

COMPOSITION OF MUSICAL AND VISUAL DEVICES TO CREATE MOMENTS OF RESOLUTION
IN MARCHING ARTS PRODUCTION DESIGN

by

Ryan John Williams

Bachelor of Science
York College, 2005

Master of Music
West Chester University, 2014

Submitted in Partial Fulfillment of the Requirements

For the Degree of Doctor of Musical Arts in

Music Composition

School of Music

University of South Carolina

2020

Accepted by:

David Garner, Major Professor

J. Daniel Jenkins, Committee Member

John Fitz Rogers, Committee Member

Man Fang, Committee Member

Cheryl L. Addy, Vice Provost and Dean of the Graduate School

© Copyright by Ryan John Williams, 2020
All Rights Reserved.

DEDICATION

This paper is dedicated to all the “band kids” who love what they do. Stick to your passion, be the best at everything you do, and some day you can go to work every day doing what you love, rather than just going to a job.

ACKNOWLEDGEMENTS

I cannot begin this paper without first acknowledging with the utmost gratitude the efforts of all the faculty who have contributed to my education and who have pushed me to expect more out of myself, to take me out of my comfort zone, and to help me to grow. Over the time spent at the University of South Carolina, I have learned innumerable lessons from Dr. John Fitz Rogers, Dr. Reg Bain, Dr. David Garner, and Dr. J. Daniel Jenkins, along with all of the rest of the faculty in the School of Music. This fantastic cadre of scholars, experts, and human beings never shy away from an opportunity to provide growth to any student, whether or not there are paid credit-hours involved.

I also have to give thanks to my family – to my parents, my sister, and to Lindsey for always having my back throughout all the trials and tribulations that come with personal growth. The journey is never easy, no matter how great the destination. Nobody can do it without support. Thank you.

ABSTRACT

This research study identifies techniques of creating and releasing musical tension in audio-visual performance media, specifically within the marching arts. A successful composition in this medium is defined, in part, by the coordination of effects between pitched musical elements, non-pitched (percussive) musical elements, and movement (choreographed) elements. Such compositions create a concert performance situation in which there is aesthetic gratification and a sense of sophistication in which aural stimuli interact in congruence and in conjunction with visual stimuli. By identifying the creative practice through conversation with practitioners, designers, choreographers, and composers, the common practices of the genre can be identified to better inform future design and composition endeavors. This will benefit not only the marching arts but also those directors and musicians who wish to create enhanced, audio-visual performances in any setting.

TABLE OF CONTENTS

Dedication.....	iii
Acknowledgements.....	iv
Abstract.....	v
List of Abbreviations	vii
Chapter 1: Introduction.....	1
Chapter 2: The evolution of design.....	5
Chapter 3: The human desire for resolution	16
Chapter 4: How tension is crafted for aesthetic gratification	22
Chapter 5: Conclusion and other applications	38
References.....	40
Appendix A: Interview Questions	43

LIST OF ABBREVIATIONS

BOA	Bands of America
CYO	Catholic Youth Organization
DCA	Drum Corps Associates
DCI.....	Drum Corps International
VFW.....	Veterans of Foreign Wars
WGI.....	Winter Guard International

CHAPTER 1

INTRODUCTION

To the uninitiated, the idea of a marching band conjures images of a military unit in dress uniform, moving at a stately pace while playing the music of John Philip Sousa, Kenneth Alford, or Henry Fillmore. For decades following the 19th-century conception of a band marching in a parade, this has been a standard practice. Following World War I and World War II, military musicians who returned home from combat continued to perform in their military tradition; through community organizations known as “drum and bugle corps,” young people came to experience the same regimented structure that soldiers learned through their military service. As these organizations continued to grow, they began to organize events in which several groups would perform in succession. This led to the inception of a competitive activity in which each group would spend the winter and spring months creating and perfecting a new production for the summer’s contest season.

To singularly identify marching bands and drum and bugle corps (hereafter referred to as “the marching arts”) as examples of musical performance that incorporates a visual element would be notably short-sighted. Adding a specially choreographed dance component to accompany a piece of music is as old as the 16th century, with the evolution of the simple Italian madrigal into the *balletti*, or little dances.¹ Not long after, Jacopo Peri had the idea to craft a longer piece of music to dramatize a long narrative that included

¹ Richard Taruskin, *Music from the Earliest Notations to the Sixteenth Century* (New York: Oxford University Press, 2010), 746.

theatric staging. With the composition and production of *La Dafne*, opera was born as another art form combining musical performance with visual arts.²

Throughout history, dozens of composers and choreographers have collaborated on hundreds of ballets and operas, many of which have earned their rightful places in the pantheon of music history. Arising from these traditions, we have also seen genres such as operetta and the Broadway musical emerge. In contradistinction to cultures that have discrete concepts of music and dance, the Igbo people of Nigeria only have one word, *egwu*, to describe both, further emphasizing their interrelated importance.³ If there is such a rich history of “traditional” musical forms that offer audio-visual composition, why then would the marching arts be worthy of isolated consideration?

In the modern competitive marching arts, organizations that fund and sponsor performing ensembles understand that the return on investment of a group is not its profitability but its competitive results. Those groups which are most successful in their competitive arenas tend to exert a great deal of influence in further advances in the activity: companies that manufacture the instruments on which the musicians perform, the companies who make the uniforms and costumes worn for performance, and companies who create merchandise purchased by fans all gravitate towards those groups who win. As each year begins anew, the groups at the top of the previous year’s competitive results see more prospective members come for auditions. The best instructors send their résumés with

² Taruskin, 826.

³ Agatha Ijeoma Onwuekwe, “The Socio-Cultural Implications of African Music and Dance,” 2012, <https://www.ajol.info/index.php/cajtm/article/view/76593/67042>.

hopes of a teaching position. The designers⁴ and instructors who conceptualize the productions by those ensembles are the professionals who get the most phone calls for other work. The ecosystem of the marching arts has evolved into a multi-million-dollar industry and the ensembles who want to come to the forefront and those who want to stay there are all willing to make investments in order to become a trendsetter. Competition drives the best designers to evolve in each new season.

Mirroring more traditional dramatic productions, the marching arts have indeed seen a growth in production styles. Just as a learned scholar can point to characteristics that would differentiate the operas of Mozart and Wagner or differentiate Stravinsky's *Orpheus* (1947) from Copland's *Appalachian Spring* (1944), a veteran of the marching arts activities would be able to identify the growth and evolution of productions through history, notably in the last approximately 15 years. These evolutionary steps will be addressed in Chapter 2. The contemporary approach analyzed in this paper is the means through which this activity uniquely creates moments wherein audiences are driven to react.

Those arrivals, known in the activity as "effect moments," are often rewarded in performance with cheering and applause from audiences. The organization, construction, and pacing of those effect moments are a substantial consideration in the adjudication process. Despite many different approaches to constructing these effect moments from the many different designers in the marching arts, they almost always distill down to the simple concept of tension and release. Chapter 4 of this paper focuses mostly on those moments of tension and release; on how choreography, movement, and musical performance

⁴ Throughout this paper, the term "designer" will be used to describe any of the creative contributors in the marching arts: program coordinators, composers, arrangers, drill writers, color guard designers, and choreographers.

intersect at arrival points; and how various designers coordinate their efforts to heighten dramatic tension.

To better understand why effect moments are dramatically effective (as well as psychologically predictable), Chapter 3 briefly explores the psychology of tension and release as well as dissonance and resolution.

CHAPTER 2

THE EVOLUTION OF DESIGN

The discussion of the design style of marching arts production can (and has) filled volumes of writing. In 2002 and 2003, Steve Vickers, one of the editors of *Drum Corps World*, a periodical specialized to the drum and bugle corps activity, compiled a two-volume anthology called *A History of Drum & Bugle Corps*. Several authors contributed to and assembled this history, detailing the style of productions, the evolution of the equipment, and lists of year-by-year rosters and competitive results. The information on the evolution of the activity alone fills more than 200 pages, recounting details provided by participants and leaders, along with excerpts from periodicals. To establish a basis for this paper's discussion of contemporary marching arts design, this chapter focuses more specifically on the style of the drum and bugle corps activity.

