

From Machine to Instrument

A Composer's Perspective of Turntables Composition

by

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ABSTRACT

Since 1999, a small group of groundbreaking orchestral works for turntables and orchestra has surfaced on the concert stage. These compositions explore the possibilities of the turntables and invite an intriguing fusion of musical cultures of the classically trained musician and the hip-hop DJ. Since DJ turntablists typically follow an improvised tradition and do not read music, the composer must find an effective means of notating the turntables and collaborate with the turntablist in the execution of the work. As interest in turntables composition grows, there is a need for discussion and a compositional guide with advice based on present day works. In effort to contribute a guide for turntablism composition, my research includes a historical and composer perspective that discusses turntables techniques, operation of the equipment, digital technology, hip-hop background, history of the instrument, and works of the past and present with musical excerpts pertaining to the notation and use of the turntables. Specific sources include: *RPM* by Nicole Lizée, *Concerto for Trumpet, Turntables, and Orchestra* by Paul Leary, *Concerto for Turntables and Orchestra* by Gabriel Prokofiev, and Stephen Webber's turntable method book *The Art of the DJ Turntable Technique*. Interviews with composers Prokofiev, Lizée, and Leary have provided important primary source information regarding their experience with turntablism composition and performance. Unrelated to the above research and attached as an appendix, my composition *Andrew's Ritual for Bedtime* for chamber orchestra is a single movement for choreographed dance that depicts a mother preparing her energetic young son for bed. The

title references the nightly rituals parents undertake in order to prepare their children for bedtime.

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TABLE OF CONTENTS

	Page
LIST OF FIGURES.....	vii
CHAPTER	
1 INTRODUCTION	1
The ism of Turntablism	3
Overview & Purpose of Research	4
About the Research Material	6
2 HISTORICAL PERSPECTIVE	8
The Gramophone’s Orchestral Debut	8
Trick Recordings	10
An Imaginary Landscape	15
The Birth of Musique Concrète	18
Broken Music and Beyond.....	20
Turntablism Developments in Hip-hop.....	22
Beginnings of Conventional Notation and Turntables Concerti.....	28
The First Concerto for Turntables.....	30
Paul Leary’s Concerto for Trumpet, Turntables, and Orchestra.....	36
Prokofiev’s Concerto for Turntables and Orchestra.....	38
Stephen Webber’s Contributions at Berklee Boston	46
3 ABOUT THE INSTRUMENT	48

CHAPTER	Page
Turntables Components and Setup	48
Turntables.....	49
Mixer.....	55
The Evolution of the Instrument and Records.....	59
Serato and Digital Vinyl Systems.....	64
Ion “Discover DJ” Computer DJ System.....	67
4 TURNTABLISM TECHNIQUES	69
Introduction.....	69
Cueing & Marking Records.....	70
Mixing.....	71
Beat Match Mixing.....	72
Extending the Break.....	74
Beat Juggling.....	74
Scratches.....	75
Notation	76
Baby Scratch.....	80
Forward Scratch.....	82
Reverse Scratch	83
Stab	84
Chirp	85

CHAPTER	Page
Tear	86
Scribbles.....	87
Transformer	88
Flare	90
Glide.....	92
Hydroplane.....	92
Crab & Twiddle.....	93
Lazers.....	94
Uzi and Uzi Fade (Helicopter).....	95
Echoes.....	97
Creating a Melody.....	97
Summary of Techniques... ..	98
5 CHALLENGES FACED BY COMPOSERS	100
Complications of Incorporating Turntables in an Orchestral Setting..	100
“Culture Shock”	100
How to Train your DJ.....	101
Choosing and Finding a DJ	103
Placing the Sound of the Turntables	105
Copyright	108
6 CONCLUSION	111

CHAPTER	Page
Guidance to Composers New to Turntables Composition.....	111
Why Should a Composer Write for Turntables?	113
 APPENDIX	
A BIBLIOGRAPHY.....	116
B GABRIEL PROKOFIEV INTERVIEW 2013.....	121
C NICOLE LIZÉE INTERVIEW 2013	135
D PAUL LEARY INTERVIEW 2013.....	147
E FOREWARD & NOTES FROM GABRIEL PROKOFIEV'S CONCERTO SCORE..	155
F PERMISSION	160
G ANDREW'S RITUAL FOR BEDTIME	163

LIST OF FIGURES

FIGURE	Page
1. the low strings stylus effect in the final measure of <i>RPM</i>	33
2. imitation between brass and turntables mm. 267-281 in <i>RPM</i> (concert pitch)	34
3. turntables notation found in Leary’s <i>Concerto</i> , movement I, mm. 48-52 ...	38
4. melodic interaction between strings and DJ, Prokofiev <i>Concerto</i> , movement II “Irreguluv” mm. 1-10.....	43
5.1. standard turntables setup	48
5.2. “battle style” turntables setup.....	49
6. turntables with labeled components.....	51
7. mixer with labeled components.....	56
8. Serato equipment added to a typical DJ setup	65
9. Ion “Discover DJ” Computer DJ System.....	68
10. two different methods of marking records.....	71
11. TTM notation of basic scratches.....	77
12. a diagram of Lizée’s turntables staff notation.....	79
13. a diagram of Prokofiev’s turntables staff notation	79
14. a diagram of Stephen Webber’s turntables staff notation	80
15.1. baby scratch notation (general).....	81
15.2. baby scratch notation (specific).....	81

FIGURE	Page
15.3. Lizée’s baby scratch notation (specific).....	81
16.1. forward scratch notation (general).....	82
16.2. Lizée’s forward scratch notation (specific).....	82
17.1. reverse scratch based on Lizée’s notation method	83
17.2. Prokofiev’s reverse scratch notation.....	84
18.1. Prokofiev’s stab notation	84
18.2. stabs based on Lizée’s notation method.....	85
19.1. chirps notated with staccatos	86
19.2. chirps based on Lizée’s notation method	86
20.1. Lizée’s tear scratch notation.....	87
20.2. an alternate tear scratch notation.....	87
21.1. Lizée’s scribble notation	88
21.2. scribble notation shown as a trill.....	88
21.3. Prokofiev’s scribble notation.....	88
22.1. Lizée’s original transformer notation from her thesis	89
22.2. Lizée’s transformer notation in the 2005 publication.....	90
22.3. another example of Lizée’s transformer notation.....	90
22.4. Webber’s transformer notation.....	90
23.1. Lizée’s flare notation	91
23.2. Webber’s flare notation.....	91

FIGURE	Page
23.3. an alternate flare notation with terminology labels.....	92
24. Lizée’s glide notation	92
25. Lizée’s hydroplane notation.....	93
26.1. the crab shown with piano fingering for the crossfader.....	94
26.2. the twiddle shown with piano fingering for the crossfader.....	94
26.3. the crab notated like a snare drum four-note ruff	94
27.1. notation for one or two handed lazer.....	95
27.2. notation for a muted lazer.....	95
28.1. uzi fade based on Lizée’s notation method.....	96
28.2. uzi represented as a trill	96
28.3. Prokofiev’s helicopter notation	96
29. two different echoes using terraced dynamics.....	97
30. Prokofiev’s melody notation, mm. 14-21 movement IV “Meditnow”.....	98

CHAPTER 1

INTRODUCTION

When many academically trained musicians hear Gabriel Prokofiev's *Concerto for Turntables and Orchestra* for the first time, there is an immediate fascination with its musical language and unique accomplishments—not to mention an interest in Prokofiev's family heritage. What is notable about this concerto is that it combines the modern club music culture with academic music culture by featuring a new electronic instrument championed by the former culture in the classical format of the latter. The musical language of the club music culture itself is not new, but its popularity and influence on academic music encourages fresh new sonorities in a similar manner to how jazz had captivated composers nearly a century ago. This cross-pollination of musical cultures has the potential of refreshing traditional concert programs with new works that could bring new audiences to the symphony. Turntables composition provides exciting new challenges and opportunities for composers looking for fresh new ideas.

Despite the prejudicial skepticism surrounding the merging the musical cultures of hip-hop and academic music within turntables concerti, Prokofiev and other composers have created compositions that support a forward-thinking viewpoint that the turntables may be used as an expressive musical instrument. Many critics have since changed their mind upon hearing these works and witnessing the turntables' expressive performance in practice. Prokofiev recalls a difference of opinion before and after the performance of his concerto:

“I remember hearing from the daughter of a violinist for the RSNO about how her mother and other members of the orchestra had been very suspicious of this ‘Concerto for Turntables’ and thought it was going to be a big gimmick, but after the concert, most of them had really enjoyed the piece and felt quite differently about it. After witnessing how expressive the turntables can be, they actually accepted them as a valid instrument.”¹

With its precise hand-on-vinyl rhythmic virtuosity and freedom to manipulate any recorded sound, the turntables are one of the most expressive electronic instrument of our time. The instrument has its own set of characteristic sounds, complexities, and techniques. Its electronic nature encourages a composer and performer to explore sonorities outside the realm of acoustic instruments.

Consisting of primarily concerti, a growing repertoire for turntables encourage the validity of the instrument through traditional western notation and classical forms. Each of these works exhibit their own unique features and use of turntablism. While some are more overtly stylistically linked to hip-hop than others, turntablism can always be traced to its hip-hop roots regardless of the style of the work. The techniques and scratches parallel nearly all of the musical ideas of the academic culture, but with terms developed by the DJ culture. This terminology must be understood by a composer and perhaps even by a conductor to help facilitate the performance of new and existing turntables works. As interest in the instrument grows, there will be a need for a guide to composing for the instrument, as well as method books designed for turntablists of varying backgrounds. There may even come a time where turntablists have the option of studying their instrument at an academic institution.

¹ Gabriel Prokofiev interview, Appendix B, Q19.

The ism of Turntablism

A bassoonist with a good sense of humor might refer to an instrumental technique as, for example, a ‘bassoonism.’ When asked about their area of study, no serious student would say that they study bassoonism at the conservatory. But on the other hand, the term *turntablism* has become widely accepted in referring to the art of using the turntables as a musical instrument. This term is unique to the turntables; there is no equivalent for other instruments because there has been no need to clarify their purpose in music performance. The turntables did not originate as a musical instrument, but as a technological device with the purpose of reproducing recorded sound. It was not until later experimentation and developments that it became used as a musical instrument. The ism suffix found in the word turntablism could be interpreted to have several different nuances depending on one’s imagination or sense of humor, but it generally refers to turntables being used in the processes of real-time record manipulation through mixing and scratching techniques performed by a disc jockey (DJ).

Akin to how a bassoon performer would be called a *bassoonist*, DJ Babu adopted the word *turntablist* with the same rationale to differentiate the DJ as a performer of mixing and scratching techniques from a DJ who simply plays records. In 1995, the talented amateur DJ began labeling his homemade CDs as “Babu the Turntablist” and later named one of his tracks “Turntablism.” He explained his realization of the movement to fellow members of the Beat Junkies DJ crew, “You know, we can’t even really call ourselves DJs anymore. There’s guitarists, there’s pianists, why not turntablists?” DJ

Babu probably did not realize his seemingly simple added suffix would prove significant in naming the movement and signifying a serious methodology.²

The terms *DJ*, *scratch DJ*, and *turntablist* vary between artists; they are all reflected throughout this document and refer to the same type of performer. Most automatically already presume that “DJ” refers to a hip-hop performer who manipulates records, rather than a radio DJ who simply plays records. Many still call themselves DJs rather than turntablists; part of the DJ culture is creating a made-up identity, like DJ Yoda or DJ Jazzy Jeff for example. Those who want a more serious distinction refer to the art of manipulating records as turntablism by turntablists. Back in 1999, composer Nicole Lizée used the terms DJ and turntablist interchangeably while calling for DJ in her first score for turntables, but years later finds herself using the term turntablist almost exclusively. Gabriel Prokofiev often uses the term *scratch DJ* to clarify the type of DJ needed to perform his music. Perhaps akin to the differences in geographical dialects, this variance in terminology is prevalent throughout DJ culture in its multiple names for the same techniques.

Overview & Purpose of Research

My research traces the history of the turntables use as an instrument in a way that presents a comprehensive timeline of events and incorporates both hip-hop and academic music backgrounds. Previous published writings mention select events in varying length of detail, and composers of turntables concerti mention a few predecessors,

² Mark Katz, *Groove Music The Art and Culture of the Hip-Hop DJ* (New York: Oxford University Press, 2012), 127.

but no one has arranged a broad historical portrait of the instrument that encompasses classical music, experimental works, hip-hop, and recent turntables concerti. As the instrument's hip-hop background is quite large, this document focuses on only the most important events with the details that connect to its academic background.

Following the historical perspective, a composer's perspective gives a basic overview of the instrument and techniques as a guide for beginning a turntables composition. This includes the instrument's components, how the DJ operates the equipment, and additional information about the digital system (Serato) used in Prokofiev's turntables concerto. It is not meant to be a review of all the equipment currently on the market. Information about the history of technological developments of the instrument (from Edison's phonograph to modern CD turntables) and its associated media (wax cylinders to vinyl records) adds more insight to the timeline of works for turntables.

Perhaps most important to composers is the section about the instrument's techniques and scratches. A lengthy list of techniques and scratches have been compiled and explained using several different sources. This is of course not an exhaustive list, but it combines all the materials from current important sources. Methods of turntables notation used in the works or method books of Nicole Lizée, Gabriel Prokofiev, Stephen Webber, and Paul Leary are compared side-by-side with musical examples to illustrate the instrument's techniques. First-hand experiences from turntables composers give foresight into potential rehearsal and performance issues.

All of these areas form the beginning of a composer's guide to composing for the instrument. An awareness of a general, complete historical background will give composers an accurate picture of the instrument's capabilities before writing their first turntables composition. Details about the equipment's operation allow a composer to put himself in the role of the performer in the execution of musical ideas. Knowledge of the techniques with accompanying hip-hop terms and various notational examples show the composer paths of connecting both musical cultures. Foresight of potential rehearsal and performance issues prepare the composer for facilitating a successful performance of his work.

About the Research Source Material

My historical research consults the extensive research of musicologist Mark Katz, who has published several books on the developments of turntablism in all styles of music including hip-hop and academic music. Research by David Nicholls, Richard Kostelanetz, and Julia Robinson add details regarding John Cage's work with turntables in the composition of his *Imaginary Landscape No. 1*. Information from various articles by Felicia Miyakawa, Leta Miller, Caleb Stuart, Emily Thompson, and others add to the historical timeline of turntables composition and development of the machine.

The composer's guide about the instrument, techniques, and notation largely draws from the published books and turntables method book of Stephen Webber. Samples of Nicole Lizée's turntables notation from her master's thesis about her turntables composition *RPM* add alternative examples to Webber's style of notation. My

interviews with three composers Gabriel Prokofiev, Nicole Lizée, and Paul Leary offer insight into the creative process, and challenges faced in turntables composition.

CHAPTER 2

HISTORICAL PERSPECTIVE

The Gramophone's Orchestral Debut

Among the first appearances of turntables on the concert stage was in Ottorino Respighi's 1924 orchestral tone-poem *The Pines of Rome*, where a recording of a nightingale was played on a gramophone at the end of "The Pines of the Janiculum." Gramophones were a common household item during the 1920's and anybody who owned one was familiar with the amusing effect of the lowering pitch of the recording as the turntable wound down to a stop.³ The idea of using the gramophone was a creative solution to a potentially perplexing dilemma; Respighi was probably more concerned with the realism provided by the recording than the novelty of the technology itself. John F. Reilly comments in *The Classical World* that any combination of wind instruments, or even a coloratura soprano, was too artificial for Respighi's desired nightingale effect.⁴ As one can imagine, Respighi's gramophone usage sparked discussion and criticism. Critics claimed that its use was ineffective and that he should have trusted the listener to have the 'brains' to recognize an artificial instrumental representation of nature.⁵ Composers had been imitating nature sounds musically with much success for a very long time prior; the

³ Thom Holmes, *Electronic and Experimental Music: Technology, Music, and Culture* (New York: Routledge, 2008), 43.

⁴ John F. Reilly, "Respighi in the Latin Class," *The Classical World*, Vol. 53, No. 8 (May, 1960), 248.

⁵ The reviewer remarked, "The lesson is that composers should credit their hearers with brains and a little fancy."

use of a nightingale recording was simply unnecessary.⁶ Even though Respighi's gramophone usage did not employ modern turntablism sounds and the nightingale record was later replaced with audio technological improvements, it marks the beginning of turntablism history.

The potential of recorded sound frightened some composers. John Philip Sousa, undoubtedly worried about copyright, complained of the 'menace of mechanical music' in the 1906 September *Appleton's*.⁷ Meanwhile, others learned to embrace the invention and debated Sousa's alarmist views.⁸ The potential and importance of technology was on everyone's minds as composers began to curiously explore its capabilities. Igor Stravinsky, who made recordings with Columbia, hinted at the next step for composers in 1930—"It would be of the greatest interest to create music specifically for the phonograph, a music whose true image—its original sound—could only be preserved through mechanical reproduction. This would well be the ultimate goal for the phonographic composers of the future."⁹ His notion of 'original sounds' that were 'preserved through mechanical reproduction' indicates an early view of what would emerge as *musique concrète*.

⁶ 'Discus', "Gramophone Notes," *The Musical Times*, Vol. 70, No. 1037 (July, 1929), 618.

⁷ Timothy D. Taylor, Mark Katz, Tony Grajeda, *Music, Sound, and Technology in America A Documentary History of Early Phonograph, Cinema, and Radio* (Durham and London: Duke University Press, 2012), 113.

⁸ *Ibid.*, 126.

⁹ *Ibid.*, 113.

Trick Recordings

The tenth in a series of bold annual new music festivals, Neue Musik Berlin 1930 featured a new type of technological music. The final pieces premiered on the June 18th program were created by composers Paul Hindemith and Ernst Toch specifically for record and performed by gramophone.¹⁰ The short program of *Originalwerke für Schallplatten* ('original works for disc') included five pieces that lasted a few minutes each. Hindemith titled his two works *Trickaufnahmen* ("trick recordings") and the remaining three works by Ernst Toch were collectively titled *Gesprochene Musik* ("spoken music"). The basic effect exploited by each man was the effect of pre-recorded sounds being played back at the wrong speed heard to create amusing distortions of the original audio. The idea of creating a unique music characteristic of the gramophone was not solely Stravinsky's. Toch explained that the purpose of their gramophone experiments was that of "exploiting the peculiarities of its [the gramophone's] function and by analyzing its formerly unrealized possibilities...thereby changing the machine's function and creating a characteristic music of its own."¹¹

The composers found themselves immersed in trial and error tests with microphones and disc cutters (a device that records on to disc with a "cutting needle" used to create grooves in blank discs) just weeks before the performance. Their pieces were created using a long and laborious multi-step process at the Hochschule für Musik.

¹⁰ Mark Katz, *Capturing Sound: How Technology has Changed Music* (Berkeley: University of California Press, 2004), 100.

¹¹ Thom Holmes, *Electronic and Experimental Music: Technology, Music, and Culture*, 44.

Using only a microphone, disc lathe (recorder), and several phonographs, the pieces were created by first recording a set of sounds onto one disc and then rerecording them onto a second disc as the first was played back, typically at a different speed.¹² In some cases, the composers had to choreograph the final recording of multiple discs while manipulating their speeds as they were recorded. If magnetic tape had been available, the composers' process would have used much simpler splicing and overdubbing techniques.¹³

Hindemith's *Trickaufnahmen* featured a vocal and instrumental study. The vocal work, most likely sung by Hindemith himself, was named *Gesang über 4 Oktaven* (four-octave song) and consisted of two separate melodies with variations. Hindemith was able to artificially stretch his vocal range by playing a recording of his voice at speeds that were twice and half as fast, resulting in an octave higher or lower respectively. The end of the piece foreshadows what later became known as "overdubbing" in the era of magnetic tape. Hindemith created recorded layers of harmony and counterpoint, ending with a three-voice chord, his voice singing all three parts. The instrumental study, without title, sounds like it has been scored for three instruments, xylophone, viola, and cello and was again probably performed by Hindemith. The reality is that the viola, Hindemith's primary instrument, was probably the only stringed instrument used since the pitch could be altered by varying the speed of the recordings. The viola plays pizzicato throughout

¹² Thom Holmes, *Electronic and Experimental Music: Technology, Music, and Culture*, 44.

¹³ Mark Katz, *Capturing Sound: How Technology has Changed Music*, 101.

the piece, and depending on the record speed sounds also as a violin or cello. The two instruments combine to create a spirited exploration of distorted timbre and polyphony.¹⁴

Evidence suggests that there may have been more to the performance than Hindemith walking up onstage and setting his discs in motion. It is unknown why he created two discs of the instrumental xylophone and viola piece, but one can imagine the possibility of two gramophones onstage being used to create a canon between the two recordings. There was definitely something more to the vocal piece, which one critic described as an “aria with piano accompaniment, in which the human voice extends to a range of approximately 3½ octaves.” Since there is no piano accompaniment recorded on the disc, this suggests Hindemith must have played piano with the recording for the performance.¹⁵ A copy of the piano part has not survived, so one can only imagine how the premiere may have sounded, but we are lucky that a musicologist at Berlin’s Institute for Music Research made backup recordings of the once lost trick recordings. The institute, not interested in the one-of-a-kind 78 source recordings, returned them to the donor who then sold them to a junk dealer.¹⁶

Unfortunately, the recordings of Toch’s *Gesprochene Musik* have not survived, but the popular *Geographical Fugue* survived through live performances and has become his most well known work. The piece can essentially be described as a rhythmical tongue twister of geographical names spoken to achieve a dramatic effect. Like Hindemith,

¹⁴ Mark Katz, *Capturing Sound: How Technology has Changed Music*, 100.

¹⁵ *Ibid.*, 101.

¹⁶ *Ibid.*, 99.

Toch's experiments involved changing the speed of the disc recordings, which changed vowel sounds and even timbre of the spoken words in a way similar to how inhaling helium raises the pitch of the natural human voice or inhaling sulfur hexafluoride conversely lowers the vocal pitch. The original recorded gramophone rendition of the piece must have sounded quite different from how it is now commonly heard in live performance. Written for four-voice mixed choir, *Gesprochene Musik* consists of two unnamed movements and the final famous "Fuge aus der Geographie." Toch explained that his approach was to exploit the possibilities of mechanical recording to create a type of instrumental music where the original source of the voices would almost be unrecognizable.¹⁷

The manipulation of the human voice through Toch's presentations captured the audience's attention and intrigued festival participants. Toch's wife Lilly recalled musicians manipulating records themselves and going further in their experiments with record speeds. The director of the Hochschule für Musik, Georg Schünemann, described his amazement and impression of the performance:

"If vowels are sung and are raised in pitch, curiously strange sounds ring out; and if they are combined with consonants in the manner of solfege syllables, a nearly instrumental sound arises. How these amazing pieces worked hardly a musician could say, and how these unusual sounds came into being no one knew, whether through combining musical instruments, voices, or even noises. And yet every compositional, logical, and tonal aspect was precisely planned."¹⁸

¹⁷ Mark Katz, *Capturing Sound: How Technology has Changed Music*, 102.

¹⁸ *Ibid.*, 103.

Hindemith and Toch had helped others to realize the potential of phonograph's capabilities, but interest and further developments would not immediately follow. Both composers fled the country when the Nazis rose to power in 1933 and discouraged experimental music by labeling it as degenerate. Composers became captivated by the possibilities of newer technologies, such as sound film, which had important advantages over the phonograph for the recording and manipulation of music. The invention of musical instruments since 1920 such as the Theremin and Ondes Martenot took away attention from phonograph composition. Even radio was seen as a possible replacement to the wide interest in the phonograph. Not everyone took gramophone composition seriously.¹⁹ Toch himself described his own work as "an interesting acoustical experiment...perhaps a musical joke" and one critic agreed that the "burlesque records of Hindemith and Toch bordered closely on practical joking" while another called the performance "a poor joke."²⁰

Critical opinion mattered little as the gramophone music by Hindemith and Toch was ahead of its time. The ambition of technology had inspired composers to push the capabilities of the technology itself. Hindemith's combination of live and recorded music anticipates the music with live electronics movement of the 1960s. Even the roots of hip-hop turntablism sixty years later can be traced back to the experiments of Hindemith and Toch. What was attractive about this technology was the opportunity to explore timbral

¹⁹ Mark Katz, *Capturing Sound: How Technology has Changed Music*, 111.

²⁰ *Ibid.*, 110.

possibilities and create a composition that was performed true to the composer's intentions every performance.²¹

A young John Cage, who had been traveling abroad, was in attendance at the gramophone music premieres. Several years later, he created his own phonographic work, the first of many that continued to influence modern music beyond Hindemith and Toch's works. Cage had little to say about the impact of their work on his own, but he did mention interest in their experiments, as well as this amusing comment: "Toch—boy was he onto some good stuff back there in Berlin. And then he went and squandered it all on more string quartets!"²²

An Imaginary Landscape

Very few composers followed in the footsteps of Hindemith and Toch in their exploration of *Grammophonmusik*. Inspired by René Bertrand's invention of the Dynaphone, Edgard Varèse decided to search for a new electronic medium of expression. From 1932 to 1936, he repeatedly applied for a Guggenheim Fellowship to fund the creation of a new electronic instrument for composing. Rejected each time, Varèse turned to phonograph turntables for modest experiments in record manipulation. He was able to operate them at different speeds simultaneously, as well as run records backwards, but he

²¹ Mark Katz, *Capturing Sound: How Technology has Changed Music*, 113.

²² *Ibid.*, 113.

did not actually create any works akin to Hindemith and Toch. By 1952, Varèse had instead adopted the tape recorder as his primary means of electronic composition.²³

Cage was influenced by all three composer's efforts when he created his *Imaginary Landscape No. 1* in 1939. While Cage's *Imaginary Landscape No. 1* is one of the best-known early compositions to use turntables, it is commonly mistaken as the first. His legendary credo on experimental music written in 1937 mentions turntables as one of several electrical instruments that would contribute to a new era of music history.²⁴ He had said, "The only lively thing that will happen with a record is if you somehow would use it to make something which it isn't. If you could for instance make another piece of music with a record...that I would find interesting."²⁵

While living in Seattle, Cage worked at the Cornish School for dancer and choreographer Bonnie Bird, a former member of the Martha Graham Company. Aside from accompanying Bird's dance classes, giving lectures, and composing new works for dance and concert stage; Cage was able to experiment with turntables in the school's state-of-the-art recording studio.²⁶ He found that by switching the speed of the studio's turntables between 33-1/3 and 78 RPM, he could electronically produce unique sliding tones.²⁷ *Imaginary Landscape No. 1* incorporates the manipulated test sounds emitted

²³ Chou Wen-Chung, "Varèse: A Sketch of the Man and His Music," *The Musical Quarterly*, Vol. 52, No. 2 (April 1966), 165-166.

²⁴ Thom Holmes, *Electronic and Experimental Music* (New York: Routledge, 2002), 266.

²⁵ Mark Katz, *Capturing Sound: How Technology has Changed Music*, 45.

²⁶ David Nicholls, *John Cage* (Urbana: University of Illinois Press, 2007), 21.

²⁷ Leta Miller, "Henry Cowell and John Cage: Intersections and Influences, 1933-1941," 82.

from the turntables with muted piano (Henry Cowell's manually muted piano) and cymbals. Two performers are required to control the turntables' speed and rhythmically raise and lower the styli.²⁸ The test frequencies on the records created by the Victor Company included constant tones and sliding tones that traveled through a whole range of pitch. Cage found the sounds interesting without any need of modifying the sound; the combination of the percussion and electronic sounds was intriguing by itself and inspired Cage in the creation of more *Imaginary Landscapes*, each featuring a technological device.²⁹

By incorporating the turntables with other traditionally accepted instruments, Cage convincingly demonstrates how they could be used as a musical instrument. They can be manipulated, or 'played' in a meaningful way, but more importantly, they can interact with other instruments bringing about new sounds and textures.

Cage's notes in a brochure attached to the 1958 recording of a 25-Year Retrospective Concert describes his *Imaginary Landscape No. 1* as a type of 'proto-musique concrète' or music that was intended to be heard broadcast or from a recording. It was not intended to be heard from live performance. The original performance was recorded in two separate studios and mixed in a control booth. One of the results of Cage's work was a collaborative production with choreographer Bonnie Bird that was entitled *Imaginary Landscapes*. Choreographer Marian Van Tuyl made an experimental dance film called *Horror Dream*, which was also set to Cage's *Imaginary Landscape*

²⁸ Mark Katz, *Capturing Sound: How Technology has Changed Music*, 45.

²⁹ Richard Kostelanetz, *Conversing with Cage* (New York: Proscenium Publishers, 1987), 157.

score.³⁰ It was one of his earliest works for dance and probably served as an experiment in understanding the powerful relationship of the visual dance against the sound of music. The dancers, one of whom was Merce Cunningham, were challenged by these new sounds. Bird recalled that the dancers had a hard time with the music because they were not used to ‘working with music that they could not hold on to in some way.’³¹

The Birth of *Musique Concrète*

Following in the same vein of Hindemith and Toch after the interruption of WWII, Pierre Schaeffer established the practice of recording manipulated sound as an art form known as *musique concrète* in 1948. Schaeffer had access to four turntables and a basic 78 RPM disk-cutting lathe that allowed for playing records backwards and forwards at different speeds, mixing extracted sounds, and creating repeating loops by deliberately breaking the groove. The limited maximum three-minute recording time of a ten-inch record at 78 RPM could be extended through the use of multiple playback turntables. To select cuts within a recording, Schaeffer manually operated the volume controls before and after an excerpt. To solve the difficulty of backwards playback with a 78 RPM system, Schaeffer reverse-mounted an additional tone arm for continuous backward playback. The creation of a simple montage from a sequence of excerpts required elaborate studio choreography of cueing and lining up records on multiple turntables.³²

³⁰ Richard Kostelanetz, *John Cage: An Anthology* (New York: Da Capo Press, 1968), 128.

³¹ Julia Robinson, *John Cage* (Cambridge: MIT Press, 2011), 175.

³² Peter Manning, “The Influence of Recording Technologies on the Early Development of Electroacoustic Music,” *Leonardo Music Journal*, Vol. 13, (2003), 7.

Schaeffer's first piece of *musique concrète*, *Étude aux chemins de fer* ("Railroad Study"), was created from recordings made at the depot of the Gare des Batignolles in Paris in early 1948. In this study, the mechanical sounds of the train wheels passing over the breaks in the rails are looped extensively. A looped sound at 78 RPM had a duration of just under one second. A speed of 30 RPM increased a loop's duration to about two seconds, but any further decrease would cause an unwanted distortion. The problem of the unwanted skipping stylus across groove breaks was smartly hidden in the "clickety-clack" nature of the sound itself.³³

Like Varèse, Schaeffer moved forward using magnetic tape in a new and improved studio in 1951. The disk cutter was replaced by a set of mono tape recorders and three other tape devices allowed for various re-synthesis and analysis processes. The Morphophone consisted of a continuous tape-loop system with ten playback heads that could create continuous pulsating repetitions. Two machines made up what was called Phonogènes and controlled the tape playback speed. One created tempered pitch transpositions controlled by a 12-note keyboard with an octave switch that extended the range to two octaves. The keyboard device added a dimension of real-time control absent from most tape pieces that is similar to the real-time control employed by turntablists in the manipulation of records. The enhanced range, precision, possibilities, and ease of

³³ Peter Manning, "The Influence of Recording Technologies on the Early Development of Electroacoustic Music," 7.

composition afforded by this new equipment easily surpassed Schaeffer's previous methods with turntables and disk cutters.³⁴

Broken Music and Beyond

While composers abandoned the turntables in favor of magnetic tape by the early 1950s, Cage continued to expand the sound palate of the avant-garde. Applying his idea of the prepared-piano, he modified the turntables in his *Cartridge Music* of 1960 by removing the stylus and replacing it with items such as wires, pipe-cleaners, toothpicks, feathers, matches, and slinkies.³⁵ The sound of the object is picked up by the cartridge and then amplified through a speaker. Performers could also vary the sound by scraping, touching, and striking them, foreshadowing the beginning of hip-hop turntablism. The score only provides instructions for determining a time structure, leaving the performers freedom to choose their objects and manipulate freely.³⁶ *Cartridge Music* was used on multiple occasions as the music for the choreographed pieces of Merce Cunningham entitled as *Changing Steps*, *Exercise Piece II*, and *Exercise Piece III*.³⁷

Following Cage's cartridge modification experiments, Fluxus musicians began to engage in destructive sound-creating practices that led to the ruining of turntables and records. Most notable was the work of Fluxus musician Milan Knížák who began creating

³⁴ Peter Manning, "The Influence of Recording Technologies on the Early Development of Electroacoustic Music," 7.

³⁵ Caleb Stuart, "Damaged Sound: Glitching and Skipping Compact Discs in the Audio of Yasunao Tone, Nicolas Colins, and Oval," *Leonardo Music Journal*, Vol. 13, (2003), 47.

³⁶ Another Timbre, *John Cage – Cartridge Music*, 2012, [online], Available from <http://www.anothertimbre.com/cartridgemusic.html>, July 29, 2013.

³⁷ John Cage Trust, *Cartridge Music*, 2013, [online], Available from http://www.johncage.org/pp/John-Cage-Work-Detail.cfm?work_ID=36, July 29, 2013.

‘broken music’ in 1965. Knížák cut records into sections and glued them back together forming new composite records resulting in new sounds as the needle bounced over the cracks between the mismatched chunks of vinyl. He also burned them, applied tape, paint, and simply broke them as desired. The recorded results were released in several editions of *Broken Music* starting in the early 1970s.³⁸ Interested in a new type of notation, Knížák even glued pieces of record to a blank score in his *Composition for Four Groups of Instruments*.³⁹

Completely unaware of Knížák’s work, Christian Marclay also engaged in some destructive practices of his own starting in the late 1970s concurrent with the emergence of hip-hop. In addition to employing many of Knížák’s techniques, Marclay created music from an art installation where visitors were asked to walk across dozens of records arranged on a gallery floor. The scuffed and scratched records were then used in Marclay’s performance using several turntables to create a musical collage of pops and clicks with some greatly distorted tunes.⁴⁰ Other performances involved the live manipulation of multiple turntables using skipping thrift-store records, damaged records found in the street, as well as records purposely damaged by Marclay himself.⁴¹ Since the 1980s Marclay has created dozens of turntable works. Among many creative works is an

³⁸ Monoskop, *Milan Knížák*, 2013, [online], Available from http://monoskop.org/Milan_Kn%C3%AD%C5%BE%C3%A1k, July 29, 2013.

³⁹ Continuo’s Weblog, *Milan Knížák ‘Broken Music (details)’*, 2009, [online], Available from <http://continuo.wordpress.com/2009/08/19/milan-knizak-%E2%80%98broken-music-details/>, July 29, 2013.

⁴⁰ Mark Katz, *Capturing Sound: How Technology has Changed Music*, 45.

⁴¹ Christopher Cox, Daniel Warner, *Audio Culture: Readings in Modern Music* (New York: Continuum International Publishing Group, 2006), 341.

appropriate homage titled *John Cage* created in 1988, which is a type of mix created from cutting up several records of Cage's music and gluing different pieces into a single disc.⁴²

Out of all the composers who experimented with turntables, Marclay has explored the realm of the turntable's possibilities most fully and is most prominent in the world of avant-garde turntablism. His use of looping skipping records parallels what many hip-hop DJs were doing at the same time. While hip-hop may sound like a world apart from Marclay's, many techniques and artistic intentions are in fact the same. In a discussion with the editors of *Music* magazine, he explains how the experimental music and hip-hop culture have grown separately:

When I became aware of hip-hop I could see the natural connection between those two traditions. But hip-hop didn't grow out of that kind of white, nerdy, high art culture. It came out of the streets. It was a simple direct way to make music. And also a cheap way.⁴³

Marclay puts himself in the middle of these two traditions, but separates himself from Hip-hop by avoiding commercial beats or the creation of anything sounding like pop music.

Turntablism Developments in Hip-hop

The emergence of hip-hop begins in the Bronx on August 11, 1973 with DJ Kool Herc's first party. His 'Back to School Jam' held in the basement of his family's apartment building was a success and word spread quickly as he continued to DJ more parties throughout the Bronx with a growing collection of records and a larger sound

⁴² Mark Katz, *Groove Music The Art and Culture of the Hip-Hop DJ*, 201.

