo is not very fast and the performer has ample time to strike the B-flats with mallet two.¹¹ Furthermore, B-flat to A and B-flat to E make for slightly uncomfortable double verticals because the B-flat is near the body of the performer on the upper manual and the A and E are on the lower manual.

Although there are technical advantages to a single-independent analysis, the double-vertical analysis yields a distinct musical result by reserving the strong beats, and nothing but the strong beats, for the left hand alone. This evokes subtle unavoidable differences in both timbre and dynamic between the right and left hands. Additionally, the interval of a perfect fifth is a thematic element of the work that is emphasized from the very first measure (Example 17).

¹¹ Rather than using phrases such as “the inside mallet of the left hand,” the mallets will hereafter be referred to by Stevens’s numbering system. From the performer’s left to right, the mallets will be numbered one through four.



Example 17. M. 1 from *Marimba Spiritual*.

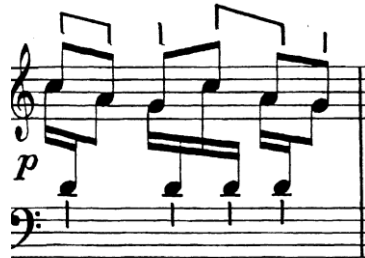
Measure 154 of *Marimba Spiritual* elucidates an effect of single-alternating strokes on accents (Example 18).



Example 18. M. 154 from *Marimba Spiritual*.

Here, a crescendo extends throughout the bar, with the loudest note occurring on the fourth beat. This single-alternating analysis reserves mallet one for beat four, adding a special emphasis to the loudest note in the measure. The teeter-totter motion of single-alternating strokes also creates a natural up-stroke which increases potential energy and prepares for a physically efficient increase in volume. An additional benefit of the single-alternating analysis is the elimination of the need for a physical shift of a perfect fourth between the third and fourth beat.

Another example, below, illustrates a repeated stroke-type pattern in the right hand (Example 19).

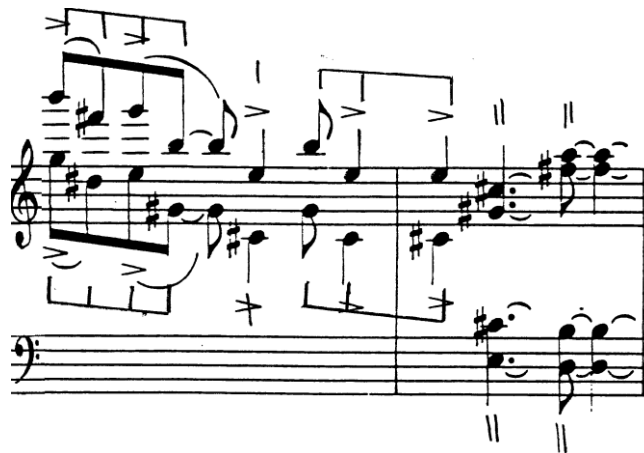


Example 19. M. 346 from *Marimba Spiritual*.

This pattern, two single-alternating strokes followed by one single independent, creates subtle dynamic emphasis that mimics the melodic contour of the excerpt. This analysis reserves the fourth mallet for the highest notes in the phrase, a sticking which lends itself to natural emphasis achieved through both timbre and volume. This is especially true if the performer is using mallets of varying hardness, a common practice in four-mallet technique.

Limiting (Adding) Shifts

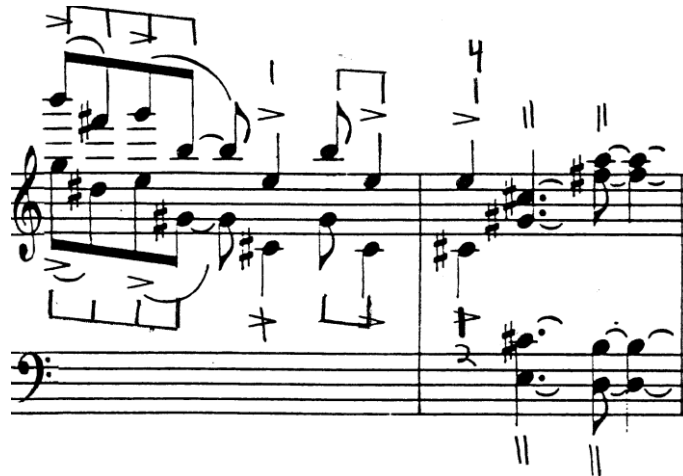
Examples 8, 9, and 18 illustrated the significant effect stroke-type analysis has on shifting—the physical act of moving mallets and hands horizontally along the instrument. In some instances, the performer may use a particular stroke-type analysis to add additional shifts (Example 20).



Example 20. MM. 32-33 from the First Mexican Dance.

Using single-alternating strokes over the bar line in the above example creates an unnecessary shift between the last beat of measure 32 and the first beat of measure 33. This shift, however, substantially decreases the distance of the subsequent downward shift to the double-vertical strokes. Two small shifts are sometimes preferable to one large shift.

Although the tempo of this excerpt lends itself to single-alternating mechanics, an added shift could also be achieved through the selection of single-independent motion. If single-independent motion is used, mallet numbers must also be notated in order to successfully convey the added shift (Example 21).



Example 21. MM. 32-33 from the First Mexican Dance.

Although the shift is implicit in the single-alternating example, the notation of single-independent strokes will not convey the added movement without the additional markings shown above.

Student Assessment

Using a standardized system of notation for four-mallet stroke types, formal stroke-type analysis offers teachers an excellent means to assess student knowledge and comprehension. A student who engages in stroke-type analysis reveals more to the teacher than just comprehension of the stroke types themselves. The analysis will reveal a relative comfort level with the stroke-types, perhaps exposing favoritism for one stroke type over another. This favoritism may manifest itself in the consistent selection of single independents when single-alternating strokes are more appropriate. Another analysis may reveal an abundance of single-alternating strokes because the student lacks confidence in his or her ability to execute double laterals.

Research is showing that the speed and complexity of these stroke types are primary factors in the gradation of four-mallet marimba literature.¹² Evaluating a stroke-type analysis gives the instructor a chance to determine the speed at which the student is comfortable executing various stroke types or combinations thereof—which nervousness and a lack of preparation might otherwise conceal. In turn, the instructor can use this knowledge to select appropriate repertory and steer the course of future studies. Many compositions for all ability levels tend to focus on one or more of the four stroke types.

Practice Pedagogy

Much of the time spent teaching any instrument is dedicated to teaching and reinforcing practice techniques – practice pedagogy. In four-mallet marimba practice, the performer must maintain proper performance-tempo stroke mechanics at reduced speeds, or tempi more suited to early encounters with the music. Notating the single alternating-motion in the opening of the first movement of *Two Mexican Dances for Marimba* serves as a reminder that even at extremely slow tempi, the teeter-totter rotation of the stroke must be maintained (Example 22).

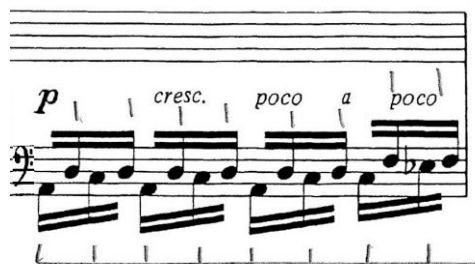


Example 22. MM. 1-2 from *Two Mexican Dances*.

¹² Julia Gaines, “Objective Grading of Four-Mallet Marimba Literature: The Creation of Performance Levels,” (Lecture, Percussive Arts Society International Convention, Austin, TX, November 7, 2008).

A student who does not account for stroke-type mechanics is likely to execute single-independent strokes at slower speeds, resulting in practice sessions that do not reach their potential degree of productivity. Inevitably, the mechanics of the stroke will change as the tempo increases, and the student who has been applying single-independent mechanics will find the transition cumbersome. Maintaining single-alternating mechanics in practice, even at speeds where single independents would normally be used, prevents the student from experiencing undue frustration.

The following excerpt from *Marimba Spiritual* is another example of this scenario (Example 23).



Example 23. M. 423 from *Marimba Spiritual*.

The left hand executes continuous single-alternating strokes while the right hand executes continuous single-independent strokes. Young students might prepare this passage playing only single-independent strokes at slow tempi. However, single-independent strokes become more and more difficult to execute as practice tempo approaches performance tempo. A thoughtful stroke-type analysis early in the learning process enables the student to choose performance-tempo mechanics, resulting in less frustration and accelerated progress.

Conclusion

Stevens's identification of four fundamental stroke types has vast implications for four-mallet pedagogy and performance. However, the absence of a standardized method of notating stroke types hinders the percussion community from communicating and analyzing these many implications. This is comparable to communicating functional harmony without Roman numeral analysis, piano pedagogy without fingerings, or violin pedagogy without a method of notating bowings. Stroke-type notation allows performers to make notes during practice, composers increased levels of specificity, and pedagogues an efficient means with which to communicate with students.

Additionally, two performers may successfully apply different combinations of stroke types to any given work. The complete stroke-type analyses of *Marimba Spiritual* and *Two Mexican Dances* confirm that stroke types often represent musical or technical decisions made by the performer. These decisions are an element of performance practice that is too often overlooked. Stroke-type analysis allows both teacher and student to fully explore the effect of various stroke types on the musical and technical elements discussed above. In turn, this exploration will result in more purposeful stroke-type selection by the performer.

Using stroke-type analysis and stroke-type notation, teachers will possess an efficient tool for communicating technical information to students and relating that information to specific musical effects producing desired results. Students will have at their disposal a weapon of retention more powerful than mere recollection. In closing, I hope further stroke-type analyses will continue to reveal new subtleties in the relationship between stroke types and affective performance.

CHAPTER II
TABLA AND INDIAN MUSICAL CONCEPTS IN
MODERN DRUM SET PERFORMANCE

Introduction

The drum set, as we know it today, is less than 100 years old and is primarily associated with jazz and popular music. As a recital instrument its potential remains largely marginalized. While the rate of new compositions for percussion has grown exponentially since its addition to the university curriculum in the middle of the twentieth century, there is still a limited selection of advanced notated compositions for drum set in comparison to the repertoires of more traditional concert percussion instruments. This selection is further diminished if one excludes compositions based in the instrument's role in jazz and popular idioms for which the drum set has been championed.

The core of the college percussion curriculum has traditionally revolved around snare drum, mallet percussion, and timpani. According to a study led by Dr. Ron Fink, in 1969 drum set was one of the most “de-emphasized areas of percussion instruction.”¹³ This offers an explanation for the relative lack of drum set compositions while concerti for traditional concert percussion instruments abound. In the past three decades, however, drum set has become increasingly recognized as a critical component of the college percussion curriculum. A 1994 study by Tom Morgan revealed that only 38% of full-time college percussion instructors had studied drum set as part of their college percussion curriculum, but the vast majority felt that it should be included. When those instructors were asked what percentage of the curriculum should be devoted to drum set, the average

¹³ Ron Fink, “Percussive Arts Society College Curriculum Project,” *Percussionist* 7, no. 1 (October 1969): 32.

response was 20.2% – suggesting that the instrument is a de facto core component of a changing curriculum.¹⁴

These studies reveal an enormous upward trend in the emphasis college percussion instructors are placing on drum set. Although the instrument is still somewhat bound to its role in jazz and popular music, these conceptual limitations are dissipating as composers and performers explore its full potential as a multiple-percussion instrument. Indian classical music provides the drum set recitalist with excellent alternatives to this traditional western role. In particular, the tabla tradition of *Hindusthani Sangeet*, the classical music of Northern India, bears a strong correlation to Western drum set performance in many ways. For example:

1. In *Hindusthani Sangeet* the tabla has traditionally played a role of accompaniment, much like the Western drum set.
2. A *tabaliya*, the preferred nomenclature for a tabla player, is able to produce a wide variety of sounds. The drum set, being a multiple-percussion instrument, is the Western percussion instrument most capable of producing such an array.
3. *Hindusthani Sangeet* requires frequent improvisation from the *tabaliya*, a skill in which Western drum set players also strive for proficiency. *Karnatic Sangeet*, or South Indian Music, places less emphasis on improvisation by the *tabaliya*.
4. The *tabaliya* uses compositional devices to signal the end of various sections that are also effective within the context of Western drum set performance.
5. The development of the tabla as a solo instrument during the middle of the twentieth century parallels the development of the drum set as a solo instrument.

¹⁴ Tom Morgan, “Drumset in the University Percussion Curriculum,” *Percussive Notes* 32, no. 3 (June 1994): 71.

6. Drum set performers steeped in the jazz tradition are comfortable with cyclic formal structures, which predominate in *Hindusthani Sangeet*.
7. The two drums that comprise the tabla are responsible for creating rhythmic variety and keeping time in much the same manner as the drum set in Western music.

Composer and author Daniel Levitan noted in 1977, “it is now . . . accepted . . . that one of the most significant developments in the evolution of Western art music in the past century has been the expanded use of percussion instruments.”¹⁵ The purpose of this chapter is to continue that expansion by providing a method for the transcription of tabla compositions to drum set. In the process, it contributes to a growing recital repertory for the drum set and expands Western percussionists’ knowledge of the tabla—an instrument that some consider “the most sophisticated of all drum sets in the world.”¹⁶ Throughout this chapter, foreign terms are italicized, with the exception of instrument names that have worked their way into the global percussion lexicon.

The Instrument and Its Roots

Origins

Uncovering the genesis of the tabla has, until recently, been a difficult task for Western scholars. Levitan, in the same 1977 article quoted previously, wrote that “the tabla ... may have been perfected as late as the seventeenth century.”¹⁷ James Blades, in his thorough and seminal treatise on percussion instruments and their history, exposes no

¹⁵ Daniel Levitan, “The Tabla as a Contemporary Chamber Instrument,” *Percussive Notes* 16, no. 1 (Fall 1977): 34.

¹⁶ Sudhis Chandra Banerjee, *Tabla and the World of Indian Rhythms* (Haryana, India: Shubhi, 2006), 7.

¹⁷ Levitan, 34.

conclusive origin of the instrument, but notes that “many Hindu scholars agree that the instruments have existed as *tabla* and *bamya* from the fourteenth century.”¹⁸ Ed Pias, in his 1996 dissertation, writes, “no one knows exactly from where tabla are derived, but it is generally agreed that they are relatively young, about 150 years old.”¹⁹ Rebecca Stewart, in the culmination of over ten years of fieldwork on the topic, traces the origin of the instrument back to the first half of the eighteenth century through analysis of iconography and repertory.²⁰ The difficulty Western scholars have experienced in identifying the origin of the tabla is, to some degree, due to the lack of materials published in English. One recent Indian author wrote, “Till a few years ago, writing a book on tabla in English would have proved to be sacrilegious.”²¹

Yet even native scholars and performers disagree on the origins of the instrument. A predominant legend places the origin of the tabla with the double-headed barrel drum called pakhawaj, another popular North Indian drum used primarily in the accompaniment of a genre of classical vocal music known as *dhrupad*. As the story goes, an anonymous performer continued to play his pakhawaj during a performance after it split into two pieces—a myth that comes in many variations and which some believe to be accurate. Others believe that “during the reign of Allaudin Khilji, his court musician Amir Khusru gave birth to the modern tabla,” which would date the instrument back to

¹⁸ James Blades, *Percussion Instruments and Their History* (London: Faber & Faber, 1971), 138.

¹⁹ Ed Pias, “North Indian Rhythms on the Drum Set” (DMA diss., University of Washington, 1996), 80.

²⁰ Rebecca Marie Stewart, “The Tabla in Perspective” (PhD diss., University of California-Los Angeles, 1974).