Although similar, traditional high school or college marching band largely lagged behind drum and bugle corps in terms of production evolution. Since the middle of the 1990s, some top high school marching band programs have indeed produced notable growth in production design. The music education organization Music for All sponsors a series of annual events across the nation known colloquially as "Bands of America" or "BOA." It is at these events where many of those aforementioned high school productions have gained attention. Because of differences in the parameters of competition between BOA and the drum corps idiom, program design has evolved differently between the two activities. Likewise, the indoor (or "winter") color guard and drumline activities overseen

by Winter Guard International (WGI) also have a different set of parameters that allow for still different innovations. And there's crossover; many drum corps innovators are also recognized as innovators in BOA and WGI.

2.1 The Military Roots of Drum and Bugle Corps

The earliest versions of marching music are rooted in military units that needed musical instruments for battlefield communication or for ceremonies. As far back as the armies of Greece and Rome, rudimentary horns and drums were used as a means of providing instructions and commands to units stretched across battlefields.⁵ Because of the ease with which these instruments could project across large, open, outdoor spaces, it was a much more effective for quick information than trying to pass instructions verbally. These battlefield roles continued through many generations of military history, evolving into "Field Music" units in the 19th-century American military.⁶ Unlike Field Music units, the "Bands of Music" were non-combat units, providing music for ceremonial functions, such as changes of command or official receptions.⁷ The different units were also marked by their uniforms, with Field Music units retaining the appearance of enlisted, combat soldiers and the Bands wearing the dress uniform typically worn by officers.⁸

Towards the latter part of the 19th century, American military bandmasters such as John Philip Sousa began to compose marches for their bands and would often compose the marches to combine the traditional instruments of the Bands of Music alongside the

⁵ Ronald Da Silva, "Pageantry Born on the Battlefield," in *A History of Drum & Bugle Corps*, ed. Steve Vickers, vol. 2 (Madison: Sights & Sounds, Inc., 2003), 6.

⁶ Da Silva, 6.

⁷ Da Silva, 6.

⁸ Da Silva, 7.

bugles from the Field Music units.⁹ Buglers began to be incorporated into ceremonial, parade music, and these soldiers began to contribute to peace-time events. Furthermore, as World War I began to unfold, the invention of telephonic communication eliminated the need for the battlefield mission of the drums and bugles.¹⁰ As military music stabilized exclusively around the instrumentation of the marching band, the performance tradition of these drum and bugle corps would eventually be relegated to American Legion organizations.¹¹

2.2 Post-World War I Evolution

Between World War I and World War II, the members of the drum and bugle corps began to compete against one another as a means of entertainment both for themselves and for spectators from their communities. These competitions were largely based on street parade performances and were sponsored by organizations centered on youth and veterans, such as the Catholic Youth Organization (CYO), the Boy Scouts, the American Legion, or the Veterans of Foreign Wars (VFW).¹² Not long after, drum and bugle corps began to shift their competitions from parade marching to be more creative and unique adaptations of the military's "pass in review" ceremony, conducted on a military parade field.¹³ The movements were nearly all derived from the military "drill and ceremony" maneuvers.¹⁴

⁹ Da Silva, 12.

¹⁰ Da Silva, 12.

¹¹ Da Silva, 12.

¹² Rosalie Sward, "The Evolution of Musical and Visual Design," in *A History of Drum & Bugle Corps*, ed. Steve Vickers, vol. 1 (Madison: Sights & Sounds, Inc., 2002), 98.

¹³ Sward, 98.

¹⁴ Leedy and Ludwig, *Drum Corps Guide for Advanced Corps* (Elkhart, IN: C. G. Conn, 1950), 20–21.

Following World War II, as veterans returned home to the United States, their involvement with local American Legion and VFW organizations led to greater participation in community activities and the civilian drum and bugle corps activity began to increase.¹⁵ While the field performances were still rooted in military tradition, much of the choreography was still largely straight-line formations moving in straight-line pathways. The performances also relocated from the military parade field to the more accessible football fields in their communities.¹⁶ The music selections also began to shift away from military tradition. Corps began to include popular music into their performance repertoire, especially adding slow, lyrical “ballads” to their performance.¹⁷

2.3 Breaking from Military Tradition

In the late 1960s, this departure from military tradition increased.¹⁸ Designers chose music representing different styles, resulting in what some refer to now as “potpourri” shows. It would not be uncommon to find excerpts of orchestral music, concert band literature, top-40 pop, jazz, and Broadway in the same show. In order to highlight certain skills independent of one another, “concert numbers,” during which the corps would stand still to perform, would often have the most technically difficult passages. Drum solos also became an important as well as separate portion of the production. Normally, when the brass section played, the percussion parts were less intricate, and mostly maintained tempo and to provide unambiguous rhythmic accompaniment. Thus, drum solos allowed the percussion section to demonstrate their own technical abilities.

¹⁵ Sward, “The Evolution of Musical and Visual Design,” 100.

¹⁶ Sward, 100.

¹⁷ Sward, 100.

¹⁸ Sward, 118.

The movements on the field, while no longer derived entirely from military drill and ceremonies, retained the style of the military movements. Prior to this, there was a lot of emphasis on straight lines and block formations, and maintaining an equal step size at all times. By combining an equal size step with unique step-off times for each performer, so-called “step drills” allowed for some variety in the development of these block-like formations. In the 1960s, two interrelated changes transformed what drum corps looked like on the football field. The most notable change was the use of curved shapes, rather than solely linear formations.¹⁹ To move seamlessly from one curvilinear formation to the next, performers needed to take different sized steps in order to retain the integrity of the formation. This led the normalization of adjusted step size drills, in which each performer takes different sizes steps in moving from shape to shape—yet another difference from past practice. Even with these new concepts to the movements, the practice was to maintain symmetry about the 50-yard line on the football field; that is, the formation on the left side of the field would be mirrored exactly on the right.

In addition, it was still common to create productions using unrelated pieces of music. Then in 1971, a drum corps from Garfield, New Jersey, the Garfield Cadets, fielded a production depicting the American Revolution. Throughout the duration of their performance, all the music was related to American and British military traditions. The practice of choosing music all centered around a singular thematic concept or idea was a new idea and this became known, at the time, as a “total show” production. Similarly breaking with tradition, Garfield’s formations on field (in the jargon, referred to as “drill”)

¹⁹ Sward, 106.

were not entirely symmetrical to the 50-yard line but instead had periodic moments in which the symmetry was centered on other yard lines or about an angled axis.²⁰

As the instructors began to move further from military tradition, political rifts began to emerge between the drum corps (the performing ensembles) and the veterans' organizations that sponsored competitions. This led to the two substantial separations of the drum corps activity: the 1965 formation of Drum Corps Associates (DCA)²¹ and the 1972 inception of Drum Corps International (DCI).²² These new organizations began hosting contests guided by new rule books that embraced instructors' new, progressive design ideas that ran counter to military tradition. The chief difference between DCA and DCI is age limits on membership. Drum corps within DCA permit members of any age while the DCI organizations are limited to "junior corps," whose members may be no more than 21 years of age.²³

Although new ideas are introduced every year, some innovations more conspicuously change the artform. One significant example from 1980 is the Santa Clara Vanguard. Their production that year broke with so many of the norms, "the judges were heard to say they did not know how to judge this show."²⁴ Such ground-breaking choices included adding drill while performing the concert productions and creating drill that was entirely asymmetric. In one such example, while playing selections from Holst's *The Planets*, the drill designer, Pete Emmons, created movement "during which small circles

²⁰ Sward, 118.

²¹ Tom Peashey, "A History of Drum Corps Associates," in *A History of Drum and Bugle Corps*, ed. Steve Vickers, vol. 2 (Madison: Sights & Sounds, Inc., 2003), 24.

²² Sward, "The Evolution of Musical and Visual Design," 119.

²³ Sward, 119.

