A NEW PLACE AT THE TABLE: ANCIENT CADENTIAL PATTERNS FOR MODERN IMPROVISATION AND AURAL SKILLS TRAINING

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ABSTRACT

Contemporary efforts to integrate improvisation practice into institutional music education are many and varied, but lack of improvisatory skill remains an ongoing problem, especially in classical music instruction. Drawing on artisanal training, in which a corpus of memorized repertoire becomes a stylistic knowledge base, source of cognitive schemata and raw material for creative variation, a useful set of historically-derived "standards" can be found in the three introductory cadences used in the Neapolitan conservatory partimento tradition (It. *Cadenza Semplice, Cadenza Composta, Cadenza Doppia*) of the seventeenth and eighteenth centuries. Referencing music cognition research, music theory sources and improvisation discourse, this paper argues that intervallic suspensions in these schemata (4-3, 7-6) can be seen as a simple demonstration of error perception and correction, a cognitive process that can be deployed to develop and strengthen both aural and creative skills. Integration of these cadences into beginner training also suggests a reassessment of the order of introduction of musical elements found in formal music instruction, which privileges the chord as a discrete entity, and relegates intervallic suspension, schemata and counterpoint to intermediate, advanced, or supplementary study. These cadences concisely synthesize and demonstrate contrapuntal interplay and voice leading between bass and treble voices, basic syncopation and rhythmic division, and the concept of dissonance/consonance within linear parameters as an integral aspect of musical form. A series of beginner to intermediate exercises for use in vocal and instrumental training are presented. The dissertation recommends that intervallic suspensions be given a renewed "place at the table," once again taking their former role as primal examples of compositional structure and aesthetic possibility.

DEDICATION

This dissertation is dedicated to my parents, Alison Macnamara Cunningham and David Lewis Stein. Both were present at its inception; neither at its culmination. The example of their love, courage and resolve is with me always.

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Chapter One: Why do I need to improvise, and what is a partimento?

Musicians who specialize in the music of the European Common Practice era – very roughly, the three centuries preceding the twentieth – are trained to perform an elegant and sophisticated antiquarian repertoire. The composers of the seventeenth and eighteenth century served the European aristocracy; those of the nineteenth century met the needs of the post-French Revolution *bourgeois*. Our modern concert halls and opera houses have become the catch-all arenas for music originally performed in courts, theatres, churches, cathedrals, drawing rooms, saloons and salons. The performers are called, or call themselves, "classical" musicians, playing "classical" works.[1] Before the advent of recorded sound, a handwritten or printed musical score was the only technology capable of transmitting music across time and distance. What begins as necessity eventually becomes culture; thus the ability to execute a score according to a (most often dead) composer's intentions continues to be the central skill for which modern classical musicians are trained and celebrated. Musicians who specialize in this repertoire can be justifiably proud of their ability to interpret works of exceptional beauty, profundity, technical challenge, formal intricacy and historical significance.

[1] Further use of this term will occur without quotation marks. Taruskin argues that despite the vast differences in the various elements assembled to form the concept of a Classical Tradition, all are "genres that have been disseminated primarily through the medium of writing. The sheer abundance and the generic heterogeneity of the music so disseminated in "the West" is a truly distinguishing feature – perhaps the West's signal musical distinction." (Taruskin 2005, xxiii) Issues of periodicity and nomenclature remain a challenge within music education and research; there has been critical scrutiny of both the term "classical" and "common practice" as applied to historical repertoire. The traditional historical designations used in standard music textbooks– medieval, Renaissance, Baroque, Classical, Romantic, Modern – are borrowed from categorization used in visual art history, and can be confusing when attempting to align musical style and thought to a firmly demarcated period of time. But they provide a starting point for generally acknowledged categories of style and era that will allow us to discuss different music histories and their intersections. This paper will deploy terms like jazz, classical, rock, hiphop, etc. as broad stylistic categories, while acknowledging here the degree to which they must always be qualified and contextualized when attempting to clarify musical and cultural phenomena.

But despite its noble history and cultural cachet, classical music is a relatively small area of musical activity, and there is no guarantee that classical training will result in sustained or lasting employment in this repertoire area. If a modern interpreter of classical repertoire has the right combination of luck and talent to become a professional concert soloist, or to secure regular or full-time contract employment in orchestras, opera choruses, or chamber ensembles, there will little or no need for them to call on skills other than the interpretive ones that are the central focus of this type of performance instruction**.** But for how many musicians is this likely to be the case, out of the hundreds that spill from music schools into the work force every year? Covach's "'High Brow, Low Brow, Knot Now, Know How': Music Curricula in a Flat World" notes that "often enough, the most narrowly focused classical musician will emerge from music school into a world that will require that graduate to build a career, often freelancing and teaching without the security of a full-time position in classical music. In such an environment, a broader range of musical skills and experience are a significant asset." (Covach 2017, paragraph 18)[2] Any category of specialist musician – piano soloists, oboe, or viola players who have concentrated principally on orchestral and solo repertoire, vocalists who have mastered difficult arias or even mastered entire operatic roles – may be confronted with the question of what happens when employment in these areas is not immediately forthcoming, and there are bills to pay. Some musicians augment their income with non-musical work. Others become independent contractors, piecing together a living that involves performing, teaching, recording, composing and arranging. Facility with non-classical music, and the aural and improvisatory skills necessary

[2] Covach (2017), an online publication, has no page numbers to cite. See also Cook (2018, 174), Cottrell (2017, 57-76), and Freeman (2014, 65, 83). Freeman's discussions are titled "Changing Repertories, Mixing Traditions" and "Prepare to Reinvent yourself; Learn Versatility" respectively. Even writers such as Freeman, firmly ensconced within the classical tradition, are well aware of the multistylistic environment in which their students must learn to function.

to execute it successfully, is all but essential for this type of career path, a simple reality that nonetheless remains barely acknowledged in some classical music curricula. It is as if a particular cadre of architecture students was taught only to construct and maintain fountains in the style of the 1612 *fontane di Piazza San Pietro*, and gardens in the eighteenth-century style of the *Jardins du château de Versailles*, but were carefully sheltered from learning how to construct a home, road, sidewalk, or playground in a modern urban or rural environment.

The results of this approach were brought home to me at a rehearsal, during which I watched sympathetically as a friend and colleague struggled to find the key to accompany "Happy Birthday" on a keyboard. The song had been struck up spontaneously by a group of amateur singers before the keyboardist had a chance to orient the group with an opening chord. Unable to figure out the key center, or to locate the appropriate harmony to support the melody, my colleague threw up hands by the third line of the song and allowed the singers, who sang raggedly but in tune, to finish it on their own. In the pantheon of musical challenges, "Happy Birthday" is, or at least should be, the equivalent of a lob pitch, an easy bat-to-ball connect requiring only the most basic coordination of hand and mind to complete a set of tasks well within the capability of a trained professional. To improvise an accompaniment to "Happy Birthday" without a score – "by ear," colloquially – is less an act of improvisation than an act of memory retrieval and execution of a very simple piece of music, no element of which should be mysterious to a professional musician. The song is in a major key; the melody has a one-octave range, and contains no unusual intervallic motion or large leaps, save for the octave jump in the final phrase. The entire composition is only eight measures long. Perhaps it is unfair to demand of musicians who labour for years to be able to do justice to the great canonic masterpieces of European composition, that they also be able to quickly accompany "Happy Birthday," possibly

the one song on earth that least requires musical support. A successfully improvised instrumental accompaniment of "Happy Birthday" may be regarded as a civic rather than an artistic task; an achievement not commonly associated with profound aesthetic fulfillment for, well, anyone. It is also a good test for whether a musician has the skills necessary to contend with more complex musical situations in which a printed score may be incomplete, insufficient, unavailable, or nonexistent. Very good musicians, such as my colleague, are not alone in finding themselves struggling with these types of musical tasks.[3]

In any capacity other than "a full-time position in classical music" in North America, musicians will almost certainly encounter a demand for music services in styles such as folk, rock, hiphop, jazz and music theatre, as well as sophisticated and technically challenging non-western traditions that are increasingly being taught and performed in arenas previously dominated exclusively by repertoire from the European canon. Professional employment may include:

- music theatre pit orchestra
- military band conductor
- liturgical and community choir conductor
- club musician – rock, R and B, folk, metal, etc.
- style-specific ensembles – salsa, tango, rebetiko, fado, polka, English and Scottish country dance, etc.
- music therapy, dance therapy

[3] "Piano studios across the country also continue to graduate pianists who are capable of performing an impressive portfolio of standard, very difficult works, but who would struggle if asked to play 'Happy Birthday' in any major key as part of an impromptu social gathering. These are performers who can *play musical works* but who cannot creatively manipulate the elements of any one particular music genre." (Pedroza 2017, 139) Also see McDonald 1989, "A Survey of the Curricular Content of Functional Keyboard Skills Classes Designed for Undergraduate Piano Majors" (PhD diss., University of Oklahoma, 1989)

- orchestral “pops” or crossover orchestras
- contemporary avant-garde composition
- film scoring/sound production
- recording session musician
- cross-cultural ensembles – hybrid western and non-western styles
- amusement park and cruise ship ensembles

For several of the employment areas listed above, ability in score execution alone may suffice. But multiple stylistic areas require inventive skills in melodic variation, metric and rhythmic variation, bass-line interpolation, addition of vocal and instrumental harmony to a principal melody, chord substitution or re-voicing, and alteration of form through arrangement and re-composition. Below is a number of situations that I have encountered as a singer, keyboard accompanist, chamber ensemble lutenist, orchestral theorbo player, bar-band guitarist and bassist, live *karaoke* pianist, hired choral tenor, choral ensemble director, competition clinician/adjudicator, private teacher, university and college instructor, leader/specialist for music activities with amateur groups of adults, special needs adolescents, toddlers, pre-teens and the elderly at summer camps, workshops, hospitals, primary and secondary schools, community centers and retirement homes. Many of these tasks below I have fielded myself, or watched exclusively score-trained musicians grapple with, as in the case of my colleague and “Happy Birthday.” The dissertation that follows is an attempt to explore the possibilities of one element of musical education – currently marginalized, but historically central to professional training – that may help foster aural skills in musicians to aid them in situations such as the following:

- playing bass for a music theatre score in which one of the performance directions is the word “busier”;
- accompanying a rhythm and blues musician as part of an onstage orchestra and fielding a spontaneous request, while onstage in front of a large audience, to improvise a solo line over a chord sequence played by the band’s rhythm section;
- playing cello for a vocal recital in which the classically-trained soloist requires one or two instruments to accompany her in a group of folk, rock, or jazz songs originally arranged and performed by a small band, large orchestra, or both;
- extemporizing an instrumental solo within the performance of an orchestrated jazz score;
- extemporizing a vocal solo within the performance of an orchestrated jazz score;
- playing extemporized instrumental interludes on solo violin between sections of a choral work, which are required to modulate from the key of the previous section to the key of the one following;
- participating in the ad hoc creation of *a cappella* group harmonies, by ear, to accompany cantorial intonations for a synagogue service;
- during a vocal master class, creating realizations for the accompaniment of seventeenth century monodic songs by Caccini, Monteverdi and Purcell, for which the score is only a bass line with number figures to indicate chording;
- pivoting from an attempted singing session, in which a group of special needs children quickly become dissatisfied with the repertoire prepared for them, to an impromptu workshop in songwriting and sound collage;

- accompanying a dance class in which a triple time version of a duple time score is requested;
- accompanying a dance class in which a duple time version of a triple time score is requested;
- adapting a score originally arranged for SATB choir to a piano accompaniment for solo singer, in a different key than is printed, with no time to write it out before the rehearsal and performance;
- harmonizing a melodic fragment conceived and sung by an aspiring songwriter, helping them shape their idea into a finished composition, and teaching them to accompany themselves as they sing;
- playing extemporized variations above a Baroque or Renaissance ground-bass, for a post-concert encore that has not been rehearsed, and for which there is no score;
- learning, transposing, adapting and teaching the melody of a video game theme song to a six-year-old boy over the course of a twenty-minute music lesson, for which the only source is an app on his mother's cellphone;
- creating and assigning harmonies, rhythmic patterns and bass lines, with only a lead sheet score as guide, to a bassist, drummer, guitarist and singers who show up to play and sing for a church service, ninety minutes before it begins;
- ascertaining by ear the intervallic structure of a non-western scale, finding a way to adapt it to a western instrument, and using it for a cross-cultural improvised collaboration with other musicians.

Tasked with comparable challenges, many competent musicians without strong improvisation skills can solve them – given time. But what happens when there are just moments

to respond to a new, unexpected, or unfamiliar musical gesture? Successful boxers are often adept counterpunchers, with the ability to assess the precise angle and nature of an attack in a fraction of a second, and to land their own blow before an opponent lands theirs. Just as boxers must train relentlessly to stay calm and think clearly under threat of injury, so musicians must learn not to panic and freeze when confronted with unanticipated musical puzzles that demand an immediate response. Many of the situations outlined above require a musician to be as quick and adept in instantaneous aural comprehension as with score execution, and to select and deploy the most appropriate action with speed and confidence. To contend in the professional arena requires training as a musical counterpuncher.

Music schools have made attempts to address this issue; improvisation training is offered as a course, or course component. It is taught as an element of performance practice in a specific style, or offered as a general set of improvisatory techniques applicable to multiple styles. Music publishers have published improvisation methods for centuries, and many resources are available for both group class and private study. But lack of improvisation training, and related problems of aural comprehension, continue to be a challenge. Article upon article identifies this issue, and author after author offers solutions technical, practical, inventive and idealistic by turns, but the problem persists.[4] In the world of classical training, within the categories of organ and pre-1800 music, improvisation training retains a tenuous foothold. But instruction is not consistent, and is often dependent on the individual initiative of administrators of programs, private teachers, and students. It remains possible for undergraduate musicians to attain conservatory diplomas, and to complete university degrees, without ever having improvised in any systematic manner. It also

[4] Appalachian State's *Journal of Music Pedagogy* alone has multiple examples: see Porter (2013), Gross (2013), Jürgensen (2019), Engelsdorfer (2018), and Lovell (2019). See also Grymes (2014), Giacomelli (2012), Hickey (2009, 2012), and Niknafs (2013) among many others.

remains possible to graduate from these types of programs without having spent any time exploring the degree to which improvisation and score execution have been coexistent aspects in what is now thought of as classical music – well into the twentieth century – or to have actually had any experience playing classical music in an integrated manner.[5]

Some classical music programs have begun to integrate improvisation instruction into their curricula.[6] But these schools were outflanked decades ago in this area by college programs in which improvisatory training is a standard required element in both daily practice, examinations, and performances. Graduates of colleges whose focus is jazz, and/or other areas of vernacular popular music, are likely to be comfortable and confident both learning by ear and improvising, and thus may be better equipped than many classical musicians to address many of the professional challenges listed above. Jazz training at the undergraduate level has become a viable educational alterative to classical training, for musicians seeking accreditation as teachers or researchers, and employment as composers, performers, arrangers, or administrators. The most well-trained of these graduates emerge with professional score execution skills equal to classical musicians, as well as a creative ease and stylistic versatility the latter often lack.[7] A

[5] See Massimiliano (2017), Mather (1984), Borio and Carone (2018), Gooley (2018), Kinderman (2009), Rasch (2011), Wegman et. al (2014), Haynes (2007), and Haynes and Burgess (2016). These books and articles explore the varied history of improvisational practice within the large category of "classical music."

[6] As of this writing there are improvisation courses to be found at Juilliard School of Music: https://www.juilliard.edu/news/118516/primer-improv-classical-music-students, Guildhall in London https://www.gsmd.ac.uk/music/staff/teaching_staff/centre_for_creative_performance_and_classical_improvisation/, among others. University degrees with a specialization in Early Music may include elements of improvisation training, but it is not a consistent aspect of every program, as it is in less score-dependent styles such as rock and jazz.

[7] At the same time, jazz education has generated its own pedagogical challenges and critiques. The institutionalization of jazz education, replacing what was to a large degree vernacular training, raises questions regarding pedagogical standardization and a resultant dearth of unique improvisational voices, as well as issues of cultural disconnection from the style's afro-diasporic history. Jazz education at the secondary level can also neglect improvisatory skills, focusing instead on ensemble training and stylistic practice. See Eitan (2014), Poulter (2008), Mantie (2008), and Prouty (2006, 2008, 2014). See also Sarath et. al. (2014, 73).

music student with an eye to the pragmatic may not even consider a classical program for training, whether it offers improvisation instruction or not.

Part of this study has involved surveying different schools and methods of improvisation training, and their applicability to institutional instruction. The musical elements that ultimately became the focus of the dissertation will be introduced below.[8] But it should be noted that the attainment of musical skill, including improvisation technique, does not and has never required formal instruction or institutional accreditation of any kind. Learning to improvise requires nothing more than initiative, and resources for teaching – traditionally a mentor or teacher, but in modern times recordings and videos – are not difficult to locate.[9] Self-taught skill need not be virtuosic, or even notably original, to be of use in professional or amateur settings. In many areas of music employment, aspiring professionals can be forgiven for viewing institutional certification as entirely superfluous. Within the commercial music industry, musicians who have never had a formal music lesson can achieve careers and incomes well beyond the highest earning levels of many top classical and jazz soloists. This large and lucrative market includes popular songs, video game themes, and music for film and television. These areas require skills in songwriting, composition, facility with recording technology, skill in combining image and sound in film, television, digital and social media. In these arenas, trained musicians can be outmatched by those with little or no formal background: musicians who may struggle and falter when confronted with printed music, but whose aural skills, creative abilities and technical prowess are sufficiently honed to be able to execute many professional musical tasks. These

[8] The focus of the study has been Western methods and traditions of improvisation though there are elements of Western improvisation training that are comparable to non-Western training, as will be noted later.
[9] Videos for improvisation training, on YouTube and elsewhere, are so numerous that their review and categorization would require its own dedicated chapter, as would a balanced assessment of the efficacy of video learning versus more traditional models. More research is needed in this area, because of the widespread popularity and dissemination of this type of music instruction. For examples, see Hanson (2018) and Whitaker (2014).

types of musicians develop – improvise, if you like – a vocational training suited to their professional needs, interests, commercial and artistic ambitions.[10] Many musicians, including celebrated artists working in areas formerly in the purview of trained classical composers – film and concert work – may have an educational history in which formal training is scant or even absent altogether.[11] Self-taught musicians are also regularly able to compete for institutional employment, because teachers conducting music classes at primary, or even secondary levels of education, are not always required to have music as their central area of expertise. A math or English teacher assigned to a music class, with some ability to play an instrument, create and assign vocal harmonies, and cadge some music education basics from a text, course or online tutorial, can conduct a class well enough to instruct their students in rudimentary theory and history, as well as managing a couple of school concerts a year. A musician who has never received formal improvisation training, seeking to make themselves more versatile and employable, can teach themselves as musicians without formal accreditation have done for centuries – by practice and drill, on their own, or within group sessions, with the guidance of a

[10] Burnard (2012), *Musical Creativities in Practice*, is an in-depth study both professional practices and educational trajectories of professional musicians, as well an analysis of how formal pedagogy does not always address professional needs.

[11] Hans Zimmer and Frank Zappa, both principally self-taught, are two such composers. Zimmer is a preeminent figure in film composition, comparable to Herrman, Korngold and Morricone. Zappa's music continues to be studied and performed in concerts of contemporary composition, and Zappa is on his way to being a canonic figure in this small but influential area. Famously, Zimmer had one formal music lesson and picked up the rest of his training playing in bands, before becoming one of the most prolific film composers alive (Oxford Music Online's Grove Encylopedia has no mention of Zimmer's educational background, but he has repeatedly stated that other than two weeks of music lessons, he has no formal training. See, for instance https://www.jewishvirtuallibrary.org/hans-zimmer). Grove also glosses over Zappa's educational background; while Zappa experienced a very small amount of formal instruction, his education was effectively a self-designed apprenticeship model, involving the study and copying out of musical scores. See Barry (2004), *Frank Zappa: the Biography*. While other prolific film composers have come from a more formal background, such as John Williams and Ennio Morricone, lack of institutional training is not an impediment to professional employment in this area. Stewart Copeland and Mark Knopler are musicians who came to film scoring via previous experience in rock bands. Video game composer Koji Kondo has no classical training, although he appears to have studied organ before beginning to play in bands.

mentor or teacher; with the use of incomplete scores of various types; and in the twentieth century, by listening to and imitating recordings.

None of the above means that institutions should not try to add improvisation training to their curriculum. Indeed, they have a responsibility to do so, if only for the tactical reason of broadening a school's ability to compete within the marketplace of post-secondary education options. Musical activities that require abilities beyond score interpretation are simply too prevalent to make programs that neglect this skill viable or competitive. How should classical music institutions approach this challenge? Amassing improvisational technique is a practice of a lifetime, most effectively begun when a student is a child; a semester or two of instruction for young adult undergraduates cannot embed essential skills in a comparable way. Something of more substance is required than a few exercises found in a commercial text, included as adjunct tasks within curriculum; even a discrete improvisation course as a program requirement is likely not sufficient for the development of lasting ability. The 2017 College Music Society *Manifesto* (TFUMM), observes that change recommendations to curricula that include improvisation training "are usually framed through an additive lens. The existing foundation remains largely inflexible, and provision for core creative experiences is limited to remaining space. TFUMM takes the critical step of advocating that the entire music study enterprise should be built around systematic approaches to these creative processes." (Sarath et. al. 2017, 59)[12] While this might strike some as a next-to-impossible alteration of current curricula, institutional improvisation training should attempt to be as thorough as any other aspect of a traditional music curriculum.

[12] The acronym TFUMM stands for the title of the original 2014 College Music Society report, entitled *Transforming Music Study from its Foundations: A Manifesto for Progressive Change in the Undergraduate Preparation of Music Majors.* The report was later expanded into a book, published in 2017 with additional chapters added. See Sarath et. al. (2017)

This means that it should be integrated into every level from primary to post-secondary training. But considering that many musicians feel that there is already insufficient time for adequate training in current required elements – sight-reading, aural skills, theoretical and historical knowledge of repertoire – how can improvisation be reintroduced in a way that does not detract from other areas? What approach will allow teachers, students, and administrators to balance current program requirements with adding a skill that, for many classical musicians, remains daunting and mysterious?

The task begins by reframing assumptions regarding the area of ability from which improvisation and aural skill is thought to emerge. Because improvisation has become so marginalized in classical training, the skill of being able to improvise comfortably has developed an element of mystery. Informal discussions of musical ability make use of a particular catchphrase that sounds, at best, like a piece of folk wisdom: the phenomenon of the "good ear." For professional musicians this is a shorthand for an apparent comprehension of musical elements, that facilitates an ability to accomplish musical tasks more easily and quickly than the norm. Improvisation is a skill often associated with this fabled quality. I suggest that any use of this phrase in a pedagogical context indicates a lack of engagement with the question of what kind of music training might actually foster a "good ear." Its use by teachers is a figurative throwing up of the hands: a surrender to unexamined concepts of aptitude, and an inability or unwillingness to look critically at established methods of training. It should not be a given that having a good ear – in the sense that one can quickly comprehend and respond to musical tasks like the improvisatory ones in the list above – can never be learned, but must reside forever in the category of innate, unexplainable talent. In different musical situations, it always puzzled me that my colleagues in the non-classical world of music played and sang improvised lines by ear

as a matter of course, while my classical colleagues struggled to function without a score. The high level of musical skill within the latter group made it clear that the issue was not the lack of a "good ear," but with the training they had received. There were clearly elements in the learning process of the former group – however ad hoc it might appear – that were being missed or ignored in classical instruction. So, this dissertation began out of the simple wish to help score-trained musicians be more comfortable when called on to improvise. As I made my own transition from student to teacher and performer, I regularly encountered musicians with skills far superior to my own, but whose reluctance to improvise indicated not just anxiety, but something close to fear. I continued to ponder why this task was such a stumbling block, when it was so easy for musicians with formal training to accomplish; and why classical training was so poorly equipped to impart it. Perhaps institutional jazz training, with its commitment to improvisation as a required element, was the solution? But if so, why did so many of my classmates – and later, students – in jazz programs struggle with basic aural skills, despite being able to improvise competently on more complicated musical structures? The ability to assess and identify basic musical structures still appeared to be missing in this area of study.

These were not academic research questions, but professional ones I pondered, over three decades as a working musician. From these questions flowed other questions that shaped and influenced the research for this paper: can the possession of the fabled "good ear" be something other than a special, individual quality ascribed to only a few? What methods of understanding sonic structure will allow formally trained musicians to manage what musicians without formal training seemed to be able to accomplish so readily? One thing was certain – it could not be as straightforward as adding improvisation training to a curriculum, otherwise hearing basic elements of musical construction would not be such a challenge for musicians in all styles, even

those that improvise regularly. The central research question, as I began to explore different pedagogical approaches to improvisation, became one that could be applied to teachers and students alike*:* What specific elements of musical construction can students be encouraged to pay attention to, when attempting to help them develop improvisatory and aural skills? And within formal training, what is an effective way of teaching this mode of listening?

The following chapters describe the research process of investigating existing literature to discover what type of listening might help accomplish this goal. The particular element that ultimately became my focus – intervallic suspension and the interplay of dissonance and consonance that suspensions create – was considered central to musicians' training in the past, but is curiously downplayed and marginalized in modern music training. And in modern improvisation pedagogy, it is often missing altogether. The following will demonstrate the gap between the usefulness of this element as a pedagogical tool, and the degree to which it is deployed in modern training. It is that gap that this paper is written to address. A caveat: what follows is intended to augment, rather than to replace, existing methods in improvisation and aural skills training. It is not intended to be conclusive in a manner that obviates other approaches. There are too many variables in music to assert that focusing on this specific element is the key to having a "good ear," in any empirical sense. But I will argue that its absence at the beginner level has been to our detriment, and that its reinstatement can be useful for both students and teachers. So, what follows has potential ramifications for what is currently considered basic music training, and could suggest a reassessment of current protocols in improvisation and aural skills at both beginner and advanced levels.

The rest of chapter one briefly surveys four different categories of improvisation research and resources: cognition, history and musicology, pedagogy, and advocacy. It is noted that

improvisational ability is attainable without the need for formal study, and that improvisation training in jazz programs already makes them a practical training alternative to classical study. Seventeenth- and eighteenth-century Neapolitan conservatory partimento sources are presented as a potential tool for modern improvisation training in an institutional setting. The elements of referents and schemata, error correction and physical drill are specified as necessary aspects of improvisation training (Pressing 1988), especially in style-specific areas of improvisation. As was the case in the ancient conservatories, improvisation is considered primarily as a vocational and artisanal aspect of professional musicianship training; a technical skill increasingly necessary for making music in a modern, pan-cultural environment. The potential of keyboard cadences from partimento sources to lead to a reconsideration of the standard introductory order of musical elements (scales, intervals, chords, inversions, chord progressions, phrases sentences) is asserted.

Chapter two surveys current partimento and solfeggio research and its burgeoning impact on the study of European music history, musicology, performance, theory and analysis. Recent applications of partimento practice in beginner and undergraduate music training are surveyed. It is noted that modern partimento instruction does not regularly include and integrate the earlier step of historical solfeggio drill (which combined sight singing, vocal embellishment and counterpoint instruction) in the traditional manner of Neapolitan conservatory training. It is also noted that while partimento models are being deployed for modern training, they are being structurally altered to conform with modern pedagogical protocols, rather than spurring musicians to re-examine those protocols critically. The question of why partimento training and skills fell into disuse is addressed. It is concluded that while partimento research is currently being deployed in improvisation training, music analysis, keyboard skills and early music

performance practice, partimento study remains a niche area of specialty in advanced classical music studies.

Chapter three analyzes the three basic cadence models used in Partimento training – Simple Cadence, Compound Cadence and Double Cadence (It. *Cadenza Semplice*, *Cadenza Composta*, *Cadenza Doppia*). Drawing on research on music cognition, it is demonstrated that intervallic suspensions in these cadences elicit processes of sonic anticipation and expectation; that they can be seen as a controlled formalization of error perception and correction: and that two-part contrapuntal model for melodic drill fosters aural skills awareness more thoroughly and efficiently than a one-voice drill. In two- and three-voice models, these cadences have the potential to convey important lessons about harmony, melody, rhythmic division, syncopation, contrapuntal intervallic motion, phrase execution and compositional form, with an economy of musical material. It is noted that elements synthesised in these cadences are normally separated and stratified in the more standard introductory order of current training (scale, key, interval, chord, chord inversion, chord progression). These elements are relegated to intermediate to advanced training, a separate unit of introductory written species counterpoint, or buried and deemphasized in tables of melodic variation examples. It is concluded that in light of elements in partimento and music cognition research, alteration of the standard order of introduction of musical elements should be reassessed in institutional training.

Chapter four examines the place of the intervallic suspension in current music training, and finds essential differences from the Neapolitan training. Unlike beginner models for scales and chords, there are currently no beginner schemata deployed for the introduction of intervallic suspensions. Instead, suspensions are introduced relatively later in training; other than in fourth species counterpoint, there is no set place for this element in modern music training. A basic

combined version of the three-cadence sequence is presented, to be deployed as a standard model for introduction.

Chapter five explores the possibilities for reintegration of these cadences into modern aural skills and improvisation training. Azzara and Snell 2016, *Assessment of Improvisation in Music,* is identified as a useful six-part set of guidelines for institutional improvisation drill and assessment (repertoire, vocabulary, intuition, reason, reflection, and exemplars). Beginner exercises are presented that explore the uses of the three cadences, in models that can be used in the development of aural and creative skills.

Chapter six begins with a personal reflection about a childhood experience of using schemata in musical exploration and play. The use of the cadence sequence in style-specific contrapuntal improvisation is explored. It is noted that these cadences do not have to replace protocols of modern institutional training, but can augment current pedagogical models to increase their effectiveness, thoroughness and creative potential. It is observed that these models have the potential to revitalize current customs in institutional education, and to help reorient classical training back towards its roots in artisanal apprenticeship. The study concludes with final observations of the cadence sequence's use in formal and aesthetic aspects of music composition.

The new millennium has seen an increase, even a boom, in improvisation research. From relatively sparse beginnings, academic improvisation research has become broad, deep, even overwhelming.[13] The commercial success of the Early Music movement in the second half of the

[13] Nettl (1974), "Thoughts on Improvisation: A Comparative Approach," was an early investigation of issues surrounding study of improvisatory practice, Nettl's influence was such that this essay is regularly referenced in bibliographies, and appears to have functioned as a kind of springboard for other researchers to take up further investigations of the practice, including Nettl and Russell (1998) and Solis and Nettl (2009). Lewis and Piekut (2016), the *Oxford Handbook of Critical Improvisation Studies*, in a survey of improvisation literature, notes that "new articles from a sizable group of distinguished senior and emerging scholars representing a wide variety of

twentieth century, and the rise of research into pre-1800 performance practice, has led to a growing awareness of the improvisational roots of classical performance and composition.[14] Musicological research has expanded beyond the works and histories of the musicians of the European classical music canon, into the arenas of popular music studies, jazz and non-western music. Music cognition research examines the role of improvisation in cognitive development. These different areas of research render increasingly untenable customs and traditions of classical music education that downplay or even ignore creative training; institutions are increasingly compelled to consider curriculum reform.[15] A comprehensive survey of improvisation literature is well beyond the scope of this paper, but briefly, the literature can be sorted into four general categories: music cognition, history and musicology, advocacy, and pedagogy.

disciplines in the humanities, sciences, and the arts," and observes that the field also encompasses a large amount of "ethnographies, analytical case studies, … particular traditions, methods, practices, genres, or works... biographies, interviews, first-person narratives, and how-to discussions of practice…. discussions of skill development, and/or working with children on musical improvisation." (Lewis and Piekut 2016, 2)

[14] The term "Early Music" has the potential to be as confusing as the term "Classical." For the purposes of this discussion, it refers to the mid-twentieth century movement to attempt to understand and recreate elements of original practice in the performance of canonic repertoire, It was important for its destabilizing influence on mainstream classical music performance, and the degree to which it compelled musicians to scrutinize the habit of performing music from disparate eras and traditions with a standardized approach to interpretation. It is capitalized in this dissertation to avoid confusion, and to specify its place as a distinct strain of classical training and performance. For a brief history of the Early Music movement, see Haskell 1988.

[15] See Mark and Gary (2007) for a "survey of reform initiatives" in the USA (Sarath 2017, page 57n). See also Woodford (2009) for a discussion of Canadian music education reform.

Music cognition and improvisation

Pressing 1998 summarizes cognitive processes that facilitate acts of musical improvisation:

> The improviser must affect real-time sensory and perceptual coding, optimal attention allocation, event interpretation, decision-making, prediction (of the actions of others), memory storage and recall, error correction, and movement control, and further, must integrate these processes into an optimally seamless set of musical statements that reflect both a personal perspective on musical organization and a capacity to affect listeners. (Pressing 1998, 51)

Beaty 2015 notes the additional complication of improvising in a group context, in which music generated by an individual must also fit within the larger sound arena generated by multiple participants:

> The improvising musician faces the unique challenge of managing several simultaneous processes in real-time – generating and evaluating melodic and rhythmic sequences, coordinating performance with other musicians in an ensemble, and executing elaborate fine-motor movements – all with the overall goal of creating esthetically appealing music. (Beaty 2015, 109)

Researchers have observed that study of musical improvisation improves our general understanding of cognitive processes. Beaty notes:

> Scientific improvisation research investigates the practice at both the level of the physical and the cognitive, and in doing so helps scientists gain insight into the workings of the human mind. The question of how musicians improvise is relevant not only to the psychology of music, but also has implications for the psychology of creativity, as understanding the nature of creativity at a high level of skilled performance may shed light on domain-general processes underlying creative cognition. Improvisation research may also inform basic cognitive neuroscience because it provides a unique look at how acquired expertise shapes brain structure and function. (Beaty 2015, 109)

Berkowitz 2014 concurs:

> Musical training appears to yield cognitive benefits that are not merely music-related. If improvisation training leads to a shift in the ability to activate goal-directed, top-down attention, further research could explore whether training in improvisation actually enhances the ability to modulate attention in this way, and whether this remains limited to improvisatory tasks or is available across domains. (Berkowitz 2014, 11)[16]

[16] See also Berkowitz (2010).

` Beaty, Berkowitz and other researchers make frequent reference to the work of Jeff Pressing, whose untimely death limited his contribution to several influential articles. “Pressing laid the groundwork for a cognitive understanding of musical improvisation. In spite of his focus on cognition, his work is characterized by recognition of the integral and often dominant role of motor function in the performative act of improvisation.” (Dean and Beilis 2014, 39) Pressing is cited in many discussions of the mental and physical processes involved in improvisation practice (1984, 1988 and 1998). Several of his concepts will be referenced in chapter three.

As scientific data often relies on comparison of control groups, cognitive neuroscience studies collect data regarding brain activity observed in the accomplishment of different musical tasks, cross-referenced with improvisatory elements. Some studies contrast brain activity detected in sight-reading versus improvisation (Harris/de Jong 2015), in some cases with study of both audience members’ and performers’ brain patterns (Dolan and Sloboda 2013), and in comparison studies of improvisers from different background and music traditions (Matare 2009). Other researchers target specific musical elements such as rhythm and melody (De Manzano/Ullén 2012), while others attempt to identify specific brain activity pertaining to jazz improvisation **(**Rosen et.al. 2020) and in the realm classical music (in the case of Dolan and Sloboda 2013, with study of both audience members’ and performers’ brain patterns). Other studies attempt to analyze brain activity according to stylistic parameters, comparing brain patterns of jazz and classical musicians at improvisation and sight-reading tasks respectively (Belden et al. 2020). Musical improvisation is tested for its potential to improve cognitive performance in other tasks (Abrahan et. al. 2021), as well as more general music pedagogy (Colwell 2002 and 2006, Deliège and Wiggins 2006, Telesco 2013). Cognitive research into improvisation can be seen as a branch of music cognition studies, and it is often used to argue for

integrating improvisation training into general music instruction. The cognition research area most salient to this dissertation is the experimental work inspired by theories of Leonard Meyer, and the writing of David Huron, as well as the writing of past theorists such as Zarlino and Kellner, whose observations regarding the effect of music on the listener anticipated experimental research in music cognition.

Historical and musicological research

The role of ethnomusicology is central to the development of improvisation research.[17] The rise of this discipline – originally the study of non-western music traditions – compelled music researchers to investigate improvisation as an essential element of compositional practice, as many non-western of styles could not function without it, notably the court traditions of the Middle East and the Indian subcontinent. Traditionally, musicology was strongly focused on sociocultural contextualization of the works by composers of the European canon. It has now become the multivalent study of all music in every society. In a sense, all musicology is now ethnomusicology, or vice versa.[18] Partly because of the influence and commercial success of the Early Music movement, historians and researchers interested in the European tradition have expanded beyond focusing on canonic composers to examine forgotten musicians, treatises, and other historical documentation. This research has included investigations into historical improvisation, often undertaken by performer-scholars.[19] In this area, musical scores are viewed less as discrete guides for note execution, but as one piece of a puzzle that must include other pedagogical, theoretical, cultural, and performative elements, many of which can only be imperfectly guessed at and reconstructed.[20] Institutions that specialize in pre-1800 music

[17] Seminal ethnomusicological texts in English are Nettl (1964), Blacking (1973), and Feld (1982).
[18] Amico (2020) argues against the stratification of the two research areas, and calls for, the "(sub-) discipline's cessation" (Amico 2020, 31). See also Korysn (2003), *Decentering Music*, on the challenges of cross-disciplinary dialogue within academic discourse.
[19] See footnote 5 and 30. For dissenting voices regarding improvisation, ornamentation and over-interpolation of existing scores, see Parrott (2015, 1-15), and Jerold (2016), especially chapters nineteen and twenty ("How Composers Viewed Performers' Additions" and "The Varied Reprise in Eighteenth-Century Instrumental Music: a Reappraisal.") See also Taruskin (1995, 273-291) "A Mozart Wholly Ours,", which addresses the controversial question of improvisation in interpretation of Mozart's works, in particular his piano concertos.
[20] The current term for this approach to research and performance is "historically informed performance," or HIP. Articles in this area are legion, as are the many disagreements about accurate historical practice. See footnotes 5 and 31, also articles by Bania (2014), Bass (2008), Balint (2014), Kenny (2008), McGee (2008), Rubinoff (2009), Seletsky (1996), and Zaslaw (1996). See books by Nuti (2007) , Mariani (2017), Sherman (1997 rev. 2003), and Smith (2011).

integrate improvisation into training.[21] Others, focused on later music, provide options for exploration of this skill, with workshops and discrete courses. Individual teachers share their work in lectures, articles, and video resources. McGill's Professor Peter Schubert, in addition to his articles and books, posts YouTube videos explaining and demonstrating the practice of improvising vocal canons.[22] Harpsichordist Elam Roten's "Early Music Sources" YouTube channel offers well-sourced online lectures on performance practice, including improvisation techniques, with PDF versions of historical treatises and primary sources available for download.[23] Researchers of performance practice examine historical improvisation treatises as resources in how to train modern musicians in this skill, and produce modern commercial methods on how to improvise in an historical style (Rebours and Boquet 2007, Erhardt 2014, Ruiter-Feenstra 2011). Concert presentations of pre-1800 music increasingly emphasize improvisatory skill as an element of performance practice. Organ Competitions in organ performance often have an improvisation requirement; this now also occurs for instruments such as flute and violin.[24] Unlike jazz studies, however, all these initiatives have not yet resulted in a common approach to improvisatory training in classical studies, nor a standard framework for improvisatory testing in exams or recitals.

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[21] Schola Cantorum Basiliensis, founded in 1933, is exclusively devoted to the research and study of Early Music, but notable programs within music schools are Conservatorium van Amsterdam, Guildhall, Juillard, McGill University, etc. among others.

[22] Peter Schubert Video playlist: https://www.youtube.com/channel/UCPdwE21gqS7voKPI2GDs_-A. World Wide Web June 2019.

[23] Early Music Sources website: https://www.youtube.com/channel/UCJOiqToQ7kiakqTLE7Hdd5g. World Wide Web June 2019.

[24] The MA Festival (Bruges) has a competition in which an improvisatory component is a requirement: https://macompetition.com/about/the-competition.

Improvisation pedagogy

Improvisation pedagogy can be generally divided into two different publishing categories: academic articles, and commercially produced instructional texts. The references that follow are only a fraction of the voluminous amount of material available to both help and confound musicians looking for guidance in their own training and that of their students. Jazz and rock improvisation materials are oriented to teachers working specifically within those styles.[25] Other methods are targeted at classical musicians, either to help with general skills (Friesen 2012), or to build knowledge of a historically situated style.[26] Some improvisation training manuals target a specific instrument, such as Humphries (2010) or Oestereich and Pennington (1981), both designed for pianists. Improvisation drills are also integrated into university level aural skills training materials (Phillips et al. 2011, Jones et al. 2014). Academic articles, books and dissertations examine pedagogical possibilities within specific styles such as jazz (Hargreaves 2012, Louth 2012, Meadows 2006, Salley 2007) or pre-1800 European repertoire. Recognizing that rock musicians often learn "by ear," some writers have investigated the possibilities of pedagogy that includes the skills developed by learning music in this manner (Lilliestam 1996, Green 2001 and 2008).

Both academic discussions and commercial publications are essential resources for music education, but there is not always a strong connection between the two areas. Academic articles on improvisation pedagogy do not enjoy a large readership among working musicians. Access to academic materials is often restricted, requiring a paid membership or affiliation with a

[25] There are innumerable jazz and rock instructional publications available. Levine (2011) has been widely used; see also various publications from the Berklee College of Music *Get Your Band Together* Series. The "music minus one" publications of Jamie Aebersold – recorded backing tracks for improvisational drill – has been widely imitated. Online Youtube resources of this type are now freely available.
[26] See footnotes 5, 20 and 30.

university or college. Because of this, concepts and methods set out in these resources may or may not easily filter through to commercial literature, or to individual teachers. *The New Handbook of Research on Music Teaching Learning* asks: "What research informs music textbook development? In recent years, publishers have conducted marketing research that relies on information gathered from experts in the field; however, very few research studies on the effectiveness of music textbooks have been published." (Hanley and Montgomery 2002, 125)[27] The gap between commercial and academic pedagogical materials has implications for both improvisation training and music education in general. Competition can be fierce to produce materials that will be competitive and profitable in the huge education market. The economic success of academic publishing houses relies to some degree on the sale of undergraduate texts, which help underwrite the production and smaller print runs of scholarly monographs on more esoteric topics.[28] Elements to augment textbooks, such as computer resources and databases for testing, tracking homework, inputting and calculating marks, etc., may supersede other considerations when a teacher is deciding what materials to purchase. If they are operating within a large institution, with many students to meet and assess, it would be hard to fault them for opting for the convenience and efficiency of data accumulation through internet-based on-line drills and exercises; but it does not follow that these resources are pedagogically superior to others. Teachers regularly mix and match, alter and adjust different texts to create a curriculum, but even combinations of different texts may still deliver insufficient or incomplete instruction. Finding the time needed to read, assemble, and create a curriculum from the available resources can be a challenge. Economic and logistical constraints may only allow a teacher to pick one

[27] See also Clementz (1990).
[28] See Forman (2005) and Rhine (2011) for discussions of this economic model.

text, and hope that it will address the majority of their students' needs. Despite assurances from authors that a commercial text has been field-tested, musical needs, abilities and resources vary so widely that it is unlikely that any published method can be effective for more than a fraction of the education market. Both academic articles and commercial resources will always be an imperfect fit for educational goals and resources that vary widely from locale to locale.

Improvisation advocacy

Writers in this category champion improvisation as a correlate of political activism, social betterment, and spiritual improvement, or sometimes all three at once. The *Oxford Handbook of Critical Improvisation Studies Volume 1* observes that "both scholars and journalists routinely offer the notion of musical improvisation as symbolic of democracy itself." (Lewis/Piekut 2016, 19) The 2014 CMS *Manifesto* states that "the culturally narrow horizons of music study as nothing short of a social justice crisis." (Sarath 2017, 61) In its conclusion, the report states:

> A strong argument can also be made that the transformed model of music study advanced by TFUMM will shape a new generation of artists/visionaries who will transmit their broad and transformative wisdom to society and positively impact many of the most pressing issues of our times…ecological crises, poverty, famine, disease, violence against women, child abuse, ideological and extremist tensions. (Sarath 2017, 83)

"The Share: Improvisation and Community in the Neoliberal University" touts the concept of improvisation as societal transformation with near-utopian intensity:

> If improvisation is a useful metaphor for democratic social practice, then play gives life to that metaphor, suturing the play-space to the real-life scenario by actively and intentionally cultivating structures of empathic thought and feeling that will enrich a kind of interior citizenship that is predicated on dialogue and empathy: a *citizenship of the heart*….So let us sing and dance in balconies and in parks, let us come together as communities, and let us improvise a new-old kind of citizenship that grows from empathy, love and beauty. (Laver 2016, 253)

The chief author of the CMS Manifesto states, in another publication, "If it achieves the reform needed to rectify this divide, the field will not only flourish but emerge as a healing force for all education and humanity," (Sarath 2013, 309) before evoking the cosmic: "These very kinds of improvisatory transformations also manifest on a planetary scale and pose extraordinary ramifications for Ensemble Earth's navigating the chord changes at hand." (Sarath 2013, 399)

This dissertation is a hybrid: while it focuses on particular elements in music pedagogy, any discussion of improvisation that includes a pedagogical component becomes a piece of advocacy by default, because of the degree to which improvisation continues to remain outside the parameters of standard classical training. But for this project, improvisation advocacy has ironically been the least helpful of the four areas of improvisation discourse. The earnest italicization, incantatory rhythms, and sociopolitical agendas found in this type of writing attest to the authors' determination to confront issues of societal inequity and injustice. At the same time, this idealism, however inspirational, cannot render it exempt from critical scrutiny, especially when assessing what kinds of improvisation training effectively builds creative skills. The rhetorical intensity of much improvisation advocacy may strike some as overreach, and compel anyone who does not share its fervency to question both its practical application and its more ambitious claims. Reading the assertions above, and others that demonstrate similar idealism and ambition, a skeptic might observe that if multiple discrete acts of improvisation, enacted over centuries, had the inherent power ascribed to them, one might reasonably expect seismic global change to have occurred before now. Many aspiring musicians are likely to see improvisational ability in more prosaic and straightforward terms: as one more tool in one's professional arsenal to help in the ongoing task of soliciting and maintaining employment. Or, colloquially, stuff I make up that gets me paid, substituting for 'stuff' a word not primarily associated with academic discourse. Historically, the act of improvisation has functioned as an artisanal skill – comparable to woodworking, tailoring, culinary arts, and so on – that can be commodified and sold on demand. Far from being a force for social change, improvisatory skill has more often been just one more musical element among many to be assigned value for sale or barter. In the twentieth century, improvised music has been recorded, packaged and converted

into quantifiable units of sale by companies that produce and market recordings, and clubs and concert halls that book live performances. The CMS Manifesto correctly asserts that current classical training represents an alteration of the style's earlier parameters: "Were Bach, Beethoven, Mozart, Clara Schumann and Franz Liszt alive today, their musical lives would likely more closely resemble those of today's creative jazz artists and other improvisers-composers-performers than interpretive performance specialists whose primary focus is repertory created in, and for, another time and place." (Sarath 2017, 55)[29] But in their zeal to claim past improvisors as proto-revolutionaries, the authors neglect to give a fully contextualized picture of these past artists' professional lives, which took place within a market economy that paid them to perform, compose and improvise for the entertainment and diversion of audiences and patrons.[30] Few improvisors of any renown have escaped this employment model, unless they had other sources of income that allowed them to share their art without financial recompense. Historically, improvisatory skill has most often been rented and paid for by those with sufficient education, leisure time, and income to hire musicians or attend concerts, for both the personal pleasure of listening and the social advantages conferred by the accruing of status through displays of discernment. This type of patron – rock audiences in modern concert venues, modern jazz aficionados in 1950's bistros, pre-twentieth-century European aristocracy, royalty and clerisy in their churches, concert halls and theatres – have rarely demonstrated any substantive commitment to breaking down the economic and cultural structures that made it possible for

[29] It should also be noted that it can be anachronistic to apply the term "improvisation," with its many modern associations and resonances, to the improvisatory cultures of the past. In nineteenth century composition and performance, "improvisation had not been 'invented… [t]he noun 'improvisation' hardly existed in musical discourse. The verb forms – 'to fantasize', 'to prelude', 'to extemporize' – were far more common, indicating that [improvisation] was conceived as a practice rather than an abstract category of musical production. With the exception of the north German free fantasia… there was no shared or widespread understanding that improvisation differed in some fundamental way from other modes of production." (Gooley 2018, 53).

[30] Bach's employment was primarily aristocratic, religious and civic. Mozart and Beethoven added to this mix subscriptions for public concerts.

them to fund and commission the artists whose work they enjoyed. Situated within a system of compensation solicited and bequeathed for artistic services provided – as it will be the instant the player puts out the tip jar, takes a collection, sells a ticket, receives a benefaction from a private patron, or secures a grant from an arts council –improvisation has no unique property different from any other musical endeavour, and may strengthen and reinforce structures of economic inequity as much as break them down.

Improvisation advocates are aware of the political and social structures that shape the creation and reception of music; a sizeable amount of writing in this area is devoted to analysis and criticism of societal and educational structures that influence and constrain music performance and education, as well advocacy for the alteration, even dismantlement, of these structures.[31] But the insistence that the act of improvising has inherent qualities that can, by its very nature, disrupt and alter the world for the better, leads writers to sort musical activities into oppositional binaries – classical music versus jazz, mainstream jazz versus experimental jazz, orchestras and marching bands versus small combos, written composition versus spontaneous improvisation, score interpretation versus improvisational creativity, passive audience member/active performer versus egalitarian collective of participants, with the former categories negatively characterized as conservative, and the latter positively characterized as progressive.[32] These oppositional categorizations elide and obscure the many ways in which these various categories are not oppositional, but are regularly combined and integrated in both amateur and

[31] See Hickey (2009), Bell(2014), Lewis (2013), and Fischlin et al. (2013).

[32] Margulis (2014), *On Repeat*, critiques this last category as insufficiently nuanced, arguing that cognitive reception of music is inherently active, and that there is too much interpretation of information occurring in the brain to be able to characterize the act of listening as passive. "I would…propose…that the notions of participatory and presentational are imaginary poles, with substantial residue of the participatory clinging to much music that appears to be strictly presentational. When elements of the participatory, such as repetition, occur in presentational styles, they don't ordinarily trigger overt participation, but they do elicit a kind of imagined, virtual participation that can serve to powerfully involve an audience." (Margulis 2014, 11)

professional music-making. Employment opportunities for the type of music generated by experimental improvisation collectives are relatively scant, and experimental musicians may have to be proficient at more traditional styles, within traditional ensembles, to generate income.

Ultimately, the insistence that one form of music making is inherently better or healthier for a society than another, is neither a new nor innovative concept. In the past century there have been arguments made for the liberal social value of jazz, rock, folk music, and the classical avant-garde; all of these styles have appeared to correlate to aspirations for social justice, in various historical contexts.[33] In the specific case of improvisation, Gooley 2018 argues that aspects of improvisation's current acclaim are rooted in nineteenth-century music discourse, which contrasted improvisational freedom with stultifying aspects of bourgeois concert culture: "the vision of musical improvisation as a repository of a social and ethical 'good' – a vision central to critical improvisation studies – is ultimately the product of the early nineteenth century, and owes its initial discursive development to literary romanticism." (Gooley 2018, 5) Examining Guelph University's Critical Improvisation Studies program, which situates improvisation in strongly political terms, Gooley argues that the "discourse of critical improvisation studies (CSI)… tends to valorize the self-sustaining, self-sufficient artist's collective" but devotes "relatively little attention to questions of public communication, aesthetic judgement, and the divisions between professional improviser and lay audiences implicit in any concert scenario." (Gooley 2018, 279) Even advocates themselves are beginning to question the notion of improvisation as inherently progressive: "I should say that I've grown a little bit wary

[33] For cultural and political claims made for other styles, see Denisoff (1971), Sinclair (1972), and Baraka (1963). Left-wing organizations, especially in the first half of the twentieth century, used musical performance and composition, especially of folk-derived music, as tools for recruitment, education, and advocacy. Rock and jazz were more overtly commercial styles, but were often equated with the forces of social change by virtue of their stylistic and technical differences from classical music, and its perceived association with hierarchical social structures.

or skeptical about the use of the word improvisation to stand in for freedom or liberation… I feel like too often we're cherry-picking moments that we feel are expressing a certain ideal of freedom." (Iyer 2015, 87)[34] In the end, the claims made in improvisation advocacy have been made too often to be considered fresh. The belief that music or other art forms have the power to improve individual and collective ethical, civic, spiritual conditions to society's greater benefit – rather than to simply bring pleasure or solace, which is no more than many look for and expect from music – is centuries old.[35] But for all that this concept is venerable, it remains empirically untenable. Improvisation advocacy is merely the latest manifestation of this stubbornly idealistic perspective.[36]

[34] For another critique of the utopian perspective from a practitioner and advocate of free improvisation, see Corbett (2016).

[35] See Clayton (2106) "The Social and Personal Functions of Music in Cross-Cultural Perspective," in *The Oxford Handbook of Music Psychology*. Clayton proposes four essential functions for music: regulation of an individual's emotional, cognitive, or physiological state; mediation between self and other; symbolic representation; coordination of action.

[36] In the nineteenth century, A.B Marx and E.T.A Hoffman's writing on German composers argued strongly for the superior spiritual benefits of these musicians' work, not dissimilar to qualities modern writers have claimed for the work of John Coltrane, and other notable modern improvisers. See Sarath (2013, 232).

Partimenti and improvisation

At the end of this brief tour of improvisation literature, the challenge remains: how to teach the skill in a manner that allows for both creativity and rigour, while negotiating the challenges of working with student populations with diverse skills and backgrounds, in private and institutional settings. The varied resources and areas of research above demonstrate that consensus on an ideal pedagogy for improvisation is next to impossible to achieve. Along with logistical, institutional, and economic challenges that any educational model must address, the concept of improvisation itself is subject to disparate goals and agendas. Improvisation as self-expression, creativity, stylistic mastery, social justice, technical prowess, commercial technique – any of these imperatives, singly or in combination, will influence our perception of both the practice and the pedagogical tools we choose to deploy. No choice will satisfy every agenda.