²¹ Sudhis Chandra Banerjee, 8.

the fourteenth century.²² Past *tabaliyas* maintained that the tabla originated with their respective gurus. Outrageous as this presumption may seem to current scholars, it is representative of the dogmata that has thwarted accurate scholarship until very recently.

Fortunately, as a result of increased global attention on tabla and the emerging predominance of institutionalized music instruction in India, the last decade has witnessed progress in the identification of the origins of the instrument. Rebecca Stewart's conclusions are finally being corroborated by Hindu scholarship. New research by Dr. Arun Kumar Sen and others is finally being presented in books on tabla written in English. Samir Chatterjee's *A Study of Tabla* points to findings that suggest Amir Khusru II invented the tabla around 1738 at the behest of Niyamat Khan (also known as Sadarang), an eminent classical vocalist of the time.²³ Sudhis Banerjee, citing Sen, writes in *Tabla and the World of Indian Rhythms* that during the reign of Mohammed II (1734), Amir Khan "devised tabla to suit [Sadarang's] singing."²⁴ Banerjee continues, "According to yet another scholar, during the reign of Mohammed Shah Rangile, one Niyamet Khan (alias Sadarang) was an eminent musician. It was Sadarang's youngest brother, Khusro Khan, who fountain-headed the tabla."²⁵

One may draw a handful of conclusions by taking these previous accounts into consideration. Although these explanations vary slightly in detail, it is safe to say that a vocalist known as Sadarang played a role in encouraging the invention of the tabla, and that it occurred in the mid to late 1730s. A "flood" of iconography from northwestern

²² Ibid., 11.

²³ Samir Chatterjee, *A Study of Tabla* (Nutley, NJ: Chhandayan, 2006), 28.

²⁴ Sudhis Chandra Banerjee, 11.

²⁵ Ibid., 11.

India showing pairs of drums in the last half of the eighteenth century affirms this timeframe.²⁶ Each of the above narratives also place the origin of the instrument in Delhi, the eighteenth-century capital of the Mughal Empire. The oral tradition and lineage of the six tabla *gharanas* (generational schools based on geographic location—discussed at length below) and the fieldwork of Rebecca Stewart corroborate this conclusion as well. One may conjecture that Amir Khusru II, Amir Khan, and Khusro Khan were the same person because “Khan” is both a last name and a generic title of respect used in many Asian countries, including India and Pakistan. Finally, the tabla was developed to provide more melodic accompaniment for classical vocal music than the pakhawaj was able to provide—a conclusion also consistent with extant sources. Apart from these conclusions, Stewart points to physical and stylistic characteristics that suggest modern tabla involved the combination of elements from, primarily, three extant percussion instruments: (1) the pakhawaj, (2) the dholak, and (3) the naqqara.²⁷

Depiction

“*Tabal*” is the generic word for “drum” in both Arabic and Farsi. “Tabla” is directly borrowed from this term, which derives from the Aramaic “*tabla*” adapted from the Akkadian word “*tabalu*” or “*tapalu*.”²⁸ Widespread use of these generic terms for “drum” throughout Asia during the past two millennia fuels a prevalent misconception that the modern tabla is an ancient instrument. It consists of two membranophones placed

²⁶ Rebecca Marie Stewart, 7.

²⁷ *Ibid.*, 14. The later points to a hitherto undistinguished connection between tabla and Western timpani, an instrument to which Gordon Peters established the naqqara as a primary predecessor in his *The Drummer, Man: A Treatise on Percussion*.

²⁸ Hause, H.E., “Terms for Musical Instruments in the Sudanic Languages,” *Supplement to the Journal of the American Oriental Society* 7, (January-March 1948): 8.

on top of supporting rings (termed *takians*, *bidas*, or *adhras*) during performance. In rare instances, in a practice known as *tabla tarang*, additional drums tuned to various pitches are added such that the *tabaliya* may provide the primary melodic content of the music. The performer plays the instrument from a seated position (traditionally with legs crossed in the “lotus” position) with the larger, lower-pitched drum to the left of the smaller, higher-pitched drum. Both drums together are collectively referred to as “*tabla*.”

The larger left-hand drum is termed “*bayan*” and derives its name from “*baya*,” meaning “left,” although it may also be referred to as “*duggi*” or “*dagga*.” The *bayan*, a kettle or vessel drum, stands approximately nine inches high with a diameter of approximately nine to ten inches. The *dayan*, or smaller right-hand drum, is a truncated cone with its greatest diameter (roughly seven inches) approximately three to four inches above its base and a head diameter of four to six inches. The *dayan*, deriving its name from “*daya*,” meaning “right,” is also referred to as “*dahina*” or “*tabla*.” In order to avoid confusion in this document, “*tabla*” will hereafter refer to the collective instrument. “*Dayan*” will refer to the singular right-hand drum.

The primary membrane of both drums, usually goat or deer skin, is covered around the circumference by another, cut to form a ring one to three centimeters wide. This double-headed outer portion of the playing surface is called the “*kinar*.” The application of up to thirty layers of a paste, composed of fine iron fillings mixed with flattened cooked rice, creates another playing surface on each drum called “*gaab*” or “*shyahi*.” Centrally located on the *dayan* and placed slightly off-center on the *bayan*, the *gaab* takes the form of a black dot two to three inches in diameter. The playing surface between the *kinar* and the *gaab* is called the “*maidan*” or “*sur*.”

On each drum, the *kinar* is stitched onto the primary membrane by a fine leather strand which, in turn, is interwoven with the *pagri*, a heavy leather ring forming a collar around the entire amalgamation. A quarter-inch leather strap, called the “*chot*,” is interwoven between the *pagri* and the *gurri* (another leather ring at the base of the instrument), affixing the playing surface to the body of the drum. The *chot* also controls the surface tension of the head and, in turn, the pitch. During a classical performance, the *dayan* is tuned to the tonic; during the performance of popular or tonal music it may be tuned to the dominant or sub-dominant. Rather than tuning the *bayan* to a specific pitch, the *tabaliya* merely attempts to achieve a warm resonant bass reverberation. Both drums are tuned by tapping the *pagri* with a specialized hammer. A downward tap on the *pagri* raises the pitch; an upward tap lowers the pitch. Inserted underneath the *chot*, eight wooden toggles, called “*gatthas*,” hold the drum at the proper tension and can be adjusted for fine-tuning. Although *gatthas* are not typically used on the *bayan*, smaller versions may be inserted when the *chot* of the *bayan* loses tensility.

The body, termed “*handi*” or “*kuri*,” of the *dayan* is made from neem wood (sometimes called *margosa*), catechu (a mixture of wood from several species of *Acacia* boiled together), or shisham (sometimes sold as Indian rosewood). The *bayan* has traditionally been constructed from terracotta, a clay-based unglazed ceramic. However, since the middle of the twentieth century copper, steel, or bronze have become preferred materials, primarily for their durability. If the *bayan* is constructed from metal, it is usually coated with chromium-steel nickel for aesthetic value. Both the *bayan* and *dayan* have gradually diminished in size since the eighteenth century.

Tabla Culture

Traditional

Traditional Indian music education revolves around two fundamental concepts that differ from those found in Western music education. The first is the oral transfer of knowledge from *guru* to *shishya*, or teacher to disciple. Ustad Zakir Hussain,²⁹ one of the world's foremost *tabaliyas*, describes the significance of this relationship in his own words:

In India, the [*guru-shishya*] relationship grew into a very intimate one, because when you were accepted by a teacher all your other family ties were severed. You became the son or the daughter of the *guru* and you were treated like all the other children in the house. You were clothed; you were fed; you were educated. That *guru* was your father, your teacher, your mentor, your guide, your advisor—[your] everything.³⁰

Below, Pandit Arup Chattopadhyay describes his own experiences as a *shishya*:

Guru means it's not only that you are learning tabla from him. It's like he shows you the way for everything. I learned from my *guru* how to talk to people—how to respect people. [I learned] how to eat with [them] like a special guest, you know, how to hold a fork—everything he taught me. Also [he is like] my father, you know? I used to go to his home and stay there. He used to wake me up at, like, 5:00 in the morning. “Get up! Get up quick!” [I would] have some breakfast and practice.³¹

Because tradition in India dictates that the oldest son adopt the same profession as his father, the *guru-shishya* relationship continues from father to son in one household for

²⁹ “Ustad” and “Pandit” are honorary titles of respect given to leading musicians of a *gharana*. The latter is reserved for Hindus, and the former for Muslims. In rare instances, non-Muslim performers will be granted the title of Ustad.

³⁰ Michael Parillo, “Zakir Hussain: Global Drummer,” *Modern Drummer* 32, no. 1 (January 2008): 77.

³¹ Arup Chattopadhyay, interview by Erika Barbosa, San Diego, CA, date unknown.

generations. This results in the second major difference between traditional Indian and Western music education—*gharanas*.

The term derives from the word “*ghar*,” which means “a place of residence.”³² In conjunction with the implication of a unique style and repertory, *gharana* is a concept bound to geographic location. Often used interchangeably with “school” or “style,” a *gharana* is not officially recognized until the cycle of *guru* and *shishya* continues through at least three generations. Six major tabla *gharanas* have recognition in the world today, all of which are in Northern India and led by a *khalifa*—a successor or “key representative.”³³ These six *gharanas* are the Delhi, Lucknow, Farrukhabad, Ajrala, Benaras, and Punjab. The Delhi *gharana* is the oldest, and the progenitor of the other five. Appendix B provides detailed lineages of the six major tabla *gharanas*.

Tabla learned in this traditional fashion is called “*gharanedar* tabla.” *Guru-shishya* and *gharana*-based education is not unique to tabla. It has been the historical precedent for the education of all musicians, including vocalists. Even today, a performer is judged by his *guru* before the first note of a performance reverberates, and a *tabaliya* that does not reflect the qualities of his *gharana* is seldom taken seriously by audiences and peers alike. *Gurus* have traditionally been secretive about their musical knowledge, and these elements of education have hindered the acquisition of historical knowledge by both Eastern and Western scholars. “Oral tradition could trace genealogical relationships

³² Samir Chatterjee, 30.

³³ *Ibid.*, 30. In the instance of the Punjab *gharana*, Ustad Zakir Hussain is distancing himself from that title, and presently there is no family successor in the Ajrala *gharana*.

and relate myths, but it could not provide documentation. Neither, as it turns out, could literary channels until sometime after the tabla's emergence."³⁴

Modern Day

Historically, a serious tabla student would possess no other alternative than to seek a master *tabaliya*, a title which comes with age, musical prowess, and the affirmation of his or her peers. The *tabaliya* would not receive this affirmation without an education grounded in a specific *gharana*, received from another master. But *gharanedar* tabla and the *guru* system of music education has declined in recent years. India, economically classified as a newly industrialized country, has begun to adopt institutionalized music education—now coexisting with the old ways. Technology and globalization have increased the availability of and demand for information. Chatterjee writes, “Since the Industrial Revolution, easy communication and media have broken down barriers of isolation in every aspect of Indian life and culture. *Gharana* purity has become controversial. They are more homogenized.”³⁵ Further acknowledging this decline, Indian musicologist Sudhir Mainkar comments, “It is impossible for a *guru* to keep his [style] strictly secret, confidential, and insulated from other influences . . . All the musicians and students of tabla are getting opportunities and situations where they can listen to all [*gharanas*] of tabla. Such an influence cannot be avoided now.”³⁶ Indian tabla has felt the influence of Western culture.

³⁴ Rebecca Marie Stewart, xii.

³⁵ Samir Chatterjee, 31.

³⁶ Sudhir Mainkar, “Is Gharana Tradition, Discipline, and Loyalty Fading out in Today’s Art of Tabla?” *Journal of the Indian Musicological Society* 40 (2009-2010): 215.

Vice versa, globalization has led to the exportation of Indian musical culture to Western audiences and musicians. In 1955, sarod virtuoso Ustad Ali Akbar Khan began collaborations in America with Yehudi Menuhin. Seminal performances by sitarist Pandit Ravi Shankar and Ustad Alla Rakha at the Monterey Jazz Festival (1967) and the Concert for Bangladesh (1971) propelled Indian classical music, and the tabla, into public prominence, “sparking American and European interest in the sounds of India.”³⁷ Ustad Zakir Hussain (who was also Alla Rakha’s son) settled in the United States in 1969, and has since collaborated with many Western artists, including Mickey Hart, John McLaughlin, Bela Fleck, and Steve Smith. The Ali Akbar College of Music, where one Western percussionist discovered “loyalties to music that are unsurpassed, and dedications to a type of artistic expression rarely seen by teachers of Western music,”³⁸ has created epicenters for the spread of Indian music in San Francisco and Basel, Switzerland. Institutions of higher education in the United States that employ specialized tabla faculty include the University of California-San Diego (Pandit Arup Chattopadhyay) and the Manhattan School of Music (Pandit Samir Chatterjee), and a growing number of college percussion instructors have some degree of tabla experience.

The incorporation of tabla to Western percussion repertory and recital halls, however, has been surprisingly slow. The *Siwe Guide to Solo and Ensemble Percussion Literature* contains thousands of compositions, but only 31 require tabla.³⁹ Most of those compositions treat the tabla as an exotic bongo, or a generic membranophone to be struck

³⁷ Anastasia Tsioulcas, “Tabla Contents,” *Jazziz* 17, no. 6 (June 2000): 59.

³⁸ George Ruckert, “The Tabla Goes West,” *Percussive Notes* 19, no. 1 (Fall 1980): 74.

³⁹ Thomas Siwe, “Siwe Guide to Solo and Ensemble Percussion Literature,” *Percussive Arts Society*, <http://www.pas.org/Learn/compresearch.aspx> (accessed January, 20 2011).

with a stick as part of a larger multiple-percussion setup. The Percussive Arts Society (PAS) maintains an online database of solo and ensemble percussion programs detailing repertory, personnel, dates, and locations of performances. Programs are continually added by PAS; performers and educators are encouraged to submit listings. As of January 29, 2011, the database contained 7,410 complete programs of percussion music; eight programs mention “tabla.”⁴⁰ This is an understandable figure, because tabla proficiency takes many years to develop and is, unarguably, not a core component of the college percussion curriculum. The drum set however, being a de facto core component, can provide Western percussion students with a vehicle for the exploration and study of a rhythmically complex Indian classical tradition.

Adapting Tabla to Drum Set

Past Methodology

Several scholars and drummers have, heretofore and in various capacities, undertaken the cross-cultural adaptation of Indian rhythms and tabla music to drum set. A chronological summary of the five most significant works is presented here:

1986. As a drum set student of Ed Blackwell, Royal James Hartigan adapted *Karnatic*, or South Indian, *tala* (time cycles with distinct numbers and groupings of beats) to the drum set in his 1986 dissertation “Blood Drum Spirit: Drum Languages of West Africa, African-America, Native America, Central Java, and South India.”⁴¹

⁴⁰ Percussive Arts Society, “Compositions Research,” Percussive Arts Society, <http://www.pas.org/Learn/compresearch.aspx> (accessed January 29, 2011).

⁴¹ Royal James Hartigan, “Blood Drum Spirit: Drum Languages of West Africa, African-America, Native America, Central Java, and South India” (PhD diss., Wesleyan University, 1986).