²⁴ Sward, 138.

moved around the field with their various brass voices responding to each other.”²⁵ This idea of having disconnected shapes moving independently completely violated the expectations of the era. While this style of drill is now entirely common, at the time it resulted in the Vanguard, traditionally a contender for the top spot, falling to seventh place at that year’s championships.

Later, in 1983, the Garfield Cadets again brought about change by going far past their 1971 production, with legendary drill designer George Zingali almost entirely abandoning the tradition of symmetric and geometric drill in favor of abstract shapes and curvilinear forms that spanned the field.²⁶ A year later, the activity began to recognize that ensembles were taking more risks in their drill design and changed the evaluation system. Until 1984, corps were scored simply by imparting a penalty every time an adjudicator observed an error. In this scoring system, the “tick system,” each corps would begin their performance at a maximum of 100 points and every error would result in a 0.1-point deduction. The winning ensemble would be that which had the fewest errors. This system did not reward innovation, as keeping the design simple would mean less risk and thus greater reward. Under the new system implemented in 1984, artistry and risk began to be rewarded. Each adjudicator would award the ensemble points based the difficulty level of the material being attempted and how well the performers were achieving that material.²⁷ With this new system in place, the corps would be rewarded, rather than penalized, for attempting to do more challenging (and presumably, more interesting) productions. Such risk-taking led corps to begin to push tempos to new extremes, including the Garfield

²⁵ Sward, 138.

²⁶ Sward, 141.

²⁷ Sward, 143.

Cadets performing part of Leonard Bernstein's Symphony No. 1 at 218 beats per minute in 1985.²⁸

2.4 The beginning of contemporary design

Throughout the 1980s and 1990s, both drum corps and the more traditional high school and college marching bands could be described as “concerts on the move.”²⁹ Musical selections ran the gamut of traditional marches to demanding classical and concert works. Drill and choreography were mostly just abstract shapes to position featured performers where they could best be heard.³⁰ This period also included more classical and modern music as well as a growing repertoire of advanced wind band literature. The year 1991 stands out with notable examples of the design of the era. The Cadets of Bergen County (formerly the Garfield Cadets) fielded a production entitled *The ABCs of Modern American Music*, opening with John Adams' *A Short Ride in a Fast Machine*, followed by Copland's *Letter from Home*, and closing with Bernstein's *Prelude Fugue and Riffs*. During the Copland portion of the show, the corps intertwined the programmatic foundations of the original music with choreography based on a picnic on a blanket.³¹

Despite the Cadets of Bergen County's production with demanding and modern music, this was only enough to get the corps to sixth place.³² The corps that won in 1991 was the Star of Indiana, a project begun by Bill Cook, a medical supply manufacturer, drum corps fan, and supportive parent of two drum corps kids. Star of Indiana was a short-lived drum corps, only existing from 1986 to 1993. In their short time, they constant sought to

²⁸ Sward, 145.

²⁹ Will Wells (visual designer), Interview with author, Zoom, July 1, 2020.

³⁰ Wells, interview.

³¹ Sward, “The Evolution of Musical and Visual Design,” 160.

³² Gregg Blocher, “1991 Season Results,” From the Press Box, accessed September 6, 2020, <https://www.fromthepressbox.com/1991season>.

innovate and improve, fueled in large part by Cook's controversial strategy of hiring the best drum corps designers, including the aforementioned George Zingali. Star's 1991 production was named *Roman Images* and used music by Ottorino Respighi, including portions of his *Feste Romane* and *The Pini di Roma*. The corps customized their uniforms for the season to resemble the traditional appearance of the Roman army's dress uniforms. Although this is not the only example from this period of a corps customizing their uniform, it is a notable example of the "total show" concept.

Throughout the production, the drill formations on the field often included symbology common to Roman history and even moments of Roman military formations. However, what really cements this production in the annals of drum corps history is the closing of the show. In the production's initial iteration, Zingali crafted a moment in which the show ended with the formation of a large Christian cross on the field. Through the summer, as the production developed, Zingali wanted to make more out of the moment, to create additional energy, tension, and deliver a stronger release. At the penultimate arrival moment, the high point of the tension leading into the release, the cross forms for the first time, with none of the movement leading up to the cross hinting that it would be coming. After short pause in this cross formation, the cross breaks apart into small line segments that rotate independently of one another before finally reforming the mirror image of the same cross, again without any indication that was the direction to which the performers were heading. The resulting segment of the production is now known colloquially as simply (and legendarily) "the cross-to-cross." Instead of planning this sequence with pencil and paper, Zingali created it on the field, positioning his performers in a more organic

fashion.³³ Like concert dance choreographers,³⁴ this hands-on approach to creating drill and choreography is how some drum corps designers work.³⁵

In the year 2000, two drum corps began to establish a new trend towards production design. The Cavaliers, from Rosemont, Illinois, fielded a production based solely on Michael Daugherty's *Niagara Falls*. Their program coordinator from that year, Michael Gaines, describes the visual design on the 2000 Drum Corps International DVD release. Throughout their production, the design attempted to continuously depict imagery that might be associated with water, waterfalls, and specifically the Niagara Falls.³⁶ Such visualizations included notable uses of shades of blue in the color guard equipment, costuming suggestive of boat crews, and visual phrases to depict waterfalls (e.g. movement "downward" from the back of the field towards the front of the field, followed by movement in circular patterns akin to the currents of waterfalls).

Second, The Cadets (still another new name for the Garfield Cadets) performed a show based on music composed for Disney World's *Millennium Celebration*. Their director and program coordinator, George Hopkins, explained that the production, entitled *We Are The Future*, was based in part on the life of children, growing up, graduating, and becoming parents. Throughout this show, the flags used by the color guard had images of clock faces and iconography associated with graduation, and portions of the drill were

³³ Brian Soules (visual instructor), in discussion with the author, 2000.

³⁴ Jennifer Deckert (professor of Dance at University of South Carolina), interview with the author, Zoom, August 25, 2020.

³⁵ Scott Chandler (program coordinator, Concord Blue Devils), interview with the author, Zoom, August 19, 2020; Jonathan Vanderkolff (program coordinator, Bluecoats), interview with the author, Zoom, August 16, 2020.

³⁶ Tom Blair, *Drum Corps International 2000 World Championships*, DVD (College Park, MD, 2000).

written to show the hands of a clock rotating with the passing of time.³⁷ Like the previous example of *The Cavaliers*, *The Cadets* more directly and explicitly conveyed thematic production ideas in the visual presentation of the show, rather than having the music convey the program accompanied by merely abstract drill.

Currently, visual designers strive to depict the same concepts envisioned in the musical material.³⁸ The productions on the field are more dramatic, theatric, and programmatic in nature than in previous eras, all in service to creating a more memorable and meaningful work of art and entertainment³⁹ In a common refrain, designers and choreographers want the audience “to see what they’re hearing and to hear what they’re seeing.”⁴⁰ It is from this consideration that the central focus of this discussion takes shape: musical and visual designers work in coordination to maximize the response from the audience. The phenomenon of the human response to tension-release (or dissonance-consonance) is rather universal and predictable and is a driving factor behind many of the design choices made in the contemporary marching arts.

³⁷ Blair.

³⁸ Clark Cothran (visual design and instructor), interview with the author, Zoom, August 2, 2020.

³⁹ Vanderkolff, interview.

⁴⁰ Wells, interview.

CHAPTER 3

THE NEED FOR RESOLUTION

The importance of resolving tension is not a characteristic unique to the marching arts. Even the untrained listener has an understanding of organization in music,⁴¹ as has been addressed as far back as Zarlino. As he stated in 1558, the difference in pitch between consonance and dissonance should create an effect to the listener that “can hardly be tolerated”⁴² Psychologically speaking, the need for resolving a chord progression, that is, to resolve a dissonance, is related to the general human desire for stability and predictability.⁴³

The definition of what is and is not resolved or consonant relies heavily upon cultural, historical, and situational context. For those steeped in drum corps, certain expectations have arisen because of the conventions that are normative in the type of music these groups have tended to program, discussed in Chapters 1 and 2. The majority of the musical material used within the marching arts depends on the expectations and presuppositions bound up with common practice Western tonality. It is these patterns of

⁴¹ Carlota Pagès-Portabella and Juan M. Toro, “Dissonant Endings of Chord Progressions Elicit a Larger ERAN than Ambiguous Endings in Musicians,” *Psychophysiology* 57, no. 2 (August 8, 2019): e13476, <https://doi.org/10.1111/psyp.13476>.