⁴³ Christopher Cox, Daniel Warner, *Audio Culture: Readings in Modern Music*, 343.

system. His parties became so well known that no other DJs would plan any parties on the same night. Kool Herc was definitely not the first or only DJ in the Bronx, but his first party is recognized as the origin of hip-hop because there is solid evidence of an exact time and location. These parties throughout the Bronx, which eventually spread to other urban areas, set the foundation for the development of hip-hop turntablism.⁴⁴

In order to understand the birth of hip-hop, one must first understand the *break*. The break in a song was a percussive instrumental interlude where the crowd would feel compelled to “get-down” and dance. It was the solo break-dancers known as *b-boys* and *b-girls* that made these breaks famous. Unfortunately, these instrumental breaks were much too short for the purpose of dancing; as soon as the words came through after the break, the crowd would lose its drive to dance. In order to keep the momentum of the dance party and their own popularity high, DJs would continuously loop the break by manually lifting the tone arm at the end of the excerpt and replacing it back at the start.⁴⁵

This simple concept is, in reality, difficult to perform. A DJ would have to pick up and reset the stylus in rhythm without creating any catastrophic screeching noises. They would also have to know visually where breaks were found on records, sometimes marking them with stickers or tape. Some DJs became so skilled at finding breaks; they could actually find them on sight by looking at the grooves for the darker band without having played the record.⁴⁶ Inspired by Kool Herc’s practices of using two copies of the

⁴⁴ Mark Katz, *Groove Music The Art and Culture of the Hip-Hop DJ*, 17-23.

⁴⁵ *Ibid.*, 15.

⁴⁶ *Ibid.*, 16.

same record to repeat dance sections, Grandmaster Flash developed the practice of extending the break while keeping the beat and tempo precisely even by incorporating a mixer.⁴⁷ Most early DJs performed without mixers using whatever equipment they had in varying setups.⁴⁸ The mixer though, was the key to the smoothest transition between repetitions of the break.⁴⁹

The significance of these breaks is more than just a simple idea; it is the foundation on which hip-hop is built. DJs and their audiences heard them as an incomplete idea, a fragment that required repetition. There was no longer any need to play complete songs or records. As a result, DJs saw their trade in a new light and began manipulating turntables as an instrument beyond their playback capabilities.⁵⁰ Soon, DJs were freely touching records and adding slipmats to their turntables. The first slipmats were cut from plastic record sleeves and placed on the platter to allow the record to slip freely back and forth without harming the motor.⁵¹

GrandWizzard Theodore is widely accepted among the DJ community as the originator of the record scratch. He was the first to present the technique musically to the public and also responsible for its naming. It is uncertain which year Theodore began scratching publicly. He insists his first scratching performance happened in 1975, but

⁴⁷ Stephen Webber, *The Art of the DJ Turntables Technique*, (Boston: Berklee Press, 2003), 40

⁴⁸ It is unclear who is responsible for incorporating two turntables in the evolution of current DJ setups.

⁴⁹ Mark Katz, *Groove Music The Art and Culture of the Hip-Hop DJ*, 16.

⁵⁰ *Ibid.*, 54.

⁵¹ *Ibid.*, 55.

from his list of records first scratched, many were actually released in 1976. Others claim that Grandmaster Flash was scratching even before Theodore. At that time, all DJs were familiar with the sound of a record scratching as a side effect of cueing records. Both DJs may have accidentally discovered the beginnings of record scratching independently, but Theodore was ultimately responsible for being the first to deliver it to the public in a rhythmic, musical fashion.⁵²

It is important to note that this scratch is actually the first of many different scratches developed by DJs following Theodore's contribution. Theodore's became known specifically as the 'baby' scratch as new variations developed into widely accepted technique. DJs experimented independently, influenced each other, and sometimes stole ideas from their competitors, often leading to the question of who had invented the technique first. In some cases, multiple DJs have been credited as the inventors of a single technique. As it is easy to detect discrepancies of historical facts from DJ to DJ as they retell their stories, the DJ community as a whole has collectively accepted certain facts.⁵³

The DJ battle sits at the core of hip-hop culture and is responsible for driving the development of turntablism. In an aggressive spirit of competition and talent, DJs have strived to continually outdo each other by creating new original techniques or adding bolder variations to existing scratches. The first battles took place on the streets and were more of a battle of booming loudness than skill. Having no official judge, the winner was

⁵² Mark Katz, *Groove Music The Art and Culture of the Hip-Hop DJ*, 60-61.

⁵³ Ibid.

determined by which DJ drew the most dancers and loudest cheers. The DJ who won the battle had the bigger, louder sound system that could drown out the opponent.⁵⁴ Battle dynamics soon changed as GrandWizzard Theodore introduced talent and skill in performance even before he was scratching. In addition to his expert needle-dropping skills without aid of headphones, Theodore was known to handcuff himself, showing the crowd that he had could still beat his opponents even when handicapped. This was a skill that had to be practiced for hours at home.⁵⁵ By the mid-1990s battles had spread across the world. Modern competitions first established by the New Music Seminar organized DJ battles with elimination rounds of head to head competition. By contrast, the current DMC World DJ Championships features a showcase style of performance with a winner chosen by judges.⁵⁶

Once DJs figured out how to record their own performances, battle records were used as a “secret weapon” to fake out an opponent. When it was their turn to perform, a DJ could start their compiled record and turn out the lights so no one could see what was happening. Actual records made of the battles were rare at first; more common was the creation and use of mix-tapes. In modern competitions, a DJ could perform with a recording of one of their own performances.⁵⁷

Every DJ instinctively recognizes two words “ah” and “fresh” as being ideal for scratching, as well as having an important cultural significance. These two words have

⁵⁴ Mark Katz, *Groove Music The Art and Culture of the Hip-Hop DJ*, 44.

⁵⁵ *Ibid.*, 49-50.

⁵⁶ *Ibid.*, 153-154

⁵⁷ *Ibid.*, 67-68.

appeared on well over one hundred different songs and show up on almost every battle record ever made. They were immortalized in the hip-hop record called “Change the Beat” created for French radio in the early 1980s. The recording of manager Roger Trilling’s amusing vocal impression of an Elektra Records executive saying, “Ah, this stuff is really fresh!” transformed into a robotic voice by a vocoder (an electronic device used to timbrally alter the human voice), found its way onto the B side of the record. What made these two words attractive for scratching was the timbral grittiness caused by the vocoder and the distinctive sounds of each word. The “Ah” had a sharp attack, good for fast scratches, and a long decay that maximized scratching possibilities much further. A DJ could demonstrate a variety of scratches on a single sound. While the more complicated “Fresh” sound does not have a clean attack, it can be broken down into three parts for more possibilities (“Fr” + “eh” + “sh”). While “Change the Beat” was not a hit, the use of these two simple words lives on because of their use in an award-winning track “Rockit,” which became a cornerstone of turntable music.⁵⁸

Herbie Hancock’s hit track “Rockit” with scratches by Grandmixer D.ST marks the point in which scratching became mainstream. Hancock, a highly regarded successful jazz keyboardist and composer, helped legitimize the turntables as a musical instrument, bringing it to the forefront of pop musical culture. The song was awarded a Grammy, and its music video won several MTV awards. When “Rockit” came out in the summer of 1983, the music video was broadcast repeatedly on MTV. Millions saw live

⁵⁸ Mark Katz, *Groove Music The Art and Culture of the Hip-Hop DJ*, 89-93.

performances at the 1984 Grammys and other concerts. DJs were inspired to recreate their own vision of the hit track using any record they could find that contained the words “ah” and “fresh.” More importantly, “Rockit” marks the point where musicians of different backgrounds came together to create a challenging new type of music that expanded the horizon of hip-hop DJing.⁵⁹

Beginnings of Conventional Notation and Turntables Concerti

Near the turn of the millennium and about fifteen years after the emergence of “Rockit”, DJs and composers began to seek a new boundary challenge with classical music by way of traditional music notation. These two traditions of pop and classical turntablism were finally crossing paths since going their separate ways in the early 1970s.

In 1998 DJ Radar composed *Antimatter* for “the sole purpose of establishing turntablism as a legitimate form of musical expression through a written and universal musical medium, a score.”⁶⁰ After completing the first draft, Radar asked Arizona State University graduate music student and jazz keyboardist Raúl Yáñez to transcribe the solo scratch sections and help him produce a final copy of the score, which was published by Om records in 1999. Radar’s opinion is that his work ‘represents the beginning of a new ‘Classical Era.’⁶¹

While working on *Antimatter*, Radar had the idea of performing with an orchestra. Yáñez was opposed to the idea at first. He wondered why a DJ was interested in

⁵⁹ Mark Katz, *Groove Music The Art and Culture of the Hip-Hop DJ*, 93-98.

⁶⁰ *Ibid.*, 206.

⁶¹ Felicia Miyakawa, “Turntablature: Notation, Legitimization, and the Art of the Hip-Hop DJ,” *American Music*, Vol. 25, No. 1 (Spring, 2007), 94.

orchestras and noted that traditional jazz and pop music is traditionally left without notation. Radar relented and soon the two were spending hours jamming together in collaboration with Yáñez sketching and refining ideas—the result being what they presumed as the very first concerto for turntables in history. While Yáñez is listed as the composer, he acknowledges the piece as a truly collaborative effort giving equal credit for Radar’s ideas.⁶²

The first movement of Radar and Yáñez’s *Concerto for Turntables* for solo turntable, strings, brass, winds, and percussion was premiered March 7, 2001 at ASU’s Gammage Auditorium to an enthusiastic audience of more than 3,000 people.⁶³ The complete concerto was eventually performed in New York City at Carnegie Hall on October 2, 2005 with Yáñez listed as the composer and Radar as the soloist. The New York premiere was sponsored by Red Bull energy drinks and was performed by an orchestra of the best college students from around the country conducted by Constantine Kitsopoulos. Notation has played a key role in the work ensuring multiple performances in New York as well as across the globe in Latvia.⁶⁴

The completed work features many characteristics associated with the classical concerto. The three movements follow the typical fast-slow-fast arrangement; a cadenza at the end of the first movement gives the soloist an opportunity to improvise on

⁶² Mark Katz, *Groove Music The Art and Culture of the Hip-Hop DJ*, 206.

⁶³ Felicia Miyakawa, “Turntablature: Notation, Legitimization, and the Art of the Hip-Hop DJ,” 94.

⁶⁴ Mark Katz, *Groove Music The Art and Culture of the Hip-Hop DJ*, 204.

previous themes, and thematic material in the first two movements appear in the finale of the third movement.⁶⁵

Though unnecessary for Radar's performances, he insisted that the solo turntables part be transcribed so that other DJs may perform the concerto, further legitimizing the instrument in the classical world. Even in its notated form, no other DJs have performed the concerto. This may be the result of the score and a recording not being readily available, as well as the solo part being too personalized to Radar's skill level. Both Radar and Yáñez remain optimistic about the future of their concerto and see a future where the piece is published with a variety of skill levels.^{66 67}

The First Concerto for Turntables

At about the same time that Radar and Yáñez were collaborating, Canadian composer Nicole Lizée was working on her master's thesis in music composition at McGill University in Montreal. Her concerto titled *RPM* for large ensemble and solo turntablist was premiered March 12, 1999 by DJ P-Love and the McGill Contemporary Music Ensemble conducted by Denys Bouliane.⁶⁸ Lizée's premiere predates Radar and Yáñez's 2001 premiere, marking *RPM* historically as the first concerto for turntables.⁶⁹

⁶⁵ Mark Katz, *Groove Music The Art and Culture of the Hip-Hop DJ*, 207.

⁶⁶ Ibid.

⁶⁷ An electronic email interview was sent to Raúl Yáñez regarding his concerto, but it was not completed.

⁶⁸ Instrumentation: 2dpicc, 1,1dbass, 1 – 1, 1, 1, 0, 3perc, pnodcelst, hp, str, DJ

⁶⁹ Radar and Yáñez must have been unaware of Lizée's work before they had mistakenly labeled theirs historically as the first concerto for turntables. It can of course be correctly labeled as the first 'American' work of this nature.

Lizée explains how a unique presence of electronics at an early age influenced a natural interest in turntable composition. Since the 1950s, her father has been an ardent electronics collector, salesman, and repairman who collected various devices that came through his shop. Unaware of the emerging hip-hop culture in America, a young Lizée spent hours creating “songs” with various devices, some of which included phonographs and turntables. When her father began selling satellite dishes in the early 1980s (ca. 1983) she became fixated with MTV. Like many current DJs, Lizée was captivated by the special feature on MTV about the emergence of the turntables as a musical instrument focusing on Grand Mixer D.ST (later DXT), Grandmaster Flash, and Kool Herc. Fascinated by the MTV feature, she closely followed turntablism developments through the 1980s and 1990s and was an avid follower of Grandmaster Flash, DJs Q-Bert, Shadow, Disk, Flare, and Mix Master Mike. By the mid-1990s she was working with contemporary music ensembles in Montreal contemplating her first turntables composition.

Having grown up surrounded by different musical styles and technology with interest in classical and several genres of pop music, Lizée remarks that it was only natural for her to include atypical instruments in concert music. Since she grew up surrounded by these sounds and styles, they were already part of her subconscious when she composed *RPM* and later turntable works:

“For me, the sonorities generated by these machines feel very natural placed within an otherwise ‘traditional’ acoustic ensemble. Certain sounds have become iconic to me and I want to capture and manipulate these ‘icons’ within a new environment.”⁷⁰

⁷⁰ Nicole Lizée interview, Appendix C, Q33.

Only aware of Cage and Marclay's work, Lizée composed *RPM* informed mostly by her knowledge of the techniques of hip-hop turntablism. She developed her own notation that incorporates traditional and graphic music notation with DJ scratch terminology notated in the score akin to Italian musical expressions. The goal of her notation style was to be precise and expressive while capturing every component of the instrument, thus allowing it to sit within an ensemble and be conducted with other instruments. Finding much success, Lizée expanded her notation system in later turntable works.

While *RPM* is not referred to as a concerto in the score and does not adopt classical concerti characteristics, it possesses many modern concerto attributes. The turntablist is the focal point of the work and interacts with the orchestra who compliments, contrasts, and colors the sound of the instrument. The final section simulates a DJ battle between the turntablist and the acoustic orchestral metaphoric turntablist dueling back and forth similar to how soloists and ensembles alternate in traditional concerti. Though there is no overtly labeled cadenza or improvisatory passage in the concerto, Lizée considers this final battle as a type of cadenza. Whether literal or metaphoric, the turntables are always the focal point of the work.

A unique attribute to this concerto is that the orchestra emulates the turntables by performing what Lizée describes in her thesis as 'metaphoric' turntablism. Acting in small groups as metaphoric turntables, the orchestra performs its own acoustic representation of warping, pitchshifting, splicing (a skipping effect), dragging, transforming (a rapid distorted scratching), beat matching, record juggling, and is placed on the same level as the turntables. Frequent use of portamenti, mutes, harmonics, wide

vibrato, ponticello, odd meter changes (the occasional insertion of a 1/16 measure), and difficult metric rhythms are used in Lizée’s orchestral turntables emulation. She even goes as far as to have the piece end with the low strings scratching their lowest string in a way that resembles the sound of a stylus being removed from the record (Fig 1), cutting off fifteen seconds of sustained crystal glasses.⁷¹

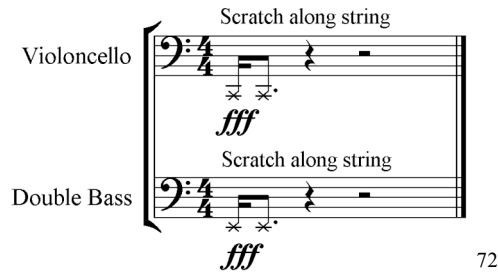


Figure 1. the low strings stylus effect in the final measure of *RPM*

Thematic material is organized into three continuous sections divided by silence. Part I features the orchestra acting alone as the metaphoric turntables simulating turntable idioms for about three and a half minutes. Part II introduces the authentic turntables interacting with the metaphoric turntables influenced by the recorded excerpts manipulated by the DJ. The concluding part III simulates a raucous DJ battle between the acoustic ensemble and DJ. The winner of this contest is open to interpretation.⁷³

The records manipulated by the DJ come from the 1960s musical era and include excerpts from *The Sound of Music* soundtrack and other selected tracks by Perry Como, George Winston, and The Sandpipers. Musical aspects such as tempi, timbre, and melody are extracted from these fragments and directly influence the material performed by the

⁷¹ Nicole Lizée, *RPM*, (Toronto: Canadian Music Centre, 2005).

⁷² Nicole Lizée, *Ibid.*, 73.

⁷³ Nicole Lizée, “RPM for Large Ensemble and Solo Turntablist” (Masters Thesis, McGill University, 2000), 16.

orchestra.⁷⁴ In a record juggle from mm. 259-282, a sampled trumpet solo fragment from Como’s “Papa Loves Mambo” (“Record 2” in the score) is the best example of overt imitation between the live acoustic trumpet in the orchestra and the sampled recording. The other record (“Record 1”) sampling Como’s “Don’t Let The Stars Get In Your Eyes” is also directly imitated by the brass. When the second record is introduced, the trumpet begins to separate from the horn and trombone to imitate the trumpet solo on the second record. Figure 2 isolates these instruments’ interaction and shows the relation to the samples juggled by the DJ. One will also notice an interesting metric notation in the turntables showing how the second record sounding at a different tempo fits in the original meter at a 5:8 ratio. Lizée explains in her thesis that the DJ must follow the conductor and must ignore the faster tempo introduced by the second record.⁷⁵

The image shows a musical score for four parts: Horn, Trumpet, Trombone, and DJ. The music is in 4/4 time and spans four measures. The Horn part has dynamics *p*, *f*, *p*, and *mf*. The Trumpet part has dynamics *p*, *f*, *p*, *f*, and *p*. The Trombone part has dynamics *p*, *f*, *p*, and *mf*. The DJ part shows Record 1 and Record 2. Record 2 is introduced in the third measure with a 5:8 ratio notation. A 'Molto vib. (jaw/shake)' instruction is written above the Trumpet staff in the third measure.

⁷⁴ Nicole Lizée, “RPM for Large Ensemble and Solo Turntablist,” 5-9.

⁷⁵ *Ibid.*, 50.

Figure 2. imitation between brass and turntables mm. 267-281 in *RPM* (concert pitch)

RPM effectively blends musical genres and creates a unique portrait of turntablism expressed in a sophisticated avant-garde lounge atmosphere. More importantly, Lizée's thesis is a critical document that provides valuable insight into the future of turntables composition. Her thesis includes the original handwritten score of *RPM*, a detailed analysis of the composition, and an explanation of turntablism techniques accompanied by visual examples of her turntablism notation direct from the score. A revised published score and a professional recording are also available through the Canadian Music Centre.

⁷⁶ Nicole Lizée, *RPM*, 53-55.

The accessibility of these materials makes the study of *RPM* ideal for any composer or DJ interested in the notation of turntables composition.

Several works for various sizes of ensembles and turntables have surfaced in the most recent decade by composers Nicholas Chase, Sean McClowry, Nikitas Demos, Anthony Paul De Ritis, Shiva Feshareki, Paul Leary, Raz Mesinai, Gabriel Prokofiev, Mariam Rezaei, Daniel Bernard Roumain, Stephen Webber, and Ignaz Schick, among others. Since the premiere of *RPM*, Lizée has written seven new works involving turntables, further expanding and refining composition practices. A few more concertos for turntables by De Ritis, Feshareki, Leary, and Prokofiev have followed as well.⁷⁷

Paul Leary's Concerto for Trumpet, Turntables, and Orchestra

The *Concerto for Trumpet, Turntables, and Orchestra* by Paul Leary was commissioned by the Cleveland State University Contemporary Youth Orchestra (CYO) and premiered December 13, 2003 conducted by Liza Grossman with Joe Miller performing on trumpet and DJ Reemyks as turntablist.⁷⁸ Intrigued by the idea for a turntables concerto from a director of the CYO, Leary added a trumpet soloist to help the piece coalesce.

The four movements each have different thematic and musical organization and are titled as follows:

⁷⁷ Mark Katz, *Groove Music The Art and Culture of the Hip-Hop DJ*, 208.

⁷⁸ Instrumentation: 2dpicc, 2+cor, 2+bass, 2, (bari sax) – 4, 2, 2+bass, 1, timp, 3perc, hp, str, solo trpt, DJ

- I. Blue
- II. Into the Remix
- III. Improvisation
- IV. Finale: As the Tables Turn

Movement I is structured around a ground bass, and movement II follows a rondo pattern of alternating themes. Movement III is a completely improvised solo duet between the trumpet and turntables with no parameters given by the composer other than duration. The finale begins as a transition from the improvised movement into another rondo thematic pattern that grows in intensity to its final conclusion. The soloists performed in duets and also separately with the orchestra in a dialogue with the alternating themes. The overall musical style of the work is inspired by the TV show music of the 1970s-1980s. Leary specifically mentions the TV show “Hawaii Five-0” as an inspiration. While the concerto is not overtly related to hip-hop, its musical style matches the time period of hip-hop’s origin.

Having limited experience with turntablism, Leary focused on what he knew of traditional concerto characteristics and capitalized on the hip-hop tradition of improvisation when incorporating DJ. His turntables notation gives only the instruction of when to play and for how long (Fig 3); similar to how Respighi notates the gramophone nightingale song. Any records may be used and the samples are chosen by the DJ. A few other details in the score inform the conductor of when the turntables have a solo or are playing in conjunction with the percussion as well as when the turntables should match or counter the orchestra or trumpet.

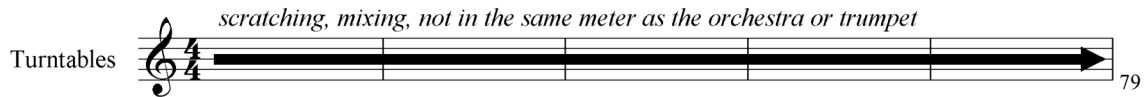


Figure 3. turntables notation found in Leary’s *Concerto*, movement I, mm. 48-52

A specific repeated rhythm is written for the turntables at the very end of the score, but Leary commented that it was too cumbersome for the DJ and instead let the DJ ‘do something funky.’ The concerto has only been performed twice by two different DJs and Leary has not composed any more works that incorporate turntables following the concerto.

Prokofiev’s *Concerto for Turntables and Orchestra*

Even though Prokofiev was not the first to write such a concerto, his name certainly holds a lot of clout and has garnered a lot of attention. He often uses his first name to avoid being confused with his famous grandfather Sergei. Gabriel was born to a Russian father and an English mother in London and studied composition at Birmingham and York Universities. At age ten, he started writing pop songs and played in a band. For the past eight years, Prokofiev has been acting as a DJ producing dance, electronica and hip-hop music.⁸⁰ In 2004, he founded the independent record label *Nonclassical* and

⁷⁹ Paul, Leary, *Concerto for Trumpet, Turntables, and Orchestra*, 2003, 5.

⁸⁰ The Performing Right Society Foundation, *Gabriel Prokofiev*, 2008, [online], Available from <http://www.prsformusicfoundation.com/guestofthemonth/gabrielprokofiev.htm>, September 22, 2010.

started *Chamber Music Classical Stays Out Late*, a new nightclub act in London that includes live acts as well as DJ sets that incorporate classical music.⁸¹

Prokofiev's *Concerto* was commissioned by Chimera Productions and premiered on September 26, 2007 by DJ Yoda and the Heritage Orchestra at The Scala at King's Cross conducted by Jules Buckley.⁸² A version for expanded orchestra was later commissioned by the National Youth Orchestra of Great Britain and premiered on August 3, 2011 in Symphony Hall Birmingham by DJ Switch and the National Youth Orchestra of Great Britain conducted by Vladimir Jurokowski.⁸³ Faber Music Ltd. has published both versions of the score and a recording of the original version is available on Prokofiev's *Nonclassical* record label.⁸⁴ Prokofiev's *Concerto* was actually first performed in April 2006, but he considers it more of a 'sharing' than an official premiere.⁸⁵

Like Yáñez, Prokofiev was first opposed to the idea. His account of the genesis, composition, and program notes of the concerto is included in the foreword of the score.⁸⁶ According to Prokofiev, he already had the experience of writing a small chamber work incorporating DJ for the Bath Festival in 2004 (*Three Dances for Bass Clarinet, String Trio & DJ*), but felt the idea of a DJ concerto sounded "too grandiose and gimmicky"

⁸¹ Gabriel Prokofiev, *Gabriel Prokofiev – short biog*, 2006, [online], Available from <http://blogs.myspace.com/gabrielprokofiev>, September 22, 2010.

⁸² Original instrumentation: 1dalt, 1dcor, 1dbass, 0 – 1, 2, 1+bass, 0, timp, 4perc, str, DJ

⁸³ Expanded instrumentation: 2dpicc+alt, 2+cor, 2+bass, 2+contra – 4, 3, 2+bass, 1, timp, 4perc, hp, str, DJ

⁸⁴ Gabriel Prokofiev, *Concerto for Turntables & Orchestra* (London: Faber Music, 2010).

⁸⁵ More details regarding this performance can be found in Appendix B, Q4.

⁸⁶ The foreword from the score has been attached as Appendix E.

seemingly like “another PR exercise in trying to make modern classical music ‘cool’ and ‘trendy’.” Will Dutta, who had first approached him with the idea argued in favor of its artistic potential. Countering Prokofiev’s criticism, and apparently unaware of Yáñez and Lizée’s concerti, Dutta commented that it was “inevitable that a concerto for turntable would emerge sooner or later, why not let us be the team to do it right?”⁸⁷ A highly skilled turntablist DJ Yoda was offered to serve as soloist for the project. Once Prokofiev took some time to consider the possibilities of the project, he began to sketch out various concepts for each of the movements and was soon dedicated to finishing the concerto.⁸⁸

The *Concerto* is laid out in five movements of varying lengths and forms that showcase different DJ skills. These techniques range from the most basic of reversing, interrupting, and playing back fragments of a record to very advanced expressive scratches such as the crab, the transformer, echoes, planing, hydroplaning, and even new original scratches created by DJ Yoda. Prokofiev also manages to incorporate mixing manifested through the DJ juggling beats against the orchestra rather than between two turntables. The classic vocal expressiveness of “ah” from “Change the Beat” is used in the third movement and melodic possibilities are pursued extensively through the fourth movement. Prokofiev explains that by using the three positions of pitch control in 33 or 45 RPM, a DJ can create the first six notes of a minor scale. The use of improvisation

⁸⁷ Appendix E, Foreward & notes from Gabriel Prokofiev’s Concerto score

⁸⁸ Gabriel Prokofiev, *Concerto for Turntables & Orchestra*.

through cadenzas in each movement gives the DJ a chance to perform freely, connecting the *Concerto* both to the popular tradition of DJing and classical concerto tradition.⁸⁹

The five movements of the *Concerto* have two names that represent both classical and DJ traditions. Upon completing the *Concerto*, Prokofiev created classical movement titles as a deliberate reference to classical tradition and kept the BPM markings as a reference to the DJ tradition. A few people involved in the original recording of the work insisted that he also keep his original titles that he had given his sketches as ‘aide memoires.’ The resulting movement titles found on the CD are as follows:

- I. Introduction (“Grim Eye” -140bpm)
- II. Adagietto (“Irreguluv” -75bpm)
- III. Largo peasante – Allegro – Largo (“Malmo” -62/125pm)
- IV. Andante (“Meditnow” -95bpm)
- V. Allegro Gavotte (“Snow Time” -107bpm)

Prokofiev’s original sketch titles were influenced by the style, characteristics, or location attached to a theme. “Grim Eye”⁹⁰ or grimey refers to a UK dance style called ‘Grime’ that influenced the movement. This style is consistently 140 BPM, but has a half-time 2/2 feel while employing dark bass sounds. “Irreguluv” is named after its 11/8 irregular time signature. Prokofiev thought of the low strings motif for “Malmo” while walking through the Malmo airport in Sweden. The theremin-like turntable melody of “Meditnow” has a meditative quality and “Snow Time”⁹¹ has a ‘wintry ostinato.’

⁸⁹ Gabriel Prokofiev, *Concerto for Turntables & Orchestra*.

⁹⁰ Originally “Grimeye”

⁹¹ Prokofiev notes that he is not keen on the “Snow Time” title.

When Prokofiev had first started work on the concerto in the fall of 2005, he was unaware of Lizée's concerto and Yáñez's complete concerto had not yet been premiered. In his teenaged years, Prokofiev remembers being 'blown away' by Grandmaster Flash and Wheels of Steel as a possible origin to his interest in hip-hop turntablism. While an undergraduate student at Birmingham University, UK, Prokofiev mentions trying out turntablism on a pair of Gemini turntables purchased by him and housemates.⁹² He also attended the DMC competition held in Birmingham and witnessed the virtuosic capabilities of the turntables before meeting with DJ Yoda to learn a wider range of the instrument's capabilities and all the names to the different scratch techniques.

The musical style of Prokofiev's *Concerto* incorporates rhythmic syncopation influenced by his interest in the syncopated grooves of American funk and hip-hop. His program note informs the audience to listen for traces of 'hip-hop drum patterns, a Reggaeton beat, Grime, and even disco-house.' He explains that most of the classic scratch techniques are meant to be scratched over a rhythmic groove. Since DJs are accustomed to scratching over these grooves, Prokofiev created a familiar rhythmic foundation for which the DJ can connect to the classical tradition and freely improvise added elements as necessary. He also makes some clear references to the origins of turntablism in the hip-hop culture of the 1970s-1990s with each movement exploring a different technique. While Cage did not employ turntablism, Prokofiev's turntable melody references Cage's melodic use of the turntables in *Imaginary Landscape No. 1*. His pre-

⁹² Prokofiev did not learn to scratch properly.

recorded “ahhh” sound scratched in the third movement hearkens back to the classic “ahhh” sampled from “Change the Beat.”

The most significant element that separates Prokofiev’s *Concerto* from other previous concerti is his choice of records manipulated by the DJ. Instead of being subjected to creating a composition based on the prerecorded records available, Prokofiev created his own records of his own original concerto themes. This allows for a direct and intricate relationship between all the performers where the DJ can instantly electronically manipulate any musical idea originating from the orchestra. Figure 4 shows how movement II “Irreguluv” begins with the turntables manipulating a sample of the strings which grows to a full measure in length by m. 4. The strings enter in a distorted acoustic version of the sample in m. 5 and later directly match the sample in m. 9 playing in unison with the recording.⁹³

The image shows a musical score for three parts: Turntables, Violin I, and Violin II. The Turntables part is in 8/8 time, Adagio (♩ = 75), and features a 'scratch' and 'PLAY' markings. The Violin I and II parts are in 8/8 time, Adagio (♩ = 75), and feature a 'p' marking and 'show notes of loop' text.

⁹³ Gabriel Prokofiev, *Concerto for Turntables & Orchestra*, 4.

scratch ad lib. then play PLAY

Tt (DJ)

Vln. I *molto stacc. e secco*
p *mp*

Vln. II *molto stacc. e secco*
p *mp*

pulsing with X-fader

Tt (DJ)

Vln. I *mf*

Vln. II *p* *f*

Vc. *pizz.*
mp *p* *f*

94

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Figure 4. melodic interaction between strings and DJ, Prokofiev *Concerto*, movement II “Irreguluv” mm. 1-10

Listeners encounter a unique listening experience when listening to the recording of the concerto. Without a score, it is difficult to notice the difference between the live and recorded orchestra until the surprise of the unexpected scratches and distortion created by the DJ separate the two. The exact replication of music between acoustic and electronic instruments allows the orchestra to function as the second record required for beat juggling. Instead of using a test tone to create melody as Cage had done in *Imaginary*

⁹⁴ Gabriel Prokofiev, *Concerto for Turntables & Orchestra*, 4.

Landscape No. 1, Prokofiev uses a recorded alto flute tone from the orchestra. He even goes as far as recording the flutist gasping for use as his “ahhh” sound in order to keep all sounds original to the orchestra. By restricting the origin of the orchestral sounds, Prokofiev avoids any sense of artificial gimmicks brought in from outside commercial recordings, resulting in a higher continuity between DJ and orchestra.⁹⁵

Prokofiev’s *Concerto* has recently been choreographed by Cathy Marston in a 2011-2012 winter production of the ballet *A Midsummer Night’s Dream* in Bern, Switzerland. The *Concerto* was incorporated into the ballet alongside Mendelssohn’s overture and incidental music for this play. Marston re-titled the modern ballet *Ein Winternachtstraum* (a Winter Night’s Dream) to reflect her wintry perspective of Mendelssohn’s music. The ballet is set at an abandoned fairground guarded by faeries from the “mechanicals” who are depicted as demolition men wearing yellow hard hats.⁹⁶

The clever juxtaposition of Mendelssohn’s work with Prokofiev’s connects the past and present while enhancing the peculiar dream created by the faeries at the center of the ballet. Prokofiev’s *Concerto* can be interpreted as a twisted mechanical reflection of the classical tradition with the symbolism of the turntables representing the manipulation of the lovers and mechanicals by Puck and Oberon. In addition to the *Concerto*, Prokofiev was asked by Marston to compose twenty minutes of new music for scenes not covered by the existing music. With Marston’s suggestion, Prokofiev incorporated

⁹⁵ Appendix E, forward & notes from Prokofiev’s *Concerto* score

⁹⁶ Gabriel Prokofiev, *Ein Winternachtstraum (a Winter Night’s Dream) – my 1st BIG ballet*, 2011, [online], Available from <http://gabrielprokofiev.com/2011/11/02/ein-winternachtstraum-a-winter-nights-dream-m/>, September 3, 2013.

both his and Mendelssohn's existing themes for the setting of the explicit love scene and wedding scene.⁹⁷

Following work with the ballet, Prokofiev continued his venture into turntables composition with the recent completion of a new concerto for trumpet, percussion, turntables, and orchestra. This new concerto was written for the Orchestre National de Pau and was premiered February 5, 2014 by the Orchestre National de Pau conducted by Faycal Karoui and performed by soloists Marie Bédard, trumpet, Chantal Aguer, percussion, and DJ Switch as turntablist.⁹⁸ In an electronic email interview prior to its completion, Prokofiev shared some of his ideas for the new concerto. The new concerto would explore the dialogue between three soloists with the motifs of the trumpet and percussion directly manipulated by the turntables. There would be more explicit use of the turntables manipulating material that has just been performed and there would be a delicate choreography of phrases passed between the instruments. While Prokofiev's turntable works have been a success and are gaining popularity, he would still prefer to concentrate on writing concerti for other instruments.

Stephen Webber's Contributions at Berklee Boston

Just a few months after the premiere of Prokofiev's *Concerto*, Stephen Webber's *Stylus Symphony* was premiered in November 2007 by the Berklee Contemporary

⁹⁷ Gabriel Prokofiev, *Ein Winternachtstraum (a Winter Night's Dream) – my 1st BIG ballet*.

⁹⁸ Faber Music, *World Premiere of Prokofiev's Concerto for Trumpet, Percussion, Turntables, and Orchestra*, February 10 2014, [online], Available from <http://www.fabermusic.com/news/world-premiere-of-prokofievs-concerto-for-trumpet-percussion-turntables-and-orchestra10022014-1>, February 23, 2014.

Symphony Orchestra at the Berklee Performance Center in Boston. Webber, a DJ, musician, composer, and professor at Berklee wrote a four-movement symphony with DJ that combined the orchestral tradition with not only hip-hop, but with other popular dance genres such as trip-hop, and dubstep. Also notable is the use of MC rapping an original rap both written and performed by Raydar Ellis in the symphony's third movement.⁹⁹

Webber, who authored *The Art of the DJ Turntables Technique*, a method book for musicians to learn basic turntables techniques, approached the Berklee administration with the request to offer turntablism classes. After two rejections, Webber's proposal for a mobile turntable lab was approved in 2003 and the first class in beginning turntablism was offered in January 2004.¹⁰⁰ As a popular class, 50 students applied for eight slots in Webber's class for the 2004 fall semester.¹⁰¹ It is the first conservatory class that teaches hip-hop performance techniques using western notation and theory.

⁹⁹ Stylus Symphony, *What is the Stylus Symphony?*, [online], Available from <http://www.stylussymphony.net/what-is-the-stylus-symphony/>, February 4, 2014.

¹⁰⁰ Mark Small, *Faculty Profile: Stephen Webber's Long and Winding Road*, [online], Available from http://www.berklee.edu/bt/153/bb_faculty_profile.html, February 4, 2014.

¹⁰¹ Katie Zezima, *Turntables Come Out of the Basement and Into Music Class*, 2004, [online] Available from <http://www.nytimes.com/2004/03/03/nyregion/turntables-come-out-of-the-basement-and-into-music-class.html>, February 4, 2014.