1995. Gregory Michael Diethrich's master's thesis, titled "The Art of North Indian Tabla Drumming: Adaptations to the African-American Drum Set Tradition"⁴² and written under the guidance of Hartigan, investigates the potential of incorporating tabla rhythms and compositions (primarily from the Lucknow *gharana*) into the context of jazz drumming.
1996. Previously mentioned in this document, Ed Pias's "North Indian Rhythms on the Drum Set" uses pakhawaj and tabla rhythms on the drum set "as a way of internalizing rhythm, hearing longer melodic phrases, and learning to play in odd meters."⁴³
2006. New York based jazz drummer Dan Weiss transcribes solo tabla compositions for drum set in a self-published book.⁴⁴ Weiss was a student at the Manhattan School of Music and a disciple of Pandit Samir Chatterjee.
2008. Pete Locket's *Indian Rhythms for Drum Set*, is a very thorough book on the application of Indian rhythms to drum set performance in popular Western contexts. The rhythms are derived from four Indian percussion instruments: 1) mridangam, 2) kanjira, 3) ghatam, and 4) tabla.⁴⁵

In addition to these larger works, a steadily growing number of drum set performers have been collaborating with tabla artists, learning to play tabla, or incorporating aspects of tabla into their own playing since the last quarter of the twentieth

⁴² Gregory Michael Diethrich, "The Art of North Indian Tabla Drumming: Adaptations to the African-American Drum Set Tradition" (master's thesis, San Jose State University, 1995).

⁴³ Ed Pias, Abstract.

⁴⁴ Dan Weiss, *Tintal Drum Set Solo: Complete Transcriptions* (New York: Dan Weiss, 2006).

⁴⁵ Pete Locket, *Indian Rhythms for Drum Set* (Briarcliff, NY: Hudson Music, 2008).

century. Foremost on this list are Steve Smith, Mickey Hart, Ed Shaughnessy, Trilok Gurtu, Casey Schuerell, and Terry Bozzio.

Present Methodology

The approach used herein differs from the approaches taken by the aforementioned performers and scholars in three primary facets of their adaptation of tabla and Indian music to drum set. The preeminent difference is the individual literal transfer of tabla *bols* to the drum set. A *bol*, is “a mnemonic syllable used by Indian musicians to express the content and musical phrase of a composition.”⁴⁶ *Bols* are the method of oral transmission that, in India, substitutes for Western music notation. With respect to tabla, each *bol* corresponds to a specific stroke technique and, thus, a specific timbre. A single *bol* may also represent different stroke techniques, and therefore sounds, in different musical contexts. Additionally, two different *bols* may represent the same stroke technique and consequential timbre. The method of transcription presented here assigns one timbre, *bol*, or stroke to a singular corresponding timbre or stroke on the drum set. Tabla also uses compound *bols*—unique syllables that represent the combination of specific left and right hand strokes. In such instances, those compound *bols* will transfer to the drum set as the simultaneous execution of both corresponding drum set timbres.

This tedious method has been predominantly avoided. The work of Dan Weiss and the dissertation of Ed Pias comes closest to this approach, although Pias’s method often assigns multiple sounds on the drum set to a single *bol*⁴⁷ and Weiss varies his

⁴⁶ Himadri K. Lahiry, *Tabla Playing Made Simple* (London: Asian Music Academy & Resource Center Charitable Trust, 1996), 17.

method, such that one sound on the tabla may correspond to various sounds on the drum set in various contexts.⁴⁸ Ed Shaughnessy adapts the Indian system of *bols* to drum set by creating unique *bols* of his own to represent the various playing surfaces of his drum set, thus enabling him to more effectively communicate ideas to his students.⁴⁹ Most drum set artists have transferred tabla music to drum set through approximation by de-emphasizing timbre; instead they choose to focus on rhythm, note groupings, and general melodic contour. Steve Smith, arguably the most well-known Western drummer to advocate the use of Indian rhythms, describes this process below:

There are, in a way, two approaches. One is high tones and low tones—to approximate the melody of the tabla between highs and lows. That’s usually between a snare drum and a bass drum. The other approach is in a much faster type of playing—the rolls . . . I use rudimental stickings to approximate the feeling I’m getting, so I can play quickly and with the king of phrasing I’m hearing. I put together paradiddles, double paradiddles, and so on.⁵⁰

The final two differences between the present and past efforts are less complex. First, each tabla composition transcribed for drum set originates with Pandit Arup Chattopadhyay and the Farrukhabad *gharana*. Second, the purpose of these transcriptions is not to adapt the content of North Indian music to Western idioms. Rather, the aesthetic of North Indian classical music is intended to be conveyed through the Western drum set. Each transcription is meant to stand alone as an addition to the classical repertory of solo drum set music and, in turn, the broader realm of solo percussion performance—of which

⁴⁷ Ed Pias, 23.

⁴⁸ Dan Weiss, 1-82.

⁴⁹ Ed Shaughnessy, “Drum Set Boles,” *Percussive Notes* 37, no. 2 (April 1999): 22.

⁵⁰ Michael Parillo, 12.

world percussion is already an established subcategory. This is a radical departure from the approach of the aforementioned scholars and performers.

The present collection of transcribed tabla compositions, because of its substantial length, is provided in Appendix C. Table 1 details the transcription process below. One must bear in mind that although the fundamental tabla strokes and resultant timbres are largely consistent from one *gharana* to another, even between teachers within the same *gharana bols* used to identify the strokes sometimes vary. Table 1 represents the tabla *bols* as taught by Pandit Arup Chattopadhyay. Moreover, a repertory of a single *tabaliya* can easily include well over one hundred *bol* variations. Only the *bols* used in the transcriptions herein are presented in Table 1. The identification of all *bols* used by all *gharanas*, or even a single *gharana*, would cause needless confusion for the reader. Again, one must remember that the strokes themselves are largely consistent from one *gharana* to the next.

Table 1

Bol Transcription Method

Tabla <i>Bol</i>	Description of Tabla Stroke	Corresponding Drum Set Sound
de (as in “day”)	Compound <i>bol</i> = ghe + te/re/ta	Bass Drum + Middle of Snare Drum
Dha (as in “dog”)	Compound <i>bol</i> = ghe + na	Bass Drum + Ride Cymbal (Tip of Stick)
Dhe/te (as in “day”)	Non-Resonant <i>dayan</i> ; always in combination with Re; entire right side of palm swipes top of <i>dayan</i> (see Dhe)	Snare Drum at Edge

Table 1 (continued).

Tabla <i>Bol</i>	Description of Tabla Stroke	Corresponding Drum Set Sound
Dhe (as in “day”)	Compound <i>bol</i> = ghe + Dhe; the first Dhe in a sequence of DheRe is usually accompanied by <i>bayan</i>	Bass Drum + Snare Drum at Edge
dhe (as in “day”)	Compound <i>bol</i> = ghe + Te/Re	Bass Drum + Middle of Snare Drum
Dhin/Dhi (as in “dean”)	Compound <i>bol</i> = ghe + tin	Bass Drum + Crash Cymbal (Tip of Stick)
dhin/dhi (as in “dean”)	Compound <i>bol</i> = ghe + tu/tun	Bass Drum + High Tom
di/din (as in “deed”)	Resonant <i>dayan</i> ; executed as Ta, but all fingers are raised immediately	Ping Shot on High Tom
ghen/ghē/ge/ga/gi (as in “hen”/”hay”/”day”/”god”/”geese”)	Resonant <i>bayan</i> ; 1) middle ring, and little fingers, 2) middle and ring fingers, or 3) middle finger alone strike(s) the <i>sur</i>	Bass Drum
Ka/Ke (as in “cop” or “cake”)	Non-resonant <i>bayan</i> ; entire left hand strikes <i>bayan</i> ; palm stays on the <i>bayan</i>	Hi-Hat with Foot
Kat (as in “cut”)	Non-resonant <i>bayan</i> ; same as Ka/Ke, but usually with more emphasis; palm lifts prior to stroke	Side of Hi-Hat with Side of Stick

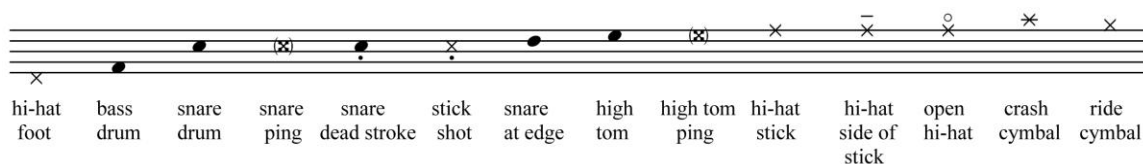
Table 1 (continued).

Tabla <i>Bol</i>	Description of Tabla Stroke	Corresponding Drum Set Sound
ke/ki/ka (as in “cake,” “key,” or “cop”)	Non-resonant <i>bayan</i> ; same as Ka/Ke, but made to blend with te/re/ta and Te/Re; sounds like te/re/ta and Te/Re	Middle of Snare Drum
Kran (as in “micron”)	Compound <i>bol</i> = Kat + ta/na; flammed such that Kat strikes prior to ta/na	Hi-Hat with Foot + Rid Cymbal (Tip of Stick)
Kre (as in “crate,” but the “r” is pronounced as a light “D” sound)	Compound <i>bol</i> = Ka + Te/Re	Hi-Hat with Foot + Middle of Snare Drum
ne (as in “nay”)	Non-resonant <i>dayan</i> ; middle, ring, and little finger on edge of <i>gaab</i> ; usually stopping the resonance of a previous <i>bol</i>	Dead Stroke in Middle of Snare Drum
re (as in “ray”)	Non-Resonant <i>dayan</i> ; always in combination with Dhe; entire left side of palm swipes top of <i>dayan</i>	Snare Drum at Edge
ta/na (as in “top” or “knot”)	Resonant <i>dayan</i> ; index finger on the <i>kinar</i>	Ride Cymbal (Tip of Stick)
Te/Re (as in “take”)	Non-Resonant <i>dayan</i> ; middle, ring, and little fingers strike the <i>gaab</i> , with the middle finger hitting the center	Middle of Snare Drum
te/re/ta (as in “they,” “ray,” or “top”)	Non-Resonant <i>dayan</i> ; sounds like Te/Re; index or middle finger strikes the center of the <i>gaab</i>	Middle of Snare Drum

Table 1 (continued).

Tabla <i>Bol</i>	Description of Tabla Stroke	Corresponding Drum Set Sound
Ta (as in “thought”)	Non-resonant <i>dayan</i> : this <i>bol</i> is executed with a four finger dead stroke, the middle finger striking the center of the <i>gaab</i>	Stick Shot on Snare Drum
ta-ra (as in “top” and “rob”)	Resonant <i>dayan</i> : these two <i>bols</i> in conjunction are executed as Te-te, except on the <i>kinar</i> to produce resonance	Open Hi-Hat with Stick
The (as in “they”)	Compound <i>bol</i> = Ke + Te/Re	Hi-Hat with Foot + Middle of Snare Drum
the (as in “they”)	Compound <i>bol</i> = Ke + te/re/ta	Hi-Hat with Foot + Middle of Snare Drum
thi (as in “thee”)	Compound <i>bol</i> = Ke + tin	Hi-Hat with Foot + Low Ride Cymbal
Thu/Thun (as in “tune”)	Compound <i>bol</i> = Ka + tu/tun	High Tom + Hi-Hat with Foot
ti (as in “tea”)	Non-resonant <i>dayan</i> ; middle finger on edge of <i>gaab</i>	Ping Shot on Snare
tin/ti (as in “tee-in” or “tea”)	Resonant <i>dayan</i> ; index finger strikes the <i>sur</i>	Crash Cymbal (Tip of Stick)
tu/tun (as in “tune”)	Resonant <i>dayan</i> : tip of the index finger strikes a light glancing blow on edge of <i>gaab</i>	High Tom

A key to the drum set notation is provided below (Example 24).



Example 24. Drum Set Notation Key.

In all the instances of transcription or notation of tabla music in this document, the repeating rhythmic cycle of *tal* (discussed in detail below) is delineated by a double barline. Each *matra* (also discussed at length below) is assigned the duration of one quarter-note.

North Indian Musical Concepts

North Indian classical music functions on fundamental principles that differ from Western music in many ways. The following concepts are integral elements of *Hindusthani Sangeet*, and are found in the tabla transcriptions of Appendix C, as well as *Palta*—Bob Becker’s 1981 composition for percussion ensemble and solo tabla. They consist of time structure, *bhari-khali* arrangement, *vistar* and *paltas*, *tihais*, compositional forms, and *jhati*.

Temporal Organization

Hindusthani Sangeet is largely based on time cycles. Although there is no harmonic element in North Indian music, these time cycles are similar to the repetitious sequences that characterize the traditional formal element of American jazz music (e.g., twelve-bar blues, “rhythm changes,” and so on). The various time cycles (*tals*) used in

the music of North India are identified by three primary elements: the total number of beats (*matras*), the manner in which those *matras* are divided into groups (*vibhags*), and their corresponding pattern of rhythmic accompaniment (*theke*) expressed in tabla *bols*. All three of these elements collectively distinguish one *tal* from another. For example, it is possible to have two unique *tals* with the same number of *matras* divided in the same fashion; in this instance the *theke* is the final defining component.

Furthermore, *tals* are expressed through a system of counting known as *tali-khali*, which divides the *matras* into another layer of groups that may or may not coincide with their division into *vibhags*. As the *tal* is counted, the first *matra* in a group designated as *tali* is accompanied by a clap of the hand; the first *matra* in a group designated as *khali* is accompanied by a wave of the hand (the overt absence of a clap) or a clap with the back of the hand rather than the palm. In the Indian method of notating *tals*, *tali* groups are identified numerically. The exception to this is the first beat of the *tal*; this beat is called “*sam*” and is identified with a plus sign if it begins a *tali* group. *Khali* groups are identified with a zero—even if they begin on *sam*. A popular twelve beat *tal* known as *Ektal* is presented below as one might see it in Northern India (Example 25).

The notation of *Ektal* contains three layers of information. The top layer provides a numerical representation of each *matra*, as well as pipes that separate each *vibhag*. The second layer introduces the corresponding *theke*. The third and final layer outlines the *marga* (literally meaning “way” or “path”), which is expressed by *tali-khali* counting.

1	2	3		4	5	6	
Dhin	Dhin	na		Dha	tun	na	
+				2			
7	8	9		10	11	12	
Kat	ta	dhi		terekete	dhi	na	
0				3			

Example 25. Ektal in Traditional Notation.

From the notation, we can see that expressing the *khali-tali* of Ektal consists of counting to twelve with claps on 1, 4, and 10, and a wave (or anti-clap) on 7. Additionally, it is common to mark the beats between claps and waves by touching the thumb to fingers. One complete cycle of a *tal* is called an “*avartan*”. Three popular *tals*, Rupaktal, Jhaptal, and Tintal, are notated below (Example 26, 27, and 28).

1	2	3		
ti	ti	na		
0				
4	5	6		7
dhi	na	dhi		na
1		2		

Example 26. Rupaktal in Traditional Notation.

1	2		3	4	5	
Dhin	na		dhi	dhi	na	
+			2			
6	7		8	9	10	
tin	na		dhi	dhi	na	
0			3			

Example 27. Jhaptal in Traditional Notation.

1 Dha +	2 Dhin	3 Dhin	4 Dha		
5 Dha 2	6 Dhin	7 Dhin	8 Dha		
9 Dha 0	10 tin	11 tin	12 ta		
13 Te 3	te	14 Dhin	15 Dhin	16 Dha	

Example 28. Tintal in Traditional Notation.

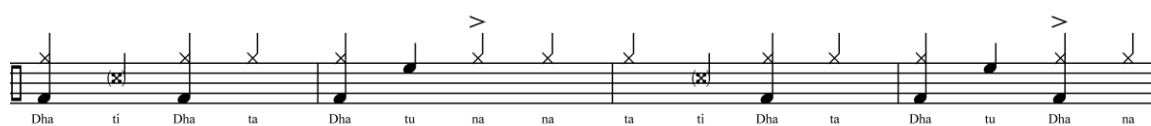
Although many *tals* exist in North Indian music, performers do not use them with equal frequency. Those shown above are among the most popular, and Tintal is unquestionably the most common of any *tal*. It is also important to mention that there exist subtle variations in *thekas* between *gharanas*. However, the fundamental *bols* and essence of each *theka* is well established. The *thekas* presented herein are those conveyed by Pandit Arup Chattopadhyay, and they illustrate another important concept in North Indian tabla composition—*bhari-khali*.