⁴² J.J. Bharucha, “Anchoring Effects in Music: The Resolution of Dissonance,” *Cognitive Psychology* 16, no. 4 (October 1984): 487, [https://doi.org/10.1016/0010-0285\(84\)90018-5](https://doi.org/10.1016/0010-0285(84)90018-5).

⁴³ Bharucha, 489.

consonance and dissonance, tension and resolution, that inform the average drum corps listener's experience, and the following discussion should be understood in that context.

For such listeners, the need for the resolution of dissonance in music may feel connected to the same innate, human psychological drive to resolve any manner of dissonance. Sigmund Freud discussed this topic as it relates to the human need to resolve tension.⁴⁴ In Freud's findings, the "death instinct" drives the human tendency to return to a place of reduced tension. That is, the human psyche strives to tend to a place in which all stimuli (dissonances and consonances) are in balance.⁴⁵

Additionally, for such listeners, the need for resolution of tension or the arrival to a consonance following a dissonance is connected to the human need for organization, structure, and predictability.⁴⁶ This is not limited solely to music. In the visual domain, the mind finds a place of repose with the organization of physical objects into regular alignment, be it horizontal, vertical, or at a predictable angle (e.g. 45°).⁴⁷ Whether musical, visual, or related to any other source of stimulus, the need for resolution is not arbitrary but rather an acknowledgement of a system of rules and that some occurrence violated those rules, thus needing to return to a place of order. Indeed, English metaphysicist Thomas Whittaker, in 1890, wrote in response to German philosopher Wilhelm Volkman, "consciousness of tone is not a consciousness of a particular felt content, but is a consciousness of the process of feeling as determined by interaction of one element with

⁴⁴ Kurt Singer, "The Resolution of Conflict," *Social Research* 16, no. 2 (June 1949): 232–33.

⁴⁵ Singer.

⁴⁶ Leonard Meyer, *Emotion and Meaning in Music* (Chicago: University of Chicago Press, 1956), 231.

⁴⁷ Bharucha, "Anchoring Effects in Music: The Resolution of Dissonance," 488.

others.”⁴⁸ Note that, in this reference, “tone” as Whittaker references is not a musical tone but the general tenor or character of a stimulus. In his discussion, Whittaker is telling us that the human consciousness perceives tension as a function of a larger context. With those sensory perceptions, the consciousness instinctively tends towards a “[pleasurable] response” to the discomfort of the “hindrance.”⁴⁹

The concepts of tension trending towards resolution, discussed by Whittaker in 1890 in reaction to Volkman’s *Lehrbuch der Psychologie* from 1856, and Freud’s work around the beginning of the twentieth century, all come to a point of summation with Leon Festinger’s work relating to cognitive dissonance. As he postulates, the human mind has an unconscious drive towards consonance; there is an innate desire for balance and with it, to avoid a place of dissonance.⁵⁰ In Festinger’s terms, consonance and dissonance are describing the relationship or ordering between any given set of stimuli. In music specifically, the terms “consonance” and “dissonance” refer to musical structures (harmony, rhythm, meter, etc.) and whether or not they are in harmony or resolved. As such, by the definition of the terms used to analyze and define music, acknowledgment is also given to the psychological effects of the same. Stepping back to Meyer, he acknowledges that the role of consonance and dissonance in music is related to the human psychological condition. He states, “they are human mental phenomena and as such they depend for their definition upon the psychological laws governing human perception, upon

⁴⁸ Thomas Whittaker, “Volkman’s Psychology,” *Mind* 15, no. 59 (July 1890): 332.

⁴⁹ Whittaker, 332.

⁵⁰ Leon Festinger, “Cognitive Dissonance,” *Scientific American* 207, no. 4 (October 1962): 93–94.

the context in which the perception arises, and upon the learned response patterns which are part of this context.”⁵¹

Meyer addresses the effect of artistic tension as related to the overall human emotional condition. He quotes C.P.E. Bach to say that dissonance “rouses our emotions” while consonances “quiet” them.⁵² As recently as 1999, David Frego postulates in his research that exposing a human subject to a dissonant artistic stimulus will affect their emotional state.⁵³ He finds that following said stimulus, the subject will have a sense of relief when the same stimulus resolves to consonance, order, and structure within the context of the environment created by the stimulus.⁵⁴ Agreeing with Meyer, Frego also suggests that removing control from the listener “may also contribute to a general feeling of tension.”⁵⁵

Neuroscientist and musician Daniel Levitin, in *This is Your Brain on Music*, explains the brain’s reactions to such stimuli. In one such example, Levitin addresses the melodic phrase of the finale from Beethoven’s Ninth Symphony.⁵⁶ In this example, Levitin frames the midpoint of the melody against the established framework of tonal music. The melody descends towards the tonic but stops on the second scale degree. In the understood schema of Western tradition, the listener senses that the idea is incomplete and desires a return to the tonic. When the second half of the phrase begins on the third, not the tonic,

⁵¹ Meyer, *Emotion and Meaning in Music*, 230.

⁵² Meyer, 229.

⁵³ R. J. David Frego, “Effects of Aural and Visual Conditions on Response to Perceived Artistic Tension in Music and Dance,” *Journal of Research in Music Education* 47, no. 1 (Spring 1999): 33.

⁵⁴ Frego, 41.

⁵⁵ Frego, 41.

⁵⁶ Daniel Levitin, *This Is Your Brain on Music* (New York: Dutton, n.d.), 118–19.

the psyche is agitated further and the yearning for the tonic is heightened. At the conclusion of the melody, Beethoven delivers on the return to the tonic and resolution of that tension becomes very gratifying. While Beethoven's entire Ninth Symphony is long in duration and travels through a variety of harmonic, melody, and rhythmic structures, Levitin's example addresses specifically the main melodic theme within isolated or localized context. This is reinforced further by Frego's findings that duration of a stimulus also has an impact on the perception of tension from that stimulus.⁵⁷

Later, Levitin explains how cognitive dissonance does not have to come from a systemic tradition, as in the example of Beethoven not resolving to the tonic. Cognitive dissonance can also exist within a framework of "local" rules, such as a piece of music exhibiting and then defying specific patterns, repetitions, and the like. In these terms, a work can develop a unique complexity by establishing a system or process, then violating that system, and finally a return to the expected. Reiterating and further reinforcing Bharucha's findings previously noted, this challenges the human psyche and provides a cognitive fulfillment to the artistic production. If a work is too simplistic, it is not interesting; if the work is too complex, an audience is unable to follow to the process at work and is thus not engaged.⁵⁸

This level of engagement and thus the resulting level of effect is also connected to the audience's experience with the stimulus in question. In Frego's study, the audience listened to pieces of music by Vivaldi, Bellini, and Cage. Part of the audience viewed a video of dance accompanying the music, choreographed by Mark Morris, George

⁵⁷ Frego, "Effects of Aural and Visual Conditions on Response to Perceived Artistic Tension in Music and Dance," 41.

⁵⁸ Levitin, *Your Brain*, 235.

Balanchine, and Merce Cunningham respectively.⁵⁹ In all three examples, the audience with formal musical training responded more significantly than the non-musician audience. The response triggered by the Vivaldi/Morris examples yielded the most significant reactions among both musicians and non-musicians. Conversely, the non-musician audience had a significantly reduced affect by the Cage/Cunningham example.⁶⁰ Thus, while it is fair to say modern, contemporary musical and visual works elicit an emotional response, the data suggest that stimuli of a less-complex structure will have a more notable influence on a greater number of people.