CHAPTER 3

ABOUT THE INSTRUMENT

Turntables Components and Setup

The basic turntables setup consists of two turntables connected to a mixer and amplification. Beyond this, a DJ may add extra technology such as drum machines, groove boxes, or laptop programs with accessories like MIDI pedals. In the standard setup, the two turntables are placed on either side of the mixer (Fig 5.1). The turntables placement may be rotated sideways with the tone arm at the top rather than the side so that the tone arm is positioned away from where techniques are performed (Fig 5.2). This is known as a “battle style” setup (or “Philly style” because it originated in Philadelphia). DJs also opt for this setup because it requires less horizontal space. There are at least a dozen less common variations based on these two setups. Marclay performs with four turntables without a mixer, and some DJs explore creative setups for originality, but most gravitate towards the battle style setup.¹⁰²

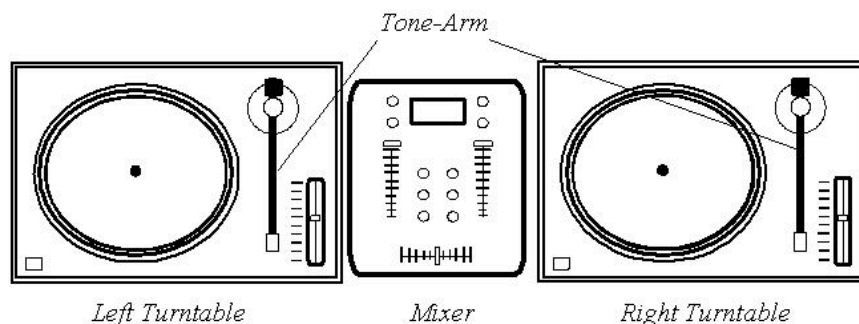


Figure 5.1. standard turntables setup

¹⁰² Stephen Webber, *The Art of the DJ Turntables Technique* (Boston: Berklee Press, 2003), 14-15.

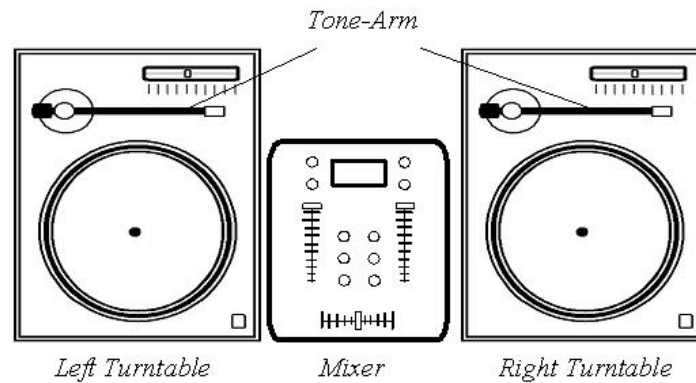


Figure 5.2. “battle style” turntables setup

Turntables

Today’s market provides several different models of turntables for professionals and beginners. The main difference between models is whether the platter is spun using a belt drive motor or a direct drive motor. Belt drive turntables are driven by a rubber belt pulley system that connects the platter with the motor. Holding the platter in place may cause it to lose traction and slow down, or there may be a delay getting back up to speed when released. Even though a belt drive system requires a softer touch, some DJs prefer this system because the slight slippage of the belt makes live beat-matching mixing easier. Professional DJs will probably have high-end direct drive turntables where the motor is connected directly to the motor. These turntables are designed specifically for scratching and have a stronger motor with more torque. The platter will actually keep spinning underneath a record held in place or pulled back. Scratching is more precise and the record will return to tempo immediately when released.¹⁰³

¹⁰³ Ben James, *The Turntable DJ* (Miami: Warner Bros. Publications, 2002), 8-9.

Most belt driven turntables are inexpensive and are common in homes, but not all household turntables are good for turntablism; they will require some modifications. If someone were to try scratching them outright with no modifications, they would probably find the needle skittering all over the record. The needle would need to be exchanged for one designed to avoid skipping and slipmats would either need to be purchased or cut from old record sleeves.¹⁰⁴

Commercial turntables also lack many of the crucial features that come standard on professional DJ turntables. They may have a longer start up time and have only one start button where professional DJ turntables have separate on/off buttons for the machine and the platter. Pitch controls needed for creating melodies and performing mixing may also be absent from the system.¹⁰⁵ Typical DJ turntables should include the following basic components as shown in figure 6:

¹⁰⁴ Mark Katz, *Groove Music The Art and Culture of the Hip-Hop DJ*, 128.

¹⁰⁵ Stephen Webber, *The Art of the DJ Turntables Technique*, 11.

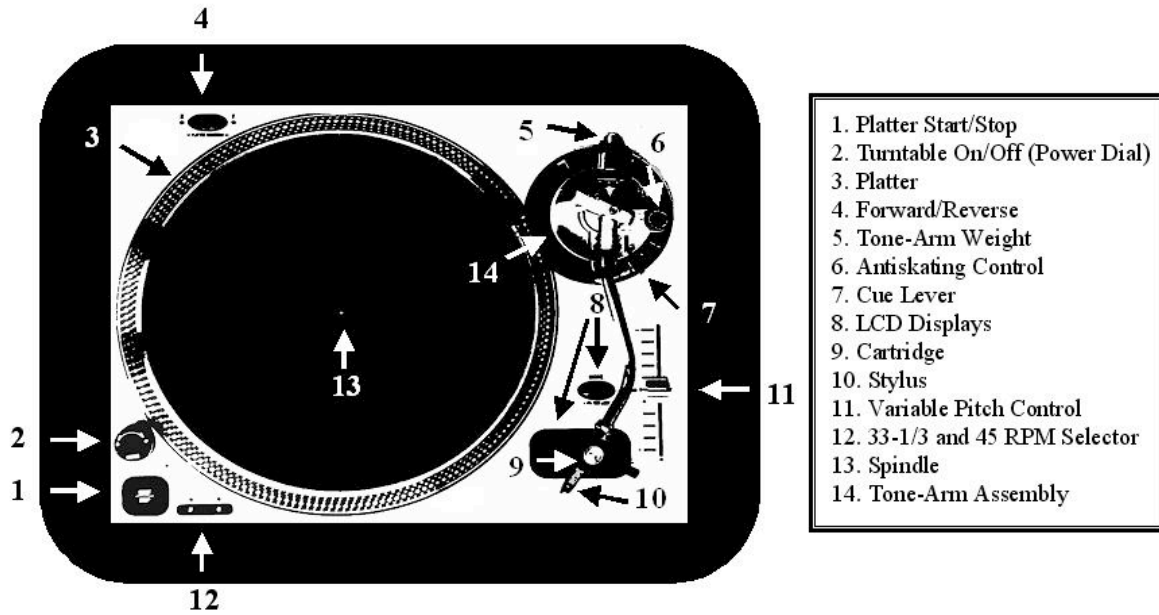


Figure 6. turntables with labeled components

1. The **platter start/stop** button starts or stops the platter from spinning. Pressing this button while the record is playing results in a dramatic “grinding to a halt” effect, which is used at the end of Prokofiev’s movements III and V of his *Concerto*. Some models are designed to also change platter direction when this button is tapped twice. The model depicted in figure 6 alternatively has two separate buttons (diagram label 4) for changing platter direction.¹⁰⁶

2. The **turntable on/off (power dial)** knob turns on the turntables system, sending power to the stylus without spinning the platter. Several scratches benefit from having separated platter and turntable on/off controls.¹⁰⁷

¹⁰⁶ Stephen Webber, *The Art of the DJ Turntables Technique*, 7.

¹⁰⁷ Ibid.

3. The **platter** is where records are placed. Most platters are made of rubber to help grip records, which is not ideal for scratching. DJs will place slipmats over the platter to allow them to freely manipulate the record while the platter spins underneath. They are usually made of felt, but they can also be homemade from cutting up old plastic record sleeves to fit the platter.¹⁰⁸

4. The **forward/reverse** buttons allow the platter to change direction. Before the reverse feature was built in to the turntables, DJs and composers like Varèse had to manually modify their equipment in order to hear records backwards.

5. The **tone-arm weight** adjusts the force of the stylus in the record groove. Increasing the weight on the stylus will help minimize skipping, but it will also wear out the stylus and records much faster.¹⁰⁹

6. The **antiskating control** adds an inward force to the tone arm to keep the stylus from skipping or skating out of record grooves. The control is typically set at the same number as the tone-arm weight, but DJs will adjust these settings according to their personal preferences.¹¹⁰

7. The **cue lever** lifts and lowers the tone arm and is almost never used because DJs place the needle on the record by hand.¹¹¹

8. The **LCD displays** relay the actions and settings of the turntables on a convenient visual screen. Some high-end models will display not only RPM but also beats per

¹⁰⁸ Stephen Webber, *The Art of the DJ Turntables Technique*, 16.

¹⁰⁹ *Ibid.*, 8.

¹¹⁰ *Ibid.*, 10.

¹¹¹ *Ibid.*, 7.

minute, known as a “BPM counter”, but they are not fully accurate according to the DJ community. The BPM counter technology analyzes the audio input and generates a reading. Its analysis cannot be trusted as some recordings drift in tempo, or do not have a beat structure that can be analyzed accurately. Imperfections aside, it remains a helpful tool for beginners practicing beat matching. The vast majority of DJs will match by ear without needing the BPM counter.¹¹²

9. The **cartridge** houses the stylus, magnet, and coils that convert the vibrations emitted from the stylus into electrical signals. Cage modified cartridges by replacing the stylus with found objects to explore the object’s sonic possibilities interpreted by the mechanism.¹¹³

10. The **stylus**, or needle, is connected to the cartridge and rides along record grooves. As the needle follows the record grooves, it moves vertically and horizontally which vibrates a stiff metal cantilever attached to a magnet. The magnetic energy of the vibrating magnets travels through the poles and is converted into electronic signals by two coils (one for each channel of stereo sound), which are the transmitted by the head shell leads. To achieve stereo sound, the stylus reacts to both sides of the groove, the left and right sides, which correspond to left and right channels.¹¹⁴

¹¹² Trance.nu, *BPM Counter On Turntables Help ???* [online], Available from <http://trance.nu/v4/forum/viewtopic.php?t=159050>, January 23, 2014.

¹¹³ Stephen Webber, *DJ Skills: The Essential Guide to Mixing and Scratching*, (Oxford: Elsevier, 2008), 138.

¹¹⁴ Ibid.

11. The **variable pitch control** changes the pitch of a record by changing its speed. The pitch can be changed using the slider for both 33-1/3 and 45 RPM. The amount of pitch fluctuation varies from plus or minus 8% on the Technics 1200 Series turntables to plus or minus 50% on the Numark TTX series. DJs will use this control to adjust the speed to match the beats of another record on the other turntable, or they may use the slider to play melodies. Prokofiev's *Concerto* uses the variable pitch control to create the turntables melody in movement IV.¹¹⁵

12. The **33-1/3 and 45 RPM selector** buttons control the speed of the platter in “revolutions per minute” (RPM). At 45 RPM, a record completes 45 rotations in one minute. The old gramophones of Hindemith and Toch's time were typically operated at 78 RPM, a speed still available on some models.¹¹⁶

13. The **spindle** helps keep the record in place and centered on the platter. Marclay has experimented by punching alternative spindle holes in records so that they may be played un-centered.¹¹⁷

14. The **tone-arm assembly** supports the stylus and routes the connection wires from the stylus to the turntable body. They may be straight or S-shaped. There are several adjustments that can be made to the tone-arm's height and weight to help avoid skipping.¹¹⁸

¹¹⁵ Stephen Webber, *The Art of the DJ Turntables Technique*, 7.

¹¹⁶ *Ibid.*, 7.

¹¹⁷ Douglas Kahn, “Christian Marclay's Early Years: An Interview,” *Leonardo Music Journal*, Vol. 13, (2003), 20.

¹¹⁸ Stephen Webber, *The Art of the DJ Turntables Technique*, 8.

Mixer

Mixers collect audio from different sources, combine it together, and then send a mixed signal to stereo speakers, recorder, radio transmitter, or some other destination. A DJ mixer differs from normal mixers in that they have been simplified to usually contain only the two channels needed for each turntable. They are more compact so that the turntablist's hands can easily reach the mixer controls and each turntable on either side. DJ mixers are used to create seamless transitions between sources and its controls are manipulated like a musical instrument to create rhythms, articulations, and phrases. The best DJ mixers have sturdy, replaceable controls that feel good enough to be played as a musical instrument and can be modified to fit a performer's preference. Professional models will boast "outstanding fidelity, powerful equalization, and an intuitive interface for external devices."¹¹⁹

The basic DJ mixer should include the following components as shown in figure 7:

¹¹⁹ Stephen Webber, *DJ Skills: The Essential Guide to Mixing and Scratching*, 177.

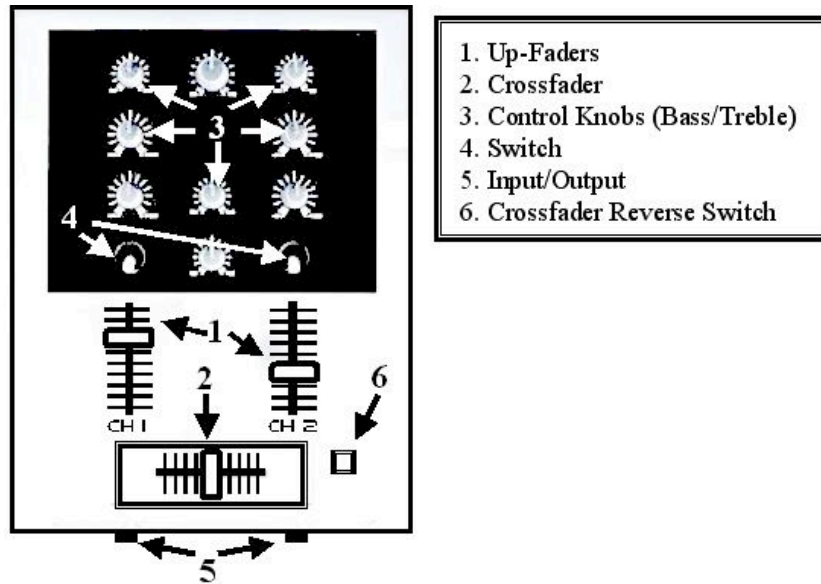


Figure 7. mixer with labeled components

1. The **up-faders** (or channel faders) control the volume of each channel or turntable. A DJ may play rhythms or echoes by sliding the fader. They may also be used to create fades in or out on either channel, or to balance volume between turntables.¹²⁰

2. The **crossfader** runs horizontally and is used for fader scratches and mixing the two turntables together. When the crossfader is set in the middle of the spectrum, both turntables are heard at equal strength. When set at the far left or right, the turntable of the selected channel is singled out.¹²¹ Radio DJs and club DJs create a continuous flow of music by sliding the crossfader from one turntable to the other. This fader can fade out from the end of one track on one turntable into the beginning of another track on the other turntable. Crossfader transitions can fade right into the next track, or they can fade into silence with the DJ waiting to set the needle at the beginning of the next track. On certain

¹²⁰ Stephen Webber, *The Art of the DJ Turntables Technique*, 12.

¹²¹ Ibid.

models, the slope of the fader can be adjusted to have a steep or gradual slope. A gradual slope is appropriate for mixing and a steep slope is best for scratching.¹²² Several scratches such as the crab and the chirp incorporate the crossfader using rapid movements. In this case, only one turntable is used (or the other is silenced) so that the crossfader movements into the silenced channel create rhythmic breaks in the sound. The crossfader can also be used to cut off the end or tips of scratches for different articulations.

3. The **control knobs** adjust various gain and equalizer (EQ) levels of each channel individually, both together, and any external devices such as microphones and headphones. By using these controls, the DJ can adjust bass, midrange, treble, and volume. The mixers with the best equalizers allow a DJ to completely isolate the frequencies of a bass line or a treble melody from an otherwise thick texture. The gain controls adjust the phono preamps for each turntable and can add noise or distortion when set very high (which is typically unwanted). The phono preamp is required to boost the output signal of the turntable cartridge and inserts an appropriate EQ curve for vinyl mastering.¹²³ Without this phono EQ and preamp, the sound will be tinny and unusable.¹²⁴ Mixers with more features may have extra controls for adjusting reverb, filters, flangers, delay, and vocoder effects.

¹²² Stephen Webber, *DJ Skills: The Essential Guide to Mixing and Scratching*, 182.

¹²³ Stephen Webber, *The Art of the DJ Turntables Technique*, 13.

¹²⁴ Stephen Webber, *DJ Skills: The Essential Guide to Mixing and Scratching*, 177.

4. The **switch** for each channel turns the signal to the turntables on or off. A turntablist may perform precise, cleaner rhythms using the switch rather than using a fader.¹²⁵

5. There are several **inputs and outputs** that connect various devices through the mixer including the turntables themselves (typically more than the two represented in Figure 7). Microphones can be connected for MCing (also known as rapping) and headphone jacks allow the DJ to listen to records and cue them up without broadcasting the sound to the audience. The mixer outputs are connected to the house system, which contains amplification and loudspeakers. Other additional external devices such as MP3 players, CD players, laptops, and drum machines can be added for extra effects.¹²⁶

6. The **crossfader reverse switch** (or “hamster switch”) reverses the crossfader channels. The “hamster style” performance practice was created by the west coast turntable crew known as the Bullet Proof Skratch Hamsters. By connecting the turntables to the mixer in reverse, they created a reversed crossfader. When the crossfader is moved to the right, it singles out the turntable on the left rather than the right (and vice versa). This alteration significantly changes the feel and phrasing of the fader scratches such as the crab and flare and is preferred by many turntablists. Modern mixers now feature the hamster switch that automatically reverses the crossfader.¹²⁷

¹²⁵ Stephen Webber, *The Art of the DJ Turntables Technique*, 12.

¹²⁶ *Ibid.*, 11.

¹²⁷ Stephen Webber, *DJ Skills: The Essential Guide to Mixing and Scratching*, 268.

The Evolution of the Instrument and Records

The first phonograph was invented in 1877 and patented in 1878 by Thomas Edison. It used wax cylinders and could both record and reproduce sound. Each machine was equipped with two styli, one for recording and one for playback.¹²⁸ To record, the operator would have the recording stylus in place and would speak into the horn. The horn would direct the sound to a diaphragm, vibrating the stylus, which cut grooves on the rotating cylinder. To playback the recording, the operator would use the playback stylus, which traced the grooves causing the diaphragm to sympathetically vibrate. The horn would acoustically amplify the vibrations of the diaphragm.¹²⁹ The sound quality was far from ideal musically, and while convenient for office businessmen recording messages, its use proved impractical.¹³⁰

In 1888, a German immigrant in America named Emile Berliner improved upon Edison's technology with his invention of the gramophone. Instead of using wax cylinders, the gramophone played flat discs made of vulcanized rubber that were easily mass-produced from a master copy. The discs were seven inches in diameter allowing for about two minutes of record time and the machine had to be manually cranked at a consistent speed. With new improvements to Edison's machine, both wax cylinder and disc machines were equally competitive by the early 1890s. Even though the gramophone

¹²⁸ Stephen Webber, *DJ Skills: The Essential Guide to Mixing and Scratching*, 3.

¹²⁹ *Ibid.*, 137-138.

¹³⁰ Emily Thompson, "Machines, Music, and the Quest for Fidelity: Marketing the Edison Phonograph in America, 1877-1925," *The Musical Quarterly*, Vol. 79, No. 1 (Spring, 1995), 137.

could not record, it eventually replaced wax cylinders entirely because discs were easily mass-produced and much easier to store.¹³¹

The introduction of the victrola in 1906 dealt a serious blow to the popularity of the cylinder. Victrolas were seen as a stylish, modern household status symbol and were capable of playing varying sizes of discs. Tchaikovsky's *Nutcracker Suite* was released in 1909 on four 2-sided discs and was referred to as the first "album" since its packaging resembled the layout of a photo album. As the recording market grew during WWI, portable players called deccas allowed recordings to be played anywhere.¹³²

By 1912, the Edison Company entered the disc market to compete with Victor and Columbia. After years and several million dollars of research, Edison released their diamond needle and diamond disc phonograph. This new machine was housed in a cabinet just like the victrola and used an unbreakable diamond tip needle rather than the competitor's steel needle that needed to be replaced after a few playings. The quality was superior, but the higher price was not competitive with its already established competitors. Only diamond discs could be played on the machine; they were not interchangeable with discs produced by other manufacturers. Edison dealers were forbidden to refer to the diamond disc phonograph as a machine and were asked to instead

¹³¹ Stephen Webber, *DJ Skills: The Essential Guide to Mixing and Scratching*, 4-5.

¹³² *Ibid.*, 6.

sell it as a “musical instrument” giving “recitals” with diamond disc recordings of Edison’s finest artists.¹³³

Starting in 1915, thousands of “tone test” demonstrations promoting the diamond disc phonograph were given as free performances across the country. Live solo performers would perform doubled by a recording of themselves performing the exact same music as an uncanny fidelity test. On some occasions entire tone test concert programs were given at prominent symphony halls to large audiences. Marie Rappold sang with her Edison re-creations at Carnegie Hall New York in a concert attended by an audience of about 2,500. Audiences of that day were astonished by how indistinguishable the real performance was from the recording. One can speculate that Respighi’s decision to use the nightingale recording in *The Pines of Rome* may have been influenced by first-hand experience or news of these tests that had traveled abroad. While these tone tests were extremely marketable and newsworthy for a time, Edison was apparently more interested in competing with real sound than his competitors’ machines; in fact, his sales never surpassed Victor’s.¹³⁴ From 1921 to 1929, Edison’s tone test fad began to fade as low audience turnout and frequent cancellations helped contribute to the closing of his business—and the end of an era.¹³⁵

Record sales began dropping in the early 1920s with the advent of radio broadcasting. Commercial radio music was free, of better sound quality, and the

¹³³ Emily Thompson, “Machines, Music, and the Quest for Fidelity: Marketing the Edison Phonograph in America, 1877-1925,” 142-148.

¹³⁴ *Ibid.*, 148-156.

¹³⁵ *Ibid.*, 160-161.

technology excited listeners. As Edison's market declined, Victor remained resilient by incorporating the most current technologies, including Bell laboratories' new invention of the condenser microphone starting in 1925. Invented in 1916, the condenser microphone could pick up more high and low frequencies than the earlier horn, adding much-needed bass and a richer sound quality. Radio supported sales of the new records by playing them over the airwaves and soon record players and radios were combined in one machine.¹³⁶

Magnetic tape was invented in 1939, but the tape recorder was still in need of serious improvements before it could be competitive. As tape improved, records began to lose favor, as the shellac records were brittle, easily scratched, and were limited to ten minutes of playing time per side. The vinyl LP ("Long Player") made of polyvinyl chloride (PVC) was introduced in 1948. This new record was twelve inches wide and had a run time of thirty minutes per side at 33-1/3 RPM. By 1950, vinyl LPs had replaced the earlier shellac 78 RPM discs.¹³⁷

Record companies had the option of pursuing the tape market, but they decided to continue with the vinyl LP format to avoid confusing consumers with another change in technology. The 1960s saw the golden age of vinyl LP records when the Beatles were signed by EMI in 1961.¹³⁸

¹³⁶ Stephen Webber, *DJ Skills: The Essential Guide to Mixing and Scratching*, 6-7.

¹³⁷ *Ibid.*, 8.

¹³⁸ *Ibid.*, 9.

The turntables of the early 1970s were not strong enough to support the development of hip-hop turntablism. The first turntablists used inexpensive styli because expensive high fidelity needles were too light for scratching.¹³⁹ DJs were not able to expand their techniques until direct-drive turntables and more robust equipment were available starting in the mid-1970s.¹⁴⁰

Even into the late 1980s, DJ mixers were not manufactured with the scratch DJ in mind. They were large, old-fashioned, and had stiff faders that held back the developments of the fader scratches. A radio DJ might use the fader once every few minutes, but a turntablist would use the same fader hundreds of times in that same time period. If the crossfader did not break, its overuse caused a crackling static, or could lead to “bleeding,” where both channels would be heard regardless of the fader’s position.¹⁴¹

DJs always had a solution to their instrument’s shortcomings, whether it was to tape coins to the cartridge, or to spray the faders with WD-40 to loosen stiff faders. It was not until the early 1990s that the equipment manufacturers really began to take notice. In 1995, mixers were streamlined, simplified, and improved with superior crossfaders and added features specifically requested by scratch DJs.¹⁴² Older discontinued needles favored by DJs for their skip-less performance were re-released, improved, and marketed as “turntablist record needles.”¹⁴³ Even today, with

¹³⁹ Mark Katz, *Groove Music The Art and Culture of the Hip-Hop DJ*, 128.

¹⁴⁰ *Ibid.*, 50.

¹⁴¹ *Ibid.*, 131-132.

¹⁴² *Ibid.*, 135.

¹⁴³ *Ibid.*, 129-130.

manufacturers realizing their dream equipment, DJs are still pushing the limits of the technology as an ingrained resistance of authority.¹⁴⁴

Record sales began to decline starting in the early 1980s with the arrival of the digital compact disc.¹⁴⁵ Where the market for cassette tapes has come and gone, a small market for vinyl LP records remains. The rise of turntablism in recent decades has added a renewed interest in the vinyl LP. Some modern consumers prefer the sound of a vinyl record to digital, or they might simply have a fascination in the older technology.

There are several digital turntables on the market, which add both benefits and some controversy among DJs. The benefits are that a DJ no longer has to carry around a record collection, and many standard techniques, which had once been performed manually, can now be performed at the touch of a button. Critics argue that digital systems remove the physical skill that helped legitimize the art of turntablism, but most embrace the added benefits of the technology. In 2011, the DMC World DJ Championships began allowing the use of software-based systems in addition to traditional vinyl.¹⁴⁶

Serato & Digital Vinyl Systems

Gabriel Prokofiev's *Concerto* takes advantage of a popular digital vinyl turntable system called Serato Scratch Live. Serato is equipped with two vinyl records unique to Serato, the accompanying Serato software (to be operated on a laptop), and a small black

¹⁴⁴ Mark Katz, *Groove Music The Art and Culture of the Hip-Hop DJ*, 136-137.

¹⁴⁵ Stephen Webber, *DJ Skills: The Essential Guide to Mixing and Scratching*, 10.

¹⁴⁶ Mark Katz, *Groove Music The Art and Culture of the Hip-Hop DJ*, 247.

metal box with various outputs and inputs that will require connections to the DJ's existing turntable setup. Any turntables may be used and there are no special turntables to buy or learn. Figure 8 shows how the black box, laptop computer, and an optional microphone are wired together to a DJ's existing setup.¹⁴⁷

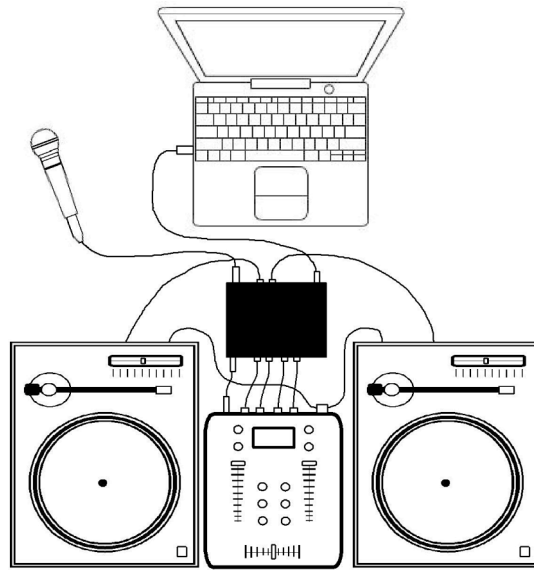


Figure 8. Serato equipment added to a typical DJ setup

At first glance, the Serato records look like any other record. Looking closely, one might notice their uniqueness in that all the track bands are the same width and there is no variation of groove thickness. It might even appear to be a blank record or a fabricated prop. When played without the Serato software, the record emits a long high-pitched sine wave known as a control signal. When the software is enabled, the tone is replaced by a chosen sound file on the computer, which can then be manipulated on the special records

¹⁴⁷ Mark Katz, *Groove Music The Art and Culture of the Hip-Hop DJ*, 220.

just like any other typical record. The software interprets the manipulation of the control tone into the manipulation of the sound file.¹⁴⁸

Prokofiev's approach to turntables composition is to compose original material that is recorded prior to performance and scratched by the DJ. Before Serato became popular, Prokofiev recorded and pressed twenty test copies of the vinyl record required for his *Two Dances for String Trio, Bass Clarinet, Piano and Scratch DJ* in 2004.¹⁴⁹ The *Concerto* of 2007 takes advantage of the Serato system so that the excerpts are easily uploaded to the interface and can be edited or rerecorded depending on DJ preferences. The interface also allows a DJ to set cue points to quickly and accurately find a desired sound more efficiently. A composer does not need to worry about paying for pressing records and wear of a special record is no longer an issue. The recording can be more easily updated if changes are made to the composition. Ensembles must keep in mind that they may need to plan ahead for recording excerpts if necessary.

When an ensemble hires the score from Faber Music, a sound file for both right and left turntables can be immediately downloaded from the publisher and uploaded to a Serato system. The sound files are in order and organized by movement. The premiere performance of Prokofiev's *Concerto* was actually scratched using a high quality MIDI recording. Since the premiere, Prokofiev has made and edited recordings of live orchestra

¹⁴⁸ Mark Katz, *Groove Music The Art and Culture of the Hip-Hop DJ*, 220.

¹⁴⁹ Prokofiev remembers the twenty test pressings costing around £400.

playing the scratched excerpts that are now used in current performances.¹⁵⁰ DJ Switch recently recommended to Prokofiev that he compile the sound files of the Serato records at a tempo of 133.333 BPM so that all of the samples would start at the same place on the record—an obvious benefit to the performer. An ensemble has the option of creating their own recordings for the DJ while using the recording supplied by the publisher for rehearsal purposes only. Prokofiev cautions the creation of new recordings with the warning that is important to master the recording properly with the right EQ and compression as this really affects a sample’s sound quality when scratched.

Ion “Discover DJ” Computer DJ System

Ion offers the “*Discover DJ*” *Computer DJ System* (Fig 9), which contains a portable controller and the MixVibes Cross LE Performance software interface. The controller mimics turntables similar to digital turntables, but on a smaller, simpler scale meant for novices. It plugs into a computer via USB and automatically connects a user’s iTunes music library to the turntables software interface. A user may mix and scratch using the two platters and a mixer, which are arranged in a professional layout in a one-piece controller unit. Selected tracks are then loaded to both decks from the iTunes library and controlled through the device and software.¹⁵¹

¹⁵⁰ The complete story of the evolution of Prokofiev’s Serato recordings can be found in Appendix B, Q9.

¹⁵¹ Ion Audio, *Discover DJ Computer DJ System*, 2013 [online], Available from <http://www.ionaudio.com/products/details/discover-dj>, September 17, 2013.

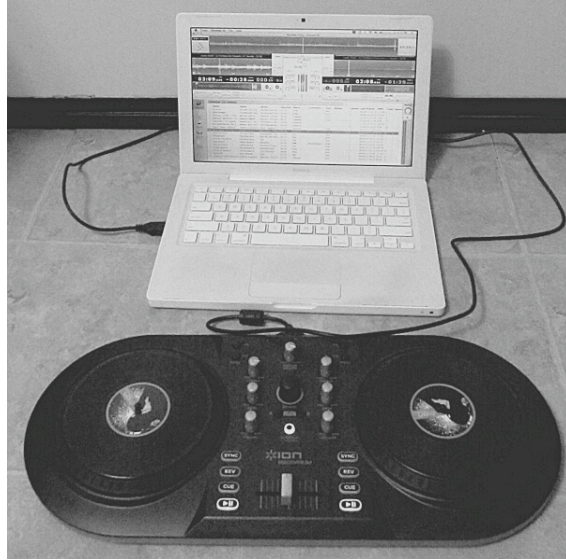


Figure 9. Ion “Discover DJ” Computer DJ System

This system makes cueing, transitions, scratching, looping, beat-matching, and pitch alteration very simple and attainable for amateurs. Recording and playback capabilities are also included. A composer could easily use this system as a tool for turntable composition without having to buy costly equipment or worry about needles and records. Music and samples original to the composer can be uploaded and manipulated by the controller.¹⁵²

¹⁵² Ion Audio, *Discover DJ Computer DJ System*, 2013 [online], Available from <http://www.ionaudio.com/products/details/discover-dj>, September 17, 2013.

CHAPTER 4

TURNTABLISM TECHNIQUES

Introduction

The combination of a constantly advancing technology and an infinite amount of recordings (whether digital or analog) leads to endless possibilities when using turntables as an expressive musical instrument. A composer writing for the instrument should be knowledgeable of turntablism and its associated terminology used by DJs. Many of the techniques are comparable to musical expressions and notation already found in the classical tradition. Instead of adopting this tradition, DJs tangentially developed their own terminology that encompasses rhythm, articulations, effects, and sound quality. For example, four quarter notes with marcato accents would be more readily recognized by a DJ as: *four record stabs*. Composers must learn these terms in order to communicate their ideas effectively to DJs both in the notated music and orally in rehearsal. These techniques can be notated in the music in a similar manner that *pizzicato* or *sul ponticello* are used in a violin part. A composer may also find that hearing these techniques will help in understanding the instrument's sound characteristics. If a DJ is unavailable for demonstration, one can consult the CD that accompanies Webber's book "DJ Skills," or search youtube for turntablism demo videos.¹⁵³

¹⁵³ DJ Angelo, DJ Chile, and DJ Short-e ('Studio Scratches' channel) have several tutorial videos covering a wealth of scratches and techniques.

Cueing & Marking Records

The very first technique a beginning DJ learns is how to cue records on the turntable and play them back at normal speeds (the primary skill of a radio DJ). A radio DJ will “cue up” a record by manually picking up and placing the needle precisely where the music begins on a record.¹⁵⁴ This may be the very beginning of the record, or it could be the beginning of track three. The tracks of a record are very easily seen as bands of grooves separated by thin lines of smooth areas (silence) and are numbered from the outside moving in.¹⁵⁵

A scratch DJ develops the skill of cueing anywhere on a record while it is stationary or in motion. The desired sound of a drumbeat groove or dissonant orchestral accent might occur anywhere within the tracks. The DJ will cue the needle at the beginning of the chosen excerpt, often placing markers on the record as a helpful reminder. Stickers (adhesive dots) or drafting tape may be placed directly on the grooves of the record to show where to place the needle, and straight lines can be drawn on the label outward from the center spindle hole to serve as a clock guide (Fig 10). When the excerpt is cued up, the DJ may draw a line straight up from the spindle hole towards “12 o’clock” on the record. Marking records varies greatly between DJs and some may prefer marking towards the landmarks of the stylus or even the on/off switch. In performance, a DJ can

¹⁵⁴ Ben James, *The Turntable DJ*, 13.

¹⁵⁵ Stephen Webber, *The Art of the DJ Turntables Technique*, 23.

easily cue chosen excerpts by lining up the markers and placing the needle in the correct groove. While this concept might appear easy, it is a difficult skill to master in reality.¹⁵⁶

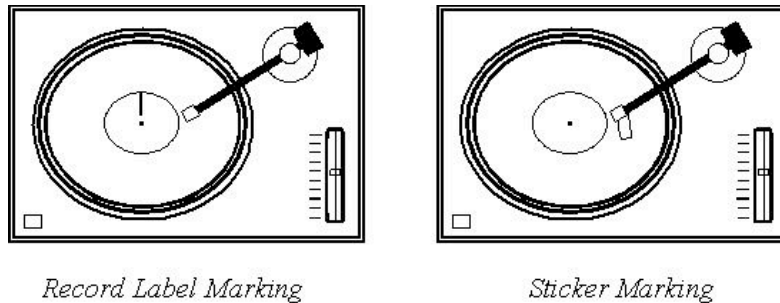


Figure 10. two different methods of marking records

A composer need not include directions to cue excerpts; the DJ will do so automatically as long as the chosen excerpt is indicated. A composer should however consider where the required excerpts lie on the record and how many will be used. Multiple records of the same recording might be required. Digital turntables take the guesswork out of cueing for DJs; markers can be placed digitally using the software interface and can be cued instantly with the touch of a button or mouse-click. When pressing a vinyl record or using a digital system such as Serato, it is best to line up the starts of all the samples in the same place, like at “12 o’clock.”

Mixing

In the hip-hop tradition, DJs create their music by extracting material from an amassed collection of recordings of preexisting music. The chosen material could be an entire track, a verse of a song, a drumbeat, or a piano chord. These ideas are mixed together into a new music where the DJ can control timbre, pitch, rhythm, and create new

¹⁵⁶ Stephen Webber, *The Art of the DJ Turntables Technique*, 27-28.

rhythmic patterns (also known as “beats”). A DJ’s mixing options are as great as his collection of recordings, which is virtually unlimited when digital technology is considered. The most skilled DJs perfect creative and interesting mixes with tricks, scratches and effects.¹⁵⁷ A composer may also choose material for the DJ from preexisting recordings or he may compose and record his own material to be mixed in the same manner that Prokofiev has done with his *Concerto*.