For the purposes of this dissertation, we will define improvisatory ability as a set of technical and creative skills that allow musicians to pivot quickly in unfamiliar situations, grasp the formal and stylistic parameters of a given phrase or composition, and select the appropriate musical response. Instruction should be able to encompass both the needs of an aspiring professional, and an amateur for whom music will be a passion and developed skill, but not a source of income – the latter category encompassing the majority of students who receive music instruction. Within an institutional setting, improvisation skills should be integrated with training in ensemble playing and score execution. Rather than seeing improvisation training as an aesthetic or cultural/political alternative to the attainment of these skills, let us instead pragmatically assert that both creative and interpretive skill are complementary abilities needed to be able to make music in informal and amateur settings, as well as in professional circles. These two areas need to be fostered at both the basic, secondary and undergraduate levels of

instruction, and neither should be considered more valuable than the other, any more than the ability to build a roof would be considered superior to the ability to construct a basement. Pedagogy that neglects creative training or basic score reading skills, leaving one or the other to later stages of training, runs the risk of putting students at a disadvantage in both amateur and professional situations that they will encounter outside the scholastic arena. In what follows, it is most useful to frame improvisation primarily as a form of communication – between professional and amateur musicians, performers and audience members, a group of seniors in an assisted living residence, a toddlers' song circle at a community drop-in, and other ensembles or informal groups of any type – and only secondarily as a means of self-expression, or path towards social or personal betterment. If an ethical, moral, or socially relevant justification for improvisation training is required, let it align with basic numeracy and literacy: equipping people with the cognitive skills that allows them comfortably, competently, and creatively communicate with others in a variety of musical contexts.

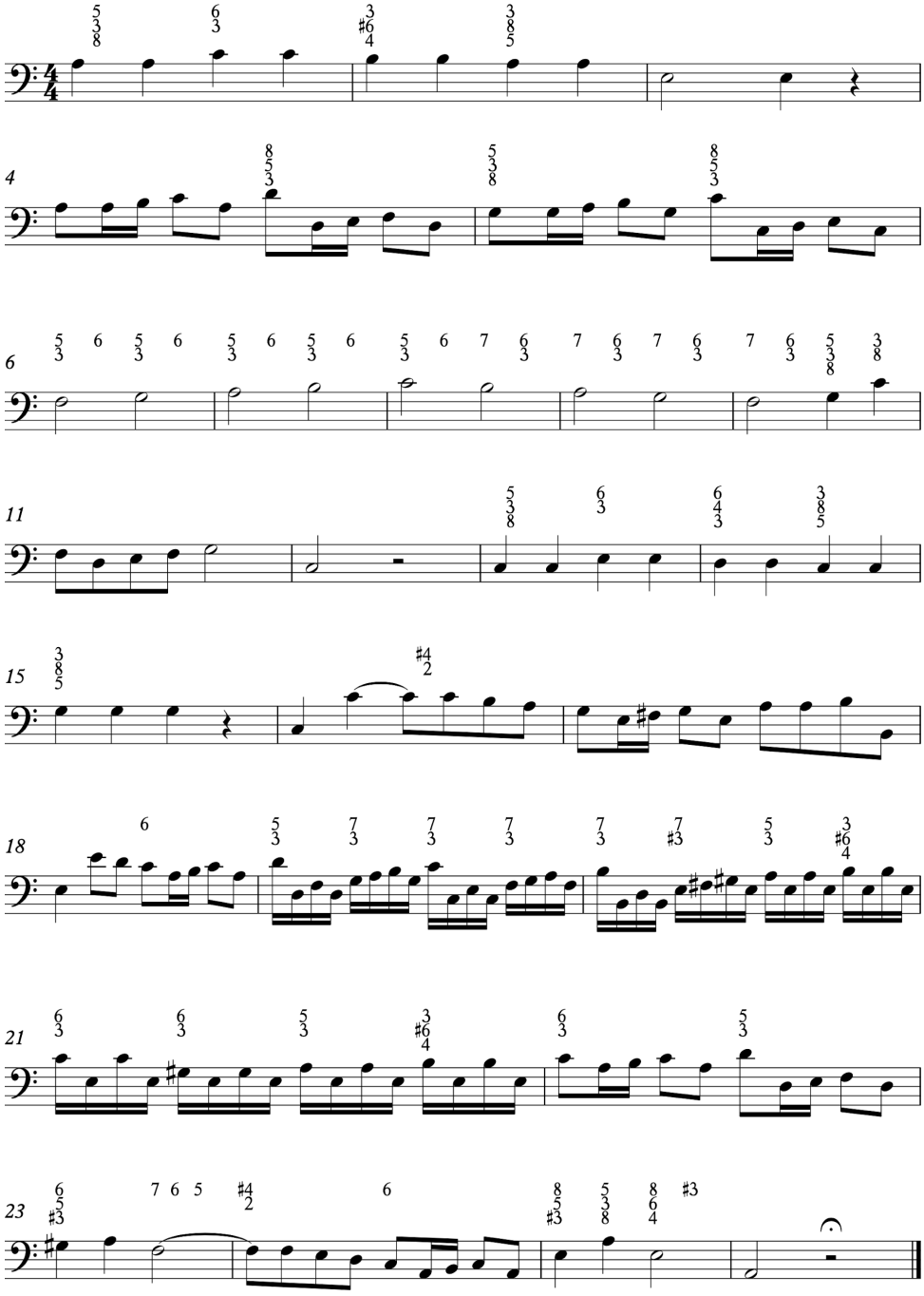
This dissertation explores schemata from creative training in the Naples conservatories during the seventeenth and eighteenth centuries. These schemata are drawn from research within an innovative area of musicology that has recently brought renewed attention to methods that were once a part of standard classical music training. These methods can present challenges for musicians trained exclusively in score interpretation. Observing students' struggles with improvisation, University of Rome Professor Giorgio Sanguinetti writes, "In my partimento classes I have met brilliant concert pianists who could play Rachmaninoff 's Third Piano Concerto with ease. But when asked to play the easiest of Fenaroli's partimenti they faltered in the realization, their fingers stiff with anxiety. Can we reasonably ask them to improvise a cadenza in a Mozart concerto?" (Sanguinetti 2014, 4-5) Leaving aside the challenges of

improvising a convincingly Mozartian cadenza, musicians might pose several questions: what the heck is a partimento?[37] Why should anyone care that Fedele Fenaroli – a forgotten composer – wrote a partimento? And why should a pianist possessing the technique to master the *Rach Three* bother even trying to play a – well, what is this thing, anyhow?

At its simplest, a partimento is a bass line exercise for over which a musician is expected to improvise a melody. In the manner of figured bass, sometimes some specific melodic motion above the bass line was specified, as in the partimento by Giacomo Insanguine (1728–1795) below. (Figure 1.1) But this was not always the case; partimenti were often unfigured, as apprenticed learned to recognize the unspoken stylistic signals encoded in the bass lines themselves. Partimento form ranges from a diatonic phrase of several measures to a sketch for a multi-voice fugue with extensive chromatic character and structural complexity.

[37] There has been a notable increase in online references to partimento training in the last five years, but the short Grove Music Online entry for Partimento was published in 2001, and has not yet been updated, https://doi-org.ezproxy.library.yorku.ca/10.1093/gmo/9781561592630.article.20981. The extensive Grove entry on Naples has a section on the renowned Neapolitan conservatories, but no mention of partimenti.

Figure 1.1. Insanguine partimento No. 6.



Partimenti were predominantly used throughout the eighteenth century during the cultural heyday of Neapolitan influence, and into the nineteenth century, albeit in altered form. Court musicians were required to produce, at a furious pace, the fashionable music that their

aristocratic patrons expected, and partimento training helped accomplish this task. Partimento research and training has enjoyed a relatively small but fervent revival of interest in recent years, chiefly because of the groundbreaking work of Sanguinetti, Robert O. Gjerdingen and other academic musicians and researchers. Modern partimento discourse has a cross-categorical character, bridging the gap between different areas of improvisation research. In music analysis, partimento models provide insight into structural elements in the work of historic composers. In music history and musicology, partimento instruction shines a light on forgotten or ignored aspects of pedagogy and musical culture, particularly the influence of Italian music throughout Europe, and especially on renowned German composers – a connection often downplayed in many music history texts. Some partimento books and articles also draw on music cognition research, with the pedagogical elements in partimento instruction illuminating understanding of the creative processes and habits these exercises were designed to foster and train within the mind.[38]

Gjerdingen (2007), *Music in the Galant Style*, posits that partimento training provided apprentice musicians with a series of musical units – schemas, or schemata – that could be combined to create both individual phrases and extended compositions. These schemata were internalized mental models recognized by both composers and audiences. Audiences who heard them, especially when used in repeated instances, learned and enjoyed them without necessarily having direct procedural knowledge of their technical structure, not dissimilar to the manner in which modern audiences recognize familiar chord, melodic and bass patterns without being able to name the specific technical elements of which they are comprised. Musicians who had learned

[38] It is principally Gjerdingen's work that I refer to here, as will be made clear in chapter two, especially "Psychologists and Musicians: Then and Now," (2013) and "Schema Theory as a Construction Grammar," (2016) as well as *Music in the Galant Style*. Byros (2012) also takes a similar approach.

these models could compose and extemporize quickly, a crucial skill in a society that required new compositions constantly, from background *tafelmusik* to three-hour operas. This type of training was not unique to music-making in European courts. Gjerdingen draws parallels between court musicians of different cultures and locales in their approach to learning a corpus of knowledge:

> If one adopts the perspective of twenty-first-century ethnomusicology, eighteenth-century Galant musicians in Naples, Dresden, Versailles, or London do not look so very different from eighteenth-century court musicians in Tehran, Dehli, Yogyakarta, or Seoul…. Training in any of these traditions took years and required the memorization of huge amounts of musical vocabulary and repertory…. In styles that favored improvisation, young musicians practiced how to select strings of patterns that helped to fashion larger formal or narrative designs. (Gjerdingen 2007, 370)

Partimento training provided patterns that could be used in simple works and extended, varied, and combined in more complex composition. They were part of a dialogue of shared communication between musician and audience; connoisseurs of the Galant style could recognize familiar elements, and appreciate both their repeated use and the expansion of formal boundaries.[39] Composers needed to be able to both fulfill expectations and challenge those expectations in a way that surprised and intrigued their listeners, built the composer's reputation, and led to further employment and commissions.

In the area of historical performance practice, performers have taken up the challenge of executing partimenti *extempore*, in the manner of the Neapolitan apprentices. Their enthusiasm for this practice reflects some of the exuberance of the improvisation advocacy school.[40] Many partimento adherents are keenly interested in the possibility of curricular revision in music

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[39] There is not yet consensus as to the capitalization of "Galant"; Gjerdingen does not do so in MGS, for instance. This paper will align the word with other stylistic categorizations, however imprecise – Renaissance, Classical, etc. – and capitalize accordingly.

[40] Social media has played a notable role in allowing partimento aficionados to communicate with one another, and several lead researchers in the field moderate pages on Facebook devoted to discussions of partimenti, solfeggi, basso continuo, historically informed improvisation, etc.

education, and champion partimento techniques as a method of reintroducing and reintegrating creative elements into current classical training. But interest in partimento pedagogy remains relatively narrow, and has been most often restricted to advanced keyboard students, Early Music specialists, researchers in theory and analysis, and a few intrepid performers, all within the area of classical music studies. There has been relatively little exploration of how the partimento tradition might be of use within the general arena of modern music education, with its multi-stylistic options and wide variety of pedagogical methods. But partimento instruction shares a distinct aspect of jazz and other popular styles, especially prior to these styles' absorption into institutional instruction: the acquisition of theoretical, technical and formal knowledge through internalization and variation of a corpus of repertoire. The professional's term for this corpus is "standards," and any rock, jazz, blues, folk, or country musician who has played in a setting in a bar or club will know instantly what this means. In a professional context, standards comprise a group of songs recognizable to experienced players and fans of a given style. Standards must be memorized and instantly playable upon request. For self-taught musicians, learning a corpus of repertoire is the method by which they become expert in a style. Every element of a given song – a melodic arc, chord progression, rhythmic gesture, bass line – becomes a model to be internalized, memorized, combined and deployed in performance, and used as raw material for further creation. The Insanguine example above combines a number of musical gestures that would regularly be used in different contexts –opera, settings of liturgical texts, instrumental compositions. As in a modern popular song, familiar and novel elements would be combined to make music that struck a balance between the expected and the unusual, between fulfilling the audience's expectations and subverting them.

Classical music training often frames compositional technique and style in progressive terms, emphasizing the importance of composers by the degree to which their work is considered innovative and original.[41] This primary focus on originality and innovation usually relegates schematic recombination to an intermediate exercise for fledging composers – composing a fugue or sonata in an antiquarian historical style, for instance. Interpretive musicians who are not. composers are encouraged to move into areas of specialization defined by eras, styles, or individual composers. A pianist will be renowned for Romantic-era piano concerti, a singer will be considered a master of Italian opera roles, another a Debussy specialist, another a Britten specialist, and so on. Because this type of musician is an interpreter rather than a creator of repertoire, schematic knowledge and the skill of combining standard elements in composition and improvisation can often be marginalized entirely.[42] In one sense, classical music does have a set of "standards" in children's instruction; any primary-level classical piano training can be expected to include Petzold's "Bach" M*inuet in G*, the theme from the last movement of Beethoven's ninth symphony, and almost certainly the first section of his *Bagatelle No. 25 in A Minor*, the inescapable *Für Elise*. These chestnuts have little or nothing to do with professional assembly of repertoire, but are simply a collection of favourite and easily teachable tunes, a kind of children's jukebox of greatest hits which functions as introduction to canonic composers. This repertoire can be used to shape taste and preference, and to foster a culture of familiarity within a

[41] Conferment of approval for music that is considered innovative and progressive often goes hand in hand with scorn for music that is considered retrogressive and conservative. Examples of this are the fights between the adherents of Brahms and Wagner, and fans of 1940's bebop versus those who preferred older styles of jazz, the so-called "Moldy Figs." This stylistic hostility has had ramifications for performance and training in composition. See Boulez's famous 1952 article on Schoenberg, "Schoenberg est Mort," and essays and articles by Taruskin (2009), which investigate the degree to which this perspective influenced trends in composition within academic settings during the mid to late twentieth century.

[42] Of course, there is a class of interpretive classical musicians who are also composers, and who use these skills in combination, for instance in organist Helmut Walcha's completion of the final section of J.S. Bach's incomplete Die Kunst der Fuge, BWV 1080. But this is a relatively small cadre of performers.

relatively narrow area of musical style. At more advanced levels there are "standards" in the sense of a particular corpus of repertoire that students may be expected to learn, in order to build technical performance and interpretive skills in a systematic fashion. Both vocal and instrumental instruction in solo repertoire will include standard compositions that a student musician is expected to study and master. But there is no regularly required internalization or practice of schemata in either of these educational approaches, nor expectation of creative variation of the repertoire learned.

Modern "serious" composition instruction tends to downplay the concept of the standard, possibly associating it with the culture and practice of popular music. The connection between a commonly used form – a schema – and its manifestation in a work by an individual composer, is often overlooked in beginner and intermediate classical training. For example, Pachelbel's familiar D major *Kanon* is played, heard, loved, or despised by musicians, audiences and wedding parties alike. But few of these will be aware of what its original audience and performers knew, which is that Pachelbel's composition was a version of the well-known *Romanesca* ground-bass dance model – to borrow from jazz terminology, Pachelbel was thriving on a riff.[43] This is also the case with Handel's D minor *Sarabande* from his keyboard suite HMV 437 (made popular in the 1970's by its use in the film *Barry Lyndon*), which contemporary listeners would have recognized as variation on the familiar *Folia* ground-bass. The Romanesca and the Folia were two of many ground-basses liberally used by composers, either as stand-alone variations, or discrete sections of compositions.[44] If modern music teachers are familiar with

[43] "Thriving on a Riff" is the title commonly given to jazz saxophonist Charlie Parker's "Anthropology" (1945), which is based on the harmonic structure of George Gershwin's "I Got Rhythm" (1930). The chord changes of this song, now commonly known as the "Rhythm Changes," have been frequently used by jazz composers as the basis for compositions in the first part of the twentieth century.
[44] See Erhardt (2014) for multiple examples of *Romanescas* and *Folia*s.

these models, they may introduce their students to them, or they may not. They may also appear as a topic in a music history class, or perhaps in a course in Early Music performance practice. But these are possibilities only; most classical music exams do not currently require students to compose or improvise their own version of a ground-bass. There is no correlate to the jazz exam's requirement that a student improvise their own version of a standard. Schematic and structural understanding of compositional models has been marginalized to music analysis classes, and even there it may be viewed as superfluous. Pianist Robert Levin, who regularly improvises in his performance of Mozart and Haydn has observed: "I was head of the theory department at the Curtis institute, and continued to teach theory for fifteen years, and I saw it very clearly. All of the students, with the smallest of exceptions, fought tooth and nail the idea that they had to understand how the musical language functioned." (Sherman 1997, 331)[45]

This thesis argues for the reintegration of these schematic basics, or "standards," into classical training at the beginner level for both singers and instrumentalists, as an aid to aural skills and creative training. Our focus will be the first models taught in partimento training: the *Cadenza Semplice, Cadenza Composta and Cadenza Doppia*, or Simple Cadence, Compound Cadence and Double Cadence (abbreviated to CS, CC and CD in subsequent chapters, and capitalized or uncapitalized as appropriate). As will be made clear in chapter three, these cadences were in use before the rise of the Neapolitan conservatories, and were part of training in other parts of Europe as well as throughout Italy. Other elements of basic partimento training, notably the "Rule of the Octave" (Fr. *Règle de l'octave, It. Regola dell'ottava),* have caught the interest of music theorists and teachers, but scant detailed attention has been paid to the

[45] In an online article, Laitz acknowledges the many challenges that students and teachers face in music theory instruction, but also complains that "basic curiosity… is the diminishing and sometimes missing element in students' characters." (Laitz 2016, para. 8)

cadences. It is not hard to see why; to us, the three cadences are nothing more than the most common variations on the very familiar tonic-dominant chord change. The elements of which they are comprised can be found in any standard beginner to intermediate music theory text. The ubiquitous presence of these elements, in both canonic repertoire and beginner musicianship instruction, can cause us to view them as obvious, cliched, even meretricious; necessary to acknowledge and impart, but less worthy of interest than more complex, analytically intriguing and enjoyable aspects of partimenti. Still, the *cadenzi* were important enough that the Neapolitan *maestri* labelled and taught them to generations of musicians. They were the basis of an institutional training that produced musicians whose influence was deep, lasting and widespread across Europe for two centuries. As we shall see in subsequent chapters, what the Neapolitan maestros considered cadences were notably different than our modern understanding of the term. In what follows, both ancient and modern entities will be referred to "cadences," with investigation of their varied qualities supplying clarification as to the precise structure of each group of models.

A common trap for music teachers is to "downplay the cliché," guiding their students away from stylistic gestures that are considered over-used, boring, and hackneyed. But considering anew the cadences' over-familiar elements through the lens of modern partimento discourse, learning their history and deploying them for improvisation workshops and private students, I began to feel that their deceptive familiarity and simplicity belied and obscured their potential to teach complex and even profound lessons about the structure and practice of music, of which improvisation drill was only one facet. Analysis of the cadences will demonstrate the various lessons they can impart about harmony, counterpoint, form, consonance and dissonance, suspension and resolution, metric organization, phrase execution and interpretation. For children,

they are comprehensible primal narratives, presented in an easily memorable form, that can be aligned with well-known childhood songs that bear the same structure, to later be revisited and expanded as training proceeds. For young adult students with little experience of the classical canon, these exercises can also be a simple and straightforward introduction to core elements of contrapuntal technique, as we shall explore in chapter six. And for experienced musicians with strong knowledge of common practice repertoire, these exercises are a window into elements of the training, and thus the thinking, that took place in the lives and minds of the composers they revere. For new adult improvisors with an exclusively classical music background, these cadences use familiar musical language and syntactic organization. They are, or can be, the first of these steps towards gaining improvisatory skill, using models that were part of this style for many centuries. But as I hope to demonstrate, the lessons they teach are applicable to many styles of music, and they can be useful in general music education and stylistic training, in which the classical repertoire is only one of many traditions. The simplicity of these beginner models makes them adaptable to a variety of settings: useful schemata for musicians who undertake their own training, and systematic enough to be adapted to a graded, institutional program of assessment.

As stated above, the musical elements in the cadences are found in a variety of different styles and eras of music. But this cadence sequence groups and introduces basic musical elements in a different manner from modern training. Currently, musical education of all styles takes an additive and typological approach to music syntax, beginning with scales, moving to intervals, chords, inversions, chord progressions, phrase sentences, and finally larger forms. This approach has been widely adapted for popular and jazz training as well. Newer music theory and

aural skills texts continue to follow these additive and stratified conventions of organization.[46] Counterpoint training is commonly taught as a separate and discrete unit, focusing primarily on written species counterpoint exercises. This standard order of syntactical introduction continues to privilege the goals of identification and classification of existing scores, for the purposes of interpretive execution in performance. In standardized testing models in aural skills training, it allows teachers to quickly assess and mark correct identification of discrete aspects of rhythmic, melodic and harmonic organization.

The missing element in all of this is creative variation of contrapuntal schemata, as a required element at every level of training. This thesis will argue that these cadences can begin to address this lacuna, and that reintegrating them into beginner training compels a reorientation of the order of introduction of musical elements currently found in textbooks, classrooms and private studios. Used tactically and creatively, these exercises – stylistically conservative and over-familiar in many ways – can inspire both understanding of rule and convention, and also rule-breaking and innovation, as they did with generations of musicians who pushed the boundaries of the styles from which the exercises arose. Beginner training emphasizes score reading, instrumental instruction, learning to sing, amassment of repertoire, elements of creative play. These cadences have the potential to simply and effectively elicit the skill that should precede and underpin all these activities, which is the ability to hear and assess clearly and precisely the interplay of lower and higher pitches as they dance and intermingle: the ability to *listen*, the musician's primal and essential task.

[46] For the purposes of this dissertation, twenty-five English language theory texts and sixteen aural skills texts were reviewed to assess standard approaches to introduction of music materials. Among these were popular and widely-used texts that have been published in multiple editions.

Chapter Two: Everything old is new again – the rise of partimento research

The rise of interest in modern partimento research can be traced to the appearance of two books published by Oxford University Press – *Music in the Galant Style* (Gjerdingen 2007) and *The Art of Partimento: History, Theory and Practice* (Sanguinetti 2012). Of course, partimento research and the use of partimenti in modern pedagogy predates these two publications. A number of earlier modern articles have examined elements of partimento history and use.[47] Some modern organ and basso continuo training contains elements of improvisation drill similar to, or derived from, partimento sources. But it is *Music in the Galant Style* (MGS) and *The Art of Partimento* (AoP) that moved beyond these specialized areas of history, theory, organ improvisation and basso continuo accompaniment to engage the interest of different types of musicians from all over the world, and provoke challenges to preconceptions within the areas of music history, theory and aural skills studies. "MGS effectively tore down the institution [of eighteenth-century music analysis] in order to build it anew… MGS's greatest contribution…is nothing other than a reconstruction of the eighteenth-century artisanal mindset." (Byros 2017, 67) Baragwanath 2013 on AoP states: "This book holds the promise of a radical reappraisal of an entire century of music history." (Baragwanath 2013, 287) Gjerdingen himself writes in his review of AoP: "[Sanguinetti's] is truly a monumental achievement, both as a thoroughly researched documentary history of one of the most diffuse and laconic set of texts imaginable and as a practical guide for the music student of today who wishes to gain some facility in classical styles of the past." (Gjerdingen 2013, 121) In the wake of these books, workshops, conferences, new critical editions of scores, concerts, recordings, online discussion groups and

[47] See Christensen (1992), Lester (1996, 2007), Jans (2007), Cafiero (2007), Holtmeier (2007), Sanguinetti (2005), and Stella (2007).

ongoing research have followed. What may be the first modern competition in partimento extemporization took place in Katowice, Poland in 2019.[48] Partimento studies even has its own breakout media personality in the young composer Alma Deutscher, who began to play and compose as a child, using partimento techniques.[49] This chapter will briefly summarize these two galvanizing texts, survey aspects of modern partimento research that they have inspired and prompted, and examine the application of partimento elements to modern music pedagogy.

MGS, published five years prior to AoP, combines schema theory, cognition research and musicological investigation of the music and culture of the European courts between the period of roughly 1720-1780.[50] It surveys the composers, teachers and training methods of the Neapolitan conservatories, and investigates the works of other European composers who were influenced by Italian styles and traditions. Emphasizing the social forces that shaped and influenced the musical choices of composers – civic and religious requirements, audiences' unceasing desire for new diversions and entertainments, class identity constructed in part through signifiers such as musical taste and artistic discernment – MGS attempts to investigate the manner in which the music was heard by its original listeners. The author points out that as "the social distance between people increases, so can the distance between their modes of listening. A distant musical language may then require translation." (Gjerdingen 2007, 16) The evolution of classical music education inevitably meant that "eighteenth century music came to be heard

[48] The competition was organized by the Karol Szymanowski Academy of Music in Katowice. The competition was organized in two rounds. The first round focused on basso continuo realization; the second included realization of a Neapolitan partimento, which was given to competitors the day before the performance.

[49] English language press coverage of Deutscher has focused on her age and compositional achievements, while ignoring her training in partimento techniques, and Gjerdingen's role as her teacher. Ironically, instead of illuminating the role of partimento instruction in this musician's development, this focus reinforces a standard perspective found in the historical view of canonic composers, in which improvisational skill in is seen as proof of their unique genius, rather than an aspect of the training they receive. See the magazine articles Eddy (2019) and Williams (2019).

[50] MGS cites Heartz (2003), *Music in European capitals: the Galant style, 1720-1780,* to define a distinct "Galant" historical period.

through the filter of nineteenth century music." (Gjerdingen 2007, 17) MGS argues that the analysis of schemata commonly used in the court composition of the time – pre-fabricated models to aid the speedy creation of new works on demand – can provide modern listeners with "a method for developing a historically informed mode of listening to Galant music." (Gjerdingen 2007, 19) Gjerdingen's belief that schemata provide a gateway into past modes of hearing and listening was not a novel feature of MGS. It first appeared in his 1988 *A Classic Turn of Phrase*, which investigated a common Galant schema identified by music theorist Leonard B. Meyer, examining its use by different composers from 1720 to the late nineteenth century. (Figure 2.1) Eschewing standard music notation, Gjerdingen's model is an attempt to express a musical idea as a "mental representation of a Galant musical utterance" (Gjerdingen 2007, 453) that could be expressed in any key or meter. Gjerdingen believes that a mental representation of a schema "is likely in no particular key, may or may not have a particular meter, probably includes no particular figurations or articulations…. All that useful indeterminacy would vanish were the schema to be presented as a small chorale in whole notes, probably in the key of C major with a 4/4 meter." (Gjerdingen 2007, 453) The diagram illustrates the concept of temporal linear motion, intervallic relationship, melodic line and bass line contour without the use of standard musical notation. The perception of rhythmic hierarchy is denoted through S and W for strong and weak; the T and D refer to tonic and dominant chords. The numbers within the bubbles refer to scale degrees, and the numbers without specific the intervallic relationship between each group of two notes. This model became the basis for the schema examples used in MGS. The second example illustrates the schema in standard music notation. (Figure 2.2)

Figure 2.1. The Meyer.

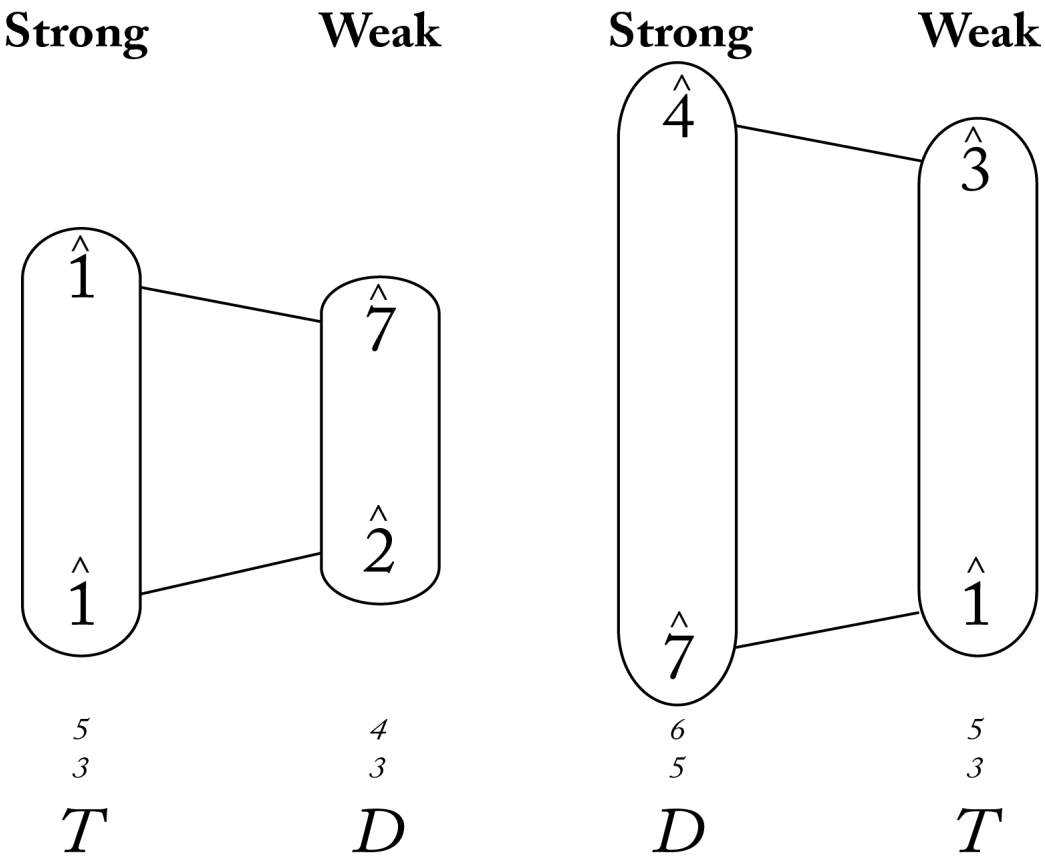
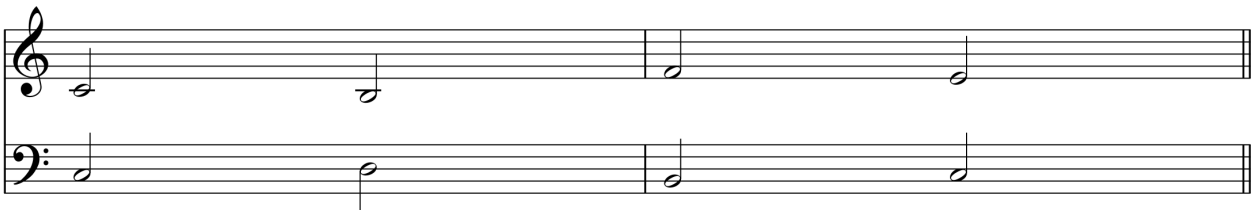


Figure 2.2. The Meyer – standard music notation.



A Classic Turn of Phrase received more negative responses from reviewers than MGS, possibly in response to the author's critiques of aspects of Schenkerian analysis and the

Generative Theory of Tonal Music (GGTM) of Lerdahl and Jackendoff.[51] As well, there was no discussion in *Classic Turn of Phrase* of Neapolitan partimento training or texts, as Gjerdingen had not first become aware of this research area until 2003.[52] Gjerdingen agrees that the more favourable reaction to MGS may indicate a shift in academic fashion – an increasing receptiveness to musicological perspectives in score analysis, for instance.[53] From the point of view of empirical evidence, partimento research also gave a plausible historical context to the method of score analysis that he had previously explored in the earlier book, strengthening the argument through the support of primary sources. For musicians who were not convinced by the theoretical perspective in the earlier book, MGS provided historical correlates between partimento exercises, finished compositions and the schemata identified by the author.

Partimento manuscripts demonstrate that a schema-based approach to training was how composers of this era were taught their craft. Gjerdingen likens partimenti to the sketch templates of the *Commedia Dell'Arte* plotlines. (Gjerdingen 2007, 8-9) That is, a set of stock elements that the performers realized and expanded on with improvised words and gestures, in the same manner that composers combined, expanded and varied prefabricated musical models to create works that comprised both familiar and novel elements. Schemata were combined in partimenti in varied forms, and through repeated drill apprentice composers learned to recognize them quickly, and select the appropriate melodic solutions. The majority of the schemata were introduced without formal nomenclature, except for the introductory cadences and the *Regola*

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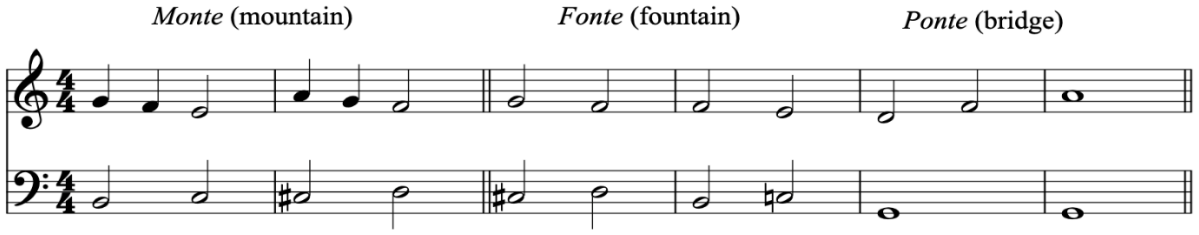
[51] At the book's conclusion, the author's assertion that Meyer's archetypes are "alternative formulations," in contradiction with Schenkerian models, is made plain (Gjerdingen 1988, 265). Reviewers grappled with what they felt to be Gjerdingen's errors and misreadings of Schenkerian concepts. See Proctor (1989), Cavett-Dunsby (1990), Lester (1990), and Agawu (1991).

[52] Gjerdingen, Robert O. Interview by Benjamin Stein, Facetime. Toronto, 22 March 2016.

[53] Taruskin (2011) mentions MGS in a published symposium on issues of historical and political contextualization in the work of Stravinsky. Taruskin's many lectures, essays and books can be seen as an ongoing campaign to overcome resistance to cultural and political contextualization in the areas of music analysis and music history.

dell'Ottava. Specific sequences were generally grouped under the headings *moti di bassi* (bass movements) or *movimenti* (sequences), with literal descriptions of intervallic motion rather than titles – "up a fifth, down a fourth," "up a second, down a third," etc., to specify the bass movement taking place within the model. But the concept of labelled schemata is not a modern invention; Riepel's coining of the terms *Monte*, *Fonte* and *Ponte* is an historical example of the descriptive, rather than purely technical, approach to labelling that MGS emulates.[54] (Figure 2.3) Gjerdingen labels schemata in honour of a composer, teacher, or theorist (*Prinner*, chapter three; *Fenaroli*, chapter sixteen), for their connection to older dance forms (*Romanesca*, chapter two) or with descriptive Italian terms that evoke their linear character (*Quiscenza*, chapter thirteen; *Indugio*, chapter twenty). Each chapter introduces a different schema and then explores its varied use, in scores by composers of the Galant era. As the schemata grow in number, various passages are shown to combine multiple models.

Figure 2.3. Riepel's schemata.



[54] These terms were introduced and used in Riepel's *Anfangsgründe zur musicalischen Setzkunst*, written between 1752-65. The above example is based on the prototype versions of these schemata from MGS (Gjerdingen 2007, 453-464). "According to Riepel, the Italian term *monte* meant 'a mountain to climb up onto,' *fonte* meant 'a well to climb down into,' and *ponte* meant 'a bridge to cross over.'" (Gjerdingen 2007, 197). The first two schemas are the basis for imitative sequences; the third, a model of melodic variations over a dominant harmony, usually used to create tension and expectation just prior to a return to the tonic center of the composition.

Chapter twenty-seven of MGS examines an early draft of Haydn's third string quartet, opus 3, observing that "for much of the sketched movement Haydn notated only a single staff, and… did not bother to sketch fully some repetitions and returns of earlier material," positing that "a young composer who had studied advanced partimenti [and been]… taught to hear multiple voices from the cue of a single voice would only need to write a singing voice as a cue" for the later work of writing the finished composition. (Gjerdingen 2007, 383) Gjerdingen judges that "Haydn… seems to have retained many of the notational practices taught in advanced partimenti,one can almost hear him thinking 'a Monte would work nicely here but… I'll just leave it out'…The Fenaroli works here… I only need to notate the first one." (Gjerdingen 2007, 383) This is a dramatic recreation of the "eighteenth-century artisanal mindset" mentioned by Byros; a speculative one, as Gjerdingen acknowledges. While music history often focuses on composers' individual achievements as an indication of their unique vision, the prodigious score output demanded of composers in this era required compositional skills that were as much about recombination and variation as they were about innovation. As partimenti increased in complexity, they presented challenges that students were expected to solve and master. The speed of execution required of Haydn and others demanded instantaneous retrieval and deployment of standard models, combined with individual inventiveness, to strike the balance between novelty and familiarity that was a central aspect of the style.

Music theorists have responded to MGS's schema analyses, historical investigations and analyses in a variety of ways. Diergarten 2011, "*The True Fundamentals of Composition: Haydn's Partimento Counterpoint*," explores the connection between Haydn's works and the influence of his Italian mentor, Porpora, a teacher and composer considered to be an exemplar of the Neapolitan tradition. Diergarten demonstrates that despite Haydn's pointed

acknowledgement of Porpora's influence in his development, music textbooks have emphasized his Austro-German identity and post-facto place as a member of the so-called First Viennese School, citing Haydn's ownership of *Gradus ad Parnassum,* the famous counterpoint instruction manual by Johann Joseph Fux, as evidence of its influence in Hadyn's training. Diergarten asserts instead that while "Haydn was familiar with Fux's *Gradus* [*ad Parnassum*]… the precise role of this book and its didactics is not as obvious as it may seem at first glance**…**it is, in any event, simplistic to limit eighteenth-century Viennese counterpoint to Fux. Any more accurate and detailed understanding of Viennese counterpoint should take the partimento tradition into account." (Diergarten 2011, 63) He concludes, "Partimenti, whose spirit Haydn received from Porpora's hands, may prove to be the true fundamentals for a new understanding of Haydn." (Diergarten 2011, 75)[55] Byros 2012, *Meyer's Anvil: Revisiting the Schema Concept*, investigates listeners' perceptions of musical schemata over a span of time. The essay focuses on a musical schema that Byros labels the "le-sol-fi-sol" (scale degrees *b*6-5-#4-5). Traditionally, this line was found in the bass voice of a composition, and was usually a variation of the technique of dominant prolongation prior to a return to the tonic. Beethoven's use of the line in the opening measures of his third symphony (the *Eroica*) was, like many of Beethoven's uses of traditional schemata, a departure from the norm and a play on the expectations of his audience. Using the harmonic ambiguity of the line – it can be heard variously as a brief episode setting up a modulation to G minor, or a chromatic episode that strays from but does not leave the tonality of Eb major – Byros attempts to trace the aural reception history of this schema through written accounts of the symphony's reception. Drawing on critics', diarists' and musicians' perception

[55] For a further assessment of the importance of Fux, see Lester 1992, chapter 2.

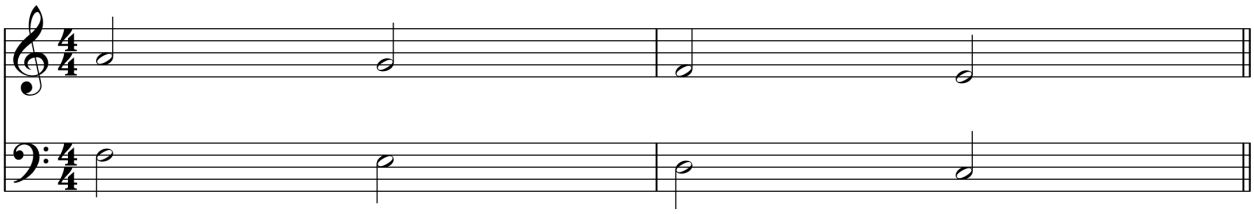
and analysis of the piece, Byros creates a reception history that emulates the "archeology of listening" model from MGS.[56]

Several music theorists have considered how MGS's schemata approach affects other areas of score analysis. Caplin (2015) identifies the Prinner (Figure 2.4**)** as perhaps Gjerdingen's "most important theoretical discovery," while asserting that Gjerdingen's discussion of the Prinner lacks "any substantial discussion of the manifold ways in which its constituent scale degrees operate within a broader harmonic context." (Caplin 2015, 17-58) There have been several attempts to blend Schenkerian concepts with schema analysis (Rabinovitch 2013 and 2018, Froebe 2014 and 2015). Other writers have extended Gjerdingen's practice of schema identification, labelling and analysis; the well-known ground-bass minor-mode passacaglia is incorporated into a schema labelled the "Morte" in Rice (2015).[57] Other Galant-era schemata proposed are the "Volta," (Mitchell 2017), "Marpurg's Galant Cadence" (Lodewyckx 2015); IJzerman (2018), a textbook discussed below, contains a model that the author labels the "Omnibus," which is particularly applicable to nineteenth-century composition.[58] Boyle/ Sherrill (2015), "Galant Recitative Schemas," applies schema labelling to the tropes and conventions of opera and oratorio recitative. Various vocal contours and harmonic gestures are named the "O Cielo" and the "Susanna," and so on. Byros 2017 references Sanguinetti's belief that these various engagements with partimento research herald "the recent arrival of a multifaceted and unified 'new theory,' which consist of schemata, their German equivalent Satzmodelle, and Italian and Austrian partimento traditions, the latter known as partitura." (Byros 2017, 67-68) Partituras have a similar structure and function to partimenti, but have not yet enjoyed the same

[56] See also Weiss (2013), Balint (2014), Byros (2017) for similar examples of this approach to schema analysis.
[57] Rice seems especially determined to identify and name schemata for what he terms the "Galant Schematicon" (Rice 2014), having coined the schema terms "Heartz" and "Lully" in papers and lectures.
[58] IJzerman (2018, 267). For further discussion of the Omnibus see Telesco (1998) and Yellin (1998).

close investigation as the Italian models[59]. Time will reveal which writers' responses to MGS will have lasting traction in advanced music analysis and basic music training.

Figure 2.4. The Prinner.



Partimento training and history were only one facet of MGS, and they whetted musicians' appetites for more information about this little-known area of musical history. Sanguinetti's 2012 *The Art of Partimento,* which focused specifically on the training in the Neapolitan conservatories, was highly anticipated by those newly made curious about partimento training. AoP is a multidisciplinary study: a capsule history of the Neapolitan Conservatories, the composers they produced and the maestri who taught them; an exploration of the technical elements in partimento training; and an instruction method for musicians interested in learning partimento techniques for development of their own improvisatory and compositional abilities, and those of their students. AoP briefly addresses partimento training in other parts of Italy, but maintains a focus on Naples. (Sanguinetti 2012, 23-28) Sanguinetti describes the political and cultural background of the conservatories: the rule of Spain over Naples, the heavy maritime traffic to a southern port city that contributed to the problems of civic poverty, and a growing population of indigent children without resources or family. The creation of conservatories for music training – trade schools for orphans, run and administered by church and civil authorities –

[59] See Christensen (2008) and Diergarten (2015).

addressed both child poverty and the political and cultural needs of the clergy and aristocracy.[60] The apprentices provided musical services to the city's many churches, first as indentured labour lent out by the conservatories, or upon graduation, as employees in churches, courts, and opera houses. As the conservatories' reputations grew, European courts eagerly hired Neapolitan graduates, and sponsored promising children from across the continent to travel to Naples for study. The conservatories were founded at the end of the sixteenth century; by the middle of the eighteenth century, Neapolitan music and musicians had built a notable reputation throughout the continent.

Partimento training was preceded by extensive drill in *solfeggi* – melodic sight singing – undertaken as vocal exercise, before apprentices were allowed to choose and learn on instruments. Neapolitan Solfeggi were not the single-line vocal exercises of current ear training and sight-singing practice, but two-voice exercises intended to reinforce both harmonic knowledge and intervallic contrapuntal protocols, an important point to which we will return in the following chapter. AoP demonstrates that apprentices were expected not simply to improvise lines that would fit with the given bass, but to shape coherent and interesting melodic phrases. Improvised partimento drill was combined with written counterpoint practice for musicians training as composers. Advanced partimenti often contained melodic incipits in other clefs, giving apprentices thematic material to integrate into their practice. In later chapters, AoP addresses increasingly complex issues of contrapuntal realization of partimento scores, such as imitation and double counterpoint. The final chapter of AoP is a backward-composition exercise – a decomposition, as it were – of the B major Prelude from Bach's first Well-Tempered Clavier collection. Sanguinetti removes its busy bass motion and melodic gestures until a

[60] See also Del Prete (2014) and Heartz (2003).

simpler, partimento-like structure stands revealed. The exercise is a nod to MGS's theoretical analyses, and an assertion that the Italianate influence on canonic German repertoire deserves fresh consideration.[61]

Both MGS and AoP won the American Society for Music Theory's Wallace Berry Award, and academic reviews were generally positive. Musicians realized the importance of these areas of enquiry, and their potential to reframe analytical and historical narratives.[62] Gjerdingen also created *Monuments of Partimenti* in 2005, an online resource of hundreds of Neapolitan partimenti and solfeggi. Gjerdingen believed that disseminating scores in this manner – as opposed to the standard academic editions in which ancient manuscripts are commonly and expensively presented – made it possible for partimento use to move more quickly and easily beyond the academic sphere to the world of teachers and performers. He observed it would have taken another 5-10 years for knowledge of partimento to filter through to non-academic musicians, had he opted for standard academic publishing of historical partimento sources.[63] Social media has facilitated international discourse and connections between musicians sharing information and expertise in partimento use. Renewed interest in the Neapolitan tradition has led to the publication of new editions of partimenti. Uppsala University published Van Tour (2017), *The 189 Partimenti of Nicola Sala* in three volumes. Schola Cantorum Basiliensis Scripta published Paraschivescu (2017), *Die Partimenti Giovanni Paisiellos: Wege zu einem praxisbezogenen Verständnis*. Interest in partimenti has also led to

[61] "Even J.S. Bach, whom the general public has long viewed as the paradigmatic Baroque composer, created Galant music when it suited his and his patrons' purposes." (Gjerdingen 2007, 6) For applications of schema analysis to Bach repertoire, see Byros (2015) and Callahan (2010, 2012).
[62] There been critiques of both publications. De Goede (2013) takes issue with AoP's separation of partimento and basso continuo practice; Holtmeier (2011) challenges the premise of the schema classifications in MGS, asserting that eighteenth-century sources do not sufficiently support this type of analytical approach.
[63] Gjerdingen, Robert O. Interview by Benjamin Stein. FaceTime. Toronto, April 6, 2020.

increased interest in other compositions and overlooked composers from the Neapolitan school. Sigismondo's four-volume 1820 *Apoteosi della musica del regno di Napoli in tre ultimi transundati secoli,* a major source for modern partimento researchers, was republished in a 2018 edition. Walhall published Scarpa (2018), *Compositori della Scuola Romana e Napoletana (18. Jh.): 17 Composizioni rare per clavicembalom,* including works by Leo, Greco and others. Scholarly editions of partimenti have also appeared online. In the modern style of e-publishing, *The partimenti of Alessandro Scarlatti* is an online edition of Scarlatti's *Regole per ben sonare il cembalo.* (Cipriani 2018)

Partimento materials have appeared in a variety of pedagogical settings, and specialized workshops and courses at the graduate and undergraduate level. Bergé/Lodewyckx (2014) investigates the techniques of eight European teachers, including Sanguinetti and Van Tour, whose classroom work deploys partimento models and techniques.[64] Workshops including, or built around partimento literature and practice, have taken place at several of the above institutions, and in Smarano (Italy), Jacobs School of Music (Indiana U, Bl), Milan, Cambridge, Massachusetts (USA), and Katowice (Poland). Beginning in the summer of 2014, Rochester's Eastman School of Music offered a week-long workshop in partimento/schema improvisation training, entitled "Classical Music on the Spot," run by Eastman teachers Gilad Rabinovitch and Johnandrew Slominski.[65] Material from MGS and AoP was combined with exercises by Handel, examples of historical extemporization from Corelli's opus 5 violin sonatas, and material

[64] At the time of publishing, the teachers interviewed held classes at the following institutions: Nottingham University, UK; Schola Cantorum Basiliensis, Switzerland; Conservatory of Amsterdam, Netherlands; Conservatory of Antwerp, Belgium; Castilla y León Conservatory, Salamanca, Spain; University of Mainz, Germany; University Tor Vergata, Rome, Italy; Royal Academy of Music, Stockholm and Gotland School of Composition, Visby, Sweden.

[65] Both Rabinovitch and Slominski have since left the Eastman School. Their partimento workshop, which ran for several years, has been discontinued.

developed by the teachers, in which music by C.P.E. Bach and Boccherini was reduced to structural skeletons resembling the schema models of MGS. The workshop included group sessions, private coaching and a final recital. Rabinovitch and Slominski used material from the workshop for a series of recorded improvisations by students, and published their observations in "Towards a Galant Pedagogy: Partimenti and Schemata as Tools in the Pedagogy of Eighteenth-Century Style Improvisation." This 2015 article addresses the challenge of taking what was a labour intensive, years-long process in the Neapolitan conservatories, and adapting it to a modern curriculum and a musically diverse population. Moseley (2011), "Musical Improvisation Alla Commedia Dell-Arte", describes a workshop performance at the University of Chicago of a commedia dell-arte pantomime, composed by Mozart and first performed in Vienna in 1783. All that remains of the score is a surviving violin part. Using this fragment, their knowledge of Mozart repertoire, and eleven schemata from MGS, the performers improvised elements of the performance. "In doing so, we distributed the cognitive burden of acquiring fluency in late-eighteenth-century idioms by learning with and from one another through collaborative improvisation. Responsibility for the musical whole was thus devolved across the entire group, a procedure we found to be challenging and invigorating in equal measure." (Moseley 2011, 342)

Since AP and MGS were published, the most significant research into the history and pedagogy of the Neapolitan conservatories has been Van Tour (2015), *Counterpoint and Partimento: Methods of Teaching Composition in Late Eighteenth-Century Naples* (Acta Universitatis Upsaliensis: Studia Musicologica Upsaliensia), and Baragwanath (2020), *The Solfeggio Tradition: A Forgotten Art of Melody in the Long Eighteenth Century* (Oxford University Press). Van Tour (2015) is an examination of the two distinct schools of training which took their style and inspiration from Francesco Durante (1684 –1755) and Leonardo Leo

(1694 –1744). These were two of the most important and influential Neapolitan teachers of the early eighteenth century, and an apparent rivalry between "Durantists" and "Leonists" continued for decades. AoP investigated the sources that recount this rivalry, and posited that from "the standpoint of their partimenti, there is no significant difference between the style of Leo and Durante." (Sanguinetti 2012, 67) Van Tour's monograph examines this assertion. With extensive investigation into the partimenti of both composers and their students, as well into the fine points of stylistic instruction at the various conservatories, he argues that the traditions of Leo and Durante did indeed constitute two distinct styles of training. The style founded by Leo and practiced at La Pietà dei Turchini was slightly more conservative, emphasizing strict counterpoint techniques, and was more well suited to liturgical music. The school of training inspired by Durante, and practiced at Santa Maria di Loreto and Sant'Onofrio a Porta Capuana, was by contrast more melody-driven, and well suited to the popular opera styles of the day.[66] Van Tour has also discovered a number of eighteenth-century example realizations of Partimenti, which addresses the lacuna that Sanguinetti (2012) had identified.

Baragwanath (2020) adds a crucial element to partimento research and, in doing so, illuminates an element that modern partimento discourse has not yet fully addressed: the educational process that allowed Neapolitan apprentices to sing, improvise and compose melodic tropes that would furnish raw material for themes, motifs, and the vocal lines so essential to success in Neapolitan composition.[67] While partimento study was a bass-centered method, in the original curriculum it was intended to help facilitate the development of melodic mastery, which had been primed by the relentless, years-long *solfeggio* drill for the youngest Neapolitan

[66] See Demeyere (2018) for further discussion of the Leo/Durante dichotomy.
[67] Baragwanath (2011) observes that the professors of counterpoint at nineteenth century Italian music schools were also the school's singing teachers; Italian training "rested on the continued influence of eighteenth-century methods of training that regarded performance and composition as inextricably linked." (Baragwanath 2011, 256-7)

apprentices. Currently, Baragwanath is conducting studies in which modern students work with Neapolitan syllabification methods.[68] Investigating the nature of Neapolitan syllabification, Baragwanath posits that slur lines above specific groups notes in solfeggi may indicate guidelines for syllable designation, in which the same syllable is used for multiple pitches, as a guide to the simple inner structure of a florid and/or ornamented line.[69] This is in contrast to modern methods of syllabification, which complicates an area of current training already steeped in dispute.[70] Within partimento circles both ancient and modern, there have been multiple perspectives on the most useful method of syllable use. Gjerdingen notes that while the use of solfege syllables was widespread in ancient music training, there was neither a uniform approach nor uniform agreement about their efficacy, and "by midcentury some younger writers like Joseph Riepel and Johann Friedrich Daube had begun to ridicule all solfege systems as the imposition of needless complexity." (Gjerdingen 2007, 36). In the *Monuments of Partimenti* website, Gjerdingen posted a pugnacious critique of modern solfege practice. He asserts that the modern system of syllabification arose less from pedagogical principles than printing of music texts for mass consumption in the nineteenth century, and indicates his belief that a system used for child apprentices for as much as a decade of intense training is not useful or appropriate modern young adult students first encountering solfege practice during a modern 3- or 4-year academic degree.

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[68] Baragwanath states that his research is currently taking place at the Conservatorium van Amsterdam. Online Communication with Benjamin Stein. Facebook. Toronto October 28, 2020.

[69] The practice is commonly referred to as solmization or syllabification in academic and pedagogical writing. "Solfege" is also occasionally deployed as a verb.