By understanding how human psychology is affected by the violation of rules as well as the delivery of expectations, the nature of design decisions in the marching arts is more easily understood from a practical manipulation of the senses rather than purely a collection of aesthetic choices. The larger concept of this flow of dissonance to consonance or tension and release is what primarily drives the decision-making process of the creators, composers, and designers of a marching arts organization. The creation of tension followed by the carefully crafted and coordinated release of tension leads to a maximized emotional reaction from the audiences.

⁵⁹ Frego, “Effects of Aural and Visual Conditions on Response to Perceived Artistic Tension in Music and Dance,” 35.

⁶⁰ Frego, 37.

CHAPTER 4

HOW TENSION IS CRAFTED FOR AESTHETIC GRATIFICATION

Over the last 15 to 20 years, marching arts organizations have expanded to include the new role of “program coordinator.” This individual does not necessarily create material but rather acts as a mediator, helping to ensure that all writers stay on the same page and acting as a final decision-maker when it comes to the creative direction of a production.⁶¹ Program coordinators both manage the production and help define its story. The marching arts have evolved from simple abstract visuals that accompany concerts to very theatrical and highly produced dramas. They are now closer to opera or ballet – far different than the military marching units that predate World War I or even what was happening in the 1980s or 1990s.

4.1 The Leading Programmers

While there are numerous marching arts ensembles across the country, the evolution of design style and aesthetic can be regularly traced back to the upper echelon of the competitive rankings in DCI. As ensembles earn their places at the top of these competitions, their style is emulated among other organizations at all levels. In recent years, organizations that have influenced design of the marching arts have produced three individual program coordinators who emerge as the leading minds in the activity.

⁶¹ Jay Bocoock (music arranger), interview with the author, Zoom, August 25, 2020; Chandler.

The first is Scott Chandler. Chandler has been on the instructional staff of the Blue Devils, a drum and bugle corps from Concord, California, since 1990 and has served as the program coordinator since 2003.⁶² In the 17 years during which Chandler has guided the design of their productions, the Blue Devils have won nine competitive seasons. Of the remaining eight seasons, six were second-place finishes. During a competitive season that involves approximately forty ensembles, this is remarkable and outstanding consistency.

Chandler's background, outside of the marching arts, includes training in classical dance. He spent time living, training, and dancing in New York City, studying the choreographic and performance styles established by Martha Graham. In discussing his approach to putting a production together on the field, it is clear that his dance background and training has been influential. Chandler does not think of the movement on the field as being "drill" in the traditional sense, but rather choreography that communicates a larger emotional narrative.⁶³

The second coordinator is Jon Vanderkolff of the Bluecoats of Canton, Ohio. Vanderkolff has a long history of influence in the marching arts. In the 1990s, he was a visual designer with the (now defunct) Star of Indiana drum and bugle corps. During his time with Star, Vanderkolff followed in the footsteps of famed drill designer George Zingali who died in 1992. Vanderkolff was influential in the look of Star's 1993 production, which was based on Samuel Barber's *Medea* and Béla Bartók's *Music for Strings, Percussion, and Celesta*. In his words, Vanderkolff composed the visual elements

⁶² "Blue Devils Performing Arts," Blue Devils Performing Arts, accessed August 26, 2020, www.bluedevils.org.

⁶³ Chandler, interview.

in the production to represent a progression in painting styles, beginning with Pollock and ending with Kandinsky.⁶⁴

The Star of Indiana organization left DCI after 1993 to develop an indoor, theatrical production that became known as *Blast!*, a unique production for which the Tony Awards organization created a new category, “Best Special Theatrical Event,” in 2001 expressly to bestow the honor upon the organization.⁶⁵ During this time, Vanderkolff was one of the primary visual designers for the production, and also employed his music composition training from the New England Conservatory of Music to compose works performed in the production. Since 2013, Vanderkolff has been the program coordinator at the Bluecoats, where his visual design style very much reflects a certain compositional approach to music: beginning with a small motif and developing it through natural, evolutionary processes.⁶⁶ Vanderkolff’s style is to take a simple, abstract gesture or effect and to maximize possible interpretations. As such, the Bluecoats’ productions do not necessarily focus on storytelling.

The third notable influential designer is Keith Potter. Potter currently heads the Boston Crusaders’ design team, although his impact on the marching arts can be traced back to his previous work with the Carolina Crown of Fort Mill, South Carolina. While the designs produced by both Carolina Crown and the Boston Crusaders have not garnered the same competitive success as other organizations, the productions under Potter’s direction have consistently earned some of the warmest audience reception year after year.

⁶⁴ Vanderkolff, interview.

⁶⁵ “Past Winners,” The Tony Awards, accessed August 26, 2020, www.tonyawards.com.

⁶⁶ Vanderkolff, interview.

Discussing his approach to design, Potter speaks as a creative mind that is constantly self-aware and striving to always find new influences to better define his artistry. His attention to detail is clear when watching his productions and comparing them to his thought process. Potter relates the flow of a band show to that of stand-up comedy, where a comedian will tell a story rife with tangents, each following its own emotional journey and contributing to the ultimate punchline as a payoff.⁶⁷ Potter's ability to tell a story and intertwine seemingly unrelated layers in order to paint a bigger picture has been evident in many of his drum corps productions. The end results are masterfully-crafted morality plays, staged on the marching band field.

In 2016, while with the Carolina Crown, Potter and his team used Barber's *Medea* and The Police's *Roxanne* as the soundtrack to a spaghetti western (complete with a stagecoach rolling across the field) about a revenge for a murder. At the end of the production, it became clear that the lesson of this morality play was that mercy, not vengeance, is the better way to live one's life. In 2018, while with the Boston Crusaders, Potter put together a production that combined the plots of the television program *LOST* with the story of William Golding's *Lord of the Flies*, using such musical material as Minoru Miki's *Marimba Spiritual*, Silvestre Revueeltas' *Sensemayá*, and the hymn *Amazing Grace* as the vehicle to explain that humanity is best served by working together rather than in conflict with one another.⁶⁸ Potter's productions speak to a shared humanity, and by doing so, help audiences place themselves into the story on the field.

⁶⁷ Keith Potter (program coordinator, Boston Crusaders), interview with the author, Zoom, August 6, 2020.

⁶⁸ Potter, interview.

Each of these three designers takes a unique approach to composing a production, but each has earned a place where both fans and other designers look to their works for inspiration. Their influences are the foundations on which other programs base their designs. Because of their level of influence, these designers act as the starting point for a discussion into what makes for successful and convincing design. Whether the style is Chandler’s homage to concert dance, Vanderkolff’s abstract art, or Potter’s storytelling, the mechanics of how their productions are crafted have several parallels.

Although these three designers are different stylistically and their productions are also quite different, the foundations on which they build their work are solid. Among those facets at which these coordinators excel, one of the most notable is their ability to “hide the bones”⁶⁹ of a production; to not allow the audience to be aware of the machinations of the specific construction of moments, but instead simply allowing the audience to suspend disbelief and enjoy the production they are watching.

4.2 Pacing of Design

The marching arts still retain quite a mixed audience of spectators that range from educated and experienced to casual observer.⁷⁰ Productions are expected to avoid long, developmental builds and instead complete phrases more quickly and succinctly,⁷¹ thus inspiring director and composer Dr. Andrew Yozviak to refer to production as “short-attention-span theatre.”⁷² An example of a long and sustained build towards an apex would

⁶⁹ Chandler, interview.

⁷⁰ Richard Templin (visual designer and consultant, interview with the author, November 5, 2014).

⁷¹ JD Shaw (music arranger, Phantom Regiment and faculty member at Univeristy of South Carolina), interview with the author, Zoom, September 1, 2020.