Since improvisation is a strong component of the hip-hop tradition, a composer has a greater opportunity to give the performer more artistic control over mixing and scratching. The composer must consider how much choice is given to the DJ. On one side of the spectrum, Leary’s *Concerto* takes advantage of this improvisation tradition and only indicates when the DJ is to play. The DJ is fully responsible for what recordings are to be mixed and scratched. On the other side, Lizée’s *RPM* requires specific recordings and indicates which excerpts are to be used throughout the piece. There are no overt cadenzas or any improvised areas; Lizée has created a fixed composition based on her choices. Prokofiev’s *Concerto* falls somewhere in the middle with compositional choices made mostly by the composer, but also by the DJ in cadenzas at the end of each movement.

Beat Match Mixing

In order to create new music, a DJ must learn the art of creating and manipulating rhythmic patterns from excerpted recordings. A good DJ will calculate the BPM (beats

¹⁵⁷ Stephen Webber, *DJ Skills: The Essential Guide to Mixing and Scratching*, 240.

per minute) of his recordings and organize them according to tempo. Some advanced systems will calculate this automatically. A DJ synchronizes the differing tempi of opposing recordings by adjusting the speed of the turntables to match beats. He can create new interesting composite rhythms between recordings or smooth transitions from one to the next. In the case of turntable concerti, a DJ can match beats between recordings and a live orchestra.¹⁵⁸

A DJ matches beats by first listening to the beat of the second recording and comparing its speed to the beat of the first recording. The second record is then adjusted slower or faster by using the pitch control. One should also realize that the pitch control will change the pitch lower or higher in addition to changing the speed. If this is unwanted, the DJ can enable the “key lock” feature that overrides the change in pitch, but allows for the tempo to change. A DJ will typically match harmonic keys using the key lock feature before changing the speed with the pitch control, which in this case would not affect pitch, but only the speed.¹⁵⁹

A DJ uses headphones to listen in privately to the second recording while adjustments are made so as not to broadcast them to the audience. Once the DJ has matched tempi, the second recording is set in motion precisely where he wishes the excerpts to line up. Beats that are not properly matched will sound out of phase and can potentially create rhythmically jarring transitions. He must also consider the amount of distortion caused by changing the speed. If this is unfavorable, he may change speeds of

¹⁵⁸ Stephen Webber, *DJ Skills: The Essential Guide to Mixing and Scratching*, 224.

¹⁵⁹ *Ibid.*, 238-239.

both turntables to meet somewhere in the middle to achieve a more favorable playback sound quality.¹⁶⁰

Extending the Break

The technique of looping a recorded excerpt is known to many DJs as “extending the break.” It was pioneered by Grandmaster Flash and is considered a foundational technique of the hip-hop culture. Flash repeated sections of the records that dancers liked best and developed a way to seamlessly loop the fragment continuously between two copies of the same record without disrupting the rhythmic pulse.¹⁶¹

This technique can be performed manually by playing the excerpt on one turntable while silently cueing the excerpt copy on the second turntable to play in time right after the first. After the first copy of the excerpt is played, the first turntable is silenced and dragged backwards (also known as “back spinning”) back to its cue point while the second copy plays back the same excerpt. This process can be continued endlessly for as long as the DJ chooses. Digital systems will loop fragments at the push of a button in tempo in durations ranging from an eighth note to a four-bar phrase. Since this removes physical skill from the technique, many DJs disapprove of the use of digital software.¹⁶²

Beat Juggling

Once a DJ masters making beats and matching tempi, he can start manipulating beat patterns as a technique known as “beat juggling.” DJ Rob Swift accredits DJs Steve

¹⁶⁰ Ben James, *The Turntable DJ*, 20-21.

¹⁶¹ Stephen Webber, *The Art of the DJ Turntables Technique*, 40.

¹⁶² *Ibid.*, 41.

Dee and Dr. Butcher for inventing the technique. According to Swift, Dr. Butcher was able to make beats sound like they were going backwards or sounding in reverse.¹⁶³

Prokofiev cues the DJ with written instruction to juggle beats against the orchestra in movements II, III, and IV of his *Concerto*.

Beat juggling requires two copies of the same record on both turntables while some expert beat jugglers may be able to use only one. The technique can be understood as a variation on extending the break. Instead of looping the beat seamlessly with even repetitions, a DJ can “juggle” the beat by freely interrupting it by touching each record and bouncing back and forth between the two records using the crossfader. This creates an interesting irregular beat pattern that can either sound like stuttering, skipping, or even a change of meter depending on how rapidly the DJ cuts up the beat.¹⁶⁴ During a beat juggling passage, various tricks and scratches can also be incorporated freely into transitions between phrases.¹⁶⁵

Scratches

Mixing can be understood as the arrangement of excerpts into phrases and form, while scratching is the musical expression of these excerpts through the articulation of rhythm and distortion of timbre. Scratches can be divided into two categories, those that incorporate the fader on the mixer (fader scratches), and those that do not (faderless

¹⁶³ Stephen Webber, *DJ Skills: The Essential Guide to Mixing and Scratching*, 64.

¹⁶⁴ Adam Douglas, *DJ 103: Basic Beat Juggling*, [online], Available from <http://www.ign.com/articles/2002/09/26/dj-103-basic-beat-juggling>, January 27, 2014.

¹⁶⁵ The Scratchers Journal, *Beat Juggling Tutorial*, [online], Available from <http://www.x2k.co.uk/beat-juggling-tutorials/>, November 9, 2013.

scratches). They can be simple or intricate, but most of the time they are blatantly percussive. Depending on the recorded excerpt, scratching can highlight drum patterns, add rhythm to vocals, give additional weight to lyrics, or rapidly divide a single beat. Scratching earned its name from the way it sounds, which is especially prevalent when scratching “ahh” or “fresh.” Gouges are not physically scratched into the record (though it does add extra wear). Slipmats allow for the record to be moved in articulate movements while the platter spins underneath without damaging the motor.¹⁶⁶

Since turntablism initially developed in separate communities, there can be discrepancies in terminology. Grandmaster Flash referred to his version of scratching as “cutting.” With the advent of the internet and international competitions, DJs have collectively agreed upon some important historical facts, as well as some universally accepted scratch names. New scratches and variations on standard scratches are constantly developing as the result of competition among DJs. These special scratches will vary between DJs and are unique to each performer. Even though there is already a large body of scratches that have been collectively developed by the DJ community, the sonic possibilities are limitless.

Notation

Most DJs do not read conventional musical notation, but they do have a sophisticated understanding of rhythm and can perform fast and articulate rhythms. All rhythmic figures and musical articulations are understood by DJs as various scratches that

¹⁶⁶ Stephen Webber, *DJ Skills: The Essential Guide to Mixing and Scratching*, 253.

have been developed and named over time. A DJ might jot down the names of scratches to help them remember their routine or a transition, whereas a composer might use music notation.

A type of tablature for the turntables known as the Turntablist Transcription Methodology (TTM) was developed in collaboration by John Carluccio, Ethan Imboden, and Ray Pirtle in 1997 and was later published in 2000. Scratches notated with TTM are plotted on a rectangular graph where the horizontal axis represents time and the vertical axis represents record rotation. TTM also shows the name of the scratch, what excerpt is used, whether the sound is off, direction of record notation, and the use and placement of specific percussion sounds (Fig 11). It unfortunately does not include dynamics or tempo, and there is no way of knowing exactly how the excerpt should sound.

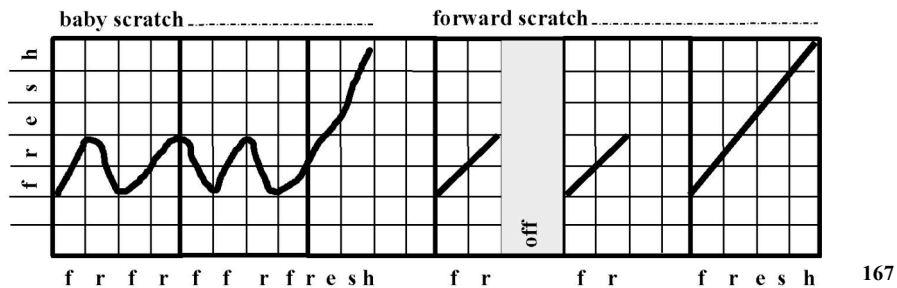


Figure 11. TTM notation of basic scratches

Like guitar tablature to the guitar community, TTM is exclusive to the DJ community. A composer is less likely to learn TTM or incorporate it in a composition, but it could offer

¹⁶⁷ Turntablist LLC, *TTM*, 2005, [online], Available from <http://www.ttmethod.com>, January 12, 2014.

results that are more precise or prove helpful in rehearsal. A helpful website for TTM (www.ttmmethod.com) includes sound clips with their notation examples.¹⁶⁸

In a concerto setting, a composer can help fill communication gaps between the DJ (a non-notation reader) and the orchestra (notation readers) by adding DJ terminology to the score. Ultimately, the composer will have to teach the DJ the music by rote until reading music becomes standard in their community. Only on rare occasion will a composer find a DJ with the ability to read specific notation.

Nicole Lizée's notation method (Fig 12) is very precisely detailed and uses a special staff that displays all articulations and instructions for the DJ. A traditional staff shows rhythmic and melodic notation of the recorded excerpt as needed. The name of the turntablist technique desired is written above the staff and the volume controlled independently of the record's volume is indicated below. The top line above this staff indicates crossfader positions. When the DJ is only using one turntable (with the other turntable silenced), a + indicates for the crossfader to be open (sound on) and a - indicates that the crossfader should be closed (sound off). When both turntables are used, this line will refer to the turntable used (either turntable one or two). The second line is reserved for three details: the name of the recorded excerpt used, alteration in pitch using the variable pitch control, and the changes in rpm.¹⁶⁹

¹⁶⁸ Mark Katz, *Groove Music The Art and Culture of the Hip-Hop DJ*, 209.

¹⁶⁹ Nicole Lizée, "RPM for Large Ensemble and Solo Turntablist", 14-15.

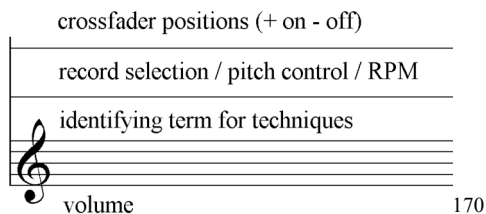


Figure 12. a diagram of Lizée's turntables staff notation

Gabriel Prokofiev chose a simpler, streamlined approach that is a closer resemblance to percussion notation on a traditional five-line staff (Fig 13). Prokofiev also adds turntablist technique descriptions to the phrase and a boxed text indicates which sample is used. When the performer is not expected to follow a rhythm exactly as notated, Prokofiev allows for flexibility with a “ritmo ad lib” indication.¹⁷¹

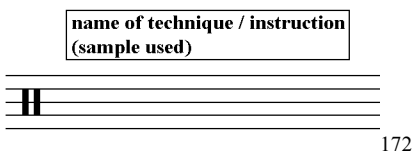


Figure 13. a diagram of Prokofiev's turntables staff notation

Stephen Webber's method book, *The Art of the DJ Turntable Technique*, gives yet another option that uses a single line percussion staff (Fig 14). The duration and operation of the crossfader is given above the line while the duration of the record movements are given below.¹⁷³ Unlike Lizée's notation, Webber does not use + and – for the use of the crossfader and instead uses rhythm durations. A quarter note would indicate that the crossfader is sounding (open) and a rest would indicate that it is silent

¹⁷⁰ Nicole Lizée, “RPM for Large Ensemble and Solo Turntablist”, 14-15.

¹⁷¹ Gabriel Prokofiev, *Concerto for Turntables & Orchestra*.

¹⁷² Ibid.

¹⁷³ Stephen Webber, *The Art of the DJ Turntables Technique*, 73.

(closed). His method book also includes exercises labeled with arrows for record movements, and numbered counting subdivisions to help DJs learn to read traditional music notation.

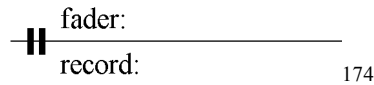


Figure 14. a diagram of Stephen Webber's turntables staff notation

The subsequent turntable techniques of this document are described in detail and are accompanied by examples of notation. The notated examples represent these three approaches to notation with a few additional suggestions by the author.

Baby Scratch

First performed by GrandWizzard Theodore, the baby scratch (also called a “rub”) is the most basic scratch essential to every DJ’s repertoire. It is created by using the hand to simply push and pull the record back and forth over a chosen sound. The DJ can express baby scratches in many different ways depending on the nature of the sound itself as well as the length, speed, and pitch control setting of the scratch. They can sound as specific or as abstract as desired.¹⁷⁵ Baby scratches slowed down to durations such as half notes and whole notes are called drags. When the record is dragged, the pitch of the audio sounds lower than the original.¹⁷⁶ Notation of these scratches could be as general as figure 15.1 or as specific as figures 15.2 and 15.3.

¹⁷⁴ Stephen Webber, *The Art of the DJ Turntables Technique*, 73.

¹⁷⁵ Ben James, *The Turntable DJ*, 27.

¹⁷⁶ Stephen Webber, *DJ Skills: The Essential Guide to Mixing and Scratching*, 255.



Figure 15.1. baby scratch notation (general)

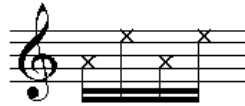


Figure 15.2. baby scratch notation (specific)

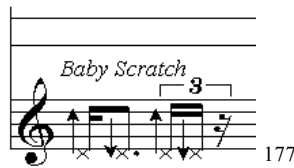


Figure 15.3. Lizée's baby scratch notation (specific)

Figure 15.1 provides the most basic essentials for notation—a rhythm and x-noteheads to indicate unspecified pitches resulting from the scratch. Figure 15.2 goes a bit further showing high and low unspecified pitches sounding from the manipulation of the record. The DJ would have to select the proper segment in order to achieve the figure if the composer had not already specified a sample to use. Lizée notates her baby scratches as figure 15.3 using precise rhythms, and arrows indicating the forward and backward motion of the record, but there is no general expression of pitch like in figure 15.2. Lizée also uses a three-stave notation where the other two single line staves are reserved for additional instructions.

¹⁷⁷ Nicole Lizée, “RPM for Large Ensemble and Solo Turntablist,” 11.

Forward Scratch

A forward scratch is created by simply allowing the excerpt to play and silencing it using the crossfader as the record is pulled back to the beginning. This allows for the focused repetition of the forward real time sound of the excerpt, which can be varied further with the slight push of the record. Forward scratches are perhaps comparable to upbows on a violin. Figures 16.1 and 16.2 depict a general and specific notation of the scratch.¹⁷⁸



Figure 16.1 forward scratch notation (general)

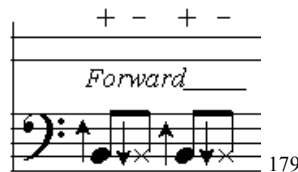


Figure 16.2 Lizée’s forward scratch notation (specific)

Traditional noteheads communicate the sound as being played normally with the sounding record material reflected on the staff. Lizée’s notation in figure 16.2 captures both the sound and silence of the forward and reverse motions in a precise rhythm. Again, Lizée uses up and down arrows to show the forward and backward playing of the record. A single line staff above with + and – indicate the crossfader switching from on to off for that particular turntable. The silence of the second half of the beat might be better

¹⁷⁸ Ben James, *The Turntable DJ*, 28.

¹⁷⁹ Nicole Lizée, “RPM for Large Ensemble and Solo Turntablist,” 12.

depicted as stems with rests considering the x-noteheads are used for non-specific pitched sounds created in other scratches. While this notation is shown in her thesis and first copy of *RPM*, it no longer appears in the revised 2005 publication.

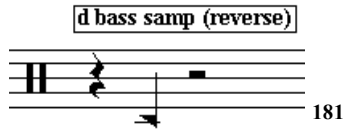
Reverse Scratch

A reverse scratch can be thought of as the opposite of a forward scratch. A DJ isolates the backward sound of the excerpt, silencing the forward motion with the crossfader.¹⁸⁰ Backward scratches could be thought of as downbows on the violin. Lizée does not include this scratch in *RPM*, but figure 17.1 shows how the scratch could be notated based on her forward scratch notation. Figure 17.2 shows a simpler notation based on the approach used in Prokofiev's *Concerto*. In this case, a sample is identified and an instruction is given, but the performer has some freedom choosing how to express the sample.



Figure 17.1. reverse scratch based on Lizée's notation method

¹⁸⁰ Ben James, *The Turntable DJ*, 29.

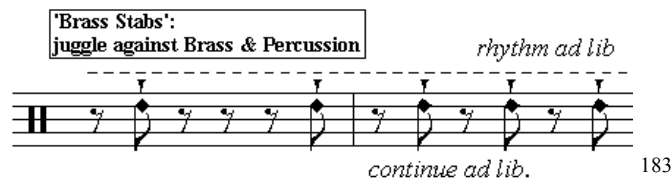


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Figure 17.2. Prokofiev’s reverse scratch notation

Stab

The stab is a fast forward variation of the forward scratch that creates a much sharper sound.¹⁸² Prokofiev makes use of the stab using notation in figure 18.1 with staccatissimo articulations that a violinist would interpret as both being staccato and accented. Any type of accent articulation will reflect the force required for making stabs. Backward stabs are also possible. Lizée makes no use of stabbing in *RPM*, but it is easy to imagine the notation potentially appearing as figure 18.2.



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Figure 18.1. Prokofiev’s stab notation

¹⁸¹ Gabriel Prokofiev, *Concerto for Turntables & Orchestra*, 1.

¹⁸² Ben James, *The Turntable DJ*, 30.

¹⁸³ Gabriel Prokofiev, *Concerto for Turntables & Orchestra*, 11.

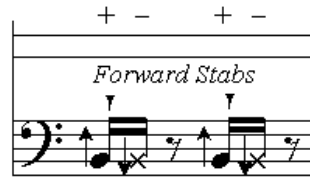


Figure 18.2. stabs based on Lizée’s notation method

Chirp

Developed by DJ Jazzy Jeff, and named after its resemblance to chirping birds, the chirp is essentially another variation of the baby scratch. The main difference between a chirp and a baby scratch is that the chirp uses the simultaneous use of the crossfader during the scratch. The scratch begins with the crossfader open. As the record is pushed forward, the crossfader is simultaneously switched to the off position. When the record is pulled backward, the crossfader is simultaneously switched to the on position. The resulting flapping motion created by both hands has given the chirp a nickname of “the bluebird.” The sound of chirping birds can be recreated with this scratch with the use of a sine wave or whistle sample. Chirps may be performed in a variety of speeds and rhythms and are often used to connect other scratches into combinations.¹⁸⁴ They are most known for having crisp short attacks that could be expressed with the simple addition of staccatos like in figure 19.1. Lizée does not use chirps in *RPM*, but one could imagine a notation consistent with her system perhaps appearing as figure 19.2. The crossfader staff has been reconfigured to show the motion of the crossfader sliding open

¹⁸⁴ Stephen Webber, *DJ Skills: The Essential Guide to Mixing and Scratching*, 268.

and closed. The open and closed noteheads as well as their placements above and below the single line staff help communicate the crossfader motion and positions.



Figure 19.1. chirps notated with staccatos

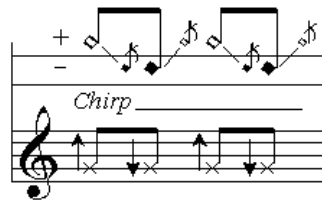


Figure 19.2. chirps based on Lizée's notation method

Tear

A tear essentially divides (or tears) one or both of the baby scratch strokes in two, creating three or four beats. A DJ can quickly pause midway through a forward push, creating a break in the sample resulting in two rhythmic beats. The same can be done on a backward pull, leading to several rhythmic combinations of full and broken strokes of the record. Triplet rhythmic figures are most often associated with the tear, but the beats may be performed unequally as well.¹⁸⁵ Figure 20.1 shows the tear found in the revised score of *RPM* expressed in triplets with one full forward stroke and a divided backward stroke. Figure 20.2 shows more rhythmic possibilities using an alternative notation that uses two different noteheads and staff positions to show specific forward and backward motion of the scratch. The x-noteheads indicate forward motion and the diamond noteheads indicate

¹⁸⁵ Ben James, *The Turntable DJ*, 35.

reverse motion. Figure 20.2 would be read as: *forward scratch, reverse tear, forward tear, reverse tear, forward tear, reverse scratch.*

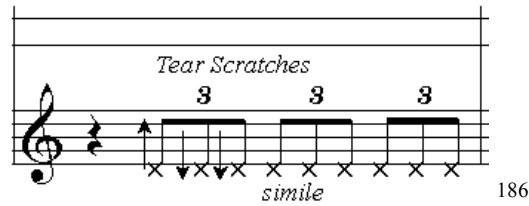


Figure 20.1. Lizée’s tear scratch notation

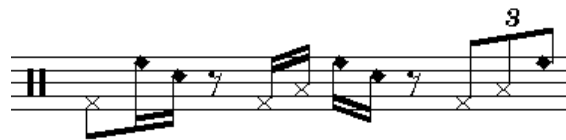


Figure 20.2. an alternate tear scratch notation

Scribbles

Scribbling is created from fast baby scratches performed in a tremolando manner. The DJ’s fingertips are placed on the record and a tense forearm muscle causes a high-speed forward and reverse ‘scribbling’ motion.¹⁸⁷ A DJ may also refer to faster repeated note rhythms as scribbles.¹⁸⁸ The scratch is best notated as a tremolo, either with all of the beats written out or abbreviated. Figure 21.1 shows Lizée’s notation of the scribble as a tremolo, but it could also be arguably shown as a trill as in figure 21.2. Figure 21.3 shows a rhythmic passage of scribbles found in Prokofiev’s *Concerto*.

¹⁸⁶ Nicole Lizée, *RPM*, 61.

¹⁸⁷ Nicole Lizée, “RPM for Large Ensemble and Solo Turntablist”, 12.

¹⁸⁸ Stephen Webber, *The Art of the DJ Turntable Technique*, 54.

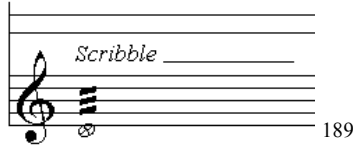


Figure 21.1. Lizée’s scribble notation

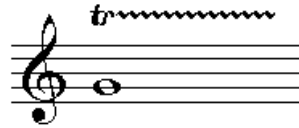
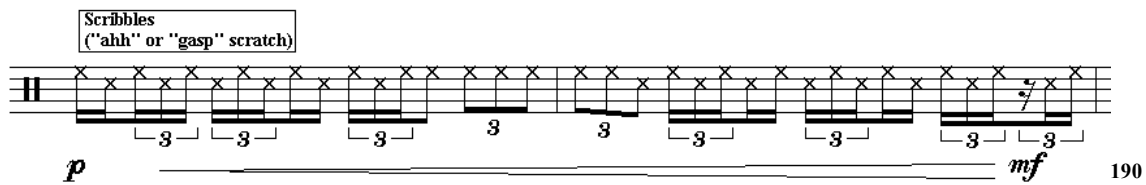


Figure 21.2. scribble notation shown as a trill



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Figure 21.3. Prokofiev’s scribble notation

Transformer

Transforming was developed by DJs Spinbad, Cash Money, and Jazzy Jeff.

While dragging a record forward over a sample, the crossfader is open and closed to create rhythms such as eighth notes, sixteenth notes, and triplets. Unlike the tear, the record hand does not create the rhythm. The transformer may be performed with the crossfader, channel fader, or switch for different results. The crossfader may be the easiest to work with, but the channel fader has a broader dynamic range and the switch is more precise on

¹⁸⁹ Nicole Lizée, “RPM for Large Ensemble and Solo Turntablist,” 12.

¹⁹⁰ Gabriel Prokofiev, *Concerto for Turntables & Orchestra*, 20.

attacks and releases. While the thumb holds the fader closed with mild pressure, the index finger taps the fader open in stuttering rhythms against the pressure of the thumb.¹⁹¹

Figure 22.1 shows Lizée’s notation of the transformer in m. 174 of the original version of *RPM* and figure 22.2 shows changes to the notation appearing in m. 171 of the revised 2005 publication.¹⁹² By examining the changes in these two examples, one can see the melodic material from the record (shown on the staff) has been dropped in favor of making the rhythm appear more prominent. Figure 22.3 shows yet another example of Lizée’s notation of the transformer, which suggests that the DJ lets the record play freely while a stuttering effect is created with the crossfader. This example appears in the original version of *RPM* but was removed from the 2005 publication. Figure 22.2 is perhaps the best notation with the clearest instructions that best resembles the transformer. As another option, Stephen Webber’s turntable technique book shows transforming exercises notated like in figure 22.4. The fader, crossfader, or switch rhythm is shown above whole-note or half-note record drags.¹⁹³



Figure 22.1. Lizée’s original transformer notation from her thesis

¹⁹¹ Stephen Webber, *DJ Skills: The Essential Guide to Mixing and Scratching*, 267.

¹⁹² Nicole Lizée, “RPM for Large Ensemble and Solo Turntablist,” 14.

¹⁹³ Stephen Webber, *The Art of the DJ Turntables Technique*, 75.

¹⁹⁴ Nicole Lizée, “RPM for Large Ensemble and Solo Turntablist,” 38.

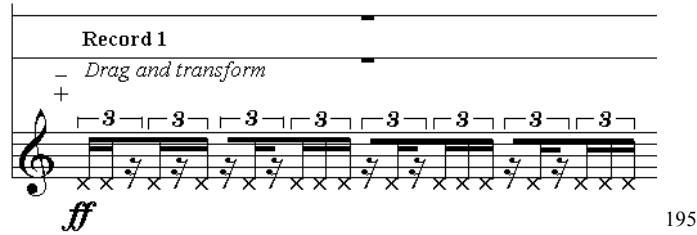


Figure 22.2. Lizée’s transformer notation in the 2005 publication

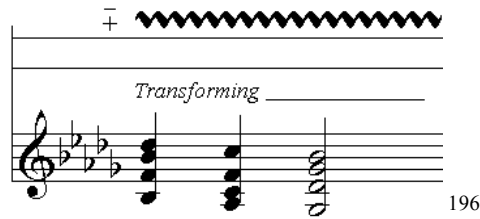


Figure 22.3. another example of Lizée’s transformer notation

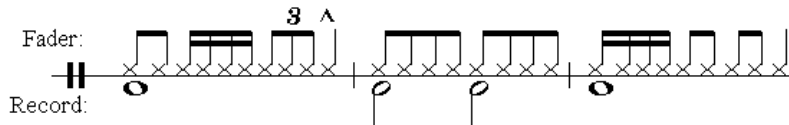


Figure 22.4. Webber’s transformer notation

Flare

DJ Flare introduced the flare in the early 1990s. Like the transformer, the flare cuts up forward and backward strokes using the fader, but the emphasis is on momentarily stopping the sound called ‘clicks.’ Clicking the fader means to bounce the crossfader open and closed, creating a click sound as the fader physically hits either side. Unlike the transformer, the flare results in different timbres. For example, a transformer might create a “w-w-w-w” sound, where a flare creates more of a “wi-cki-wa-cka” sound. Transformers are typically performed over a longer portion of record, whereas a flare is a

¹⁹⁵ Nicole Lizée, *RPM*, 34.

¹⁹⁶ Nicole Lizée, “RPM for Large Ensemble and Solo Turntablist”, 14.



Figure 23.3. an alternate flare notation with terminology labels

Glide

Gliding is a wide and fast vibrato created by fingers rubbing the edge of the record quickly back and forth.¹⁹⁹ This effect is not mentioned or used anywhere other than in Lizée’s *RPM*. It may be specific to DJ P-Love, who premiered the piece, or it may be known by other DJs under another name. Figure 24 shows a vibrato line over the notated music on the record.



Figure 24. Lizée’s glide notation

Hydroplane

Hydroplaning is a warped vibrating sound created when the fingers are rubbed across the surface of the record against the record rotation.²⁰¹ A listener might still be able to make out the sound of the original excerpt. The technique resembles a slow finger roll on the tambourine, though a tambourine skin is stationary. Figure 25 shows Lizée’s notation and use of hydroplaning in m. 146 from the original version of *RPM*. The

¹⁹⁹ Nicole Lizée, “RPM for Large Ensemble and Solo Turntablist,” 13.

²⁰⁰ Nicole Lizée, *RPM*, 31.

²⁰¹ Nicole Lizée, “RPM for Large Ensemble and Solo Turntablist,” 13.

technique was removed from the 2005 revised score. The chords from the recording have been numbered 1-38 and the number 24 helps the DJ keep track of the harmonic progression while manipulating the sample.

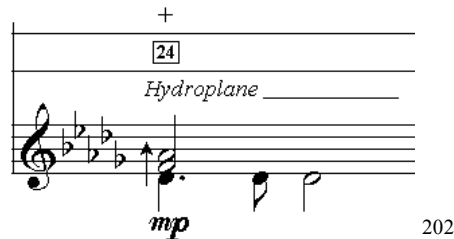


Figure 25. Lizée’s hydroplane notation

Crab & Twiddle

The crab and the twiddle are more scratches that involve the crossfader in a way similar to transforming. Like in the transformer, the thumb acts as a spring on the crossfader, but in these scratches multiple fingers are drummed off the fader to cause it to open rhythmically. The twiddle only involves the thumb, index, and middle fingers, but the crab adds the ring finger and sometimes the pinky. The crab is used for much faster, intricate rhythms, and is essentially a 3-click flare. It is called the crab because the hand movement looks like a crab running around on the mixer. There are also open and closed crabs, meaning that the crossfader can start in the closed or open position.²⁰³ Crab technique would be used for rapid rhythms similar to those found in snare drum music.

Figure 26.1 shows notation based on Webber’s exercises, where each finger is given a

²⁰² Nicole Lizée, “RPM for Large Ensemble and Solo Turntablist,” 33.

²⁰³ Stephen Webber, *DJ Skills: The Essential Guide to Mixing and Scratching*, 274.

number as in piano fingering. Figure 26.2 shows the correct fingering for the twiddle. In figure 26.3, the crab could be used to perform what looks like a snare drum four-note ruff.

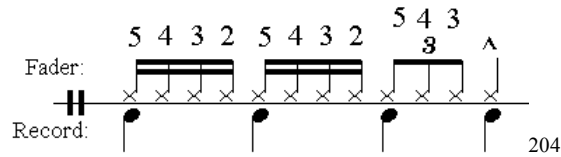


Figure 26.1. the crab shown with piano fingering for the crossfader

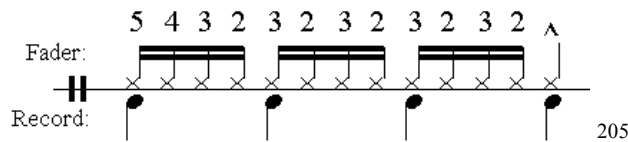


Figure 26.2. the twiddle shown with piano fingering for the crossfader



Figure 26.3. the crab notated like a snare drum four-note ruff

Lazers

There are three types of lazer scratches which can emulate the sound of a video game lazer gun when using an “ah” style sample. The one-handed lazer is created when the DJ flings the record back and forth using only the middle finger. The finger comes in contact with the record only to push it in motion, making attacks sound higher and faster.

Two-handed lazars involve both hands flinging the record, which increases the

²⁰⁴ Stephen Webber, *The Art of the DJ Turntables Technique*, 92.

²⁰⁵ Ibid.

possibilities of speed and makes tears possible. Muted lasers (also known as phasers) are created when one hand gives slight downward pressure to keep the record in place while the other flings the record. This practice leads to a more detached sound. The notes are staccato, percussive with more space between attacks, and can only be used for short little rhythmic motives. Figure 27.1 shows a possible rhythmic notation for a one or two-handed lazer with a higher and lower sound. Figure 27.2 shows the type of rhythm that would be possible with a muted lazer.²⁰⁶

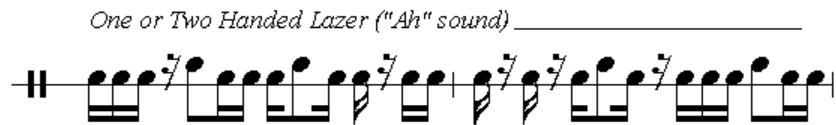


Figure 27.1. notation for one or two handed lazer

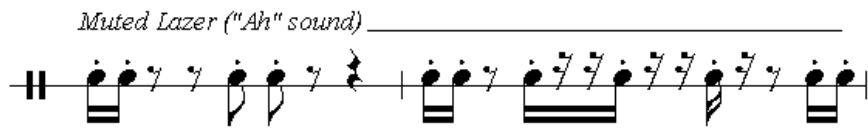


Figure 27.2. notation for a muted lazer

Uzi and Uzi Fade (Helicopter)

Uzis are performed by using a single finger creating a continuous muscle spasm to cause the record to quiver back and forth at an extremely high speed. The result is similar to the scribble, but it cannot be controlled in even beats.²⁰⁷ By incorporating the fader in the Uzi Fade in figure 28.1, the sound of a helicopter flying by can be created.²⁰⁸ Figure 28.2 shows the Uzi likened to an instrumental trill that is played so fast that it is

²⁰⁶ Stephen Webber, *DJ Skills: The Essential Guide to Mixing and Scratching*, 257.

²⁰⁷ *Ibid.*, 258.

²⁰⁸ *Ibid.*, 265.

impossible to keep even. Figure 28.3 shows Prokofiev's notation of the helicopter in his *Concerto* in mm. 45-46 of mvt. IV. The *ritmo ad lib.* marking in Prokofiev's passage indicates that the DJ can improvise an alternative rhythm.²⁰⁹ It is uncertain why one of the beats in the final triplet of m. 45 appears as double-stop sound; it may be a publisher error.

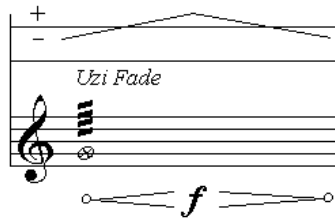
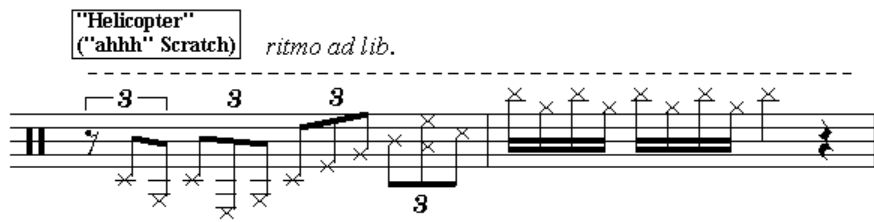


Figure 28.1. uzi fade based on Lizée's notation method



Figure 28.2. uzi represented as a trill



210

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Figure 28.3. Prokofiev's helicopter notation

²⁰⁹ Gabriel Prokofiev, *Concerto for Turntables & Orchestra*.

²¹⁰ *Ibid.*, 38-39.

Echoes

Echoes are a manual emulation of echoes created by lowering the fader on each repetition of a selected excerpt. A DJ can physically shape the echo to their liking by controlling the length of the excerpt, speed and depth of the decrease in volume.²¹¹ This type of effect is already a fairly common musical gesture found in unaccompanied solos of acoustic instruments. Figure 29 shows two different echoes using terraced dynamics to create the echo.



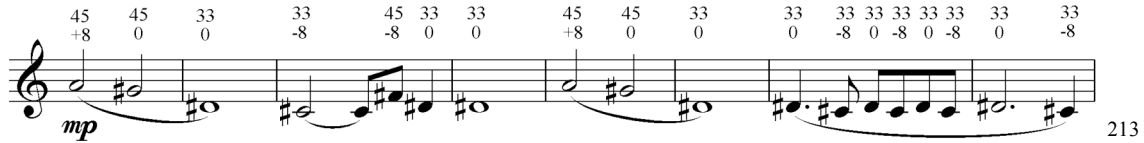
Figure 29. two different echoes using terraced dynamics

Creating a Melody

There are six notes that can be played from a single sustained recorded tone. These precise pitches will vary depending on the pitch of the original tone used. The pitches are created from the three positions of the pitch control at either 33-1/3 or 45 RPM. These notes resemble the structure of a minor scale, but some of the notes are tricky to play after one another. The turntables are not entirely flexible as a melodic instrument. Prokofiev's melody in the fourth movement of his *Concerto* sounds as written. Two numbers above each pitch indicate the RPM (33 or 45) and the pitch control (-8, 0, +8). Figure 30 shows an excerpt of Prokofiev's melody notation.²¹²

²¹¹ Stephen Webber, *DJ Skills: The Essential Guide to Mixing and Scratching*, 265.