[70] Advocates of varied systems of Solfege training – fixed do, movable do, la-based minor, do-based minor, chromatic, etc., fight it out with a fury that would make the Tudors and Plantagenets plead for moderation. See Brown (2003), Rappaport (2004), and Kuehne (2010). No firm evidence has emerged to conclusively identify one method as empirically superior to others (Karpinski 2000, 146-148). Textbooks often list different solmization systems as options, demonstrating that multiple approaches must be accommodated in materials created for pedagogical use.

> Many Neapolitan solfeggi are florid to a degree that would make syllabification more humorous than impressive. We are thus left with the irony that today we ask adult learners to perform feats of sight singing (singing with syllables tied to scale degrees and chromatic inflections, free of any harmonic and contextual support from a keyboard instrument) that seem not to have been imagined in the eighteenth century. Perhaps, with the evidence of actual eighteenth-century pedagogy before us, we can envision the emergence of a 'historically informed' style of instruction, one that focuses on the accumulation of stylistic knowledge rather than on a gymnastics of syllables. (*Monuments of Partimenti* website, Gjerdingen 2004) [71]

Baragwanath's work on syllable designation may shed further light on this question; his forthcoming work in this area will have ramifications for modern partimento pedagogy, which has focused on keyboard realization but neglected vocal improvisation drill. As of this writing there has been little indication of interest in this question from teachers and researchers in the area of Kodaly, Orff, Dalcroze and other modern systems of children's music training that regularly require syllabification in sight-singing.

Gjerdingen's partimento research has drawn on the work of both Van Tour and Baragwanath. *Monuments of Partimenti* has undergone a revision, with updated databases of both solfeggi and partimenti, new scores and manuscripts based on research work of other academic musicians, and new sections on *intavolature* and *disposizione*, both of which were additional pedagogical aspects of Neapolitan training. *Child Composers in the Old Conservatories*: *How Orphans Became Elite Musicians* (Gjerdingen 2019), both explores the lives and work of the Neapolitan apprentices, and expands into the area of nineteenth century professional training in France. Gjerdingen compares two composers, the Italian Cimarosa and the French Busser, who undertook similar training – albeit separated by a century – noting the similarities between the French and Neapolitan conservatories.[72] *Child Composers* (ChC)

[71] The original article quoted here, "Solfeggi in Their Historical Context," was removed from *Monuments of Partimenti* website in 2021 approx.
[72] Domenico Cimarosa (1749-1801); Henri Busser (1872-1973).

addresses a lacuna previously identified in AoP: eighteenth-century partimento realizations.[73] Several different original sources – the 1750 Gallipoli manuscript discovered by Van Tour (Gjerdingen 2019, 341n), a realization by Sala buried in a 1834 harmony treatise, and a 1789 guide with rare written instructions by Vignali (Gjerdingen 2019, 123-125), among others, begin to fill in a picture of how partimenti were realized. Gjerdingen suggests: "a modern keyboard player contemplating how to realize a partimento by Leo might do well to first play his intavolature and listen to how Leo treated various schemas, movimenti and cadences." (Gjerdingen 2019, 152) ChC does not have the cohesion of MGS, which had the organizational parameter of schemata introduction and analysis to help shape the book's investigations into culture, custom and compositional technique. Rather, it reads as an extended set of related essays on the various research tributaries that have sprung up in the wake of MGS and AoP. Most crucially, ChC is another attempt, along the lines of the *Monuments* website, to bring awareness of partimento research beyond the arena of academic discourse. It departs from the standard black and white academic monograph, with an elegant cover and colourful illustrations. Gjerdingen proudly cites it as "the first academic coffee table book."[74] To some degree this is an overstatement; the book's analyses of partimento realizations will be hard slogging for those who have not read MGS, or are not used to academic music analysis. But in keeping with the populist intent of the *Monuments* website, the author is clearly committed to reaching out to a non-academic audience. ChC attempts to avoid intimidating or excluding the interested amateur: "Readers with a low tolerance for technical jargon may skip this paragraph." (Gjerdingen 2019,

[73] AoP organized historical partimento sources into three categories: partimento exercises themselves, sketches which often had no accompanying written guidelines; sets of rules, usually accompanied with examples; and written out realizations of partimento basses. At the time of publishing, Sanguinetti had as yet been unable to locate examples of the latter category; his few examples of realized partimenti in AoP were taken from the early nineteenth century. Further research by Sanguinetti and Van Tour, has expanded this area of historical documentation.
[74] Gjerdingen, Robert O. Interview by Benjamin Stein, FaceTime. Toronto, April 6, 2020.

31) Musical examples are contained within the text, and recorded examples. are also available in an open-source YouTube channel, *Child Composers* (Gjerdingen 2018). Transliterations, to aid pronunciation of non-English terms, are embedded in the text.

Apart from individual initiatives of individual teachers, either in private studios or institutions, as of this writing I have located two partimento resources for children. The Freiburg Hochschule für Musik has an online web page entitled *Kartimento*, which presents a series of flashcards that combine different sections of musical phrases (Drescher 2020). Unfortunately, the website's explanation of how teachers should use its system of cards and symbols is convoluted, and appears to require a substantive prior knowledge of figured bass technique and terminology. The beginner text *Tonal Tools: For Keyboard Players* (Strobbe and Lodewyckx 2014) has an awkward design, combining ungainly physical dimensions and colourful illustrations with print that is small and difficult to read. Its many excerpted musical examples, exercises and discursive mini-essays are confusingly presented. But most crucially, *Tonal Tools* expands MGS's schema labelling method to a point that is likely to be unmanageable for a beginner curriculum. Setting out nine basic schemata for training, the authors then expand each schema into further variants, resulting in forty separate categories of classification between the nine models, which are then further expanded, resulting in one hundred and eight separate labelled variants. Several further models are introduced in the text, but not listed in the index. It is hard to see how anyone hoping to teach partimento techniques to children for the first time would know how to deploy this publication effectively.

In the area of undergraduate instruction, *Harmony, Counterpoint, Partimento: A New Method Inspired by Old Masters (*IJzerman 2018, Oxford University Press), is a music theory textbook intentionally built around partimento techniques and skill-building approaches.

HCP attempts to thread a middle ground between partimento-inspired aural skills training and the score analysis found in a standard music theory class, mixing drills and exercises with analysis of excerpts from compositions. Applying a "primarily contrapuntal perspective" (IJzerman 2018, xii), chord formation is identified as the result of linear interplay of voices. While this approach can be found in other undergraduate texts, it usually appears in chapters on species counterpoint, and is usually separate from instruction in chord formation and identification. IJzerman's text, with its willingness to blend and integrate harmonic and contrapuntal conceptions of sound construction, is an important pedagogical alteration of modern perspectives, one that we will also explore in following chapters. HCP alters other standard theory training protocols to align with partimento concepts. The text identifies the interval of a third and sixth as a "chord in its own right," (IJzerman 2018, xii) rather than the common introductory view of sixth intervals as first inversions of root position triads.[75] HCP treats the bass line of the introductory exercises "as the actual foundation of the harmony instead of the progression of chord fundamentals." (IJzerman 2018, xii)

If there is a problem with Ijzerman's method, it is that it is geared towards the ideal student in classical training: drilled in score reading, familiar with theoretical nomenclature and versed in canonic repertoire. It is suggested that prior to undertaking study with HCP, the student know the "major and minor scales and the key signatures up to seven sharps and flats… intervals from the unison to the tenth, and the interval qualities perfect, major, minor, diminished, and augmented… complementary intervals… basic knowledge of triads," (IJzerman 2018, xv) as well as identifying inversions through standard modern Roman numeral terminology. This is

[75] Partimento texts demonstrate that there was a blended approach to sixth chords; indications can be found that they were considered distinct entities, as in earlier centuries, as well as inversions of root position triads, perhaps influenced by the increasing perceptions of equivalence promulgated most famously by Rameau. For a discussion of the history of this process, see Christensen (2004), *Rameau and Musical Thought in the Enlightenment.*

very similar to John Mortensen's *The Pianist's Guide to Historic Improvisation* (Oxford, 2020), which states that for the book to be useful, in addition to keyboard skills, the user "will need an education in music theory approximately equal to three semesters of college study. This will include Roman numeral analysis, figured bass, modern chord symbols, chord inversions, chord qualities, etc." (Mortensen 2020, 2) "The Rule of the Octave in First-Year Undergraduate Theory: Teaching in the Twenty-First Century with Eighteenth-Century Strategies," describes a course curriculum that occurs only after students have "learned three-part species counterpoint, principles of keyboard-style harmonization, and common cadential progressions," within the context of an "honors section" of a theory curriculum, which had focused on species counterpoint (Sánchez-Kisielewska 2018, 117).

To be deployed effectively, these three texts depend on an infrastructure of previous training to produce students with a level of aural comprehension and sight-reading proficiency that allows them to function at the level required to effectively use the texts or execute the classwork. In a classroom setting, they also require a teacher with the ability to effectively teach aural skills, familiar with the classical style, able to give informed feedback on students' attempts at stylistically appropriate diminution work, and with enough class time allotted to accomplish these tasks.[76] But even assuming that a teacher has a class entirely filled with students trained to the necessary level, managing both creative and the analytical aspects of Common Practice repertoire may be more of a challenge if a teacher has not had their own thorough training in historically informed improvisation, and a specific grounding in partimento practice. It is a

[76] "I see my students three times a week, for harmony, analysis, and solfege. I try to combine the three subject matters as much as I can, so in the solfege class we discuss the harmony/counterpoint issues from a purely oral perspective." Ijzerman, Job. Email to Benjamin Stein. Toronto, 31 July, 2019.

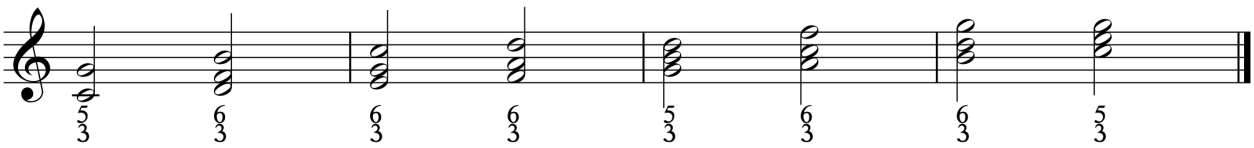
confluence of elements that may be difficult to achieve.[77] A theory teacher comfortable with analysis, but lacking the training and confidence for the creative elements in the text, might ignore or downplay the practical drills in IJzerman (2018). At the same time, a teacher comfortable with improvisation training in another style, but not strongly grounded in classical repertoire, might struggle with the contrapuntal strictures and stylistic parameters that partimento models place on creative drill. Optimum use of the texts by the three authors above requires a level of previous training that undergraduate musicians may not have reached by the time their degree begins, skills that even well-trained and experienced teachers may struggle to master, and dedicated class time that a performance-oriented curriculum is unlikely to allow.

Other challenges in using partimento models in modern training can be seen with the renewed interest in the Rule of the Octave (abbrev. RO; French, *Regle de l'octave*; Italian, *Regola dell'Otava*), a model that has attracted a great deal attention in pedagogical circles.[78] The RO was one of the first models taught to Neapolitan apprentices, who knew it simply as the *scala*. In its most primal form, each ascending step of a major and minor scale was harmonized with the intervals of a third and a sixth except for the scale degrees 1 and 5, which were harmonized with a third and fifth. (Figure 2.5)

[77] "Music departments, including my own, are admitting students whose primary instrument is electric guitar, electric bass, or trap set; these students often have little formal musical training, and their previous musical experience often consists primarily of playing in a garage band. I expect this trend will continue… [e]ven students who play traditional orchestral instruments, or sing, often have little in the way of formal training, as music programs continue to be cut in many primary and secondary schools. Nevertheless, college music departments may have no choice but to admit weaker students in order to keep their enrollments at an acceptable level." (Telesco 2013, 211n)

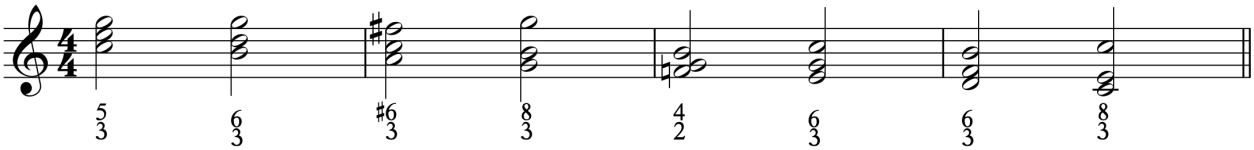
[78] Neapolitan sources commonly used the simple "scala" to identify this model. "Rule of the Octave," after the French title, has become the common title in modern partimento circles.

Figure 2.5. Ascending Rule of The Octave in three voices.



The descending version included a chromatic alteration that strikes modern ears as a brief tonicization of the dominant note, and a 4/2 harmonization above scale degree 4 that facilitates a return to the original key (Figure 2.6).

Figure 2.6. Descending Rule of The Octave in three voices.

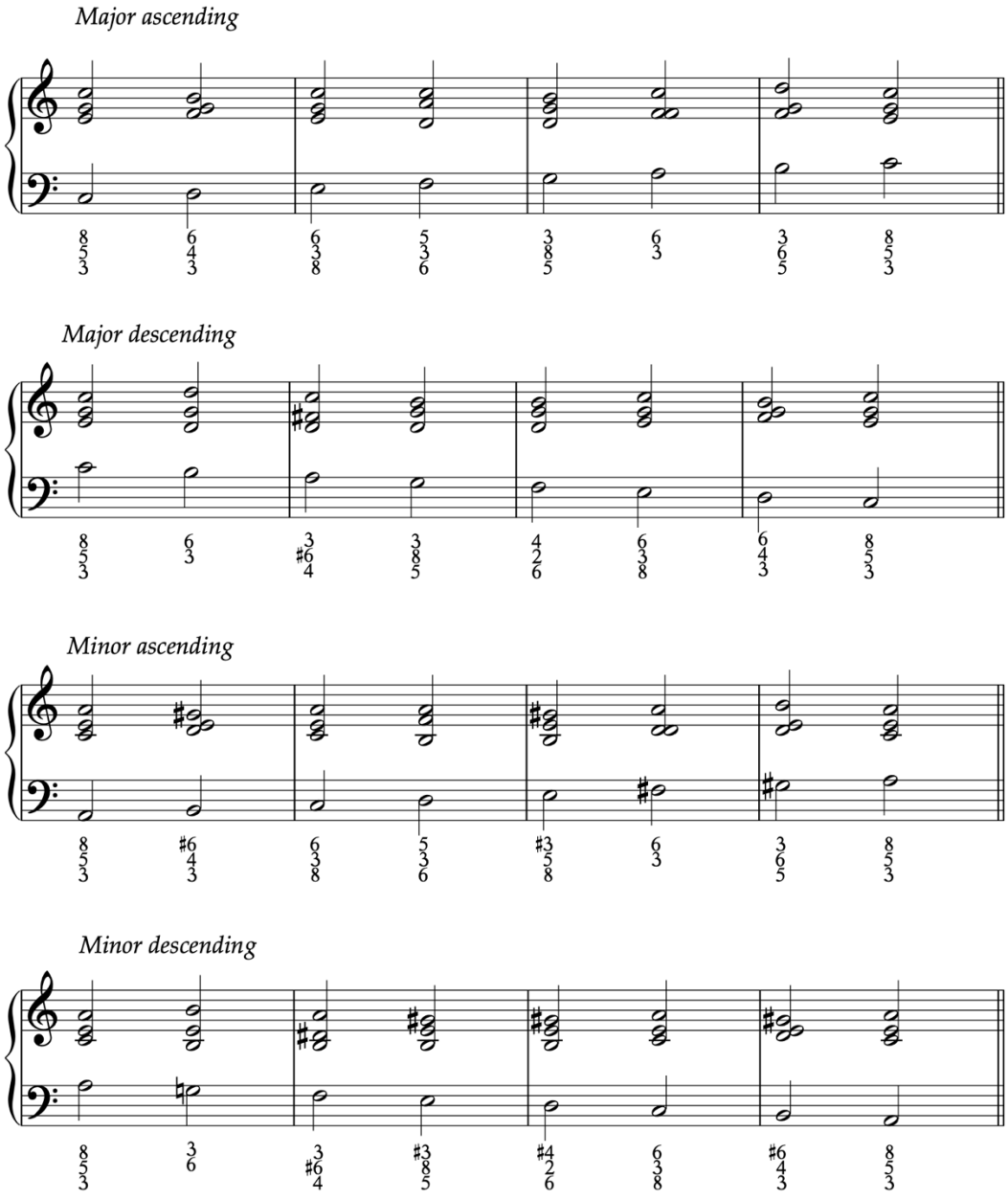


The three-voice versions in the examples demonstrate the bare intervallic structure of each chord, but the RO was most commonly taught as a four-voice keyboard exercise in both major and minor keys. The RO combined the linear motion of a bass scale with a standard set of model harmonizations, but the information it contained was much more profound than these two elements alone. It conveyed insights into musical phrasing, form, rhythmic organization, dissonance, consonance and key modulation. Its hybrid nature captured what Christensen views as "the essential dialectical tension of tonal practice between harmonic and contrapuntal poles, represented by those who interpreted the *Règle* in exclusively harmonic terms… and those who interpreted the regle in more linear, contrapuntal terms," adding that "for an understanding of

eighteenth-century musical thought, though, the *régle de l'octave* remains indispensable." (Christensen 1992, 117) AoP investigates versions of the RO by Alessandro Scarlatti, Durante, and Fenaroli, among others., concluding that the RO "found its definitive practical form, at least in Italy, with Fenaroli's [four-voice] version." (Sanguinetti 2012, 120) Sanguinetti's realization of Fenaroli's figures is below.[79] (Figure 2.7)

[79] Fenaroli's *Regole Musicali per i Principianti di Cembalo*, published in 1775, remained in print until the late nineteenth century, becoming a central reference text for both Italian and French training in the nineteenth century. Its version of the Rule of the Octave is simply called the *scala*, and is set out in three different chord configurations in major and minor versions, one of which is reproduced here. Figures reflect the hand positions set out in Fenaroli's text, which has no musical examples. This version transposes Sanguinett's G major realization to C major. For a discussion see Sanguinetti 2012, 113-124.

Figure 2.7. Rule of The Octave, Fenaroli.



The earliest version of the RO commonly cited by researchers is Galeazzo Sabbattini's 1628 *Regola facile e breve per sonare sopra il Basso continuo* (Venice) which harmonizes scale degrees 3 and 7 with sixth chords, and every other note of the scale with 5/3 triads (Christensen 1992, 97n13). A version in Francesco Corbetta's *Varii Capricii per la ghitarra spagnuola* (Milan

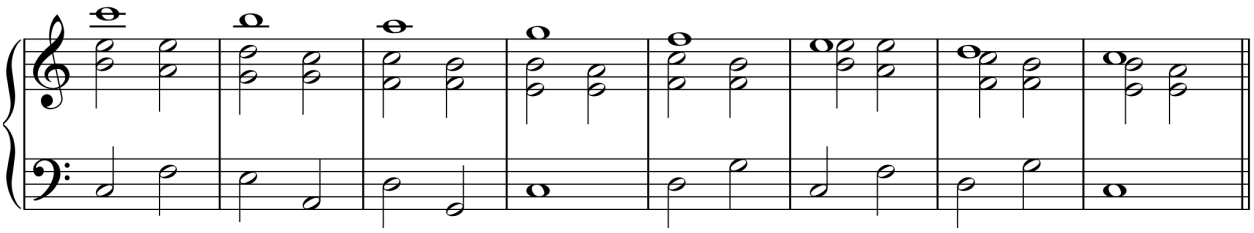
1643), is more a set of guidelines for guitar harmonization, laid out in stepwise fashion, than a basso continuo tool, but it shows a similar approach to harmonization as Sabbattini's work. Denis Delair's *Traité d'accompagnement pour le théorbe, et le clavecin*, (1690, reprinted 1724) a manual for accompaniment and *basso continuo* realization, contained a four-note version of the RO. French composer and theorbist Francois Campion shared the RO with an amateur readership with his *Traité d'accompagnement et de composition selon la règle des octaves de musique* in 1716. The *Traité*'s success led to a second edition in 1730. CPE Bach considered it a crutch for amateur musicians rather than a tool for professionals, but his 1753 *Versuch über die wahre Art das Clavier zu spielen* contains several intricate versions of the RO that have fascinated theorists for centuries, notably Heinrich Schenker.

Beginner drills that make use of the RO in its original form can be found in several of the individual classes mentioned in Bergé/ Lodewyckx (2014); and the revised *Monuments* website contains some drills that Gjerdingen has used in his own teaching, in a section entitled "Learning the Rules."[80] But modern teachers of music theory have struggled with elements of the RO's particular schematic nature that do not correlate with current training, altering its character to conform to modern customs in music theory. Gaudlin (2013) introduces the RO as an aspect of chord analysis, in a version markedly different to the historical examples mentioned above. Thick with densely stacked close-position triads, it is deployed as an analytical tool in a chart for chord inversion identification, with no attention paid to the smooth linear voice leading and elements of keyboard execution that are a central aspect of the original model. (Gaudlin 2013, 9-10) Terefenko's *Jazz Theory: from Basic to Advanced Study* contains a jazz version of

[80] http://partimenti.org/partimenti/about_parti/beginners_guide/learning_the_rule.pdf.

the RO that reverses its structure, by placing its scale motion in the treble voice, rather than in the bass. (Figure 2.8, Terefenko 2014, 292) This is the precise opposite of the ancient RO practice. Terefenko's model may be influenced by the *urlinie* of Schenkerian analysis in which a descending scale in the treble voice is harmonized with bass motion.[81] As Sanguinetti notes, the idea of bass motion as a secondary support to stepwise scale movement in the treble does not appear to have been a notable training drill in eighteenth century training. "When placed in the upper voice, the scale obviously needed a counterpoint in the bass; however, in contrast to the RO, a standard model of accompaniment never established itself." (Sanguinetti 2012, 116) Harmonization of a treble scale appears to have had little presence in partimento exercises as an organizing principle.[82] Terefenko's version actually has more in common to another one of the advanced *moti di bassi* taught to Neapolitan apprentices: sequences of bass leaps in descending sequence.

Figure 2.8. Treble voice Rule of The Octave, Terefenko (2014).

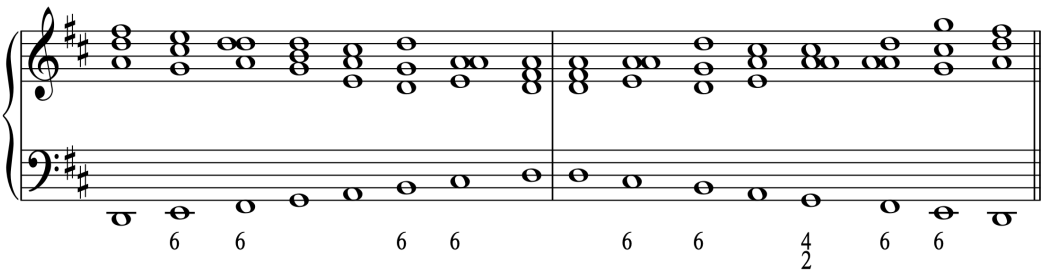


"Activating aural imagery through keyboard Harmony" (Graybill 2018), also alters the RO in two significant ways. This version substitutes a root-position triad above scale degree 4 in the ascending sequence (in place of the 6/3 or 6/5/3 version used in the vast majority of historical

[81] Terefenko (2009) also features the author's version of the Rule of the Octave. Both this publication and Terefenko (2014) deploy Schenkerian-style graphs to illustrate structural elements in jazz composition and schematic structure.
[82] Some solfeggi demonstrate scale movement in the treble voice, though this is more commonly an illustration of contrapuntal bass interaction with a hexachordal scale than a seven-note major or minor scale.

RO examples), and omits the raised sixth interval above scale degree 6 in the descending version. (Figure 2.9) This is done to incorporate the custom, within a modern curriculum, of using subdominant triads as a standard pre-dominant element, despite the fact that the majority of pre-dominant chords used in the Galant era were 6/3 above scale degree 4, when approaching the dominant scale degree 5. As Caplin points out, the "textbook progression I-IV-V-I… is not typical of the classical style." (Caplin 2004, 71) This altered harmonization of descending scale degree 6 also fits with the avoidance of an implied tonicization of the dominant, a musical element introduced at intermediate stages of chord training. But this alteration of the original model excises a basic intervallic gesture – sixth to octave, the ancient *clausula tenorizans,* which requires a raised sixth interval in the treble – that was taught to beginner musicians. It has a compositional history dating back to the beginnings of contrapuntal technique, to say nothing of its function as an element of chord structure in common practice composition. It is a sound unlikely to confuse or disorient young students, especially in the two-voice solfeggi in which it was introduced in the original training. But rather than the parameters of the original RO leading to a critical examination and possible reassessment of current pedagogical practice, modern music theory habits and customs are reinforced by altering the historical and sonic character of the model.

Figure 2.9. Rule of The Octave, Graybill 2018.



For a musical tool so central to European training. the RO is almost nowhere to be found in modern theory and counterpoint texts. Of course, all the elements in the RO continue to be part of current classical training. But the model itself has long been absent, to the point that it has struck musicians as fresh and unusual, "profoundly and irreversibly affect[ing] the way I perform, hear, teach, conceptualize and contextualize eighteenth-century music." (Diergarten 2016, 5) Other interesting historical aspects of classical training and performance that have essentially fallen into disuse – such as the Guidonian Hand, the split-sharp harpsichord, and ascribing empirical emotional qualities to specific keys – rate at least some mention in history textbooks, and are likely to elicit something other than bemusement in lectures or discussions.[83] So why did the RO, and other schemata commonly found in partimenti, solfeggi and partiturae – even the actual word "partimento" – have to be rescued from a state of nullity, even among those professionally involved in performance and research of music of this era? The question merits its own dedicated investigation; while it cannot be the focus of this study, it is ultimately a crucial aspect of partimento research. A better understanding of the reasons for disappearance of this influential tradition can provide insight into the arc of classical music history: how the style evolved, what it has become, and how elements like the RO became lost. But there is a more pressing reason: in understanding better how political and economic change altered currents of thought and social custom, which in turn influenced both musical style and pedagogy, we may be able to step outside of the cage of our own preconceptions, and better understand similar pitfalls that await us as we confront our own challenges in music education.[84] What follows is not a definitive record of causality, but rather a series of suggested topics for further enquiry.

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[83] This particular notion derived from historical tuning systems, which produced varied intervallic, scalar, and chordal characteristics for different keys; See Young 1991.

[84] See footnote 7 regarding the challenges in jazz education. Institutional jazz training has mirrored elements of and classical training, emphasizing the importance of masterworks by master composers, and championing the model of

The wake of the French revolution brought changes to the previously dominant influence of the European churches and aristocratic class, altering the economic and cultural infrastructure that had fostered and maintained court musicians.[85] Composers and performers now had to meet the needs of bourgeois music education, which included an increasing focus on performance of works by past masters; a growing insistence that music training be based on "scientific" organizational precepts; and the increasing role of universities as centers of music training. All these combined over time to shape curricular choices, which continue to influence music education to the present day. "In the course of the nineteenth century, numerous educational institutions – particularly those of the music 'conservatory'– were established throughout Europe, in which formal instruction on topics of applied music were given that had hitherto been the province of private music instructors. This new institutionalization of music pedagogy would have profound influence on the development of music theory." (Wason 2002, 59-60) Music theory increasingly became a school subject rather than a fully integrated element in professional training. The individual and small group teaching of the conservatories, accompanied by hand-written exercises jotted down by a maestro, became large group classes working through set curriculum of exercises in published textbooks. Music theorists, a group of musicians markedly different from the singing masters who taught counterpoint basics in the previous century, increasingly influenced the way music was taught to students. Influential writers, like A.B. Marx in Germany and Fetis in France, combined music pedagogy with larger questions of form,

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the genius musician whose work expresses a personal vision, with little or no thought towards audience preferences. The veneration accorded John Coltrane and his widely taught composition *Giant Steps* is not dissimilar to classical music's approach to canonic composers and repertoire.

[85] Baragwanath identifies loss of patronage as a central reason for the demise of Neapolitan conservatory training: "The social circumstances that gave rise to the method changed over the course of the eighteenth century, and its sources of income declined. Neither the Church nor the aristocracy could keep up the payments need to maintain their dedicated music industries." (Baragwanath 2020, 307)

structure, history and cultural politics, in a way that must have made partimento exercises – handwritten examples accompanied by a few quick sentences at best – seem like a different, and much lesser, discipline altogether.[86]

The societal changes that took place in the nineteenth century helped usher in a change in perception as to what music pedagogy was, or should be: "a new and newly self-reflective historiography…[led to]… two of the theoretical constructs which most immediately characterize the early nineteenth century: the 'canon' and the critical (and eventually analytical) study of the individual piece;…this leads to a third construct, the rationalization of musical pedagogy." (Blasius 2002, 40) The assembly of a canon of past masters – accompanied by an increasing sense of the importance of historical and technical progression in music – carried with it a sense of the importance of comparable progression in music education. The idea of having a responsibility to something beyond the immediate needs of patrons – to the practices of both composition and pedagogy, the relatively new field of musical analysis, and a growing sense that these elements must be progressive and forward-looking in new compositions, while revering the works of select past masters – was vastly different than the imperatives of the Neapolitan instructors, who had been more immediately engaged in creating appealing music and fulfilling civic functions required by the aristocracy and the church. To be certain, Neapolitan musicians took great pride in their traditions, with a strong reverence for influential teachers and the rigours of their trade. But their patrons had been less interested in the historical importance of the music they created, than the requirement that it be up to date and fashionable, which was an essential part of its appeal for their perception of themselves and their place within society. Nor had they

[86] For an assessment of the writing of Fetis, see Christensen 2019. For discussion of the work of Marx, see Applegate (2005) and Applegate (2017), 135-154 (chapter six, "Marx's Cosmopolitan Nationalism").

been anxious about being on the right side of the dichotomy between "serious" and "popular" music, an issue was the increasing preoccupation of music theorists, composers and their audiences.[87]

AoP briefly addresses the decline of the Neapolitan conservatories in the eighteenth century, and the continued use of partimento-like exercises into the nineteenth century, especially in France and Italy. Partimenti did not disappear entirely, but their use and function evolved. The partimenti of Fenaroli, used in French training, were republished many times, while unpublished partimenti of other Neapolitan composers fell into disuse. As Van Tour has demonstrated, partimenti had a dual function as counterpoint exercises and extemporization drills. As the second category decreased, a partimento became an increasingly unnecessary category of exercise. Sanguinetti credits Italian pedagogue and composer Pietro Raimondi with altering partimento training towards a predominantly written approach to realizing bass lines, which "wiped out the last vestiges of improvisational freedom from his partimenti" (Sanguinetti 2012, 90). To some degree, Italian conservatories maintained elements of their past practices. "The same rules, exercises, and examples appeared again and again throughout the nineteenth century… In this respect, Puccini's training differed little from that available at the time of Rossini, and perhaps even before." (Baragwanath 2011, 5) But even in Italy, by "the turn of the twentieth century…foreign influences, especially from Germany, had begun to usurp the old methods of training. A new and comprehensive textbook of harmony for the Milan Conservatory, [the] Manuale d'Armonia (Manual of Harmony, 1898), contained elements that were indistinguishable from the kind of treatise being published in large numbers elsewhere in

[87] See Gramit (2002) for an examination of popular/serious dichotomy in German music making during the first half of the Nineteenth century.

Europe." (Baragwanath 2011, 21) The erasure of the RO can also be seen as one aspect a general downplaying of the Italian influence in classical music in favour the Austro-German masters. By the end of the nineteenth century German music was now associated with progressiveness and musical innovation, with Italian methods suffering by comparison.

A similar process took place in France. "The Early Reception of Neapolitan Partimento Theory in France: A Survey" explores how the migration to France of Italian exercises had the effect of changing their nature: "[The] Neapolitan tradition…in its world of close-knit teachers and students, was indeed a highly systematized process for developing skills in improvisation and composition. But when taken out of its native context and reduced to treatises read by students unaware of the tradition, it began to transform into part of the nineteenth-century study of harmony." (Cafiero 2007, 154) Stella's "Partimenti in the Age of Romanticism: Raimondi, Platania, and Boucheron," concurs with Cafiero that the decisive element "that caused the definitive twilight of the partimento tradition, was its divorce from improvisation... The shift from improvisation to written practice marked the end of a centuries-long and glorious tradition." (Stella 2007,184) In the newer field of North American classical training, the popularity and influence of German music in England led to pedagogical choices that influence us to this day. "Translations of the major French and German pedagogical treatises had appeared in England throughout the eighteenth and into the nineteenth century… there was little indigenous music pedagogy from England from this time." (Wason 2002, 65) It was these texts that influenced English music training. When England began to produce its own writers of music theory, it was English texts in turn that helped shape music training in North America. "Ebenezer Prout, whose numerous music texts were the most widely used in Victorian Britain….became also important in North America, where they were often reprinted." (Wason 2002, 66). The influence of

German-centered musicology was also a strong factor in the assembly of a history of classical music. Gjerdingen observes in his review of AoP:

> The sublime artistry of a few Germanophone composers (Bach, Handel, Haydn, Mozart)… has helped to push the original Italian character of that era so far into the background that many music students today would be hard-pressed to name even one of the most famous composers from, for instance, the 1760s. That was a period the Italians completely dominated, yet only the rare music student could name even one of the "Big Four" put forward by the Englishman Charles Burney in 1770: Niccolò Jommelli, Baldassare Galuppi, Niccolò Piccinni, and Antonio Sacchini. (Gjerdingen 2013,119)

Baragwananth concurs: "For over 40 years scholars have acknowledged (with varying degrees of reluctance) that professional music making in eighteenth-century Europe was dominated by Italians, rather than Germans, and notably by alumni of the four Neapolitan conservatories." (Baragwananth 2013, 283)

On a stylistic level, it made sense for nineteenth-century theorists to dismiss the *Règle* and other partimento models as pertaining to a style of composition performed but no longer widely practiced, and thus no longer of value in that era of compositional study. Music theory historian Thomas Christensen observes:

> While the *Règle de l'octave* continued to be quoted in thorough-bass and harmony texts throughout the nineteenth century, it had by then lost much of its immediate import… the *Règle de l'octave* became an increasingly anachronistic harmonic progression. Its rapid harmonic changes and bass-driven motor rhythms were reflective of a distant eighteenth-century Italian-influenced compositional style, but not of post-classical tastes. (Christensen 1992, 116)

The elements of the RO were disassembled and dispersed into a series of smaller harmonic progressions, governed by written rules, that were to be memorized and executed on paper – our current method of counterpoint studies – rather than a complete sequence to be absorbed through singing solfeggi, practicing bass continuo, and creative variation. When the elements of the RO were dispersed into general harmony and counterpoint training, there was no point left in referring to it by name. This was also true of the cadences taught in partimento training, which

we will examine in depth in the following chapter. “By the nineteenth century these models were of practical use for only the most conservative ecclesiastical styles. Having to learn them… must have seemed inordinately tedious and pedantic.” (Baragwanath 2011, 59) As early as 1818, Reicha’s *Cours de composition musicale* indicates a chord-centered approach to introductory materials, which was quite different from the partimento approach, as we shall see. Two centuries later, we can view the older methods of tonal and rhythmic organization as conceptual frameworks that provide insight into past practices, with potential benefits for modern training. But as procedural relics of the recent past, nineteenth century musicians saw them as simply out of date, insufficient tools for new modes of harmonic and melodic invention.

But observing how the RO elicited outright hostility from nineteenth century theorists, it appears that something more deliberate took place than a replacement of older tools by ones better suited to changes in musical style. Christensen notes that “by 1818, Reicha could write dismissively that the RO ‘is of so little use to practical composition that it is not worth the effort to discuss it in this work.’" (Christensen 1992, 116) Holtmeier cites theorists such as A.B. Marx and Weber as being not only dismissive, but derisive, of thoroughbass training, and notes that theorist Heinrich Josef Vincent went so far as to title his 1860 theory text *Kein Generalbass Mehr*, or No More Thoroughbass. (Holtmeier 2007, 7n). These expressions of antipathy and dismissiveness attest to the anxiety over the cultural context in which the RO had functioned. It is important to remember the degree to which Neapolitan apprentices, and musical artisans in general were considered an inferior caste, even high-profile star musicians and composers who might command the interest of their patrons. Burney’s famous description of the middle school cafeteria-like character of Neapolitan practice areas would have been repellent to nineteenth century bourgeois musicians who were, in their own way, as class-conscious and jealous of

social standing as the aristocratic classes that preceded them.[88] The aristocratic classes of earlier centuries could accept that their music was generated by this caste – after all, it was their traditional place, and these musicians posed no threat to aristocratic status. But a newly empowered bourgeois responded better to the concepts of music as an academic discipline, and an elevating influence with beneficial spiritual qualities, and was anxious to jettison any associations with professional composition as a lower-class pursuit.[89] The RO was one of the few partimento models that had a profile outside the artisanal circles in which it was taught. Public discussions of it by writers like Delair, Campion and J.C. Bach meant that it was associated with not only with music of the past, but with the previous century's aristocratic culture, the function of music within that culture, and the social status of the musicians that supplied it. It was possibly the awareness of this history, as much as the technical aspects of the older musical models, that provoked the ire of nineteenth-century theorists. Their comments have a virulence that conveys a profound antipathy to the very idea of a composition as a schematic construct, to say nothing of a made-to-order product delivered for a fee or salary. The model of composer as an artisan, at his most successful a "prosperous civil servant" (Gjerdingen 2007, 6) cobbling together prefabricated elements, was antithetical to the emerging bourgeois notion of the genius composer as romantic outsider, whose compositions were spontaneous, inspired

[88] Burney's journal entry of 31 October 1770 has been repeatedly quoted in later music history texts. "On the first flight of stairs was a trumpeter, screaming upon his instrument till he was ready to burst; on the second was a french-horn, bellowing in the same manner. In the common practising room there was a Dutch concert, consisting of seven or eight harpsichords, more than as many violins, and several voices, all performing different things, and in different keys…in the midst of such jargon, and continued dissonance, it is wholly impossible to give any kind of polish or finishing to their performance; hence the slovenly coarseness so remarkable in their public exhibitions; and the total want of taste, neatness, and expression in all these young musicians, till they have acquired them elsewhere." (Burney 1773, 336-337). Burney's publication, which was influential in England, contains other highly critical comments on the state of music performance in Naples during the writer's visit.

[89] See Parmer 2014 for a discussion of ongoing elements of class and status anxiety in musical training performance, and academics.

expressions of his inner life.[90] This was disagreeable on two levels: first, post-Beethoven, that music as a discipline would be subject to anything but the will of the individual artist; second, that something other than immutable scientific laws of music would guide compositional choice.

A.B. Marx inveighed without cease against music that he felt demonstrated "technical fluency, decked out in fashionable mannerisms," (Applegate 2017, 140) a phrase that negatively describes elements prized in the Galant aesthetic. This approach to composition reflected a relationship between composer and audience that Marx and his followers could not abide. The idea of a musician entertaining and flattering their audience with pleasing musical gestures, familiar allusions, even shared jokes – the essence of what court players and composers were expected to provide to their patrons and employers – was an uncomfortable reminder of the professional realities of generations of musicians employed by the aristocratic class. Far from evoking the spiritual heights that Marx heard in his revered Beethoven and Bach, the RO hearkened back to an uncomfortably temporal aspect of the lives of past masters: their courtier-like existence, their dependence on patronage, the necessity to be aware at all times of the needs, preferences, predilections, habits and idiosyncrasies of their audiences, as well having to endure exploitation with a smile and a bow.[91] Leaving aside German musicians' hostility to Italian and French composition, based in part on its popularity with German audiences – Marx was hardly

[90] The gendered pronoun is appropriate here, as the ideal Romantic composer was also male. The erasure of creative female musicians from the canon, as well as musicians of colour, is another area of the historical record in that modern musicology continues to confront.

[91] A particularly disturbing example of this dynamic is seen in Mozart's 1 May 1778 letter to his father, in which one of music's undoubted geniuses describes his humiliation in Paris by the *Duchesse de Chabot*. Hoping for work in the form of commissions or patronage, Mozart was compelled to wait in a freezing antechamber for the Duchess. Upon her arrival, Mozart found himself providing background music as she and her friends enjoyed a game of cards. Mozart did his best to put a positive gloss on the miserable episode, but his helpless fury appalls us still. "Give me the best piano in Europe, and listeners who understand nothing, or don't wish to understand, and who do not sympathize with me in what I am playing, I no longer feel any pleasure." (Mozart letter, 1778, trans. Wallace 1866). Gutenberg Project version, online: https://www.gutenberg.org/files/5307/5307-h/5307-h.htm#link2H_4_0004.

the only one to express these sentiments – it is also the hagiographic quality of Marx's writing on Beethoven that would make it hard for him to accept schematic elements, with their implied qualities of standardization and cliché, in the work of any composer to whom he would ascribe spiritual superiority.[92] Faced with a choice between an apparently science-based approach to music – in combination with elevated claims for its spiritual benefits – and the workmanlike straightforwardness of Neapolitan conservatory training, as exemplified by the apparently unsystematic unpublished scraps and artifacts of private instruction from the conservatories, the latter needed not just to be dismissed, but erased and left to pass into oblivion. It was a history that was incompatible with newer perceptions of what composers were, or at least, should be.

In short, extra-musical tensions and imperatives of ethnicity, politics, social status and economics, all contributed to influence both musical aesthetics and education. Classical musicians continue to feel the effects of this historical process. The renowned Italian composers mentioned above by Burney are barely known today. Pedagogical materials deployed by classical music schools, such as Toronto's Royal Conservatory of Music, still use Handel's music for their example of Italian opera, reinforcing the old myth that Handel outpaced his Italian colleagues to become the greatest composer of *opera seria* that ever lived. While musicians are taught the stylistic parameters of "early" and "late" Beethoven and Mozart, the subtleties and complexities of the entire Italian tradition continue to fall into a general group category, especially in beginner and intermediate training. Nowhere is this more evident than the 1894 Schirmer publication *Twenty-Four Italian Songs and Arias of the Seventeenth and*

[92] Marx's pro-German jingoism is well documented, though Applegate 2017 argues a more nuanced view of Marx's opinions of non-German composers. See Menke 2018 for a discussion of Marx's attack on Dehn in *Die alte Musiklehre im Streit mit unserer Zeit* (Leipzig 1841) and by extension, what Marx perceived as the vagrant Italian elements in Dehn's approach to music theory. Similar to Diergarten 2011's examination of the Neapolitan influence on Haydn, Menke makes the case for the influence on of Italian training on Wagner.

Eighteenth Centuries, still in print (now published by Hal Leonard), and an ongoing resource for repertoire selection in conservatory vocal exams. This collection (sometimes referred to within vocal instruction circles as the *Twenty-Four Hateful Hits*) elides the stylistic range of almost two hundred years of repertoire, fostering a standard approach for compositions as disparate as Caccini's 1602 *Amarilli* – an introspective song first accompanied on solo theorbo – to Gluck's 1770 *O del mio dolce ardor*, a full-scale opera aria originally scored for orchestra.[93] It is possible that partimento research will help bring more nuance to our approach to the work of these composers, especially at the beginner and intermediate levels. But this may take some doing. Sanguinetti, an Italian scholar, saw the publication of his *Art of Partimento* in English, but has found that there is currently little interest in publishing an Italian translation.

Noting that "performance of entire fantasies extempore to the improvisation of cadenzas, lead-ins, and additional ornaments" (Diergarten 2011, 15) continued well into the twentieth century, Diergarten argues that the practical application of partimento-derived schemata continued to be manifest in the work of nineteenth-century pianist-composers. But these skills were increasingly the province of a few virtuoso pianists and violinists, and by the early twentieth century these skills were increasingly no longer required. Conservatories were increasingly producing musicians whose strength was interpretation rather than spontaneous composition; theory exercises emphasized identification and analysis of pre-existing scores. Partimenti in varied forms retained a tenuous and marginalized place in European training, but little or nothing of the tradition made it over to North America, the terrain of new possibilities. These documents and the type of institutional environment in which they were used became part

[93] Alfred Publishing's 1991 *26 Italian Songs and Arias* (ed. John Glenn Paton), subtitled "An Authoritative Edition Based on Authentic Sources", covers the same repertoire as the Schirmer *24 Italian Songs and Arias*. It is a far superior alternative to the 1894 publication, and a model for how to introduce historically informed musical interpretation at the beginner level.

of the lost detritus of the old country, left behind by generations of expatriate teachers and performers.[94] Nor did partimento texts attract the interest of historians. The majority of written partimenti were internal documents conceived for private study, jotted down with a minimum of explanation or instruction. Partimenti had also functioned as the basis for written counterpoint exercises, another central aspect of conservatory training. Van Tour argues that partimenti were used interchangeably in written composition, sung solfeggio creation, and basso continuo accompaniment practice (Van Tour 2015, 22-23). Hiding in plain sight in many museums and conservatory archives, these were generally ignored or overlooked as time passed. Because there was no direct record of their use – for instance, a set of instructions as one might find in a music textbook – historians likely surmised that the exercises' main function was written counterpoint, missing their additional creative function in improvisation drill. The gnomic quality of partimenti, and the degree to which they were combined with oral instruction, is noted by Christensen in "*Fragile Texts, Hidden Theory*":

> The partimento represents a tradition of embodied knowledge in which the practical understanding of harmony and counterpoint was inculcated through emulation and endless repetition. It was literally 'finger' knowledge. To the extent that there was any articulated theoretical component to the *partimenti* exercise, it was the one that would have been conveyed orally by a master. (Christensen 2011, 195)

The transmission of knowledge that partimenti facilitated could only fully occur in a face-to-face lesson, in which the document and the instruction combined to impart the concept to the student. It is a final, likely unsolvable question – what kind of instruction did the maestri give to their students as they plunked down a new partimento in front of them? – that renders the

[94] Kevin Korsyn, author of *Decentering Music* (2003), argues that elements of "The partimento tradition actually flourished in some institutions in the United States. The Italian composer Rosario Scalero (1870-1954) became the head of the composition department at the Curtis Institute of Music in Philadelphia in 1927 and taught many influential composers, including two of my own teachers, George Rochberg and André C. Vauclain. Nino Rota, Gian Carlo Menotti, Marc Blitzstein, and Samuel Barber also studied with Scalero. So for some of us the partimento tradition never had to be revived." Kevin Korsyn, email communication, June 24, 2021.

Neapolitan tradition forever incomplete. The enigmatic unknowability of the combination of the fragile texts, and the lost instruction that accompanied them – private coaching by the *maestro* to the *apprendisti* – tantalizes and frustrates as we attempt to definitely understand how they functioned in the past, and consider their possible use in the modern musical world.

Partimento culture also is a significant missing link in our historical knowledge of the musical past; its re-emergence holds possibilities for reassessment, even illumination, of neglected but central elements of a musical tradition. The reappearance of partimento history has not only spurred us to consider anew the Italian influence in central Europe, but farther to the east as well. Gjerdingen 2011, "*Gebrauchs-Formulas*," explores bass-line training in Russia at the end of the nineteenth century, illustrating the article with fascinating examples of bass lines and harmonic progressions from Arensky's 1897 *A Collection of 1000 Lessons for the Practical Study of Harmony*. If there is a traceable compositional through-line from the aristocratic protocols of central Europe to the modernist innovations of Stravinsky and other Russian composers, the influence of the partimento tradition and expatriate Italian composers (Paisello, Cimarosa, among others) could be an important aspect of it that requires further exploration. [95]

Researchers and advocates have exuberantly touted the benefits of these new areas of discovery. In the realm of music history and western music theory – as well as the history of western music theory, a highly specialized sphere of investigation – exuberance is merited. It is not hard to see why today's musicians have embraced partimento research and practice with alacrity, even glee, and why they have high hopes for the ability of partimento research to spur

[95] Stravinsky studies has become a battleground for scholars, as Taruskin and others debate the precise nature of Stravinsky's training and formative influences, especially as pertains the influences of folk music and earlier Russian composers, which are elements of his background that Stravinsky downplayed and possibly even suppressed. *Music Theory Spectrum* 33, No. 2 (2011) is a multi-article discussion of issues regarding reception and analysis of the work of Stravinsky. See also Taruskin 1996.

advances in these disciplines, as well as in music pedagogy. At the same time, we should remind ourselves that success of the eighteenth-century conservatories was not due to an empirical superiority in the partimento/solfeggio system; it is that their methods functioned for musicians and the society in which they lived, well enough to produce results in the form of popular composers, performers and compositions, results that other jurisdictions noted and wished to emulate. When contemplating a modern application of partimento models, we should remember that the hothouse environment of the Neapolitan conservatories no longer exists, nor does the society that created and benefited from them. Our perspective on childhood, education, music and art bear little or no resemblance to the views of the past – not to mention our view of child labour, and the mutilations that produced the prized Italian *castrati*, some of whom received their training in Naples. Other powers have replaced the royal and religious hierarchies in which the conservatories flourished, and these changes have influenced the nature of education and the goal of arts instruction. The closest thing to the conservatories in modern times, in an institutional sense, are college and university music degrees.[96] In these programs, undergraduates complete the course work over three or four years, with four-month hiatuses to travel or work, as well as weekends, civic and religious holidays, reading weeks and spring breaks. It is a schedule of training inconceivable to the conservatory trainees who spent a childhood studying and working every day for six to ten years, when they were not eating, sleeping, praying, or being hired out for civic and liturgical functions. (Sanguinetti 2012, 38-29) No modern form of institutional music education is as stringent – and on occasion, brutal and even violent.[97] Mastering the tools

[96] While some modern conservatories have a similar structure to the college model, a notable element in modern conservatory training is the graded syllabus, which allows music students to gain certifications by passing exams. Training within the actual conservatory is not required. Far from living in communal dorms for years on end, modern music students do not even have to set foot in a conservatory to gain a conservatory diploma.
[97] See Del Prete (2014) and Van Tour (2016, 43-45).

of their trade was the only thing that stood between the orphan apprentices and their poverty, neglect, and destruction. Success in music school, for the poorest of them, was literally a matter of survival. Modern children or undergraduates, by contrast, may have to contend with a poor or failing grade for substandard performance, but it would take a lot for them to be banished from most institutions, which rely on their fees and will strive to keep them enrolled, no matter how poorly they manage their studies. In this environment, what use can partimento training be, as training that functioned in a world so radically different from ours? Modern musicians may find fascinating ideas and techniques in partimento models, but it seems unlikely that it will ever be what it was in its heyday – a gateway method to success in the most popular styles of the era. Modern explorations in partimento practice attest to the energy and creative thought in this area of enquiry, but they have yet to effect any widespread change in general music training. These models and ideas must now function within modern music education formats, and currently they appear equally likely to be altered and assimilated as to disrupt and innovate.

However, the process of internalizing and creatively varying models is the core of schematic improvisation, a technique applicable to a variety of styles. If we are willing to look critically at current music education protocols, we must acknowledge that it is precisely this element of partimento training that classical music education no longer regularly requires. It was likely this missing knowledge that froze the fingers of Sanguinetti's *Rach Three* virtuoso. This is where rock and jazz musicians have the advantage, because popular music is often organized in cyclic repeating units – defined by repeating metric grooves, chord changes, and bass lines – that are structurally akin to the ground-basses of the past. Popular musicians are expected to eternalize, vary, and combine these patterns, just as ground-basses could be internalized and deployed in more complicated compositions. The *moti di bassi* schemata in partimento training

had a similar function as a series of combinable building blocks for compositional use. What professional composers in Naples were required to do is not dissimilar from what is required of modern musicians: to use internalized patterns to solve creative requirements quickly in different styles and situations. Partimenti were drills to help develop the ability to form an individual creative response to an incomplete score. There is some parallel with a modern lead sheet which is typically a one-stave melody with accompanying chord changes. A lead sheet is understood to be only a guide to finished performance, requiring creative elements for realization. Schematic knowledge is necessary when creating an idiomatically appropriate realization of a lead sheet.[98] But ultimately lead sheets and partimenti cannot be precisely equated; modern lead sheet skills do not address a core element of what the partimento/solfeggio system taught: contrapuntal voice leading patterns and protocols. This creative parameter compelled an intervallic precision between bass and treble that is not fostered in the more general "chords below, melody above" approach in both lead sheet realization and improvisation practice. And within these contrapuntal customs, there is one core element that neither institutional jazz, or any other modern scholastic system, focuses on and demonstrates as simply and effectively partimento training did: intervallic suspension. The potential use of this element in improvisation and aural skills instruction, will be explored in the following chapters.

[98] In jazz and rock training, lead sheet execution is an essential requirement. Aware of the necessity of this skill, some classical music theory texts have integrated some elements of lead sheet instruction, but it has not become a uniform element. The widely used Laitz 2016 has one mention of jazz and chord symbols in an almost 900-page book (page 754), and no mention of lead sheets.

Chapter Three: The *Cadenzi* – analysis and implications for introductory music education

The term "cadence" is commonly used to denote a sonic gesture that dissipates or ceases the perceived temporal motion of a musical phrase. Like a comma in the middle of a sentence or a period at its end, a cadence helps define the boundaries of a phrase, and signals to a listener either that another is about to begin, or that the composition has come to an end. In the mind of the listener, this gesture is perceived as a point of repose in sonic flow, a noticeable incident that helps shape and define the listener's experience of both what has occurred up to this point, and what follows after it. In all but the simplest (or most relentless) pieces of music there are likely to be several cadences, often with varied characteristics, although certain elements occur frequently. In many types of western diatonic composition, a sense of momentary or final cessation is achieved by uniting musical signifiers of stability in harmonic, melodic, rhythmic and metric parameters. Harmonically, there may be an iteration of the chord designated as the composition's key center; melodically, the phrase may move to a note consonant with this harmony; rhythmically, a slowing of the tempo and/or a shift to larger note durations may occur.[99] A cadential gesture employs a combination of these three elements to signal to the listener that a phrase or entire composition is complete.[100]

Within this common approach to cadence structure, there are myriad variants and sub-variants within the larger parameters of individual composition, composer, style, and era. Researchers have examined with Talmudic thoroughness the nature of cadences within the

[99] In classical repertoire, the arrival at the secondary dominant in the middle of a conventional sonata form is also accompanied by many of these signifiers as well.