Bhari-Khali

Bhari-khali, also expressed as *mudhi-khuli*, is an aspect of *tal* that becomes a critical element of compositional structure and performance practice. “*Bhari*” literally means “full” and refers to the presence of the *bayan*, which creates a “full” round sound. During the *khali* portions of a *tal* the *bayan* is taken away; *khali* is the antithesis of *bhari*. When clapping *tali-khali* this is the anti-clap, or wave, distinguished by a zero. A degree

of approximation is implicit in this concept, as one can observe in the Tintal *theka* above (Example 28). The *bayan* drops out from *matras* 10-13 even though the *khali vibhag* officially encompasses *matras* 9-13.

Bhari-khali arrangement is an aspect of *tal* that effects compositional structure as well as *thekas* and improvisations. An excerpt from a composition on Tintal is presented below (Example 29).

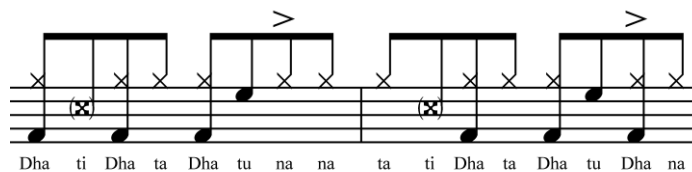


Example 29. *Bhari-Khali* Arrangement Exhibited in Fixed Composition.

Because tabla compositions are not given titles in the same manner as in Western music, the compositions herein are referred to by the first few *bols* of the main theme; this composition is titled “Dha-ti-Dha-ta.” Transcribed for drum set, the *bayan* here is represented by the bass drum. The excerpt lasts for one complete *avartan* of Tintal, and *Bhari-khali* is maintained. The approximate nature of this concept is apparent; in this instance, the removal and reintroduction of the *bayan* is an act of anticipation. The *khali vibhag* of Tintal is measure 3 of the example.

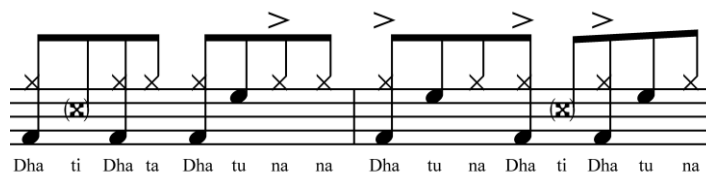
Vistar and Palta

Variation is an essential process in North Indian tabla composition. The most common compositional form, the *kayeda*, is fundamentally a theme and variations, and many other compositional forms display elements thereof. The main theme from “Dha-ti-Dha-ta,” is shown below with reduced note values (Example 30).



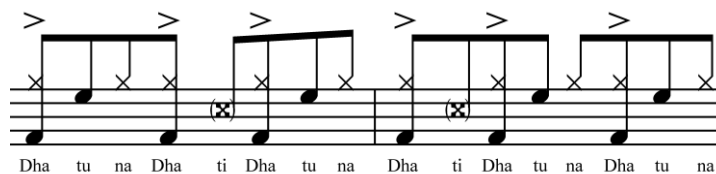
Example 30. Theme from “Dha-ti-Dha-ta.”

In Variation 1 (Example 31) two fragments from the original theme, Dha-tu-na and Dha-ti, have been reordered to create new material.



Example 31. Variation 1.

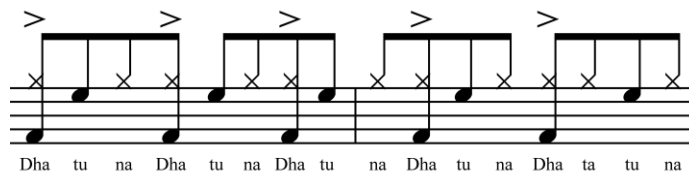
Variation 2 (Example 32) builds upon variation 1 by reordering these fragments once again.



Example 32. Variation 2: Variation 1 Reordered.

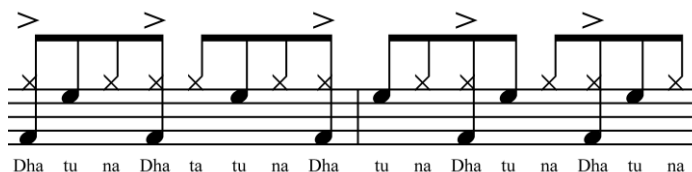
Variation 3 (Example 33) reorders the four Dha-tu-na fragments from variation 2 and extracts a new fragment, Dha-ta-tu-na, from the original theme. Originally occupying

space on beats two and three (Example 30), this fragment has been displaced to occupy beats three and four.



Example 33. Variation 3: Variation 2 Reordered.

Variation 4 (Example 34) reorders fragments from variation 3. No fragments are removed, no fragments are added, and no new fragments are introduced.



Example 34. Variation 4: Variation 3 Reordered.

Variations are called “*vistar*.” “*Paltas*” refers to *vistar* created only through the reordering of previous material. As a part of speech, it is a relatively flexible term. Banerjee writes, “The word *palta* means tossing or turning, or simply variations. When various sound syllables of the basic [theme] are permuted and combined (tossed and turned) to produce variations of the original base [theme], we engender ‘*paltas*.’”⁵¹ *Palta* is a process; it is something to be done. *Paltas* are also the end result of engaging in that process; they are the resultant variations. Once a variation has been created through this

⁵¹ Sudhis Chandra Banerjee, 23.

process, one is said to have accomplished, performed, or “engendered” a *palta*. Example 34 is a *vistar*, but it is also a *palta* derived from example 33. Although reordering precisely defines a *palta*, *vistar* and *palta* are often used, incorrectly, as synonyms.

Tihai

Tihais (less frequently referred to as *tiyas*, or *tiya* if singular) build tension in anticipation of the close of a section of music by repeating a phrase three times, with the final note of the last repetition ending on *sam* of a new *avartan*. Because they are intricate and often lengthy portions of compositions, American tabla scholar and performer David Courtney considers them a distinct compositional form.⁵² Stewart, who charted seventeen major varieties of *tihai* based on length, compares them to a “3-fold” version of the plagal “Amen” cadence in Western music.⁵³ Aneesh Pradhan, a *tabaliya*, scholar, and contributing author for the *Journal of the Indian Musicological Society*, acknowledges a growing emphasis on *Tihai*:

Interestingly, the use of *Tihais* was not focused upon until a few decades ago, as there was a general belief that a *tihai* needed only to denote the closing of a musical chapter, but was not an “event” in itself. Further, it was also felt by many that excessive use of *tihais* pointed to a bankruptcy of ideas for concluding a chapter or moving on to a new musical idea. But the mathematical complexity has since increased, and has often become the focus of attention in concerts.⁵⁴

Considering the purpose, relative brevity, and past nature of the *tihai*, it is classified herein as a compositional device, rather than a genre of composition by itself.

⁵² David Courtney, “The Cyclic form in North Indian Tabla,” *Percussive Notes* 33, no. 6 (December 1995): 32.

⁵³ Rebecca Marie Stewart, 239.

⁵⁴ Aneesh Pradhan, “Sangat: The Role of ‘Tabla’ Accompaniment to Hindustani Music and Dance,” *Journal of the Indian Musicological Society* 39 (2008): 111.

There are two main varieties of *Tihais*: *dumdar tihais* and *bedam tihais*.⁵⁵ The most common variety is the *dumdar tihai*. “*Dum*” has two literal translations; it means “breath” and “a very small unit of time.”⁵⁶ In a *dumdar tihai*, a pause is inserted between each repetition of the “*pala*,” or musical phrase. In the *dumdar tihai* below (Example 35), taken from the composition “Dha-tereketetakaterেকে-Dha-ti” found in Appendix C, each repeated phrase is separated by a quarter rest.

Example 35. *Dumdar Tihai*.

Although one may theoretically apply any *tihai* to any *tal*, this *tihai* occurs over four *avartans* of Tintal. The *pala* repeated in this *tihai* is twenty-two beats long, including the rest. In the last repetition, the twenty-first beat—the final “Dha”—concludes the *tihai*.

⁵⁵ David Courtney, “The Cadenza in North Indian Tabla,” *Percussive Notes* 32, no. 4 (August 1994): 58.

⁵⁶ *Ibid.*, 58.

In contrast, a *bedam tihai* exhibits no pause between *palas*. The *bedam tihai* shown in Example 36 occurs in the composition “Dha-tereketetakatereketeDha,” which is set in Rupaktal (see Example 26); each *avartan* is comprised of seven *matras*. The repeated *pala* is four and three quarters *matras* in length, and identified by a dark downward arrow. *Tihais* almost always conclude with the *bol* “Dha.” In some instances, the *bayan* may be omitted on the final *bol* of the first two *palas*. If so, the performer typically adds *bayan* to the final *sam*. The *bedam tihai* in Example 36 illustrates this compositional technique.

Dha ghe na Te te ghe na Dha ti Dha ga Thu na ghe na na na na ghe na na na na na na ghe na na na na na na Dha ghe na Te te ghe na Dha ti Dha ga Thu na ghe na na na na na na ghe na na na na na na Dha ghe na Te te ghe na Dha ti Dha ga Thu na ghe na na na na na na ghe na na na na na na Dha ghe na Te te ghe na Dha ti Dha ga Thu na ghe na na na na na na ghe na na na na na na Dha

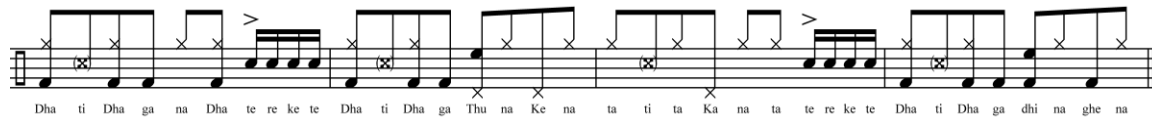
Example 36. *Bedam Tihai*.

Compositional Forms

Many compositional forms involve an introduction of a main theme, a body of *vistar*, and a concluding *tihai*, although some do not. Specific rules of composition vary between *gharanas* and individual artists, although the fundamentals are generally agreed upon. The forms presented here are limited to those found in Becker’s *Palta* and the transcriptions found in Appendix C, and are not meant to include all forms used in

Hindusthani Sangeet. Chatterjee compares the “scope and variety of tabla repertory” to that of the piano.⁵⁷

The *kayeda* is among the most common compositional forms, and our representative example, “Dha-ti-Dha-ga,” is a fixed composition in Tintal (Example 37).



Example 37. *Kayeda* Theme.

Kayeda is a theme and variations form and, as such, begins with the presentation of a main theme. The theme exhibits *bhari-khali* arrangement and has an A-B-A'-B' structure. In the third measure, *matras* 9-12 of the underlying *Tintal* and our A' portion of the theme, resonant *bayan* strokes have been omitted or altered. They have been omitted if the corresponding *bol* in the first measure was a compound *bol* involving a resonant; they have been altered to become non-resonant if the corresponding *bol* in measure one was open *bayan* with no accompanying right-hand stroke. This general rule is consistent among all compositions that exhibit *bhari-khali*. In Example 37, “Dha” becomes “ta” and “ga” becomes “Ka.” This is *bhari-khali* in action, and the reason for the *tali-khali* system of counting and clapping *tal* structures.

Following the introduction of the theme, the *kayeda* has three possible options: (1) the theme may be repeated, (2) the theme may be repeated at a faster pace through the reduction of note values (without changing the underlying *tal*), or (3) the variations may

⁵⁷ Samir Chatterjee, 18.

begin. The first two options may occur many times before the latter option is explored, although the composition must begin variations at some point. A variation on the “Dha-ti-Dha-ga” theme is presented below in its entirety (Example 38).

Example 38. Variation on “Dha-ti-Dha-ga” Theme.

A single variation is twice the length of the original theme. First, the variation is presented in *bhari* form and followed by a return to the primary thematic material. Next, the variation is presented in *khali* form and, once again, followed by the original material. Therefore, the variation takes the form A-B-A-B. The B section of the *bhari* concludes with “Thu-na-Ke-na” in anticipation of the approaching *khali*; the B section of the *khali* concludes with “dhi-na-ghe-na” in anticipation of the approaching *bhari* if there are more variations, or the approaching *tihai* if the composition is coming to a conclusion. These short phrases are conventional, and sometimes a subtle distinguishing feature of a particular *gharana* or artist. Because of these phrases, the A-B-A-B format is more aptly described as A-B-A'-B'. Thus, the variation is twice the length of our theme and exhibits the same structure.

Kayedas can be “excruciatingly long,” containing countless variations.⁵⁸ The typically large quantity of variations is also a distinguishing feature of this form. Moreover, the variations typically develop in a systematic fashion, the details of which also vary by *gharana* or individual artist. During a performance, *kayedas* are frequently improvised as the performer draws inspiration from his or her vast repertory, which can include many thousands of compositions. A *kayeda* always concludes with a *tihai*. Although *tihais* have been discussed at length already, the *tihai* for “Dha-ti-Dha-ga” is presented in Example 39.

5

Tihai

Dha ti Dha ga na Dha te re ke te Dha ti Dha ga Thu na Dha ga Thu na Kat Ta Dha Dha ga Thu na Kat Ta Dha

Dha ga Thu na Kat Ta Dha Dha ti Dha ga na Dha te re ke te Dha ti Dha ga Thu na Dha ga Thu na Kat Ta

Dha Dha ga Thu na Kat Ta Dha Dha ga Thu na Kat Ta Dha Dha ti Dha ga na Dha te re ke te

Dha ti Dha ga Thu na Dha ga Thu na Kat Ta Dha Dha ga Thu na Kat Ta Dha Dha ga Thu na Kat Ta Dha

Example 39. “Dha-ti-Dha-ga” *Tihai*.

Laggi, another genre of tabla composition, is similar to a *kayeda*. It, too, is a theme and variations style composition concluding with a *tihai*. *Laggi* means “to link,” and phrases much shorter than those of *kayedas* are a defining feature of the form. They

⁵⁸ David Courtney, “The Cyclic Form in North Indian Tabla,” 37.

also typically involve a steady succession of resonant *dayan* strokes performed at a quick tempo. “Dha-ti-Dha-ta,” previously introduced in the explanation of *vistar* and *palta*, is a *laggi* (Example 40).



Example 40. *Laggi* Theme.

The transcription enables easy perception of the many resonant *dayan* strokes; each are represented by an “x” above the staff. Example 41, below, presents a variation in its entirety.

Dha ti Dhata tu na Dha ti Dhata tu na Dha ti Dhata tu na Dha ti Dhata tu na Dha ta tu na ta ti Dhata Dha tu Dhana ta ti ta tu na ta ti ta tu na ta ti ta tu na Dha ti Dhata Dha tu na na ta ti Dhata Dha tu Dhana

Example 41. *Laggi* Variation.

Rather than an A-B-A’-B’ format, this *laggi* variation takes a simpler A-B-A’-B format. *Bhari-khali* is still maintained. One rule regarding *kayedas*, *laggis*, and other theme and variations forms, is that the *bols* of the original theme must be maintained. Introduction of new *bols* is generally not allowed, although this is a rule that is sometimes broken, particularly by the introduction of emphatic *bols* in the *tihai*. In the case of “Dha-

must predominantly maintain the *bol*s from the original theme. In *Palta*, the *rela* above is performed at double speed (Example 44).