²¹² Gabriel Prokofiev, *Concerto for Turntables & Orchestra*.



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Figure 30. Prokofiev’s melody notation, mm. 14-21 movement IV “Meditnow”

At 45 RPM, the pitches A, G-sharp, and F-sharp are possible. At 33-1/3 RPM, the pitches C-sharp, D-sharp, and E are also possible. Prokofiev’s melodic theme uses five of the six pitches possible and does not utilize the E. Raising the pitch control (+8) raises the starting pitch (0) at either speed one semitone while lowering (-8) lowers the starting pitch two semitones. If a composer’s original starting pitch played back as a C at 33-1/3 RPM with the pitch control at 0, the following scale could be created: C (0), D-flat (+8), and B-flat (-8) at 33-1/3 RPM and F (0), G-flat (+8), and E-flat (-8) at 45 RPM.

Summary of Techniques

The turntables are primarily thought of as a rhythmic instrument, but simple melodies using a sustained tone are also possible. Beat patterns can be looped by extending the break, or manipulated against other beat patterns through beat juggling to create rhythmic contrast. Most of the various named scratches allow for the performance of any type of precise rhythm (even trills, tremolos, sextuplets), while others are more known for their effect. They can be grouped into fader and faderless scratches and scratch variations are endless. The resulting sounds of these techniques vary depending on the

²¹³ Gabriel Prokofiev, *Concerto for Turntables & Orchestra*, 35.

sonic attributes of the chosen samples. Choosing an effective sample may take more time than organizing techniques into musical phrases. When notating the DJ part, it is recommended to include the name of the scratch above the rhythm and identify the sample to reflect the desired articulation and performance of the sound.

CHAPTER 5

CHALLENGES FACED BY COMPOSERS

Complications of Incorporating Turntables in an Orchestral Setting

Collaborative work with a DJ poses a unique challenge for composers who wish to incorporate turntables in an orchestral setting. Like with any instrument, the best collaborations result from a composer understanding the instrument's capabilities, knowing the soloist's talents, and communicating ideas effectively (both verbally and through notation). Unlike other instruments, the vast majority of turntablists do not read musical notation and use a different lexicon to discuss music. There is a broad range of skills, strengths, weaknesses, and different understandings of music between DJs. Adding to this breadth is the notion that the instrument itself is very new and is still evolving technologically; its vast musical possibilities shift with every advancement. The turntables' techniques, pedagogy, and budding repertoire are not as solid when compared to the violin's hundreds of years of existence. Therefore, it is important for a composer to dedicate a great deal of time immersed in DJ culture and in collaboration with multiple DJs in order to learn their lexicon and best understand turntablism composition.

“Culture Shock”

When two musical cultures merge (in this case hip-hop and classical music), both parties experience some sense of “culture shock.” In most cases, conductors will not know anything about turntablism, and DJs will not know anything about rehearsing or playing a concerto with an orchestra. This type of scenario leads to the development of a

new lexicon, aesthetics, sonorities, practices, and rehearsal techniques. Any time spent by the DJ, composer, and conductor studying each other's alternative musical culture will minimize the degree of misunderstandings and potential barriers in collaboration. The DJ will feel the highest degree of shock. He is leaving his environment to play with an orchestra who reads music, has years of experience following a conductor, and understands ensemble rehearsal practices—skills that are completely new and foreign to hip-hop DJs.

Prokofiev and Lizée both mention preconceived notions about turntables concerti by artistic directors, orchestral musicians, and audiences leading to skepticism that later changed after the performance of their works. Many accepted the turntables as a valid, expressive musical instrument, but Lizée notes a division in opinion between the McGill faculty following the premiere of *RPM*. Some embraced the innovation while others refused to believe that it was music or that it belonged in an academic institution.

How to Train your DJ

The main challenge faced by all composers is training the DJ to learn the music and adapt to the academic music culture of ensemble rehearsals. It is important to realize that DJing is predominantly an improvised solo tradition. Most DJs will not be able to look at an orchestral part, count measures of rest, follow the conductor, and play as notated on the page. Orchestral rehearsal time is limited and none of it should be wasted getting past the obvious barriers. Therefore, the composer must be prepared to help the DJ learn the music by rote, and the conductor must also meet with DJ to discuss cuing

before any rehearsing can begin. It is important for the conductor and DJ to discuss the logistics of finding and cuing record samples at different rehearsal markings. Even though a notated part may not help the DJ much, it is very important for the conductor to be able to help guide the DJ and connect him with the ensemble as efficiently as possible.

A MIDI file recording of the orchestra may also help the DJ practice outside of rehearsal. Leary provided a Sibelius recording to help his DJ learn his entrances. In Prokofiev's case, DJs can be directed to DJ Yoda's recording of his concerto to start learning the music. He can also provide a live recording of the orchestra without DJ for outside practice and for solo DJ performances with the orchestra playing back on a third turntable. These materials have helped Prokofiev facilitate numerous performances worldwide by at least seven different DJs.²¹⁴

Most DJs learn a great deal by listening to the DJ Yoda recording, but others have followed the score more closely. Prokofiev recalls DJ Noize using a youtube recording of DJ Switch with the NYO, while Martin Baumgartner preferred to follow the score and listened to the DJ Yoda recording only once or twice. Eventually, when the DJ is familiar with the piece, he can bring more personality and musicality to the performance.

In addition to learning from a recording, Prokofiev has been able to communicate finer details to most of the DJs performing the *Concerto* in one-on-one sessions. Before the recording existed, Prokofiev spent many private sessions explaining to DJ Yoda how he wanted the piece to be performed. With DJ Yoda's basic understanding of music

²¹⁴ A complete list of Prokofiev's concerto performances can be found in Appendix B, Q1.

notation, the score that evolved served as a guide. Prokofiev's turntables notation has been revised since the initial performance and he would like to make more revisions to reflect the DJ Yoda recording with more precision.

On very special occasions, one may find a musically trained DJ who reads music and understands the ensemble rehearsal process. Nicole Lizée was fortunate to have found a highly skilled turntablist at her own university who could read and understand her notation while performing *RPM* to a very precise degree.²¹⁵ While this undoubtedly added to the success of rehearsal and performance, the conductor still met with the soloist before rehearsal to establish a method of communication and interaction.

Choosing and Finding a DJ

Lizée's decision to only work with highly skilled performers who read music increases the quality of performance and allows her to write complex music with great precision, but it also limits the number of DJs who can perform her music. Since the premiere of *RPM*, Lizée has written seven other works that incorporate turntables while simultaneously refining her turntables notation. Only four turntablists including herself have performed these works, and each composition currently appears to have an exclusive performer.²¹⁶ Only one turntablist, DJ P-Love, has performed *RPM* for a total of four performances. Lizée notes that her biggest challenge in turntablism composition is finding a performer, and finding orchestras willing to program new music.

²¹⁵ Lizée's story of finding her turntablist can be found in Appendix C, Q 24.

²¹⁶ A complete list of works and performers of Lizée's turntables compositions can be found in Appendix C, Q 26.

Paul Leary did not face the same challenge of finding a performer; DJ Reemyks was supplied upfront by the CYO as the performer. Leary's challenge however was in working with the DJ he was given. The DJ struggled learning the music by rote as well as in the collaborative exploration of musical possibilities between composer and DJ.²¹⁷ Leary states the DJ's lack of musical literacy as the most complicated issue in rehearsal and accredits conductor Liza Grossman for cuing the DJ at crucial points throughout the concerto, ultimately resulting in a successful performance.

Despite these issues, Leary successfully adapted his concerto to suit the ability of the DJ provided by the orchestra. The DJ is given almost complete freedom to improvise with the orchestra and with the trumpet soloist. The only instruction given to the DJ by Leary is when to start and end playing (easily cued by the conductor), as well as when the DJ rhythm needs to contrast the orchestra or be in unison. Leary's concerto does not require the use of specific recordings, other than the use of a Muhammad Ali quote "I'm going to fight..." He found the notation of exact rhythms to be useless considering the DJ's inability to read music, but this sense of freedom allows it to be performed easily by other DJs of varying abilities.

Being supplied a DJ upfront may save a composer the challenge of finding one, but it may lead to other future challenges depending on the DJ's abilities. There is the chance that an orchestra may overlook a DJ's potential to collaborate with a composer and overcome rehearsal barriers—or choose whomever they can find. Prokofiev and Lizée

²¹⁷ More details about Leary's collaboration with DJ Reemyks can be found in Appendix D, Q 23.

note that a good DJ will be able to perform passages almost exactly the same each time (when well-rehearsed) and will be able to react quickly if a stylus skips.

Prokofiev was also supplied a DJ in the commission of his concerto. Prokofiev, who initially was not keen on writing a turntable concerto, was encouraged by Will Dutta's DJ choice. In fact, if Dutta had not found DJ Yoda, Prokofiev surmises that his DJ search would have probably led him to DJ Yoda regardless. Prokofiev's concerto has been performed by seven different DJs. When looking for a DJ, he consults DMC World DJ Championship listings to look for previous winners who might be living in the area where the concerto is to be performed. Prokofiev has been able to suggest performers for upcoming North American performances as well as find two substitute DJs for DJ Yoda for occasions when he was unavailable.

Placing the Sound of the Turntables

Both Lizée and Prokofiev mention two different challenges of incorporating the sound of the turntables within the orchestra. One is balancing the sound quality through orchestration and the other is balancing the volume of the turntables with the orchestra.

Respighi's orchestration around the gramophone recording of the nightingale is the earliest example of a solution to this problem. Compared to modern times, Respighi did not have the luxury of choosing or even creating the best recording possible. The gramophone and recording available to him would be considered 'primitive' by our standards. The nightingale recording played by itself would have sounded too artificial and out of place and a household gramophone was likely to be overpowered by large

orchestral forces even at soft dynamics. Respighi's solution was to have the gramophone accompanied primarily by muted strings gently trilling at *ppp* and softer. This texture blends in to the fuzziness of the recording and does not detract from the nightingale content on the record. The gramophone, which begins playing on the final sustained note of the final statement of the memorable clarinet solo, is never without instrumental background or at least one violinist softly trilling. Modern performances negate the volume balance issue entirely through the use of concert hall sound systems.

Lizée mentions the challenge of “blending two sources in the concert hall” referring to incorporating the sound and color of recorded samples from another era (1940s-1960s).²¹⁸ She found that “the lush, vocal-centric quality of the recordings require a certain orchestral treatment to heighten its impact.” Lizée helps match the sound of the turntables in the orchestra by having the orchestral musicians emulate various turntable effects (i.e. splicing, stuttering, drones, white noise) and in other instances the turntables emulates the orchestra in a melodic, textural, and thematic sense. All sound characteristics of the orchestra and turntables are interwoven through imitation of each opposing party. In later works, she also calls for records to be worn down to achieve a timbral color of great static with the disintegration of frequencies.

Artificial static can also be added through Serato to add a more realistic character to the sound of digital turntables performance. In Prokofiev's *Two Dances for String Trio, Bass Clarinet, Piano, & Scratch DJ*, the vinyl noise of pops, crackles, and clicks

²¹⁸ Lizée's sources of her samples can be found in Appendix C, Q 27.

where literally pressed onto the record required for the piece before Serato was available. These sounds are used as a type of ‘percussion kit’ that the turntablist manipulates in expressive and rhythmic gestures. The DJ part of *Two Dances* is more accompanimental and less demanding than in the *Concerto*.

Choosing recorded samples is integral to Lizée’s compositional process; in some cases her decision-making process requires several weeks.²¹⁹ *RPM* requires the use of specific samples, as the character and musical material of these excerpts is directly embedded in the orchestra’s material. A DJ choosing any sample at random would ruin the thematic and sonic relationship of the instrument and the orchestra. It would be akin to mismatching solo violin parts of two different concerti. Lizée is conversely considering different record choices for an alternate version of *This Will Not Be Televised*, but again, her records would be carefully chosen.

Since Prokofiev’s orchestral themes are scratched by the DJ (and directly connect the DJ to the orchestra), there is little concern regarding matching the thematic orchestration between DJ and orchestra. The orchestration of the recording should match the live orchestra very closely; if not, the Serato technology allows for the samples to be re-recorded as necessary. Prokofiev offers orchestrations of the concerto for both chamber and full orchestra. The recorded samples of each version match the orchestral forces called for by each score.

²¹⁹ Lizée even considers the pressing of a vinyl record (or sound quality).

Prokofiev's concern lies mostly in the volume balance and the placement of the turntable sound projection within the orchestra. He maintains that the sound of the turntables should appear to emanate from the instrument itself (like a piano) by having a small-medium sized PA placed behind the performer. Its amplification should not be connected through house speakers located on opposite sides of the hall. A DJ should not regulate his own volume because he will not be able to accurately hear balance with the orchestra from his position; a sound technician may help maintain balance between turntables and orchestra from the audiences' perspective. Prokofiev's suggested performance practice does require the use of monitors in rehearsal and performance. The conductor will need a small monitor in order to clearly hear the DJ, and another small monitor, if available, that will benefit the percussion section.

Copyright

Copyright law is a very complicated issue and a composer should be aware of the basics before incorporating sampled music of another author. The hip-hop DJ tradition exists because of musical borrowing, perhaps in spite of copyright infringement. Most DJ samples could probably be considered lawful examples of "fair use" in that they are very small or have been altered beyond recognition of the original, but the problem is that there is no easy method to determine whether a sample is fair use—and a lawsuit is an unpractical way to find out. Those who knowingly infringe copyright often escape complications because they are distributing their remix freely, or a lawsuit is not worth

the copyright owner's time or money, but no one can be certain how a copyright owner feels about their property.

The best defense a composer has against lawsuits is to ask permission from the copyright holder. He should also take care in using small samples and making sure the identity of copyright material does not become embedded in the orchestration of the work. Leary did not consider copyright issues when composing his concerto; he was not even aware of what records were used. He states that he wants his concerto to exist under the same principles of musical borrowing found in the DJ tradition. Since Leary does not specify what samples are to be scratched and the DJ part is almost entirely improvised, each performance of the work will vary.²²⁰ It would be difficult to prove that Leary infringed copyright. Leary's concerto recording, however, is a separate issue.

Lizée did not secure permission for her samples used in *RPM*, but she also argues that is impossible to secure permission without hiring a lawyer for thousands of dollars. The samples used in *RPM* are from very notable sources (including music from *The Sound of Music* and singer Perry Como), but they are used in a way that would be difficult to prove copyright infringement beyond fair use. A recognizable sample used in her Perry Como "Catch a Falling Star" record juggle does not exceed the length of Como's phrase "catch a falling star." An extended orchestral excerpt from *The Sound of Music* soundtrack is used, but it has been cut up in such a manner that it is difficult to recognize the original source material unless one is looking at the score. More importantly, Lizée's

²²⁰ The specific use of the Muhammad Ali quote is not noted in the score.

orchestration references these samples, emulates their character, and does not take on the identity of the samples as some sort of odd remixed medley.

A composer can avoid the copyright issue entirely by creating records of their own original themes. Prokofiev's concerto borrows from his own orchestral themes found within the concerto, and not from any preexisting recordings. Recordings of sounds created by the orchestral musicians (talking, breathing, opening a soda can) are also his original samples. The advent of digital turntables technology allows a composer the ease of incorporating recordings of his own ideas without having to press vinyl records.

Prokofiev is the first composer to acknowledge the tradition of musical borrowing by including remixes of his concerto on the same CD as the original. Following the original concerto recording, eleven remixes by various artists (including Prokofiev himself) sample the concerto to create new variations, collages, and rhythmic grooves.²²¹

²²¹ G Prokofiev Concerto for Turntables and Orchestra, NONCLSS005.

CHAPTER 6

CONCLUSION

Guidance for Composers New to Turntables Composition

A composer who wants to write for the turntables should be aware of its history, techniques, and the recent works of its budding repertoire. He must also consider its background in academic, experimental, and hip-hop music. Prokofiev suggests attending live turntablism DJ battles and meeting with a talented scratch DJ to get an idea for the instrument's range of possibilities. Most of the concertos written for the instrument involved direct collaboration with a specific DJ; Lizée's *RPM* was written prior to her finding a performer. If the equipment is available to a composer, experimenting with the turntables may also prove beneficial. The Ion "Discover DJ" Computer DJ System may be a helpful tool for a composer to locate samples and experiment with their manipulation. Since it is a digital system, it is very easy for a composer to record sounds, upload them, and manipulate them instantly.

There are various sources available for study. Turntablist enthusiast and musicologist Mark Katz has written several books about turntables history, both in hip-hop and academic music. Stephen Webber, who teaches a hands-on turntablism class at Berkeley College of Music in Boston, has two published books that are very helpful to composers. *The Art of the DJ Turntables Technique* offers a guide for beginners to learn turntablism attached to musical notation.²²² It is considered to be the first turntablism

²²² Book supplies two practice records.

method book. His other book, *DJ Skills: The Essential Guide to Mixing and Scratching*, provides more historical information regarding the instrument, hip-hop background, and more techniques beyond the beginning method book. The text is accompanied by a valuable CD of musical examples and demonstrations of techniques.

All of Lizée's published scores are available through the Canadian Music Centre (CMC); recordings of *RPM* and *This Will Not be Televised* are also available on a CMC CD.²²³ Her masters thesis with valuable information regarding *RPM* and its notation is available for download through the McGill University library website. Prokofiev's score is available for hire through Faber Music and has been recorded with DJ Yoda and the Heritage Orchestra using Prokofiev's nonclassical CD label.²²⁴ A recording of the Leary concerto with the CYU orchestra is available for download through amazon.com.²²⁵ Youtube of course remains an extremely invaluable resource for easy reference of turntables music, as well as numerous high quality turntablism demo videos created by several different DJs.²²⁶

A composer should be prepared to get past any obstacles that may arise from the merging of musical cultures. The success of a work will be determined by how well the DJ, composer, and conductor handle this scenario. A composer can address certain issues in the work's design (taking advantage of improvisation), or he must rely on teaching the

²²³ *This Will Not be Televised*, CMC CD 13508.

²²⁴ G Prokofiev Concerto for Turntables and Orchestra, NONCLSS005.

²²⁵ Contact Paul Leary directly to see the score, it is not currently published.

²²⁶ DJ Angelo, DJ Chile, and DJ Short-e ('Studio Scratches' channel) have several tutorial videos covering a wealth of scratches and techniques.

DJ by rote with the conductor's assistance in rehearsal. He should have enough background knowledge to serve as a mediator between the academic and hip-hop cultures to help facilitate communication between everyone involved.

Why Should a Composer Write for Turntables?

The turntables are arguably one of the best options for composers wanting to write electroacoustic music that can be controlled expressively in real-time live performance. The visual of a DJ's hand-on-vinyl expressive control is more readily accepted and recognized by general audiences, perhaps more than the electronic alternative of a performer pushing buttons on a laptop or drawing a stylus across a tablet.

The sonic and musical possibilities of the turntables are endless and are not limited to just the vinyl records available. Digital turntables technology allow for the freedom to manipulate any recorded sound without needing to press vinyl records. The sounds, effects, and techniques are unique to the instrument and broaden the range of compositional possibilities. They can create precise virtuosic rhythmic passages, simple melodies, polymeter, polytonality, musical collages, electronic vocal effects, and much more than a single percussion instrument can offer.

As improvisers, DJs are in a sense composers too and can offer a composer a valuable new viewpoint on the composition process. A competitive tradition among DJs has established virtuosic levels of performance and has helped create a forum for DJs to develop their skill. The talent and skills throughout the DJ community range high and

diverse. Most DJs will have an interest or desire to further their art form a step further and add more legitimacy to their instrument.

Writing for turntables encourages a blending of two musical cultures that fosters a postmodern viewpoint that is current to our time. It is also a rare and exciting opportunity to help cultivate a standard repertoire and methodology for a new instrument. Lizée mentions an appeal for creating new contexts for ‘[a machine] associated with a particular function and historical period.’ The challenge of blending two divergent musical cultures and developing notation is a fascinating scenario. Such a unique fusion may capture the attention of orchestras looking to increase their audience who might not ordinarily program new music. Having received numerous performances of his *Concerto*, Prokofiev notes this kind of appeal as an opportunity for orchestras to attract new audiences from a new modern public.

An establishment of repertoire and pedagogy has only just begun, and in time, turntablism performance may be recognized across the globe and included at renowned conservatories and universities. Until musical society reaches this historical landmark, DJs and composers should strive to encourage the use of the turntables as a legitimately expressive musical instrument. Quests for legitimacy are not new in the world of turntablism and they have been ongoing since the first appearance of the gramophone onstage in the 1920s.²²⁷ There is an overall sense among DJs that notation will help turntablism grow as an art form. The turntable concerti written by Lizée, Yáñez,

²²⁷ Felicia Miyakawa, “Turntablature: Notation, Legitimization, and the Art of the Hip-Hop DJ,” 101.

Prokofiev, and Leary have no doubt added to the cause by establishing a repertoire, developing a notation, and inspiring new works that compel new composers to join an exciting post-modern musical movement relevant to our time.

APPENDIX A
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APPENDIX B

GABRIEL PROKOFIEV INTERVIEW 2013

Turntablism Composition Research Interview with Gabriel Prokofiev

An electronic Email interview conducted by Jeffrey Ouper

Interview completed September 17, 2013

(some responses have minor edits for grammar, spelling, and clarity)

GENERAL BACKGROUND INFORMATION

Q1 Jeffrey Ouper: How many times have the two versions of the *Concerto for Turntables and Orchestra* been performed since their premieres?

Gabriel Prokofiev:

- 1) Heritage Orchestra / Jules Buckley / DJ Yoda – (world premier) @ The Scala, London, UK
- 2) Royal Scottish Nation Orchestra (RSNO) / Alexander Micklethwaite / Beni G @ Glasgow Festival Hall, Glasgow, Scotland. June 19, 2008
- 3) Heritage Orchestra / Jules Buckley / DJ Switch (cd release concert) @ DelaWarr Pavillion, Sussex, UK. November 2009
- 4) Present Music Ensemble / Kevin Stalheim / DJ Madhatter (US premier) @ Turner Hall, Milwaukee, USA. September 18, 2010
- 5) National Youth Orchestra (of Great Britain) / Vladimir Jurowski / DJ Switch @ Birmingham Symphony Hall, UK. August 3, 2011
- 6) National Youth Orchestra (of Great Britain) / Vladimir Jurowski / DJ Switch @ Snape Proms, Alderburgh, UK. August 4, 2011
- 7) National Youth Orchestra (of Great Britain) / Vladimir Jurowski / DJ Switch @ The Royal Albert Hall, London, UK. August 6, 2011
- 8) Teresa Careña Youth Orchestra / DJ Switch. @ FUNDAMUSICA (FESNOJIV), Caracas, Venezuela. March 25, 2012
- 9) WASO / Paul Daniel / DJ Zeke @ The Astor, Perth Australia. August 18, 2012
- 10) Seattle Symphony / Stilian Kirov / DJ Madhatter @ October 19, 2012
- 11) Copenhagen Philharmonic / Jesper Nordin / DJ Noize @ Copenhagen Philharmonic Hall, Denmark. January 25th, 2013 (part of the ‘60 minutes’ Concert series – only movements: 2,3 & 5 performed.)

Future Performance:

- 1) CYSO – Chicago Youth Symphony Orchestra @ Orchestra Hall, Chicago on May 11, 2014 – TBC – soloist possibly Kid Koala - TBC

Choreographed Performances:

- 1) Ein Winternachtstraum, Bern Ballet, Switzerland
Bern Symphony //DJ: Martin Baumgartner
Choreography: Cathy Marston

Music: Felix Mendelssohn / Gabriel Prokofiev.

(13 performances) (approx 90 minutes). November 3, 2011 – January 31, 2012. This Ballet (based on Shakespeare's A Midsummer Night's Dream) used complete score of Concerto for Turntables, performed live, alongside 20 minutes of new music for orchestra and turntables.

2) The complete recording of *Concerto for Turntables* was used for another contemporary ballet: 16 Aug 2011 - 'Grim Eye' world premier, Houston – Dance using complete *Concerto for Turntables*

choreographer: Maurice Causey. Dance company: Infinite Movement Ever Evolving. @ Barnevelder Movement/Arts, Houston. <http://www.mauricecausey.com/>

'Turntables only' performances by DJ Switch – with 3rd turntable playing back orchestral recording:

1) 'Blank Canvas' @ Café Oto, Dalston, London. November 26, 2009

2) Nonclassical 'wheels of steel special' @ The Macbeth, 70 Hoxton St. London N1. December 7, 2009

3) 'Nonclassical Directions' concert, curated by Gabriel Prokofiev @ LSO St Lukes, London. May 17, 2011

Q2 JO: How many different DJs have performed the piece?

GP: I think it's 7 if you include Martin Baumgartner (who was soloist for the ballet – which included the complete concerto).

Q3 JO: What do the movement title names mean?

GP: The movements have two titles. The original titles come from the file names I gave the original sketches for the concerto, and were quickly given as 'aide memoires.' Later I gave more traditional 'classical' movement names as a deliberate reference to the classical concerto tradition, but kept the BPM numbers for each movement as a reference to DJing tradition. However, a few of the people involved in the original recording of the *Concerto* insisted that I kept the original titles as well; I guess they had grown used to them and felt they suited the music. Here's a quick explanation of the titles:

Grim Eye – I think that I originally wrote Grimeye for the title, meaning grimey, as a reference to the UK dance style 'Grime' which has influenced that movement (Grime is always in 140 bpm, but has a 'half-time' 2/2 feel, and uses dark bass sounds).

Irreguluv – comes from the fact that movement is often in an irregular time signature of 11/8.

Malmo – I came up with the main cello/double bass motif while walking through Malmo airport in Sweden. I quickly sang the idea into my mobile phone; once I started working on it properly back in London, I used the name ‘Malmo’ as a reference.

Meditnow – This movement has a meditative quality, so that resulted in that nickname.

Snow Time – I’m not so keen on this title; it’s a simple reference to the wintry feel of main ostinato motif of this movement.

Below are the movement titles as listed on the CD release:

- 1) Heritage Orchestra feat. DJ Yoda - Introduction (“Grim Eye” -140bpm)
- 2) Heritage Orchestra feat. DJ Yoda - Adagietto (“Irreguluv” -75bpm)
- 3) Heritage Orchestra feat. DJ Yoda - Largo peasante – Allegro – Largo (“Malmo” -62/125pm)
- 4) Heritage Orchestra feat. DJ Yoda - Andante (“Meditnow” -95bpm)
- 5) Heritage Orchestra feat. DJ Yoda - Allegro Gavotte (“Snow Time” -107bpm)

COMPOSITION PROCESS FOR COMPOSING A TURNTABLES CONCERTO

Q4 JO: Did you know of or research any orchestral works using turntables when you composed your concerto?

GP: When I first started composing the concerto, I did a bit of research and actually didn’t find anything that had turntables and orchestra. Bear in mind, I started composing the very first draft version back in autumn 2005, which was even before the [complete] DJ Radar concerto had been performed. In fact, the very first performance of the concerto was on April 2006 at Blackheath Concert Halls, London performed by The Trinity College of Music Contemporary Music Group, conducted by Andrew Morely, with soloist DJ Yoda—but it was more of a sharing than a proper premier, so it’s not mentioned as the official premier.

Q5 JO: How much did you know about turntablism before you wrote the concerto?

GP: Quite a lot. When I was an undergraduate student at Birmingham University, UK, my housemates and I were all fans of hip-hop. We bought a pair Gemini

Turntables for DJing, and though I didn't actually learn to scratch properly, a couple of the housemates had a go and we used to listen to music artists like DJ Premier. I also attended the Birmingham DMC competition and saw just how incredibly virtuosic turntablism can be. I used to buy lots of funk, soul & early hip-hop from a local record store and also picked up a few turntablist mixes. Prior to that, when I was in my teens, I had been blown away by Grandmaster Flash and the Wheels of Steel—so I guess that had already got me very interested in turntablism. Once I actually decided to start writing the concerto, I had a couple of sessions with DJ Yoda where he helped me understand the wider range of possibilities and limitations of the instrument, and also introduced me to all the names of the different scratch techniques.

Q6 JO: What makes your concerto sound like hip-hop (vs. a turntable concerto that Cage or Varèse might have written)?

GP: Firstly, I'm a big fan of syncopated grooves, and I like a lot of American funk and hip-hop, so most of my music has sections that are very rhythmic and quite syncopated—therefore, it was only natural that approach would appear in the concerto. Also, I wanted there to be some clear references to the origins of turntablism in the concerto. Though Cage obviously used turntables, it was due to the necessity that turntables were the most accessible way of playing recorded sounds (or test tones!) at that time, and I wouldn't call his use 'turntablism' as we recognize it today. For me, the origins of turntablism was clearly in hip-hop culture of the late 1970s, 1980s, and 1990s, and I wanted that to be reflected in the music. Many of the classic scratch techniques are designed to go over a groove, and all the best DJs are used to DJing with grooves that it would be crazy to ignore it in one of the first concertos for turntables.

Q7 JO: Was your DJ notation effective in achieving your vision? Why or why not?

GP: I think my notation does its job in helping the DJ and the conductor know what the DJ should be doing. With DJ Yoda, we had many sessions where I explained to him what I wanted, and as his music reading skills were quite basic (and he didn't really want to be looking at the score that much), the score that evolved was mainly used as an aid memoire, a guide. Since the first performance, I have improved the details in the score, but I think that it could be even more precise and have a more consistent notation system in place—the problem is I just never have time to make that update! Also, I've had the luxury of having one-on-one sessions with most of the DJs who have performed the concerto, and also have the DJ Yoda recording as a reference point. Much of the finer detail has been communicated orally and by DJs listening to the Yoda version. However, I was

never contacted by DJ Zeke for the Australian premier of the concerto, so I really don't know how that performance turned out (I'm hoping that he studied the Yoda recording!).

Q8 JO: Upon listening to the work with the score and reading your instruction, one can sense there are different levels of freedom, even outside the 'ritmo ad lib' sections. If a DJ performed the work precisely as you notated during the bars outside the 'ritmo ad lib' sections, would you consider it a good performance? What sections need to be performed exactly as written with no room for interpretation?

GP: I don't have a score on me at the moment to go through exact sections, but I think that most of the precisely notated sections work fine, though there are a few moments that could feel a bit stiff. Martin Baumgartner who performed in Switzerland followed the score very precisely at first (very Swiss), and I did find bits of his early rehearsal performances a bit stiff. After the first rehearsal, I encouraged him to add more 'rubato' and be freer with his interpretation, and to add more of his own personality, especially in the 'ritmo ad lib' sections. The thing is that DJs are not accustomed to performing from scores, and as long as the score visually gives the general idea, they don't need something super precise—it would more likely cramp their style if they felt they had to follow a score exactly. Having mentioned that, I would like to get a complete transcription of the Yoda recording, and then include more of that in the final score, as most of that performance is how I originally conceived the turntables to be performed.

CHOICE OF RECORDED MATERIAL BEING SCRATCHED

Q9 JO: How did you create the records needed for this concerto?

GP: Firstly, it's important to explain that all the sounds that the DJ uses come directly from the orchestra. Early on in the composition process, I was very concerned that the concerto could end up sounding quite 'kitchy', especially if there were classic hip-hop samples scratched over a live orchestra, but then I realized that a good solution would be to give the DJ only sounds from the music that the orchestra was playing, so that he would almost be scratching with them live. However, I realized that recording the DJ sounds live in the concert would be too risky. Therefore, we would have to record all the sounds in rehearsals and then mix, master, and edit them, and then compile them in the correct order and press them to vinyl or load them into Serato.

For the first rehearsals with DJ Yoda, I had made a MIDI version of the orchestral parts (using orchestral samples) for him to rehearse with. I gave him the

orchestral phrases that he would scratch with from those MIDI recordings, that way, we could work out which orchestral passages and which orchestral sounds scratched best, and also experiment with how to edit and compile those sounds. Then, when we rehearsed with the orchestra, we continued using the MIDI recordings. I made some recordings of the orchestra in the dress rehearsal, but I really wasn't happy with the sound as the rehearsal was in a really bad acoustic.

For the premier performance we ended up using the MIDI recordings for the turntables. However, I used good quality orchestral samples (Vienna Philharmonic library and Miroslav Orchestral library) and mixed them carefully to get the most realistic sound possible. But once we had done the studio recording for the CD release, I made a new set of sounds for the DJ parts—which have been used for most performances since (though they have been updated for some gigs like the NYO proms gig, when I updated many of the full orchestral passages so that the DJ sounds matched the orchestra much better).

When compiling the records [using Serato] more recently with DJ Switch, he advised me to compile everything at a tempo of 133.333 bpm so that all the samples would start at the same place on the vinyl—which is obviously very helpful. The actual 'records' were played using Serato, and up until now, all the DJs have used Serato, rather than actually pressing vinyl. Obviously, Serato allows the DJ to quickly make edits to the samples, and have extra repeats of certain samples, or even change the order around, and of course use cue points to get to the desired sound more reliably—but DJ Switch now barely uses cue points and I think he could probably perform with real vinyl if necessary.

Q10 JO: How complicated was the process?

GP: –See above.

Q11 JO: What are the steps for creating the records?

GP: –See above—I should also add, that the mastering of the sounds is very important, and getting the right EQ & compression really helps how the sounds work when scratched. Currently, when an orchestra hires the scores from Faber Music, they also receive download links to the files for the DJ. These can be used immediately in rehearsals and for the performance, but potentially a DJ could re-record new versions of the sounds if they wanted.

Q12 JO: How many records are used?

GP: Two records are used. For each movement, there is a sound-file labeled LEFT or RIGHT deck. Each movement has its own set of sounds that are all sequenced in the correct order.

Q13 JO: How are the samples laid out on the records?

GP: –See above—If everything was pressed onto a vinyl record, each movement would be separated by wide track dividers. Individual sounds would follow one after the other, perhaps with small track dividers before significant samples.

Q14 JO: How expensive is it to create records for the piece?

GP: When using Serato, you just need the hardware; otherwise it depends on how you press the vinyl. I have written an earlier composition in 2004 that includes DJ called: *Two Dances for String Trio, Bass Clarinet, Piano, & Scratch DJ* [Arts Council commission for the Tate Ensemble @ Bath Festival, approx. nine minutes duration]. For this piece, I actually got the vinyl properly cut and pressed twenty test pressings (I don't think Serato even existed then). That cost around £400 if I remember correctly.

Q15 JO: What is the lifespan of the records?

GP: Those vinyl records are lasting well, but I made twenty copies, as they do wear out over time.

Q16 JO: Any other information

(no response given)

PERFORMANCE REHEARSAL PRACTICE

Q17 JO: What were the complications of incorporating a DJ into this work? What are the performance issues (if any)?

GP: Getting a good sound balance between the DJ and the orchestra is very important and potentially problematic. My idea for the *Concerto for Turntables* is that the turntables should be treated just like any other solo concerto instrument (e.g. a piano) and therefore, the sound of the turntables should be localized, and should clearly come from the turntables (with a small-medium stereo PA placed just behind the turntables)—not from a huge PA system side-wide on either side

of the orchestra. Also, the volume of the turntables should not be louder than the orchestra, at most it should match the orchestra. However, the level of the turntables needs to be controlled by a sound-engineer sitting in the audience of the concert hall so that it can be properly balanced with the orchestra. If the DJ controls the volume, they might not get the balance right for the audience from where they are positioned. Also, the conductor normally needs a small monitor to hear the DJ and if possible, the percussion should also have a monitor.

Q18 JO: What are the rehearsal issues (if any)?

GP: The issues of monitoring are also very important for rehearsals. It's also important for the conductor and the DJ to have a session together before the orchestral rehearsal so that they can prepare how they will communicate and determine which cues the DJ will need. As most DJs aren't used to working with conductors or orchestras, it's very important that they are confident with how they will interact and communicate before the full rehearsal starts, otherwise a lot of time can be lost.

Q19 JO: Is there a degree of 'culture shock' for all involved individuals incorporating the DJ of a different musical background?

GP: It very much depends on the orchestra. More traditional orchestras tend to be quite skeptical about the turntables at first. I remember hearing from the daughter of a violinist for the RSNO about how her mother and other members of the orchestra had been very suspicious of this "Concerto for Turntables" and thought it was going to be a big gimmick, but after the concert, most of them had really enjoyed the piece and felt quite differently about it. After witnessing how expressive the turntables can be, they actually accepted them as a valid instrument.