[100] Further elements contributing to cadential character are timbre, volume, and varied instrumental and vocal performance choices – Early Music performance regularly experiment with different instruments within basso continuo groups, for instance. As elements that are not always easy to quantify with precision, these are sometimes underemphasized or even ignored in traditional music analysis, in favour of a score-oriented approach.

classical tradition; modern analysis has extended cadence discussion to modern popular music.[101] But for countless undergraduates who become music teachers preparing music students for music exams, there are only several types of cadences, defined almost exclusively by harmonic content. The Plagal, Perfect, Authentic, Inauthentic, Imperfect and Deceptive cadences are all taught as a two-step sequence of chords, with their harmonic function identified by Roman numerals, and secondarily by variations in melodic and bass-line material. For most of us, this is as far as our understanding of cadences extends.

These designations can be identified through written musical notation as easily as through contextual awareness of sound – more easily, if a musician lacks the ability to identify pitches and pitch function through aural reception – and are therefore ideal for presentation in textbooks and use in institutional exams. But this expediency exacts a price: the emphasis of chordal identity as the principal defining trait of cadences, at the expense of other musical elements, has led to an oddly contradictory educational bifurcation. The beginner pedagogy that introduces cadences is not so much expanded in advanced academic analysis as it is critiqued and refuted amongst a relatively small group of musicians, all the while remaining static and unchanged in general practice. Caplin writes:

> As for 'cadence,' the situation is particularly grim. I have identified what I take to be problems and inconsistencies about cadence in the writings of eminent scholars of our time. The situation in the pedagogical trenches is considerably worse. I continue to encounter students who have been taught from an early age that every progression from V to I, no matter the inversion of the chords, is a cadence of some sort. (Caplin 2004, 113)

Gjerdingen concurs with Caplin, albeit from a historical rather than theoretical perspective:

> Since the mid-nineteenth century, each ostensibly fixed type of cadence has been taught as a 'chord progression' with a descriptive title intended to 'grasp its essence' (e.g., 'perfect,'

[101] Cadence discourse in popular music observes that cyclical grooves may include tonic-dominant motion, but that this motion occurs in phrases in which the use of tonic and dominant chords does not correlate with their standard position in classical phrases, such as the familiar I-V-vi-IV chord progression. See Tagg (1982), Everett (2004), and Osborn (2017). For an analysis of cadence use and function in film scores, see Lehman (2013).

> ‘imperfect,’ ‘deceptive,’ ‘plagal,’ ‘Phrygian,’ and so forth)… Generations of nineteenth- and twentieth-century music students have learned about musical phrase endings – cadences – from textbooks on harmony. (Gjerdingen 2007, 142)

Observing earlier:

> This chord-centered view of musical articulation was fully appropriate to the aims of general music education in the Romantic age, but it is too coarse-grained for an esoteric, courtly art like Galant music. Or put another way, it highlights only what Locatelli has in common with Rimsky-Korsakov.” (Gjerdingen 2007, 140)

As nuanced discussion of cadences is not necessarily an element in basic music theory courses, musicians armed solely with an undergraduate degree or conservatory diploma remain unaware of the incomplete or misleading nature of the cadence categories they have learned, and may impart to others in turn. But the texts they learn from, and may redeploy, are commonly written by musicians with advanced academic experience and credentials. These writers cannot be unaware that targeting harmony as the central element of importance in cadence analysis has potential to obfuscate or even impede our understanding of the significance of other elements factoring into cadential function and character; and yet this approach continues to be promulgated and taught.

Extending his critique of the chordal approach, Gjerdingen observes that “The delicate interactions of Galant basses and melodies, however, were not fixed and go well beyond simple ascriptions of an essence… a ‘cadence’ is thus more properly understood as an instance of bass/melody co-articulation.” (Gjerdingen 2007,142). This observation provides a useful starting point for exploring the beginner cadences taught in the Neapolitan conservatories. In one form or another, these models were taught for over two hundred years, and continued in Italian training well into the nineteenth century. Both MGS and AoP investigate cadences and clausulae

thoroughly, as have other articles[102], but pedagogical applications of partimenti have tended to downplay them. Mortensen withholds a discussion of cadences until a late point in the text, stating, "this book does not proceed in strict historical order… we will postpone that topic until chapter 10 and use the reader's prior knowledge of cadences as a temporary measure." (Mortensen 2020, 1) IJzerman (2018) addresses cadences in chapter three, after introduction and discussion of other schemata. Lodewyckx/Bergé (2014), which explores the methods of several modern teachers of partimento, makes little mention of cadences in its examination of partimento teaching.

The extreme familiarity and ongoing use of the cadences' musical elements have made them easy to overlook. But the musicians who developed the partimento system considered these schemata to be of central importance, designating cadences as the first element to be demonstrated in basic partimento texts. In view of both the historical influence of the conservatories and our continued engagement with the music of past eras, we should be careful not to dismiss these models out of hand when reintegrating partimento concepts into modern pedagogy, merely because the elements within them seem so basic and familiar. The cadences deserve at least as much consideration as both Gjerdingen's MGS schemata and more intriguing historical partimento *moti di bassi*, such as the *Régle*, have attracted. In the following chapters we will consider these models from the perspective of cognitive experience of intervallic suspension, the pedagogical process of error correction, and the artistic parameters of musical narrative and form. The following discussion will argue that a unified sequence of the three

[102] See Gjerdingen (2007, 139), and Sanguinetti (2012, 105-113). See also Menke (2011), Lodewyckx (2015), and Diergarten (2015). But these are dedicated articles; more general discussions of cadence history may not address models used in partimento training. The "Cadences" chapter heading in the *Oxford Handbook of Critical Concepts in Music Theory*, asserts that the discussion is "historical, with particular interest in the sixteenth throughout eighteenth centuries," (Harrison 2019, 535) but only briefly mentions the Cadenza Doppia, and makes no reference to either Neapolitan cadence practices, or their German partitura equivalents.

cadences provide complete but variable basic models of sequential sonic experience that can aid in the process of learning how to listen, and to work creatively with sound. While the central concern of this dissertation is not analysis, but improvisation and aural skills training, the following discussion may also help clarify the areas of confusion identified by Caplin and the anachronisms pointed out by Gjerdingen, arming students with more flexible, historically sourced models that can be applied to both beginner instruction and advanced discourse.

Within the context of keyboard partimento drill, the three *cadenzi* were chord inversion exercises, with the intervallic character of each cadence indicated by numbers above a bass, in the manner of a basso continuo score. Different maestri set out variations on the three cadences, but the essential contours created by intervallic interaction of pitches remained remarkably consistent over two centuries. For the purposes of the discussion that follows, Fenaroli's 1775 *Regole* straightforwardly describes the structure of each cadence:

> A cadence is that which, when the bass goes from the central tone to the fifth, and from the fifth returns to the central tone. There are three types of cadences: simple, compound, and double. The simple cadence is that which, when bass is given the simple consonances that are required by both the central tone and the fifth. That is the 3 and the 5 for the central tone, and the major 3 and 5 for the fifth. The compound cadence is that which, when, above the fifth, a dissonance is made with the fourth prepared from the octave of the central tone, and resolved to the major third of the fifth note. The double cadence is that which, when, above the fifth tone, one puts the major third and fifth; fourth and sixth; fourth and fifth, and then major third and fifth. (Fenaroli 1775)[103]

A linear conception of cadences predates the Neapolitan conservatories; it had been part of musicians' training for centuries, with a much longer history than the two-chord model we

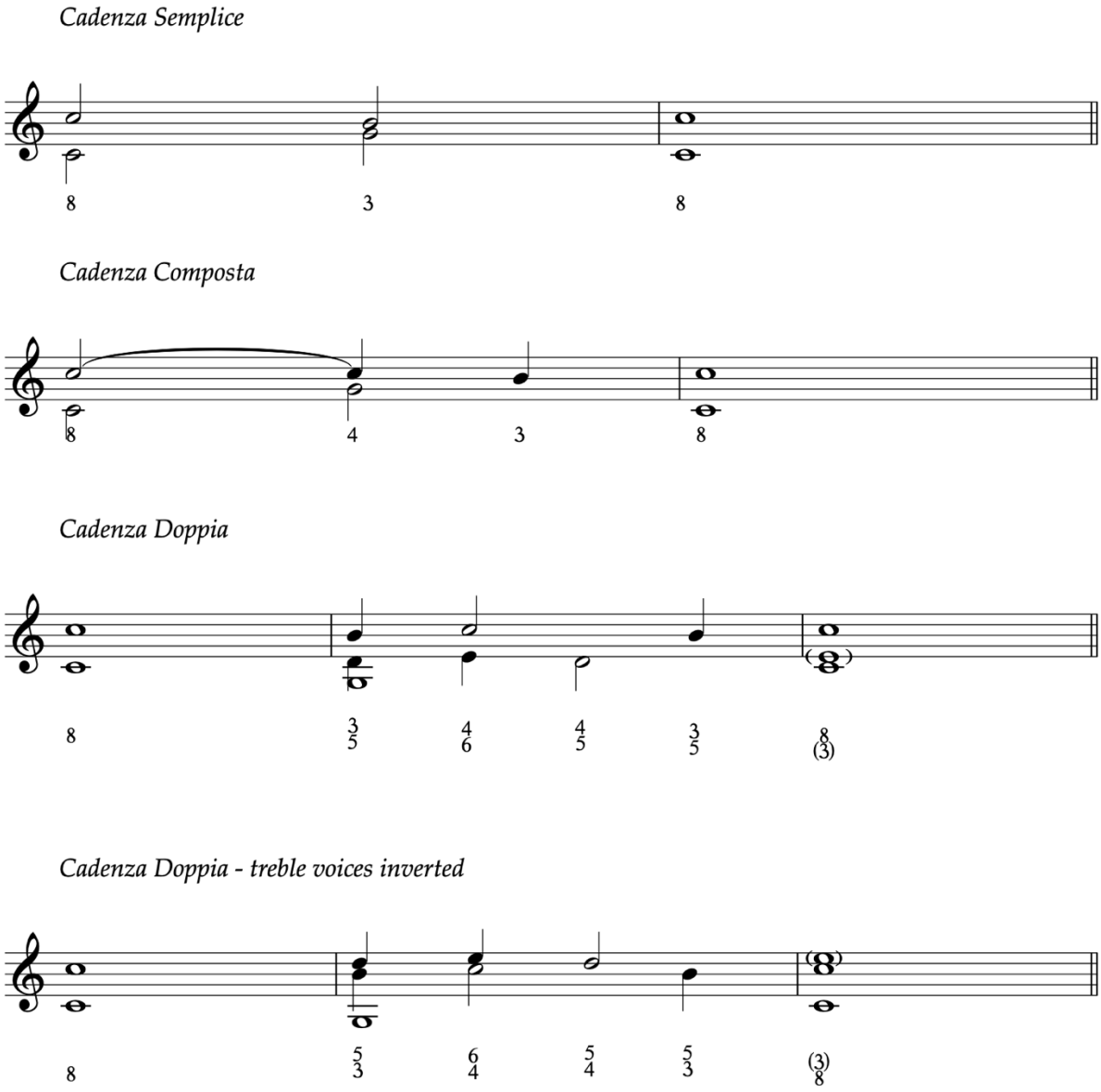
[103] From the *Regole*: "La Cadenza è quella, quando il Basso dalla prima del Tono va alla Quinta; e dalla quinta retorna alla prima. Le Cadenze sono de tre maniere: Semplici, Composte, e Doppie. La cadenza semplice è quella, quando al Basso gli si danno le semplici consonanze, che rechiede tanto la prima del tono [p. 8] quanto la quinta; cioè 3., e 5. alla prima del tono, e 3. maggiore, e 5. alla quinta del tono. La Cadenza composta è quella, quando su la quinta del tono ci si fa una dissonanza de quarta preparata dall' ottava del primo tono, e risoluta alla terza maggiore della quinta del tono. La cadenza doppia è quella, quando sù la quinta del tono si dà terza maggiore, e quinta; quarta, e sesta; quarta, e quinta, e poi terza maggiore, e quinta."

currently deploy. Arising from "the earliest days of discant, when cadence was synonymous with *occursus*, the coming together of two parts in contrary motion" (Taruskin 2005, 276), the structural importance of the linear dissonance as an impediment to "a mandatory pair of ending intervals" (Harrison 2019, 536) can be seen in didactic materials such as fifteenth century German *orgelbücher*, as well as sixteenth century Spanish and Italian guides to vocal and instrumental diminution by writers like Ganassi, Ortiz, Bassano and Rognoni.[104]

In the two- and three-voice realizations below, we can see the cadences' characteristic intervallic character. (Fig. 3.1) The straightforward movement of the *cadenza semplice* from a stable tonic to the fifth scale degree and back, harmonized with traditionally consonant intervals above, is a simple model of journey and return. The *cadenza composta* introduced a 4-3 suspension above scale degree 5, delaying the third degree of the triad built on scale degree 5. The *cadenza doppia* added an additional level of dissonance, suspension, and rhythmic division above scale degree 5 before the tonic arrival – the unstable 6/4 pitch combination, the 7-6 (or 2-3, if the voices were inverted) intervallic movement of the upper voices above the dominant bass, followed by 4-3 movement and the final resolution back to the tonic chord. Throughout the ongoing discussion, the terms *cadenza semplice*, *cadenza composta* and *cadenza doppia* will be abbreviated to CS, CC and CC respectively, with both full Italian and English labels deployed when appropriate.

[104] For non-Italian sources, see Christensen 2014 for discussions of the works of Paumann and Bucher, among others.

Figure 3.1 Cadenzas (cadences).



Partimento research has not yet revealed at what point in their training Neapolitan apprentices were formally introduced to the cadenzas as discrete schemata, or when the terms *semplice*, *composta* and *doppia* were introduced. But living in the conservatories, the younger

apprentices likely heard cadence terminology used by the *maestri* and older students in group lessons, long before they were allowed to choose instruments or receive individual instruction. Nonetheless, at whatever point the terminology was first deployed, it is certain that the cadences would have been introduced long before, as embedded sonic phenomena in solfeggio drills in which the cadences appeared, in varied forms, in practically every exercise. Long before child apprentices may have learned the cadence terminology and its execution on instruments, their minds and memories could have been introduced to countless examples of these musical gestures.

Keyboard students learned the different chordal inversions of each cadence. With the CC, the 4-3 suspension occurred at the bottom, middle, or top of the three-note chord above the bass. With the CD, the suspension sequence would occur between two adjacent voices in thirds, or separated by a sixth with the third note of the chord in between. All three were variations on what would now be considered a Perfect Cadence (PAC), which is the chordal structure of dominant to tonic, or V-I. But the term PAC and other related terminology was not used in Neapolitan training, nor by any of the canonic composers to whose work the label is regularly applied. The current practice of affixing Roman numerals to pre-existing scores was also not yet in use.[105] In beginning to explore how the cadences can be useful in modern training, it is crucial to remember that the pedagogical context for Neapolitan cadences was different from our modern training in chord assembly and triadic labelling. Of course, the Neapolitans understood

[105] For the question of historical anachronism in applying Roman numeral analysis to pre-nineteenth century music, see Lester (1992, 106). In a section entitled "What you should probably forget" in a discussion of figured bass, Gjerdingen's Monuments of Partimenti website advises that "Beethoven, Schumann, Brahms, Debussy, Ravel, Stravinsky would have failed a modern collegiate examination in 'Harmony 101.' They had a sophisticated knowledge of harmony but they never experienced the draconian simplifications of real music that make harmony courses possible (e.g., Roman numerals, harmonic functions, etc.). If you can leave those concepts behind, then the world of figured basses will be much easier to understand." Accessed Sept 21 2020: http://partimenti.org/partimenti/about_parti/beginners_guide/basics_of_figures.pdf

how chords were constructed, and how they functioned. But their experience of note combinations had first been shaped by the repeated singing of solfeggi, undertaken for a period of years before an apprentice was allowed to play an instrument. For a modern student viewing examples in a textbook, a four-voice chordal presentation of these models has the potential to under-emphasize the core contrapuntal motion embedded in each model, and the degree to which Neapolitan students had been taught to think in terms of linear dialogue between treble and bass. As Gjerdingen observed in his juxtaposition of Locatelli and Rimsky-Korsakov, the use of modern chordal terminology tempts us to slap convenient but generic labels on sequences from disparate compositions, eras, stylistic norms and modes of hearing. In the following discussion we will set aside terms such as PAC, IAC, plagal cadence, etc., though we will refer to them later on as applicable.[106] This will focus our attention on the particular characteristics of the CS, CC and CD, and help us attempt to understand the way these cadences shaped the manner in which musicians, and possibly their audiences, heard and understood the interplay of notes in cadential moments.

It is not an exaggeration to state that, in the Naples conservatories, vocal technique and counterpoint instruction were inseparable; training began with singing, and it was the singing teachers that were responsible for teaching their vocal students rules of counterpoint as well as vocal and improvisation technique.[107] The experience of years of singing melodies and tuning to a bass instrument – experiencing contrapuntal pitch interaction as part of repeated vocal exercise – would mitigate against the mind's interpreting these sequences simply as "melody over chord

[106] PAC: perfect authentic cadences; IAC: imperfect authentic cadence.
[107] The tradition of singing teachers being the principal instructors of counterpoint both pre- and post-dated the heyday of the Neapolitan conservatories. See Baragwanath (2011, chapter six) and Smith 2011. Early singing instruction regularly combined technical elements of voice production with instruction in singing diminutions; there is some parallel to contemporary vocal jazz instruction in this respect.

changes" in the modern sense that accompanied singing (and improvised soloing) is sometimes understood. Neapolitan vocal training was crucially different from our two modern institutional methods of singing practice: unaccompanied melodic drill, or accompaniment by harmonic instruments such as guitar or piano, often with the melody doubled by the pianist's right hand. Neapolitan conservatory solfeggi were conceived as two-voice compositions that demonstrated specific contrapuntal interaction between treble and bass voices. Intervallic suspensions helped facilitate the mental process of learning sonic interaction of bass and treble at the intervallic level, as we will explore below. Partimento exercises provided a mental archive of artistic and stylistic information, but the structure of the beginner cadences also reinforced the fundamental cognitive lessons demonstrated in the contrapuntal dialogues of vocal solfeggio drill, which all apprentices were required to undertake.

While the cadences were chord exercises, complete triads are not required to create the cognitive experience of a suspension, and it is in removing the chordal elements surrounding the cadences' intervallic suspensions that we can see more clearly the dialogue between bass and treble lines – Gjerdingen's "bass melody co-articulation" – that solfeggio drill would have trained Neapolitan apprentices to notice. For musicians, the cultural and procedural associations that music notation evokes are so thoroughly engrained that an alternative representation of pitch interaction can be an illuminating exercise. In this spirit, the models below are based on the schema diagrams in MGS which deliberately avoid standard musical notation. (Figures 3.2 to 3.4) Gjerdingen asserts that musical notation can "[over-specify] a prototype's constituent features"; when a model is presented in standard musical notation – often a chorale-type passage in the key of C major – "all that useful indeterminacy would vanish." (Gjerdingen 2007, 453) One notational element has been slightly altered from the diagrams used in MGS, which is the

unbroken line between the pitches that remain constant from one sonic event to the next. The diagrams should be understood as an attempt to illustrate the mind's sequential reception of sound, and the manner in which the sonic alterations combine and interact as they occur.

Figure 3.2. Cadenza Semplice, schema after *Music in the Galant Style*.

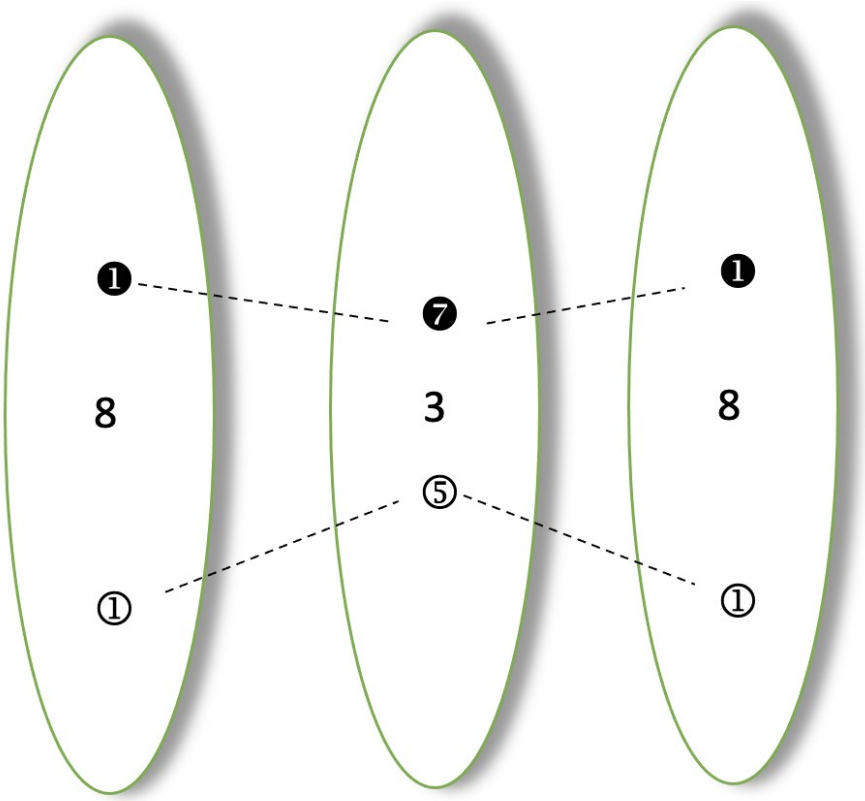


Figure 3.3. Cadenza Composta, after *Music in the Galant Style*.

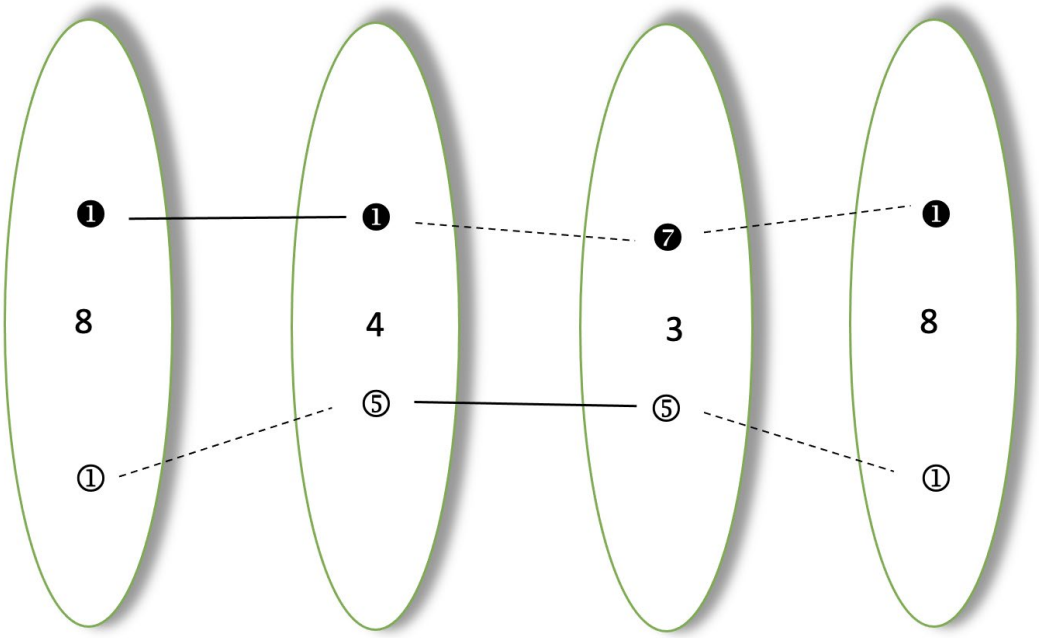
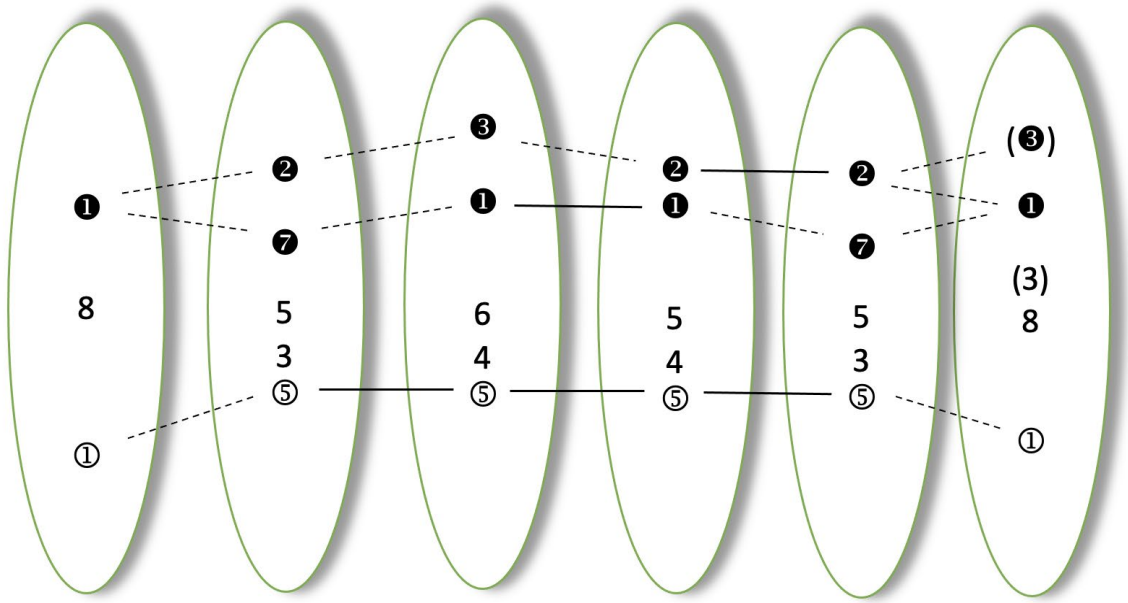


Figure 3.4. Cadenza Doppia, after *Music in the Galant Style*.



These diagrams demonstrate the essential contrapuntal elements of the cadences as well as the sequential and contingent character of their tripartite combination. Bracketed between two home pitch combinations at the beginning and end of each model, there is a doubling of pitch combinations between them from one, to two, to four. This sequence of melodic and intervallic variations serves as a convenient shorthand demonstration of basic contrapuntal pitch interaction. The CS demonstrates contrary motion; the CC adds oblique motion, followed by contrary motion; and the CD introduces parallel motion of two tones above a stationary bass, followed by oblique motion in the upper tones before the final cadential gesture. The CD also contains a basic example of rhythmic syncopation in one of the two upper voices. Partimenti deployed many varieties of combined musical elements, but the cadences were a structural and stylistic constant. In conjunction with standard harmonizations of stepwise bass motion covered in the parameters of ascending and descending Rule of the Octave, they were an aspect of every partimento or solfeggio created or realized. Partimenti at the intermediate and advanced level might have some combination of all three cadences.

The cadences were the first of several intervallic suspensions that apprentices were required to learn, the others being 9-8, 7-6 and the bass suspension, 4/2 to 6/3. Musicians had long understood that suspensions had a particular effect on the listener, and thus a central function in musical composition. Zarlino's 1558 *Le Istitutioni harmoniche* states:

> As I have said, every composition, counterpoint, or harmony is composed principally of consonances. Nevertheless, for greater beauty and charm dissonances are used, incidentally and secondarily. Although these dissonances are not pleasing in isolation, when they are properly placed according to the precepts to be given, the ear not only endures them but derives great pleasure and delight from them. They are of double utility to the musician. (Smith 2011, 85)[108]

[108] Zarlino 1558: " Et benche (come altrove si e detto) ogni Compositione, & ogni Contrapunto: & per dirlo in una sola parola, ogni Harmonia, si componghi di Consonanze principalmente; nondimeno per pi. Sua bellezza, & leggiardria, si usano anco secondariamente in essa, per accidente le Dissonanze, lequali quantunque poste sole all'udito non siano molto grate; nondimeno quando saranno collocate nel modo, che regolarmente debbeno essere, &

Kellner's 1737 *Treulicher Unterricht im General-Baß* , published almost two hundred years later, describes almost exactly the same process:

> A dissonance is that which is does not correspond, or sounds bad. It is often defined as a distance between two tones that is rough to the ear, and, at its most basic, feels uncomfortable. At the same time, dissonance is just as important as consonance for the movement of the affects. Because a work consisting of only consonances sounds too simple and virtuous, dissonances are necessary in order to ameliorate this. For just as a painter uses shadows in his works so that, by contrast, the light might better shine forth, so too does the musician employ dissonances in such a way so that the consonances which follow fall more favorably to the ear. (Remeš 2019, 610)[109]

No comparable discussion of the effect of suspensions has yet been located in partimento sources. Zarlino's and Kellner's careful and nuanced analyses can be contrasted to Fenaroli's terse observation that "Music is composed with consonances and dissonances."[110] It is possible that private instruction was conducted along the same lines, although this may have varied from teacher to teacher. Sanguinetti quotes an account of Furno's approach in Florimo's nineteenth century history of the conservatories: "When students asked him of the rationale behind his corrections, he did not answer as Durante did.[…] Instead, he…said, 'do it, and do as I say, because this is what my master Cotumacci taught me. Why are you asking for reasons, when in

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secondo li precetti, che dimostraremo; l'Udito talmente le sopporta, che non solo non l'offendeno: ma li danno grande piacere, & diletto. Di esse il Musico ne cava due utilite. Gioseffo Zarlino, Le Istitutioni harmoniche (Zarlino 1558, 172–73) The words added in brackets are from Blackburn (1987, 232), in a discussion of Zarlino's writing in translation.

[109] See also Remeš 2019, "Four Steps Towards Parnassus." I am indebted to Dr. Derek Remeš for his translation and insightful suggestions. Rameau's views on the nature of suspensions, too complex to summarize here, can be seen as less of a clear set of categorizations and definitions than a kind of ongoing dialogue, as he approaches the question again and again from different perspectives in his *Traite de l'harmonie* (1722), *Génération Harmonique* (1737), and his *Code de Musique Pratique* (1760). In the final publication he makes a brief observation notably similar to that of Kellner and Zarlino, stating that the nature of the suspended note will lead the listener to be "always preoccupied until it is resolved. The desire for such a resolution is the sole object of the ear in this case." (Rameau 1860, 126). For discussion of Rameau's views on suspensions and "suppositions," see Wignall 1992, Lester 1992 and Martin 2012.

[110] "La musica e composta è composta di consonanze e dissonanze." Fenaroli, *Regole musicali* 1775.

music the first, and strongest reason is effect?'" (Sanguinetti 2012, 84) Florimo's history was written almost one hundred years after the fact, but the anecdote demonstrates that the conservatory teachers appear to have had little time for, or interest in, analysis or detailed explanation. They knew what worked, and they made sure the students learned it. Perhaps the instructors explained suspensions to their students as carefully and thoroughly as Kellner or Zarlino; or perhaps they simply told their students what to do, in the manner of Furno. There may have been practical reasons for a lack of documented explanation: the importance of remaining competitive through deliberate concealment of the technical aspects of the training. In their heyday the four main Neapolitan conservatories were highly competitive, and teachers and students would seek to outdo one another at public events.[111] Publishing extensive explanations and rationales would make publicly available the elements of Neapolitan training that drew students from across Europe and contributed to the fees that the conservatories charged. It was not in their economic interest to provide written explanation of their professional secrets, and this may account in part for the enigmatic quality of the surviving documents, "music, like any profession, was founded upon the selling of specialized skills that had to be guarded and kept at a distance from the general public." (Baragwanath 2011, 6)[112] In the end, it is likely that the Neapolitan teachers understood that the lessons they needed the apprentices to learn were embedded in the notes themselves, and that verbal or written analysis was less essential for the apprentices than the inescapable daily singing drills.[113]

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[111] There are even accounts of physical confrontations and vandalism between conservatory ensembles – see Van Tour 2016, 42-46, "Anecdotal Evidence of the Rivalry." This is situated within van Tour's discussion of the rivalries between "Durantists" and "Leonists," but the impression given is not unlike the hostility of neighbour high schools, with stylistic considerations running secondary to a clan-like territoriality.

[112] This quote refers to nineteenth-century training, but Baragawanath's discussion of Italian practice encompasses the previous century, and Italy's inheritance of the conservatory tradition.

[113] Ref. Christensen 2011, "Fragile Texts," for further discussion of the "lost" elements in music theory pedagogy that are more effectively conveyed in oral instruction than in articles and treatises.

However, for modern teachers looking for a rationale for reintegration of the cadences, something more is needed than Furno's magisterial assurance or Fenaroli's laconic dictate. If the classical style were the only one currently being taught in institutional training, it could be argued that these cadences have a stylistic and historical importance that is reason enough for them to be reintegrated into music instruction, especially in the area of pre-1800 music analysis, musicology, historically informed improvisation, and score execution[114]. But it is the mental processes triggered by intervallic suspensions that are the most compelling reason for the proposed re-integration of these cadences into general modern music pedagogy at the beginner level. Here, modern music cognition research reaches across the centuries to bolster Zarlino's and Kellner's assessments of the reaction that suspensions elicit when used in musical phrases. The cadences elicit a cognitive process explored in Huron 2006's *Sweet Anticipation*, in a discussion entitled "The Feeling of Anticipation":

> The feelings that precede highly expected events are quite distinctive. The qualia might be characterized as tending, urging, cleaving, leaning, driving, propelling, pushing, or craving….Music theorist Eugene Narmour uses the term 'implicative'; while theorist Elizabeth Margulis has coined the technical term 'tension-S.' …I will use the phrase 'feeling of anticipation' to refer to the sense of expectancy. (Huron 2016, 306)

Both Huron and Narmour draw on the work of Leonard Meyer, whose theoretical writings argue that "the principal emotional content of music arise through the composer's choreographing of expectation." (Huron 2016, 2) Huron notes that Meyer was writing "at a time in which there was little pertinent psychological research to draw on. In the intervening decades, a considerable volume of research of experimental and theoretical knowledge has

[114] Diergarten's "Beyond 'Harmony': The Cadence in the Partitura Tradition" identifies the German partitura tradition as comparable to the Neapolitan partimento system: "…in order to paint a complete picture of classical cadences, modern cadence typologies can and should be complemented by a further criterion that has thus far been overlooked: the employment of suspension dissonances in the cadentional process." He adds, "Harmonic" analyses based on progressions of a *basse fondementale* and voice leading analyses abstracting from dissonances risk neglecting contrapuntal details that were highly important for eighteenth-century musicians." (Diergarten 2015, 79).

accumulated."[115] (Huron 2016, 2) How do the concepts explored by these theorists relate to the cadences used in partimento training?

For musicians of many backgrounds, the feeling of anticipation, tension and fulfillment generated by the Cadenza Semplice is familiar enough. This schema is a ubiquitous part of multiple different music traditions, eras and compositions, including the inescapable "Happy Birthday." In its varied but related iterations – a PAC at the end of a classical phrase or composition, a final tonic-dominant chord progression in various popular styles – the CS has consistently been in use and is commonly introduced in early training as a primal and essential example of musical construction. Many children's song melodies are structured around its dipartite harmonic parameters. The formal music class, textbook, children's song circle, private music lesson, even a parent singing to an infant, all impart this model to the next generation. Western music institutional education and vernacular learning requires it, both formally and by cultural custom and practice.

When a 4-3 suspension is added to this model, the sequence of anticipation and satisfaction becomes more complex. Huron summarizes the process as one of tension, prediction and reaction: "For a listener experienced with Western music, the suspended pitch creates a very high expectation" that the suspended tonic will resolve to scale degree 7. (Huron 2006, 309) When the "anticipated moment of resolution occurs… there is a large positive prediction

[115] Meyer's work is referenced in the writings of Huron, Margulis, Narmour, and Gjerdingen. Taruskin 2011 views current partimento research as an extension of Meyer's theoretical insights, and judges Meyer "the great pragmatic exception among the founders of American music theory, who based his music-theoretical ideas on messy psychological premises rather than tidy mathematical systems, and who never lost sight of real worlds – the phenomenal world, the social world – and the place of music within them." (Taruskin 2011, 182) Keil argues that Meyer's approach downplays the importance of "process and texture," especially in non-classical styles, characterizing the repertoire in Meyer's analyses as "thought-composed Western music" that elicits reactions "more analytic, sequential, conscious, rather than 'participatory'" (Keil 1987, 275). Margulis responds directly to this statement, arguing that "musical syntax musical processes" can be seen as "different sides of the same musical experience, with repetition serving as a clear point of intersection between the two." (Margulis 2014, 12)

response." (Huron 2006, 310). But at this point we are only halfway through the process. "The dominant chord itself then evokes an expectation for the return back to the tonic chord." (Huron 2006, 310) This expectation has been heightened by the impediment of the suspension. "The entire cadential cliché will evoke a series of positively valenced prediction responses while simultaneously evoking a series of 'yearnings' or anticipatory feelings." (Huron 2006, 310) The ubiquity of triadic chords in Western music, which very young children can identify as discrete and stable entities, means that a pitch frequency that impedes formation of a standard triad registers to the ear as interference.[116] In attempting to "solve" the impeded triad, the listener's attention is drawn to the interval of the unresolved fourth, with a subsequent experience of satisfaction at its resolution. In practical terms, adding the suspension creates a cognitively pleasant moment just before the end of a phrase, keeping interest and tension by triggering a deeply felt but often unconscious response in the listener. Noting that, "In light of the brain's disposition toward statistical learning, it is likely that the feeling of anticipation is greatest when the probability of an event approaches certainty." (Huron 2006, 306) Huron's table of reactions, cross-referenced with the steps of the CC, summarizes the sequence of *qualia* associated with each successive moment of this musical gesture (Huron 2006, 311).[117]

[116] For discussions of children's apprehension of harmony, see Corrigal and Trainor (2009, 2010), and Tan (2018, 123-162)

[117] On the left-hand side of the table, I have added the chords of the chords that correlate to the steps, as per Huron's discussion.

Table 3.1. Cadenza Composta cross-referenced with Huron's Expectation Analysis.
(From *Sweet Anticipation*, 2006, "Summary expectation analysis of a suspension").

Chord		**Reaction**	**Prediction**	**Tension**
I (octave)	pre-suspension	consonant	_	low tension
Vsus4 (fourth)	suspension	dissonant	Moderate predictive success due to pitch proximity	very high tension; strong expectation of returning to tonic chord
V (third)	Post-suspension	consonant	high predictive success	continued high tension; strong expectation of returning to tonic chord
I (octave)	cadence end	consonant	very high predictive success	closure; weak expectation of ensuing events, so low tension

The Cadenza Doppia extends and expands of the sequence of *qualia* experienced in the Cadenza Composta. Modeled on Huron's table is an analysis of the *qualia* evoked by the Cadenza Doppia, breaking down the potential steps involved in creating elements of that tension above the bass. The extended process has the potential to create an added level of tension, and a correspondingly stronger sense of resolution in the final return to the tonic chord.[118]

[118] Huron endorses this extension of his analysis. "Your table of the cadenza doppia makes sense for me. As you rightly point out, the evolved qualia will be sensitive to other factors, especially rhythmic/metric placement." Huron, David. Email communication, 25 April 2020.

Table 3.2. Cadenza Doppia and expanded Expectation Analysis after Huron.

Chord		**Reaction**	**Prediction**	**Tension**
I	pre-suspension	consonant		low tension
V	No suspension	consonant	High predictive success – return to I expected	Moderate tension
V6/4	Suspension – combination of elements from two previous chords; blend of consonant and dissonant elements	Blended or simultaneous perception of consonance and dissonance, based on intervallic combinations. Bass connotes V; treble connotes I	Moderate predictive success of return to V	Moderate tension – delay of arrival to tonic still present
Vsus4	suspension	dissonant – suspended interval (fourth) perceived as "thwarting" of V gesture	high predictive success due to pitch proximity	very high tension; strong expectation of returning to tonic chord
V	post-suspension	consonant	very high predictive success of return to tonic	continued high tension; strong expectation of returning to tonic chord
I	cadence end	consonant	predictive success achieved	closure; weak expectation of ensuing events, so low tension

Within the framework of standard western harmony, we commonly characterize the suspension series in these cadences as a series of "dissonances." In his discussion of suspensions, Huron advises caution in the use of this term:

> I am using the terms dissonance and consonance to refer to the sensory irritation evoked by a vertical sonority…The concept of dissonance is one of the most complicated and

> contentious in music scholarship… We will sidestep the myriad of issues by focusing on just one aspect of dissonance – the phenomenon of sensory dissonance. The subject of extensive experimental research, sensory dissonance is known to be linked to physiological interference along the basilar membrane of the cochlea. In effect, the presence of one (pure) tone component tends to interact with other (pure) tone components in a way that renders the hearing organ less able to discern the various spectral components present in the environment. The phenomenon can be likened to visual *glare* where a bright light source or reflection interferes with our ability to see. (Huron 2006, 312-313)

Meyer's discussion of consonance and dissonance notes that the "resolution of intervals does not have a natural basis; it is a common response acquired… within a culture area," (Meyer1956, 230) but, in a discussion that ranges well beyond the European canon to jazz and areas of non-western music, concludes that "dissonance derives its affective power, its elegance, as Zarlino puts it, from the fact that it is a deviant, delaying the arrival of an expected norm, the consonance appropriate in the particular stylistic, musical context." (Meyer 1956, 232)

Hijleh clarifies these terms in a manner that extends beyond the confines of western harmony:

> The intention of borrowing the terms 'consonance' and 'dissonance' from harmonic analytical vocabulary is to conceive of 'dissonance' along the lines of 'more dynamic interaction' and 'consonance' along the lines of 'more stable interaction.' Thus neither term is meant intrinsically positively or negatively, but rather as together constituting tension and release of the kind that is foundational to music. (Hijleh 2012, 35n)[119]

In cognitive terms, the "subjective sense of clangorousness or irritation evoked by a static vertical sonority" (Huron 2006, 311) is created by the impediment of the fourth interval to our perception of the triad, although this sonority is "static" only briefly. Hijleh's designations of "more dynamic" and "more stable" become useful for understanding the function of the fourth

[119] For further discussion of cross-cultural perceptions of consonance and dissonance, see Rehding 2016, in the *Oxford Handbook of Critical Concepts in Music Theory*, "Consonance and Dissonance." See also Meyer 1961, 206-214 ("Ornamentation in the West"), and Meyer 1956, 229-232 ("Consonance and Dissonance"). For a discussion that specifically pertains to partimento sources and the sometimes varied perceptions of Neapolitan teachers, see Sanguinetti 2012, 127-129.

interval in different musical contexts. As these scholars acknowledge, perception of intervallic character is contingent on context, and in modern music, the fourth is no longer automatically perceived as a dissonance requiring resolution. Nor can the term "suspension," as used in modern terminology, be precisely equated with the original *dissonanzi* as set out in partimento sources. In jazz harmony, "sus4" chords are often not actually suspensions of a triad, but an integral part of relatively stable chord formations. In these cases, "sus" might usefully stand for "sustained," rather than "suspended," although in jazz texts "sus" is understood to be a short form of the latter word. As music grows more complex, triadic chord structures expand to include sixth, seventh and ninth intervals, all of which can be perceived as both consonant and stable; in some areas of jazz, a chord as apparently dissonant as a $I^{7\#11}$ (i.e., C-E-Bb-D-F#) can strike the ear as stable, because of its frequent use a final chord in performance. This is also true of more modern popular music, especially in the "unresolved" fourths in the treble voices of guitar chords. These type of chord formations cannot be considered suspended, as guitar players do not always treat them as intervals in need of resolution. In both Lifehouse's *You and Me* (2005) and Oasis's *Wonderwall* (1995), for instance, it is not necessarily appropriate to think of the suspended chords as unresolved, but rather to see notes D4 and G4 played above standard guitar formations (G, C, D and Emin, A) as horizontally-conceived chordal variants. [120] In *You and Me*, played in the key of G, each chord in the guitar accompaniment has the fourth interval of D4-G4 in the treble.[121] But even when these types of guitar-chord configurations are being played, approaches to resolution will vary. In Bon Iver's *re: Stacks* (2008), the guitarist alternates between resolved

[120] Other guitarists resolve these type of Dsus4 guitar chord-derived suspensions in a more traditional and melodically ornate manner; see The Beatles; *You've Got to Hide Your Love Away,* (Lennon/Mcartney1965) and the Indigo Girls' *Closer to Fine* (Saliers 1989).
[121] The specific lead-sheet terminology needed to convey these chord configurations is G5-Cadd9-D/F#sus4-G/B-Emi7-Dsus4-Cadd9.

and unresolved fourths. In Billy Bragg's *St. Swithin's Day* (1984), the guitarist resolves the suspended interval at some points, and at others combines both the third and the fourth intervals simultaneously, allowing the resulting minor ninth interval (C#3-D4) to remain dissonant. As well, the common substitution of a V chord with a subdominant chord (IV) over a dominant bass, occurring in many different styles of popular music, effectively negates any need or use for a traditional suspension/resolution of the fourth above a dominant.[122] A fourth that never actually resolves cannot be considered a suspended note in a technical sense, and might benefit from a different label that more accurately conveys its function.

To complicate the picture further, in addition to the use of these "unresolved" fourths, suspensions both with and without the traditional resolutions continue to occur in popular music. "The 4–3 suspension occurs where the arrival of a chordal third is delayed by the presence of a dissonant fourth above the bass. The fourth is struck right along with the root and fifth, and then descends by step to the third, finally making the triad fully consonant." (Everett 2008, 210) "Sus4" chord labels are a common occurrence in lead sheets and notated popular music scores. But "Gsus4" in a lead sheet does not imply that the suspended note (in this case, a C) has necessarily been sounded prior to the appearance of this chord, in the classical sense of the prepared dissonance. It simply refers to the chord formation used to underpin a melody. Further, while suspended fourths and their resolutions may regularly appear in dominant-tonic sequences, harmonic practice in popular music does not necessarily align with classical conventions.[123] In

[122] This last substitution, which is possibly derived from the contrapuntal combination of a dominant seventh interval and unresolved fourth suspension, is found at least as early as 1881 in Debussy's first of two Arabesques, L. 66., m. 45. This formation may have antecedents in pieces like may be Chopin's 1839 *Ballade* no. 2 in F major op. 38 (ii chord over a dominant bass at m. 14) and the last four measures of Schumann's 1840 *Die Rose, Die Lilie* (*Dichterliebe*, op. 48). There is little historical research to be found on the question of how this chord formation has gradually become a regular alternative to the V chord in tonic-dominant chord sequences. In popular music and jazz theory, as well as professional lead sheets, it is often characterized as a "slash chord" and written as IV/V.

[123] See discussion of this subject, see Everett (2004, 2008), de Clercq and Temperley (2011), and Temperley (2007).

popular music, this dominant-tonic motion often occurs between sections of a composition – acting as a bridge between verse and chorus, or bridge and verse, for instance - rather than the end of a discrete phrase. This type of dominant-tonic motion cannot be considered a cadential gesture in terms of form, nor is the resolution of the 4-3 interval the stylistic requirement that it was when originally taught in the classical tradition.[124]

Still, some technical aspects of how suspensions occur in popular music composition correlate with their use in classical repertoire. Everett 2008, a comprehensive study of mid- to late-twentieth century popular music, observes: "The V chord, perhaps unsurprisingly, is the one most often decorated with a suspension."[125] (Everett 2008, 210) It remains common for a dominant chord to be preceded by a I, IV, vi, flat VI, ii7 or secondary dominant 7 chord, all of which contain the tonic note that becomes the dissonant interval over a dominant chord or bass note. This holds for sequential chord changes commonly found in modern popular music, such as the I-V-vi-IV sequence (and its commonly variation, the vi-IV-I-V).[126] It is common that, prior to the suspension, this note will be sounded in same instrument in which it becomes a suspended interval. In this sense, it is prepared in the same manner as within an orchestral or choral texture in classical repertoire. In a survey of sixty-eight songs in which a suspension occurs on a dominant chord (see Appendix B), only six of them contained an unprepared dissonance, in the sense that the suspended note had not been heard in the previous measure, either in the melody or embedded within a chord. All the others contained the note in the same instrument – vocal or

[124] When a classical explanation for cadences is applied to popular music, confusion may result. See Snodgrass 2016, 173-175. This text contains an illustration and explanation of a standard tonic-dominant phrase ending, followed by an example from Michael Jackson's "Man in the Mirror" in which almost no element of the musical passage correlates with the previous illustration.

[125] This author also observes that modern popular music arrangements just as often do not resolve the fourth. See Everett (2008, 210).

[126] *Four Chords*, a novelty song by the music comedy group Axis of Awesome, is a compendium of 37 separate pop songs that make use of this standard chord sequence. See https://www.youtube.com/watch?v=5pidokakU4I. Subsequent performances of the song have added quotes from as many as 60-70 other songs.

instrumental – just prior to the change in bass that created the dissonant fourth interval. Depending on the arrangement, the tonic note might be articulated twice – once as part of the pre-dominant chord, and again above the dominant. Most crucially, the suspended note divides a metric unit in two. If the dominant chord is sounded for one measure of 4/4, for instance, , the suspension will last two quarter notes, almost without exception. The structural elements of preparation, tension and resolution continue to be deployed for modern composers in a similar manner to the past: as a method for keeping tension within the standard, and very familiar, tonic-dominant gesture. When a suspension is added to the phrase, the effect of a consonance delayed can have a comparable or similar effect on the listener. Although the contrapuntal nature of linear motion may be obscured by being embedded within chordal formations, our minds continue to react to (and be affected by) Gjerdingen's "bass melody co-articulation" when a suspension occurs. If it did not, modern composers would have no reason to continue to deploy it in both harmonic and melodic passages, with the standard metric parameter of dividing the into two equal sections. It is a way of "delaying the arrival of an expected norm, the consonance appropriate in the particular stylistic, musical context." (Meyer 1958, 108) While the majority of examples in the survey deployed the suspension/resolution in the accompaniment, it can still be found in melodic contexts. The hugely popular *Time to Say Goodbye* (*Con te Partiro*) one of the best-selling single recordings in history, is built around a I-V-vi-IV chord change, and contains a consistent suspension/resolution of an intervallic fourth in the melody of the first section of the chorus. It is a clearly a musical gesture that remains relevant in popular composition.

Partimento rules introduce several different intervallic suspensions as training progresses, "very carefully enunciating the possibilities and constraints for the four dissonanze" (Sanguinetti 2012, 126), including the various intervallic bass motions that set up suspended intervals. In

modern non-classical repertoire, the 4-3 generated by bass movement from tonic to dominant is the remaining one deployed in a manner similar to previous centuries.[127] The cognitive process triggered by the suspension is the same, rendering the designation "suspension" accurate and useful outside of the realm of classical composition and analysis. Despite a harmonic palette that has expanded greatly since the eighteenth century, the reality of music training in the west, formal and informal, is that major and minor triads remain the building blocks of beginner music education, and show no sign of being supplanted by other chord structures. If anything, in the arena of popular music, chord structures are simpler than in the past century, with diminished and added sixth chords being a comparative rarity in many areas of popular music. When chord structures are impeded by a suspended fourth, which then resolves by bisecting a metric unit in the same manner as the classical 4-3 suspension, its use within a metric and harmonic context may elicit comparable elements of expectation, and satisfaction at its resolution.

As observed above, modern tonal compositions no longer require a suspended note to resolve, and many examples can be found, especially in guitar-driven popular music composition, in which the standard resolution does not occur. Our field of musical expectation has expanded to include gestures of resolution and non-resolution, juxtaposed and alternated according to the needs of the composition. But Huron's statistical analyses confirm the connection between the CS and the CC: "In a sample of baroque music, I found that 87 percent of 4–3 suspensions involving a dominant chord are followed by a tonic chord." (Huron 2006, 310) The connection between the two models is found in modern as well as historical repertoire.

[127] The other suspension gesture most commonly found in popular music is the 9-8 suspension, which lives on as the "Sus 2" or "add 2" chord. But instrumentalists commonly form these chords by adding the second scale degree to the third, or replacing the third altogether. In neither case does the second scale degree actually function as a suspension, making the "sus" label confusing in this instance as well. The bass suspension taught in partimento training, 4/2 to 6/3, is not a common element of popular music composition.

Until the V-I cadence recedes into history – if it ever does – the 4-3 suspension will be a useful musical gesture to keep tension in this specific part of a musical phrase. To put it another way: until *Happy Birthday* is not the song most likely to be internalized by small children through repetition at least once a year (and many more times once they enter kindergarten), both the major scale, the tonic-dominant cadence and any impediment to it, such as the 4-3 suspension, can be useful in the area of basic music education.[128] Further, of all the suspensions introduced in partimento training, it is the only one that demonstrates the concept of organized division, with its one-step, two-step and four-step sequence of rhythmic diminutions within the same schema. No comparable approach to the rhythmic division of an accented non-chord tone is in common use now, or at the time of partimento training. Whether at the end of phrase as in classical repertoire, or as a transition from section to section in modern popular composition, our minds react to this sequence it in a manner similar to past generations: with anticipation, expectation, and cognitive satisfaction at expectations fulfilled.

Just as any note can be considered stable depending on its context, the cognitive process triggered by the suspension could be demonstrated through the use of any accented non-chord tone, using standard triads of any type as the model. And there is no reason that instruction in accented non-chord tones cannot be integrated with the cadences used in partimento training. But the sequential structure of the three cadences, and the degree to which each of the three cadence models is stylistically and structurally embedded within centuries of diverse compositional examples, puts them in a different category. Accented non-chord tones are central to many different types of composition; but it would be difficult to identify another example of rhythmic

[128] Sarath (2019) suggests that "conventional neo-Eurocentric approaches to teacher education coursework that confined largely to European classical materials and their offshoots (e.g., children's songs) must be fundamentally reconceived." (Sarath 2019, 67). Chapter two of this author's 2010 textbook, however, introduces the standard major and minor scales, as the organizational models for beginner improvisation. (Sarath 2010, 28-47)

diminutions that can be found in multiple pieces of music, over such a long period of time, such as are found in the three cadence models. As well: with the suspension, the transition from stable to unstable is triggered by bass motion. It is this motion that catches the mind's attention, and compels a mental reconfiguration of the tonic note from a stable to unstable sound. In other words, our perception of its quality depends on its place within a series of linear motions, rather our perception of the relative stability or instability of a triadic (or more complex) chord. Examples of neighbour-note motion over a major or minor triad – a common beginner method of illustrating dissonances – may ultimately be less effective than the creation of a dissonance through a change in the bass. Of course, there is also no reason that a similar process of division and variation could not be applied to other accented non-chord tones, using scales other than major and minor, and expanding into non-classical styles.