Dha te re ke te ta ka Dhe re Dhe re ke te ta ka Dha te re ke te ta ka tin na ke te ta ka ta te re ke te ta ka te re re ke te ta ka Dha te re ke te ta ka Dhin na ke te ta ka

Example 44. *Rela* from Bob Becker's *Palta* at Double Speed.

Although unbroken torrents are the primary distinguishing feature of *relas*, sometimes a single additional *bol* that is not a beginning or ending to a rush of notes may be found in the repertory. So it is with the *rela* “Dha-tereketetakatereketeDha,” the main theme of which is shown below (Example 45).

Dha te re ke te ta ka te re ke te Dha te re ke te ta ka te re ke te Dha ti Dha te re ke te ta ka te re ke te Dha ti Dha te re ke te ta ka te re ke te
ta te re ke te ta ka te re ke te ta te re ke te ta ka te re ke te Dha ti Dha te re ke te ta ka te re ke te Dha ti Dha te re ke te ta ka te re ke te

Example 45. “Dha-tereketetakatereketeDha” Theme.

This composition, in Rupaktal, maintains *bhari-khali*, and one *bol*—“ti”—does not begin or end a torrent. In performance, *vistars* on *kayedas*, *laggis*, and *relas* are frequently improvised. Each performer, however, draws upon a repertory of many fixed compositions, including the variations and final *tihais*, as they elaborate.

Many fixed compositional forms do not follow a theme and variations format. Becker's *Palta* concludes with a series of *tukras*. *Tukras* are very short compositions that conclude with a *tihai*, which in many instances is longer than the body. The body of the final *tukra* from *Palta*, shown in Example 46, is 16 *matras* in length, and the final *tihai* is 33 *matras* in length.

Dha ti na ki ta ta ka ta te re ki ta ta ka din ge re na ka te re ki ta ta ka ta ka te re ke tghen ta ra naDha Kran Dha Ka Te te Kat Ta

Dha Kran Dha Kran Dha Te Dha ki ta ta ka din ge re na ka te re ki ta ta ka ta ka te re ki ta ta ka din ge re na ka te re ki ta ta ka ta te re

ki ta ta ka te re ki ta ta te re ki ta ta ka te re ki taDha na Dha na Dha te re ki ta ta ka te re ki taDha na Dha na Dha te re ki ta ta ka

te re ki taDha na Dha na Dha gi te re ki ta ta ka ta te re ki ta ta ka te re ki taDha na Dha na Dha te re ki ta ta ka

te re ki ta Dha na Dha na Dha te re ki ta ta ka te re ki ta Dha na Dha na Dha gi te re ki ta ta ka ta te re ki ta ta ka

te re ki ta Dha na Dha na Dha te re ki ta ta ka te re ki ta Dha na Dha na Dha te re ki ta ta ka te re ki ta Dha na Dha na Dha

Example 46. Tukra #3 from Bob Becker's *Palta*.

Although the traditional melodic line that accompanies solo tabla performance and outlines the *tal*, called "*lehera*," is not present at this point in the work, the rest of the composition is set to Tintal. As the double barlines show, each line of music corresponds

to one *avartan* of the *tal*. *Tukras* do not necessarily exhibit evidence of *bhari-khali*. The beginning of each *pala* of the *tihai* in this example is identified by black arrows.

Tukras can be even shorter than Becker's. The *tukra* shown below (Example 47), set to Tintal, consists of a body only 9 *matras* in length followed by a *tihai* of 24 *matras*.

Dha ga Te te ta ga Te te Kre de Te te Kre de Te te Dha ga Te te Kre de Te te Ka Te te Ka Te te Kat Ta

Dha Te te Kre de Te te Ka Te te Ka Te te Kat Tu Dha Te te Kre de Te te Ka Te te Ka Te te Kat Ta Dha

Example 47. *Tukra* “Dha-ga-Te-te.”

The body of a *tukra* is through-composed, with no rules other than fixed composition—improvisation is not allowed. *Bols* used in the *tihai* are not limited to *bols* used in the body of the composition.

A final form, the *chakradar*, consists of a single *tihai* which, in turn, is repeated three times (Example 48). In essence, the form is a *tihai* within a *tihai*. In the example below, “Kat--Te-te,” each *pala* of the *tihai* is separated by a rest. Consequently, this *chakradar* may be categorized as a *dumdar chakradar*. Since the entire composition is three repetitions of the *tihai*, each *pala* is played nine times, and the final “Dha” is not heard until the ninth repetition.

Kat Te te ghe ge Te te Ka Ta Ka Ta ghe ge Te te Ka Ta ghe ge Te te Ka Ta ghe ge te re ke te Dha ghe ge
 te re ke te Dha ghe ge te re ke te Dha Kat Te te ghe ge Te te Ka Ta Ka Ta ghe ge Te te Ka Ta ghe ge
 Te te Ka Ta ghe ge te re ke te Dha ghe ge te re ke te Dha ghe ge te re ke te Dha Kat Te te ghe ge Te te
 Ka Ta Ka Ta ghe ge Te te Ka Ta ghe ge Te te Ka Ta ghe ge te re ke te Dha ghe ge te re ke te Dha ghe ge te re ke te Dha
 Ka Ta Ka Ta ghe ge Te te Ka Ta ghe ge Te te Ka Ta ghe ge te re ke te Dha ghe ge te re ke te Dha ghe ge te re ke te Dha

Example 48. “Kat--Te-te” *Dumdar Chakradar*.

A *bedam chakradar*, “Dha-terekete-de-Te-te,” is found in Appendix C, but is omitted here because of its length. However, a glimpse at the first line reveals something new—triplet subdivision (Example 49).

Dha te re ke te de Te te Ka te re ke te de Te te Ka ta ga dhi ghe ne Dha ne Dha ne Dha Dha te re ke te

Example 49. *Tishra Jhati*.

Jhati

Jhati, the final aspect of North Indian music presented herein, refers to the number of subdivisions of the *matra*. A duple feeling belongs to the category of *chatashra jhati*, and a triplet based subdivision to *tishra jhati*. *Jhati* can be manipulated to

affect an implied metric modulation. The only rule for this process, is that the fundamental *tal* is maintained (Example 50).

Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dha na Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dha na

Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dha na Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dha na

Example 50. *Jhati* to Affect an Implied Metric Modulation.

In order to maintain the fundamental *tal* in this example, the theme must be repeated three times (or 6, 9, etc). This same process could be used with *khanda jhati* (five subdivisions per matra), *mishra jhati* (seven subdivisions per matra), or *sankirna jhati* (nine subdivisions). All subdivisions of the beat are a derivative of one of these five *jhatis* in North Indian music.

Once an adjustment to *jhati* has been made, further adjustments may be made using the original as a starting point. In the last example, Example 51 on the following page, the transition to *tishra jhati* became a stepping stone for another metric modulation, and the fundamental *tal* has remained in tact. three repetitions of the theme were required to arrive on *sam*, which, in this example, initiates Tintal *theka*.

Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dha na Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dha na
 Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dha na Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dha na
 Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dha na Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dha na
 ta ti Dha ta Dha tu Dha na Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dha na
 Dha Dhin Dhin Dha Dha Dhin Dhin Dha Dha tin tin ta Te te Dhin Dhin Dha

Example 51. Manipulation of *Jhata*.

APPENDIX A

VARIOUS STROKE-TYPE NOTATION EXCERPTS

- 1-3. Selections from David Gillingham's *Concerto for Marimba and Wind Ensemble*⁶⁰
- 4-6. Selections from Ney Rosauo's *Three Preludes for Solo Marimba*⁶¹
7. Selection from Clair Omar Musser's *Etude in C Major*⁶²
8. Selection from Keiko Abe's *Frogs*⁶³

⁶⁰ Each excerpt published by C. Alan Publications in 2008 and used with permission.

⁶¹ Used with permission of Ney Rosauo and ProPercussao Brasil.

⁶² Used with permission of Marimba Productions Inc., (C)1948.

⁶³ Used with permission of Marimba Productions Inc., (C)1978.

1

20 Quick with restlessness $\text{♩} = 132$

2

f

V |

V |

2

34

V |

3

60

mf

61

V |

V |

V |

V |

4

Allegro - (♩ = ca. 162)

p *cresc.*

5

6

simile

7



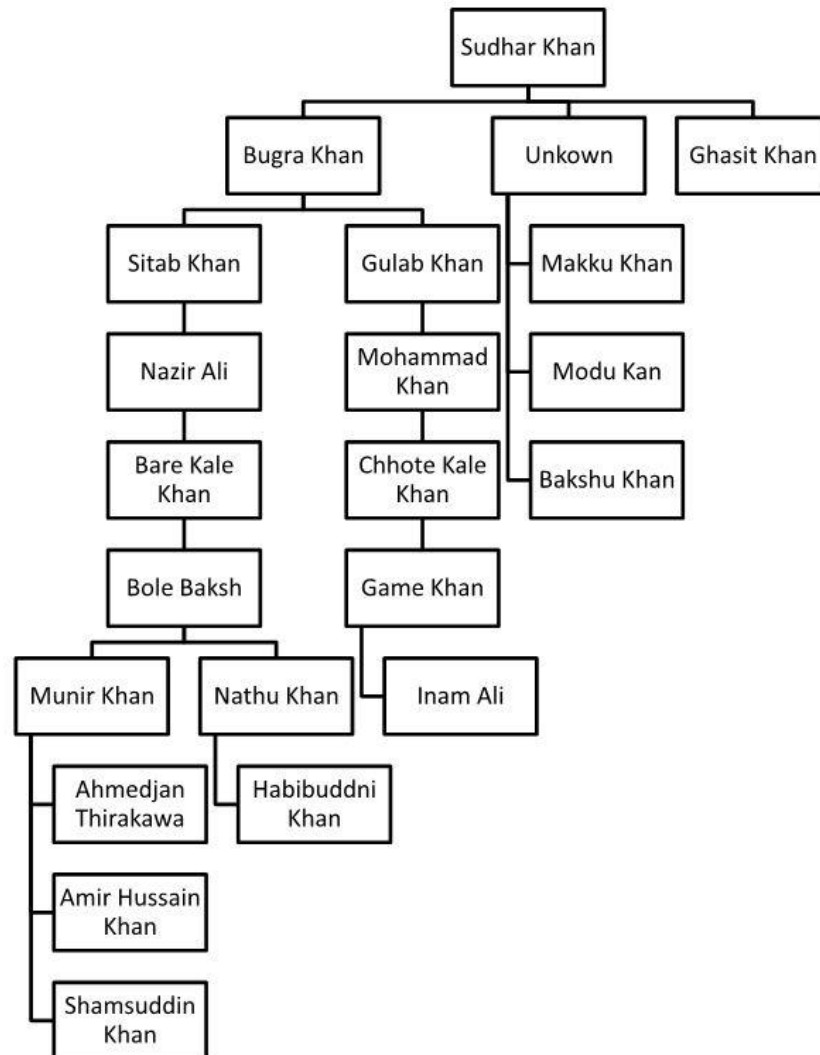
8



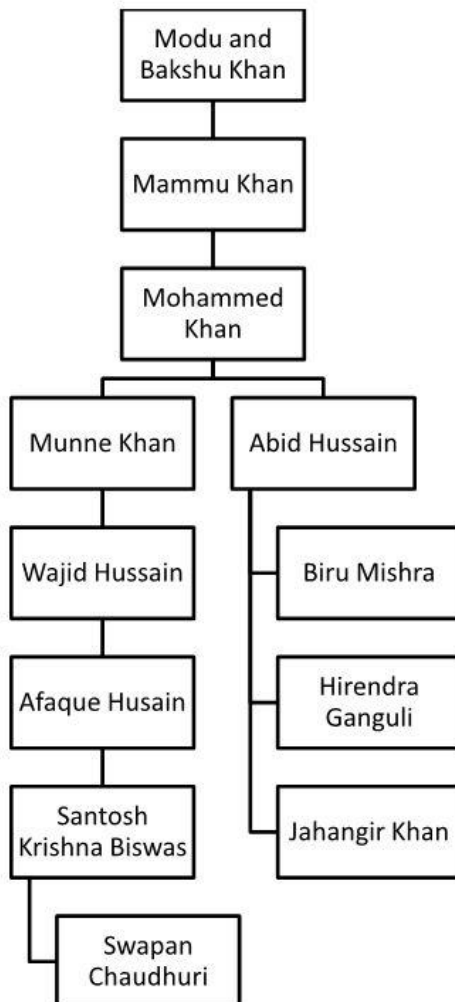
APPENDIX B
GHARANA LINEAGES

1. Dehli Gharana Flowchart
2. Lucknow Gharana Flowchart
3. Benaras Gharana Flowchart
4. Farrukhabad Gharana Flowchart
5. Ajrala Gharana Flowchart
6. Punjab Gharana Flowchart