Q20 JO: How did the DJ rehearse with the orchestra?

GP: If the DJ is well prepared, and comfortable with the conductor, the rehearsal should be like any other classical concerto rehearsal (though there's often an initial moment of shock for the DJ when they first perform with a full orchestra—and plenty of curiosity from the orchestra when they start hearing what the DJ is doing.

Q21 JO: How did the DJ learn to perform the work? Do you think most DJs will learn the piece by listening to the DJ Yoda recording?

GP: The main way they learn it is by playing along to the ‘instrumental’ recording of the concerto—which I always send the DJ and recommend that they work with. When we were recording the Heritage Orchestra, DJ Yoda was wired direct into the mixing desk so he would not be picked up on the orchestral mics. This gave me the possibility of mixing a version of the recording that has no DJ on it and can therefore be used for rehearsing and even for three deck performances.

I think most DJs do learn a lot from listening to the DJ Yoda recording, and as DJing is rarely notated, I think that learning the piece from that recording is the quickest way for a performer to start learning it. However, once they know it well, they can obviously start to bring in more of their own personality and musicality to their performance, as is encouraged by the score.

Not all of the DJs used the DJ Yoda recording much: DJ Noize had just watched the DJ Switch + NYO recording on youtube a couple of times when I first met him for rehearsals, and I actually then encouraged him to listen to the DJ Yoda recording to get another perspective on the piece. DJ Noize’s interpretation had many features that were quite unique to his DJing style, particularly his cadenzas in the third movement where he went impressively far from the sound of the original orchestral sounds. Martin Baumgartner listened to the DJ Yoda recording, but only once or twice I think, he preferred to follow the score.

Q22 JO: If Will Dutta hadn’t already found a performer for you, how would you find a DJ to perform the concerto?

GP: Well, when there are new performances of the concerto, I always check the DMC listings of previous DMC champions to see which DJs are based in the local area of where the concerto will be performed. For example, a performance is programmed for Toronto in January 2014, so I have suggested Kid Koala to the organizers as he is based in Montreal. I also suggested 8-track who is also from Montreal.

So if Will Dutta hadn’t contacted DJ Yoda, I guess I would have looked around to see which DJs had the necessary skills and might be open-minded enough to do the concerto. I probably would have come up with DJ Yoda as well. When DJ Yoda couldn’t perform with the RSNO, I tracked down Beni G (from the Mixologists), and when Yoda couldn’t do the CD launch at Dela Warr Pavillion, I contacted DJ Switch (who was an obvious candidate, being three times DMC world supremacy champion).

POST WISDOM

Q23 JO: Have you made any revisions to the concerto (are revisions needed, why?)?

GP: Well, I have improved the DJ part a few times (as mentioned above). Then, when I made the expanded version for the NYO BBC proms performance, I obviously added more instruments, and in doing so made a few improvements to the orchestration. But I haven't changed anything really significantly since the premier.

Q24 JO: Would you write another orchestral work featuring a DJ? Why or why not?

GP: Well, I've already written over twenty minutes of new music for orchestra and DJ for the Winternachtstraum Ballet in 2011. Then, earlier this year I was asked to write a second concerto for turntables for the Orchestre National de Pau (France). To be honest, I didn't feel ready to do a second concerto, it felt too soon after the first concerto, plus the first concerto still has many more performance opportunities. I would rather concentrate on writing concertos for other instruments (I composed a concerto for bass drum and for cello in the last two years). But then I considered the idea of at least featuring turntables in this new commission, and then got into the idea of a concerto for trumpet, percussion and turntables—which suddenly really inspired me. The idea of a direct dialogue between the three soloists could be really exciting with the trumpet and percussion motifs being immediately manipulated by the turntables. The premier for this work will be February 4, 2014. I've started a couple of sketches and will be composing it over the next two months.

Q25 JO: Would you take the same approach writing another work for DJ? Why or why not?

GP: The approach will be quite similar I think, but I will aim to further develop ideas I started in the concerto. The idea of carefully choreographed passing around of musical phrases is something I'd like to develop more, and have the more explicit use of turntables manipulating sounds that have just been performed.

Q26 JO: How easy is it to attract performances of this concerto; do you consider a work involving DJ too specialized to easily find multiple performances? Why or why not?

GP: There have been quite a few performances so far, so there is definitely an attraction. Though, I think the orchestral artistic programming teams do need to be open-minded and interested in breaking down boundaries. Also, because having DJ involved in a classical work can be a big attraction for new audiences, orchestras who are looking to reach out to a new public can be drawn to the piece.

Q27 JO: What advice would you give composers who want to write for DJ? What should they know before writing for the instrument?

GP: They need to go and see some turntablist DJ battles live and spend some time with a really good scratch DJ to see the range of what turntables can do. Also it's worth checking out what more alternative artists like Christian Marclay have done. They need to really familiarize themselves with the instrument and its repertoire in both experimental and hip-hop fields. If they can get hold of a turntable and mixer to personally experiment with, that would also be helpful.

Q28 JO: How many pieces have you composed that use turntables? What are their titles, how are they comparable or contrasting to your concerto? Have you used the same notation and style?

GP: Two. Before composing the concerto I wrote *Two Dances for String Trio, Bass Clarinet, Piano, & Scratch DJ* [Arts Council commission for the Tate Ensemble @ Bath Festival, approx. nine minutes duration] in 2004. The approach to the turntables in *Two Dances* is quite different and the DJ part is much less soloistic and demanding than the concerto. I solved the problem of what sounds to give the turntables by putting the sound of vinyl on the vinyl! Put simply, I recorded all the different clicks, crackles, pops, and noise that 'empty' vinyl can give and then used those sounds as a percussion kit to create rhythm tracks that could be played back on the vinyl. The DJ then manipulates longer vinyl sounds (mainly vinyl noise) to create more expressive and rhythmic gestures.

The notation is similar, but as the turntable plays back pre-programmed rhythm tracks that introduces a few extra approaches, and those rhythms are given as a small cue staff. Faber Music has the score if you are interested. You should be able to see it online, I think. Also, there is a performance on youtube, by the Art of Time Ensemble.

OTHER

Q29 JO: Do you think turntablism in ‘classical music’ is a growing genre?

GP: It seems so, not on a huge scale, but I keep hearing about other composers who have written for turntables.

Q30 JO: What kind of challenges do the turntables pose as an instrument? Does the nature of the instrument make it harder to perform passages the same way every time?

GP: A good turntablist like DJ Switch is able to perform passages almost exactly the same each time. Most turntablists practice their battle routines exhaustively and are extremely good at doing the same phrases again and again, so I don't think that's an issue if the turntablist is well rehearsed. One of the big issues is certainly getting the turntables to sit well within an acoustic ensemble.

Q31 JO: Why do you write music for turntables and why should a composer write for the instrument?

GP: There are many reasons to compose for turntables.

1. For a long time composers and performers have searched for a truly expressive way of controlling electronic or electroacoustic sounds. The turntables actually offer a very musical answer, as they can play back any recorded sounds in real time with very sensitive hand-on-vinyl control. So, turntables offer a very expressive option for composers who want to include real-time performance electroacoustic sounds in a live concert.

2. The turntables open up a very broad and quite unique range of manipulating recorded sounds, and therefore can create a very distinctive set of sounds that open up many new compositional possibilities and can create effects that are hard to achieve any other way. In particular, the turntables can be extremely precise and rhythmically virtuosic (and can be much more organic than simply triggering sounds with standard MIDI controllers).

3. The turntables are a very new instrument and can introduce a sound and a post-modern attitude to new compositions that is particular to our time. The idea of using recordings of other musical material to perform new musical ideas can introduce a very interesting post-modern aspect to a music work.

Q32 JO: Please share any notable reactions or comments from the audience or musicians about the work and/or performance.

GP: I'll get back to you on this one—you can find plenty of reviews online. I will also email you all the press I have on my laptop.

Q33 JO: If necessary, please share any more information or commentary on your concerto or on the composer's perspective of composing for turntables.

(no response given)

APPENDIX C

NICOLE LIZÉE INTERVIEW 2013

Turntablism Composition Research Interview with Nicole Lizée
An electronic Email interview conducted by Jeffrey Ouper
Interview completed September 10, 2013

(some responses have minor edits for grammar, spelling, and clarity)

GENERAL BACKGROUND INFORMATION

Q1 Jeffrey Ouper: What is the date, location, name of the orchestra/conductor, and name of the soloist involved in the premiere of *RPM*?

Nicole Lizée: March 12, 1999, McGill Contemporary Ensemble, Denys Bouliane, conductor, DJ P-Love (Paolo Kapunan), turntablist.

Q2 JO: How many times has it been performed since the premiere?

NL: Four.

Q3 JO: Have other DJs performed the piece? If yes, who?

NL: No.

Q4 JO: Whose idea was it to compose an orchestral work for turntables? Who or what inspired this piece?

NL: It was my idea—it was something I wanted to do for a very long time. My father has been an avid electronics collector, salesman, and repairman since the 1950s and has kept many pieces of technology that have come through his shop. I was surrounded by all of this technology throughout my formative years and from a very young age; I would spend hours with these devices creating “songs.” This included phonographs and turntables. In hindsight, this was probably around the same time as hip-hop culture was emerging in New York, though obviously I would have been unaware of it given my age and geographical isolation. In the early 1980s (ca. 1983), my father began selling satellite dishes and I discovered and became fixated with MTV. I remember seeing a feature on MTV examining the emergence of turntables as instruments focusing on Grand Mixer D.ST (later DXT), Grandmaster Flash, and Kool Herc. I became fascinated by it and followed the progression of turntablism ever since. Once I moved to Montreal and started working with contemporary music ensembles in the mid 1990s, I knew it would be a great opportunity to make it happen.

Q5 JO: Please share your program notes for this work if there are any.

NL: *RPM* is constructed around the concept of the turntable and DJ. This idea not only manifests itself through the use of actual turntables, but also much of the acoustic material performed by the ensemble consists of “metaphoric turntables”. These are contrasting layers of sound that are superposed over one another played by small groups of specific instruments within the larger ensemble. These instrumental groups emulate the sonorities generated through turntable manipulation such as record juggling and splicing (a skipping record effect), dragging/transforming (a rapid distorted scratching), the “hydroplane” and “tweak” effects (low-pitched, warped sonorities) and forward scratches (a stuttering effect). The work’s formal structure, pitch content, rhythmic flux, tempi, meter changes, and instrumental registers are directly influenced by the samples derived from the records manipulated by the DJ.

The final section of the work simulates a DJ battle. These competitions (where two DJs showcase their talents in a duel-like fashion) occur regularly in the world of turntablism. The DJs alternate back and forth demonstrating techniques that gradually increase in degree of difficulty. In this work, the two contestants are the entire acoustic ensemble and the DJ. The two exchange increasingly raucous articulations until they finally play together in a chaotic climax to end the battle. The winner is...

COMPOSITION PROCESS FOR COMPOSING *RPM*

Q6 JO: Did you know of or research any orchestral works using turntables when you composed *RPM*?

NL: No, there weren’t any. John Cage had used turntables/phonograph in his *Imaginary Landscapes No. 1* in 1939. I was also aware of Christian Marclay’s work with Zorn, but there weren’t any orchestral works integrating turntables.

Q7 JO: How much did you know about turntablism before you wrote *RPM*?

NL: A great deal. I was (and still am) a huge fan and have been since I first discovered it in the early 1980s—and followed its progression through the 1980s and 1990s. I was an avid follower of Grandmaster Flash, DJs Q-Bert, Shadow, Disk, Flare, and Mix Master Mike.

Q8 JO: How does your piece acknowledge the hip-hop background of the turntables?

NL: Several of the techniques used in the work are informed by hip-hop; primarily beat juggling, beat matching, and a number of scratch techniques. When I wrote for scratch techniques in *RPM*, I both notated the articulation and also used the universal terms (developed by Q-Bert, Flare, Disk, etc.) in the score akin to an Italian musical expression, etc.

Q9 JO: How would you explain the musical style(s) of the work?

(no response given)

Q10 JO: How are the turntables incorporated into the work?

a) How are the turntables featured with the orchestra and as a soloist on its own?

b) How did you orchestrate the work around the soloist?

NL: I used a number of methods to both emphasize the interaction between soloist and orchestra and highlight the turntables themselves as a unique instrument. Certain sections of the piece were set up so that the orchestral and turntable parts were written simultaneously, where the harmonic, rhythmic, or textural content contained in the sample impacted the orchestral writing. In other sections, the orchestral material was conceived of first and then I chose a sample and method of manipulation to meld with the orchestral writing. In the Perry Como “Catch a Falling Star” record juggle, I transcribed and created the juggle first and used the orchestra to color and embellish the turntablist, serving to enhance the juggle effect. The DJ Battle at the end of the piece was constructed using two entities: the DJ and the orchestra as DJ, each mimicking and gradually ‘outdoing’ each other. Eventually, the orchestra completely takes on characteristics of turntablism (i.e. splicing, stuttering, drones, white noise), losing its ‘conventional’ identity and becoming assimilated into the world of turntablism. Where as, at many times earlier in the work, the turntables emulate the orchestra in a melodic, textural, and thematic sense. They provide the harmonic foundation (i.e. the Nuns’ Hymn from *The Sound of Music*) or supply almost operatic thematic material (The Sandpipers washed out vocal theme or Maria Von Trapp’s vocal line at the very start of the battle).

Q11 JO: What was your process in figuring out notation for the DJ? Did you consider turntablature?

NL: When I devised the notation system for the turntables, I was primarily looking to be extremely precise and expressive. I wanted to find a way to capture every component of turntablism, which—much like any other instrument—is quite involved and multifaceted. I found that using a combination of traditional notation with some graphic notation for the crossfader, and text/turntable terms (similar to Italian musical expressions/indications) worked well. I've expanded this notation system a great deal in my subsequent pieces for turntables.

Q12 JO: Was your DJ notation effective in achieving your vision? Why or why not?

NL: Absolutely. It is very precise, while harnessing the improvisatory spirit of turntablism, which is the ultimate goal for me. It allows the turntables to fit seamlessly within an ensemble and be 'conducted' akin to any other solo instrument in an orchestral setting. With transcription and intricate notation I can create very specific sonic combinations and rhythmic complexities.

Q13 JO: Do you consider RPM to be a concerto or an orchestral work featuring turntables? If you consider it a concerto, what are its concerto attributes?

NL: It is a concerto in many ways. The turntables/turntablist is the focal point of the work, and the orchestra serves to interact with, clash with, compliment, and color the soloist's adept techniques. However, there are a number atypical features in the work that put the orchestra on par with the soloist, such as the emulation of turntables and turntable techniques—or metaphoric turntables as I refer to it in the thesis—performed by the orchestra. This includes the splicing of purely acoustic material at the very beginning of the work, the simulation of warping and pitchshifting, and the metaphoric layering of several turntables or beat matching. This all occurs in the first 3'30" of the piece as the turntablist is silent. The final section of the work is a simulation of a DJ Battle where the actual turntablist is pitted against the metaphorical orchestral turntablist and they alternate back and forth in a duel. This serves as a type of cadenza for both turntablist and orchestra—who is emulating a turntablist. So, the turntables—whether in literal or metaphorical form—are always the centerpiece.

Q14 JO: Is there a reason why the score calls for 'DJ' rather than the instrument itself 'turntables'?

NL: I generally use the word turntablist or turntables exclusively now, but at that

time did also use the term DJ. I now feel there is a more definite distinction between the two. Since the 1990s, the term DJ has shifted somewhat in its definition. In *RPM* I use both terms, but the title of the work refers to ‘solo turntablist’ and the accompanying thesis quite often uses the term turntablist.

CHOICE OF RECORDED MATERIAL BEING SCRATCHED

Q15 JO: Did you need to ask permission to use the specified records (any copyright issues)?

NL: No, I didn’t get permission. There are of course copyright issues, but it is impossible to get permission to use these samples. There is no system in place to allow pre-recorded samples to be cleared, unless you have a very good lawyer who specializes in sample clearance and have tens of thousands of dollars to spend. This is an ongoing debate and I don’t really see anything changing in the near future.

Q16 JO: Who chose what records were scratched in the performance (and why were they chosen)? -OR- Was it a collective decision between you and the DJ? (If collaborative, how did you choose records?)

NL: I chose all the samples. This is a very integral part of the composition process for me. This can take several weeks to decide on.

Q17 JO: Could any records be used?

NL: No—the records have become imbedded into the work. The orchestral writing informs the selection of the sample and the sample informs the orchestral writing on many levels. The two are intertwined. It would be like removing a solo violin part from a concerto and replacing it randomly with something else. Even the pressing of the record has been considered when choosing vinyl. In subsequent turntable piece pieces, I’ve asked for a vinyl sample to be worn down to create a certain faded color, a great deal of static, and disintegration of frequencies.

Q18 JO: What effect might a different record have on the piece?

NL: I am seriously considering doing this with my 2005 piece *This Will Not Be Televised* as an “alternate version”—but, again, the selection of the new samples/records selected would never just be random—they would again be very carefully selected.

PERFORMANCE REHEARSAL PRACTICE

Q19 JO: What were the complications of incorporating a DJ into this work? What are the performance issues (if any)?

NL: Firstly, finding a highly skilled turntablist who reads music. I was fortunate to find an amazing one. In my thesis for the work, I devote a chapter to discussing the challenges of using prerecorded sources with predetermined tempi and pitch. This is an incredibly interesting component of integrating turntables with live ensemble and conductor, and is something I've increasingly exploited in my pieces. There has to be a constant (rather unique) communication between the turntable soloist and conductor when negotiating these important details in real time during a performance. When record juggling where one copy of the LP is at a different pitch (and therefore speed) or when pitchshifting a sample, there are slight, and sudden, shifts in tempo. This has to be communicated in the score and, ultimately, with the entire ensemble. Also, the blending of prerecorded sources with live ensembles (of varying sizes and instrumentations) is an important issue. Some older recordings (from specific eras, certain pressings, etc.) are notorious for being thin; the grooves can wear down easily causing the stylus to skip. This requires a DJ who can react and adjust on a dime to get back into the part—I was fortunate to have that DJ.

Q20 JO: What are the rehearsal issues (if any)?

NL: One issue is jumping between sections, a regular occurrence in rehearsals—but for a turntablist, this doesn't just mean finding the measures that have just been called out in the part, it means quickly finding the corresponding LP(s) and also the specific sample on that LP.

Q21 JO: Is there a degree of 'culture shock' for all involved individuals incorporating the DJ of a different musical background?

NL: Generally, in my experience, the ensemble and conductor often have little or no prior knowledge of turntablism and hip-hop culture, so the challenge exists of finding a way to communicate this new genre/fusion: it involves a new lexicon, new sonorities, aesthetics, techniques, and performance practices. When I first began incorporating turntables into concert music there were, at times, preconceived notions among ensembles, artistic directors and (some) audiences that this wasn't serious music. It initially created a divide: those that really wanted to see this mergence of worlds happen and those who didn't. Fortunately, I'm pleased to say that many opinions changed following the rehearsal experience and performance.

Q22 JO: How did the DJ rehearse with the orchestra?

NL: A fully notated part was created for the DJ. Prior to the first rehearsals for both *RPM* and the following work *King Kong and Fay Wray*, the conductor met one-on-one with the turntablist to discuss and conduct portions of the work. This worked to establish a flow, method of communication, interaction. After this initial rehearsal, rehearsals took place with the full orchestra and went extremely well.

Q23 JO: How did the DJ learn to perform the work?

NL: Essentially from the score/parts and rehearsals. Also, I should mention that the integral part of performing any work—which could be referred to as the intangibles (i.e. bringing the work to life), was the result of working with a turntablist who is a complete musician—one with great ears, feel, time, personality, and someone who’s really into this vision of merging the two worlds.

Q24 JO: How did you find a DJ to perform *RPM*?

NL: It’s a good story. When I decided to write a work integrating turntables and orchestra for my Masters thesis at McGill, I didn’t know if it would ever be performed. I was just driven with this idea and decided to worry about finding a turntablist after the piece was finished. It occurred to me that it could be years before I found someone. Once the piece was very nearly finished, I knew it had to be performed ASAP; I wanted to see this vision materialize. I remember sitting in the cafeteria at McGill’s music building and lamented to a friend that I needed to find a turntablist quickly but probably wouldn’t be able to. I considered performing the work myself, but knew I had written something far beyond my capabilities. Someone who overheard me said, “Hey, what about Paolo?” and pointed to a guy on the other side of the cafeteria. I recognized him from turntable shows in Montreal, but had no idea he studied music at McGill. I approached him with my idea and he was absolutely into it. This started a great professional and personal friendship.

POST WISDOM

Q25 JO: Have you made any revisions to *RPM* (are revisions needed, why)?

NL: I did make some very minor revisions following the premiere, mostly affecting the orchestral parts.

Q26 JO: How many pieces have you composed that use turntables? What are their titles, how are they comparable or contrasting to *RPM*? Have you used the same notation and style?

King Kong and Fay Wray (2004)
for orchestra and solo turntablist
Premiered February 2004
Turntables: DJ P-Love

This Will Not Be Televised (2005-7)
for chamber ensemble (7 players) and turntables
Premiered February 2007
Turntables: DJ P-Love

Cryptograms (2008)
for cello and turntables
Premiered November 2008
Turntables: DJ Olive

Bonjour et sans demain (2009)
for 4 players and turntables
Premiered April 2009
Turntables: Martin Tétreault

Traumnovelle (2011)
for chamber ensemble (6 players) and turntables
Premiered April 2011
Turntables: Nicole Lizée

Bookburners for cello and turntables (2011)
for cello and turntables
Premiered February 2012
Turntables: DJ P-Love

White Label Experiment (2012)
for percussion quartet, turntables, and omnichord
Premiered March 2012
Turntables: Nicole Lizée

My turntable notation system has continued to develop and expand with each subsequent work in tandem with the expansion of techniques and ideas used in the

works. With each piece involving DJ P-Love, the style has definitely expanded in terms of scope and virtuosity, as well as in degree of experimentation. With each piece, I explored synchronization and pitch-based techniques in greater depth and pushed the rhythmic and sonic boundaries of ‘what is possible’ between an orchestra, led by a conductor, and DJ.

I’ve also worked with other interesting turntablists (DJ Olive, Martin Tétreault). As these artists are associated with different aesthetics and styles, their respective parts were written with this in mind—the notation, techniques, and overall characters of the pieces were approached differently. This proved to be another interesting challenge and led to unique results.

In 2011, I performed for the first time as DJ in my piece for turntables and chamber ensemble (*Traumnovelle*). This again, was a unique experience. The piece was written with my technical threshold in mind, while simultaneously pushing the limits of what I could do as a performer on turntables. I am a fan of imposing limitations when conceptualizing and writing a work, so it was interesting to develop a piece around my skill level, while pushing my capabilities.

Q27 JO: How close did the *RPM* premiere/recording come to how you envisioned the piece sounding in your mind (particularly regarding the sound of the turntables)?

NL: The results were quite close to how I imagined. The only issues were those of blending the two sources in a concert hall, particularly in that the work primarily used samples from the 1940s-1960s to achieve a specific overall color and aesthetic (i.e. *The Sound of Music* soundtrack, Perry Como, The Sandpipers, etc.). The lush, vocal-centric quality of the recordings require a certain orchestral treatment to heighten its impact.

Q28 JO: How flexible should composers and conductors be with the execution of turntable passages?

NL: As with any instrument or any concerto, there should be some flexibility in regards to interpretation, feel, and expression between all members of the ensemble. This is an exciting feature of performance, but as with other works involving solo instrument, there’s a certain expectation of executing the part faithfully in order to realize the piece as a whole. I should emphasize that none of this is in any way a stance against improvisation. Improvising is an enormously important skill and is a huge component of the music I grew up with and still love to this day, and there is definitely a place for improvisation in concert or classical music—it is going in interesting places—but a very large part of my aesthetic is

centered around the possibilities that exist (this includes writing for drum kit, which is another instrument I've focused on in recent years) when practices that originate from an oral tradition are merged with those that are notated. I want to capture and preserve the spirit of their spontaneity while pushing their capabilities—and at the same time control when and how something happens.

Q29 JO: How easy is it to attract performances of *RPM*; do you consider a work involving DJ too specialized to easily find multiple performances? Why or why not?

NL: Finding opportunities for repeat performances of new orchestral works in general can be a challenge. In my experience this is not necessarily due to lack of interest, but rather to lack of finances. I've been fortunate to work with artistic directors, conductors, and ensembles that are interested in my pieces involving DJ. But there's a tendency to program works with a smaller ensemble than with full orchestra for logistical reasons.

Q30 JO: What steps or guidance would you suggest to composers who are new to writing instrumental music incorporating turntables?

NL: Be very aware of the history of turntables, turntablism, and what has come before now. As with any instrument, there can be a danger of being derivative or cliché. Speaking for myself, when I integrate turntables it's not enough just to have turntables in the ensemble. It doesn't begin or end there. There's something very appealing about taking something that's associated with a particular function and a particular period in history, and creating new contexts for it. There's the notation aspect. It doesn't begin and end with having turntables merged with a string orchestra—I look for a specific effect for the ensemble as a whole—that the turntable is now a part of—and I notate for these machines as I would any other instrument.

OTHER

Q31 JO: Do you think turntablism in 'classical music' is a growing genre?

NL: Difficult to say.

Q32 JO: What kind of challenges do the turntables pose as an instrument? Does the nature of the instrument make it harder to perform passages the same way every time?

NL: Not in the hands of a great turntablist. It's a tricky instrument for sure—

with a lot of components involved. The addition of the LP (and the sample contained on that LP) definitely adds a whole new challenge, but in my opinion, a fascinating one. I maintain that the turntables are an instrument and challenges certainly exist for any instrument.

Q33 JO: Why do you write music for turntables and why should a composer write for the instrument?

NL: During my formative years I was surrounded by a wide array of musical styles and Technology—I grew up loving classical music while simultaneously loving pop, rock, and all the subgenres/movements that developed throughout the 1970s, 1980s, 1990s (turntablism, metal, psychedelia, no wave, etc.). For me, the inclusion of atypical instruments within concert music is very natural. I was always surrounded by these sounds, so they became part of my subconscious. For me, the sonorities generated by these machines feel very natural placed within an otherwise ‘traditional’ acoustic ensemble. Certain sounds have become iconic to me and I want to capture and manipulate these “icons” within a new environment.

Q34 JO: Please share any notable reactions or comments from the audience or musicians about the work and/or performance.

NL: The reaction to the premiere of *RPM* in 1999 was very strong from both the ensemble and audience and ultimately led to a number of new commissions and my continuing expansion of the fusion of turntables and concert music. Immediately following the premiere, there was a division among the McGill faculty where one side embraced the innovation and forward thinking of this fusion and the other side refused to believe that this was music or that it belonged in an academic institution. Today articles and analyses of these pieces are being written and published in magazines and ‘academic’ contexts. (To read more reactions and reviews of *RPM* and other turntable works please visit www.nicolelizee.com/press/).

Q35 JO: If necessary, please share any more information or commentary on *RPM* or on the composer’s perspective of composing for turntables.

(no response given)

APPENDIX D

PAUL LEARY INTERVIEW 2013

Turntablism Composition Research Interview with Paul Leary

An electronic Email interview conducted by Jeffrey Ouper

Interview completed August 6, 2013

(some responses have minor edits for grammar, spelling, and clarity)

GENERAL BACKGROUND INFORMATION

Q1 Jeffrey Ouper: What is the date, location, name of the orchestra/conductor, and names of the soloists involved in the premiere of the *Concerto for Trumpet, Turntables, and Orchestra*?

Paul Leary: December 13, 2003, Cleveland OH, Cleveland State University. Contemporary Youth Orchestra, conducted by Liza Grossman with Joe Miller, trumpet and DJ Reemyks, turntables.

Q2 JO: How many times has it been performed since the premiere?

PL: Twice.

Q3 JO: Have other DJs performed the piece? If yes, who?

PL: There were actually two performances of the piece with two different DJs. The original, first DJ that I worked with was DJ Reemyks. I didn't even hear about the other performance until after the concert had already happened, so I had nothing to do with the other DJ.

Q4 JO: Whose idea was the concerto for trumpet and turntables? Was the incorporation of turntables something you had wanted to try, or was this type of concerto chosen by the commissioner? Who or what inspired the piece?

PL: The idea came from the director of Contemporary Youth Orchestra and I was interested in giving the idea a try. Adding the trumpet was my idea; it was useful and helpful in making the piece come together.

Q5 JO: Please share your program notes for this work if there are any.

(no response given)

COMPOSITION PROCESS FOR COMPOSING A TURNTABLES CONCERTO

Q6 JO: Did you know of or research any orchestral works using turntables when you composed your concerto?

PL: No, I didn't know of any other pieces like mine at the time, but I of course was very familiar with the turntables and concerto musical forms.

Q7 JO: How much did you know about turntablism before you wrote the concerto?

PL: I knew a little, but I wasn't a turntablist myself. I knew the DJ who would be playing though and worked closely with him on musical ideas.

Q8 JO: Does your concerto acknowledge the hip-hop background of the turntables in any way?

PL: The second movement of the piece does this in an abstract way. My thought process was driven by the orchestral and band music written for TV shows of the 1970s and 1980s like "Hawaii Five-O." That type of thematic material was the focus of that movement, but it's not really hip-hop though.

Q9 JO: How would you explain the musical style(s) of the work?

PL: Each movement has different thematic and musical organization. For example, the first movement was structured around a ground bass. The second is more thematic in structure, but is basically a rondo style form. The alternating sections are used to feature the two soloists, the turntables and the trumpet. The main theme returns regularly.

Q10 JO: How are the turntables incorporated into the work? How are the turntables featured with the orchestra, with the other soloist, and as a soloist on its own?

PL: Both—the turntables often played as a duet with the trumpet, but also alone as a soloist or is paired with orchestral passages.

Q11 JO: How did you orchestrate the work around the soloists?

PL: The turntablist did not read music. Therefore, there were considerable limitations to what I could ask him to do specifically. I mostly trusted his judgment, allowing him to improvise and come up with ideas for the piece. We

met on several occasions to work on the material. Also, I provided him with a MIDI recording of the piece for him to work from. He was able to learn his entrances from listening to this recording. In traditional concerto format, the solo and tutti sections alternate, but sometimes they play together.

Q12 JO: How did you notate the DJ part?

PL: For the most part, I did not use traditional notation for the DJ part, I just simply put in arrows with the instructions to “play here.” There wasn’t much point in getting too intricate with a part that the performer wouldn’t find useful. I did at least provide some rhythms where I wanted them to be specific.

Q13 JO: Was your DJ notation effective in achieving your vision? Why or why not?

PL: I think it was only successful because I was there to help and guide him to ideas. If he had been on his own entirely, I don’t think he would have produced the music I was envisioning. The piece is rather long and complicated and it would have been near impossible for a non-reader to figure out what to do and where.

Q14 JO: What is the audio track in the 2nd movement? How does it relate to the turntables?

PL: I believe it’s Muhammad Ali. I can’t remember where it was taken from, but the DJ was the one who came up with the idea of using the quote. It worked out well.

CHOICE OF RECORDED MATERIAL BEING SCRATCHED

Q15 JO: What records were scratched in the premiere performance?

PL: I really don’t know.

Q16 JO: Who chose what records were scratched in the performance? -OR- Was it a collective decision between you and the DJ? (If collaborative, how did you choose records?)

PL: He mostly chose the records. I was more interested in the different sounds he could get by manipulating the records, like scratching and such; I was interested in how he could make rhythmic patters with the scratching as opposed to being interested in what record he used. The records (to me) were just a means to create noise. This is not true all the time of course, because in the movement with Muhammad Ali, I really loved the use of his voice in the repeated phrase "I'm

going to fight...." Similarly, the use of the drumbeat in the improvisation movement is important because it holds the improvisation with the DJ and trumpet player together.

Q17 JO: Does the material performed by acoustic instruments (trumpet and/or orchestra) relate in any way to the material on the record scratched by the DJ?

PL: It is not specifically connected, no. The piece could easily be performed by another DJ with a completely different set of records.

Q18 JO: Could any records be used?

PL: Yes.

Q19 JO: What effect might a different record have on the piece?

PL: I imagine the difference would be just like having a different soloist or the same soloist with a different instrument, it would sound similar but not exactly the same.

Q20 JO: Are there any copyright issues using these records; did you need to ask permission to use them in your concerto?

PL: I never thought of that and it never came up. A huge part of the DJ culture is borrowing music for performance; I would want this music to exist under the same principles.

PERFORMANCE REHEARSAL PRACTICE

Q21 JO: What were the complications of incorporating a DJ into this work? What are the performance issues (if any)?

PL: The most complicated issue was dealing with the fact that the DJ didn't read music. Everyone else was working under the parameters of musical literacy and that [difference] presented a special circumstance that had to be dealt with. Luckily, the conductor was great and helped bring him in at crucial points.

Q22 JO: What are the rehearsal issues (if any)?

PL: Same issue as the performance issues (Q21).

Q23 JO: Is there a degree of ‘culture shock’ for all involved individuals incorporating the DJ of a different musical background?

PL: Not really, the Contemporary Youth Orchestra has for years been doing pretty daring projects that push the boundaries of classical music. They were completely comfortable with the idea. For me, working with the DJ was challenging at times. He and I came at music from completely different cultural and musical backgrounds and it definitely created tension at times. I was rather pleased with a lot of his ideas, but my piece was completely foreign to him and he struggled to find his place in the music. Also, I was pretty specific about not wanting drumbeats in certain places, and of course his tendency is to want to fill the piece with drumbeats, so we had to work on him thinking about his role in the orchestra. Often, I wanted him to just do scratching things with a specific rhythm (which I had notated at one time), but that became too cumbersome, so I just kind of let it go and let him do something funky. He absolutely couldn't learn by rote; I imagine that is a condition of always being a solo artist.

Q24 JO: How did the DJ rehearse with the orchestra?

PL: He plugged in right up front of the orchestra with the trumpet soloist.

Q25 JO: How did the DJ learn to perform the work?

PL: Like I mentioned earlier, I provided him with a recording of Sibelius playing the piece so he could practice and get an idea of what the music was like. The MIDI recording and rehearsals were his main methods of practicing and learning his part.

Q26 JO: How did the DJ and trumpet performer collaborate on the improvised movement?

PL: I have no idea! I left it completely up to them. They were both accomplished improvisers, so I gave them no parameters for that movement.

Q27 JO: What are the parameters given to the soloists for the improvised movement?

PL: None.

Q28 JO: How did you find a DJ to perform the concerto?

PL: He was actually found by the CYO who commissioned the piece.

POST WISDOM

Q29 JO: Have you made any revisions to the concerto (are revisions needed, why?)?

PL: No, I was happy with the work as it was.

Q30 JO: Would you write another orchestral work featuring a DJ?

PL: I would, but only if it were commissioned for a specific performance. It's not something I would venture into without a specific purpose.

Q31 JO: Would you take the same approach writing another work for DJ? Why or why not?

PL: I'm not sure, actually. I was a pretty young and inexperienced composer when I wrote that piece, so I imagine my knowledge would lead me to something a little different. *A lot* of it depends on the type of DJ and his knowledge.

Q32 JO: How easy is it to attract performances of this concerto; do you consider a work involving DJ too specialized to easily find multiple performances? Why or why not?

PL: It's hard to say how hard it would be, not many classical orchestras have shown interest—but then I also haven't really tried to promote the work. I'm really terrible at promoting my own pieces. It's not that I don't think that the DJ is too specialized either; it's more about whether the idea works well at all. I'm not sure it really does.

Q33 JO: What advice would you give composers who want to write for DJ?

PL: I would find a specific DJ to work with on the piece. DJing is such a specific skillset that you need to work with a specific performer to know what to do.

Q32 JO: How many pieces have you composed that use turntables? What are their titles, how are they comparable or contrasting to your concerto? Have you used the same notation and style?

PL: I have only written the one piece.

OTHER

Q33 JO: Do you think turntablism in ‘classical music’ is a growing genre?

PL: No, not really. I think it’s another thing composers are playing with. There is a lot of experimentation going on these days—especially with the mixing of genres, classical and pop—but that is it. Orchestras and classical music are often looking to be more viable and ‘hip’ and one way is this type of mixing with popular genres.

Q34 JO: What kind of challenges do the turntables pose as an instrument? Does the nature of the instrument make it harder to perform passages the same way every time?

PL: Well in my experience, turntables are not that musically expressive. If the DJ is scratching, then it’s mostly a rhythmic texture that they are providing. I imagine if they thought outside the box, there could be amazing sounds created with turntables (maybe using Max/MSP as well to create electronic effects). I certainly struggled with the DJ that I worked with to think outside the box in terms of the sounds he could create with the records.