Ancient training required that apprentices be introduced to the 4-3 suspension, understand its sound, sing it, vary it, and know how to play with its dynamic and structural possibilities. Huron observes that the full effect of suspension is achieved by the entire sequence, which must include the beginning and ending consonant chords, which both give rise to and fulfill the listener's expectations:

> The experienced listener will expect each sonority to follow the previous one according to the norms of Western harmony. We cannot, for example, skip directly from the suspended sonority to the final I chord without first resolving the suspension to the V chord. It is not simply that listeners yearn for the cadential tonic chord; listeners yearn for each successive moment as the cadence unfolds. (Huron 2006, 310)

At a beginner level of training, every element of the model should be in place to elicit the sequence of reactions set out in Tables 1 and 2 above. In this order the CC becomes more dynamic, or tension filled, than the CS, and the CD more dynamic than the CC, in succession. In modern texts, there is often little connection made between these models. The CC is commonly

introduced as part of a table of melodic gestures, and the CD is identified as example an example of a chordal inversion. A discussion of suspensions in music texts may or may not be accompanied by an excerpted example, which the teacher may or may not point out, and which the student may or may not listen to or play. And even if it is mentioned, if complete models are not used, a suspension gesture may not function as Zarlino and others have stated, and the lesson will be lost on students. Deploying the cadence sequence in its entirety can help mitigate these potential lacunae. To be sure, other accented non-chord tones can convey this information equally well as the 4-3 suspension. But as we shall see in chapter four, music training has not actually come up with a simpler but more systematic model for introducing this concept at the beginner level than the three-cadenza sequence.

When cross-referenced with research by Pressing and others, the cognitive response to suspensions, as explored by Huron, becomes useful in two related ways as a tool for improvisation. The first is the concept of the referent, and the second is the process of error correction in improvised passages. Beaty observes:

> Pressing described referents as a series of well-rehearsed retrieval cues that are deployed during performance, minimizing processing demands and guiding idea generation. Referents interact with procedural and declarative information stored in a domain-specific knowledge base. Through deliberate practice, musicians build a database of generalized motor programs, which can be fluently accessed and executed during performance…. According to Pressing's model, improvisational expertise involves the interplay between referent processes and a domain-specific knowledge base. Referents consist of cognitive, perceptual, or emotional processes; the knowledge base consists of hierarchical knowledge structures stored in long-term memory." (Beaty 2015, 2)

Any model, once internalized in the memory, can be a referent.[129] The CS is one such example; and as stated above, the CC is a variation on it. But the CC itself is also a referent in its own

[129] There is an extensive literature on "chunking," or breaking pieces of information into smaller, manageable units for processing in the memory. For discussions of chunking in music, see Bregman 1990, Deutsch 2013, and Snyder 2016.

right, with a particular characteristic: the illustration of one sound's alteration in response to another. The model illustrates the process of reversion to a norm – in cognitive terms, it is both an example of an "error," and a solution for managing it. Pressing states:

> The ability to handle…errors is a crucial component in the array of cognitive skills the improvisor brings to the performance. Without such a skill no long-scale musical development would be impossible, and the sense of relaxation required for efficient and effective improvisational performance would be difficult to achieve. (Pressing 1984, 354-5)

In "Methods and Models," Pressing adds:

> Feedback is a vital component in improvisation for it enables error correction and adaptation – a narrowing of the gap between intended and actual motor and musical effects…For improvised performance that aims at artistic presentation, where discrepancies between intention and result must be kept within strict bounds, practice must attempt to explore the full range of possible motor actions and musical effects, to enable both finer control and the internal modelling of discrepancies and correction procedures, including feedforward. (Pressing 1988, 134)

The CC's two-voice model of a one-note stepwise change, in response the alteration of the bass, is as basic a model for error correction as can be assembled. The CD extends it into a two-step process between three voices. As suspensions are a model for the cognitive process of contextualizing notes in relation to a changing bass, they also demonstrate the quickest and simplest way to change it – a move to an adjacent note. It is hard to conceive of a more straightforward demonstration of a technical process that will be useful in improvisation, as well as in a variety of other settings. One of the most challenging aspects of musical training is learning how to respond to "wrong" notes; the CC is a model to help the brain respond with physical action (of the hands, voice, or feet) to solve a cognitive puzzle, rather than registering confusion and responding with the mental confusion that can commonly lead to a physical "freeze," as well as tension and even distress. While the teacher's role is ultimately to train their students to self-correct, there is no common method currently used for the development of this

ability. In improvisation, students who hear a dissonant note in their line can be advised to "go up or down a half step [if a wrong note is played] during an improvisation," (Goecke 2016, 95) but the CC actually provides a simple demonstration of this process. Karpinski observes: "The importance of error detection and correction skills to most musician is indisputable," (Karpinski 2000, 130) while acknowledging that both textbooks and computer resources downplay this skill. He adds, "[it] is possible to integrate instruction in error correction into the earliest phases of aural skills training," (Karpinski 2000, 131) which might have been a plea for models which have the clarity and brevity of intervallic suspensions in beginner cadences.

The CC gives the simplest demonstration possible of the note that does not fit, followed by the note that fits, one after the other. The ability to wait, listen, absorb, understand, and respond to pitch is the core of improvisatory practice in multiple styles, a process that is as much an exercise in receptive and contextual listening as much as it is about self-expression or artistic individuality. The perception of musical dissonance provokes the brain to problem-solve. Huron points out that the auditory impulse to normalize a sound arena is one aspect of the larger challenge of understanding, and existing within, a given environment: "Like all other sensory systems, the purpose of the auditory system is to provide listeners with relevant information about the world…. The brain assembles the puzzle pieces of resolved partials into plausible images, streams, and textures that mirror the acoustic objects or groups of objects that exist in the real world." (Huron 2016, 195). While suspensions are not errors in a formal or technical sense, and have long been accepted as an aspect of chord formulation in modern compositions of all types, in these cadences they are a simple demonstration of the problem-solving process of melodic/intervallic response to a changing bass.

In improvisation pedagogy, especially in children's education, the concept of error itself has been contested. Some educators and performers see improvisation practice as a challenge to, or possible even a refutation of, the concept of "right" and "wrong" notes, and believe that an improvisation-based pedagogy fosters a more inclusive and welcoming approach than instruction in other styles.[130] As improvised activity is understood to be a form of self-expression, teachers may hesitate to curtail musical experimentation of any type for fear of implying a personal attack on students' nascent individual creativity. If the concept of error is downplayed at beginner level music training, any improvised gesture attempted by a student may be considered valuable regardless of musical skill or experience, which will foster a sense of confidence, resulting in an increasing willingness to experiment, especially in a group setting. In some improvisation exercises, students' satisfaction with the experience is apparently enhanced by removing any notes that have the potential to create intervals traditionally perceived as jarring or dissonant – minor seconds, tritones and sevenths. Hence, the practice of encouraging students to play on the black keys of the piano, or restricting scale parameters to five-note pentatonic groups, generating a sonically euphonious sound no matter in what combination or sequence the notes are sounded.[131] In these cases, the semitone is excised, making it impossible for the 4-3 suspension to be deployed. Some childhood music education sources argue that semitone intervals can be difficult for children to sing in tune, and that children's songs using pentatonic scales can be found in many different cultures, making them ideal for beginner music training.[132] Another potential rationale may be that taking part in the creation of sound groups without obvious "errors" (as traditionally dissonant intervals, such as tritones or minor seconds, might be

[130] See Spiegelberg (2008), Lange (2011), and Niknafs (2013).
[131] Exercises in the Orff and Kodaly music education systems regularly make use of pentatonic exercises and repertoire.
[132] See Warner (1991) and Choksy (1988).

perceived) will allow student to feel they have created something coherent, or at least pleasant to the ears. It is hard not to wonder whether this approach might have as much to do with reducing potential cacophony in institutional group music-making, as it does with a coherent training methodology. A large group class at the primary or secondary level can be a challenging environment in which to foster precise intervallic listening. A group activity in which a collective sound is without audible dissonant elements gives an impression of coherence, and may be more pleasant for listeners – say, a group of parents attending a class presentation, or a principal without music training assessing a teacher's classroom environment – than an improvisation exercise that includes more traditionally dissonant sounds.

But within cognitive as well as stylistic parameters, the concept of error, and its deployment in training, is useful. It should not be set aside without careful consideration of its possible benefits in music training. The skill of listening, responding, and making a note fit with a changing bass, should be developed early in training. The majority of improvisation activity that will take place in professional or amateur settings consists of varying pre-existing models. In many situations, these models will have a changing bass structure that has the potential to generate dissonant or unstable intervals, within varied stylistic parameters. The key skill being fostered is not how to identify empirically correct and incorrect intervals – this concept changes and evolves as training expands – as it is the practice in listening for and reacting to a bass frequency. This often correlates with ~~a~~ perceived harmonic alteration, or chord change. But to foster precise listening, the initial focus should be on intervallic interaction, rather than the vaguer "chord beneath/melody that fits above" approach to improvisation. The goal of being supportive of all attempts at musical creation is a pedagogical tactic that can be practiced by any teacher wanting to build a good working relationship with students; but this does not

automatically equate to all attempts at creativity being accepted without constructive feedback, suggestions for improvement, or reference made to standard cognitive models. Nor can it be conclusively asserted that children's learning process is best facilitated by removing any apparent impediments to children's ability to easily and instantly create euphonious sounds. A student's satisfaction with a musical exercise may be achieved just as effectively, and perhaps more so, from the task of managing, exploring and "solving" dissonant interval sequences. A pedagogy that includes a controlled approach to error could ultimately be of more benefit than an approach that attempts to circumvent the concept of error altogether, in a questionable effort to safeguard self-esteem. Suspensions compel the mind's interest through cognitive dissatisfaction of the impediment of the triad, and invite a response. This approach to error is rooted in cognitive problem-solving, which humans are hard-wired to do; the satisfaction in parsing an acoustic scene is primal – a drive to understand the world, rooted in the animal instinct of survival. Long before children learn to read, they learn to combine sounds to communicate their needs; the drive to understand pitched sound draws on this process as well. But the solution is not to create musical models in which intervallic puzzles are excised. The "group of notes that work" approach may actually make it harder to find which part of a given phrase (out of the many notes that "sound good") is the most interesting and effective for directional emphasis in melodic creation, in conjunction with a contextual bass voice. A series of generally consonant sounds, without direction or dramatic shape, can quickly become uninteresting, and may actually foster inattention if a teacher is not careful.

If we conceptualize basic schemata as cognitive building blocks for increasingly complex construction, the cadence sequence illustrates a profound concept of aesthetic narrative structure that extends beyond their identity and function, simply as examples of stylistically constrained,

discrete melodic and contrapuntal gestures; i.e., intervallic suspension as a model for musical form itself. Christensen points out that whereas

> for Renaissance musicians dissonance was an interruption of a consonant progression, many seventeenth-century musicians began to interpret dissonance as an essential component of musical structure. It was necessary… not only for the smooth and proper connection of harmony, but also the expressiveness of melody.[…] Dissonance… was neither a disruption nor a darkening of some consonant chord progression; rather, it was an artful and even necessary means of defining that progression. (Christensen 2004, 64).

Form in music is perceived as a narrative unfolding through time – our standard manner of interpreting sounds heard in temporal sequence. And when we have accrued enough knowledge to be able to understand a story, it soon becomes clear that the most interesting narratives contain an element of conflict. The tale of the three little pigs who live out their lives safely and happily in well-built and secure homes is not likely to hold a child's attention for long. Only when the menace of the big bad wolf is introduced does the story become compelling. Without the threat of the wolf at the door, a witch in the forest, or a giant in the sky, fairy tales would be inert, and hold little interest as narratives, least of all for children.

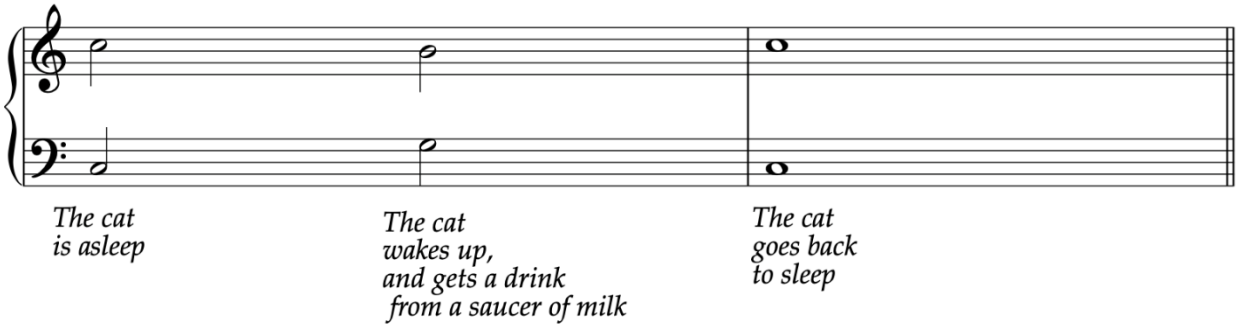
Relatively stable entities such as major scales, major and minor chords, and musical intervals must be taught. But these elements hold the same relationship to narrative that a lecture (and subsequent test) on the relative merits of brick, wood and straw as structural materials for the construction of secure residential dwellings holds to the story of the three little pigs. To make music interesting, elements of narrative and conflict are required; what we perceive as stable musical sounds need Hijleh's "more dynamic interaction" (Hijleh 2012, 35n)[133] to engage our interest. In absolute music, which lacks a sung text to create an obvious narrative arc, the 4-3 suspension is a simple method of raising the cognitive stakes and introduces conflict, in a way

[133] Full quote page 107.

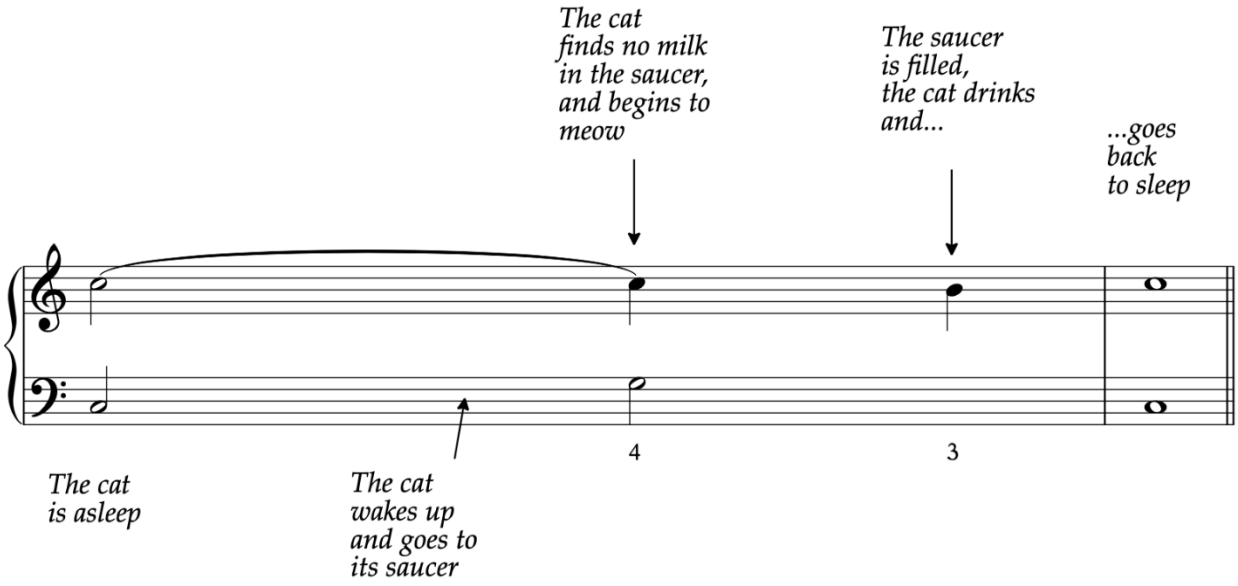
that the CS does not. Without the CC, the CS is a pleasant sequence of consonant sounds; with the suspension, the sequence becomes interesting. We can think of the CS as describing the simplest of narratives: something happens. For example, a cat gets up, drinks from a saucer of milk, and goes back to sleep. It is an example of things occurring as we expect they should. But as a narrative it is ultimately of little interest. Something must occur that makes the hoped-for occurrence – milk in the saucer – more engaging. The Cadenza Composta, with the introduction of the unstable fourth interval, introduces a simple moment of conflict into a dull story: The cat gets up and goes to the saucer to drink its milk, but finds the saucer empty. All is not as it should be, as with the unstable suspended interval above the bass. The cat begins to meow until someone comes and fills up the saucer – the suspension resolves, the cat drinks the milk, and goes back to sleep (Figure 3.5).

Figure 3.5. Cadenza Semplice, Cadenza Composta as simple narratives.

Cadenza Simplice



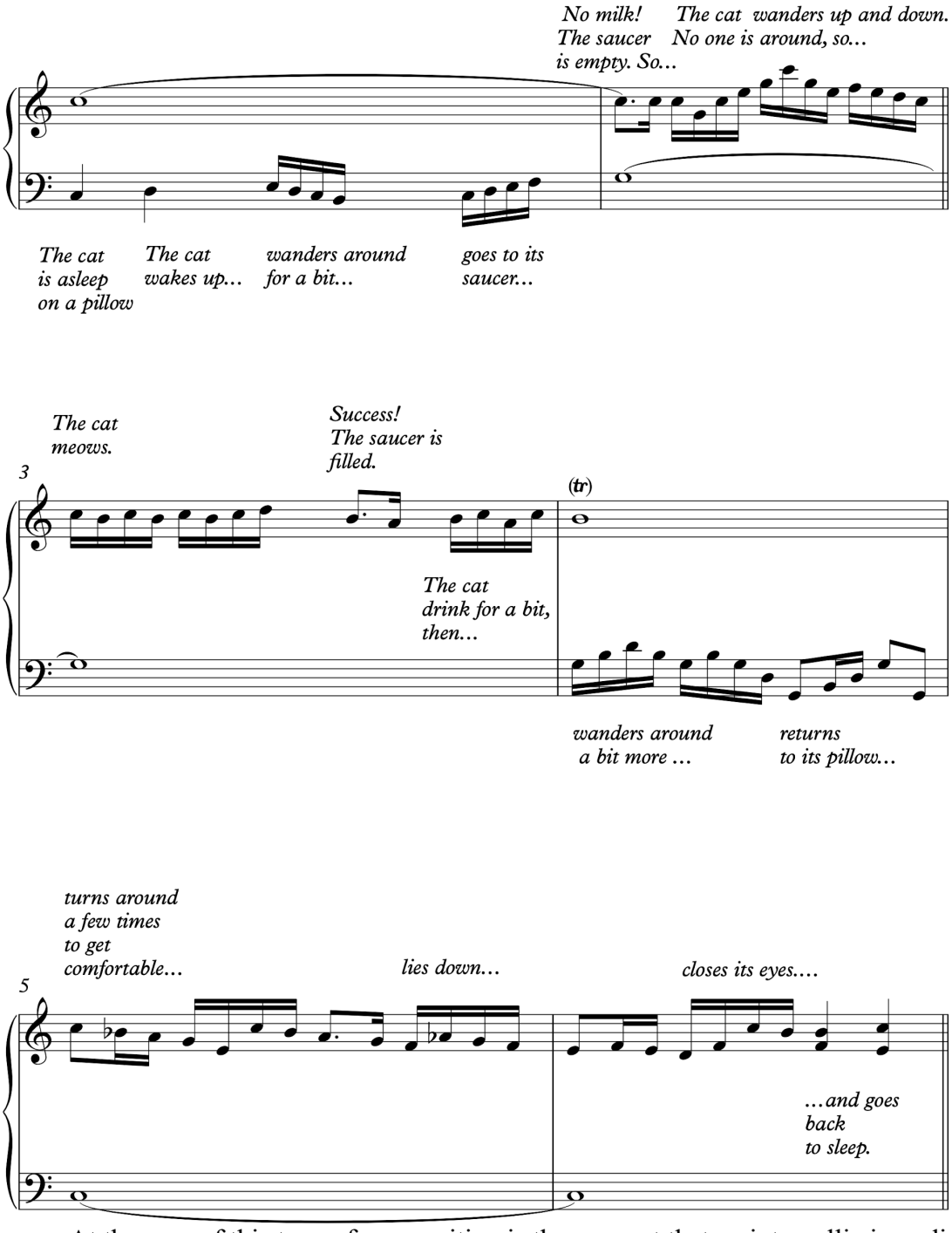
Cadenza Composta



Any sound combination or gesture that impedes or delays the ear from being able to create a stable sound picture becomes a tool for the composer/improvisor to keep both themselves and a potential audience on edge, waiting for the next solution: an unfamiliar or

unexpected chord, or rhythmic gesture; a change in tempo or dynamics; a new instrument; a pitch sounded in an extreme range of low or high, and so on. The list can be continued to include the entire panoply of musical tricks to catch the attention of the listener, and be repeated as necessary to elicit a delighted (or scared, or intrigued, or outraged) response. As the following demonstrates, even the simple of act of expanding the 4-3 suspension gesture, as well as the journey of the bass line, can lead to dramatic possibilities (Figure 3.6). What follows deploys diminution, arpeggiation, structurally chromatic descending intervallic motion as well as a final double suspension gesture to expand the story of The Cat and the Milk:

Figure 3.6. Cadenza Composta as extended narrative.



At the core of this type of composition is the concept that an intervallic impediment to cognitive repose is an essential element of formal construction. Zarlino anticipated both Huron and Meyer by centuries in his understanding of the cognitive experience of this musical gesture:

> A dissonance causes the consonance which follows to sound more agreeable. The ear then grasps and appreciates the consonance with greater pleasure, just as light is more delightful to the sight after darkness, and the taste of sweets more delicious after something bitter. We daily have the experience that after the ear is offended by a dissonance for a short time, the consonance following it becomes all the more sweet and pleasant. (Smith 2011, 85-86)[134]

Being introduced to suspensions at the beginning of training demonstrated to Neapolitan students the process of assembly, disassembly and reassembly of chord structures, a lesson repeated over and over for months and years. Neapolitan training emphasized the degree to which the process of chord assembly through contrapuntal motion and the ability to hear intervallic interaction with precision, was as important as the chords themselves. The student was taught to think in terms of shifting interval relationships, as well as chord formations. Melody, harmony, rhythm and metre were not stratified, differentiated and dichotomized in beginner training, but as integrated as it was possible for these organizations of sound to be, through the process of contrapuntal interaction within memorable schemata. To Neapolitan apprentices trained in solfeggi, cadences were hybrid entities – on one hand, building blocks for harmonic construction on chordal instruments which could be deployed in assembling harmonic sequences with vocal and instrumental forces – on the other, expressions of contrapuntal motion, and a clear and basic example of bass-melody co-articulation.

In current training there is rarely any connection made between the models that originally comprised the Neapolitan cadence sequence. The CC is commonly introduced as part of a table of melodic gestures; the CD as an example of a chordal inversion. But the names of the three cadences, as well as their standard grouping in instructional documents, demonstrate that the

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[134] "[L]a Dissonanza fa parere la Consonanza, la quale immediateamente le segue, piu dilettevole; & con maggior piacere dall'udito è, compresa, & conosciuta; si come dopo le tenebre è piu grata, & dilettevole alla vista la luce; & il dolce dopo l'amaro è piu gustevole, & piu soave. Proviamo per esperienza ogni giorno ne i suoni, che se per alquanto di tempo, l'udito è offeso da alcuna dissonanza, la consonanza che segue dopo se li fa piu soave, & piu dilettevole." Gioseffo Zarlino, *Le Istitutioni harmoniche* , page 172–73.

maestri considered them a linked sequence. If they are to be used with best effect in modern pedagogy, teachers should teach not only each cadence, but the tripartite sequence as a combined unit, including both the titles and every element of each step, including the crucial bass voice. While the CD is not widely used in modern popular music, it is an essential structural and stylistic component within the classical tradition. More importantly, it is rich in musical elements and improvisatory potential, as we shall see in chapter five. Its structural relationship to the other two cadences requires that the three be taught as a unit for the full effect and potential of the entire sequence is to be understood and explored. Putting this concept into play in modern training requires an adjustment of the modern concept of cadence, compelling us to understand it as a sequence owing as much to interval, meter and schema as to a dipartite chord combination. Before we explore the way in which this sequence can be used for aural skills and improvisation training, we will survey the manner in which modern training addresses intervallic suspensions.

Chapter Four: Intervallic suspensions in current music education materials

Long before scientific music research addressed the cognitive processes elicited by intervallic suspensions, institutional beginner music education included them in introductory cadence models. But, as noted in chapter two, partimento training diminished in importance in

the nineteenth century, and with it went the custom of introducing the simple, compound and double cadences as linked curricular elements in music training. These groupings, along with the institutions in which they were deployed, so influential for so long, were effectively discarded and forgotten during the twentieth century. The cadences' methodical clarity and simple but effective synthesis of multiple musical elements was replaced by the one-label-for-all-eras chordal definition of cadences currently taught to music students.

While these models increasingly fell out of use, the musical elements within them never disappeared from training. Rather, they were dispersed to different categories, according to newer concepts of how musical elements should be grouped in music education. Musical training is commonly an additive process, with discrete musical elements introduced separately. The process most often begins with scales, followed by intervals and then chords. This order of introduction is the standard approach of modern textbooks. These elements are then combined in extended phrases of graduated complexity. It is in these extended phrases that the 4-3 suspension is introduced as a form of melodic variation, and the double suspensions of the CD are introduced as chordal inversions. In both cases, the intervallic suspensions conveyed in traditional figured bass notation are combined – or rather, subsumed – within the more recent modern Roman numeral approach to chord labelling. Further study eventually introduces students to the suspension, and explores how linear and chordal identity blend and interact; it is the fourth element introduced in species counterpoint instruction. But the concept of "dissonance as an essential component of musical structure," (Christensen 2004, 64) as demonstrated through suspensions, is not reflected in how musical materials are introduced in modern beginner training. Because suspensions are no longer considered a basic element, there are no designated models for their introduction, as there are for scales, intervals and chords. In their absence, there

is little consistency in how this musical gesture is addressed in music theory texts. Some books embed them in general discussions of melodic variations, perhaps accompanied by a table of examples. This has the effect of downplaying their precise contrapuntal nature through group inclusion within a general category. Because the category is most often melodic variation, a bass line may or may not be included in the table. In the absence of an illustration of precise intervallic character of tenor and bass interaction, the contrapuntal nature of melodic variation may not be fully apprehended by students, who will focus their attention on the particular characteristics of the treble line. Melodic tables may be accompanied or preceded by discussions and examples of each category in the table; but commonly both table and explanation appear in the middle or even late in the text, indicating that they are for intermediate or advanced, rather than beginner, consideration (Table 4.1). Late introduction reinforces suspensions' lack of centrality as an essential musical element.

Table 4.1. Page numbers for topic discussions of suspensions in music theory textbooks.

Publication	Page Number
Karpinski (2007)	page 191-2
Laitz (2016)	page 289
Sarath (2010)	page 300

Sarnecki (2010)	page 101
Snodgrass (2016)	page 208
Turek and McCarthy (2014)	page128

An examination of modern music texts reveals that there is a remarkably uniform approach to suspensions, in the sense that is no clear consensus about how, or when, to introduce them – a consistent inconsistency. It would be inaccurate to call suspensions an orphaned element of musical structure, but in pedagogy they currently take on the character of a distant cousin, acknowledged perfunctorily at the wedding reception as the toasts begin; always welcomed and included, but not part of the immediate family, and without a firm or well-defined place at the table during gatherings. Music training lacks an established set of protocols and/or common schematic models through which suspensions can be introduced. At the intermediate and advanced levels, both suspensions (and dissonances in general) appear in musical examples without introduction or discussion, as if these elements have been thoroughly dealt with elsewhere. But it is by no means certain that deliberate introduction or discussion of these elements will actually have taken place. Some texts may contain discussions and examples, but have neither topic heading not indexed entry for suspensions. If this category is missing, there may be a discussion or explanation of suspensions found under the heading of "intervals," "dissonance," "consonance," "accented chord tones," or "cadences." But these topics may or may not be indexed themselves, and there is no guarantee that a discussion of suspensions will be located through these subject entries, or that a discussion will be clear or comprehensive. If the subject of suspensions has been raised in a class or lecture, a beginner or undergraduate music student may have no idea of where to begin to look for further references in a textbook,

and may give up after a few tries. There is also little agreement about which suspensions are of primary importance, or how their introduction should be organized. In Aldwell and Schacter (2010, 4th ed.), the first indexed entry on suspensions occurs on page 43-44; but this is a discussion of 7-6 suspension sequences, followed by an illustration of a 4-3 suspension on the final tonic of a chord sequence. The suspension sequences of the cadenza doppia are introduced as chord forms in Unit 11, beginning on page 182. The 4-3 suspension on the penultimate dominant chord, so essential to the classical style, is not given its own dedicated discussion and example until page 396-97. This is the precise opposite of the order of sequence in the Neapolitan cadenzas, and too stratified within the text for any possible connections to be made between the two models and their systematic example of rhythmic division.

Aural skills materials are collections of musical examples for sight-singing practice, commonly organized to emphasize practice of specific intervallic, chordal and rhythmic elements. In these type of books, musical passages with suspensions and/or accented non-chord tones can be found easily enough; but there is not necessarily any coordination between their appearance and a clear explanation of how they function. Most commonly, aural skills texts present suspensions doubly uncontextualized: first, by the absence of introduction or explanation, and second, by the absence of a bass voice which would make their structure, function and sonic effect clear and obvious.[135] The popular *Music for Sight Singing* (Ottman 2011, 8th ed.) has exercises with implied suspensions on page 14 and 15, and an unprepared 7-6 suspension occurs in a two-voice exercise on page 22. Many more examples can be found within

[135] Two-voice exercises are usually a small percentage of aural skills texts. "The fifth edition of Ear Training [Benward/Kolosick 1996, student edition] devotes only a few pages to multipart dictation per se, and less than 5% overall even if one counts all the transcription activities that include two or three voices. The GRE Revised Music Test [Graduate Record Examinations] includes one two-voice dictation worth 2.5% of the entire exam…. Three- (and more-) voice dictation is rare indeed, at least in U.S universities, colleges and conservatories." (Karpinski 2000, 111)

the collection. But the book has no discussion of suspension, no topics heading in its table of contents, nor any dedicated drills designed to draw students' attention to it as a musical element requiring practice.[136] Phillips (2011), *The Musician's Guide to Aural Skills* (2nd ed.), has one suggested model for improvised suspension drill; but this lone exercise is introduced on page 413 in the text, while implied suspensions in single line melodies appear as early as page 5. In the extensive list of musical elements covered in the table of contents of both books, there is no dedicated heading for a discussion of suspensions and their function. Some aural skills texts have no index at all (Xiques 2014 and Jones 2014), rendering them ineffective as reference resources for specific musical elements. Other texts specifically concerned with improvisation have no index entry of discussion of suspensions. Mulholland (2013), *The Berklee Book of Jazz Harmony*, contains many examples illustrating concepts of dissonance and intervallic tension – melodic phrasing in jazz is impossible without an understanding of these elements – but the book has no clear definition of how they function, nor an indexed entry. *Kodaly Today: A Cognitive Approach to Elementary Music,* introduces accented non-chord tones without explanation or discussion. (Houlahan 2008, 208-209)[137]

Comparable lacunae can be found in specialized texts targeted at advanced students or teachers. Belkin (2018), *Musical composition: Craft and Art*, has no entry for suspensions. In a discussion under the subject of cadences it states that "Dissonance is very common right before a cadence, since the ensuing consonance provides an additional release of tension," (Belkin 2018, 47) but does not provide a musical example. Kimball (2006)*, Song: A Guide to Art Song Style*

[136] Appoggiaturas are mentioned in passing in Ottman (2011, 163). The closest the book comes to discussion of suspension function is on page 337, with a suggestion to use "passing tones and neighboring tones" in an improvisation exercise.

[137] There may also be a printing error in the contrapuntal exercises on this page, resulting in incorrect note juxtapositions for the concepts being demonstrated. Repeated attempts were made to doublecheck this with the authors prior to the defense of this dissertation.

and Literature, a reference guide for solo vocal repertoire and performance, mentions suspensions (pages 6, 8, and in a discussion of Monteverdi, page 411) as stylistic elements; but again, with no musical example or structural contextualization accompanying either discussion.[138] Texts geared towards teachers of ensemble subjects can also be vague when it comes to specific musical materials, likely assuming that they have been covered elsewhere. Millican (2012), *Starting Out Right: Beginning Band Pedagogy*, is a technical handbook on the logistics of instruments, classroom space, rehearsals, etc., with a chapter on musical materials. It discusses musical materials in chapter two, but does not address bass-treble listening or the challenges of contrapuntal textures in ensemble pedagogy. Collins (1999), *Teaching Choral Music*, briefly mentions the cadenza, described as a "decorated cadence" on which the performer embellishes "the vocal line with an improvisatory… decorated passage." (Collins 1999, 15) The book also has a section entitled "Interpretive Factors; the Choir's Personality," (Collins 1999, 316-325), but no discussion is undertaken regarding interpretation of phrases that include dissonant elements.

Training in Early Music often occurs after a student has already completed other levels of general classical training.[139] In this style area, there can be dedicated attention given to suspended intervals, as an element of performance practice.[140] It was not until I became involved in Early Music training – after years of private and institutional instruction and professional

[138] Kimball (2013, 112) has a similarly brief mention.
[139] Undergraduate concentration in Early Music is an increasing option for specialization in North America, but undergraduates in different stylistic concentrations usually undertake standard theory and aural skills requirements during the first two or three years of undergraduate study. Jazz musicians are sometimes required to take both classical and jazz theory and aural skills classes.
[140] The concept of "historically informed" performance has its own acronym – HIP – which is in common use among professional musicians. The acronym has replaced an earlier concept of "authentic" performance, denoting the use of ancient instruments (or rather, modern instruments based on ancient models) to play canonic repertoire, as well as performance practices based on historic source materials. See Taruskin (1995), "The Pastness of the Present and the Presence of the Past."

employment – that I took part in any dedicated discussion of performance practice, with the specific topic of suspended intervals and cadences. But even though instruction in performance practice of suspensions may occur in individual lessons, lectures and master classes in Early Music, it does not necessarily extend to any substantive discussion of the structural elements involved. This is also true of Early Music instructional texts. Carrington 2018, *Trills in the Bach Cello Suites: A Handbook for Performers*, has extensive discussion of the trills and decorations within the cello suites, but there is no mention of the contrapuntal structures that generate the trills, and no exploration of the interaction between bass and treble that makes ornamented passages part of a contrapuntal dialogue rather than simply a melodic utterance. This mixture of extensive discussion without the inclusion of simple introductory schemata is also the case with Ruiter-Feenstra 2011, *Bach and the Art of Improvisation*, a text geared towards advanced players. *Upon a Ground: Improvisation on Ostinato Basses from the Sixteenth to the Eighteenth Centuries***,** by far the most useful modern instructional text for historically informed improvisatory practice, has a more thorough a set of explanations and exercise suggestions than can be found in many other publications. But its groups of models, beginning with "two-chord pendular ostinatos" (Erhardt 2013, 7-12), and followed by a number of standard ground-basses, does not include a dedicated set of cadential schemata.[141]

The most reliable location in current music training for discussion of suspensions is in species counterpoint, as intervallic suspensions are the fourth of five stages in this method. The problem here is that, as currently practiced in modern institutions, introductory species counterpoint is predominantly a written exercise. This contrasts with sung, played and improvised counterpoint, in which species instruction was only one aspect of an entire

[141] Models include Romanesca, Folia, Passamezzo Moderno, Passamezzo Antico, among others.

conceptual and cultural approach to sound. Current counterpoint instruction concentrates on the written aspect of ancient training, an abbreviated version of the years-long drill in written counterpoint previously required of composition students. Rather than using counterpoint as a way of both understanding repertoire and honing sonic perception, modern training reduces counterpoint to a discrete school subject. Many music students will only encounter counterpoint practice within a semester-long course, or as a unit in introductory music theory, which will last a few weeks at most. Because the species method must be taught quickly to classroom groups for whom there is little chance for individual coaching, modern textbooks include a series of voice leading strictures that must be correctly executed in written drills that can be completed in a workbook.[142] Counterpoint protocols are presented as "rules" in written exercise, for which the student will be docked marks if executed incorrectly. Modern counterpoint is primarily defined by these written checklists of voice leading rules, against which every pitch set to paper must be painstakingly referenced. This subjects students to a tennis-match head-swivel from the exercise to the checklist and back, one weary note at a time. This can also hold true for their teachers, whose knowledge of counterpoint may only be a class or two ahead of those they instruct.[143] It does not help that modern textbooks regularly use models either from, or modeled on, Fux's *Gradus Ad Parnassum*. These sequences of 8-10 whole notes lack any memorable or readily discernible schematic identity. The distinct rhythmic character and structure of eighteenth century partimento *moti di bassi*, or seventeenth century dance-derived ground-basses, are rarely to be found in modern species counterpoint instruction. Four-part chorale instruction also

[142] For example, see the workbooks that accompany the theory texts by Clendinning (2016, chapter nine) and Laitz (2012, chapter two).

[143] "[S]chools rely on adjunct faculty…they generally range from newly minted PhDs or DMAs with little or no experience teaching in the undergraduate trenches, or, often, they are drawn from their own institution's graduate program; on occasion, even talented undergraduates find themselves in front of their peers." (Laitz 2016)

devotes some attention to explanation and drill of written suspensions, albeit only after triadic structures have been thoroughly practiced in extended sequences. But chorale writing in modern theory classes is also primarily a written exercise, subject to the same guide-book strictures regarding voice leading as species counterpoint. The note-by-note checklist of rules is thus expanded exponentially, as each pitch written must now be checked against not one, but four others from the previous chord before the next one can be safely essayed.

It is an approach that works reasonably well in generating written exercises for marking in for semester-long group classes, but it is wildly divergent from the dynamic complexity, challenge and sheer fun of contrapuntal variation and improvisation of schemata, practiced over a period of years. The organizational structure and small amount of class time designated for this approach to counterpoint training ensures that a student will pay as much (or more) attention to the checklist than to the sound, potentially missing the experience of the cognitive reaction that the suspension elicits – the very element that Zarlino and other theorists noted as the suspension's most salient and important characteristic and use in composition. The process of using the ear to hear and understand the function and treatment of dissonance through creative but guided drill – of which the 4-3 suspension is only one option among many – is marginalized at best and eliminated at worst. In an attempt to make students aware of one historical aspect of counterpoint training, we have stripped it of the creative and improvisatory elements that made it applicable to performance, improvisation, and composition. Further, there is no modern system that introduces contrapuntal principles in primary or secondary materials for young children**,** or in secondary high-school level training. Most commonly, counterpoint instruction does not begin until undergraduate training, years after music students are at the optimum age to introduce and embed aural and cognitive skills. Species counterpoint is commonly a subject covered in the first

two years of music theory requirements in an undergraduate degree. Depending on curricular requirements, students may be required to undertake a follow-up course, or course section, in which species counterpoint becomes a more integrated and creative practice. But for many, the lessons that contrapuntal models can teach are never fully explored, and the practice is left behind as soon as basic course requirements are completed. It is rare that the sonic clarity and rigour of two-part counterpoint, the contrapuntal techniques that underpin traditional chorale-writing, and improvisation drill are combined in beginner or even advanced counterpoint and chorale practice.[144]

In short, current treatment of suspensions in instructional texts is haphazard and unsystematic, and when deployed in some species counterpoint training and chorale writing, mechanistic and unmoored from phenomenological experience of sound. The schematic simplicity of the past has been replaced by a wide range of scattershot approaches in the present. It is necessary to address this pedagogical gap. If the 4-3 suspension was only a historically situated stylistic trope that had passed into disuse, an argument could be made for continued consignment to the instructional margins in which it currently resides. But as was noted in the previous chapter, suspensions continue to play a notable role in tonal composition, especially in popular music, which is dependent on melodic, metric and harmonic musical schemata. While the classical approach to preparation and resolution of the 4-3 interval is not the stylistic requirement that it was when originally taught, it remains a common gesture found in many different styles of music, which deploy it in a similar manner to the past: as a method for keeping tension within the standard tonic-dominant chordal resolution.

[144] Chorale harmonization as physical drill and exercise, in the manner of basso continuo accompaniment, may or may not occur in keyboard skills classes; there is little consistency to be found from school to school, or in textbooks.

Textbook writers' explanations of, and drills for, suspensions have not disappeared entirely. But they are difficult to locate and inconsistent in scope and depth, and it is literally a lottery as to what will be found in any resource selected by an individual, or required by an institution. Students and teachers are at the mercy of the choices made by writers and editors who address suspensions in a wide variety of ways, if they are addressed at all. If students and teachers have not identified for themselves both the importance of this element – an insight that may or may not occur with time and experience – there is little in published curricula that will explain it clearly, and still fewer that offer clear and thorough models and drills. There is no one area in current music training in which suspension instruction coheres to combine subject heading, index, explanation, demonstration and dedicated exercise. Without any firm place for suspensions or consensus regarding their use or function, small wonder that it is that much more difficult for both teachers and students to ascertain their importance, or to deploy them tactically for aural skills and improvisation training.

A conscientious teacher, knowledgeable and enthusiastic about contrapuntal technique, will insist that their students listen to, sing, and play through species and harmony exercises, and hope that when the written test occurs at least a few students are engaging with a memory of sound combinations rather than frantically attempting to recall various chord formation, progression and counterpoint rules and protocols. But the exigencies of institutional education allow a relatively small amount of dedicated time to devote to aural skill development, amongst crammed schedules that generally emphasize practice and performance of repertoire. This means that many teachers will leave it to their students to work out the specifics of how to listen, and what to listen for in repertoire and exercises. The lack of clarity and intention in intervallic suspension training means that only the most determined or curious students will spend any time

listening to, thinking about, and incorporating this element into score study and/or improvisation practice. The suspension's most natural home in modern training remains counterpoint instruction, but until this area has a required component of improvisation and performance, counterpoint training will likely be discarded or forgotten by many students once the discrete term allotted for it is finished. Writing an exercise according to a set of antiquarian rules – rules for which clear explanation may not occur, either in textbooks and in classroom instruction – seems too far removed from actual music making for many student musicians to ascertain its use. Far too many music school graduates recall their experience of written species counterpoint with disdain and bafflement, never having learned that it was only one part of a dynamic method of sonic training, and never understanding how its intricacies can inform their own creativity.[145]

At the same time, despite the erratic nature of the suspension's treatment in pedagogical materials, notable teachers and theorists have made observations and recommendations in articles and books which indicate an awareness of importance of suspensions, counterpoint, bass-treble interaction, and internalization of schemata for creative variation. *Music Theory Through Improvisation: A New Approach To Musicianship Training* (written by the lead author of the CMT Manifesto, a strong proponent of free improvisation) states that improvising according to contrapuntal protocols "takes our hearing and thinking to the most foundational realms of melodic and rhythmic conception…. considerable benefits in terms of melodic and rhythmic clarity will… result from these improvisations." (Sarath 2010, 293-4) The widely used *Music for Sight Singing* emphasizes the importance of listening for the bass voice, and the particular

[145] The widely-used music theory text *The Complete Musician* acknowledges these issues in the opening paragraph of its introduction: "Music students often suffer through their theory and aural skills courses, viewing them as not particularly relevant – perhaps even painful – side-lines of their musical studies... Students often view part writing and figured bass as arcane and antiquated activities, and ear training and dictation-activities that should be intimately linked to music making-as scarcely more meaningful." (Laitz 2012, xii)

intervallic character of bass lines: "Some leaps tend to be associated with bass lines; they are particularly likely to occur before cadences…Mastering the characteristic patterns… will help make other bass lines you encounter seem more familiar." (Ottman 2011, 124) Karpinski's *Aural Skills Acquisition* is one of the few full-length books devoted specifically to the issues surrounding aural skills pedagogy at the undergraduate level. In a chapter entitled "Polyphonic and Harmonic Dictation," the author observes: "Among the most fundamental and important contextual pitch distinctions to be made is that between consonance and dissonance. Listeners should be able to separate contextual verticalities into one of these two categories with relative ease," adding "the distinction between consonance and dissonance is intrinsically musical, carrying with it information about function, implication and realization, sonority and texture." (Karpinski 2000, 115-116) In another section entitled "The Bass Line as the Basis for Harmonic Function," Karpinski explores pedagogical rationales for bass line drill, mustering quotes from Zarlino and Rameau to support his argument:

> In order to perceive bass lines, listeners must be able to focus their attention on the lowest voice in whatever textures they encounter. For some, this is an new mode of perception… those to whom it comes easily have already had experience in attention to bass lines: jazz and pop musicians … bass players and bass vocalists. (Karpinski 2000, 120-121)

He adds, "Polyphonic dictation… can often serve as an… extremely controlled environment in which to hone lower-voice attention skills." (Karpinski 2000, 120-121) Houlahan/ Tacka 2015, *Kodály in the Fifth Grade Classroom: Developing the Creative Brain in the 21st Century*, advocates that when introducing basic harmonic function in melody accompaniment, "the instructor should quietly hum the functional notes (chord roots) *do* and *so* for *do*-centred pieces," as well as requiring students to listen specifically for the bass voice in two-part textures, and to "listen and show the melodic contour of the lowest voice with arm motions," and finally to identify the

specific notes of the bass line with solfege syllables. (Houlahan/ Tacka 2015, 154-155) Laitz's *The Complete Musician* observes:

> The goal of the music theory teacher is to open the minds of music students… to learn that first-species counterpoint is the backbone of tonal music. The point is to debunk the myths that somehow composers led one chord to another, helter-skelter; that triads are stacked thirds; that figured bass is merely inversion theory; that voice-leading rules are infinite and arbitrary, and so forth. (Laitz 2016, n17).

Huron's *Voice Leading* identifies flaws in modern chorale-writing drill: "SATB chorale-style part-writing excludes most of the easy segregation techniques…. Limiting the textural density to just two or three streams is sure to facilitate stream segregation, yet chorale-style writing dictates a four-part texture – a density that just exceeds the common limit for easy scene parsing." He concludes that "asynchronous onsets are powerful ways of segregating sources," (Huron 2016, 181) identifying precisely the cognitive value of the staggered onsets of bass and treble voices that are found in intervallic suspensions.[146] In *Teaching Music Theory*, Snodgrass states:

> My professor was a dynamic and innovative teacher who wanted us to explore music analysis in a creative way through composition and integrated musicological study. For every theoretical concept presented, we were expected to compose and perform an original work. We were continually engaged in the process of understanding music theory through composition and spent a great deal of our theory class at the keyboard realizing figured bass in real time or experiencing how a suspension resolved**. (**Snodgrass 2020, 11)

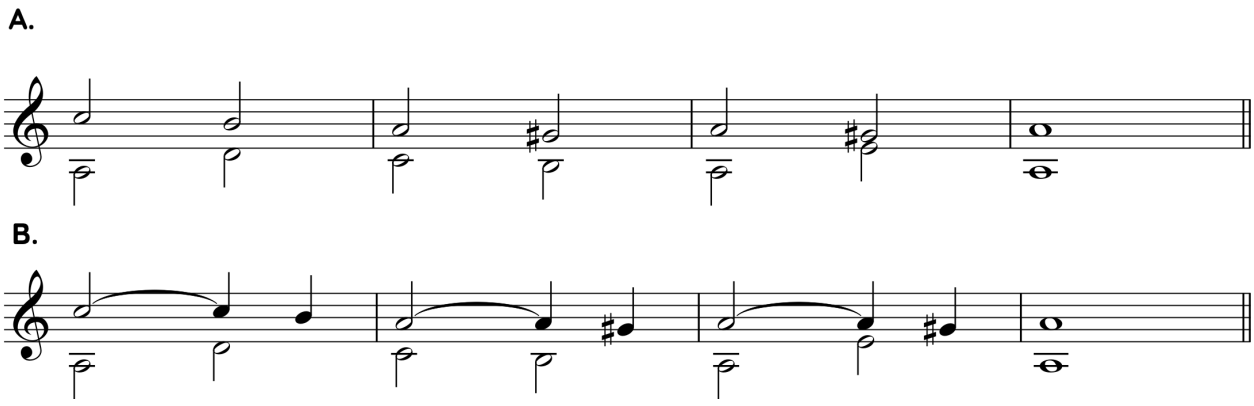
Every suggestion made above by these writers can be addressed by deploying intervallic suspensions and two-part contrapuntal structures in beginner training.

Writers also use schemata, or at least schema-like examples, to demonstrate concepts. As noted above, while Laitz 2016's thorough discussion of suspensions does not appear until page 289, it includes a simple two-voice demonstration of suspension function that is simple enough to be played by beginner musicians. (Figure 4.1) It resembles older cadence concepts in that it

[146] See Wright/Bregman 1987, and the seminal Bregman 1990.

juxtaposes, side by side, the basic model and possible variation through the use of suspensions. The use of Roman numeral chord symbols in the original publication (not reproduced here) indicates that adult students are meant to associate the model with the three- or four-note chords that contain each two-note interval. But the exercise functions perfectly well as an introductory exercise to suspension concepts in the form of a two-voice intervallic schema. Advanced (or even basic) knowledge of chords would not be necessary for this exercise to function as an introduction to suspensions; it could function as a simple composition for both children and beginners. But the exercise's location within an undergraduate text, situates it as a reference example rather than a beginner practice model. The workbook that accompanies this text has a number of exercises in which singing, playing and improvising on two-part models (Laitz 2016, chapter ten, "Accented and Chromatic Embellishing Tones") is required. Within these there are several exercises that have the structure of the Phrase Model. (Laitz 2016, 273) While there are no actual partimenti in the workbook, the basic parameters of schema, singing and improvised variation are at least present for students and teachers to explore. To what degree this small group of exercises produces lasting skills, and fully embeds mental models, is another question.

Figure 4.1. Sequence and variation from Laitz (2014).

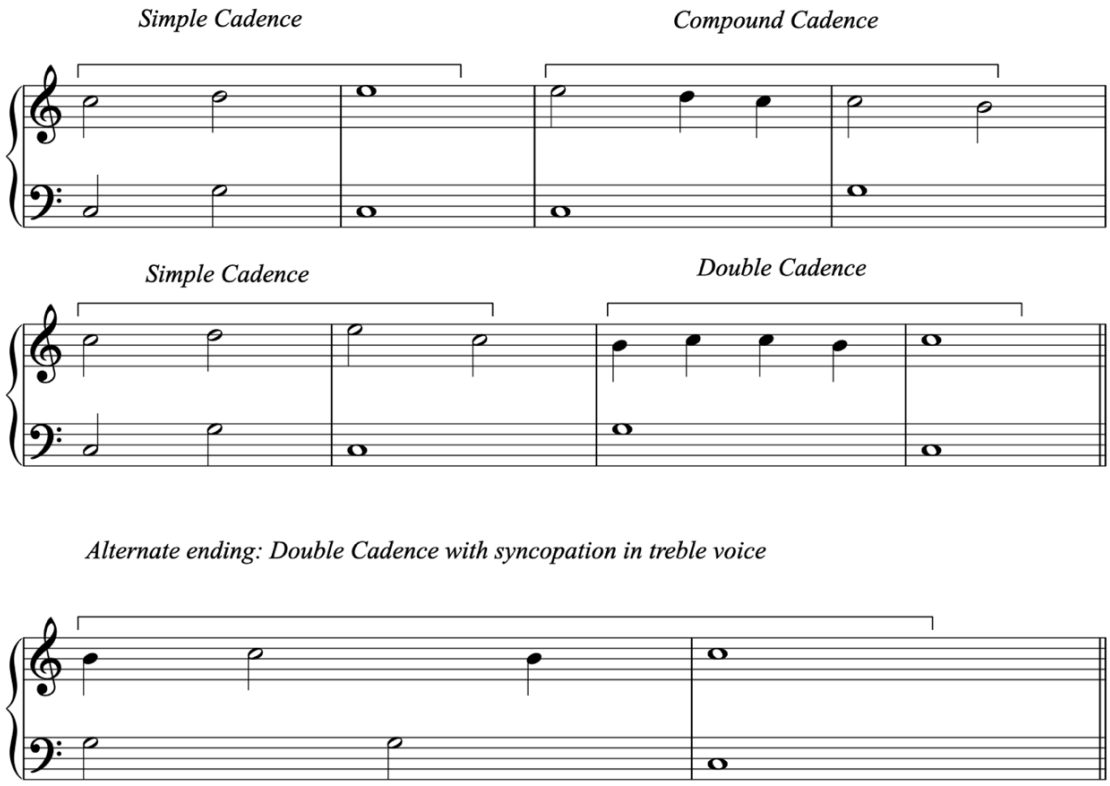


The observations and recommendations of these writers reinforces the argument for introducing schemata, creative counterpoint drill, intentional bass listening, and intervallic suspensions at an earlier stage of music training than is currently done, bridging the gap between harmonic and contrapuntal training, and opening up new possibilities for pedagogy. Two-part contrapuntal models, such as solfeggi, could be the basis for beginner chorale instruction, rather than beginning with triadic chord sequences first and adding contrapuntal elements later. An approach to chorale writing that introduces asynchronous onsets at a beginner level, rather than requiring prior introduction of four-part chordal textures, could also help train the ear to be more sensitive to the location and character of specific pitches within a chordal texture. If the brain is honed to identify, parse and segregate pitches at an early stage of training, a student will be better equipped to break down denser pitch combinations as they are introduced in advanced study. When suspended intervals appear in aural skills exercises, there should be clear coordination between explanations of the suspension and the exercises that include them. In counterpoint training, even within its current status as a limited practice, singing and improvised variation should be integrated with the written drill. A beginner counterpoint model, introduced early in training and combining a demonstration of voice leading protocols with an element of creative play, creates the possibility that young minds will be drawn to the cognitive puzzles that suspensions elicit, aiding them in recognizing these elements in repertoire as their training continues.