⁷² Andrew Yozviak (music arranger and Director of Bands at West Chester University of Pennsylvania, interview with the author, November 11, 2014).

be the finale of Respighi's *Pini di Roma*. Although it was commonly used on the field in earlier years, it is challenging to create the same effect that Respighi accomplishes in his orchestral work and adequately translate that pacing to the marching band or drum corps field.⁷³

In order to craft a production that will be well-received, designers need to adhere to established norms with regards to timing (or “pacing”), with a change of focus occurring every approximately 15 to 30 seconds and a phrase or idea coming to an arrival every approximately 40 to 60 seconds.⁷⁴ Larger-scale concepts can and do span longer times, with a specific piece of music or a visual/choreographic process lasting as long as two or three minutes, but still with the expected ebb and flow of aesthetics along the way.⁷⁵

Skilled visual designers are able to adhere to the norms of timing in order to efficiently place performers in the right place at the right time⁷⁶ while also drawing the audience's attention to different and explicit geographic locations on the field.⁷⁷ In many compelling musical works, a composer creates variety yet leaves space to shift from one idea to another.⁷⁸ Likewise, a successful visual designer hides transitions so the choreographed movement on the field flows continuously from one idea to the next⁷⁹

⁷³ Shaw, interview.

⁷⁴ Templin, interview.

⁷⁵ Potter, interview; Vanderkolff, interview.

⁷⁶ Leon May (visual designer, Boston Crusaders), interview with the author, Zoom, July 30, 2020.

⁷⁷ Ian Flint (visual designer), interview with the author, Zoom, July 30, 2020.

⁷⁸ Bocook, interview; Iam Grom (percussion designer and CEO of Box Six Production), interview with the author, Zoom, August 5, 2020.

⁷⁹ May, interview; Wells, interview.

except in moments where a phrase concludes, which are generally accompanied by a cessation of motion.⁸⁰

On the macro level, a good production gives the audience a sense of continual growth and direction.⁸¹ Visual designer Bobby Jones describes a production as “one long crescendo” that leads to the conclusion.⁸² Similarly, composer and music arranger Jay Bocook views “coda” moments as the culmination of a production. Such moments are the pinnacle of developmental ideas, and a restatement of the main thematic material at the end helps create a sense of resolution.⁸³ In this sense, the design of a marching arts production follows much of the same structure as more traditional “art” music in that motif, melody, phrase, and form all work together to provide the audience with a sense of forward direction. The chief difference is that, in the marching arts, choreography is added to complement the musical design.

While much of contemporary visual design draws on the principles and the fundamentals of concert dance, there are some notable differences between the marching arts and concert dance. Like the style of the music, the flow of the overall production affects the pace of the choreography, sometimes limiting a designer’s ability to develop ideas over time.⁸⁴ Because of the timing norms that control the flow of a program, designers must be able to craft meaningful phrases within the constraints of the overall pacing. As the

⁸⁰ Cothran, interview; Jarrett Lipman (Director of Bands, Claudia Taylor Johnson High School, San Antonio, Texas), interview with the author, Zoom, August 16, 2020.

⁸¹ Bob Chreste (marching band consultant), interview with the author, Zoom, July 29, 2020.

⁸² Bobby Jones (program coordinator, Reading Buccaneers), interview with the author, Zoom, July 29, 2020.

⁸³ Bocook, interview.

⁸⁴ Brady Sanders (choreographer, Boston Cusanders and independent dance choreographer), interview with the author, Zoom, August 20, 2020.

marching arts are competitive, a range of expected skills or vocabulary must also be demonstrated.⁸⁵ Although designers may initially find this to be stifling, the nature of competition requires them to strengthen their work by focusing their thesis and editing their design.⁸⁶

A second difference between dance in the marching arts and dance on the stage is the relationship between the movement and the music. The design style of the marching arts favors choreographic work that mirrors the music: “what you hear is what you see; what you see is what you hear” is a common rule-of-thumb among visual designers.⁸⁷ Conversely, in concert dance, the choreography and the music are treated as two voices in dialogue with one another, with the choreography frequently working in counterpoint against the music, rather than merely being subservient to the music.⁸⁸

Two points where the marching arts and concert dance notably intersect are vocabulary and style. Regarding vocabulary, classical dance focuses on several basic positions or types of movement, while modern dance styles tend to favor movement that breaks with those norms.⁸⁹ Although much of the choreography in the marching arts mirrors modern dance⁹⁰ it must also account for practical concerns. Attention must be given to carrying instruments (notably percussion),⁹¹ the color guard’s equipment,⁹² and the

⁸⁵ Sanders, interview.

⁸⁶ Sanders, interview.

⁸⁷ Flint, interview.

⁸⁸ Deckert, interview.

⁸⁹ Deckert, interview.

⁹⁰ Chandler, interview.

⁹¹ Zach Schlicher (percussion choreographer, Boston Crusaders), interview with the author, Zoom, July 29, 2020.

⁹² Kylee Hubbard (color guard designer, Boston Crusaders), interview with the author, Zoom, August 17, 2020.

ability level of performers who do not have a strong dance background.⁹³ With all these caveats in mind, the traditional, classical ballet vocabulary becomes challenging, whereas the interpretive approach of modern dance allows for more freedom of expression and of choreography.

A common term used by choreographers of both concert dance and the marching arts is “vulnerable,” referring to the emotional context in which they ask their dancers to perform.⁹⁴ Musicians understand that is not quite enough to perform a piece of music in tune, with accurate notes and rhythms, at the correct dynamic—they must instead elevate the musical passage through expression and emotion. Likewise, dancers must go beyond the correct movement of the body through time and space. It is imperative that they also do this with expression. This is communicated to audiences in a way that the viewer is able to see the emotion of the performer openly. Just as in any personal setting, allowing another to witness one’s emotions requires that person to be very open and thus vulnerable.

4.3 Creating Tension

The key to creating ebb and flow is by building effect moments with well-defined and well-coordinated tension that leads to a convincing and fulfilling release. Whether these are moments described as dissonance, chaos, or tension, they all fall under the processes described by Volkman, Whittaker, and Festinger as a violation of an established set of expectations that drives the consumer (the audience) to seek resolution. Just as Beethoven heightened tension in his Ninth Symphony,⁹⁵ designers in the marching arts seek to confound expectations in order to make the final resolution more gratifying.

⁹³ Sanders, interview.

⁹⁴ Chandler, interview; Deckert, interview; Sanders, interview; Vanderkolff, interview.

⁹⁵ Levitin, 235.

Marching arts productions use tension and dissonance on multiple levels. First, individual elements (e.g. brass, percussion, movement, etc.) will employ tension or dissonance to give that particular facet compositional direction. Second, the interaction between elements (e.g. brass versus percussion) will also have dissonance as a means of driving the overall production. One very simple and specific example of such dissonance between sections could be the implication of different meters in the different parts, such as 3/4 time against 5/4 time that resolve to 4/4 time. The collaboration of multiple designers creates this conspicuous sense of coordination.⁹⁶ Generally speaking, as one element of the overall production begins to build tension, the others follow suit in order to maintain the sense of coordination between all the elements.⁹⁷ While this has been standard performance practice within the marching arts, quantifiable data has demonstrated that complementary coordination between aural and visual components is more effective as a means of affecting an audience than those cases in which the aural and the visual work independently of or in counterpoint against each other.⁹⁸

The simplest and expected way of creating musical tension is with harmonic dissonance. Even in an idiom in which innovation is a constant, returning to the traditional dominant-tonic progression is something that underlies nearly all other functions of tension. Building a phrase of a sustained dominant pedal point can serve the function of forward momentum in a production.⁹⁹ JD Shaw, arranger for the Phantom Regiment, notes

⁹⁶ Potter, interview.

⁹⁷ Lipman, interview.

⁹⁸ Frego, "Effects of Aural and Visual Conditions on Response to Perceived Artistic Tension in Music and Dance," 41.

⁹⁹ Bocook, interview.

that “there’s a certain amount of satisfaction in voice-leading that makes sense;” that the simplicity can be equally as satisfying a moment as more complex harmony.¹⁰⁰

A common way of introducing tension into a phrase is by changing velocity. This works as effectively with musical scoring as well as within visual composition. Musical arrangers can draw the ear to a point of increased movement within a voice,¹⁰¹ to shifts in register or timbre,¹⁰² or to the introduction of new voices and colors.¹⁰³ Other ways to change velocity within music is to change the meter. Again, there are a variety of approaches, including changing from a simple- to a compound meter¹⁰⁴ or introducing hemiolas.¹⁰⁵

From the perspective of movement, a change of velocity can come from any number of approaches. One very simple method is to affect the length of the stride: by asking the performers to cover more distance with each step, the motion on the field will increase.¹⁰⁶ A second, more nuanced change to velocity comes from how the phrasing is constructed. Visual phrases (whether marching, color guard equipment work, or choreography) are often composed to align with musical structures. Very broadly speaking, a visual phrase will match up with a musical phrase – that is, it will span multiple measures. The changes in visual phrases are often marked by changes of direction, changes of step

¹⁰⁰ Shaw, interview.