Q35 JO: Why do you write music for turntables and why should a composer write for the instrument?

(no response given)

Q36 JO: Please share any notable reactions or comments from the audience or musicians about the work and/or performance.

PL: This piece was very well received. I think people were very excited about the use of a DJ, but more with the use of hip-hop as a source for a classical work.

Q37 JO: If necessary, please share any more information or commentary on your concerto or on the composer’s perspective of composing for turntables.

(no response given)

APPENDIX E

FOREWARD & NOTES FROM GABRIEL PROKOFIEV'S CONCERTO SCORE

Like the Classical concerto model, this Concerto for Turntables and Orchestra aims to show the full range of techniques and expressivity of the solo instrument and also highlight the skills of the soloist.

As the turntables (with a mixer), is an instrument that has primarily evolved in the world of hip-hop; many of the techniques used to play it originate from hip-hop culture and, therefore, this concerto innately contains language and culture from hip-hop music, even though it is not in a hip-hop style.

In hip-hop, music is almost never notated. Instead it is learnt by repetition and often uses improvisation. The primary way for the turntable motifs to be communicated is through a host of names (comparable perhaps to the different names given to various ornaments in classical music). The names tend to be descriptive; simple quavers of a single sound being scratched forward and backward is known as the ‘baby’; fast, tremolo type figures are called ‘scribbles’, very short, fast forward scratches are called ‘chirp’ scratches, and so on.

Yet, just giving the DJ (turntablist) a list of ornaments/scratch-styles would be an insufficiently accurate way to notate the DJ part. But, all the best scratch DJs have learnt their instrument in the hip-hop way and are not accustomed to following a score; and only a few can actually read music. So, notating the turntable part is potentially problematic. DJ Radar in USA has even invented a new grid-based notation system especially for turntables, but I thought that using this would over-complicate the score, as the DJ, soloist and composer would all have to learn a completely new system.

My solution for notating the turntable part has been to use traditional western notation, writing a score that generally resembles a percussion part; but with the addition of the marking in of the corresponding DJ-technique descriptions alongside each phrase, and with boxed text explaining exactly which sample the DJ should be using at each given point.

Very importantly, in order to make allowance for freedom of interpretation that is so intrinsic to DJing, and so that the finer rhythmic details of much of the turntablist’s performance can be finalized by the soloist themselves; throughout the DJ part there are sections marked:

----- ritmo ad lib -----

For all these passages the DJ is not expected to follow the written cues exactly. However, the DJ should still use the ‘sample’ that the score directs at each cue, and should also use the exact technique that is described in the score. Furthermore, the DJ should only where notes are marked, and all the rests should be carefully observed, as

they are there to give space to the orchestra; a DJ who nervously scratches throughout the concerto will greatly damage the overall effect of the work.

At many significant moments, however, there is no ‘ritmo ad lib’ marking and then the DJ should play a much more precise interpretation of what is written.

Hopefully, the DJ will have sufficient music-reading skills to follow their part and understand when to come in. Those with less reading experience can consult recordings of the concerto to help with learning, and also arrange with the conductor to give them cues.

Finally, a note on the cadenzas—the moments when the DJ can express their own skills most freely. There are in fact, cadenzas in every movement; some can be short, and some quite long. I would recommend preparing the longest cadenza for movement III, as it has the sounds that give the widest range of options for a cadenza.

Gabriel Prokofiev, June 2011

PROGRAMME NOTE

When Will Dutta first approached me with the idea of composing a ‘concerto’ for DJ, my immediate reaction was negative. Though I had composed a classical piece which incorporated a DJ for the Bath Festival one year earlier (*Three Dances for Bass Clarinet, String Trio & DJ*, 2004), the idea of an actual DJ concerto sounded too grandiose and gimmicky to me: I was concerned it would seem like another PR exercise in trying to make modern classical music ‘cool’ and ‘trendy’, but Mr. Dutta insisted that there was serious artistic potential to the project and as it was inevitable that a concerto for turntable would emerge sooner or later; why not let us be the team to do it right. Will explained that we would have the highly skilled turntablist, DJ Yoda as the soloist, and once I properly considered the musical possibilities of such a project, I soon found myself sketching out different concepts for each of the movements, and was keen to get started.

What makes the turntable different to any other instrument is that it uses pre-recorded sounds, but that is actually nothing new to classical music. From the *Musique Concrète* of Pierre Schaeffer’s studios and the *Poème électronique* of Varèse in the 1950s, which used reel to reel tape, through to the current digital world of electroacoustic music; classical composers were manipulated recorded sounds long before Grandmaster Flash made his first scratch using a record. However, once hip-hop culture discovered that a DJ could do so much more than just ‘play records’ with a turntable, their DIY approach led to the evolution of a very exciting new instrument. That instrument has somehow stayed within the world of hip-hop and dance, never venturing into the classical world, despite the incredible expressive potential it has. Having previously composed and studied electroacoustic music, I am aware of the search for more expressive ways of performing

electronic music, as unfortunately many concerts just consist of the playback of DAT tape or CD. So could it be possible that this instrument, that first came to life at Block Parties in the Bronx, bring that expressivity?

But, seeing as it was developed for hip-hop music, would it work in the context of a classical form such as a concerto? Well, hip-hop music has frequently sampled orchestral sounds and textures with great success, so why not the other way around? Plus, an experienced DJ can produce such a wide range of sounds that it must be possible for them to sit within the orchestra in some way. Furthermore, as a composer I have a genuine interest in contemporary urban music styles such as hip-hop, so I knew that I can incorporate certain rhythms and musical ideas into the work that can bring the world of the DJ and the world of the orchestra closer together. (In this concerto you can hear traces of hip-hop drum patterns, a Reggaeton beat, Grime, and even disco-house.)

The central inspiration guiding the composition of this work was of course the instrument itself, the turntable. After a meeting with DJ Yoda, where he demonstrated the range of techniques on offer, I decided that the concerto would aim to explore all the main DJing techniques, with each movement focusing on a certain technique. The concerto would explore:

1. The most basic DJ technique of all: just playing back a bit of music, and the progressions from that; stopping the record, interrupting it, reversing it, slowing it down, and cutting it up.
2. The earliest DJ technique; 'mixing'. One of the most interesting mixing techniques is Beat juggling. It is when a DJ 'juggles' with two identical records, placing them slightly out of time with each other, to create interesting new rhythms. This is usually done with two records, but in this case we have one record and an orchestra.
3. Scratching is the most famous DJ technique and in the right hands can be extremely expressive and musical. DJ Yoda showed me a wide range of scratch techniques that include Scribbling, Planing, Hydraplaning, The Transformer, Echoes, The Crab and The Baby. Once we had started rehearsing I think Yoda even came up with some new scratch techniques, inspired by the left-field flavour of this work.
4. Playing a melody with the turntable. Perhaps surprisingly, melodic playing is possible, as the Technics 1200 turntable that all DJs use has a slider and button for altering playback speed (and therefore pitch) of a record. DJ Yoda explained that one particular DJ from San Francisco often plays nursery rhymes using a test-tone as a joke in his DJ-set. Yoda explained that there were 6 notes that could quite easily be played on the turntables (3 positions of the pitch control, in 33 or 45 rpm), and it turned out these pitches make up the first 6 notes of a minor scale, but some of the notes are very tricky

to play after one another, so the turntable is not at its most flexible as a melody instrument.

The final and most defining choice for the piece was the subject of what sounds the DJ should use. Yoda explained that for scratching there are certain classic samples that work best, such as a gasping “ahhh” sampled from “Change The Beat” by Fab Freddy Five. He also showed me drum hits and patterns that are good for scratching. However, if we put these classic ‘DJ sounds’ over a live orchestra I had a feeling that the concerto would sound forced and not the organic composition I was striving for. What seemed the most natural solution was that the DJ should scratch and play with sounds that were generated by the chamber orchestra themselves so that no foreign sounds would ever enter the piece. For the necessary gasping sounds I could record the woodwind players and for the drum sounds record the orchestral percussion section playing passages from the concerto itself. Instead of the test-tone we would sample a flute note for the melodic section.

Apart from the composing of the score, the final challenge was how to notate the DJ part. We found that simplicity was the key, as DJs are not used to following scores. I prepared skeleton guide parts for Yoda but most was learnt during rehearsals, and a lot of the detail & ornamentation is improvised. This characteristic of the instrument allowed the piece to give a nod to the early days of the concerto when soloists were given a lot more freedom to improvise. So in on way, this new instrument is bringing the concerto back to its roots.

Gabriel Prokofiev

APPENDIX F

PERMISSION

To: Glenn Hackbarth
MUSIC

From: Mark Roosa, Chair
Soc Beh IRB

Date: 06/24/2013

Committee Action: Exemption Granted

IRB Action Date: 06/24/2013

IRB Protocol #: 1305009275

Study Title: Truntablism Compositiion Research Interview

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(2) .

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.

Hi Jeff,

All of my works for turntables are available for rental or purchase at the CMC:

http://musiccentre.ca/apps/index.cfm?fuseaction=score.FA_dsp_results

There are 4 turntable works ranging from chamber ensemble to large orchestra. If the piece is not listed, you can request it from them - or you can always contact me for more information.

My 2001 Masters thesis on turntablism and its notation and integration into contemporary classical music is available online from McGill University. *RPM* was premiered in March of 1999 - I've been told that it is the first concerto for turntables.

You do have my permission to use my score excerpts in your dissertation - (it probably goes without saying, but as long as I'm credited).

If you have any questions at all I'm happy to answer them - get in touch at any time.

Nicole [Nicole Lizée]

Hi Paul,

Do I have permission to use a few measures of how you notated the DJ part in your concerto as an example in my paper?

~Jeff

of course!

[Paul Leary]

Hi Jeff,

I'm happy for you to use examples from Turntable Technique and DJ Skills.

Cheers,

Stephen [Stephen Webber]

APPENDIX G

ANDREW'S RITUAL FOR BEDTIME

Andrew's Ritual for Bedtime

A Contemporary Ballet for Children

Jeffrey Ouper

Andrew's Ritual for Bedtime

Transposed Score

Flute
English Horn
Clarinet in B-flat
Bass Clarinet
Bassoon

Percussion I & II (mallet choice is performers' discretion)

Glockenspiel
Chimes
Mark Tree
Triangle
Bell Tree
Tambourine
Suspended Cymbal
Tenor Drum
Bass Drum
Temple Blocks (five)
Wood Blocks (high and low)
Sandpaper Blocks
Vibraslap
Ratchet
Police Whistle
Emergency Whistle
Claves
Congas (high & low)
*Tower of boxes, blocks, and other found objects (non metallic)
*Unspecified metallic percussion equipment and/or drumsticks

Piano
Harp
Strings

(*See mm. 318-320)

Andrew's Ritual for Bedtime

The story:

It's bedtime for little Andrew, but he won't seem to follow his mother's directions to get ready for bed. Full of energy, and wide-awake, Andrew would rather stay up, play, and misbehave—despite his mother's wishes.

After several failed attempts to wrangle her child, his mother almost loses her temper in frustration. Just as she is about to hit Andrew, she stops frozen by Andrew's child-like innocence as he plays peacefully with his toys. Captivated at the sight, she joins Andrew playing with his toys. They play together until Andrew begins to misbehave, interrupting play and aggravating his mother.

Having returned to misbehavior, Andrew pretends to fall asleep only to suddenly wake up and startle his mother in surprise. She continues to chase Andrew as their game of cat and mouse continues. The chase ends when Andrew runs recklessly into a tower of blocks. Towering over Andrew and a mess of toys, his angry mother counts to three. His game would be over at the final count and it would be time for bed.

After ignoring all three counts, the grandfather clock chimes a beautiful melody and interrupts the confrontation. Andrew begins to comply with Mother's orders, as if entranced by the clock, but not as easily as his mother would like. They barter over various bedtime activities until Andrew agrees that he will brush his teeth—but only if he is read a bedtime story first. He excitedly chooses a storybook from the shelf and Mother begins to read a cautionary tale of "The Boy Who Cried Wolf." As she reads, Andrew imagines the story as it unfolds.

In this story, a young boy is asked to watch a flock of sheep on a hill outside the village. If a wolf threatens the flock, he is told to cry "wolf!" to alert the villagers to come running to his aid to keep the sheep safe. Bored and alone with the sheep, the boy decides to cry "wolf!" as a joke for his own amusement. The villagers come running only to find themselves victim of the boy's prank. Annoyed, they inform him not to trick them again and only alert them when a wolf was truly a threat.

Soon after the villagers leave, the boy finds himself bored and alone again. Knowing he shouldn't, he gives into the temptation of tricking the villagers again and runs down the hill crying "wolf!" The villagers come running again, but this time the boy laughs sheepishly knowing that he's in

trouble. The villagers scold the boy telling him that they do not like his tricks and will ignore his shouts.

Left alone with the sheep, the boy watches as the sun sets beyond the hill. After the sun dips below the horizon, a wolf appears and sneaks up on the flock. Sensing nervousness in the flock, the boy looks up to see the wolf advancing on the sheep. With a burst of adrenaline, the boy runs down the hill shouting for help with all his might—but the villagers wouldn't come. The wolf scatters the flock into disarray and there are no sheep to be found. Having failed at his job, the boy feels guilty for his pranks and mistake. When the villagers return to find the boy alone, he promises not to tell lies. The villagers hope the boy learned his lesson.

As the story comes to an end, Andrew continues his bedtime antics, though, with a little less energy. Eventually his mother cajoles him into brushing his teeth, just as they had agreed. Andrew however continues horseplay while brushing his teeth until Mother stops him. Andrew finishes by spitting comically into the sink.

His mother then gets Andrew dressed in his pajamas, preparing him to get into bed. He is now finally starting to get tired. Andrew almost gets into the bed, but then starts to worry about monsters under the bed. His fear grows quickly and he runs away from the bed while Mother pulls up the covers to show that nothing is under the bed. Relieved, Andrew gets into bed and his mother tucks him in and gives him a goodnight kiss. She then sings a lullaby, backs away from the bed and turns out the light. Good night.

Andrew's Ritual for Bedtime

A Contemporary Ballet for Children

Jeffrey Ouper

4/4 Bubbling with Playful Energy (♩ = 120)
[Curtain Down]

The score is divided into two systems. The first system includes Flute, English Horn, Clarinet in B♭, Bass Clarinet in B♭, Bassoon, Piano, and Harp. The second system includes Percussion I (Triangle), Percussion II, Violin I, Violin II, Viola, Violoncello, and Contrabass. The music is in 4/4 time with a tempo of 120 beats per minute. The key signature has one sharp (F#). Dynamics range from *f* (forte) to *mp* (mezzo-piano) and *mf* (mezzo-forte). The Harp and Percussion II parts feature a rhythmic pattern of eighth notes. The strings play a steady eighth-note accompaniment. The Percussion I part features a triangle with a specific rhythm: two eighth notes, a quarter note, and a dotted quarter note.

4/4 Bubbling with Playful Energy (♩ = 120)
[Curtain Down]

F# B# ++|+|++

* strings should avoid dividing throughout the piece

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4

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

Glockenspiel

mf

f *mp*

chiss.

F# A# D#

7

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

mp

f

mf

f

mp

tr

6

f

mf

f

mp

f

mf

f

mp

F# D#

D#

A# B# D#

Detailed description of the musical score: This page contains a full orchestral score. The Flute part (Fl.) starts with a melodic line, followed by the English Horn (Eng. Hn.) with a triplet. The Clarinet (Cl.) and Bass Clarinet (B. Cl.) play a rhythmic pattern. The Bassoon (Bsn.) plays a melodic line. The Piano (Pno.) and Harp (Hp.) provide accompaniment. The Harp part includes dynamic markings of *mf*, *f*, and *mp*. The Percussion (Perc. I and II) play rhythmic patterns. The Violins (Vln. I and II) and Viola (Vla.) play a rhythmic accompaniment. The Violoncello (Vc.) and Contrabass (Cb.) play a bass line. The score includes various musical notations such as slurs, accents, and dynamic markings.

10

Fl. *ff* *f*

Eng. Hn. *ff* *f*

Cl. *ff* *f*

B. Cl. *f*

Bsn. *f*

Pno.

Harp. *f* *gliss.* *mf* *gliss.* *gliss.*

Perc. I Glockenspiel *mf* Mark Tree

Perc. II Chimes *mf*

Vln. I *mf*

Vln. II *mf*

Vla. *mf*

Vc. *f* *arco* *mf*

Cb. *f* *arco* *mf*

E♭ F# A♭ D♭

14

Fl. *f*

Eng. Hn.

Cl. *mp* *p*

B. Cl. *mp* *p*

Bsn. *f* *p*

Pho.

Hp.

Perc. I

Perc. II

Vln. I *p* *pp*

Vln. II *p* *pp*

Vla. *p* *pp*

Vc. *p*

Cb. *p*

17 [Curtain Rises] **5/4**

Fl. *mf* *f*

Eng. Hn.

Cl.

B. Cl.

Bsn. *mf* *f*

Pno. *mp*

Hp.

Perc. I [Curtain Rises] **5/4**

Perc. II

Vln. I

Vln. II

Vla. *mf* *f*

Vc. *pp* *mp*

Cb. *mp*

20 $\frac{4}{4}$ 6
 $\frac{4}{4}$

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I $\frac{4}{4}$ Tenor Drum 6
 $\frac{4}{4}$

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

A [Curtain up / Andrew running & playing around]

23 $\frac{6}{4}$ $\frac{4}{4}$ $\frac{3}{4}$

Fl. f

Eng. Hn. mp ff

Cl. f

B. Cl. mf

Bsn. ff

Pno. f

Hp.

Perc. I Suspended Cymbal p mf

Perc. II Bass Drum p mf

Vln. I mp arco

Vln. II mp arco

Vla. mp arco

Vc. mf

Cb. mf

26 $\frac{3}{4}$ $\frac{4}{4}$ $\frac{5}{4}$ $\frac{4}{4}$

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

f *mf* *mf* *ff* *p* *mf* *f* *mf* *ff*

trm *trm* *trm* *trm*

Bb

29

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

$\frac{4}{4}$ $\frac{2}{4}$ $\frac{3}{4}$ $\frac{2}{4}$

$\frac{4}{4}$ $\frac{2}{4}$ $\frac{3}{4}$ $\frac{2}{4}$

f *ff* *f* *f*

8va

At Cb

36 **4/4** **7/8** **4/4** **7/8** **4/4**

Fl. - - - -

Eng. Hn. - - - -

Cl. - - - -

B. Cl. - - - -

Bsn. - - - -

Pno. *f* *mf*

Hp. - - - -

Perc. I *mf* *f* *mf*

Perc. II - - - -

Vln. I - - - -

Vln. II - - - -

Vla. - - - -

Vc. *f* *ff* *f*

Cb. *f* *ff* *f*

[C] [Andrew takes off running]

43 **7/8** **4/4** **5/8** **4/4**

Fl. *ff* *f*

Eng. Hn. *ff* *f*

Cl. *ff* *f*

B. Cl. *ff* *f*

Bsn. *ff* *f*

Pno. *ff* *f*

Hp. *f* *ff*

Perc. I *f*

Perc. II *f*

Vln. I *arco* *ff*

Vln. II *arco* *ff*

Vla. *ff*

Vc. *ff* *f*

Cb. *ff* *f*

[C] [Andrew takes off running]

7/8 **4/4** **5/8** **4/4**

f *ff* [Ab] ++++|+|+|

46

4/4 3/4 3/8 4/4

Fl. *f* *mf*

Eng. Hn. *ff* *f* 6

Cl. *f* *mf*

B. Cl.

Bsn. *ff* *f*

Pno. *mp*

Hp. *ff* *f*

Perc. I *mf*

Perc. II *mf*

Vln. I *mf*

Vln. II *mf*

Vla. *ff* *mf*

Vc. *ff* *f*

Cb. *ff* *f*

G♯ A♯ C♯ D♯

49 $\frac{4}{4}$ $\frac{3}{4}$ $\frac{3}{4}$ $\frac{3}{4}$

Fl. *f* *mp*

Eng. Hn. *ff* *f* *mp*

Cl. *f*

B. Cl. *f* *mf*

Bsn. *f*

Pno. *f* *mf* *8va*

Hp.

Perc. I $\frac{4}{4}$ Temple Blocks *f* *mf*

Perc. II

Vln. I *f* *pizz.*

Vln. II *pizz.* *f* *mf*

Vla. *pizz.* *f* *mf*

Vc. *ff* *f* *mf*

Cb. *ff* *f* *mf*

D [Mother expresses frustration]

53

Fl. *f* *mp*

Eng. Hn. *f*

Cl.

B. Cl.

Bsn. *mp* *f* *mp*

Pno. *mp* *f* *mf* *mp* *mf* *mp*

(8)-----

Hp.

Perc. I *mp* *mf* *mp*

Perc. II *mp*

Vln. I

Vln. II

Vla. *mp* *f* *mp*

Vc. *mp* *f* *mp* *mf* *f* *mf*

Cb. *mp* *f* *mp* *mf* *f* *mf*

58

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

f

f

f

f

mf

mp

mf

f

f

mf

mf

f

f

mf

f

f

Triangle

Claves

mf

pizz.

f

f

f

f

f

f

f

63   6

Fl. *f* *mf*

Eng. Hn. *mf* *f* *mf*

Cl. *mf* *f*

B. Cl. *mf*

Bsn. *mf* *f* *mf*

Pno. *f* *mf*

Hp. *f* *mf*

Perc. I *f* *mf*

Perc. II *f* *mf*

Vln. I *mf*

Vln. II *mf*

Vla. *mf*

Vc. *mf*

Cb. *mf*

F₃ G₃ B₃

[Mother nearly loses her temper]

67

Fl. *mf*
tr.....

Eng. Hn. *mf*

Cl. *f* *mf*

B. Cl. *f* *mf*

Bsn. *f*

Pno. *mp*
Ped. *
Reo.

Hp.

[Mother nearly loses her temper]

51

Perc. I

Perc. II Triangle *f*

Vln. I

Vln. II

Vla. *arco* *f*

Vc. *f*

Cb. *f*

E [Andrew stops running and starts playing innocently]

71 **5/8** **6/4** **6/8** **5/4** **5/4**

Fl. *mf*

Eng. Hn. *mf*

Cl.

B. Cl.

Bsn.

Pno. *8va*

Hp. *mf*

E [Andrew stops running and starts playing innocently]

5/8 **6/4** Glockenspiel **6/8** **5/4** **5/4**

Perc. I *mf*

Perc. II Claves *mf*

Vln. I *arco* *mf* *mp*

Vln. II *arco* *mf*

Vla.

Vc.

Cb.

Detailed description of the musical score: The score is for measures 71-75. It features a woodwind section (Flute, English Horn, Clarinet, Bass Clarinet, Bassoon), piano (Piano and Harp), and a percussion section (Percussion I, Percussion II). The woodwinds and harp play melodic lines, while the piano provides harmonic support. Percussion I plays a Glockenspiel part, and Percussion II plays Claves. The string section (Violins I and II) plays arco parts. The score includes dynamic markings such as *mf* and *mp*, and a section marked *8va* for the piano. The time signature changes from 5/8 to 6/4, then 6/8, 5/4, and finally 5/4.

76 **5/4** **6/8** **3/4** **6/8**

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

mp *f* *mp*

B₃ C₃

F [Mother plays with Andrew]
6/8 Gentle and Lyrical (♩ = 80)

82

Fl. *f* *mf* *tr* *mp*

Eng. Hn. *mp*

Cl. *mf* *tr* *mp*

B. Cl. *mf* *p*

Bsn. *mf* *f* *mf*

Pno.

Hp. *mf* *mp*

+++

F [Mother plays with Andrew]
6/8 Gentle and Lyrical (♩ = 80)

Perc. I Triangle *mp*

Perc. II *mf*

Vln. I *pizz.*

Vln. II *mf* *pizz.*

Vla. *pizz.* *arco* *mp*

Vc. *mf* *f* *mf* *pizz.*

Cb. *mp*

The image shows a page of a musical score for a symphony. It features a variety of instruments including woodwinds (Flute, English Horn, Clarinet, Bass Clarinet, Bassoon), strings (Violin I and II, Viola, Violoncello, Contrabass), piano, harp, and percussion (Triangle). The score is in 6/8 time and is marked 'Gentle and Lyrical' with a tempo of quarter note = 80. The music is divided into two systems, each starting with a first ending bracket. The first system includes measures 82 through 86. The second system includes measures 87 through 91. Dynamics range from piano (p) to fortissimo (f). Performance instructions include 'pizz.' (pizzicato) and 'arco' (arco). The woodwinds and strings have melodic lines, while the piano and harp provide accompaniment. The percussion includes a triangle.

88

Fl.

Eng. Hn. *f* *mf*

Cl. *mf* *mp* *mf* *f*

B. Cl.

Bsn. *f*

Pno. *mf* *ped* *

Hp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla. *arco* *mf* *mp* *mf* *pizz.*

Vc. *mf* *mp* *arco* *mf*

Cb. *mf*

Detailed description: This page of a musical score (page 88) features a woodwind section with Flute, English Horn, Clarinet, Bass Clarinet, and Bassoon. The woodwinds have various dynamics including *f*, *mf*, and *mp*. The string section includes Violin I, Violin II, Viola, Violoncello, and Contrabass. The Viola and Cello parts include *arco* and *pizz.* markings. The Piano part includes *mf* dynamics and a *ped* (pedal) marking. Percussion parts I and II are present but mostly silent. The score is written in a key with one sharp (F#) and a common time signature.

102

Fl. *f* *mf*

Eng. Hn. *mp* *mf*

Cl. *mp* *mf*

B. Cl. *mp* *mf*

Bsn. *mp* *mf*

Pno.

Hp. *f* *mf*

Perc. I

Perc. II *mp*

Vln. I *mp* *mf* *tutti*

Vln. II *mp* *mf* *p*

Vla. *mp* *p*

Vc. *mp*

Cb. *mp*

B \flat E \flat E \flat F \sharp B \flat C \sharp

106 [Andrew disrupts play]

Fl.

Eng. Hn. *(no cresc.)* *mf*³

Cl. *mp* *f* *mp*

B. Cl. *mp* *f*

Bsn. *mf* *(no cresc.)*

Pno. *mf* 8^{va}

Hp. *mp* *gliss.*

Perc. I [Andrew disrupts play]

Perc. II Vibraslap *f*

Vln. I *mp* *mf*

Vln. II *mp*

Vla. *mp* *f*

Vc. *mp*

Cb. *mp*

G [Mother tries to contain Andrew's horseplay]

110 **3/4**

Fl. *mf*

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno. *mf* *mp*

Hp. *mf*

G [Mother tries to contain Andrew's horseplay]
Temple Blocks **3/4**

Perc. I *mp* *mf* *mp*

Perc. II

Vln. I

Vln. II *mp* *pizz.* *mf* *mp*

Vla. *mp* *mf* *mp*

Vc. *mp* *mf* *mp*

Cb.

++|+|++ **C4 D4**

114 $\frac{3}{4}$ $\frac{6}{8}$

Fl. *f* *mf* *f*

Eng. Hn. *f* *mf*

Cl. *f* *mf*

B. Cl. *mf* *f* *mf* *f*

Bsn. *mf* *f* *mf* *f*

Pno. *mf* *f* *mf*

Hp.

Perc. I *f* *mp*

Perc. II Ratchet *f*

Vln. I *mf* *f* *mf*

Vln. II *arco* *f* *mf*

Vla. *arco* *mf* *f* *mf*

Vc. *mf* *f* *mf*

Cb. *mf*

118

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

mf

f

mf

mf

2/8 6/8 4/4 6/8

122 **6/8**

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I Glockenspiel

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

mp

mp

mp

mf

mp

mp

mp *mf*

mf

f *mf* *f*

f *mf* *f*

f *mp*

f

8va

∞

126

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

mf

mf

f

mf

mp

f

mf

mf

mf

f

mf

mf

3

3

3

mf

f

mp

C# D#:

solo

130

4/**4** **H** **6**/**8**

Fl. *mf*

Eng. Hn.

Cl. *mp* *mf*

B. Cl. *mp* *mf* *mp* *f*

Bsn. *mp* *mf* *mp* *f*

Pno. *mp* *mp* *S^{nu}* *mp* *Ed.*

Hp. *mp* *mp* *+* *+* *+* *+* *+* *+* *+* *+*

Perc. I *mp* *mp* **H** **6**/**8** Temple Blocks *mf*

Perc. II Triangle *mp*

Vln. I *mp*

Vln. II

Vla. *mf* *mp*

Vc. *mp* *mp* *mp* *f*

Cb. *mp* *mp* *pizz.* *mf* *f* *arco*

135

Fl. *f* *mf* *f*

Eng. Hn. *mf*

Cl. *f* *mf*

B. Cl.

Bsn. *mf* *f*

Pno. *mp*

Hp. *ff* Bb C3

Perc. I Glockenspiel *mf*

Perc. II

Vln. I

Vln. II

Vla. *mf* *f*

Vc. *mf*

Cb. *mf*

I [Andrew pretends to be asleep]
 4/4 Slow & Tender (♩ = 60) 3/4

140 rit.

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

mp *mf* *mp* *mf*

mf *mp*

mf *p*

mp *mf* *p* *mp*

mp

E_b E_b B₁ E_b F₁ B₁ C₂

+++ +++++

rit.

4/4 Slow & Tender (♩ = 60) 3/4

146 **3/4** **4/4** Push Tempo Slightly ($\downarrow = 68$) rit. **3/4** **4/4**

Fl.

Eng. Hn.

Cl. *mp* *mf* *f*

B. Cl.

Bsn.

Pno.

Hp.

Perc. I **3/4** **4/4** Push Tempo Slightly ($\downarrow = 68$) rit. **3/4** **4/4**

Perc. II

Vln. I

Vln. II

Vla.

Vc. *pizz.* *mp* *mf*

Cb. *mp* *mf*

J [Andrew suddenly wakes, startles Mother and continues horseplay]

Tempo I (♩ = 120)

151 $\frac{4}{4}$ $\frac{2}{4}$ $\frac{3}{4}$ **8**

Fl.

Eng. Hn.

Cl.

B. Cl. *mp*

Bsn. *mf* *ff*

Pno. *f*

Hrp. *mp* *f* *Red.* *8^{va}* *

J [Andrew suddenly wakes, startles Mother and continues horseplay]

Tempo I (♩ = 120)

$\frac{4}{4}$ $\frac{2}{4}$ $\frac{3}{4}$ **8**

Perc. I Suspended Cymbal *choke*

Perc. II Bass Drum *f*

Vln. I *tutti* *mp* *f* *pizz.*

Vln. II *mp* *f* *pizz.*

Vla. *mp* *arco* *f* *pizz.* ♪

Vc. *mp* *f*

Cb. *f*

155 **6** **K**

Fl.

Eng. Hn. *ff*

Cl. *mf* *f*

B. Cl. *f* *mf*

Bsn. *f* *ff* *f*

Pno. *mf* *f* *mf*

Hp.

Perc. I **6** **K** Triangle *mf*

Perc. II

Vln. I

Vln. II

Vla. *f* *arco* *mf*

Vc. *arco* *mf*

Cb. *arco* *mf*

E♭ F♯ A♭ B♭

159

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

tr

mf *f*

f *mf*

f *mf* *f*

f *mf*

Claves

mp *mf*

mf *mp* *mf*

arco

f *f*

f *mf* *f* *mf*

f *mf* *f* *mf*

164

Fl. *f*

Eng. Hn.

Cl. *mf* *ff* *f* *trm.* *ff*

B. Cl. *mf*

Bsn.

Pno. *mf*

Hrp.

A1 B1 C1 D1

Perc. I Temple Blocks *f*

Perc. II

Vln. I *arco* *f* *pizz.*

Vln. II *pizz.*

Vla. *mf* *ff* *f*

Vc. *pizz.*

Cb. *pizz.*

L [Mother chases Andrew]

169

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hrp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

Congas

Bass Drum

mf *ff* *f* *mp* *f* *ff*

8th Led. * Led. *

arco *f* *ff*

208

Musical score for measures 172-174, 4/4 time signature.

Measures 172 and 173 are in 6/8 time signature, and measure 174 is in 4/4 time signature.

Instrumentation includes:

- Fl.
- Eng. Hn.
- Cl.
- B. Cl.
- Bsn.
- Pno.
- Hp.
- Perc. I
- Perc. II
- Vln. I
- Vln. II
- Vla.
- Vc.
- Cb.

Performance instructions include *f* (forte), *gliss.* (glissando), and *Temple Blocks*.

This musical score page covers measures 175 to 180. The piece is in 4/4 time. Measure 175 begins with a treble clef and a key signature of one flat. The woodwind section (Flute, English Horn, Clarinet, Bass Clarinet, Bassoon) and Piano parts feature intricate sixteenth-note passages. The strings (Violin I, Violin II, Viola, Violoncello, Contrabasso) provide a steady accompaniment. The Percussion I and II parts are mostly silent. Measure 176 continues the woodwind and piano textures. Measure 177 introduces a dynamic of *mf* (mezzo-forte) for the woodwinds and piano. Measure 178 features a glissando in the Harp and a dynamic of *mf* for the strings and piano. Measure 179 continues the *mf* texture. Measure 180 concludes the section with a final *mf* dynamic. The score includes various musical notations such as slurs, ties, and articulation marks.

178 **6/8** **2/2** **6/8**

Fl. *f*

Eng. Hn. *f*

Cl. *f*

B. Cl. *f*

Bsn. *ff*

Pno. *f*

Reo. * Reo. * Reo. * Reo. *

Hp. *f* *gliss.*

Perc. I *f* Bass Drum 3 **6/8** **2/2** **6/8**

Perc. II *f*

Vln. I *f*

Vln. II *f*

Vla. *f*

Vc. *f* *ff*

Cb. *f* *ff*

181 **6** **8** **5** **8**

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

f

sfz

f

Temple Blocks

184 3/4 4/4

Fl. 3/4 4/4

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno. ⁽⁸⁾
cresc. 8^{va}

Hp.

G^b A^b D^b

Perc. I 3/4 4/4

Perc. II

Vln. I 3/4 4/4
cresc.

Vln. II 3/4 4/4
cresc.

Vla. 3/4 4/4
cresc.

Vc. 3/4 4/4
cresc.

Cb. 3/4 4/4
cresc.

[Andrew runs into a tower of blocks]

M [Mother stands over Andrew in anger]

188 **4/4** Slow (♩ = 60) **2/4** **4/4**

Fl. *tr* *ff*

Eng. Hn. *ff*

Cl. *mp*

B. Cl. *ff*

Bsn. *ff* *f*

Pno. *ff* *f*

Hp. *ff* *gliss.* *mp* *Al* *+++*

[Andrew runs into a tower of blocks]

M [Mother stands over Andrew in anger]

4/4 Slow (♩ = 60) **2/4** **4/4**

*Ad lib: Knock over tower of boxes, blocks, and other found objects (non-metallic)

Perc. I Bass Drum

Perc. II *f* *Ad lib: Drop metallic percussion equipment and/or drumsticks

Vln. I *ff*

Vln. II *pizz.* *ff*

Vla. *ff*

Vc. *ff*

Cb. *ff*

*Do not use high quality percussion equipment, or equipment needed for the remainder of the piece

[Mother counts to three]

Tempo I (♩ = 120)

193

8/8 6/8 5/4 4/4

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

[Mother counts to three]

Tempo I (♩ = 120)

8/8 6/8 Temple Blocks 5/4 4/4

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

A little slower ($\text{♩} = 100$)

198 $\frac{4}{4}$ $\frac{5}{4}$ $\frac{4}{4}$

Fl. *sfz*

Eng. Hn. *sfz* *f*

Cl. *mp* *sfz* *f*

B. Cl. *sfz* *f*

Bsn. *sfz* *f*

Pno. *mf* *sfz*

Hp.

A little slower ($\text{♩} = 100$)

$\frac{4}{4}$ $\frac{5}{4}$ $\frac{4}{4}$ ++++

Perc. I *f* Wood Blocks *f*

Perc. II

Vln. I *mf* *sfz* *ff*

Vln. II *sfz* *ff*

Vla. *mf* *sfz* *ff*

Vc. *mf* *arco* *sfz*

Cb. *mf* *arco* *sfz*

202

N [clock chimes] [Mother barbers with Andrew]

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

mf

simile

f

Pno.

Hp.

f

N [clock chimes] [Mother barbers with Andrew]

Perc. I

Perc. II

Chimes

f

Vln. I

mf

f *mf* *mp* *f*

Vln. II

mf

f *mf* *mp* *mf*

Vla.

mf

f *mf* *mp*

Vc.

f

pizz.