The observations and recommendations made by the writers above can addressed simply: integrate into modern basic training the three cadences or comparable models, plainly demonstrated and complete in structure, as a required and essential conceptual lesson in beginner training. If the suspension sequence is reintegrated in this manner, there is a better chance that its

elements and the lessons they can impart will be present in students' subsequent encounters with, and understanding of, varied repertoire, styles, and compositional techniques. The beginning of this process can be as simple as having a teaching a child play a piece with this structure, a sequence of variations, and encouraging them to vary it further. (Figure 4.2)

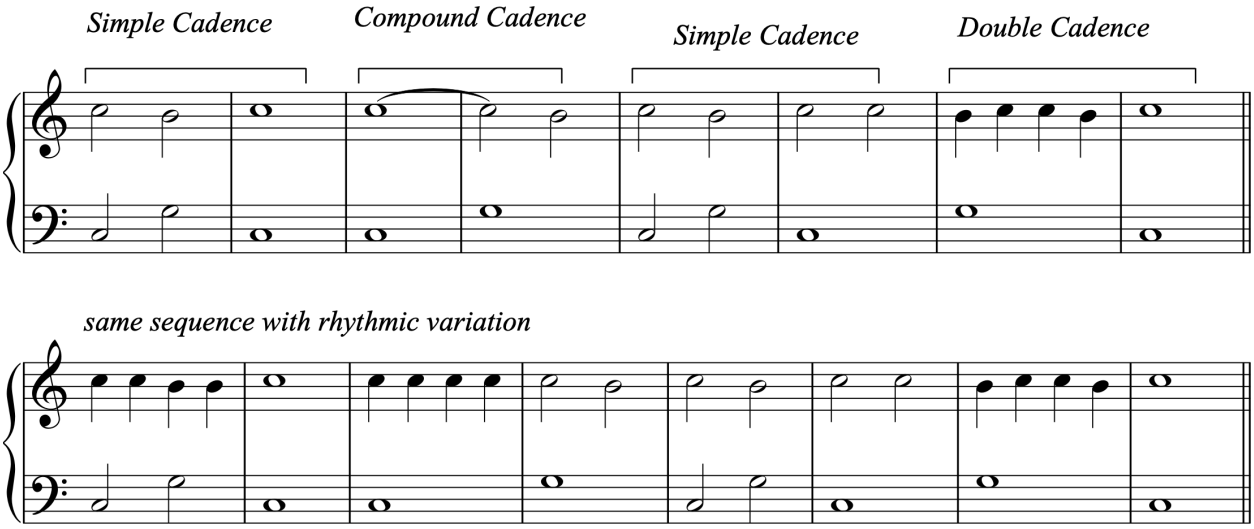
Figure 4.2. Combined cadence sequence.



Note that the example above does not deploy scale degrees 1-7-1 in the treble voice for the simple cadence section of the model, but 1-2-3.[147] A version that employs the former sequence demonstrates the problem with simply grafting together the three schemata and setting them out in standard music notation; the resulting melody line, even with rhythmic variation, is clearly too undifferentiated to be memorable or interesting (Figure 4.3).

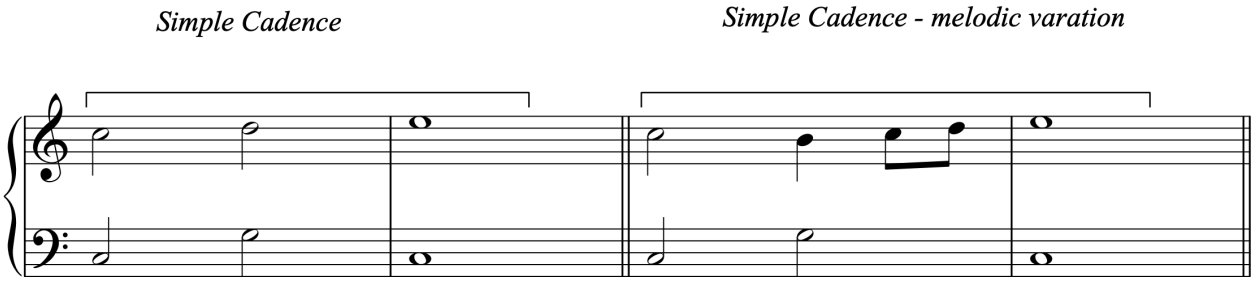
[147] Scale degrees 1-2-3, or do-re-mi, comprise a standard opening melodic gesture in classical composition, and receive their own schema designation in Gjerdingen (2007, 77-88).

Figure 4.3. Cadence sequence without melodic variation.



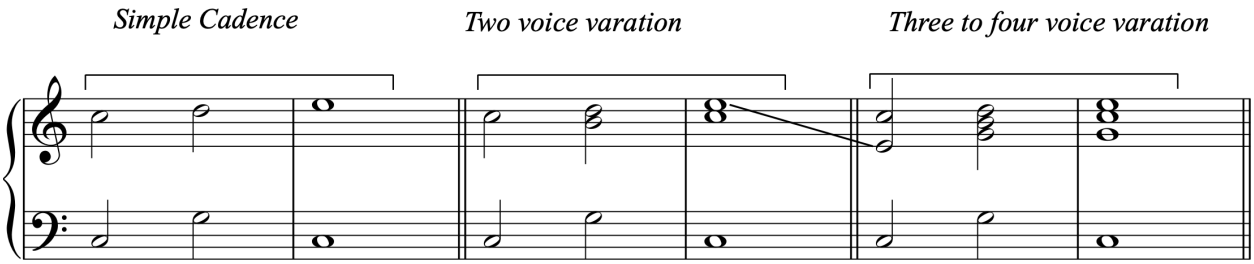
A variation in which the treble line moves to B, and then quickly by stepwise motion to include the relevant interval, but distracts from the intervallic simplicity of the model through too much rhythmic movement (Figure 4.4).

Figure 4.4. Simple cadence with melodic variation.



Another option is to add a second voice to the treble. If the CS is drilled as a discrete exercise in the manner suggested in the next chapter, this version above can be used as a variant on the basic model, and an introduction to the basics of three- and four-part chord construction. (Figure 4.5)

Figure 4.5. Simple cadence in two, three and four voices.



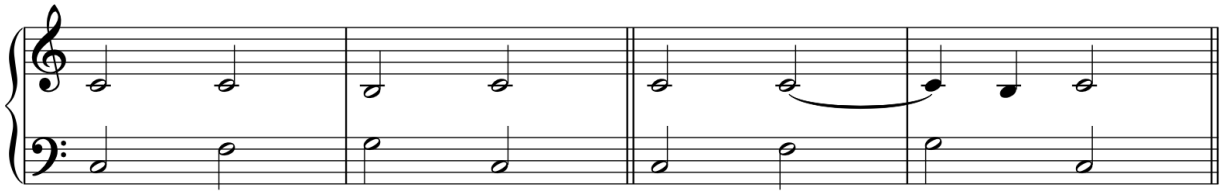
Another possibility for bridging the gap between advanced theory concepts, beginner training and schemata can be found in conflating Laitz's Phrase Model with the ground-bass *Bergamasca,* which allows cadences to incorporate the fourth scale degree in the bass.[148] Laitz introduces the Phrase Model through a written passage, rather than a schema – there is no illustration. (Laitz 2016, 273) Rather, the model is a conceptual tool through which to understand repertoire; excerpted examples by composers such as Haydn, Mozart, Schubert and Mendelssohn follow. Reasonably enough, the author and teachers using the text assume that by the time the student is ready to use a text written at this level, the phrase model would be familiar enough to students that a simple illustration might not be necessary. But as we have seen, there is no guarantee that the connection from repertoire to analytical structure will be made. Rather than leaving it to chance, it is a simple matter in beginner training to introduce this model as an improvisational schema, and to also introduce variations that combine it with the suspension sequence from the cadences. (Figure 4.6) We will return to the Bergamasca model in the following chapter.

Figure 4.6. Bergamasca combined with cadences.

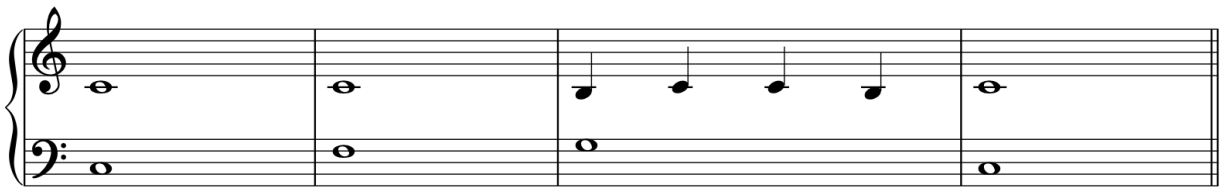
[148] Some partimento treatises also incorporated subdominant bass movement in cadence examples.

Bergamasca and Cadenza Semplice

Bergamasca and Cadenza Composta



Bergamasca and Cadenza Doppia



Should a teacher wish to do so, beginner exercises based on these models illustrated above can be given a decorative if meaningless name such as "The Happy Frog," "Walking in the Park," or "A Sunny Day." Others might prefer to stick with the original Italian nomenclature. Ideally the model should be labeled for its technical character, as the ancients did the *Régle* and other *moti di bassi*,[149] but this might prove counter-productive at the primary level. "The Three Cadences" would be incomprehensible to small children; "Partimento Cadenzi" might be a challenge for non-Italians. "Cadenza Combo" might work, or with the forced jollity of children's piano instruction books, "Cadenza Fiesta," although these last options are more irritating than appealing. But this modern educational challenge aside – conservatory apprentices were not catered to with cheerful titles or cartoon illustrations back in the day – the act of naming is an important one in defining a schema. Laitz's labelling of the Phrase Model is just one example. Naming is at the root of all education and professional training. A carpenter or stonemason must know the tool necessary for a given task, and the apprentice artisan learning the trade at their side must be able to quickly identify and supply it when asked. The names of the Neapolitan cadence

[149] E.g. "up a fourth, down a fifth," "down a fourth, up a second," etc.

sequence – simple, compound, double – denote not only technical elements but an entire conceptual framework of sonic understanding. Although the elements in the three cadences are currently dispersed into different categories, reuniting and naming them can restore and reframe their identity, impelling both teachers and students to treat suspensions with the same attention bequeathed to other essential elements in beginner training. Whatever name it is given in children's materials, it is recommended that the "Three Historical Cadences," "Three Ancient Cadences" or some comparable label, be as familiar to musicians as terms such as scale, interval and chord. Naming the models as a tripartite group will help reinforce the habit of grouping and introducing them in the way that teachers introduce scales and intervals, as a regular and standard element in basic training.

Thus named and introduced, these models would present a shift of current protocols at beginner and intermediate levels of training:

1) intervallic suspension/resolution as a primary aspect of cognition and aural skills training, rather than as an adjunct element of chord construction and melodic variation;

2) the bass voice as a central cognitive tool for pitch perception, improvisation and composition, rather than accompaniment for melody, reference point of chord analysis, or marginal element in sight-singing exercise;

3) contrapuntal training as a method for honing our cognitive organization of sound, rather than as a historically situated style of performance or composition method taught as written exercise.

The following chapter will examine how these models can be deployed in different areas of beginner aural skills and improvisation training.

Chapter Five: Cadences in aural skills and improvisation training

In the previous chapters we observed that intervallic suspensions can elicit a specific cognitive response of anticipation and expectation, which activate problem-solving processes in

the human brain, and reward resolution with a sense of satisfaction. We also observed that modern music training has no common or systematic manner of deploying of suspensions as a tool in aural skills, improvisation practice and interpretive technique. The cognitive reactions that suspensions provoke, and the potential creative solutions that they invite, are currently underused pedagogical resources. This chapter presents a series of exercises for building aural skills and improvisational creativity.

As a set of guidelines for exploring suspensions within these areas, this paper will reference Azzara and Snell (2016), "Assessment of Improvisation in Music." This article posits that there are "six elements of music teaching and learning that can provide a catalyst for creative music making and assessment: repertoire, musical vocabulary, intuition, reason, reflection, and exemplars." (Azzara and Snell 2016, 1) The authors' intention is to integrate improvisation practice with other skills commonly taught in institutional music training, and to create a model in which improvisation skills can be assessed and graded, within a set music curriculum: "When improvising, students spontaneously express musical ideas and interact meaningfully with musical content. Improvisation provides context for reading and composing music, and vice versa." (Azzara and Snell 2016, 11) While there are innumerable beginner materials, textbooks at the undergraduate level, and academic articles addressing improvisation, many are not always clear or specific about the skills being developed by a given exercise, the methods by which those skills are to be fostered, or the aesthetic and technical elements of the materials deployed. "Assessment of Improvisation in Music" sets out a series of clear guidelines for assessment, reproduced below in its entirety.

Table 5.1. Improvisation Rating Scale, Azzara and Snell 2016.

Improvisation (Additive Dimension, 0-5)
The improvisor:

1 performs a variety of related ideas and reuses material in the context of the overall form (thus performance contains elements of unity and variety).
1 demonstrates motivic development through tonal and rhythm sequences.
1 demonstrates effective use of silence.
1 demonstrates an understanding of tension and release through resolution of notes in the context of the harmonic progression.
1 embellishes notes and performs variations of themes.

Rhythm (Continuous Dimension, 0-5)
The improvisor:
1 performs individual beats without a sense of the meter.
2 demonstrates a rhythmic feeling of the meter throughout.
3 employs various contrasting rhythm patterns without a sense of rhythmic motivic development.
4 begins to develop and relate rhythmic ideas in some phrases.
5 establishes a cohesive solo rhythmically; develops rhythmic motives in the context of the overall form.

Expressive (Additive Dimension, 0-5)
The improvisor:
1 demonstrates a sense of musical interaction (e.g., melodic dialogue alone or musical conversation among performers).
1 demonstrates an understanding of dynamics.
1 demonstrates an understanding of musical style and characteristic tone quality.
1 demonstrates a sense of appropriate articulation.
1 demonstrates an understanding of appropriate phrasing.

Harmonic Progression (Continuous Dimension, 0-5, Major/Minor – Tonic, Subdominant, and Dominant)
The improvisor:
1 performs first and/or last note correctly.
2 performs all patterns in one function correctly (tonic reference).
3 performs all patterns in one function correctly (tonic reference) and some patterns in one other function correctly.
4 performs all patterns in two functions correctly.
5 performs all tonic, dominant, and subdominant patterns (functions) correctly

The numbers on the left-hand side of the table demonstrate the authors' pedagogical method:

> In 'Additive' dimensions, the criteria [are] independent... not inter-related. In 'Continuous' dimensions, the criteria are inter-dependent, so you would not achieve a 4 unless you achieved a 1, 2, and 3… for the 'Continuous' dimensions, the goal is to work toward achieving the criterion related to the number '5.' With 'Additive' dimensions, the goal is to

> combine as many criteria, with 5 being the most achievement. (email communication with Benjamin Stein, 15 Dec. 2020)[150]

The table was deployed as an assessment tool in a series of publications designed specifically for classroom use, with the "assessments lin[ing] up with the repertoire for each book." (email communication with Benjamin Stein, 15 Dec. 2020)[151] But no repertoire or examples from these publications accompanies the table in the 2016 article, beyond the general organizing principle of standard western diatonic harmony (seen in the guidelines of tonic, subdominant and dominant "functions" in the section entitled "Harmonic Progression"). This lack of specificity allows teachers the flexibility to apply the list to different levels and to use their own repertoire.[152] The list's value to this study is that it organizes and delineates discrete musical tasks simply and clearly. Cross-referencing this list with the three cadences analyzed in chapter three allows us to examine how suspensions (and by implication, more advanced partimento models that include suspensions) can be deployed within various areas and styles of improvisation training, especially in institutional settings.[153]A recommendation for the addition of two specific pedagogical tasks will be made at the end of the chapter, to be added to the authors' original list of six "elements of music teaching and learning" that are part of the article's discussion of pedagogical parameters.

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[150] The author added: "The Developing Musicianship through Improvisation books all have these kinds of rating scales. These assessments line up with the repertoire for each book." The textbook series is called *Developing Musicianship through Improvisation* (Azzara and Grunow 2006), with three levels, and resources for band instruments, keyboard, and voice.

[151] See also Azzara (1993), which demonstrated examples of how this table was used to assess tasks and assign marks.

[152] This approach is confirmed by the author in a further email communication to Benjamin Stein, Toronto, 3 Feb. 2021.

[153] There are multiple different systems of beginner music education, all vying for the attention of music teachers and institutions. Orff, Kodaly, Dalcroze and Suzuki and Gordon (in the USA) are among the most well-established, but many newer methods are contending for market share.

On chordal instruments such as keyboard or guitar, exercises should be kept to two or three voices whenever possible. While some music programs require piano training for all students, it is by no means a regular requirement, and a teacher must assume that non-piano majors will struggle with the mechanics of piano execution. Piano students comfortable with score reading, but without improvisation training, may struggle as well. Two-voice exercises on a keyboard instrument put the process within the attainable range of children, adult or adolescent students whose first instrument is not piano, and teachers who are not pianists but who want to use the piano as a tool. More crucially, it demonstrates as clearly and simply as possible the contrapuntal interaction between the bass and treble voices, without cluttering the texture with other tones that may obscure this relationship. The following exercises are set out in two-voice formats allowing execution on a harmony instrument such as keyboard or guitar, or duets in which one line is played by the student, and the other by a teacher.[154] When variations are sung or played by instruments that commonly execute one note at time, such as winds, strings and brass instruments, the teacher should play the bass line against the melodic variation played by the student.[155] Students should also be required to practice the bass line, and to be able to execute it as part of a duet texture. This may be a challenge in situations in which beginner players are playing in one octave, and the teacher does not have an instrument handy to play a bass line underneath. Although everything that follows is written in C major, both key and octave

[154] Ukulele has supplanted guitar in some music instruction, owing to its size, ease of use, storability, and cost. But this instrument is not recommended for two-voice exercises. The ukulele's narrow range and re-entrant tuning system, in which the fourth string is pitched a tone lower than the first string but higher than the other two strings. This renders it potentially confusing when attempting to find a clear demarcation between treble and bass voices in these types of exercises. The undifferentiated chordal blend that the ukulele's tuning produces makes it especially problematic for teaching either counterpoint or standard chord formations. Should its use be unavoidable, the instrument's fourth string should be reconfigured to sound in the lower octave, creating similar intervallic relationships to the top four strings of a guitar. With this adjustment, music teachers using this instrument have at least some ability to foster bass listening and contrapuntal awareness in their students.

[155] Bowed string instruments, of course, can execute two-note chords; at advanced levels three-note and four-note chords can be executed in arpeggiated form.

transposition may be necessary, The range of the flute, for instance, creates potential challenges. As the lowest note is C4, suspensions with the lower B3 are impossible, and can only be played one octave higher. At the beginner level, it might be more feasible to begin in F major, with E4 functioning as the leading tone. C4 and B3 might also be low for some beginner singers, and in such cases transposition to another key will be necessary. This will be a judgement call for teachers who understand the configurations of their instruments and the individual student's capabilities.

The model for learning is a standard technique for teaching musical passages: call and response, or listening to and replicating a musical sequence. The models below, and/or similar variants, are to be demonstrated in their basic form to students, who can then play or sing them back. The teacher should slowly, clearly, and systematically vary each model, requiring the student to imitate each variation. Then the student, using the same musical materials and schematic parameters, should create their own variations for the teacher to repeat. When the teacher is the leader, it is the student's aural skills abilities that are being tested; when the positions are reversed, the student has the chance to practice improvisation technique. It is strongly recommended that sheet music is not deployed when exploring the exercises that follow. "Assessment of Improvisation in Music" notes that "children can improvise and create music without having the ability to read notation." (Azzara and Snell 2016, 6) A notated score is of benefit as a tool to help instruct and then remind the teacher of the technical parameters of the initial model. But many of the beginner exercises that follow are simple enough to be played without sheet music, and the focus on listening and imitating, rather than on the mechanics of score reading, is the point of the process. Removing the element of score execution also compels the teacher themselves to draw on skills other than sight-reading: internalization of schemata,

memorization, transposition and the creative challenge of inventing variations in real time. If a sequence of exercises is simply sight-read by a student, an essential aspect of the process has been missed; if the teacher reads a set of exercises from sheet music, they are avoiding the very challenge that they are presenting to the students. And despite their simplicity, executing the models below, and inventing variants with them, is a challenge. The teacher must drill and practice until their own skills are reasonably secure, before they attempt to help build the same ability in others, and must draw on their own improvisational abilities, newly acquired or otherwise, to vary elements of timbre, dynamics, articulation, rhythmic divisions and rhythmic character. Once one passage has been created by the teacher and replicated by the student, a teacher must be able to move sequentially and systematically through a series of improvised passages, going from one variation to the next in a clear, obvious manner that is technically manageable by the student. In certain respects, an experienced and virtuosic improvisor may actually find it challenging to simplify improvised passages down to a few notes, while also observing and demonstrating voice leading protocols. If teachers who are themselves beginner improvisors find the process of working without a score challenging, repetition of simple passages and slower tempos can be a way to foster and reinforce their own skills as well as those of their students. The idea is to move deliberately enough through the variation and imitation process for both teacher and student to understand the ramification of each note added and played – especially in intervallic relation to the bass – rather than allow scale passages to be executed in a blur of motion.

Having improvised the initial passage and heard the student's attempt to repeat it, the teacher's next responsibility is to remember what they themselves have just played, so that they can identify possible errors in the students' iteration. In the case of student error, it is advised to

instantly replay the same exercise, repeating as many times as necessary, until it has been correctly executed by the student. At this point the exercise is entirely in the realm of aural skills training, without an improvisatory component; but the skills of listening, assessing and problem solving have been engaged, which are the processes by which a musical idea and its technical execution become embedded in memory and physical practice. When control of the exercise passes to the student, this knowledge becomes the memory's raw material. As students learn more notes on an instrument, melodic possibilities for variation on a given model can be expanded. But even as students' capabilities grow, repetition of basic elements remains useful, and the teacher should be willing to model the same variations, or similarly constructed ones, in repeated sessions, with a restricted range of melodic and rhythmic parameters, as frequently as is judged necessary. The object is to give students plenty of opportunity to internalize and commit to memory both the models themselves, and the process of creating them, so they can apply the same process in creating their own variations, both in class and in individual practice time. Younger children often enjoy repetition of familiar materials; older children and adult students may find it more difficult.

The next step in the process is for students to generate their own improvised variations. The teacher should support the student's playback by either playing the bass against the student's treble line, or by playing simple chord formations that allow the bass and treble interaction to be heard clearly. Singers not used to hearing a distinct bass line (as opposed to chord changes) underpinning their vocal line may even more confused than instrumentalists, who at least have the physical mechanics of a given instrument to aid their execution of a note. Beginner singers can struggle to hold their line against competing voices, and will sometimes default to notes and/or lines they are hearing sounded by other participants. Students can react with confusion

when playing one part and hearing another, and it may be easier for a student to hear chords played under a melody than to hear a single note. If chords are used instead of bass notes, the teacher should emphasize the bass frequency, with inner intervals of the chord played more quietly than the bass note. Still, a two-part texture is preferable to a chordal one, because it is the specific intervallic interaction between bass and treble that a student is being encouraged to listen for. If a student's playing is initially destabilized by hearing a bass part played simultaneously, repetition of the phrase without a bass part can be followed by eventual reintroduction of the bass voice into the texture, playing the bass part quietly, then repeating with increasing volume each time. Repetition will allow student the student to become confident with the physical act of playing/singing, in conjunction with the cognitive act of listening and observing.

Tasked with creating variations, students may produce melodic phrases that lack coherence. If they have created rhythmic momentum with a quick passage but have no idea how to complete it, they may randomly "grab" notes in an effort to maintain the rhythmic motion they have established, or may stop in confusion. Beginner improvisors may prize speed over simplicity, and create random melodic gestures, possibly by playing memorized scale passages, that lack motivic unity and a clear sense of direction. Both speed and elements of randomness have their place in musical creation. But at this level of instruction, whatever the age of the student, the process is not about creation for its own sake; it is about creative drill in the service of building the analytical skill of musical observation – enacted in real time, as it must be in improvised performance. Such problems require judgement calls on the part of the teacher. It may be that improvisations that have little or no aesthetic appeal should be allowed to continue, if the student is comfortable and enjoying the creative process. In this case, the act of listening, assessing, and shaping strong melodic phrases is secondary to the development of confidence

and fluency. Other students may become frustrated if their conceptual and technical skills produce passages that they self-assess as inferior. In this case, one option is for the teacher to take a portion of a passage that a student has created, and integrate into a more coherent phrase. This demonstrates a practical solution to a common problem, and also shows the student that elements of their creative work have value, and potential for further creative expansion. When control of the exercise passes to students, it is unlikely that their variations will be systematic and sequential. It is the teacher's responsibility to quickly assess the nature of the improvisations created, and to identify elements that the student may need to develop. This can be pointed out by stopping the exercise and pinpointing the precise elements that the teacher has identified as problematic – some students may benefit from verbal analysis – but the most efficient method is to demonstrate the phrase in question, and to be able to provide potential solutions as well.

Passing the control of melodic variation to a student presents further challenges. If a teacher's own aural repetition skills are not yet secure, they may find themselves unable to accurately replicate what they have heard. The simplest solution is to ask for a repetition from the student, and hope that the student is able to achieve this. If the student is unable to do this, both parties must regroup and attempt another improvised passage. Aside from giving themselves another chance at an accurate repetition, this process also develops the student's ability to remember and accurately repeat musical passages. It may also demonstrate vulnerabilities in a teacher's own aural skills. It may be difficult to acknowledge one's own musical difficulties in front of a student, but there is also value in demonstrating to beginner musicians the process working through these difficulties. Experienced teachers know that students can lose interest in musical study the moment an activity moves beyond their capability to achieve it easily. Modeling the work of music training can help students understand and

surmount this aspect of mastering musical skills. For a teacher to allow the student to see this process – to witness a teacher contending with and overcoming challenges – can be a significant lesson for beginner musicians.

The necessary preliminary musical material needed for the exercises below is the ability to play a major (and eventually, minor) scale, or component sections of a scale, in both treble and bass. For the treble voice, the important tone to begin with is scale degree seven below the tonic, which is necessary to enact the suspension gesture in the CC. These will be expanded to other scale degrees, quite quickly, as the exercises progresses. For the bass voice, scale degrees from 1 to 5 should be introduced, in both ascending and descending order. The use of letter names and/or solfege syllables can be deployed for reference and clarity, as the teacher deems useful. But what is crucial, and should not be neglected, is contextualizing exercises with scale degree numbers, which is the primary manner in which pitches are identified in chords and melodies in professional contexts. Numbers will ultimately be necessary, as they were in basso continuo realization, for understanding the basics of consonance and dissonance in a standard tonal context. As staff notation is introduced, the concept of notation and identification of melodic and harmonic intervals can be incorporated, but the process of identifying and playing/singing pitches by ear should precede this. Depending on the situation – advanced students, beginners, group or individual lessons – parameters such as the introduction of specific scale degrees should be systematic and controlled, and should not occur too quickly. Some students will easily outpace exercise parameters; others will struggle. Flexible lesson planning – the improvisatory skill of listening and reacting to the sonic feedback of students' playing, and adjusting parameters accordingly – will allow a teacher to respond to a student's level of comprehension and ability.

The following exercises range from simple to complex, suited to students at levels from beginner to advanced. Some exercises will function well within a group setting, others may be better suited to private lessons. The goal of the following discussion is not to proffer a complete curriculum, but to demonstrate the range of possibilities that can be applied within different educational arenas, using variations on both the cadence sequence and/or its individual components. What follows should not be considered definitive or prescriptive; whenever possible, teachers can expand to variations that include elements specific to particular styles.[156] The examples demonstrate some processes by a which a teacher can extend the parameters of an exercise for their students, in a step-by-step fashion that adds variations of scale, interval, rhythmic division, and dynamics to basic models. Above all, teachers should be systematic, and demonstrate to students how small changes in rhythmic and melodic parameters can alter a line, and open up increasing improvisatory possibilities. Quarter notes should move to eighths and sixteenths; scale variations should add only one note at a time. This chapter identifies six different areas in aural skills and improvisation training in which Neapolitan cadences can be cross-referenced with tasks from the Azzara and Snell table:

- Differentiation of bass and treble function
- Variation of existing models
- Use of silence
- Bass/treble interaction – note stress/emphasis
- Bass/treble interaction – rhythm and meter

[156] The cross-stylistic use of major and minor scales make them the simplest choices for beginner improvisors. At their discretion, teachers can expand choices for schemata, scale, chord and metric parameters. Any time spent in a college level aural skills class will reveal that while students may be able to execute difficult and complex music from memory, or from a score, they can be flummoxed by basic major/minor chord sequences, scale-tone identification and melodic notation. Karpinski (2000), *Aural Skills Acquisition*, is one of the few full-length investigations of the problems in this area of undergraduate training.

- Introduction of pre-dominant function in bass

Differentiation of bass and treble function

The following task appears in the third section of Table 4: “demonstrates a sense of musical interaction (e.g., melodic dialogue alone or musical conversation among performers).”

There are plenty of ways in which students at various levels, and within various arenas, can be encouraged to improvise together, and a classroom teacher had better be prepared to organize any kind of improvisation exercise, in a pre-emptive strike against sonic confusion. In group classes, a variation on the two-person model is for each student to improvise a passage, to be imitated by others. Another advanced exercise is for each member of a class to first reiterate the phrase they have heard, and to improvise a further variation on it, to be imitated and then varied again by subsequent students. But equally important to the act of improvising is the skill of learning to observe and assess musical elements as we play and sing them. In chapter one, we asserted that listening was the musician's essential task. Musicians should learn to comprehend both the sounds being generated in the moment, as well as the implications of these sounds for further musical gestures and responses. Each listener has the luxury of allowing their attention to land on the aspects of music that most appeal to them – melody, rhythmic character, timbre, etc. But those who create music have an additional set of responsibilities, if they are to move from the experience of hearing and enjoying it to being able to perform and compose. They should be able to separate both static and dynamic sound combinations into discrete, or relatively discrete, elements, and to identify specific aspects of sonic construction within them. If general music education is to provide a basis for these skills to develop, habits of sonic observation need to be a part of training, much as elements of numeracy and literacy are seen to be essential elements of general education. It is easy enough to play two or more lines; but being able to hear the bass line clearly while simultaneously executing the melody, and to conceive of both parts as separate and identifiable elements, can be a more challenging task. School music training, often done in large or mid-size groups (in some cases, with accompanying harmony instruments such as piano, guitar, or ukulele), may not provide many opportunities for fostering the ability to separate note

groups into their component parts. Students who do not, or are not able to undertake, music lessons, may only experience music training in school ensembles. And even with private lesson training, there is no guarantee that teachers will foster a careful approach to listening. It is also easy to play basic chords on piano and guitar, but it does not follow that students will be clearly able to hear, parse and identify every element of a chord. On the contrary, as more voices are added it is more likely that that individual notes in consonant chords will blend together, and that the ear will be principally engaged by the chord's harmonic character and its highest note, than it is to clearly hear and identify the bass, or specific notes within the chord. It is all the more pressing that both beginner and advanced music training, in both group and individual sessions, include exercises that foster the ability to aurally separate and perceive concurrent note groups into component parts.

Composers are taught the importance of bass lines as a structural element, or at least they used to be.[157] Teachers of bass instruments instruct individual students on to listen to their role in ensembles, as the players who execute the lowest pitch sounded in group situations. But modern music sight-singing drill can often involve singing a single line without chordal or bass accompaniment. The justification for this approach is the belief of many music teachers that beginner sight singers must draw on their memory of pitch relationships, rather than having the help of a pitch reference from an outside source. But while building pitch memory and the ability to tune to a mentally conceived tonal center is a necessary skill, it is not incompatible with the experience of actually hearing and assessing intervallic juxtaposition, in particular the perceived

[157] "To begin with, Brahms directed my attention to the bass of the theme. "The bass is more important than the melody," he said. Which is not to say that the bass must be maintained under all circumstances. But through the complementary and explanatory melody of the bass, the melody of the upper voice acquires first a certain physiognomy, and a variation of the bass can more strongly modify the entire character of the melody than a variation of this melody itself." (Jenner, quoted in Frisch/Karnes 2009, 407) Gustav Jenner (1865-1920) studied composition with Brahms in Vienna.

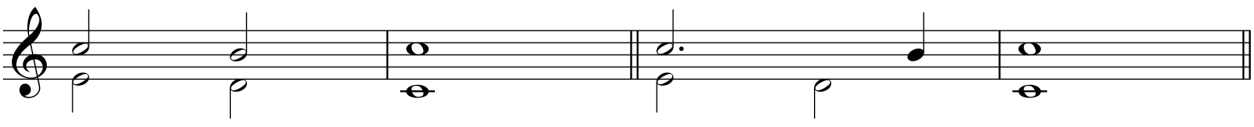
dissonance of a suspension. In the three cadence schemata, the bass voice remains the constant in each model.[158] Keeping a bass voice present in an exercise, as was done with Neapolitan solfeggi, guarantees that there will be some actual sonic experience of the bass voice for reference in building understanding of suspension/resolution, as well as general treble/bass intervallic relationships.

Bass and treble lines also function differently in musical structures, and have different roles in our perception of sound events. Our pedagogy should reflect this. The research experiments in Hove and Trainor 2014 support the observation that:

> The auditory environment typically contains several sound sources that overlap in time, and the auditory system parses the complex sound wave into streams or voices that represent the various sound sources…the main melody (spectral/pitch information) is most often carried by the highest-pitched voice, and the rhythm (temporal foundation) is most often laid down by the lowest-pitched voice[…]The low-voice superiority effect for encoding timing explains the widespread musical practice of carrying rhythm in bass-ranged instruments and complements previously established high-voice superiority effects for pitch and melody. (Hove and Trainor 2014, 1)

Currently, two-voice contrapuntal exercises in institutional training often adopt a historical perspective rather than a cognitive one. A common modern approach to species counterpoint, often found in written exercise, commonly begins with the ancient tenor cadence, demonstrating the outward movement of two voices from the interval of a sixth to an octave This approach also commonly introduces suspensions through the interval of a seventh, resolving to a sixth and then to an octave and uses this cadence as an example of invertible counterpoint as well (Figure 5.1).

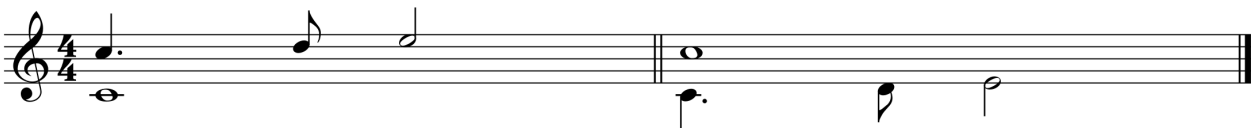
Figure 5.1. Tenor cadence and variant with 7-6 suspension.



[158] Individual partimenti sometimes demonstrate bass variation in the CD, which may have bass movement that offsets and corresponds with the four-step sequence in the treble voice. For instance, see the penultimate bar of the Insanguine Partimento in chapter 1, example 1.1.

While invertible counterpoint is a crucial element in counterpoint training, the observations in Hove and Trainor make it clear that in certain contexts, the same line will be perceived differently when executed in the treble or bass voice. The familiar figure of an ascending line of scale degrees 1-2-3, for instance, when placed in the bass voice, may evoke a different sense of forward motion than when it is placed in the treble (Figure 5.2).

Figure 5.2. Bass and treble function; stepwise motion inverted.

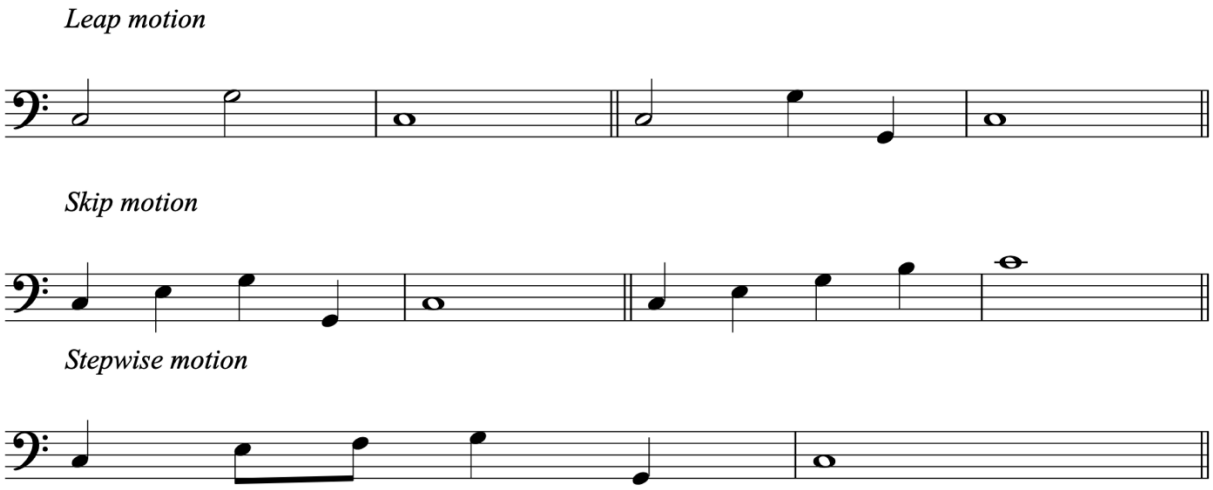


While two-voice tenor cadences were a notable part of both solfeggi and partimenti, the basso continuo/keyboard character of the cadences illustrates a clearer differentiation between bass and treble voices, with large interval movement in the bass voice and stepwise motion in the treble. Not only were these characteristic tendencies in bass and treble voices in common compositional use by at least the sixteenth century, it is a model that continues to be in use. Cellists, bassists, bassoonists and choral bass singers learn quickly that, in ensemble music-making, low frequency instruments will be called on to execute passages with large interval leaps more regularly than treble instruments responsible for executing the melody.[159] Despite the importance of invertible lines in advanced counterpoint training, we might consider that beginner counterpoint that emphasizes equality of voices is less useful than counterpoint training that helps students understand the obvious differences between bass and treble function. These

[159] See Huron (2016, 41-62) for a discussion of how sonic properties of low frequencies influences chord configurations.

cadences are ideal beginner examples to demonstrate these differing functions. This difference in character can be reinforced for students' observation by emphasizing the larger leaps commonly found in both instrumental and vocal bass parts, and expand to use of skips and steps. (Figure 5.3) By contrast, as later discussions in the chapter will demonstrate, variations in the treble voice can begin with stepwise motion and expand to larger intervals.

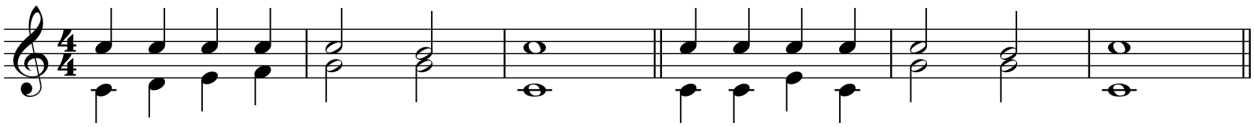
Figure 5.3. Simple Cadence bass – leap, skip and stepwise variants.



Bass contextualization of treble sounds will happen without prompting. But observing this process consciously, and being able to direct attention to it deliberately, are skills that should be developed. Hove and Trainor assert that the function of the bass voice is "carrying rhythm" (Hove and Trainor 2014, 1) – in other words, delineating a rhythmic foundation above which the melody moves in notes of shorter duration. The CC and CD are simple examples of the melody moving at twice, then four times rate of movement of the bass. Hearing stationary bass notes against a moving treble part can help train the ear to hear the two lines as separate, and an intervallic suspension contributes a level of cognitive interest to the entire exercise. At the same

time, a moving bass part against a stationary treble played prior to a suspension can help draw attention the bass voice. (Figure 5.4) As explored in the previous chapter, the suspended fourth briefly prevents our brain from aligning the two (or more) notes in a cadenza semplice into a standard consonant dyad (or triad). The resolution of the suspension may allow the combination of sounds to "fuse" in our minds, which occurs involuntarily with consonant chords but not before the moment of differentiation, through rhythmic displacement, that the suspension compels our mind to register.[160] It is a lesson for the brain that chord aggregates can be broken down into discrete phonemes, a skill that training should continue to foster. Students should play both the bass and treble parts in the following exercise. If the student has only learned to play a scale in the treble clef, the teacher should play the treble part an octave above this part, as necessary or feasible. Repeating the bass note after a suspension, or playing a stepwise-ascending bass line against a stationary treble, can draw students' attention to the bass as a distinct presence in musical texture.

Figure 5.4. Compound Cadence with stepwise and skip bass motion.

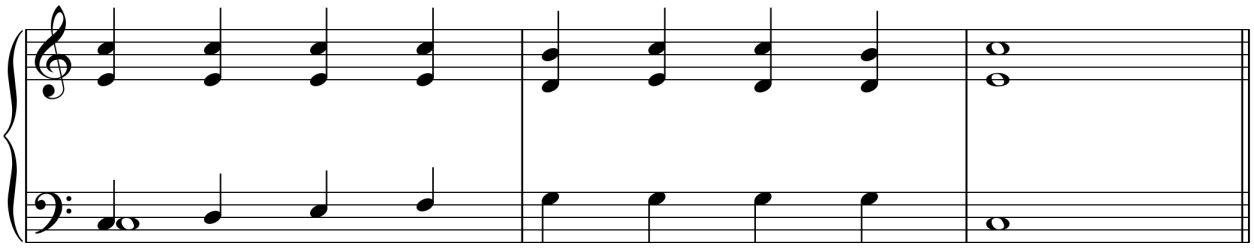


The CD, when executed with a three-voice texture, also demonstrates clearly the different functions of bass and treble, a differentiation which is applicable to many styles. As the two upper voices move at different times, the stationary lower dominant contextualizes the sound of each step of the process. An exercise with repeated quarter-note iterations of each stage of the

[160] "[A] chord can be perceived as a basic auditory object… [i]t is possible to hear certain chords without being aware of the constituent complex tones." (Huron 2016, 166) Chapter thirteen of Huron 2016, from which this quote is taken, "Hierarchical Streams," (163-171) explores the manner in which the brain fuses complex tones into one synthetic sonic entity.

CD will make it plain how each voice in the treble relates to the bass, and how each step of the sequence alters the sound relationships (Figure 5.5). A three-voice texture is a challenge for beginner pianists and guitarists, and impossible for other instruments. Exercises later in the chapter explore improvised variants on these textures. In the context of bass-treble listening, a student can play one of the three lines while a teacher plays the other two. Time spent in drawing attention to contextualizing nature of the bass voice is a recommended preliminary preparation for melodic variation. These exercises can, and should, be varied in the same manner as melodic variations: with simple and sequential alterations using stepwise, skip and leap motion.

Figure 5.5. Double Cadence with ascending stepwise bass.



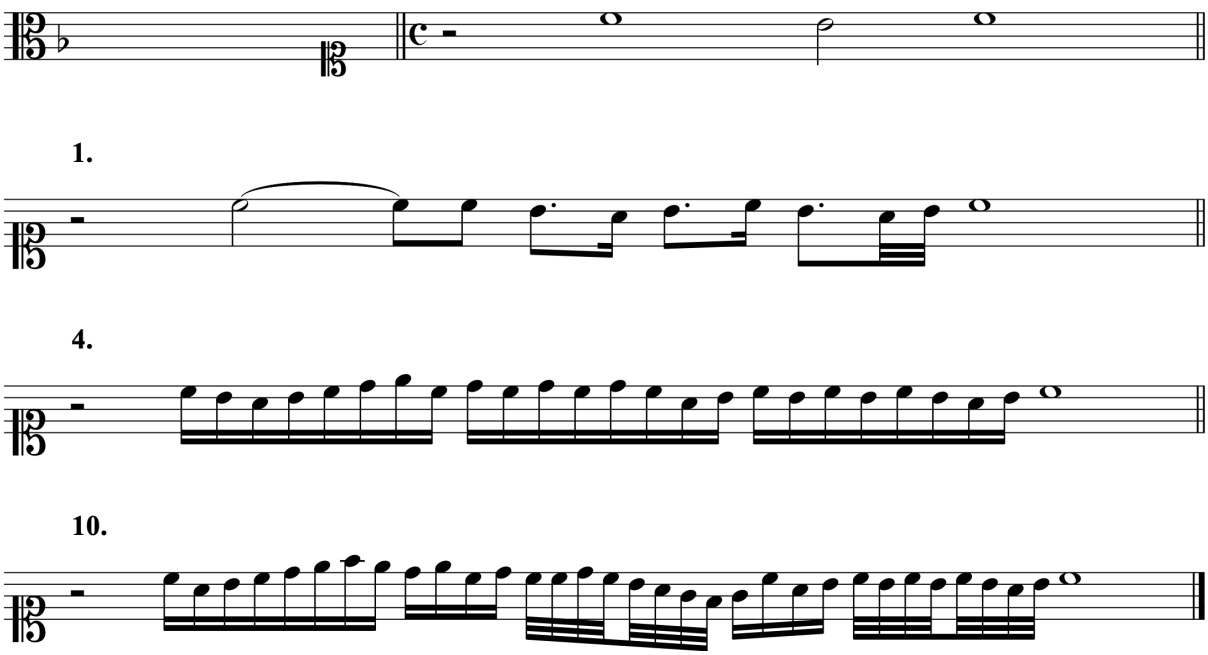
Variation of existing models

There are three tasks from Table 4 that address this aspect of improvisation, all from group one: “performs a variety of related ideas and reuses material in the context of the overall Nform (thus performance contains elements of unity and variety)”; “demonstrates motivic

development through tonal and rhythm sequences"; and "embellishes notes and performs variations of themes."

Embellishing a standard model with smaller rhythmic divisions has a been a element of improvisation instruction for centuries. Historical examples of divisions traditionally demonstrate the basic structural unit before moving to variations (Figure 5.6).

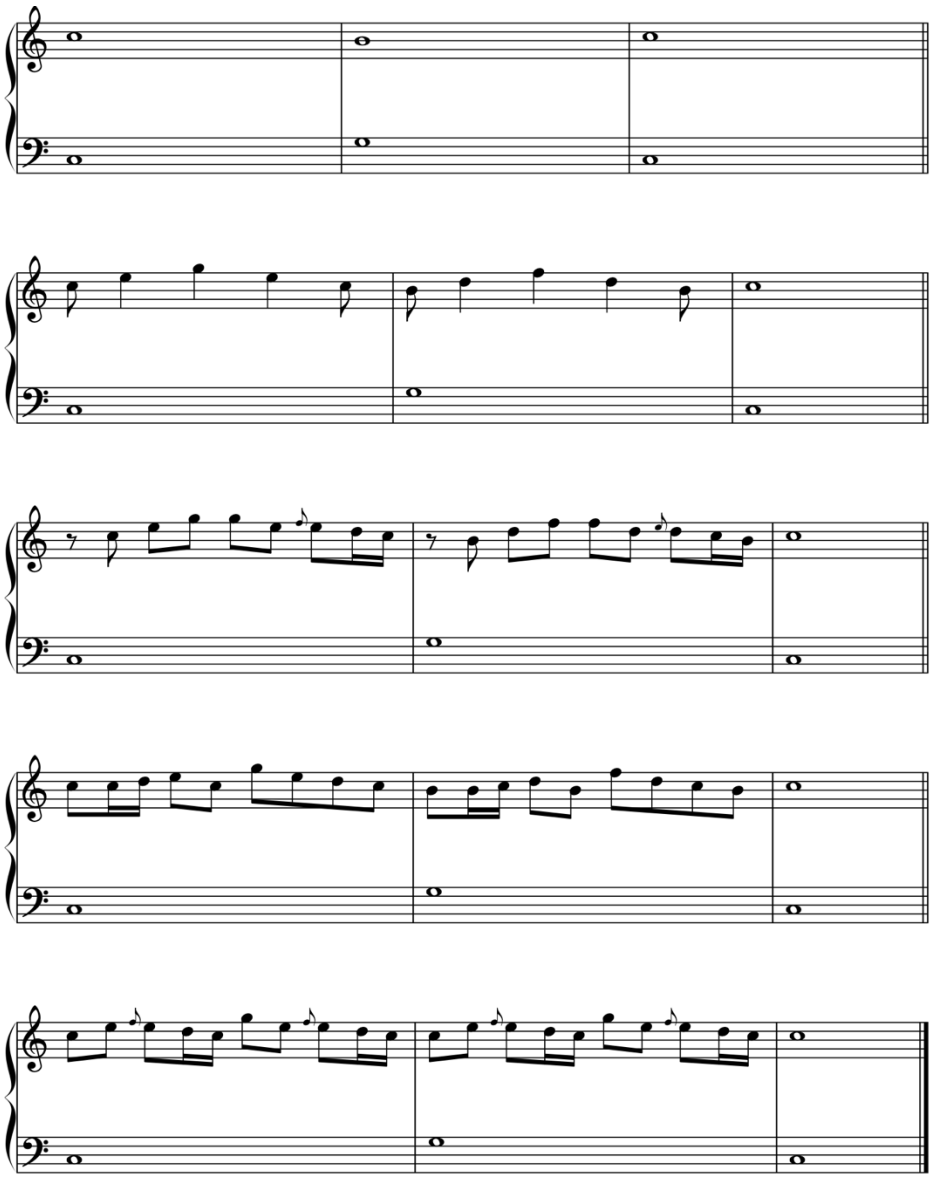
Figure 5.6. Rognoni, *Selva de varii passaggi* (1592) – variations 1, 4 and 10.



Historical compositional instruction is full of such examples; see exercises by Lavigna, famously Verdi's instructor, and a musician steeped in the Neapolitan tradition.[161] (Figure 5.7) Lavigna's model is a version of the CS; the four variations built on it appear later in the manuscript, after several other schemata and variants have been demonstrated.

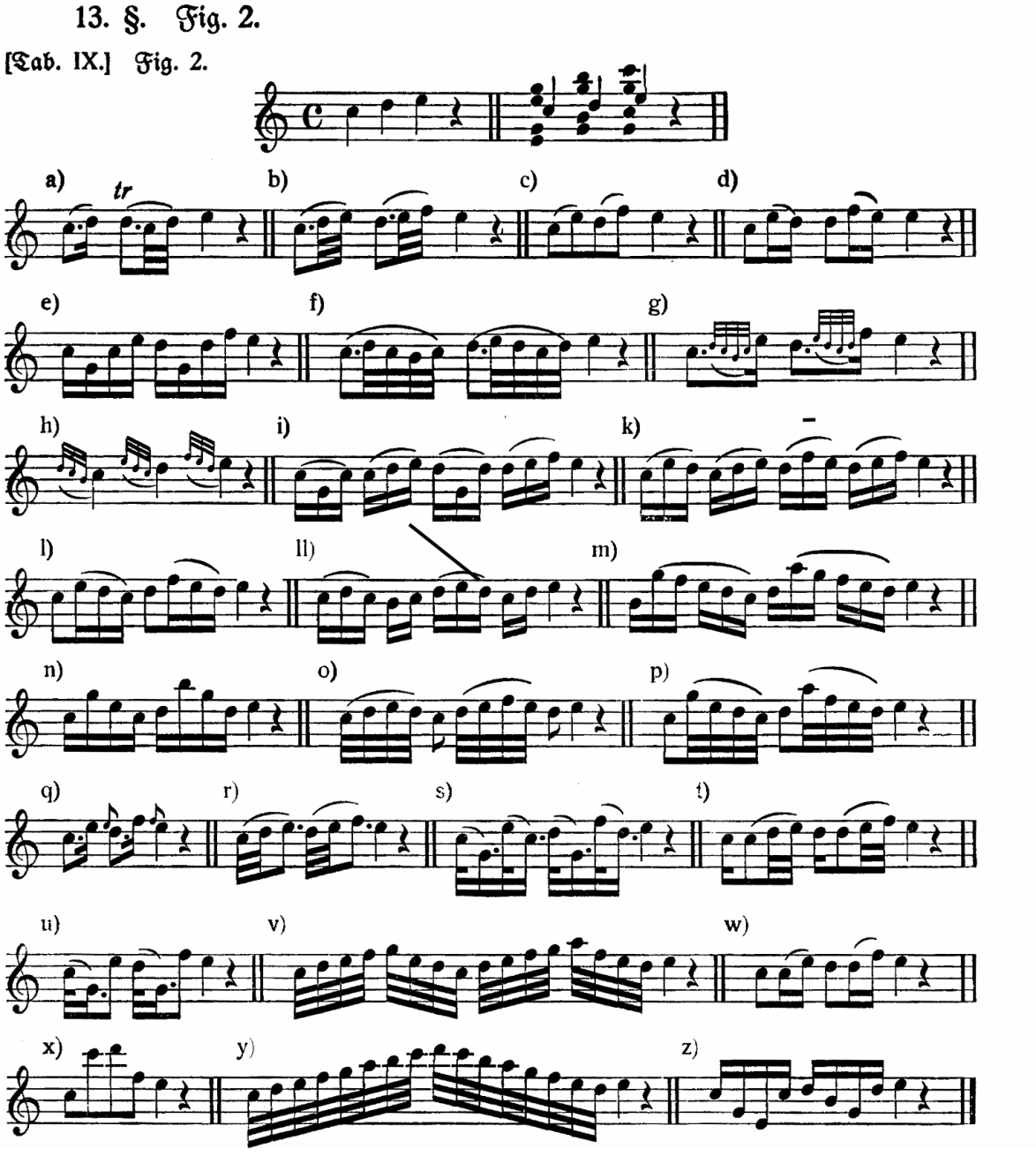
Figure 5.7. Lavigna's beginner exercises.

[161] Manuscript Noseda Th.c 117, Conservatory of Milan.



Lavigna's notebook is an unpublished manuscript; but commercial materials geared to amateur instruction contained comparable examples, such as Quantz's famous melodic variation tables (Figure 5.8).[162]

Figure 5.8. Quantz melodic table (1752).