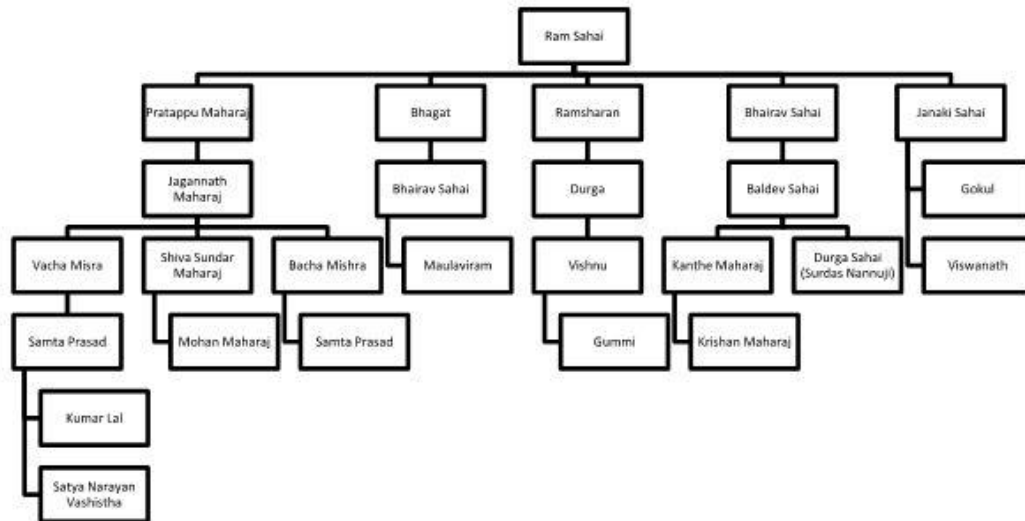
DELHI GHARANA



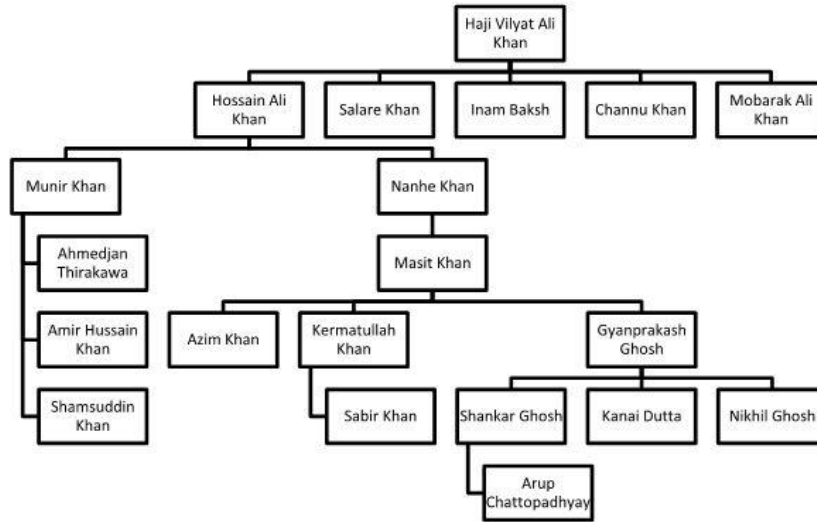
LUCKNOW GHARANA



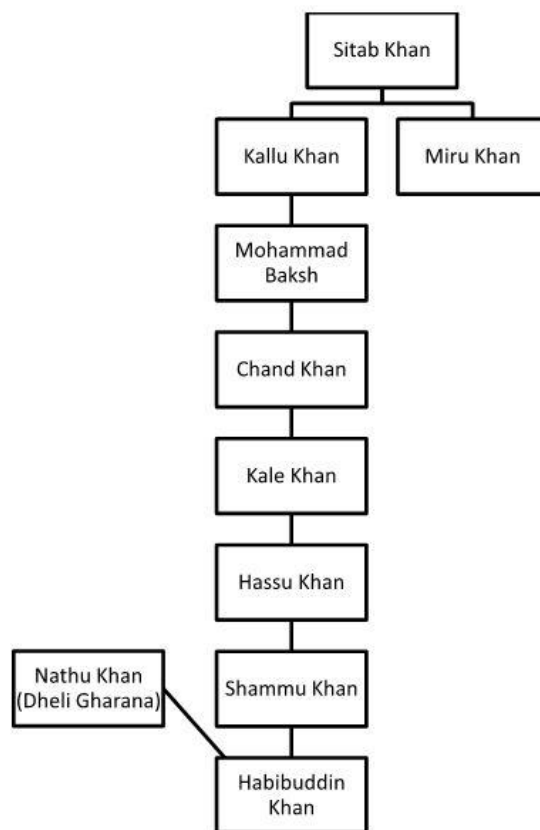
BENARAS GHARANA



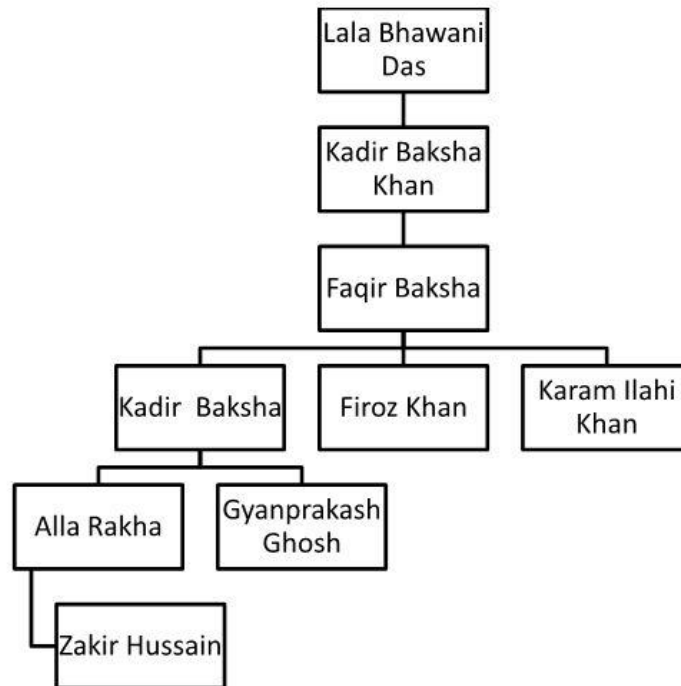
FARRUKHABAD GHARANA



AJRALA GHARANA



PUNJAB GHARANA



APPENDIX C

TABLA TRANSCRIPTIONS

1. “Dha-ti-Dha-ta” / *Laggi* in Tintal
2. “Dha--Ghe-ge” / *Kayeda* in Tintal
3. “Dha-ti-Dha-ga” / *Kayeda* in Tintal
4. “Dha-ge-Te-te-Kre” / *Kayeda* in Tintal
5. “Dha-tereketetakaterekete-Dha-ti” / *Kayeda* in Tintal
6. “Dha-Te-te-ghe-re-na-ga” / *Kayeda* in Tintal
7. “Dha-ga-Te-te” / *Tukra* in Tintal
8. “Kat--Te-te” / *Chakradar* in Tintal
9. “Dha-terekete-de-Te-te” / *Chakradar* in Jhaptal
10. “Dha-ghe-na-Te-te” / *Kayeda* in Rupaktal
11. “Dha-tereketetakatereketeDha” / *Rela* in Rupaktal

Drum Set

Dha-ti-Dha-ta**(Laggi)**
BeginnerComposer Unknown
Pandit Arup Chattopadhyay;
trans. David Whitman

♩ = 60

Tintal Theka

Dha Dhin Dhin Dha Dha Dhin Dhin Dha Dha tin tin ta Te te Dhin Dhin Dha Dha Dhin Dhin Dha Dha Dhin Dhin Dha Dha tin tin ta Te te Dhin Dhin Dha

Theme - 2x Speed

9 Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dha na Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dha na

Theme - 4x Speed

13 Dha ti Dhata Dha tu na na ta ti Dhata Dha tu Dhana Dha ti Dhata Dha tu na na ta ti Dhata Dha tu Dhana Dha ti Dhata Dha tu na na ta ti Dhata Dha tu Dhana Dha ti Dhata Dha tu na na ta ti Dhata Dha tu Dhana

Varation 1

17 Dha ti Dhata Dha ti Dha ta Dha ti Dha ta Dha ti Dha ta Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dhana ta ti ta ta ti ta ta ti ta ta ti ta ta Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dhana

Varation 2

21 Dha tu na na Dha tu na na Dha tu na na Dha tu na na Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dhana ta tu na na ta tu na na ta tu na na Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dhana

Varation 3

25 Dha ti Dhata Dha tu na na Dha tu na Dha ti Dha tu na Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dhana ta ti ta ta tu na na ta tu na ta ti ta tu na Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dhana

Varation 4

29 Dha tu na Dha ti Dha tu na Dha ti Dha tu na Dha tu na Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dhana ta tu na ta ti ta tu na ta ti ta tu na ta tu na Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dhana

Varation 5

33 Dha tu na Dha tu na Dha tu na Dha tu na Dha ta tu na Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dhana ta tu na ta tu na ta tu na ta tu na ta tu na Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dhana

Varation 6

37 Dha tu na Dha ta tu na Dha tu na Dha tu na Dha tu na Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dhana ta tu na ta tu na ta tu na ta tu na ta tu na Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dhana

Varation 7

41

Dha ti Dha ta tu na Dha ti Dha ta tu na Dha ta tu na Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dhana ta ti ta tu na ta ti ta tu na ta tu na Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dhana

Varation 8

45

Dha ti Dha tu na Dha ti Dha tu na Dha ti Dha ta tu na Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dhana ta ti ta tu na ta ti ta tu na ta ti ta tu na Dha ti Dha ta Dha tu na na ta ti Dha ta Dha tu Dhana

Tihai

49

Dha ti Dha ta Dha tu na na Dha tu na Dha tu na Dha tu na Dha tu na Dha Dha ti Dha ta Dha tu na na Dha tu na Dha tu na Dha tu na Dha tu na Dha Dha ti Dha ta Dha tu na na Dha tu na Dha tu na Dha tu na Dha tu na

53

Dha

Drum Set

Dha--ghe-ge**(Kayeda)**

Beginner-Intermediate

Traditional Kayeda
Pandit Arup Chattopadhyay;
trans. David Whitman

Tintal Theka



Dha Dhin Dhin Dha Dha Dhin Dhin Dha Dha tin tin ta Te te Dhin Dhin Dha Dha Dhin Dhin Dha Dha Dhin Dhin Dha Dha tin tin ta Te te Dhin Dhin Dha

Theme



Dha ghe ge Te te ghe ge Te te ghe na Thu na Ke na ta Ke Ke Te te ghe ge Te te ghe na dhi na ghe na

Theme - 2x Speed



Dha ghege Te te ghege Te te ghen Thuna Ke na ta KeKe Te te ghege Te te ghen dhina ghen Dha ghege Te te ghege Te te ghen Thuna Ke na ta KeKe Te te ghege Te te ghen dhi na ghen

Varation 1



Dha ghe ge Te te ghe na Dha ghe ge Te te ghe na Dha ghe ge Te te ghe ge Te te ghe na Thu na Ke na ta Ke Ke Te te Ke na ta Ke Ke Te te Ke na Dha ghe ge Te te ghe ge Te te ghe na dhi na ghe na

Varation 2



Dha ghe ge Te te Te te Te te ghe ge Te te ghe na Dha ghe ge Te te ghe ge Te te ghe na Thu na Ke na ta Ke Ke Te te Te te Te te Ke Ke Te te Ke na Dha ghe ge Te te ghe ge Te te ghe na dhi na ghe na

Varation 3



Dha ghe ge Te te ghe na Te te ghe ge Te te ghe na Dha ghe ge Te te ghe ge Te te ghe na Thu na Ke na ta Ke Ke Te te Ke na te Ke Ke Te te Ke na Dha ghe ge Te te ghe ge Te te ghe na dhi na ghe na

Varation 4



Dha ghe ge Te te ghe na na ghe ge Te te ghe na Dha ghe ge Te te ghe ge Te te ghe na Thu na Ke na ta Ke Ke Te te Ke na na na Ke Ke Te te Ke na Dha ghe ge Te te ghe ge Te te ghe na dhi na ghe na

Varation 5



Dha ghe ge Te te ghe na na na ghe na na ghe na Dha ghe ge Te te ghe ge Te te ghe na Thu na Ke na ta Ke Ke Te te Ke na na na Ke na na na Ke na Dha ghe ge Te te ghe ge Te te ghe na dhi na ghe na

Varation 6



Dha ghe ge Te te ghe na na na ghe ge na na ghe na Dha ghe ge Te te ghe ge Te te ghe na Thu na Ke na ta Ke Ke Te te Ke na na na Ke Ke Te te Ke na Dha ghe ge Te te ghe ge Te te ghe na dhi na ghe na

Varaton /

41

Dha ghe ge Te te ghe na na ghe na na ghe ge na na Dha ghe ge Te te ghe ge Te te ghe na Thu na Ke na ta Ke Ke Te te Ke na na Ke na na Ke Ke na na Dha ghe ge Te te ghe ge Te te ghe na dhi na ghe na
Tihai

45

Dha ghe ge Te te ghe na ghe na na ghe na na ghe na na na Dha ghe ge Te te ghe na ghe na ghe na na ghe na na na Dha ghe ge Te te ghe na ghe na na ghe na ghe na na

49

Dha

Drum Set

Dha-ti-Dha-ga**(Kayeda)**
IntermediateTraditional Kayeda
Pandit Arup Chattopadhyay;
trans. David Whitman

Tintal Theka



Dha Dhin Dhin Dha Dha Dhin Dhin Dha Dha tin tin ta Te te Dhin Dhin Dha Dha Dhin Dhin Dha Dha Dhin Dhin Dha Dha tin tin ta Te te Dhin Dhin Dha

Theme Twice



Dha ti Dha ga na Dha te re ke te Dha ti Dha ga Thu na Ke na ta ti ta Ka na ta te re ke te Dha ti Dha ga dhi na ghe na



Dha ti Dha ga na Dha te re ke te Dha ti Dha ga Thu na Ke na ta ti ta Ka na ta te re ke te Dha ti Dha ga dhi na ghe na

Varation 1



Dha ti Dha ga na Dha te re ke te Dha ti Dha ga na Dha te re ke te Dha ti Dha ga na Dha te re ke te Dha ti Dha ga Thu na Ke na



ta ti ta Ka na ta te re ke te ta ti ta Ka na ta te re ke te Dha ti Dha ga na Dha te re ke te Dha ti Dha ga dhi na ghe na

Varation 2



Dha ti Dha ga na Dha te re ke te na Dha te re ke te na Dha te re ke te Dha ti Dha ga na Dha te re ke te Dha ti Dha ga Thu na Ke na



ta ti ta Ka na ta te re ke te na ta te re ke te na ta te re ke te Dha ti Dha ga na Dha te re ke te Dha ti Dha ga dhi na ghe na

Varation 3



Dha ti Dha ga na Dha te re ke te Dha te re ke te na Dha te re ke te Dha ti Dha ga na Dha te re ke te Dha ti Dha ga Thu na Ke na



ta ti ta Ka na ta te re ke te ta te re ke te na ta te re ke te Dha ti Dha ga na Dha te re ke te Dha ti Dha ga dhi na ghe na

Varation 4

41 Dha ti Dha ga na Dha te re ke te Dha te re ke te Dha ti Dha ghe na Dha ti Dha ga na Dha te re ke te Dha ti Dha ga Thu na Ke na

45 ta ti ta Ka na ta te re ke te ta te re ke te ta ti ta Ke na Dha ti Dha ga na Dha te re ke te Dha ti Dha ga dhi na ghe na

Varation 5

49 Dha ti Dha ga na Dha te re ke te Dha te re ke te Dha ti Dha te re ke te Dha ti Dha ga na Dha te re ke te Dha ti Dha ga Thu na Ke na

53 ta ti ta Ka na ta te re ke te ta te re ke te ta ti ta te re ke te Dha ti Dha ga na Dha te re ke te Dha ti Dha ga dhi na ghe na

Varation 6

57 Dha te re ke te Dha ti Dha te re ke te Dha te re ke te Dha ti Dha te re ke te Dha ti Dha ga na Dha te re ke te Dha ti Dha ga Thu na Ke na

61 ta te re ke te ta ti ta te re ke te ta te re ke te ta ti ta te re ke te Dha ti Dha ga na Dha te re ke te Dha ti Dha ga dhi na ghe na

Varation 7

65 Dha te re ke te Dha te re ke te Dha te re ke te Dha te re ke te na Dha te re ke te Dha ti Dha ga na Dha te re ke te Dha ti Dha ga Thu na Ke na


69 ta te re ke te ta te re ke te ta te re ke te ta te re ke te na ta te re ke te Dha ti Dha ga na Dha te re ke te Dha ti Dha ga dhi na ghe na

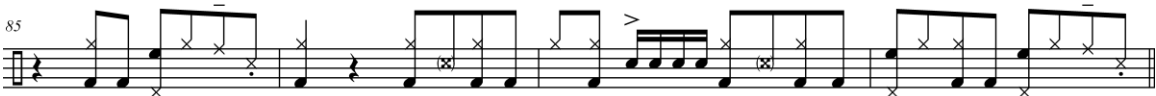
Varation 8


73 Dha ti Dha ghe na Dha ti Dha ghe na Dha ga dhi na ghe na Dha ti Dha ga na Dha te re ke te Dha ti Dha ga Thu na Ke na


77 ta ti ta Ke na ta ti ta Ke na ta Ka Thu na Ke na Dha ti Dha ga na Dha te re ke te Dha ti Dha ga dhi na ghe na

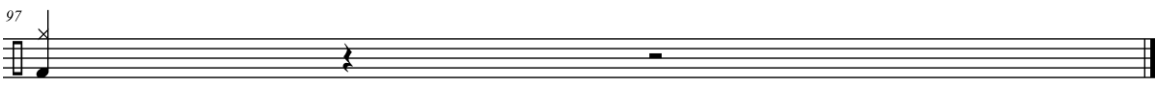
Tihai

81 
 Dha ti Dha ga na Dha te re ke te Dha ti Dha ga Thu na Dha ga Thu na Kat Ta Dha Dha ga Thu na Kat Ta Dha

85 
 Dha ga Thu na Kat Ta Dha Dha ti Dha ga na Dha te re ke te Dha ti Dha ga Thu na Dha ga Thu na Kat Ta

89 
 Dha Dha ga Thu na Kat Ta Dha Dha ga Thu na Kat Ta Dha Dha ti Dha ga na Dha te re ke te

93 
 Dha ti Dha ga Thu na Dha ga Thu na Kat Ta Dha Dha ga Thu na Kat Ta Dha Dha ga Thu na Kat Ta

97 
 Dha

Drum Set

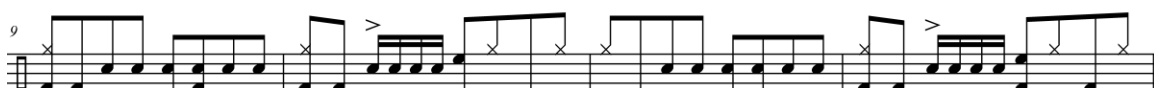
Dha-ge-Te-te-Kre**(Kayeda)**
IntermediateTraditional Kayeda
Pandit Arup Chattopadhyay;
trans. David Whitman