Cb.

f

solo

208

Fl. **3/4** **4/4** *f*

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno. *8va*

Hp. *

Perc. I **3/4** **4/4**

Perc. II

Vln. I *tutti pizz.* *mf*

Vln. II

Vla.

Vc. *mf*

Cb. *pizz.*

Detailed description: This is a page of a musical score for a symphony orchestra, page 218, measures 208-211. The score is divided into several systems. The first system includes Flute (Fl.), English Horn (Eng. Hn.), Clarinet (Cl.), Bass Clarinet (B. Cl.), and Bassoon (Bsn.). The second system includes Piano (Pno.) and Harp (Hp.). The third system includes Percussion I (Perc. I) and Percussion II (Perc. II). The fourth system includes Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (Cb.). Measure 208 starts with a 3/4 time signature. Measure 209 has a 3/4 time signature. Measure 210 has a 4/4 time signature. Measure 211 has a 4/4 time signature. The Flute part features a melodic line with dynamics *f* and a trill in measure 211. The Piano part has a sustained chord with an *8va* marking. The Harp part has a rhythmic accompaniment. The Percussion parts have rhythmic patterns. The Violin I part has a dynamic marking of *tutti pizz.* and *mf*. The Viola part is silent. The Violoncello and Contrabass parts have a dynamic marking of *mf* and *pizz.* respectively. There are various annotations such as * and circled numbers in the Harp and Piano parts.

212

Fl. *mf* *f* 3

Eng. Hn. *mf* *f* 3 3

Cl. *mf* *f* 6 *mf* *sfz*

B. Cl. *f* *mf*

Bsn. *f*

Pno. *mf* *sfz*

Hp. *mf* *Red.* *G♯ B♭*

Perc. I

Perc. II

Vln. I

Vln. II *mp* *f* *mp* *mp* *f* *pizz.*

Vla. *mp* *f* *mp* *mp* *f*

Vc. *arco* *f* *mf* *mp* *f* *pizz.*

Cb. *mf* *f* *mf* *pizz.*

O [Mother agrees to read Andrew a bedtime story]

rit. Tempo I (♩ = 120) $\frac{7}{8}$ $\frac{4}{4}$

216

Fl. *f* *mf*

Eng. Hn. *mf* 6

Cl. *mf*

B. Cl.

Bsn. *mf* *mf*

Pno. (8) *

Hp.

O [Mother agrees to read Andrew a bedtime story]

rit. Tempo I (♩ = 120) $\frac{7}{8}$ $\frac{4}{4}$

Perc. I

Perc. II

Vln. I *arco* *mf* *pizz.* *mf*

Vln. II *pizz.* *mf*

Vla. *mf*

Vc. *pizz.* *mf*

Cb. *mf*

220 **4/4**

Fl. *f* — *mf* *f* *mf* *tr*

Eng. Hn. *mf* *f* *mf*

Cl. *f* — *mf* *f* *mf*

B. Cl. *mp*

Bsn. *mf* — *f*

Pno. *mp*

Hp. *mf*

4/4

Perc. I

Perc. II

Vln. I *arco* *mp*

Vln. II *arco* *mp*

Vla. *arco* *mp*

Vc. *arco* *mp*

Cb.

(rubato) rit.

3
4

224

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Harp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

mp

f

mf

mp

mf > *mp*

simile

mp

p

p

p

p

mp

E_b

(rubato) rit.

3
4

[Transition to bedtime story]
(♩ = 80) *accel.*

229 $\frac{3}{4}$ ----- $\frac{4}{4}$ ----- 89

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp. *p* *cresc.*

[Transition to bedtime story]
(♩ = 80) *accel.*

$\frac{3}{4}$ ----- $\frac{4}{4}$ ----- 89

Perc. I

Perc. II

Vln. I

Vln. II

Vla. *pizz.* *mp*

Vc. *p* *mp* *pizz.*

Cb.

233 $\frac{9}{8}$ $\frac{4}{4}$ ($\text{♩} = 100$) **P** ["The Boy Who Cried Wolf" story begins]

Fl. *mf*

Eng. Hn.

Cl.

B. Cl. *mf* *f*

Bsn. *mf*

Pno.

Hp. *f* *mf*

Perc. I *mf*

Perc. II

Vln. I *arco* *mf*

Vln. II *arco* *mf*

Vla.

Vc. *arco* *mf* *f*

Cb. *mp* *mf*

P ["The Boy Who Cried Wolf" story begins]

$\frac{9}{8}$ Mark Tree $\frac{4}{4}$ ($\text{♩} = 100$)

237

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

Tenor Drum

mf

mf

mf

arco

mf

pizz.

pizz.

241

Fl. *tr* *mp* *mf* *rit.* $\frac{3}{4}$

Eng. Hn. *mf*

Cl. *tr* *mp*

B. Cl. *mp*

Bsn. *mf*

Pno. *mf*

Hp. *mf* *gliss* Ek

Perc. I *mf* $\frac{3}{4}$ *rit.*

Perc. II Bell Tree *mf*

Vln. I *mf*

Vln. II *mp* *arco*

Vla. *pizz.* *mp*

Vc. *pizz.*

Cb. *pizz.*

246 $\frac{4}{4}$ a tempo ($\text{♩} = 100$) $\frac{3}{4}$ $\frac{4}{4}$

Fl. *mp* *mf* *mp* *p* *mp*

Eng. Hn. *mp*

Cl. *p* *mf* *mp*

B. Cl. *p* *mp*

Bsn. *mf* *mp*

Pno. *mp*

Hp. *mp* *mf* *mp*

Perc. I $\frac{4}{4}$ a tempo ($\text{♩} = 100$) $\frac{3}{4}$ $\frac{4}{4}$

Perc. II Triangle *p* *mf*

Vln. I *p* *mp* *p*

Vln. II *p* *mp* *p*

Vla. *p* *mf* *p*

Vc. *arco* *p* *mf* *p*

Cb. *arco* *p* *pizz.* *mp* *arco*

251

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

5
4

4
4

p

mf

mp

Ass.

F_b

Detailed description of the musical score: The score is for measures 251-254. Measure 251 starts with a flute part marked with a circled 'p' and a dynamic of *p*. The piano part has a similar texture. The bassoon part has a dynamic of *mf*. Measure 252 is mostly rests. Measure 253 is in 5/4 time. The bassoon part has a dynamic of *mp*. The harp part has a dynamic of *Ass.*. Measure 254 is in 4/4 time. The bassoon part has a dynamic of *mp*. A box containing 'F_b' is located below the harp part in measure 253.

Q [Boy watches sheep]

254 $\frac{4}{4}$

Fl. *f* *mf*

Eng. Hn. *mp* *mf* 3 *mp*

Cl. *mf* *p*

B. Cl. *mp* *p*

Bsn.

Pno. *mf* *mp*

Hp. *mf* *mp*

Q [Boy watches sheep]

$\frac{4}{4}$

Perc. I

Perc. II

Vln. I *mp* *p*

Vln. II *mp* *p*

Vla. *mp* *p*

Vc. *arco* *mp* *p*

Cb. *p*

The image shows a page of a musical score for a symphony orchestra. The score is divided into two systems. The first system covers measures 254 to 257, and the second system covers measures 258 to 261. The key signature is B-flat major (two flats) and the time signature is 4/4. The instruments listed are Flute, English Horn, Clarinet, Bass Clarinet, Bassoon, Piano, Harp, Percussion I and II, Violin I and II, Viola, Violoncello, and Contrabass. Dynamics include fortissimo (f), mezzo-forte (mf), mezzo-piano (mp), and piano (p). There are also markings for 'Led.' and '*' in the piano and harp parts. A '3' indicates a triplet in the English Horn part. The section is marked with a 'Q' in a box, indicating a quasi-solo or a specific performance instruction.

262

[R] [Boy cries wolf]
Suddenly Fast (♩ = 136)

rit. 5/4 4/4

Fl. *mf* *f*

Eng. Hn. *mf* *mp* *f*

Cl. *mp* *p* *f*

B. Cl. *mp* *p* *f*

Bsn. *mf* *mp* *mf* *f*

Pno. *p* *f* *8va*

Hp. *f* *gliss.*

[Et B♭]

[R] [Boy cries wolf]
Suddenly Fast (♩ = 136)

rit. 5/4 4/4

Perc. I Tambourine *f*

Perc. II *f*

Vln. I *f*

Vln. II *f*

Vla. *mp* *p* *mp* *p* *f* *pizz.*

Vc. *f* *pizz.*

Cb. *f* *pizz.*

268 $\frac{4}{4}$

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

f

arco

gliss.

Police Whistle

*Wear whistles around neck for quick changes between instruments

[Villager comes running]

271

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

E♭ B♭

[Villager comes running]

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

5/4

4/4

5/4

4/4

8^{va}

Tenor Drum

f

arco

arco

The image shows a page of a musical score for a symphony orchestra. The score is divided into two systems. The first system includes woodwinds (Flute, English Horn, Clarinet, Bass Clarinet, Bassoon), piano, and harp. The second system includes percussion (Percussion I and II, Tenor Drum), strings (Violin I and II, Viola, Violoncello, Contrabass), and a double bass. The music is in a key with two flats (B-flat major or D minor) and a 4/4 time signature. The score features complex rhythmic patterns, including a prominent 5/4 time signature change in the woodwinds and percussion. The woodwinds and strings play intricate melodic lines, while the piano and harp provide harmonic support. The percussion includes a Tenor Drum part marked with a forte (f) dynamic. The score is annotated with performance instructions such as 'arco' for the strings and '8va' for the piano. The page number 271 is located at the top left, and the page number 232 is at the bottom center.

275 $\frac{4}{4}$ rit.

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

mf

mp

mf

mp

mf

mp

mf

mp

S [Boy laughs at his prank]

(♩ = 100)

[Villager responds with warning]

279

Fl. *mf*

Eng. Hn.

Cl. *mf*

B. Cl. *mf*

Bsn. *mf*

Pno. *mf*

Hrp. *mf*

Detailed description: This block contains the first system of the orchestral score. It includes parts for Flute (Fl.), English Horn (Eng. Hn.), Clarinet (Cl.), Bass Clarinet (B. Cl.), Bassoon (Bsn.), Piano (Pno.), and Harp (Hrp.). The Flute part starts with a trill and is marked *mf*. The Clarinet and Bassoon parts also have *mf* markings. The Piano and Harp parts are marked *mf*. The English Horn part is silent. The Flute, Clarinet, and Bassoon parts have sixteenth-note passages with slurs and accents. The Bassoon part has triplet markings. The Piano and Harp parts have rhythmic accompaniment.

S [Boy laughs at his prank]

(♩ = 100)

[Villager responds with warning]

Perc. I Glockenspiel

Perc. II *mf*

Vln. I solo *f*

Vln. II *mp*

Vla. *f*

Vc. *mf*

Cb. *f*

Suspended Cymbal

mp *f*

pizz. *f*

pizz.

Detailed description: This block contains the second system of the orchestral score. It includes parts for Percussion I (Perc. I), Percussion II (Perc. II), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (Cb.). Percussion I plays the Glockenspiel. Percussion II is marked *mf*. Violin I has a solo part marked *f* with a trill. Violin II is marked *mp*. Viola is marked *f*. Violoncello is marked *mf*. Contrabass is marked *f*. There are also markings for *pizz.* (pizzicato) and *f* for the Cello and Contrabass. A Suspended Cymbal is indicated above the Percussion I part.

282

Fl. *mf* *f*

Eng. Hn. *mf* *f*

Cl. *mf* *f*

B. Cl. *mf* *f*

Bsn. *mf* *f*

Pno. *f*

Hp.

Perc. I

Perc. II

Vln. I *mf* *f* tutti

Vln. II *mf* *f*

Vla. *mf* *f*

Vc. *mf* *f*

Cb. *mf* *f*

Detailed description: This page of a musical score covers measures 282, 283, and 284. The score is for a full orchestra. The woodwind section includes Flute (Fl.), English Horn (Eng. Hn.), Clarinet (Cl.), Bass Clarinet (B. Cl.), and Bassoon (Bsn.). The string section includes Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (Cb.). Percussion includes Percussion I (Perc. I) and Percussion II (Perc. II). The piano (Pno.) and harp (Hp.) parts are also present. The key signature has two flats (B-flat and E-flat), and the time signature is 3/4. The score features various dynamics such as *mf* (mezzo-forte) and *f* (forte), and includes triplets and slurs. The word 'tutti' appears above the Violin I staff in measure 284. The page number 282 is written at the top left.

285

rit.

Fl. *mf*

Eng. Hn. *mf*

Cl. *mf*

B. Cl. *mf*

Bsn. *mf*

Pno.

Hrp. *mf*

Perc. I Tenor Drum *mp*

Perc. II *mp*

Vln. I *mf*

Vln. II *mf*

Vla. *mf*

Vc. *mf*

Cb. *mf*

mp

289 **T** [Boy watches sheep - 2nd time]
a tempo (♩ = 100)

Fl. *mf*

Eng. Hn. *mf* *mp*

Cl. *mp* *p*

B. Cl. *mp* *p*

Bsn. *mf* *mp* *mf* *p*

Pno. *mp*

Hp. *mf* *mp*

T [Boy watches sheep - 2nd time]
a tempo (♩ = 100)

Perc. I

Perc. II

Vln. I *p*

Vln. II *mp* *p*

Vla. *mp* *p*
arco

Vc. *p*

Cb. *mf* *mp*

296

rit. (♩ = 82) accel. (♩ = 136) = (♩ = 68) accel.

Fl. *mp* *pp* *mf*

Eng. Hn. *mp* *p* *mf*

Cl. *pp* *p* *mp* *mf*

B. Cl. *mp* *mf*

Bsn. *pp* *p* *mp*

Pno. *p*

Hp. *p* *mp* *mf*

Perc. I

Perc. II Triangle *mp*

Vln. I *pp* *p* *mp*

Vln. II *pp* *p* *mp*

Vla. *pp* *p* *mp*

Vc. *pp* *p* *mp*

Cb. *pp* *p* *mp*

302 (♩ = 136) U [Boy cries wolf - 2nd time] $\frac{5}{4}$ $\frac{4}{4}$

Fl. *f*

Eng. Hn. *f*

Cl. *f*

B. Cl. *f*

Bsn. *f*

Pno. *mp* *f* *gliss.*

Hp. *f* *gliss.*

Perc. I *f* Tambourine $\frac{5}{4}$ $\frac{4}{4}$

Perc. II *mf* *f*

Vln. I *mf* *f*

Vln. II *mf* *f*

Vla. *mf* *pizz.* *f*

Vc. *f* *pizz.*

Cb. *f* *pizz.*

(♩ = 136) E♭ B♭ U [Boy cries wolf - 2nd time] $\frac{5}{4}$ $\frac{4}{4}$

305 $\frac{4}{4}$

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

Police Whistle

f

arco

gliss.

(8)

[Villager comes running - 2nd time]

308

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

$E^b B^b A^b$

[Villager comes running - 2nd time]

mf

arco

arco

311

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I
Tenor Drum

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

mf

mf

mf

f

mf

8^{va}

8^{va}

3

314 rit.

Fl. *mp*

Eng. Hn.

Cl. *mp*

B. Cl. *mf* *p*

Bsn. *mf* *mp*

Pho.

Hp. *mp*

Perc. I *mf*

Perc. II

Vln. I *mp*

Vln. II *mf*

Vla. *mf*

Vc. *mp*

Cb. *mp*

V [Boy timidly laughs at his prank]

(♩ = 60)

(♩ = 80) rit.

rit. (♩ = 60)

317

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

V [Boy timidly laughs at his prank]

(♩ = 60)

(♩ = 80) rit.

rit. (♩ = 60)

*Glockenspiel - one mallet (m. 318 only)

(dead stick)

*Tambourine 1. 2.

*Police Whistle (airy, feebly blown)

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

* Percussion in mm. 318-320 should sound as if played improperly by a child, broken/imperfect instruments may be used to help achieve the effect
 1. Hold against chest and slap palm to membrane center
 2. Shake ad lib. in a timid irregular manner that sounds sloppy and unhealthy

[Angry villager scolds boy]

a tempo (♩ = 60)

322

Fl.
Eng. Hn.
Cl.
B. Cl.
Bsn.
Pno.
Hp.

f

f

f

f

f

f

f

f

f

f

f

[Angry villager scolds boy]

a tempo (♩ = 60)

Perc. I
Perc. II
Vln. I
Vln. II
Vla.
Vc.
Cb.

Suspended Cymbal

p

arco
f

f
arco

f
arco

f
arco

f
arco

f

325

Fl. $\frac{3}{4}$ *tr* $\frac{4}{4}$ *mf*

Eng. Hn. *mf*

Cl. *mf*

B. Cl.

Bsn.

Pno. *mf* Led *

Hp. *mf* E_b $\text{G}_b \text{D}_b$

Perc. I *mf* $\frac{3}{4}$ $\frac{4}{4}$

Perc. II Chimes *mf*

Vln. I *mp* *mf*

Vln. II *mp* *mf*

Vla. *mp* *mf*

Vc. *mp* *mf*

Cb. *mp* *mf*

329 $\frac{4}{4}$ rit. **W** [Sun sets & boy watches sheep - final time] ($\downarrow = 100$)

Fl. *mp*

Eng. Hn. *mp*

Cl. *mp* *p*

B. Cl. *mp* *p*

Bsn. *mf* *mp* *p*

Pno. *mf* *mp* *p*

Hp. *mp*

Perc. I

Perc. II

Vln. I *mp* *p*

Vln. II *mp* *p*

Vla. *mp* *p*

Vc. *mp* *p*

Cb. *mp* *p*

W [Sun sets & boy watches sheep - final time] ($\downarrow = 100$)

$\frac{4}{4}$ rit.

C♯ F♭

342 rit. (♩ = 68) X [Wolf appears & sneaks up on flock] (♩ = 84) rit.

Fl. *mp* *mf* *mp*

Eng. Hn. *p* *mf* *p*

Cl. *mf* *mp*

B. Cl.

Bsn.

Pno.

Hp. *mp* *p*

F# G A# B C# D#

Perc. I rit. (♩ = 68) X [Wolf appears & sneaks up on flock] (♩ = 84) rit.

Perc. II

Vln. I *p* *pp* *p* *mf*

Vln. II *p* *pp* *p* *mf*

Vla. *p* *pp* *p* *mp*

Vc. *p* *pp* *p* *mp* *p* *mp*

Cb. *p* *mp*

348 **a tempo** (♩ = 84)

Fl. *mf* *mp*

Eng. Hn. *mf*

Cl. *mf*

B. Cl. *p* *mf*

Bsn. *p* *mf*

Pno. *p* *8^{va}*

Hp.

a tempo (♩ = 84) Temple Blocks - Soft Mallet (mm. 349-351 only)

Perc. I *p*

Perc. II

Vln. I *p* *mf* *p*

Vln. II *p* *mf* *p*

Vla. *p* *mp*

Vc. *p* *mp*

Cb. *p* *mp*

[Wolf attacks the flock]

355

Fl.
Eng. Hn.
Cl.
B. Cl.
Bsn.
Pno.
Hp.

[Wolf attacks the flock]

Perc. I
Perc. II
Vln. I
Vln. II
Vla.
Vc.
Cb.

*Emergency Whistle

mp
mp
mf
arco ff
ff
arco ff

*There are various storm, backpacking, and rape emergency whistles available; the chosen whistle should have a different timbre from the police whistle

357

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

mf

ff

f

g

mp

f

Emergency Whistle

stiss.

stiss.

G#

370

Fl. *mf*

Eng. Hn.

Cl. *f*

B. Cl. *f*

Bsn. *mf*

Pno. *mf*

Hp. *Fb* *F# G# Ab B# C#*

Perc. I *mf*

Perc. II

Vln. I *mf*

Vln. II *mf*

Vla. *mf*

Vc. *mf*

Cb. *f*

Detailed description: This page of a musical score covers measures 370, 371, and 372. The instrumentation includes Flute, English Horn, Clarinet, Bass Clarinet, Bassoon, Piano, Harp, Percussion I and II, Violin I and II, Viola, Violoncello, and Contrabass. The key signature has two flats (B-flat and E-flat). The score features various dynamics such as *f* (forte), *mf* (mezzo-forte), and *mf* (mezzo-forte). There are several triplets and slurs throughout. The Harp part includes chord boxes for Fb and F# G# Ab B# C#. The Percussion I part has a *mf* dynamic marking. The Violin I and II parts have *mf* markings. The Viola part has an *mf* marking. The Violoncello part has an *mf* marking. The Contrabass part has an *f* marking. The Flute part has an *mf* marking. The Bassoon part has an *mf* marking. The Clarinet part has an *f* marking. The Bass Clarinet part has an *f* marking. The Piano part has an *mf* marking. The English Horn part is silent. The Percussion II part is silent.

377 (♩ = 70) *accel.* (♩ = 92) **6** *rit.* (♩ = 92) **4**
4 **4**

Fl. *mp* 7

Eng. Hn.

Cl. *mp* 7

B. Cl. *mf* 7

Bsn. *p* *mp*

Pno.

Hp. *mp* *mf* *gliss.*

Perc. I

Perc. II

Vln. I

Vln. II *mp*

Vla. *mp*

Vc. *mp* *pizz.*

Cb. *mp* *pizz.*

391 $\frac{6}{4}$ $\frac{4}{4}$

Fl. *mf* *f* 3 5 7

Eng. Hn. *mp*

Cl. *mp*

B. Cl. *mp* 3

Bsn. *mp*

Pno. *mf* 8^{va}-----1

Hp. *mp* 3 *mf* 5 *f* *gliss.* [C]

Perc. I $\frac{6}{4}$ $\frac{4}{4}$

Perc. II

Vln. I *f*

Vln. II *f*

Vla. *arco* *mp* *mf* 3 *mp* *mf*

Vc. *mp* 3 *mf*

Cb. *mp* *mf*

AA [The moral of the story]

395

Fl.
Eng. Hn.
Cl.
B. Cl.
Bsn.
Pno.
Hrp.

f

8^{vb}

+++₊+++

C# G#

Detailed description: This block contains the musical score for measures 395 to 400. It includes staves for Flute (Fl.), English Horn (Eng. Hn.), Clarinet (Cl.), Bass Clarinet (B. Cl.), Bassoon (Bsn.), Piano (Pno.), and Harp (Hrp.). The Flute, English Horn, Clarinet, Bass Clarinet, and Bassoon parts are marked with a forte (*f*) dynamic. The Piano part features a low register with an 8^{vb} (8^{va}) marking. The Harp part includes a tremolo pattern (+++₊+++). A key signature change to C# and G# is indicated at the end of the section.

AA [The moral of the story]

Perc. I
Perc. II
Vln. I
Vln. II
Vla.
Vc.
Cb.

Tenor Drum
Bass Drum

f

Detailed description: This block contains the musical score for measures 395 to 400 for Percussion I (Perc. I), Percussion II (Perc. II), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (Cb.). Percussion I is marked with a forte (*f*) dynamic and includes parts for Tenor Drum and Bass Drum. Percussion II is also marked with a forte (*f*) dynamic. The string parts (Vln. I, Vln. II, Vla., Vc., Cb.) are marked with a forte (*f*) dynamic. The Viola part includes a triplet (3).

[Transition out of story]
rit.

400

Fl. *mf* *mf*

Eng. Hn. *mf*

Cl. *mf*

B. Cl. *mf*

Bsn. *mf*

Pno. *mf*

Hp. *mf*

[Transition out of story]
rit.

Perc. I

Perc. II Chimes *mf*

Vln. I

Vln. II

Vla. *mf*

Vc. *mf*

Cb. *mf*

412

Fl. *mp* *mp*

Eng. Hn. *mf* *f* *mf*

Cl. *mp*

B. Cl. *mp*

Bsn.

Pno. *mp*

Hp.

Perc. I *mp* *mp* Temple Blocks

Perc. II *mp* Claves

Vln. I *mf* solo *arco*

Vln. II

Vla. *mp* *arco*

Vc.

Cb.

422 $\frac{4}{4}$ $\frac{3}{4}$

Fl. *mp* *mf*

Eng. Hn. *mf*

Cl. *mp* *mf*

B. Cl.

Bsn. *mf*

Pno. *mf* 8^{va}

Hp. *mp*

Perc. I *mf* Temple Blocks *mf*

Perc. II *mf*

Vln. I *mf* solo

Vln. II

Vla.

Vc.

Cb.

$\text{A}^{\flat} \text{B}^{\flat} \text{C}^{\flat} \text{D}^{\flat}$

431

Fl. $\frac{7}{8}$ $\frac{4}{4}$ $\frac{7}{8}$

Eng. Hn.

Cl.

B. Cl. *mp* *mf*

Bsn. *mf* *mf*

Pno.

Hp.

Perc. I $\frac{7}{8}$ $\frac{4}{4}$ $\frac{7}{8}$

Perc. II

Vln. I *tutti* *pizz.* *mf*

Vln. II *pizz.* *mf*

Vla. *pizz.* *mf*

Vc. *pizz.* *mf* *arco*

Cb. *pizz.* *mf*

D#

435

rit.

7/8 4/4 5/4 2/4

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

mp

mf

f

mp

f

arco

pizz.

mf

p

mf

mf

Detailed description of the musical score: The score is for measures 435-438. It features a variety of instruments: Flute (Fl.), English Horn (Eng. Hn.), Clarinet (Cl.), Bass Clarinet (B. Cl.), Bassoon (Bsn.), Piano (Pno.), Harp (Hp.), Percussion I (Perc. I), Percussion II (Perc. II), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (Cb.). The time signatures are 7/8, 4/4, 5/4, and 2/4. A 'rit.' (ritardando) marking is present above the first three measures. Dynamic markings include *mp* (mezzo-piano), *mf* (mezzo-forte), *f* (forte), *p* (piano), and *arco* (arco). The Viola part includes a *pizz.* (pizzicato) marking. The Cb. part includes a *pizz.* marking. The score is written in treble clef for most instruments and bass clef for B. Cl., Bsn., Vc., and Cb.

EE [Andrew brushes his teeth]

$\frac{2}{4}$ (♩ = 100)

439

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

EE [Andrew brushes his teeth]

$\frac{2}{4}$ (♩ = 100)

Perc. I

Perc. II Sandpaper Blocks

Vln. I

Vln. II

Vla.

Vc.

Cb.

mf

arco

mf

arco

mf

arco

mf

450

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

$\frac{5}{8}$ $\frac{3}{4}$ $\frac{6}{8}$ $\frac{5}{8}$

p *mf* *f* *mf* *sfz* *sfz* *sfz*

454

2/4 3/4 5/8 3/4

Fl. *mp* *tr*

Eng. Hn.

Cl. *p*

B. Cl. *p*

Bsn.

Pno. *15^{mo}* *mp*

Hp.

Perc. I *mf* *mp*

Perc. II *mp*

Vln. I *mp*

Vln. II *mp*

Vla. *mp*

Vc. *mp*

Cb.

459

Fl. $\frac{3}{4}$ $\frac{6}{8}$ $\frac{5}{8}$ mf f mp

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I $\frac{3}{4}$ $\frac{6}{8}$ $\frac{5}{8}$ f

Perc. II mf

Vln. I mf

Vln. II mf

Vla. mf

Vc. mf

Cb.

467

Fl. *tr* *mf*

Eng. Hn.

Cl. *f*

B. Cl. *mf*

Bsn. *f* *mf*

Pno. (fs)

Hp.

Perc. I *f* *mf*

Perc. II *f* *mf*

Vln. I *f* *mf*

Vln. II *f* *mf*

Vla. *f* *mf*

Vc. *f* *mf*

Cb. *f* *mf*

7 151 6

Detailed description: This page of a musical score covers measures 467 to 506. The instrumentation includes Flute, English Horn, Clarinet, Bass Clarinet, Bassoon, Piano, Harp, Percussion I and II, Violin I and II, Viola, Violoncello, and Contrabass. The score is in 3/4 time and features a variety of dynamics and articulations. The Flute part includes trills and a trill with a tremolo. The Clarinet and Bass Clarinet parts start with a forte (*f*) dynamic. The Percussion parts feature rhythmic patterns with accents. The string parts (Violins, Viola, Violoncello, and Contrabass) play a consistent rhythmic accompaniment, starting with a forte (*f*) dynamic and transitioning to mezzo-forte (*mf*) later in the passage. The Piano part includes a fortissimo (*fs*) section. The Harp part is mostly silent. The score is divided into four measures, with measure numbers 467, 501, and 506 indicated at the top. Measure numbers 7, 151, and 6 are also present, likely indicating rehearsal marks or specific measure counts within the section.

FF [Andrew spits into the sink]

474 $\frac{2}{4}$ $\frac{3}{4}$ $\frac{4}{4}$ $\frac{5}{4}$

Fl. *f* *mf*

Eng. Hn. *mp* *mf*

Cl. *f* *mf*

B. Cl. *f* *mf* *f*

Bsn. *f* *mp* *mf*

Pno. *mf*

Hp. *f* *mp* *mf*

FF [Andrew spits into the sink] $\frac{2}{4}$ $\frac{3}{4}$ $\frac{4}{4}$ $\frac{5}{4}$

Perc. I

Perc. II

Vln. I

Vln. II

Vla. *mp* *f*

Vc. *mp* *mf*

Cb. *f* *mp* *mf*

D_3 F_3

rit. (♩ = 76) rit.

480 $\frac{5}{4}$ $\frac{4}{4}$ $\frac{3}{4}$ $\frac{4}{4}$ $\frac{2}{4}$

Fl. *p* *mf* *mp*

Eng. Hn.

Cl.

B. Cl. *p* *mp* *p*

Bsn. *p* *mp* *p*

Pno. *p*

Hp. *p* *mp* *p*

[Ab] rit. (♩ = 76) rit. [Ab]

$\frac{5}{4}$ $\frac{4}{4}$ $\frac{3}{4}$ $\frac{4}{4}$ $\frac{2}{4}$

Perc. I

Perc. II Triangle *mp* *p*

Vln. I solo *mf* *mp*

Vln. II

Vla. *p* *mp* *p*

Vc. *p* *mp* *p*

Cb. *mp* *p*

491 rit. (♩ = 88) rit.

Fl. *mf*

Eng. Hn. *mp*

Cl. *mp* *p*

B. Cl. *f*

Bsn. *mf*

Pno. *f*

Hp. *p* *mp* *mf*

3 3 E♭ B♭ E♭ B♭

Perc. I

Perc. II

Vln. I *p* *mf* *f*

Vln. II *p* *mf* *f*

Vla. *p* *pizz.* *arco* *mf* *f*

Vc. *mp* *pizz.* *arco* *mf* *f*

Cb. *mp* *mf* *f*

HH [Andrew checks for monsters under the bed]

496 (♩ = 68) **7**
8

Fl. *mf*

Eng. Hn.

Cl. *mp*

B. Cl.

Bsn. *mp*

Pno.

Hp. *mp*

Detailed description: This block contains the musical notation for measures 496 through 500. The woodwind section includes Flute (Fl.), English Horn (Eng. Hn.), Clarinet (Cl.), Bass Clarinet (B. Cl.), and Bassoon (Bsn.). The string section includes Piano (Pno.) and Harp (Hp.). The Flute part begins with a *mf* dynamic and features a melodic line with eighth-note patterns. The Clarinet and Bassoon parts also have melodic lines, with the Bassoon playing a more active eighth-note pattern. The Harp part includes chords and arpeggiated figures, with some chords marked with 'E♭' and a string diagram showing a barre on the first fret. The Piano part provides a rhythmic accompaniment with eighth-note patterns.

HH [Andrew checks for monsters under the bed]

(♩ = 68) **7**
8

Perc. I

Perc. II *mp*

Vln. I *p*

Vln. II *p*

Vla. *p*

Vc. *pizz.* *mf* *mp*

Cb. *pizz.* *mf* *mp*

Detailed description: This block contains the musical notation for measures 496 through 500 for Percussion and Strings. The Percussion section includes Percussion I (Perc. I) and Percussion II (Perc. II), with Perc. II playing a rhythmic pattern of eighth notes at a *mp* dynamic. The String section includes Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vc.), and Contrabass (Cb.). The Violin and Viola parts play a melodic line with eighth notes at a *p* dynamic. The Vc. and Cb. parts play a bass line with eighth notes, including *pizz.* (pizzicato) markings, at *mf* and *mp* dynamics.

500 *accel.*

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

mf

mp

f

mf

mp

Temple Blocks

7/8 4/4 7/8 4/4

7/8 4/4 7/8 4/4

3

3

3

503 $\frac{4}{4}$ $\frac{7}{8}$ $\frac{4}{4}$ ($\text{♩} = 148$) rit.

Fl. *f* *ff*

Eng. Hn. *f* *ff*

Cl. *f* *ff*

B. Cl. *mp* *f* *ff*

Bsn. *mf* *f* *ff*

Pno. *mp* *f* *ff*

8^{va}

Hp.

Perc. I $\frac{4}{4}$ $\frac{7}{8}$ $\frac{4}{4}$ ($\text{♩} = 148$) rit.

Congas *mf* *f*

Perc. II *mp* *f*

Vln. I *f* *mf*

Vln. II *f* *mf*

Vla. *ff*

Vc. *arco* *f* *ff*

Cb. *f* *ff*

II [Andrew gets into bed]
 (♩ = 80) rit. (♩ = 80) rit.

507

Fl. *f* *mf*

Eng. Hn.

Cl. *f* *mf* *mp* *f*

B. Cl. *p* *mp* *p*

Bsn. *mp*

Pno.

Hp. *mf* 3 3

II [Andrew gets into bed]
 (♩ = 80) rit. (♩ = 80) rit.

Perc. I

Perc. II

Vln. I *sordino* *mp* *mf* *mp*

Vln. II *sordino* *mp* *mf* *mp*

Vla. *sordino* *mp* *mf* *mp*

Vc. *sordino* *mp* *mf* *mp*

Cb.

F# B: C#

rit.

512 (♩ = 80)

Fl. *mp* *mf* *mp*

Eng. Hn.

Cl.

B. Cl. *mp*

Bsn. *f* *mp*

Pno.

Hrp.

rit.

(♩ = 80)

Perc. I

Perc. II

Vln. I *mf* *mp* *p*

Vln. II *mf* *mp* *p*

Vla. *mf* *mp* *p*

Vc. *mf* *mp* *p*

Cb.

6/4 **4/4**

517 *[Mother kisses Andrew goodnight]* $\frac{4}{4}$ ($\text{♩} = 68$) rit. $\frac{3}{4}$

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp. *f* *mf* *mp*

[Mother kisses Andrew goodnight] $\frac{4}{4}$ ($\text{♩} = 68$) rit. $\frac{3}{4}$

Perc. I

Perc. II

Vln. I *f* *mf* *mp* *p*

Vln. II *f* *mf* *mp* *p*

Vla. *f* *mf* *mp* *p*

Vc. *f* *mf* *mp* *p*

Cb. *sordino* *arco* *f* *mf* *mp* *p*

523 **JJ** [Mother sings a lullaby]
 3/4 Freely Expressive (c. ♩ = 76 - 86) 4/4 3/4 4/4 3/4
 solo or soli*

FL. *Sung: ooh*

Eng. Hn. *Sung: ooh*

Cl. *Sung: ooh*

B. Cl. *Sung: ooh*

Bsn. *Sung: ooh*

Pno. *mp*

Hp. *mp*

Perc. I *mp* Glockenspiel

Perc. II

Vln. I *Sung: ooh*

Vln. II *Sung: ooh*

Vla. *Sung: ooh*

Vc. *Sung: ooh*

Cb. *Sung: ooh*

*Lullaby may be sung as a solo or soli at a comfortable volume (a soloist may be amplified). Vocal section should be sung in a vocal range comfortable for the singer; men and womens' voices do not need to sound in the same octave, and it does not need to sound in the same octave as their instrument. Lullaby is transposed for transposing instruments so that they may play the lullaby to shadow voices.

535

Fl.

Eng. Hn.

Cl.

B. Cl.

Bsn.

Pno.

Hp.

Perc. I

Perc. II

Vln. I

Vln. II

Vla.

Vc.

Cb.

3/4

4/4

3/4

ooh

549 Play: rit. [Mother turns off light]

Fl. *mf* *mp*

Eng. Hn. *mf* *mp*

Cl. *mp*

B. Cl. *mf* *mp*

Bsn. *mf* *mp*

Pno. * Led. * Led. *

Hp. *mp*

Perc. I rit. [Mother turns off light]

Perc. II

Vln. I solo *f* *mp* tutti *pizz.*

Vln. II *p* *pizz.*

Vla. *p* *mp* *pizz.*

Vc. *p* *mp* *pizz.*

Cb. *p* *mp* *mp*