[162] From Quantz's 1752 *Versuch einer Anweisung die Flöte Traversiere zu Spielen* , page 65. The celebrated set of variations on an *adagio* movement from the same publication (Quantz 1752, chapter fourteen, "Von der Art das

Quantz's and Lavigna's examples, as well as many other found in divisions treatises, are both beautiful and tempting, especially for advanced players eager to in match improvisational virtuosity with interpretive skill. While this paper is principally concerned with beginner drill, many beginner improvisors fall into the category of Sanguinetti's struggling *Rach Three* pianist mentioned in chapter one: accomplished musicians with lopsided training, whose interpretive abilities have been brought to a high level, but whose creative skills have been allowed to atrophy. Teachers should resist the temptation to simply hand a score of division examples by Quantz (or another composer) to advanced students who have never improvised before, or to teach by emulating such florid examples, even if both student and teacher have the technical capability to execute them. If the object is improvisational mastery, leapfrogging to the virtuosic elements in historical examples is pointless without a comprehensive cognitive embedding of the sonic experience of bass-treble interaction.

The smaller the rhythmic units, and the more scale tones deployed, the more possibilities there are for variation. Reusing material, creating variations on themes, motivic development – these are core elements of musical construction. Compositional skill is not so much the task of generating musical ideas as it is the process of understanding their potential, and mastering the many ways in which a melodic utterance or bass schema can be made to evolve into larger and more elaborate (or smaller and sparer) structures and variants. But a composer often has time to contemplate material, and to revise and edit a musical score or recording. The ability to create a coherent musical structure while improvising requires a near-simultaneous coordination of

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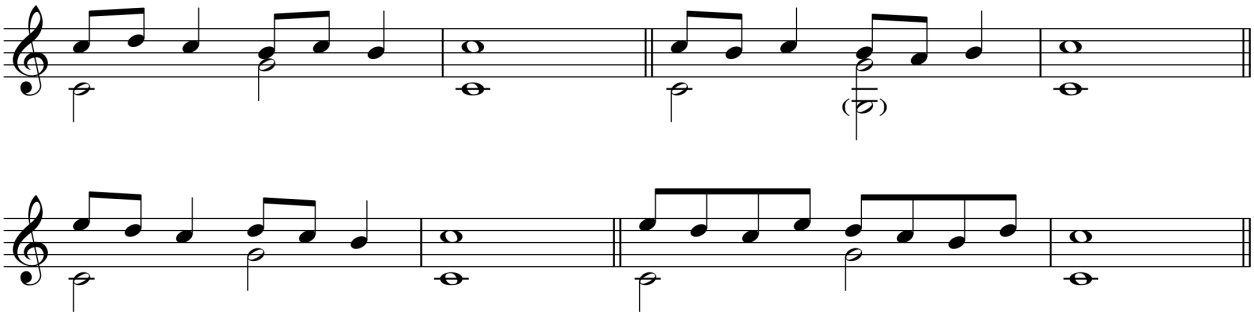
Adagio zu spielen") were an explanation and example of the technique of varying basic structure of through extemporized diminutions. The approach of publishing both a simple and ornamented version of a composition was deployed by other composers. See Telemann's *12 Sonate Metodiche* (1728-1732) and CPE Bach's *Sechs Sonaten fürs Clavier mit veränderten Reprisen*, (1758-59), Wq. 50. In the case of the former, the ornamented version is demonstrated on a score above the simpler version. In the case of the latter, the ornamented version is built into the structure of the composition itself.

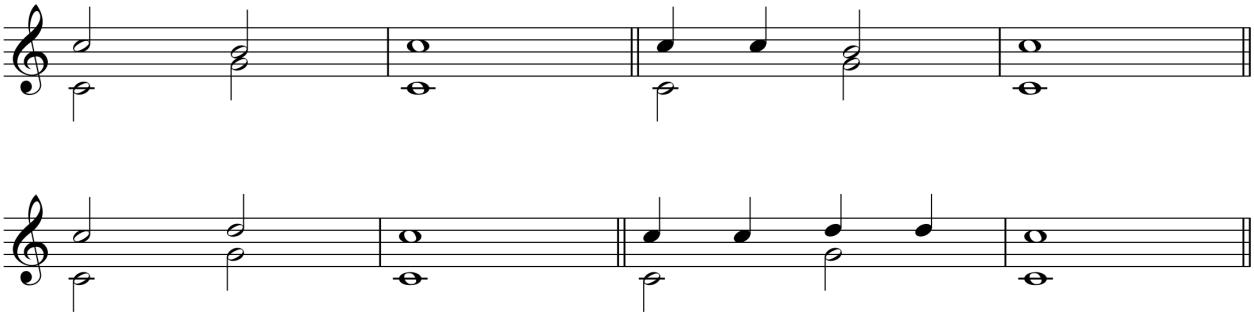
performance and analytical assessment. The CS provides a beginner model for the reuse of material, as a sequence played above a tonic note can be replicated a step higher or lower when underpinned by a dominant note. (Figure 5.9)

Figure 5.9. Simple Cadence – reuse of melodic material.



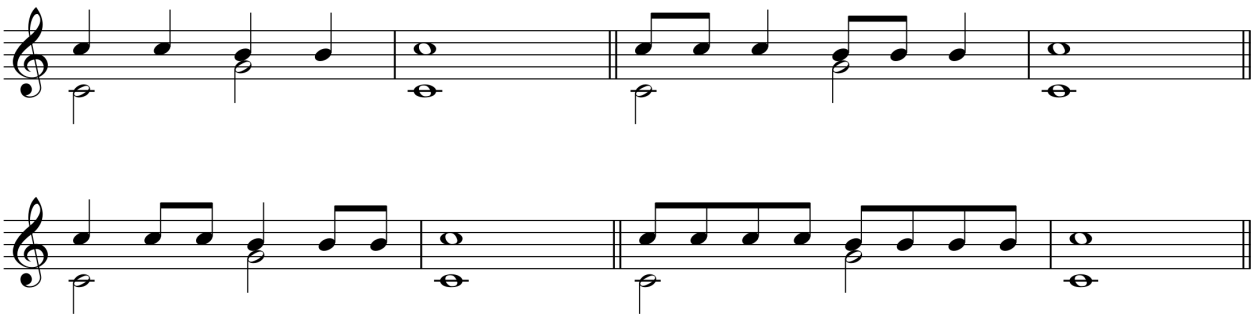
Beginner improvisors should be introduced to the process with simple models (Figure 5.10).

Figure 5.10. Simple Cadence with basic rhythmic subdivisions.



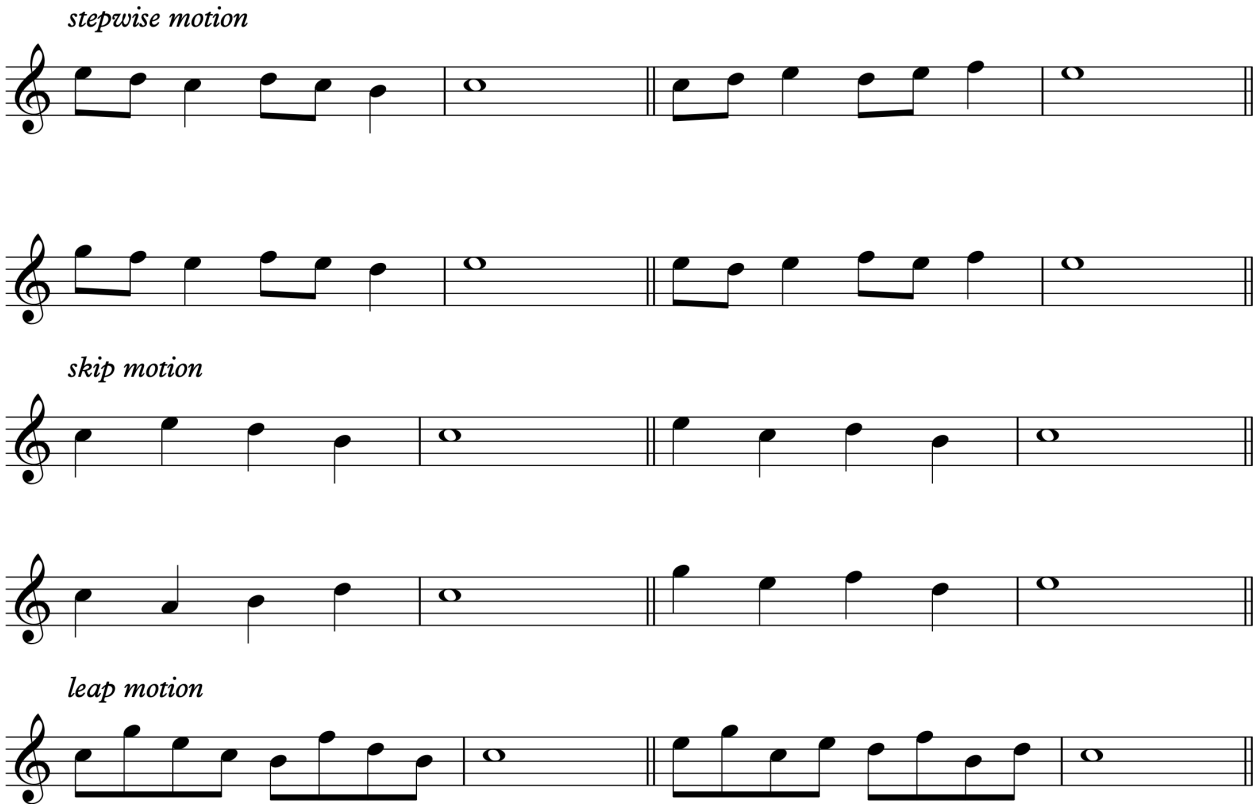
Rhythmic subdivisions can then be introduced (Figure 5.11).

Figure 5.11. Simple Cadence with rhythmic subdivisions.



The instant that a melodic cell is changed – for instance from 1-7-1 to 1-2-1 to 3-2-1, (or 1-2-3, as in the Quantz example above) – the possibilities shift again, as they do when the suspension is introduced. The challenge for a teacher is to be aware of the structural elements of a given line, and make an effort to move systematically from one variation to the next. In a call and response exercise, variations should deploy new notes slowly and sequentially, for instance scale degress 1-7-1, 1-2-1, 1-7-1-2-1, 3-2-1 and so on. As the scale parameters become expanded, the possible range of a line expands. Stepwise, skip and leap motion can be deployed individual and in combination (Figure 5.12**).**

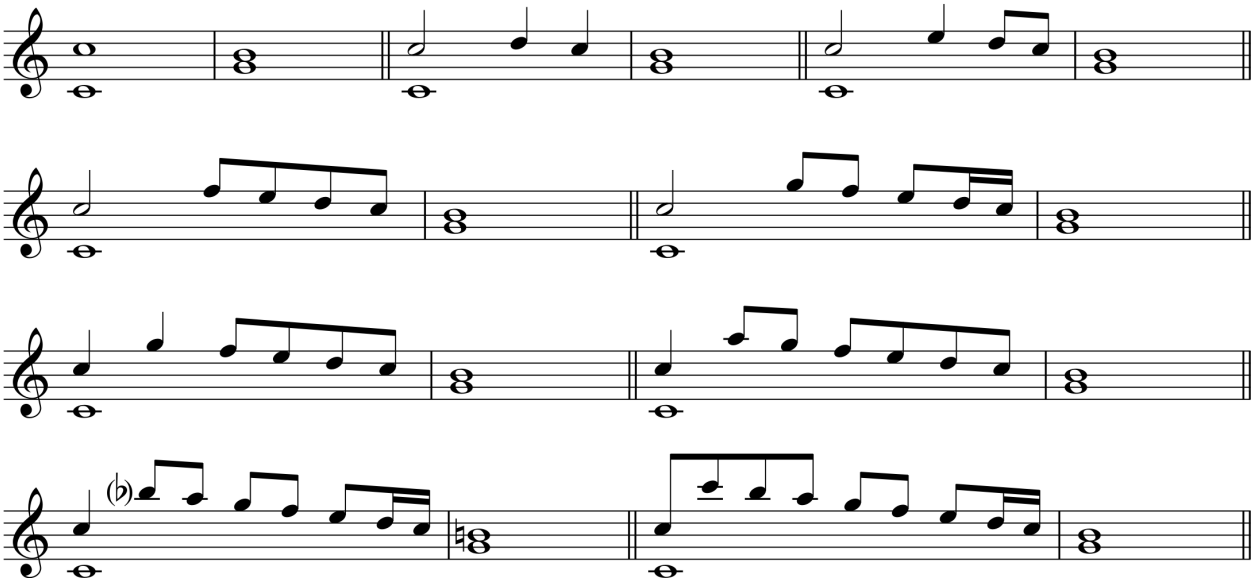
Figure 5.12. Stepwise, skip and leap motion in treble voice.



With the increasing addition of scale pitches, exercises can use the combination of upward leap followed be descending scale motion, expanding the leap by one scale pitch each time (Figure 5.13). When ascending leap motion is followed by descending scale motion, increased rhythmic diminutions, possibly combined with extended phrase length, are necessary to bring the line back to an arrival on scale degree seven in the following bar.

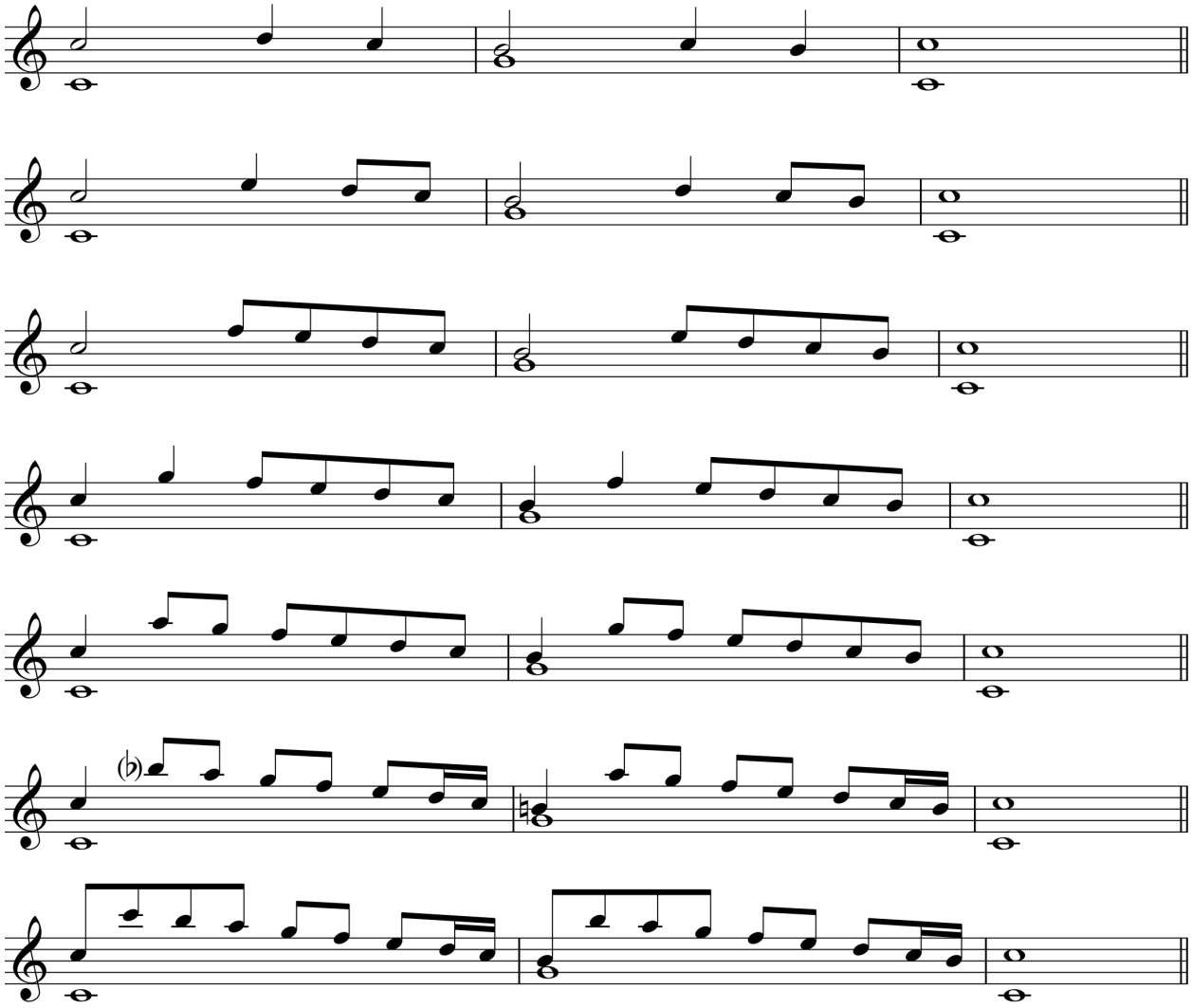
Figure 5.13. Leap to ascending scale in treble voice.

Model - 1st section of Cadenza Semplice



Note the way in which the parameter of having to arrive at the scale degree 7 in the second measure shapes the contour, rhythmic character, and duration of the line. Each of the following examples can be replicated a tone lower, to create a full statement-response phrase within the CS model (Figure 5.14).

Figure 5.14. Simple Cadence – leap to descending scale movement.

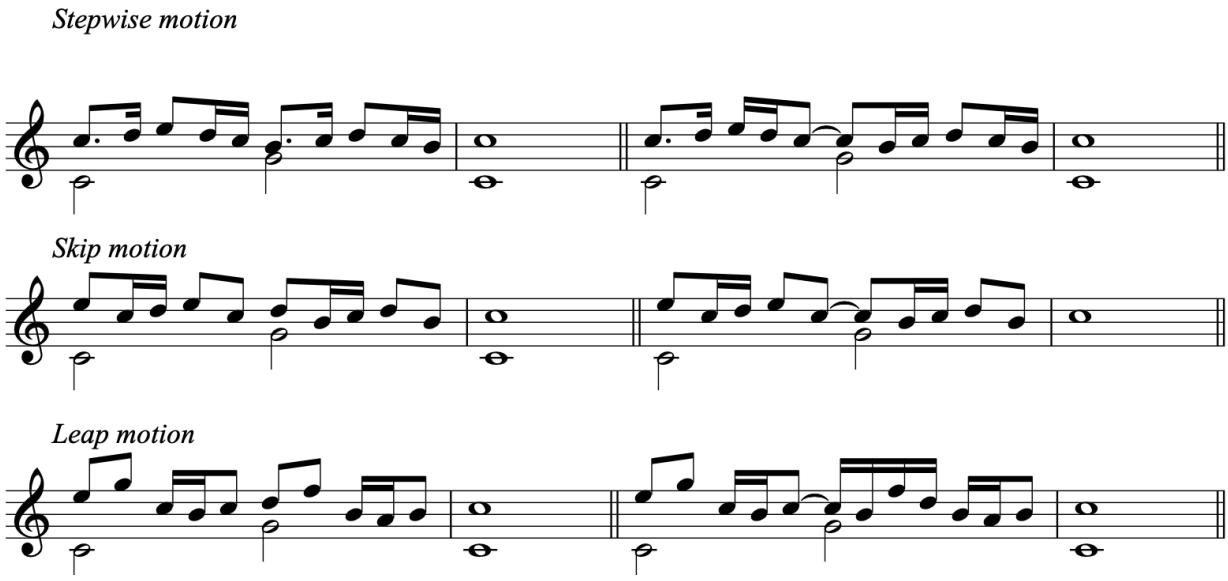


When the CC is introduced, the type of stepwise variation that the CS can generate is complicated by a new parameter, which is the arrival of the tonic on the third beat of the measure.[163] Arriving on the tonic in the middle of the phrase leads to a bifurcation of the melodic

[163] Of course, intervallic suspensions can occur at any time within a standard diatonic phrase, and as improvised practice becomes more advanced, rhythmic placement of the suspension is another variation that should be explored.

gesture. This disrupts the balanced parameters of the statement response variation process of the CS, and requires an altered solution in the second half of the phrase (Figure 5.15).

Figure 5.15. Simple Cadence to Compound Cadence – phrase variation; step, skip and leap motion.

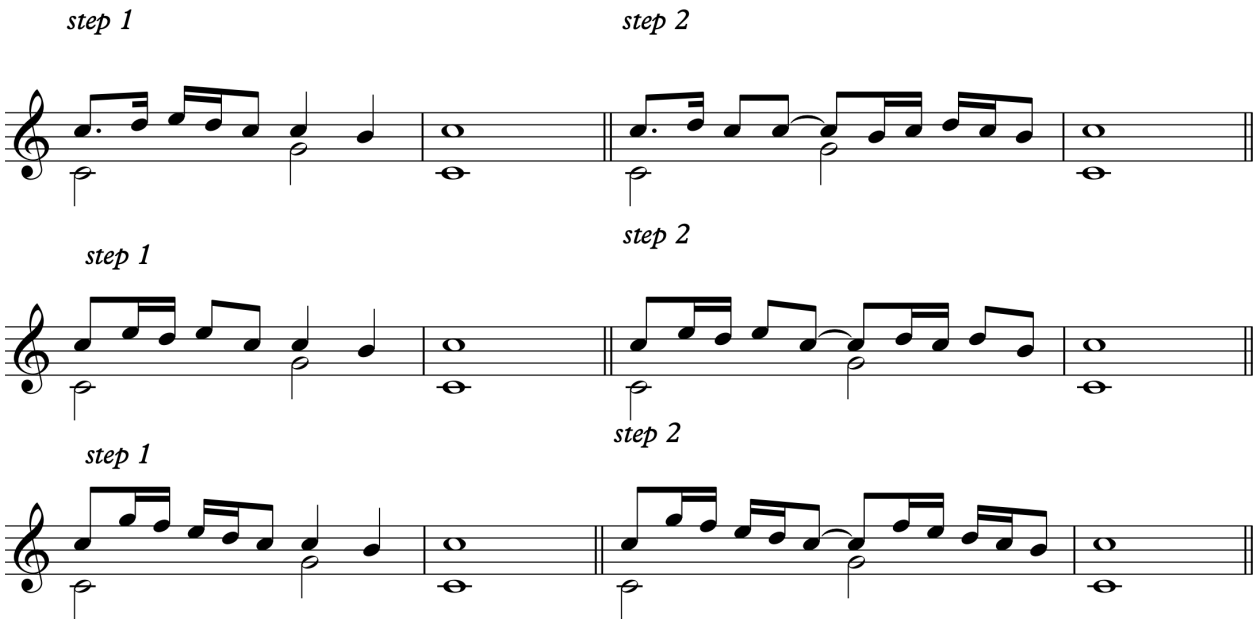


The most systematic way to demonstrate this to clearly delineate the two parts of the line. Improvised passages should begin with a musical motif that displays a distinct character, and then devolve to a simple suspension in the second half of the bar, possibly even reiterating the suspension on beat three. Once this has been practiced, the phrase can be expanded to include related motivic material after the suspension. The exercise below demonstrates the manner in which a phrase using the CS requires alteration with the CC suspension introduced (Figure 5.16). Phrases that use steps, skips and

The exercises in this paper will use the beat three arrival as a standard introductory parameter for the suspension gesture.

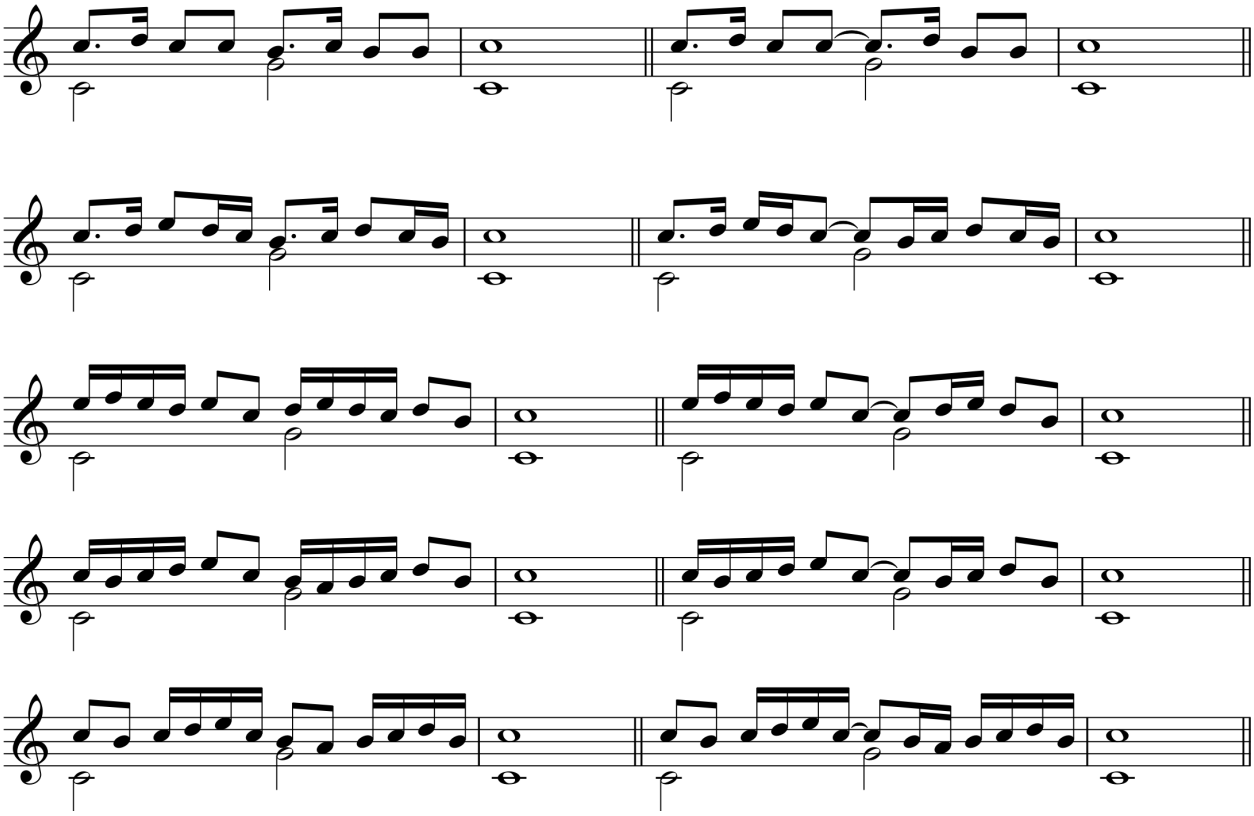
leaps present particular challenges with the addition of the new parameters; these alterations need to be thoroughly explored.

Figure 5.16. Two-part phrase construction for Compound Cadences.



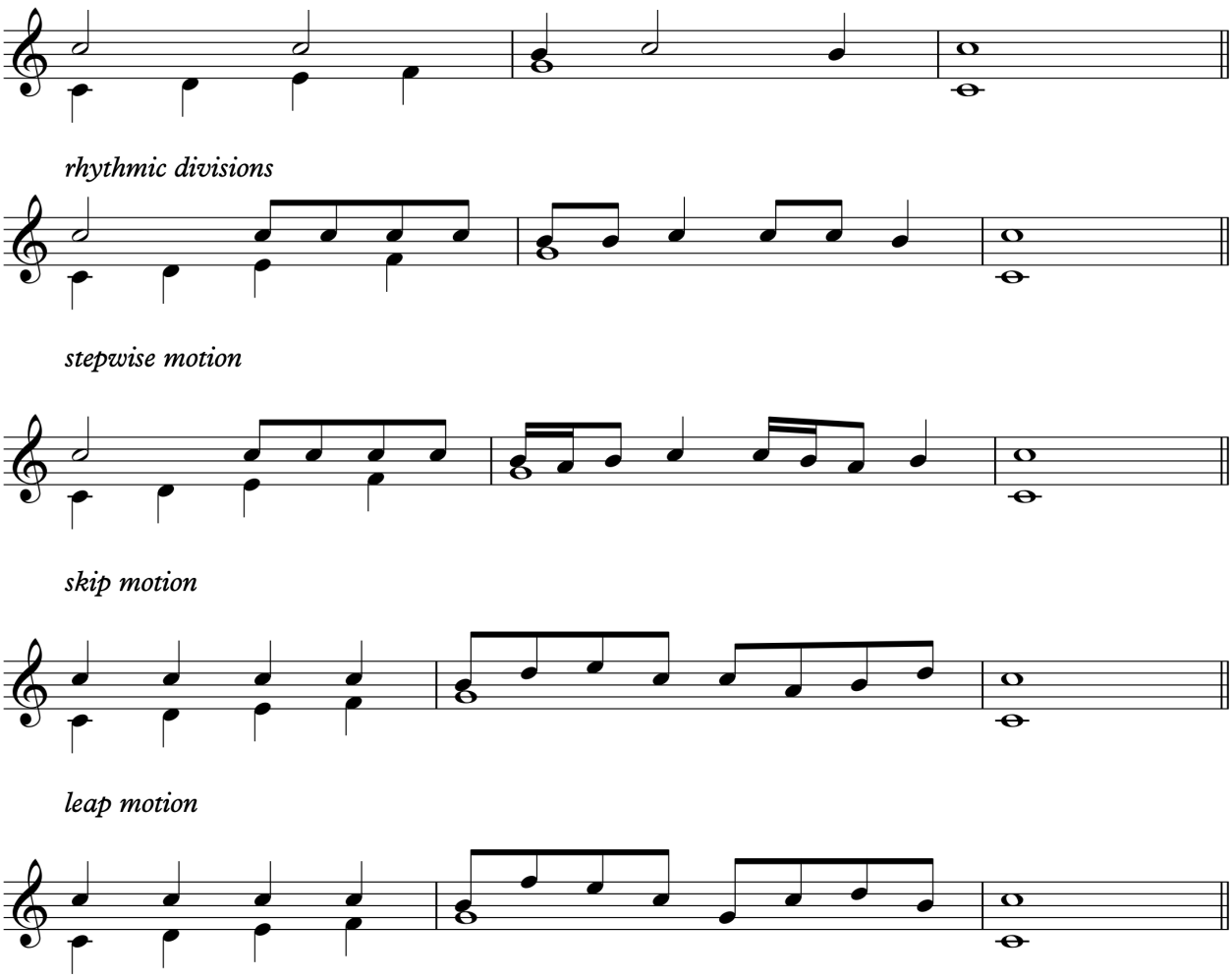
The two cadences illustrate the concept of varying a basic line in two different ways – the intervallic alteration of the CS, and the rhythmic/intervallic alteration of the CC. Teachers can intersperse related lines using the CS and CC in sequence, to demonstrate how the line changes when the suspension occurs on beat three (Figure 5.17).

Figure 5.17. Line variation in Simple and Compound Cadences.



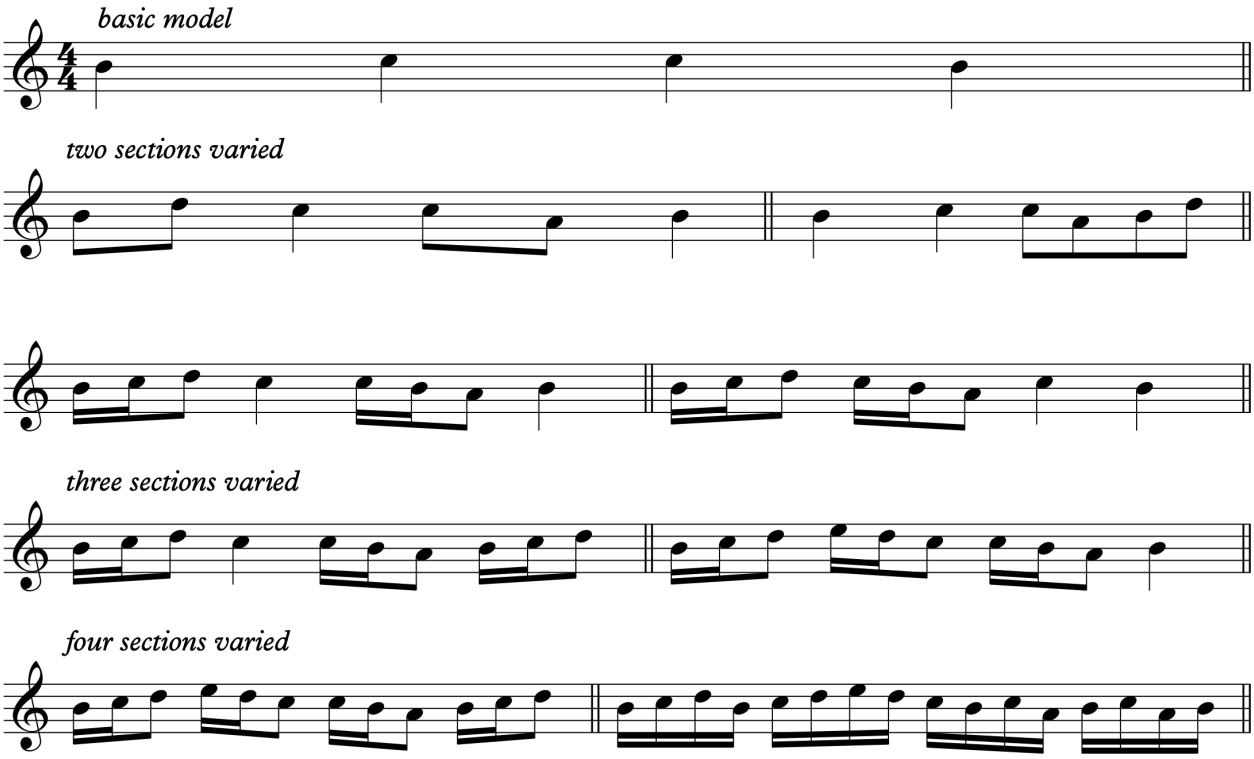
A similar process of diminution can be undertaken with the parameters of the CD. In the context of beginner improvisation, the best voice of the upper two to focus on is the one that includes the syncopation on scale degrees 7 and 1. Its melodic contour is a rhythmic variant on similar motion in the CC – a diminution, in effect – and variations on it reinforce the sequential connection between the three cadence models. For rhythmic balance, a full bar of the tonic can be played, or a bass run up to the dominant. At intermediate to advanced levels, rhythmic divisions can be demonstrated and required of students. Interplay between stepwise, skip and leap motion can be also deployed (Figure 5.18).

Figure 5.18. Variations of rhythmic and intervallic motion in Double Cadences.



The four-part intervallic sequence of the CD presents challenges for improvised diminutions. Just as the double character of the CC creates the potential of a two-part phrase in which the second part has a motivic relationship to the first, the CD has four potential sections for melodic diminution, each of which can be subjected to rhythmic division. At the beginner level for imitative exercise, it is better to vary one or two elements of the CD at a time, gradually expanding the possibilities until all four are concluded (Figure 5.19).

Figure 5.19. Variation procedure for Double Cadence.



We will address integrating variations between the two treble voices in the final section of this chapter, which deals with the introduction of the subdominant "function" in the bass.

Use of silence

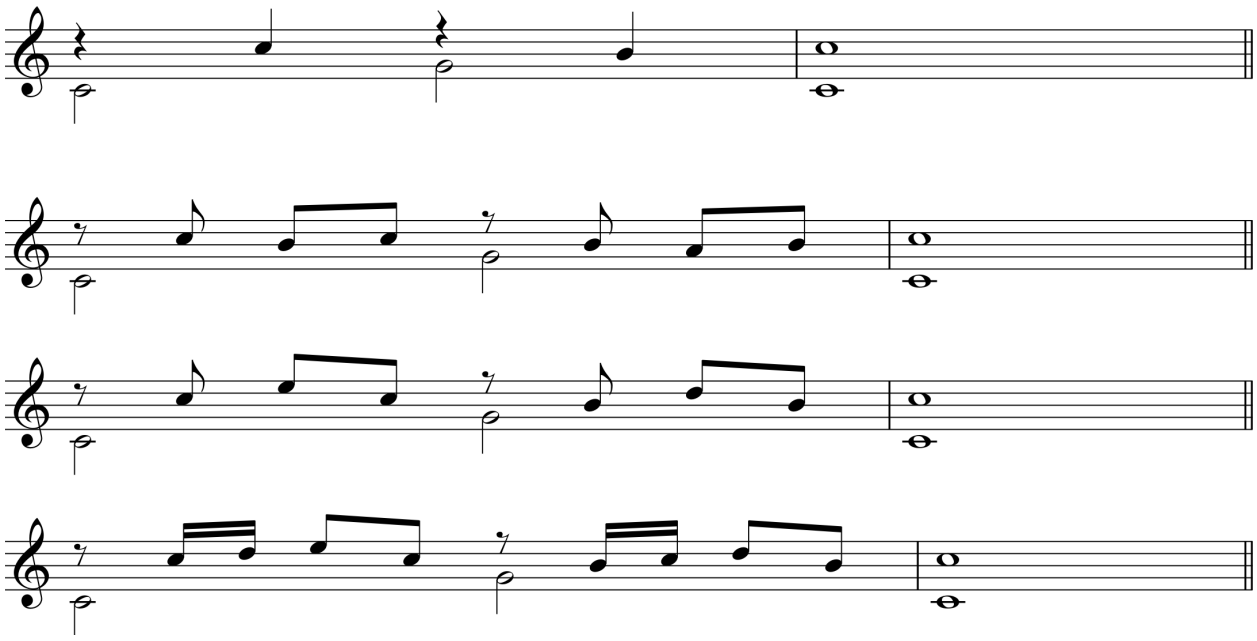
This concept is in section one of the Table 4: "demonstrates effective use of silence."

In specifying this element, the authors are calling attention to the benefits achieved by not playing as well as by playing – an important aesthetic concept, especially in improvised performance. Pauses mitigate incessant melodic motion, which may begin to anesthetize rather than engage the listener. A passage without notable pauses is in some peril of becoming less interesting than a line that uses silence to help shape and melodic character, contour, and phrase length. But there is another less aesthetic, more tactical, use of silence that aids both aural skills training and improvisation practice. When a musician is attempting to improvise to an unfamiliar piece of music, and no score, chord chart, or lead sheet is available, they must listen acutely to the structure of the composition within which their improvisation is situated. Elements of harmonic rhythm, chord change, bass line, implied scale material (major, minor, modal, etc.), cyclical structure – these are all elements that the improvisor must quickly assess and internalize to be able improvise effectively.[164] Musicians unfamiliar or unaccustomed to this process may be able to begin a melodic line securely enough, but the moment they hear themselves play a note that does not fit with the surrounding sounds – often a melody note or scale passage that may not "agree" with an accompanying chord – they may freeze in confusion, a common and dispiriting experience for classical musicians untrained in how to listen and respond quickly and creatively in real time. In this situation, one stalling-for-time (and potentially face-saving) technique is to briefly pause melodic motion at the moment a new chord occurs. If a player is playing an unfamiliar tune for the first time, pausing at this moment gives them a chance them to hear and

[164] See Lilliestam (1996), Green (2001, 2008), and Musco (2010).

respond to the change in sound, without the sound of their own playing interfering with their ability to listen. Variations on the CS can incorporate the use of silence to focus attention on the sound of the bass arrival, with statement-response motivic variation of the CS occurring a beat or half-beat after the bass note is sounded. These gestures incorporate this moment of silence as a distinct aspect within statement-response within phrases (Figure 5.20).

Figure 5.20 – Melodic silence incorporated into Simple Cadence

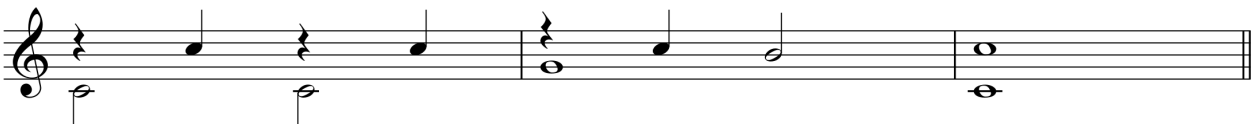


The CC's structure has a built-in pause that can help develop this habit. The melody line's arrival on the tonic just before the arrival of the dominant note in the bass effectively creates a two-part phrase, the second part of which will a response to the changing bass, included the resolution of the dissonant fourth. As melodic lines that deploy this model must land on the tonic note a beat or half-beat before the bass switches, there is potential for a break in melodic motion and a moment for silence, to allow the dissonance to be registered above the changing bass. Here, the silence in the treble line created by the suspended note functions as a temporal

space for the cognitive process of assembling the two pitches as a unit to take place. Drilling this model fosters the habit of listening and responding to a changing bass – the precise skill that improvisors need to develop, especially with unfamiliar musical material – while training musicians to formulate melodic lines that include moments of silence.

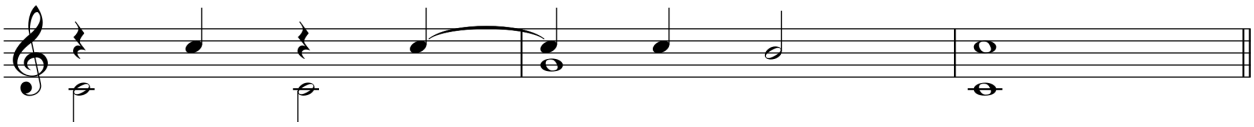
The CC and the concept of silence can be combined in different ways. The sound of the tonic can be "placed" in the mind by iterations in the first part of the example. As the bass moves, the memory of the tonic creates the perception of juxtaposition (Figure 5.21).

Figure 5.21. Repeated tonic in treble voice combined with use of silence.



In a variation, the tonic can then be held while the bass moves. The juxtaposition will be more obvious with a sustained note (possibly with a crescendo) executed by a voice, or bowed or blown instrument (Figure 5.22).

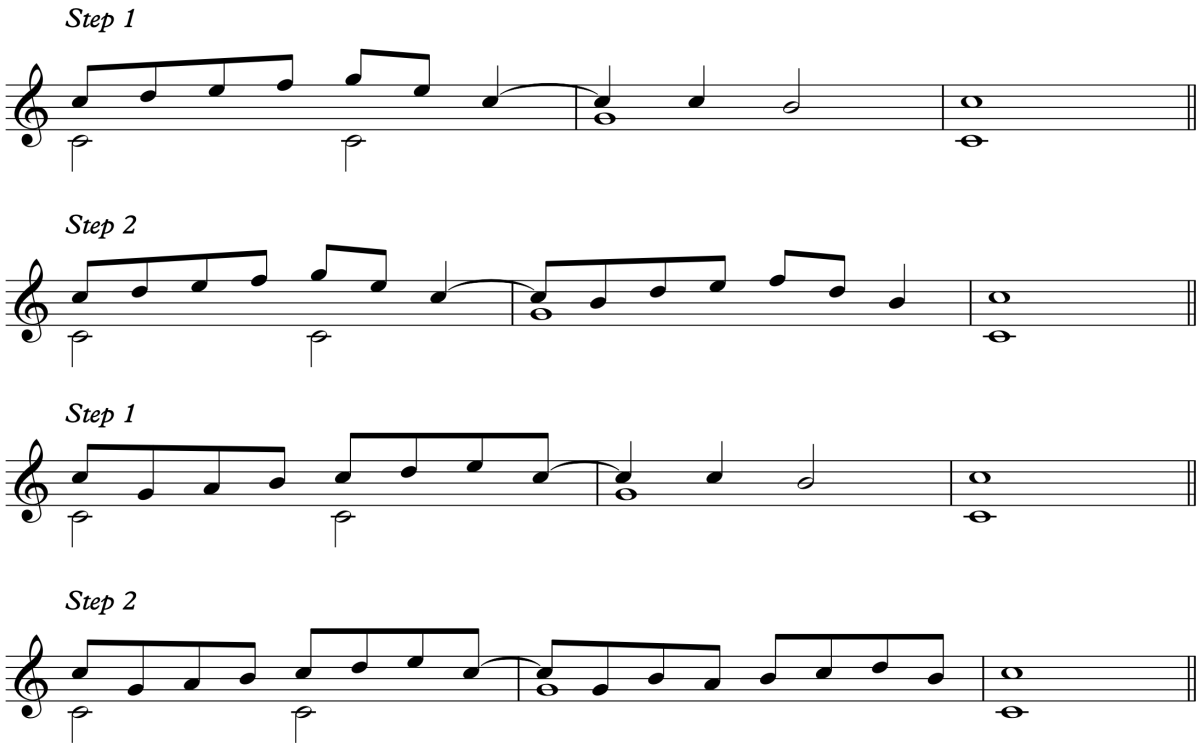
Figure 5.22. Repeated tonic in treble voice combined with suspended note.



With a plucked or struck instrument, a two-voice texture requires the listener and/or player to infer the moment of treble/bass juxtaposition. If these types of exercises are accompanied by a dynamic stress on the suspension – discussed in the following section – even

more attention is drawn to the intervallic interaction. The added tension of the CC suspension can also be evoked by emphasizing activity before the suspension occurs, and holding the tonic note into the beat three, incorporating the suspension (Figure 5.23). As the exercise progresses, the style demands that the second part of the phrase match the first in terms of thematic material and rhythmic activity. But for the purposes of fostering the habit listening to the two sounds executed at different times, the second half of the phrase needs to be simpler. The second step of the process can incorporate both the suspension and motivic material from the first part of the phrase.

Figure 5.23. Two-step sequence for phrase creation with Compound Cadence.



The structure of the CC can also help train the ear to be sensitive to compositional elements that pertain to contrapuntal textures. Playing, creating and understanding the nature of suspensions requires fostering the skill of conceptualizing note combinations that have not

actually occurred simultaneously. When a note that generates a suspension is played by a struck or plucked instrument, there is no actual juxtaposition of frequencies to create the suspended interval, especially in the case of a prepared dissonance, in which the tone to be suspended can arrive a beat, or several beats, before that bass tone occurs that will create the actual suspension. The brain must hold the treble note in the memory as the bass note is sounded, if the perception of a suspension is to register as an event. In this situation, only the residue echo of the melodic note is present as the bass note is sounded. The combination of the residual sound and the brain's "echoic memory" must do the work of grouping the tones that create this perception.[165] Here, the suspension is not an actual sonic event, but an assembling in the mind of notes that occur at different times. It is a common technique in composition, especially in works written primarily in one voice, such as the Bach cello suites.[166] The *Allemande* from the Suite in G Major demonstrates the process of an implied suspension in m. 13-14. The leaps of a seventh between the A3 and G4, and a twelfth between D3 and the following G4, demonstrate the cognitive demands the composer makes on the listener, in perceiving an intervallic juxtaposition that does not actually occur[167] (Figure 5.24). For audience members, this perception of juxtaposition, and the cognitive, reaction to it, will likely be involuntary. But musicians should be trained to listen for, understand and identify these types of events, to be able to deploy them effectively and deliberately in their own creative work.

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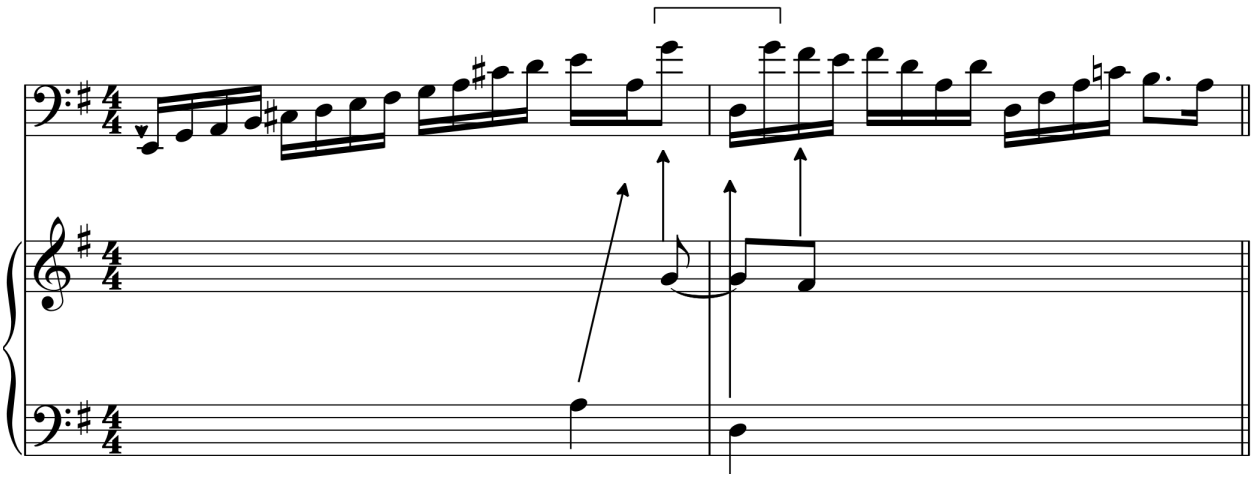
[165] The concept of echoic memory is found in Neisser (1967). "Like the flash of a visual image, auditory images tend to linger briefly after the cessations of the stimulus[...] The best measurements suggest that echoic memory has a half-life of about 1 second." (Huron 2016, 66)

[166] The use of "pseudopolyphony," or implied polyphony, is well documented in the work of Bach and other composers whose works create the impression of two or more lines within one-voice passages. See Huron (2001), Davis (2006, 2011), Deutsch (2013).

[167] Of course, in a reverberant acoustic the actual echo of the G4 will help contribute to the aural illusion, and performers are well aware of the importance of the acoustic properties of concert spaces.

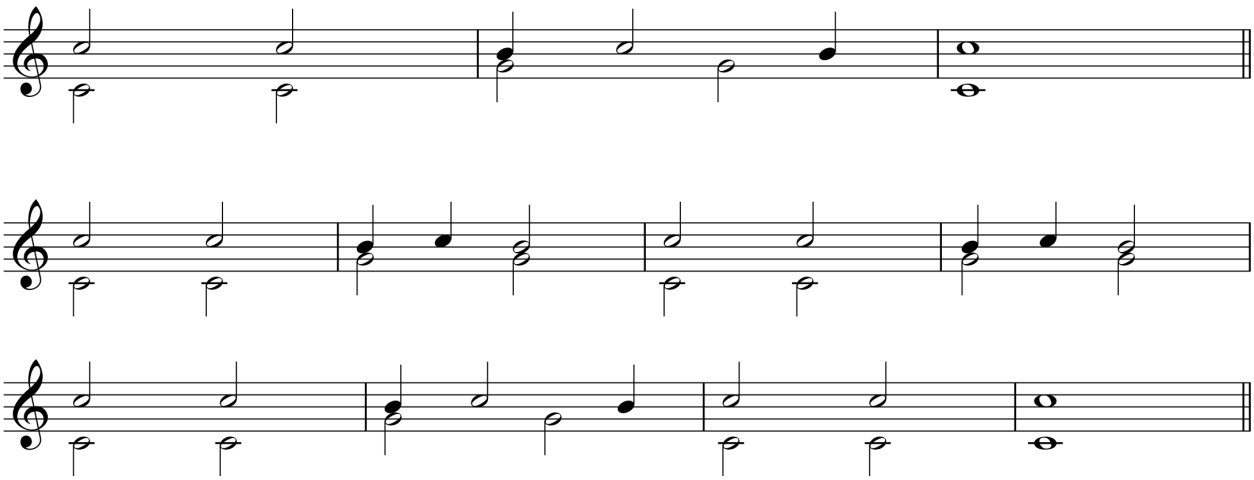
Figure 5.24. Allemande, Bach Cello Suite no. 1, m. 13-14.



Finally, the use of silence in the CD can function as an introduction to basic syncopation. In chordal versions of the CD, this syncopation is embedded within a three- or four-voice texture. But in the fleeter, virtuosic vocal and instrumental works of the Galant, it also functioned as a single-voice melodic gesture, or inner-voice counterpoint, at the end of a phrase. In slower iterations, it was more likely to occur in sacred vocal music than in opera and instrumental chamber music, perhaps as a stately ending to settings of liturgical text. The rhythmic model of quarter note-half note-quarter note (or eighth note-quarter note-eighth note) is a standard inner-voice accompaniment pattern in many compositions. At this level of training, the syncopated element can be made even more obvious if the bass is played twice, on beats 1 and 3. The syncopation is created by the mind's expectation of the arrival of on beat 3. The absence of expected sound – silence in place of an executed note – compels the cognitive problem-solving instincts that Huron describes, and triggers the reaction to the resolution that Zarlino identifies.

An extended exercise can combine the CS and CC. The two iterations of the first model draw the ear to the variation of the second in the final phrase (Figure 5.25).

Figure 5.25. Double Cadence as introduction to basic syncopation.



We will explore other models for syncopation training below. The important point here is that the suspension gesture helps emphasize the importance of silence, through placing the silent moment in the part of the phrase in which the brain is engaged with the cognitive process of expectation.

Differentiation of voices – stress/emphasis within musical phrases

This section addresses four elements in Table 4: "demonstrates an understanding of tension and release through resolution of notes in the context of the harmonic progression; demonstrates an understanding of dynamics; demonstrates a sense of appropriate articulation; demonstrates an understanding of musical style and characteristic tone quality; demonstrates an understanding of appropriate phrasing."

Phrasing, dynamics, articulation, musical style – these are the core elements in building score interpretation skills. Beginner musicians commonly execute the notes with little knowledge of how varied dynamics are used to shape a coherent musical phrase. Any teacher of beginner musicians has experienced students gamely blowing, sawing, or plunking through a relentless procession of quarter notes, executed in precisely the same dynamic manner. The result is a numbing series of tones executed without any sense of how their function changes over the course of a musical phrase. But this is a step that most teachers expect, as students accrue instrumental ability. At the beginner level when students – especially young students – are dealing with the logistics of the instrument and nascent physical control, teachers will take satisfaction from the student being able to play any notes at all correctly.

Once basic playing ability has been achieved and combined with rudimentary sight-reading, teachers are expected to instruct students in note interpretation, in a rear-guard effort to combat a well-practiced habit of undifferentiated dynamics. At a beginner level of score reading, interpretation is taught as a function of following the directives of music notation, learning the symbols that denote specific dynamic elements (volume indications, articulation markings, crescendos/diminuendos, etc.) and executing at the points indicated in the score. Accordingly, beginner students may learn to view the execution of dynamics primarily as a process of

executing visual commands, rather than listening for elements in musical structure that suggest interpretive options. But if teachers want to foster understanding primarily through listening and playing, as well as through score-reading, intervallic suspensions are an efficient way to embed the concept of dynamic variation in a musical line. Their structural simplicity means that this concept can be introduced early, and does not need to be grafted onto training after months, or possibly years, of physical drill.