Tintal Theka



Dha Dhin Dhin Dha Dha Dhin Dhin Dha Dha tin tin ta Te te Dhin Dhin Dha Dha Dhin Dhin Dha Dha Dhin Dhin Dha Dha tin tin ta Te te Dhin Dhin Dha

Theme Twice



Dha ge Te te Kre de Te te Dha ge te re ke te Thu na Ke na ta Ke Te te Kre the Te te Dha ge te re ke Kre dhi na ghe na



Dha ge Te te Kre de Te te Dha ge te re ke te Thu na Ke na ta Ke Te te Kre the Te te Dha ge te re ke Kre dhi na ghe na

Varation 1



Dha ge Te te Kre de Te te Dha ge Te te Kre de Te te Dha ge Te te Kre de Te te Dha ge te re ke te Thu na Ke na



ta Ke Te te Kre the Te te ta Ke Te te Kre the Te te Dha ge Te te Kre de Te te Dha ge te re ke Kre dhi na ghe na

Varation 2



Dha ge Te te Kre de Te te Kre de Te te Kre de Te te Dha ge Te te Kre de Te te Dha ge te re ke te Thu na Ke na



ta Ke Te te Kre the Te te Kre the Te te Kre the Te te Dha ge Te te Kre de Te te Dha ge te re ke Kre dhi na ghe na

Varation 3



Dha ge Te te Kre de Te te dhe te Te te Kre de Te te Dha ge Te te Kre de Te te Dha ge te re ke te Thu na Ke na




ta Ke Te te Kre the Te te The te Te te Kre the Te te Dha ge Te te Kre de Te te Dha ge te re ke Kre dhi na ghe na


Varation 4

41 
 Dha ge Te te dhe te Kre de Te te dhe te Kre de Te te Dha ge Te te Kre de Te te Dha ge te re ke te Thu na Ke na

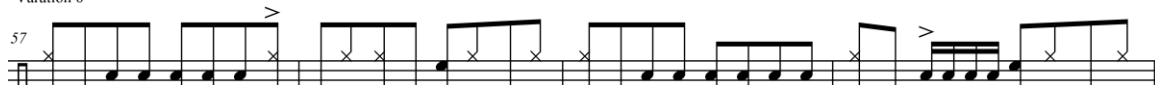
45 
 ta Ke Te te The te Kre the Te te The te Kre the Te te Dha ge Te te Kre de Te te Dha ge te re ke Kre dhi na ghe na

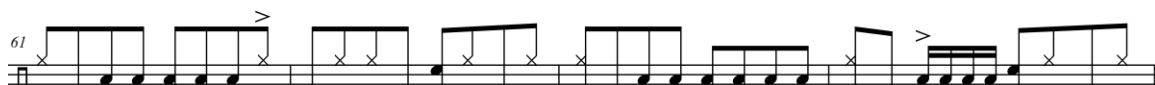
Varation 5

49 
 Dha ge Te te Kre de Te te Kre de Te Dha ge na ge na Dha ge Te te Kre de Te te Dha ge te re ke te Thu na Ke na

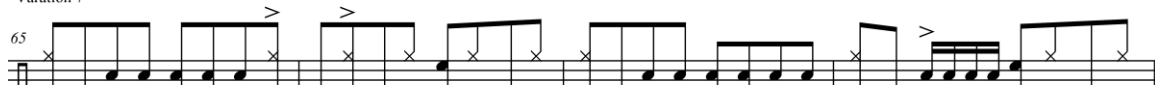
53 
 ta Ke Te te Kre the Te te Kre the Te ta Ke na Ke na Dha ge Te te Kre de Te te Dha ge te re ke Kre dhi na ghe na

Varation 6

57 
 Dha ge Te te Kre de Te Dha ge na Dha ga dhi na ghe na Dha ge Te te Kre de Te te Dha ge te re ke te Thu na Ke na


61 
 ta Ke Te te Kre the Te ta Ke na ta Ka Thu na Ke na Dha ge Te te Kre de Te te Dha ge te re ke Kre dhi na ghe na

Varation 7

65 
 Dha ge Te te Kre de Te Dha ga Dha ge na dhi na ghe na Dha ge Te te Kre de Te te Dha ge te re ke te Thu na Ke na


69 
 ta Ke Te te Kre the Te ta Ka ta Ke na Thu na Ke na Dha ge Te te Kre de Te te Dha ge te re ke Kre dhi na ghe na

Varation 8

73 
 Dha ge Te te Kre de Te Dha ga Dha ga Dha ga Dha ghe na Dha ge Te te Kre de Te te Dha ge te re ke te Thu na Ke na

77 
 ta Ke Te te Kre the Te ta Ka ta Ka ta Ka ta Ke na Dha ge Te te Kre de Te te Dha ge te re ke Kre dhi na ghe na


Tihai

81  Musical notation for measures 81-84, featuring a rhythmic pattern of eighth notes with accents and slurs. The notes are grouped in pairs and have a consistent rhythmic value.

Dha ge Te te Kre de Te Dha ghe na Dha ga Thu na Kat Ta Dha ga Dha ghe na Dha ga Thu na Kat Ta Dha ga Dha

85  Musical notation for measures 85-88, continuing the rhythmic pattern from the previous system.

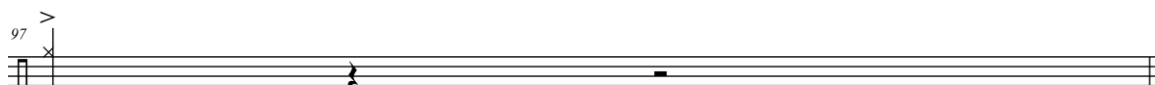
ghe na Dha ga Thu na Kat Ta Dha Dha ge Te te Kre de Te Dha ghe na Dha ga Thu na Kat Ta Dha ga Dha

89  Musical notation for measures 89-92, continuing the rhythmic pattern.

ghe na Dha ga Thu na Kat Ta Dha ga Dha ghe na Dha ga Thu na Kat Ta Dha Dha ge Te te Kre de Te Dha

93  Musical notation for measures 93-96, continuing the rhythmic pattern.

ghe na Dha ga Thu na Kat Ta Dha ga Dha ghe na Dha ga Thu na Kat Ta Dha ga Dha ghe na Dha ga Thu na Kat Ta

97  Musical notation for measure 97, consisting of a single note with an accent mark.

Dha

Drum Set

Dha-tereketetakaterekete-Dha-ti**(Kayeda)**
IntermediateTraditional Kayeda
Pandit Arup Chattopadhyay;
trans. David Whitman

Tintal Theka

Dha Dhin Dhin Dha Dha Dhin Dhin Dha Dha tin tin ta Te te Dhin Dhin Dha Dha Dhin Dhin Dha Dha Dhin Dhin Dha Dha tin tin ta Te te Dhin Dhin Dha

Theme Twice - 2x Speed

9 Dha te re ke te ta ka te re ke te Dha ti Dha ti Dha ta Thu na Ke na ta te re ke te ta ka te re ke te Dha ti Dha ti Dha ta dhi na ghe na

13 Dha te re ke te ta ka te re ke te Dha ti Dha ti Dha ta Thu na Ke na ta te re ke te ta ka te re ke te Dha ti Dha ti Dha ta dhi na ghe na

Varation 1

17 Dha te re ke te ta ka te re ke te Dha ti Dha te re ke te ta ka te re ke te Dha ti Dha te re ke te ta ka te re ke te Dha ti Dha ti Dha ta Thu na Ke na

21 ta te re ke te ta ka te re ke te ta ti ta te re ke te ta ka te re ke te ta ti Dha te re ke te ta ka te re ke te Dha ti Dha ti Dha ta dhi na ghe na

Varation 2

25 Dha te re ke te ta ka te re ke te Dha te re ke te ta ka te re ke te Dha ti Dha ti Dha te re ke te ta ka te re ke te Dha ti Dha ti Dha ta Thu na Ke na

29 ta te re ke te ta ka te re ke te ta te re ke te ta ka te re ke te ta ti ta ti Dha te re ke te ta ka te re ke te Dha ti Dha ti Dha ta dhi na ghe na

Varation 3

33 Dha te re ke te ta ka te re ke te Dha ti Dha ta Dha ti Dha ta Dha ti Dha te re ke te ta ka te re ke te Dha ti Dha ti Dha ta Thu na Ke na

37 ta te re ke te ta ka te re ke te ta ti ta ta ta ti ta ta ta ti Dha te re ke te ta ka te re ke te Dha ti Dha ti Dha ta dhi na ghe na

Varation 4

41 
 Dha te re ke te ta ka te re ke te Dha ta tu na Dha ti tu na Dha ta Dha te re ke te ta ka te re ke te Dha ti Dha ti Dha ta Thu na Ke na

45 
 ta te re ke te ta ka te re ke te ta ta tu na ta ti tu na ta ta Dha te re ke te ta ka te re ke te Dha ti Dha ti Dha ta dhi na ghe na

Varation 5

49 
 Dha te re ke te ta ka te re ke te Dha ti Dha tu na Dha ti Dha tu na Dha te re ke te ta ka te re ke te Dha ti Dha ti Dha ta Thu na Ke na

53 
 ta te re ke te ta ka te re ke te ta ti ta tu na ta ti ta tu na Dha te re ke te ta ka te re ke te Dha ti Dha ti Dha ta dhi na ghe na

Varation 6

57 
 Dha te re ke te ta ka te re ke te Dha te re ke te ta ka te re ke te Dha ta tu na Dha te re ke te ta ka te re ke te Dha ti Dha ti Dha ta Thu na Ke na

61 
 ta te re ke te ta ka te re ke te ta te re ke te ta ka te re ke te ta ta tu na Dha te re ke te ta ka te re ke te Dha ti Dha ti Dha ta dhi na ghe na

Varation 7

65 
 Dha te re ke te ta ka te re ke te Dha te re ke te ta ka te re ke te Dha te re ke te ta ka te re ke te Dha te re ke te ta ka te re ke te Dha ti Dha ta Thu na Ke na

69 
 ta te re ke te ta ka te re ke te ta te re ke te ta ka te re ke te ta te re ke te ta ka te re ke te ta te re ke te ta ka te re ke te Dha ti Dha ta dhi na ghe na

Varation 8

73 
 Dha te re ke te ta ka te re ke te ta ka te re ke te ta ka te re ke te Dha te re ke te ta ka te re ke te ta ka te re ke te Dha ti Dha ta Thu na Ke na

77 
 ta te re ke te ta ka te re ke te ta ka te re ke te ta ka te re ke te ta te re ke te ta ka te re ke te ta ka te re ke te ta ka te re ke te Dha ti Dha ta dhi na ghe na

Tihai

81 

Dha te re ke te ta ka te re ke te Dha ti Dha ti Dha ta Thu na Ke na Dha te re ke te ta ka te re ke te Dha te re ke te ta ka te re ke te Dha te re ke te ta ka

85 

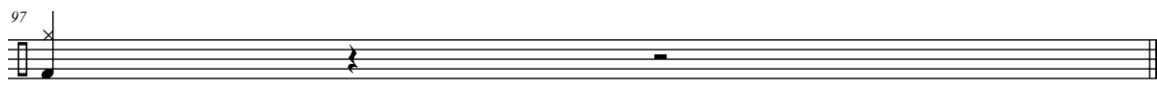
te re ke te Dha te re ke te ta ka te re ke te Dha Dha te re ke te ta ka te re ke te Dha ti Dha ti Dha ta Thu na Ke na Dha te re ke te ta ka

89 

te re ke te Dha te re ke te ta ka te re ke te Dha te re ke te ta ka te re ke te Dha te re ke te ta ka te re ke te Dha Dha te re ke te ta ka te re ke te Dha ti

93 

Dha ti Dha ta Thu na Ke na Dha te re ke te ta ka te re ke te Dha te re ke te ta ka te re ke te Dha te re ke te ta ka te re ke te Dha te re ke te ta ka te re ke te

97 

Dha

Drum Set

Dha-Te-te-ghe-re-na-ga

(Kayeda)

Intermediate-Advanced

 Traditional Kayeda
 Pandit Arup Chattopadhyay;
 trans. David Whitman

Tintal Theka



Dha Dhin Dhin Dha Dha Dhin Dhin Dha Dha tin tin ta Te te Dhin Dhin Dha Dha Dhin Dhin Dha Dha Dhin Dhin Dha Dha tin tin ta Te te Dhin Dhin Dha

Theme Twice



9 Dha Te te gheRe na ga ta ga Te te gheRe na ga Dha Te te gheRe na ga Dha Te te gheRe na ga ta Te te KeRe na Ka ta Ka Te te KeRe na Ka Dha Te te gheRe na ga Dha Te te gheRe na ga



13 Dha Te te gheRe na ga ta ga Te te gheRe na ga Dha Te te gheRe na ga Dha Te te gheRe na ga ta Te te KeRe na Ka ta Ka Te te KeRe na Ka Dha Te te gheRe na ga Dha Te te gheRe na ga

Varation 1



17 Dha Te te gheRe na ga ta ga Te te gheRe na ga Dha Te te gheRe na ga ta ga Te te gheRe na ga Dha Te te gheRe na ga Dha Te te gheRe na ga Dha Te te gheRe na ga



21 ta Te te KeRe na Ka ta Ka Te te KeRe na Ka ta Te te KeRe na Ka ta Ka Te te KeRe na Ka Dha Te te gheRe na ga ta ga Te te gheRe na ga Dha Te te gheRe na ga Dha Te te gheRe na ga

Varation 2



25 Dha Te te gheRe na ga ta ga Te te gheRe na ga ta ga Te te gheRe na ga Dha Te te gheRe na ga ta ga Te te gheRe na ga Dha Te te gheRe na ga Dha Te te gheRe na ga



29 ta Te te KeRe na Ka ta Ka Te te KeRe na Ka ta Ka Te te KeRe na Ka ta Ka Te te KeRe na Ka Dha Te te gheRe na ga ta ga Te te gheRe na ga Dha Te te gheRe na ga Dha Te te gheRe na ga

Varation 3



33 Dha Te te gheRe na ga ta ga Te te gheRe na ga Dha ta ga Te te gheRe na ga Dha Te te gheRe na ga ta ga Te te gheRe na ga Dha Te te gheRe na ga Dha Te te gheRe na ga



37 ta Te te KeRe na Ka ta Ka Te te KeRe na Ka ta ta Ka Te te KeRe na Ka Dha Te te gheRe na ga ta ga Te te gheRe na ga Dha Te te gheRe na ga Dha Te te gheRe na ga

Varation 4

41 
Dha Te te ghe Re na ga ta ga Te te ghe Re na ga Dha ta ga Te te ghe Re na ga Dha Dha Te te ghe Re na ga ta ga Te te ghe Re na ga Dha Te te ghe Re na ga Dha Te te ghe Re na ga