¹⁰¹ Bocook, interview.

¹⁰² Shaw, interview.

¹⁰³ Grom, interview; Jeremy Maytum (percussion instructor, University of Maryland), interview with the author, Zoom, August 5, 2020.

¹⁰⁴ Bocook, interview.

¹⁰⁵ Alex Beltran (percussion instructor, Boston Crusaders), interview with the author, Zoom, August 5, 2020; Jason Frith (percussion instructor and designer), interview with the author, Zoom, August 5, 2020; Maytum, interview; Schlicher, interview.

¹⁰⁶ Flint, interview.

size, changes of facings, and so on. A visual designer can create the perception of a change in velocity by asking the performers to make those phrase-level changes (facing, direction, etc.) on a more frequent basis.¹⁰⁷ For example, if a passage consists of several successive 16-count visual phrases, changing to eight-count and then to four-count phrases will give the audience a sense of acceleration, even if the tempo and the step size both remain constant.

Further, by misaligning visual and musical phrases, an additional sense of velocity emerges through the perception of multiple events.¹⁰⁸ Such design decisions can be challenging; rather than adding to a production, they can take away from the overall aesthetic if not composed with intentionality and purpose.¹⁰⁹ Such misaligned structures increase the difficulty level of a production as the performers tend to learn their routines by aligning musical phrases with visual phrases and vice versa. When the two phrase structures are in dissonance with one another, the performers must work diligently to track these challenges.

A third, still more nuanced approach to velocity in visual design comes from the perception of velocity. While years of design evolution have gradually increased the tempos at which performers are asked to move and the sizes of the steps they are asked to take, there is an upper limit at which the performers' ability to control their movement will fail to achieve the expected level of excellence. In the contemporary marching arts, it is expected to have performers moving at 180 to 192 beats per minute for sustained periods and is not uncommon to reach tempos well in excess of 200 beats per minute. Likewise,

¹⁰⁷ Flint, interview; Jones, interview; Wells, interview.

¹⁰⁸ Chandler, interview.

¹⁰⁹ Hubbard, interview.

the “standard” step size is measured at 22.5 inches, as defined by taking eight equal steps of the span of five yards (two adjacent lines on a football field). However, it is rather common to utilize a “6-to-5,” 30-inch step for extended periods, and occasionally “4-to-5,” 45-inch steps, as a means of creating velocity.¹¹⁰ As productions approach such tempos and the visual phrasing asks for steps sizes towards these upper limits, it becomes an unachievable expectation to ask performers to attempt anything greater. In those moments when an increase of velocity is still desired, visual designers change to what they describe as “countermotion.” In this simple concept, having visual formations moving horizontally in opposite directions creates a perception to the audience of twice as much speed.¹¹¹ For example, if the performers are moving at 180 beats per minute, countermotion will create the appearance that two performers moving in opposite directions would be moving at 360 beats per minute relative to one another. This extreme flurry of motion creates tension that leads to a gratifying moment of release when followed by a cessation of motion.¹¹²

Another approach to increasing tension is through changing density. As a phrase continues through time, changing the density of orchestration will have an impact on the audience’s perception of forward movement, and with it, the build towards an arrival and a release.¹¹³ Within the musical orchestration, density is relatively simple and straightforward concept. By either adding or removing timbres, performers, sections, or

¹¹⁰ Wells, interview.

¹¹¹ Aaron Barnes (visual instructor, Blue Stars and Claudia Taylor Johnson HS), interview with the author, Zoom, July 29, 2020; Chreste, interview; Cothran, interview; Flint, interview; Roger Marquis (visual caption head, Blue Stars), interview with the author, Zoom, August 9, 2020.

¹¹² Cothran, interview; Lipman, interview.

¹¹³ Shaw, interview.

ensembles, the texture of the music is affected dramatically.¹¹⁴ This can also go both ways: an increase of personnel over the span of a phrase will create an increase of dynamic and intensity of sound, which inherently tends towards arrival moments. Conversely, in a subtler approach, removing players will increase the audience's attention by drawing the listener in closer to observe moments of increased intimacy.¹¹⁵

A way that the visual composition can easily show changes of density is simply by changing the space between the performers. As a phrase continues towards a point of climax, the continual reduction of or increase in space between players will heighten that sense of tension that will eventually demand some type of resolution.¹¹⁶ A change of structure can further amplify that change of density. The regularity of shape on the field will give the audience the perception of consistency and predictability.¹¹⁷ By breaking these shapes apart into smaller forms,¹¹⁸ building up into larger forms,¹¹⁹ or simply disintegrating into total lack of visual structure,¹²⁰ the audience's perception of density as a function of tension and dissonance will increase.

Density, in the visual domain, can also relate to volume and dynamics. Visual designers describe formations that span larger geographic areas of the field and have performers closer together as "louder" than those that are more open or spread out. An increase of density (that is, formations with increasing numbers of performers) is described as a "visual crescendo." A common way of adding to the visual density of a phrase is by

¹¹⁴ Grom, interview.

¹¹⁵ Lipman, interview.

¹¹⁶ Barnes, interview.

¹¹⁷ Bharucha, "Anchoring Effects in Music: The Resolution of Dissonance," 488.

¹¹⁸ Barnes, interview.

¹¹⁹ Wells, interview.

¹²⁰ Cothran, interview.

adding and synchronizing color.¹²¹ For example, the choreography for the color guard can hide the color of the flags,¹²² keep the flags lower to the ground (and thus disrupting the sightline of the audience),¹²³ or break the ensemble into subgroups, each performing different choreography.¹²⁴ With this, the audience will perceive visual dissonance that is resolved through unison movement¹²⁵ or with equipment height (such as tosses),¹²⁶ resulting in a “louder” visual dynamic.¹²⁷

There are also more subtle means to create tension for the knowledgeable audience member. One such subtlety is virtuosity. Virtuosity can describe the level of difficulty of a quick musical passage, large step sizes, challenging movements, or difficult choreography. An audience member who understands these challenges will have a sense of excitement in anticipation of the perfect performance of such material.¹²⁸

From a slightly different perspective, visual sequences can also create tension leading to small, subtle, and unique resolutions. The term “visual sequences” would describe moments in which a short choreographic motif is performed either by individuals or small groups, in an orderly fashion across geographic space on the field.¹²⁹ This type of virtuosity demands that individual performers maintain a consistent sense of time in order for the sequential work to align at the point of resolution.¹³⁰

¹²¹ Potter, interview.

¹²² Lipman, interview.

¹²³ Potter, interview.

¹²⁴ Hubbard, interview.

¹²⁵ Hubbard, interview.

¹²⁶ Jones, interview.

¹²⁷ Chandler, interview.

¹²⁸ Lipman, interview; Sanders, interview.

¹²⁹ Potter, interview.

¹³⁰ Hubbard, interview; Lipman, interview.

In common practice tonal music frequently used in the marching arts, harmonies resolve to the tonic and rhythms lead to a downbeat. If the ultimate musical consonance is described as “tonic” and “downbeat,” then dissonance would be everything else that leads to that chord and beat. Likewise, in the visual domain, the sense of resolution is stillness (a cessation of movement) and regularity of structure.¹³¹ Thus, dissonance in visual performance is all the movement that leads towards that moment of order and respite.¹³²

¹³¹ Flint, interview.

¹³² Cothran, interview.