45 
ta Te te Ke Re na Ka ta Ka Te te Ke Re na Ka ta ta Ka Te te Ke Re na Ka ta Dha Te te ghe Re na ga ta ga Te te ghe Re na ga Dha Te te ghe Re na ga Dha Te te ghe Re na ga

Varation 5

49 
Dha Te te ghe Re na ga ta ga Te te ghe Re na ga te re ke te ta ka te re ke te ta ka te re ke te Dha Te te ghe Re na ga ta ga Te te ghe Re na ga Dha Te te ghe Re na ga Dha Te te ghe Re na ga

53 
ta Te te Ke Re na Ka ta Ka Te te Ke Re na Ka te re ke te ta ka te re ke te ta ka te re ke te Dha Te te ghe Re na ga ta ga Te te ghe Re na ga Dha Te te ghe Re na ga Dha Te te ghe Re na ga

Varation 6

57 
Dha Te te ghe Re na ga te re ke te ta ka te re ke te ta ka te re ke te ta ka te re ke te ta ka Dha Te te ghe Re na ga ta ga Te te ghe Re na ga Dha Te te ghe Re na ga Dha Te te ghe Re na ga

61 
ta Te te Ke Re na Ka te re ke te ta ka te re ke te ta ka te re ke te ta ka Dha Te te ghe Re na ga ta ga Te te ghe Re na ga Dha Te te ghe Re na ga Dha Te te ghe Re na ga

Varation 7

65 
te re ke te ta ka te re ke te ta ka Dha Te te ghe Re na ga te re ke te ta ka te re ke te ta ka Dha Te te ghe Re na ga ta ga Te te ghe Re na ga Dha Te te ghe Re na ga Dha Te te ghe Re na ga

69 
te re ke te ta ka te re ke te ta ka ta Te te Ke Re na Ka te re ke te ta ka te re ke te ta ka Dha Te te ghe Re na ga ta ga Te te ghe Re na ga Dha Te te ghe Re na ga Dha Te te ghe Re na ga

Varation 8

73 
Dha Te te ghe Re na ga ta ga Te te ghe Re na ga te re ke te ta ka te re ke te ta ka Dha Te te ghe Re na ga te re ke te ta ka te re ke te ta ka Dha Te te ghe Re na ga Dha Te te ghe Re na ga

77 
ta Te te Ke Re na Ka ta Ka Te te Ke Re na Ka te re ke te ta ka te re ke te ta ka Dha Te te ghe Re na ga te re ke te ta ka te re ke te ta ka Dha Te te ghe Re na ga Dha Te te ghe Re na ga

Varation 9

81 
 Dha Te te ghe Re na ga ta ga Te te ghe Re na ga te re ke te ta ka te re ke te ta ka ta ka te re ke te ta ka ta ka te re ke te ta ka te re ke te Dha Te te ghe Re na ga Dha Te te ghe Re na ga

85 
 ta Te te Ke Re na Ka ta Ka Te te Ke Re na Ka te re ke te ta ka te re ke te ta ka ta ka te re ke te ta ka ta ka te re ke te ta ka te re ke te Dha Te te ghe Re na ga Dha Te te ghe Re na ga

Varation 10

89 
 Dha Te te ghe Re na ga te re ke te ta ka te re ke te ta ka te re ke te ta ka te re ke te ta ka te re ke te ta ka te re ke te Dha Te te ghe Re na ga Dha Te te ghe Re na ga

93 
 ta Te te Ke Re na Ka te re ke te ta ka te re ke te ta ka te re ke te ta ka te re ke te ta ka te re ke te ta ka te re ke te Dha Te te ghe Re na ga Dha Te te ghe Re na ga

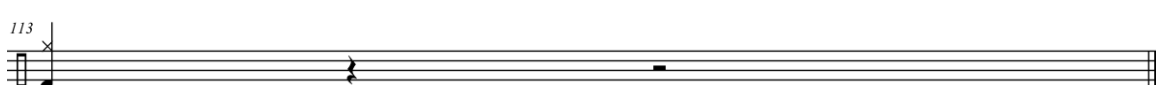
Tihai

97 
 Dha Te te ghe Re na ga ta ga Te te ghe Re na ga te re ke te ta ka te re ke te ta ka te re ke te Dha ke te ta ka te re ke te ta ka te re ke te ta ka te re ke te Dha ke te ta ka

101 
 te re ke te ta ka te re ke te ta ka te re ke te Dha Dha Te te ghe Re na ga ta ga Te te ghe Re na ga te re ke te ta ka te re ke te ta ka te re ke te Dha ke te ta ka

105 
 te re ke te ta ka te re ke te ta ka te re ke te Dha ke te ta ka te re ke te ta ka te re ke te ta ka te re ke te Dha Te te ghe Re na ga ta ga Te te ghe Re na ga

109 
 te re ke te ta ka te re ke te ta ka te re ke te Dha ke te ta ka te re ke te ta ka te re ke te ta ka te re ke te Dha ke te ta ka te re ke te ta ka te re ke te ta ka te re ke te

113 
 Dha

Drum Set

Dha-ga-Te-te**(Tukra)**
IntermediatePandit Arup Chattopadhyay;
trans. David Whitman

The musical notation is written on a single staff with a 4/4 time signature. It consists of three systems of music. The first system contains four measures of music with lyrics: "Dha ga Te te ta ga Te te Kre de Te te Kre de Te te Dha ga Te te Kre de Te te Ka Te te Ka Te te Kat Ta". The second system starts at measure 5 and contains four measures with lyrics: "Dha Te te Kre de Te te Ka Te te Ka Te te Kat Ta Dha Te te Kre de Te te Ka Te te Ka Te te Kat Ta". The third system starts at measure 9 and contains one measure with the lyric "Dha". Above the notes, there are 'x' marks indicating specific drum strokes. Some notes have horizontal lines above them, possibly indicating a specific drum or a sustained sound.

5

9

Dha

Drum Set

Kat--Te-te

(Chakradar)
Intermediate

Pandit Arup Chattopadhyay;
trans. David Whitman

Musical notation for measures 1-4. The staff shows a sequence of notes with 'x' marks above them, indicating drum hits. The lyrics are: Kat Te te ghe ge Te te Ka Ta Ka Ta ghe ge Te te Ka Ta ghe ge Te te Ka Ta ghe ge te re ke te Dha ghe ge

Musical notation for measures 5-8. The staff shows a sequence of notes with 'x' marks above them. The lyrics are: te re ke te Dha ghe ge te re ke te Dha Kat Te te ghe ge Te te Ka Ta Ka Ta ghe ge Te te Ka Ta ghe ge

Musical notation for measures 9-12. The staff shows a sequence of notes with 'x' marks above them. The lyrics are: Te te Ka Ta ghe ge te re ke te Dha ghe ge te re ke te Dha ghe ge te re ke te Dha Kat Te te ghe ge Te te

Musical notation for measures 13-16. The staff shows a sequence of notes with 'x' marks above them. The lyrics are: Ka Ta Ka Ta ghe ge Te te Ka Ta ghe ge Te te Ka Ta ghe ge te re ke te Dha ghe ge te re ke te Dha ghe ge te re ke te

Musical notation for measure 17. The staff shows a single note with an 'x' mark above it, followed by a rest. The lyrics are: Dha

Drum Set

Dha-terekete-de-Te-te**(Bedam Chakradar)**

Advanced

Traditional; as taught by
Pandit Arup Chattopadhyay;
trans. David Whitman

Jhaptal Theka

Dhin na dhi dhi na tin na dhi dhi na

Dhin na dhi dhi na tin na dhi dhi na

Dha te re ke te de Te te Ka te re ke te de Te te Ka ta ga dhi ghe ne Dha ne Dha ne Dha Dha te re ke te

de Te te Ka te re ke te de Te te Ka ta ga dhi ghe ne Dha ne Dha ne Dha Dha te re ke te de Te te

Ka te re ke te de Te te Ka ta ga dhi ghe ne Dha ne Dha ne Dha Dha te re ke te de Te te Ka te re ke te


de Te te Ka ta ga dhi ghe ne Dha ne Dha ne Dha Dha te re ke te de Te te Ka te re ke te de Te te

Ka ta ga dhi ghe ne Dha ne Dha ne Dha Dha te re ke te de Te te Ka te re ke te de Te te Ka ta ga


dhi ghe ne Dha ne Dha ne Dha Dha te re ke te de Te te Ka te re ke te de Te te Ka ta ga dhi ghe ne

Dha ne Dha ne Dha Dha te re ke te de Te te Ka te re ke te de Te te Ka ta ga dhi ghe ne

19 
Dha ne Dha Dha te re ke te de Te te Ka te re ke te de Te te Ka ta ga dhi ghe ne Dha ne Dha ne

2x Speed
21 
Dha te re ke te de Te te Ka te re ke te de Te te Ka ta ga dhi ghe ne Dha ne Dha ne Dha Dha te re ke te

22 
de Te te Ka te re ke te de Te te Ka ta ga dhi ghe ne Dha ne Dha ne Dha Dha te re ke te de Te te

23 
Ka te re ke te de Te te Ka ta ga dhi ghe ne Dha ne Dha ne Dha Dha te re ke te de Te te Ka te re ke te

24 
de Te te Ka ta ga dhi ghe ne Dha ne Dha ne Dha Dha te re ke te de Te te Ka te re ke te de Te te

25 
Ka ta ga dhi ghe ne Dha ne Dha ne Dha Dha te re ke te de Te te Ka te re ke te de Te te Ka ta ga

26 
dhi ghe ne Dha ne Dha ne Dha Dha te re ke te de Te te Ka te re ke te de Te te Ka ta ga dhi ghe ne

27 
Dha ne Dha ne Dha Dha te re ke te de Te te Ka te re ke te de Te te Ka ta ga dhi ghe ne Dha ne

28 
Dha ne Dha Dha te re ke te de Te te Ka te re ke te de Te te Ka ta ga dhi ghe ne Dha ne Dha ne

29 
Dha

Drum Set

Dha-ghe-na-Te-te

(Kayeda)
Advanced

Pandit Arup Chattopadhyay;
trans. David Whitman

Rupaktal Theka

ti ti na Dhi na Dhi na

2

ti ti na Dhi na Dhi na

Theme

3

Dha ghe na Te te ghe na Dha ti Dha ga Thu na ghe na Te te ghe na Dha ti Dha ga Thu na Ke na

4

ta ke na Te te ke na ta ti ta Ka Thu na ghe na Te te ghe na Dha ti Dha ga dhi na ghe na

Theme - 2x Speed

5

Dha ghe na Te te ghe na Dha ti Dha ga Thu na ghe na Te te ghe na Dha ti Dha ga Thu na Ke na ta ke na Te te ke na ta ti ta Ka Thu na ghe na Te te ghe na Dha ti Dha ga dhi na ghe na

Varation 1

6

Dha ghe na Te te ghe na Dha ghe na Te te ghe na Dha ghe na Te te ghe na dhi na ghe na Dha ghe na Te te ghe na Dha ti Dha ga Thu na ghe na Te te ghe na Dha ti Dha ga Thu na Ke na

7

ta ke na Te te ke na ta ke na Te te ke na ta ke na Te te ke na Thu na Ke na Dha ghe na Te te ghe na Dha ti Dha ga Thu na ghe na Te te ghe na Dha ti Dha ga dhi na ghe na

Varation 2

8

Dha ghe na Te te ghe na Te te Te te Te te ghe na Dha ghe na Te te ghe na dhi na ghe na Dha ghe na Te te ghe na Dha ti Dha ga Thu na ghe na Te te ghe na Dha ti Dha ga Thu na Ke na

9

ta ke na Te te ke na Te te Te te Te te ke na ta ke na Te te ke na Thu na Ke na Dha ghe na Te te ghe na Dha ti Dha ga Thu na ghe na Te te ghe na Dha ti Dha ga dhi na ghe na

Varation 5

10
Dha ghe na Te te ghe na Te te Te te Te te ghe na Te te Te te Te te ghe na dhi na ghe na Dha ghe na Te te ghe na Dha ti Dha ga Thu na ghe na Te te ghe na Dha ti Dha ga Thu na Ke na

11
ta ke na Te te ke na Te te Te te Te te ke na Te te Te te Te te ke na Thu na Ke na Dha ghe na Te te ghe na Dha ti Dha ga Thu na ghe na Te te ghe na Dha ti Dha ga dhi na ghe na

Varation 4

12
Dha ghe na Te te ghe na ghe na na na Te te ghe na ghe na Te te ghe na Dha ga dhi na ghe na Dha ghe na Te te ghe na Dha ti Dha ga Thu na ghe na Te te ghe na Dha ti Dha ga Thu na Ke na

13
ta ke na Te te ke na ke na na na Te te ke na ke na Te te ke na ta Ka Thu na Ke na Dha ghe na Te te ghe na Dha ti Dha ga Thu na ghe na Te te ghe na Dha ti Dha ga dhi na ghe na

Varation 5

14
Dha ghe na na na ghe na na na Te te ghe na Dha ghe na na na ghe na na na Te te ghe na Dha ghe na Te te ghe na Dha ti Dha ga Thu na ghe na Te te ghe na Dha ti Dha ga Thu na Ke na

15
ta ke na na na ke na na na Te te ke na ta ke na na na ke na na na Te te ke na Dha ghe na Te te ghe na Dha ti Dha ga Thu na ghe na Te te ghe na Dha ti Dha ga dhi na ghe na

Tihai

16
Dha ghe na Te te ghe na Dha ti Dha ga Thu na ghe na na na na na ghe na na na na na na na ghe na na na na na na Dha ghe na Te te ghe na Dha ti Dha ga Thu na ghe na na na

17
na na na ghe na na na na na na ghe na na na na na na Dha ghe na Te te ghe na Dha ti Dha ga Thu na ghe na na na na na na ghe na na na na na na ghe na na na na na na

18
Dha

Drum Set

Dha-tereketetakatereteDha

(Rela)
Advanced

Pandit Arup Chattopadhyay;
trans. David Whitman

Rupaktaal Theka

ti ti na Dhi na Dhi na

2

ti ti na Dhi na Dhi na

Theme

3

Dha te re ke te ta ka te re ke te Dha te re ke te ta ka te re ke te Dha ti Dha te re ke te ta ka te re ke te Dha ti Dha te re ke te ta ka te re ke te

4

ta te re ke te ta ka te re ke te ta te re ke te ta ka te re ke te Dha ti Dha te re ke te ta ka te re ke te Dha ti Dha te re ke te ta ka te re ke te

Varation 1

5

Dha te re ke te ta ka te re ke te Dha te re ke te ta ka te re ke te Dha te re ke te ta ka te re ke te Dha te re ke te ta ka Dha te re ke te ta ka te re ke te

6

Dha te re ke te ta ka te re ke te Dha te re ke te ta ka te re ke te Dha ti Dha te re ke te ta ka te re ke te Dha ti Dha te re ke te ta ka te re ke te

7

ta te re ke te ta ka te re ke te ta te re ke te ta ka te re ke te ta te re ke te ta ka te re ke te ta te re ke te ta ka ta te re ke te ta ka te re ke te

8

Dha te re ke te ta ka te re ke te Dha te re ke te ta ka te re ke te Dha ti Dha te re ke te ta ka te re ke te Dha ti Dha te re ke te ta ka te re ke te

Varation 2

9

Dha te re ke te ta ka te re ke te Dha te re ke te ta ka te re ke te Dha te re ke te ta ka Dha te re ke te ta ka Dha te re ke te ta ka Dha te re ke te ta ka

10 
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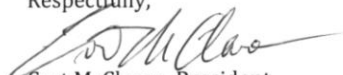
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Movement 1, Measures 20-25
Measures 34-38
Measures 60-63

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