CHAPTER 5

CONCLUSION

The marching arts have exhibited notable evolution in style and substance. The days of simple performances, consisting of marches and show tunes accompanied by block step-drills having long since faded, now replaced by productions crafted by designers who are among the best in their fields. The performers, owing their roots to street kids who just showed up are now musician-athletes who are among the best of their peer groups. The audience, in watching a production, is subject to an emotional journey that is crafted by carefully determined choices.¹³³ If the designers did their jobs correctly, that journey will be believable, convincing, and meaningful.

Throughout the history of the drum corps activity, designers and leaders have been making choices to continue progressing. Central to this decision-making process is the question of how to best affect the audience with a production. Through years of evolutionary steps, this has led to a performance-practice reflective of the same principles of dissonance-consonance found through psychological research in the arts. Whether arriving at this conclusion through experience or through research, it is undeniable that tension aggravates and resolution comforts the human psyche.

Like many great musical compositions, the most compelling marching arts' productions take the audience on a journey. Whether the journey is through an auditory

¹³³ Chandler, interview; Vanderkolff, interview.

progression, a captivating visual display, or intrinsic reflection, the human condition is affected from having had the experience. Through years of study, evolution, and refinement, the artists who are designing works for the field have the singular aim of bringing their audiences along on such a journey. Their fantastically crafted moments compel the listener to react, not with the polite applause of the concert hall but rather the raucous cheering of the die-hard fan.

REFERENCES

- Barnes, Aaron. Visual and Choreography Discussion. Zoom, July 29, 2020.
- Beltran, Alex. Battery Percussion Discussion. Zoom, August 5, 2020.
- Bharucha, J.J. "Anchoring Effects in Music: The Resolution of Dissonance." *Cognitive Psychology* 16, no. 4 (October 1984): 485–518. [https://doi.org/10.1016/0010-0285\(84\)90018-5](https://doi.org/10.1016/0010-0285(84)90018-5).
- Blair, Tom. *Drum Corps International 2000 World Championships*. DVD. College Park, MD, 2000.
- Blocher, Gregg. "1991 Season Results." From the Press Box. Accessed September 6, 2020. <https://www.fromthepressbox.com/1991season>.
- Blue Devils Performing Arts. "Blue Devils Performing Arts." Accessed August 26, 2020. www.bluedevils.org.
- Bocook, Jay. Music Design Discussion. Zoom, August 25, 2020.
- Chandler, Scott. Programming and Choreography Discussion. Zoom, August 19, 2020.
- Chreste, Bob. Design Discussion. Zoom, July 29, 2020.
- Cothran, Clark. Visual Discussion. Zoom, August 2, 2020.
- Da Silva, Ronald. "Pageantry Born on the Battlefield." In *A History of Drum & Bugle Corps*, edited by Steve Vickers, 2:6–13. Madison: Sights & Sounds, Inc., 2003.
- Deckert, Jennifer. Dance and Choreography Discussion. Zoom, August 25, 2020.
- Festinger, Leon. "Cognitive Dissonance." *Scientific American* 207, no. 4 (October 1962): 93–106.
- Flint, Ian. Visual Discussion. Zoom, July 30, 2020.
- Frego, R. J. David. "Effects of Aural and Visual Conditions on Response to Perceived Artistic Tension in Music and Dance." *Journal of Research in Music Education* 47, no. 1 (Spring 1999): 31–43.
- Frith, Jason. Percussion Discussion. Zoom, August 5, 2020.

Grom, Iam. Percussion Discussion. Zoom, August 5, 2020.

Hubbard, Kylee. Choreography and Color Guard Discussion. Zoom, August 17, 2020.

Jones, Bobby. Visual and Design Discussion. Zoom, July 29, 2020.

Leedy, and Ludwig. *Drum Corps Guide for Advanced Corps*. Elkhart, IN: C. G. Conn, 1950.

Levitin, Daniel. *This Is Your Brain on Music*. New York: Dutton, n.d.

Lipman, Jarrett. Design Discussion. Zoom, August 16, 2020.

Marquis, Roger. Visual Discussion. Zoom, August 9, 2020.

May, Leon. Visual Design Discussion. Zoom, July 30, 2020.

Maytum, Jeremy. Percussion Discussion. Zoom, August 5, 2020.

Meyer, Leonard. *Emotion and Meaning in Music*. Chicago: University of Chicago Press, 1956.

Onwuekwe, Agatha Ijeoma. “The Socio-Cultural Implications of African Music and Dance,” 2012. <https://www.ajol.info/index.php/cajtm/article/view/76593/67042>.

Pagès-Portabella, Carlota, and Juan M. Toro. “Dissonant Endings of Chord Progressions Elicit a Larger ERAN than Ambiguous Endings in Musicians.” *Psychophysiology* 57, no. 2 (August 8, 2019): e13476. <https://doi.org/10.1111/psyp.13476>.

The Tony Awards. “Past Winners.” Accessed August 26, 2020. www.tonyawards.com.

Peashey, Tom. “A History of Drum Corps Associates.” In *A History of Drum and Bugle Corps*, edited by Steve Vickers, 2:24–31. Madison: Sights & Sounds, Inc., 2003.

Potter, Keith. Visual and Design Discussion. Zoom, August 6, 2020.

Sanders, Brady. Dance and Choreography Discussion. Zoom, August 20, 2020.

Schlicher, Zach. Percussion Discussion. Zoom, July 29, 2020.

Shaw, JD. Programming and Music Design Discussion. Zoom, September 1, 2020.

Singer, Kurt. “The Resolution of Conflict.” *Social Research* 16, no. 2 (June 1949): 230–45.

Soules, Brian. *History of Star of Indiana*, 2000.

Sward, Rosalie. "The Evolution of Musical and Visual Design." In *A History of Drum & Bugle Corps*, edited by Steve Vickers, 1:97–186. Madison: Sights & Sounds, Inc., 2002.

Taruskin, Richard. *Music from the Earliest Notations to the Sixteenth Century*. New York: Oxford University Press, 2010.

Templin, Richard. Visual Design Discussion. Interview, November 5, 2014.

Vanderkolff, Jonathan. Staging and Choreography Discussion. Zoom, August 16, 2020.

Wells, Will. Visual Discussion. Zoom, July 1, 2020.

Whittaker, Thomas. "Volkmann's Psychology." *Mind* 15, no. 59 (July 1890): 325–41.

Yozviak, Andrew. Show Design and Pacing Discussion. Interview, November 11, 2014.

APPENDIX A

INTERVIEW QUESTIONS

The following list of questions was used to guide conversation with visual designers.

Where appropriate, the interviewees were asked to expand upon their answers.

- What does “phrasing” mean in terms of visual composition? Drill vs Staging vs Choreography
- What does it look like to have a visual phrase come to a conclusion? What is the “release” or “arrival” of a phrase? What about a “comma” - a phrase that isn’t ending, but is continuing forward?
- How do you create a sense of forward progress in visual design? What’s the visual equivalent of a chord progression?
- How do you create tension in visual design? How do you release that tension?
- How do you think of coordination/correlation between music and visual design?

The following list of questions was used to guide conversation with percussion writers.

Where appropriate, the interviewees were asked to expand upon their answers.

- What does “phrasing” mean in terms of percussion composition? Pitched vs Non-Pitched; Front vs. Battery
- What are ways that a non-pitched phrase comes to a conclusion? What is the “release” or “arrival” of a phrase? What about a “comma” - a phrase that isn’t ending, but is continuing forward?

- How do you create a sense of forward progress with using rhythm as the primary color? What's the percussion equivalent of a chord progression?
- How do you create tension in battery design? How do you release that tension?
- How do you think of coordination/correlation between music design elements?

The following list of questions was used to guide conversation with music writers.

Where appropriate, the interviewees were asked to expand upon their answers.

- How do you think of phrasing in context of re-composing a work for the field?
What's the balance between retaining the original work versus alterations to allow for timing and effect moments?
- What are your techniques for creating "forward progress" in a phrase - the musical characteristics to "motivate" a phrase towards its conclusion?
- What are some of your techniques for creating tension to lead up to arrival moments?
- How do you think of coordination/correlation between music design elements? In what ways do visual designers help to shape and guide your creative process?