As we observed in chapter three, Zarlino 1558 identifies the effect that a suspended note created in the mind of a listener. Performance execution of a dissonance was emphasized by a dynamic stress on the dissonant note. Centuries later, Quantz attested to the importance of this stress: 'To excite the different passions the dissonances must be struck more strongly than the consonances…The more, then, that a dissonance is distinguished and set off from the other notes in playing, the more it affects the ear. … Without this mixture of agreeable and disagreeable sounds, music would no longer be able now to arouse the different passions instantly, now to still them again." (Quantz 1752, 254) CPE Bach concurs: "in general it can be said that dissonances are played loudly and consonances softly" (Palmer 2001, 29) [168] Quantz pointed out this element of performance practice for amateur music makers, who needed it stated plainly. In the conservatories, expressive stress on dissonant notes was likely so commonplace that it was not necessary to write it down for aspiring professionals, not dissimilar to how certain elements of interpretive practice in popular and folk music are not formally taught, but are learned through performance and imitation. Dynamic stresses on dissonances would likely have been a standard aspect of solfeggio execution.

[168] See also Donington (1989, 205) and Haynes/Burgess (2016, 140-166).

As CPE Bach's and Quantz's interpretive suggestions make clear, intervallic suspension provides an obvious point of emphasis in musical phrases, helping increase sensitivity to both prepared suspensions, dissonances with an underlying bass, and accented non-chord tones. Of course, there are many other elements beyond intervallic dissonance that can factor into the act of shaping both an improvised or score-executed melody. But the suspension, in its concision and brevity, is an ideal tool for demonstrating this aspect of phrasing to beginner musicians. Training musicians to "lean on" the dissonance in a simple exercise gives them a model to apply to more advanced music. This knowledge is useful in different stylistic contexts. Suspensions are easily identifiable as structural elements in Wagner, Mahler and Brahms, but we have only to listen to melodic lines in modern popular music – John Denver's "Leaving on a Jet Plane" (Figure 5.26) and the Pogues' "Fairytale of New York" (Figure 5.27) are two examples – to realize that non-chord tones on strong beats remain relevant to performance and composition beyond the area of classical performance practice. At advanced levels, a technical understanding of suspensions is a skill that improvisors will need to have in their repertoire, as will composers who need to work quickly to create interesting phrases and textures. The Neapolitan cadences can draw attention to it at the very beginning of training.

Figure 5.26. Leaving on a Jet Plane (Denver).

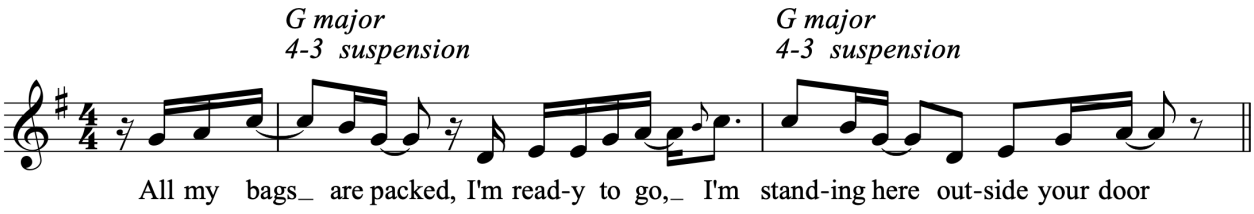
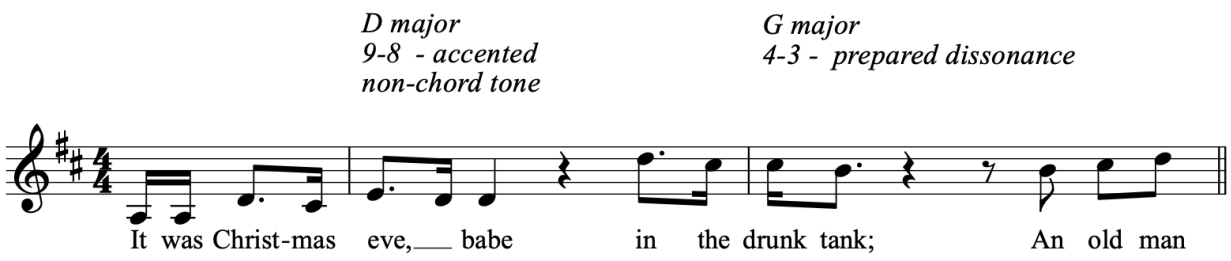


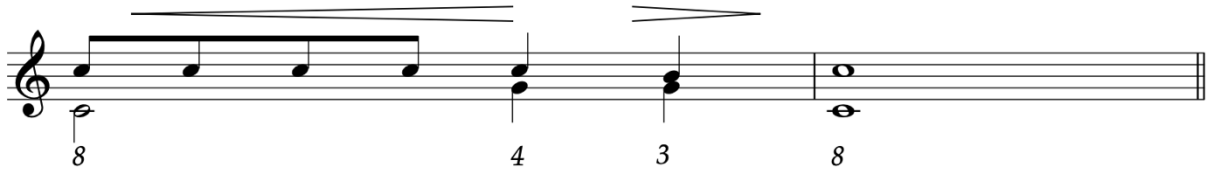
Figure 5.27. Fairytale of New York (Finer/MacGowan).



Musicians can be vague about what it means to interpret phrases "musically," often preferring to show rather than tell, in part because our procedural knowledge can be stronger than our declarative knowledge. Put another way, musicians often learn how to execute scores without a specific technical understanding of the structural elements in the music that lead them to interpretative choices. This can render teachers unable to clearly direct students' attention to the precise aspects of a phrase that need alteration when striving for more effective interpretation, resulting in vague suggestions like, "more energy," "more line," "be expressive," etc. Suspensions provide a simple, clear model for identifying a possible point of emphasis in melodic interpretation, with the main point of stress occurring on the dissonant fourth in the 4-3 suspension. If a dissonance is identified as the target note of a melody, and interpreted accordingly – meaning an increase in volume of the notes prior to the note, and diminishing volume for those that follow – the student has learned at least one common approach to shaping a musical phrase that includes repeated notes, in an example that can be introduced in basic levels of training. It is a method for the identification of the target note that can help in both score interpretation, and in improvised passages. With the former skill, it helps build the habit of assessing at the entire composition, especially the interaction between bass and treble, rather than focusing on the treble line exclusively. In improvisation, it helps foster an increasing sensitivity

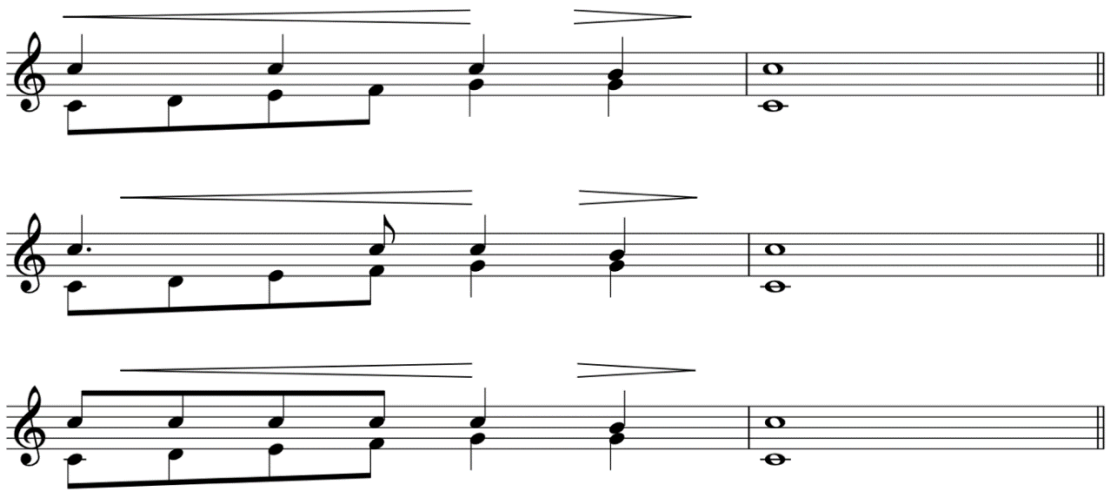
to bass contextualization. Using the bass movement that has created the dissonance as a signal/guide for where to put stress in a phrase reinforces the basic concept that there needs to be dynamic differentiation in a line, even one with repeated notes. Bass contextualization can help with this, especially in very basic exercises in which the same notes are repeated *ad nauseum*. The change in the bass is the signal that an interpretive alteration of the melodic line is required. The simplest way to teach this particular lesson is subdivide the tonic and create a crescendo/diminuendo towards and away from the suspension (Figure 5.28).

Figure 5.28. Compound Cadence with dynamic stress.



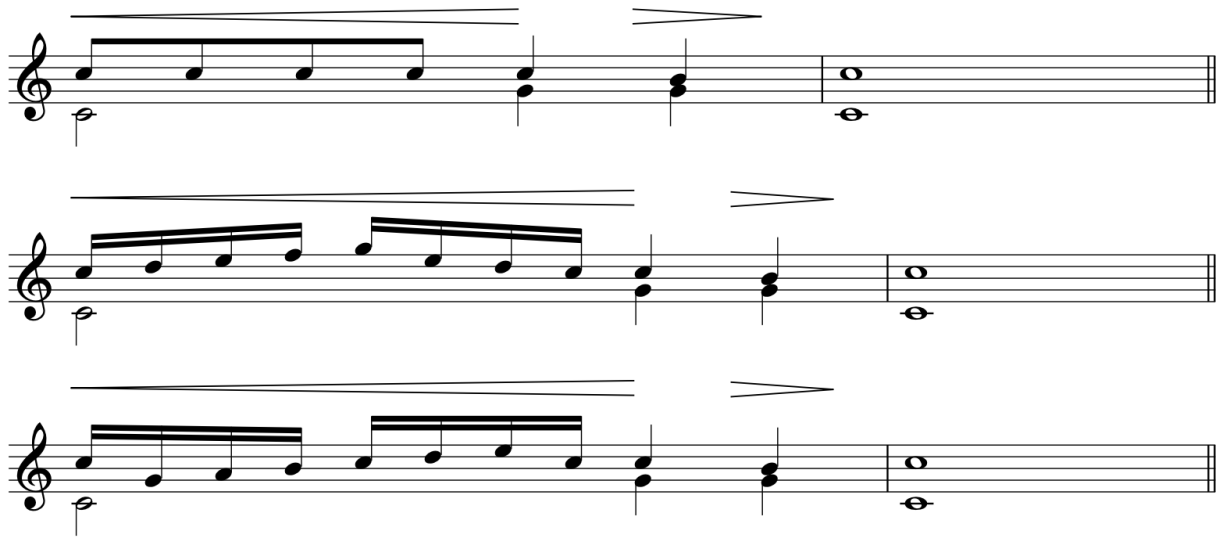
To help guide a student in the gradated creation a crescendo, a stepwise ascending bass line can be incorporated (Figure 5.29).

Figure 5.29. Compound Cadence with dynamic stress and stepwise ascending bass line.



As melodic possibilities are expanded, this basic structure can remain a part of the interpretation of a line (Figure 5.30).

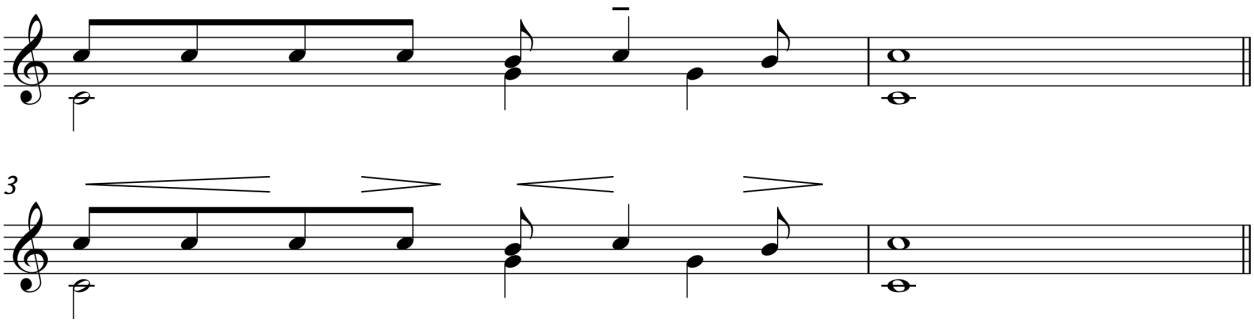
Figure 5.30. Compound Cadence with melodic variation and dynamic stress.



The CD adds a variation on this model, with the stress occurring an instant after the bass lands. This can be achieved adding a stress to the cadenza doppia gesture, as in the first example.

A variation is a double emphasis that includes a crescendo/diminuendo in the movement leading to the CD, then another dynamic gesture that emphasizes the suspension (Figure 5.31).

Figure 5.31 – Double Cadence with accents and stresses



In these examples the suspension acts as a focal point, creating a "target tone" at the point at which the dissonant interval occurs, helping shape the dynamic character of the entire line. The idea that a melodic line has a linear shape and direction, and that this direction can be expressed not only with intervals but with dynamics, is an essential aspect of the musician's art. Some improvisation training emphasizes playing a group of sounds that "fit" harmonically, addressing neither the use of dynamics or target notes at the beginner level. It is an approach to improvisation that bears the same relationship that a roller has to a brush – a useful tool when painting walls, but one ill-equipped for painting pictures. If dynamics are added to models with intervallic suspensions, more sensitive habits of phrasing and emphasis can be embedded in the creation of improvised phrases. Dynamic stress can help reinforce the understanding of bass movement and intervallic contextualization as an event worthy of notice and observation, which will aid in structural understanding of many standard musical schemata. Students can learn that the execution of a succession of identical notes can be differentiated depending on where they are in the phrase, and on what is occurring in the bass (and eventually in other voices as well).

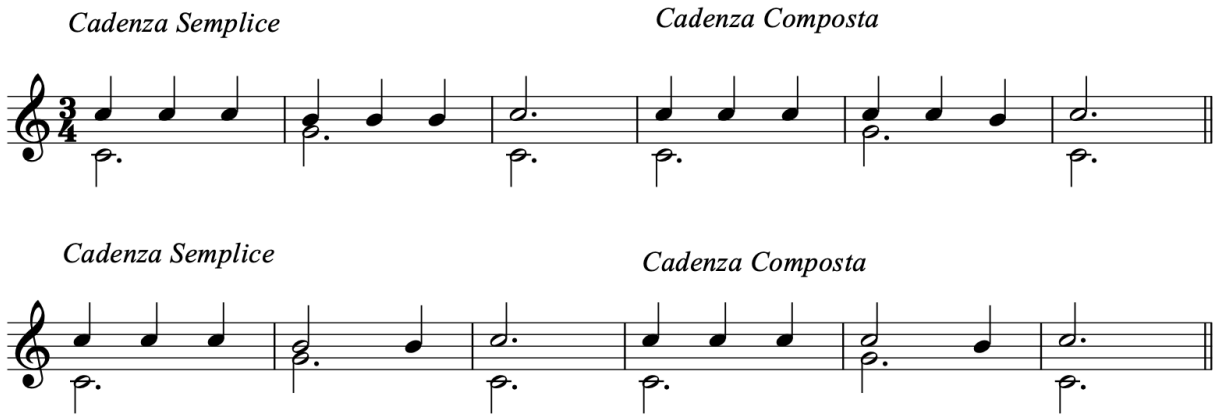
Taught early, this lesson can at least mitigate against the sewing machine dynamics that are a trap for beginner players and the despair of their teachers. The interpretation of a line within a notated composition is not an improvisational skill, of course. But developing bass listening is not simply about hearing juxtaposed notes, but about understanding the nature of the sound that the juxtaposition creates, and how the particular nature of a suspended interval may influence the overall dramatic shape of a line. As explored in the discussion of bass and treble function above, stressing dissonances is another method of drawing attention to awareness of the presence and function of the bass frequency, which is a required element in many improvisational styles.

Differentiation of voices – rhythm and meter

Suspensions can be deployed in two elements in the third section of Table 4: "demonstrates a rhythmic feeling of the meter throughout" and "begins to develop and relate rhythmic ideas in some phrases."

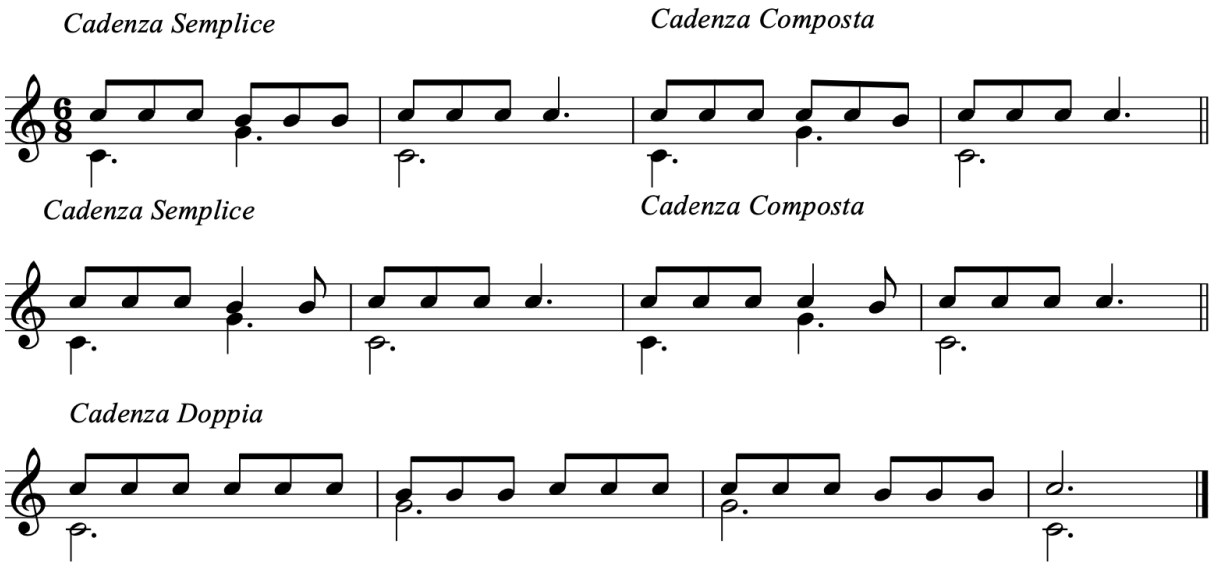
Teachers should make sure that both simple and compound subdivisions – groups of twos and threes – are also part of the improvisation drill, so that when the various meter signatures are introduced as written models, students will recognize them as familiar modes of rhythmic organization (Figure 5.32).

Figure 5.32. Cadences in triple-meter form.



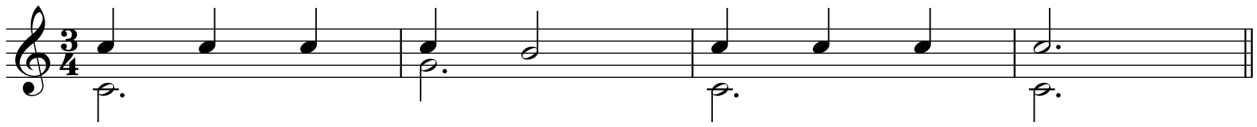
This moment of tension in the CS can be used to add cognitive interest to different rhythmic passages and metric models (Figure 5.33).

Figure 5.33. Cadences in compound meter form.



The suspension can also be useful for a simple introduction of syncopations in triple time (Figure 5.34).

Figure 5.34. Compound Cadence with rhythmic syncopation.

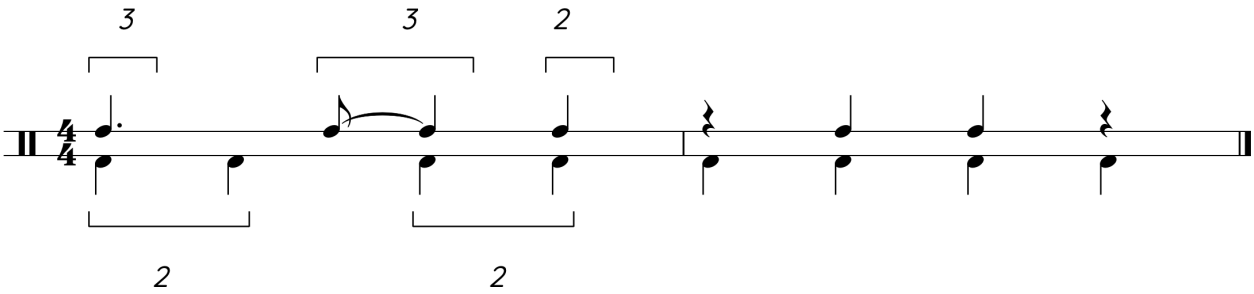


In all these cases, the suspension is a tool to draw the ear to the element of the exercise that a teacher wants to emphasize. Drawing on Hove and Trainor 2014, (which asserts that treble and bass lines have distinct roles in music making, and that it is the bass voice that encodes rhythm and carries timing), a two-line texture with suspensions can be deployed to help differentiate both an underlying steady pulse, and the possibilities for delineating syncopations

against it. To explore this possibility, we will use the clave sequence, one of the most important rhythmic schemata in popular music of the twentieth century. The rhythmic character of many styles is unthinkable without it.[169] Classical musicians, whose musical education may not regularly include repertoire that uses the clave beat, may struggle both sight-reading scores that include it, and playing repertoire centered around its structure. Like other musical elements commonly found in twentieth century popular music, it should be a required model in all training.

An essential element of the clave rhythm is the combination of its uneven rhythmic subdivisions (eighth notes in 3+3+2 groupings) underpinned by an even two or four-beat pulse, in the first section of the pattern[170]. (Figure 5.35)

Figure 5.35. Clave rhythm.

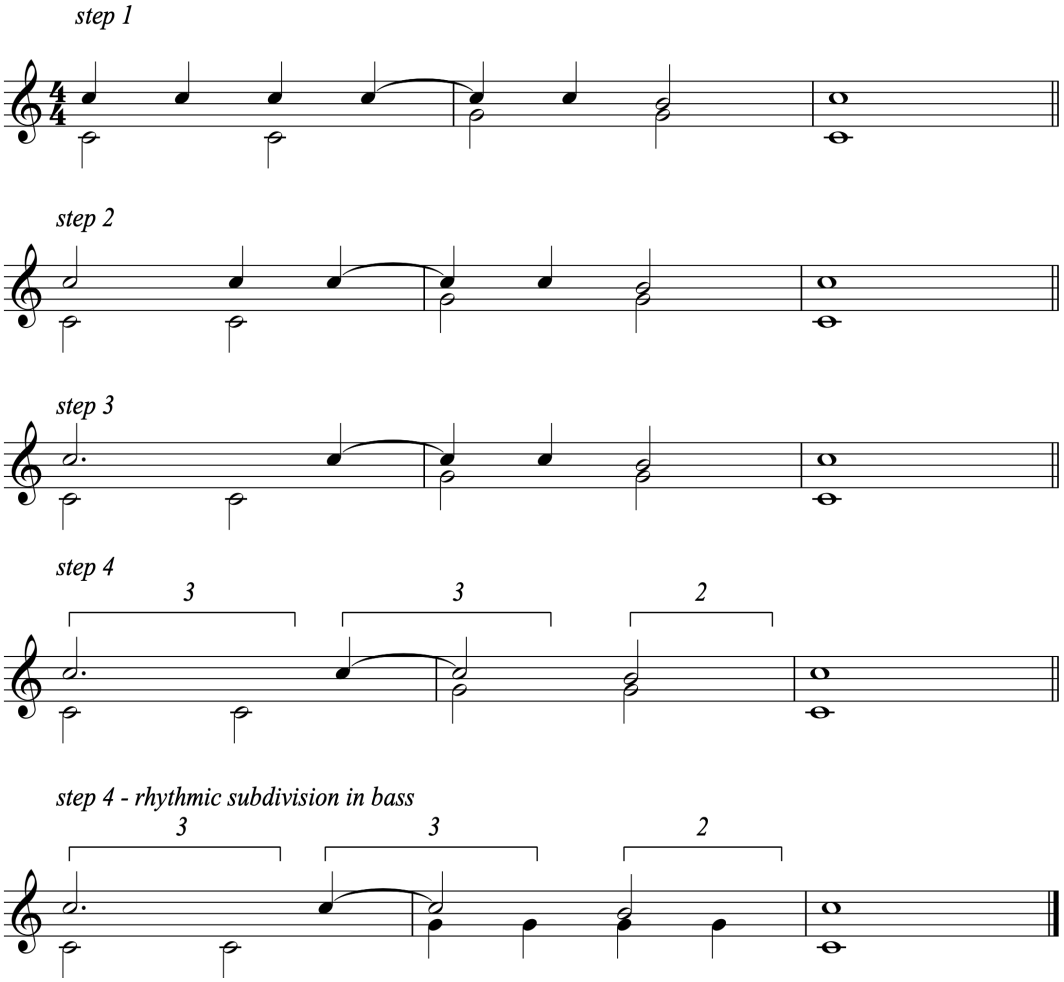


On a keyboard, the more straightforward rhythmic group executed in the left hand allows the right hand to offset this pulse with the syncopated accents of the clave beat. Of course, this can be accomplished without the use of a suspension. But adding the suspensions creates another instance of tension and narrative interest to the exercise, triggering cognitive problem-solving habits. The suspension aids students in differentiating the underlying pulse from the

[169] See Peñalosa/ and Greenwood (2012) and Marshall (2020).
[170] There are multiple variants on the rhythmic organization of the Clave beat. An article in Marshall's website, "American Clave/Ragtime Country" demonstrates several examples of variant rhythmic subdivision within the Clave structure. Accessed Sept. 2021: https://wayneandwax.com/?page_id=9315.

syncopations in the treble line, helping their understanding of syncopations as a type of accented variation on underlying rhythmic structures. The following example sets out a four-step process in which rhythmic gestures in the treble are pared away, and the suspension is used to help articulate the distinctive rhythmic character of the clave sequence (Figure 5.36). Rhythmic subdivisions in the bass voice can be added to help maintain a steady tempo.

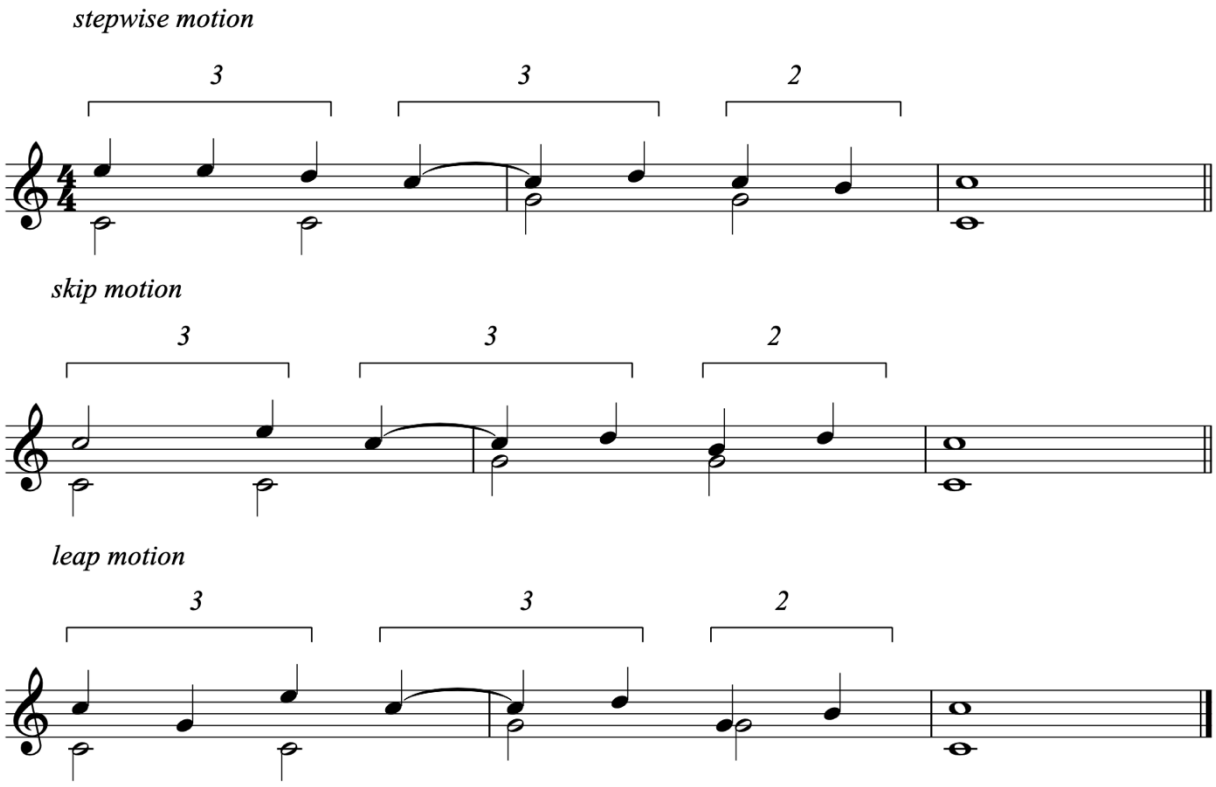
Figure 5.36. Cadenza Composta and Clave sequence.



With non-keyboard instruments, teachers should experiment with allowing students to play both the underlying even pulse and the syncopations above as the teacher plays the opposing part. As students' ability to execute this rhythmic cell becomes secure, teachers can

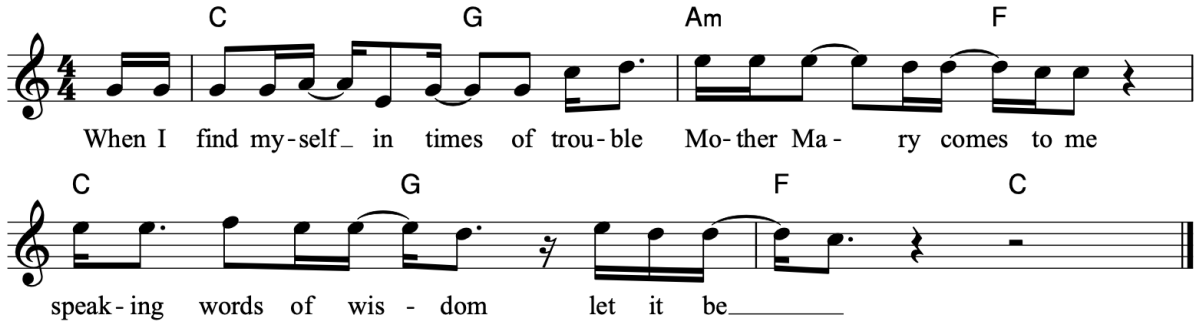
experiment with adding other melodic elements based on the 3+3+2 organizing principle, and add repetition to help facilitate the ability to maintain both a steady pulse and add the overlying syncopation elements (Figure 5.37). This is a crucial skill in many areas of popular music.

Figure 5.37. Clave rhythm and step, skip and leap motion.



These types of melodic interpolations obscure the clave sequence's distinct rhythmic character of 3+3+2 accents, but its structure is present within them. In this case, the goal of drilling melodic phrases that employ the clave rhythm is to practice improvising melodies which have points of repose or accent just before or after a beat, bar unit, or chord change. Like the pure clave rhythm, these types of phrases are common elements in modern popular music in many styles, and generating variations that include them allows students to become familiar with this style of phrasing, as in the Beatles excerpt below. (Figure 5.38)

Figure 5.38. Let it Be.



It bears repeating that learning or executing syncopated elements in many forms of popular and vernacular traditions does not require formal training; indeed, a training that is score focused can even be counter-productive to instruction in syncopations. Subtle elements of stress and phrasing in syncopated passages can be difficult to convey in standard forms of music notation, and can sound stilted when poorly executed from a musical score, without complementary aural training and experience. A common mistake in rhythmic training is do conflate syncopation with dynamic accentuation, drawing attention to a syncopation giving it an accent or stress. This is different than the note stress recommended in the section on stress/emphasis in musical phrases. In the case of syncopations generated in a two-part texture such as the cadence schemata, it is the guide of the bass note that creates the rhythmic structure through which a syncopated melody note is perceived as a deviation from a passage's principal rhythmic organization. When teachers play syncopated passages as examples for students to imitate, they should be careful not to dynamically emphasize the syncopation (unless there is a specific interpretive reason to do so), but to instead allow the bass note to simply delineate this

rhythmic structure clearly, and allow the melody to be heard against this. The rhythmic contrast provides its own emphasis, at least for the purposes of this exercise.

Introduction of pre-dominant function in bass

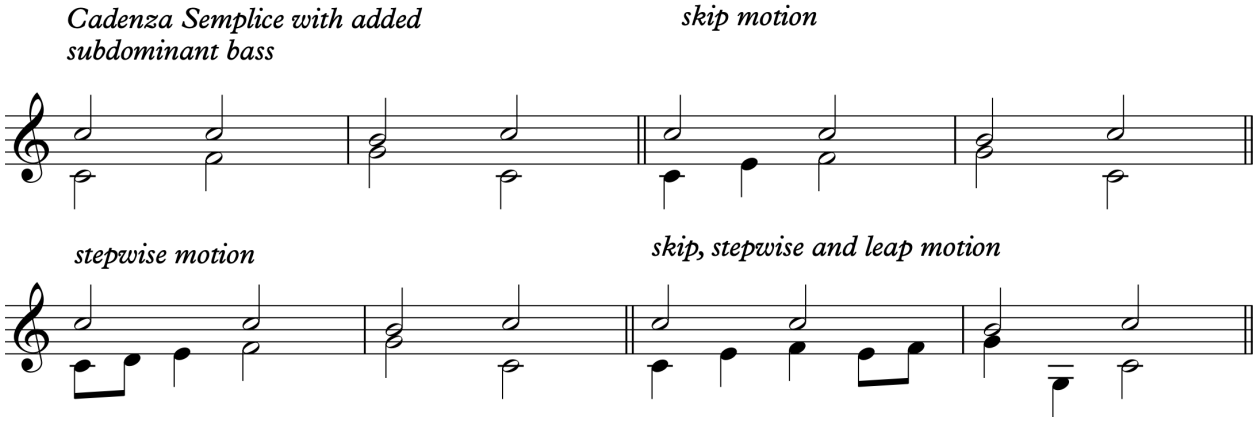
The last section of Table 4 addresses building knowledge of "tonic, dominant, and subdominant patterns."

In the previous chapter it was recommended that pre-dominant function be introduced with the *Bergamasca* ground-bass sequence, which is both a schema and common compositional tool. Knowledge of the central functionality of scale degrees, as bass notes for both chord construction and contrapuntal schemata, is a common cross-stylistic element of music pedagogy. The Azzara and Snell table gives each of these scale degrees a "function," and recommends a sequential introduction of tonic, then tonic and dominant triads, and finally all three elements of tonic, dominant and sub-dominant. The Neapolitan cadenzas are built around the two "functions" of tonic and dominant basses, with the corresponding chordal formations and melodic possibilities that these parameters suggest. The subdominant bass note is present some Neapolitan examples of the cadences, with stepwise ascending bass motion included in various examples of the three models found in partimento manuscripts. While these do not necessarily indicate conceptualization of a subdominant chord in the modern sense, they are similar, and can be integrated with chordal approaches found in modern pedagogy. Beginning intervallic construction with a two-part contrapuntal texture can be more useful than a triadic, chordal approach, even when introducing harmonic concepts. While the two- and three-part cadenza schemata are incomplete in terms of triadic content, the simplicity of the treble/bass dichotomy can help students learn to be precise about the construction of intervallic relationships through stepwise linear motion, through which full triads are ultimately assembled. Using the intervallic suspensions in the CC and CD factors in both the cognitive benefits explored earlier, and

demonstrates examples of both construction and deconstruction of the triadic elements of primary chords, in a controlled and schematically memorable sequence.

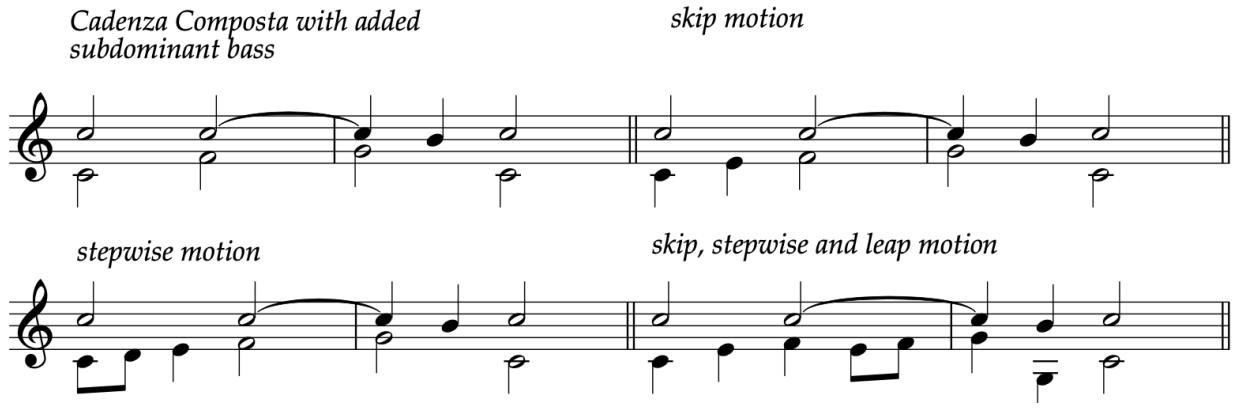
A simple approach to adding subdominant bass function to these cadential models is to introduce the subdominant tones underneath the basic parameters of the CS and CC. Stepwise motion and intervallic motion filling in steps from scale degree 1 to scale degree 4 is a variation on this model (Figure 5.39).

Figure 5.39. Bergamasca and Simple Cadence.



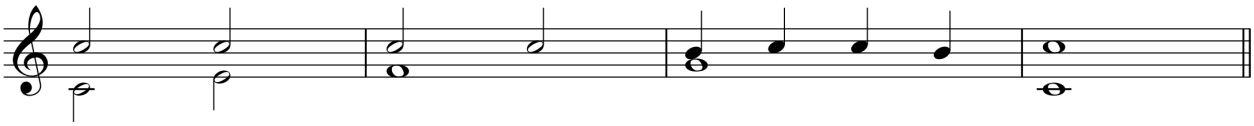
Two-part models that imply (and can be expanded into) more complete chordal formations, are common in modern training, especially for harmonic instruments such as the piano and guitar. But if we adjust our thinking to view them not only as incomplete chords, but also as contrapuntal bass-treble interactions, then the imperative to complete chords can be balanced and integrated with the goal of demonstrating linear interaction. The 4-3 suspension of the CC is ideal for this purpose. The CC bass can be expanded to include various types of motion just prior to the suspension (Figure 5.40).

Figure 5.40. Bergamasca and Compound Cadence.



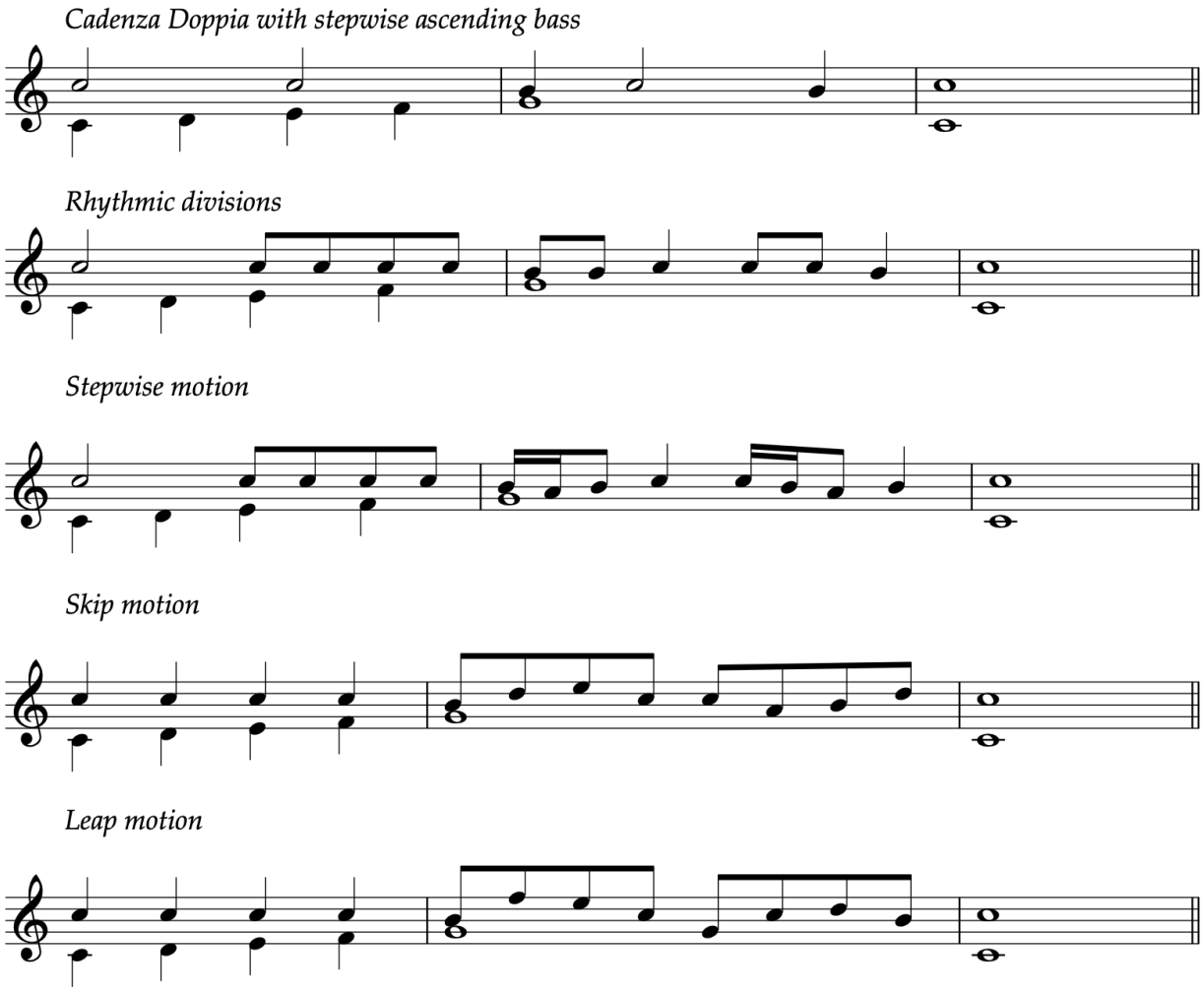
Just as the CD adds steps of intervallic interaction in the treble voice, the addition of added bass motion can create a metrically balanced phrase (Figure 5.41).

Figure 5.41. Bergamasca and Double Cadence in four-bar phrase.



Stepwise motion in the bass that includes the subdominant note can be combined with rhythmic divisions in the treble voice, including step, skip and leap motion. In the case of the latter two types of motion, use of triadic harmony will likely need to be deployed. (Figure 5.42).

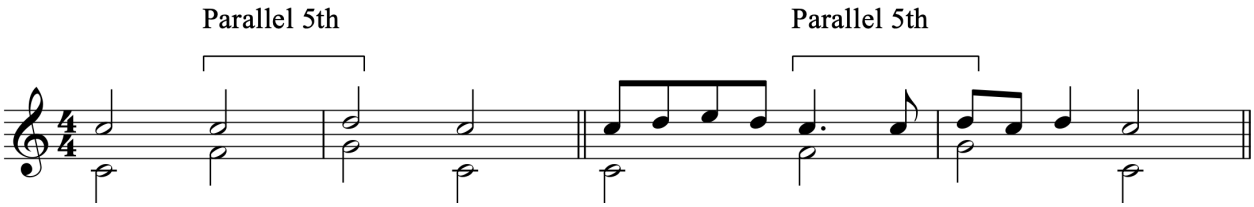
Figure 5.42. Ascending bass and Double Cadence with step, skip and leap motion.



The addition of the subdominant in the bass also opens up the possibility of parallel fifth motion between bass and treble (Figure 5.43). For students uninterested in the classical tradition, it would be hard to argue that the traditional strictures against this intervallic gesture be observed, especially in a world in which parallel fifths are a common element in popular repertoire. As triadic chord structures come into play, voice leading usually falls by the wayside, especially in the area of guitar-based popular music, in which parallel fifths and octaves in the guitar part are integral to the style. Classical contrapuntal parameters applied to songs such as

The Troggs' "Wild Thing" or Black Sabbath's "Iron Man" would be an anachronism, and an attempt to apply strict vertical voice leading to popular or jazz bass lines would likely sound no less odd than a series of parallel fifth sequences would in Baroque improvisation.[171] But if voice leading strictures are understood less as a stylistic or aesthetic requirement, and instead as a method to help train the ear to perceive different lines, and to foster an awareness of treble/bass interaction, then avoidance of intervallic sequences that cause the two lines to "fuse" into one, is a useful pedagogical stricture.[172]

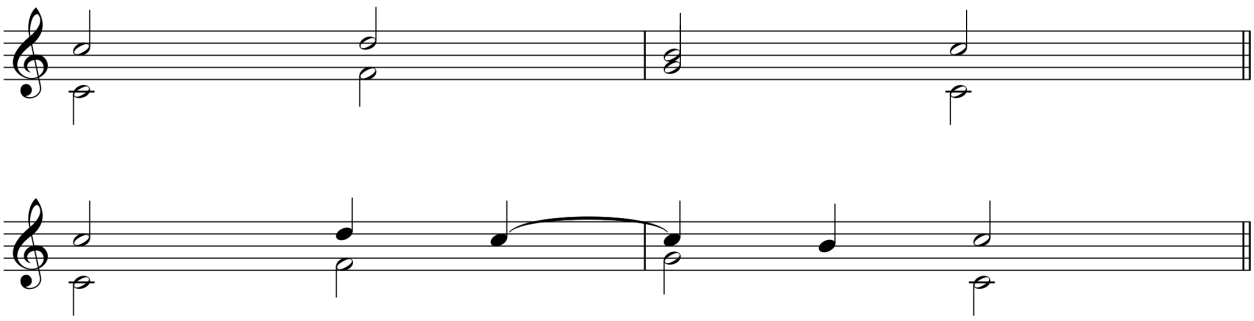
Figure 5.43. Bergamasca with parallel fifth motion.



To help beginner improvisors negotiate this challenge, subdominant function is best served by intervallic rather than triadic construction, with the historically common sixth interval above scale degree 4, rather than an actual subdominant chord. In modern Roman numeral terminology, this is a ii chord in second inversion, which is more common in pre-nineteenth century repertoire (as a pre-dominant) than a IV chord.[173] This can be combined with the CC suspension (Figure 5.44).

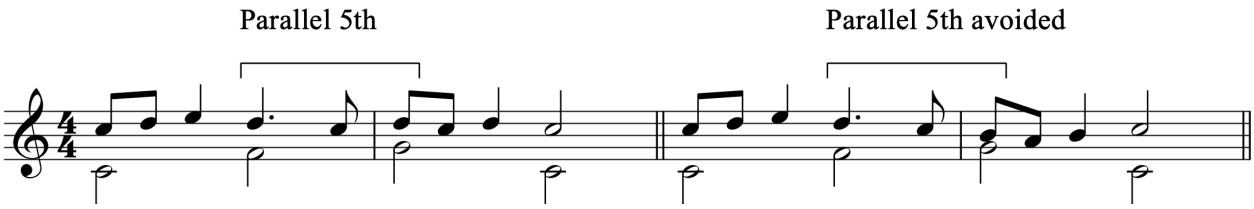
[171] Lilja (2009) addresses issues regarding the application of traditional music theory precepts to rock style and the influence of the parameters of guitar chord figurations on traditional elements of voice leading and composition.
[172] Huron discusses the cognitive process by which perfect intervals (P5, P8), by virtue of their frequency relationships can fuse into "single auditory images." (Huron 2016, 29-32)
[173] "Many Harmony texts suggest that the subdominant triad (IV) is the most typical pre-dominant harmony. Examination of the classical literature reveals, however, that the supertonic triad in first inversion (ii^6) is more often employed for this function." (Caplin 2013, 10) Use of the ii^6 as a pre-dominant persists well into the nineteenth century.

Figure 5.44. Parallel fifth motion evaded with Bergamasca and Compound Cadence.



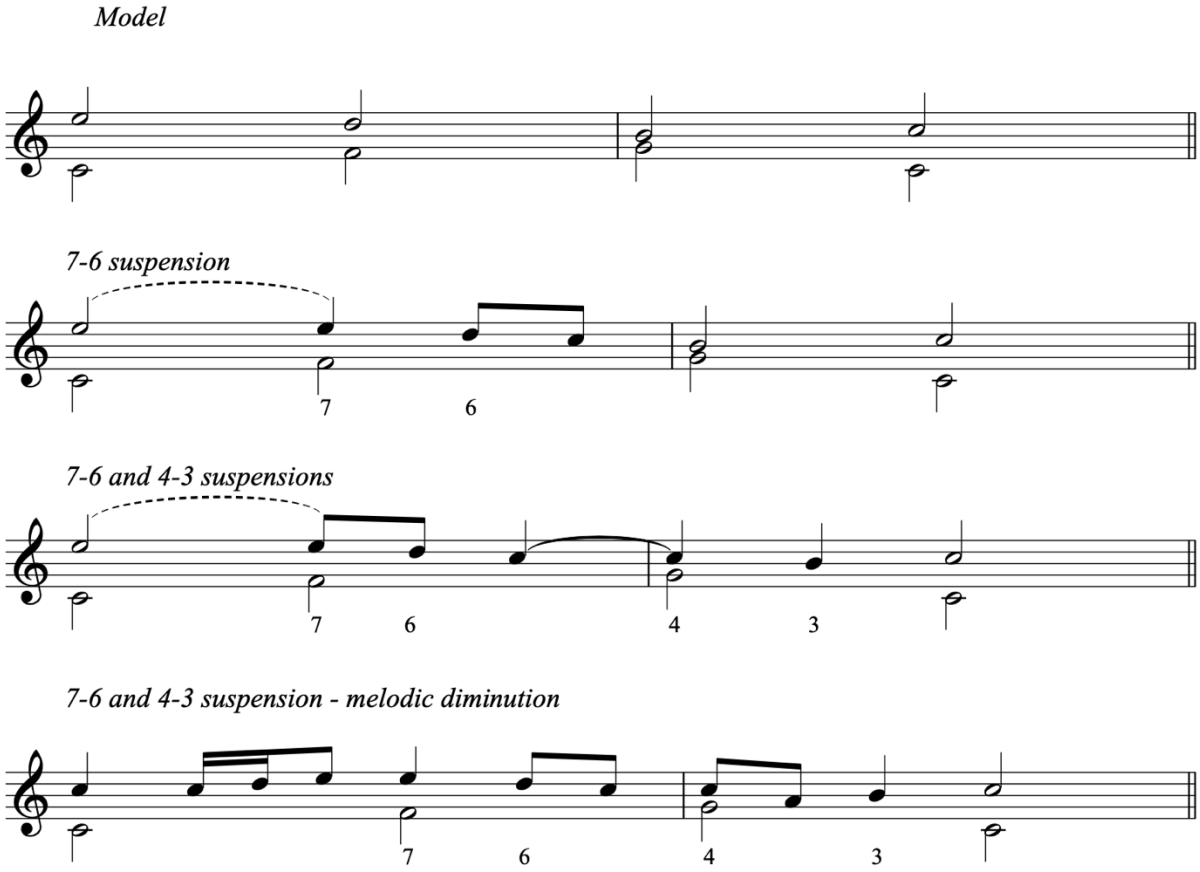
But even with the addition of a structural melodic guiding tone for variations on the Bergamasca, parallel fifth passages are easy to create. This where the teacher needs to be aware of contrapuntal possibilities between treble and bass, and demonstrate choices that maintain the individual trajectory of each line. The example below shows both parallel fifth motion, and a possible solution to avoid it. (Figure 5.45)

Figure 5.45. Solution for avoiding parallel fifth motion with scale degree 2 in treble.



Using scale degree 3 as a structural melodic tone opens up the possibility of the introduction of the 7-6 suspension, on its own and in combination with the 4-3 suspension (Figure 5.46).

Figure 5.46. Bergamasca with 7-6 and 4-3 suspensions.



The Bergamasca also expands another possibility for the use of structural tones in the contrapuntal interplay of the top two voices of the CD. In partimento texts illustrating the CD, some figured bass examples specify scale degree 4 over the dominant bass, creating an interval of the seventh rather than the fifth.[174] (Figure 5.47) In a three-part texture, the sound of the tritone can be harsh after the consonance of the tonic chord, even in inverted form. The addition of a move to scale degree 4 in the bass (and to scale degree 6 in the treble) creates a smoother transition. (Figure 5.48) The model can be expanded to introduce and include all three notes of

[174] See Sanguinetti (2012, 107-108). In this particular example, taken from Durante, the interval of the seventh is prepared via stepwise linear motion in the treble voices.

the tonic triad, with one of the top voices beginning on scale degree 5. (Figure 5.49) The results have a highly “classical” sound, and are not necessarily applicable to modern popular styles. But they are useful for demonstrating, in a three-voice texture, how chord formation is linked to linear motion between voices. For advanced players, they can provide model for learning to perceive the movement of linear lines within a three-voice texture, connections that can be obscured as chordal textures are expanded to four or more voices.

Figure 5.47. Double Cadence and introduction of seventh interval.

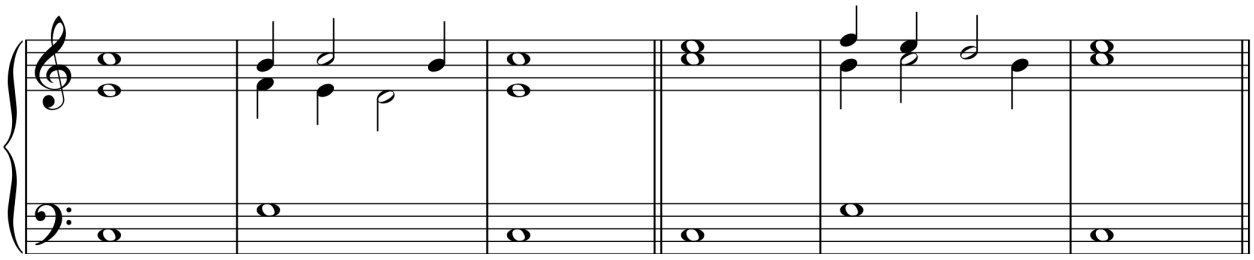


Figure 5.48. Bergamasca with seventh interval in Double Cadence.

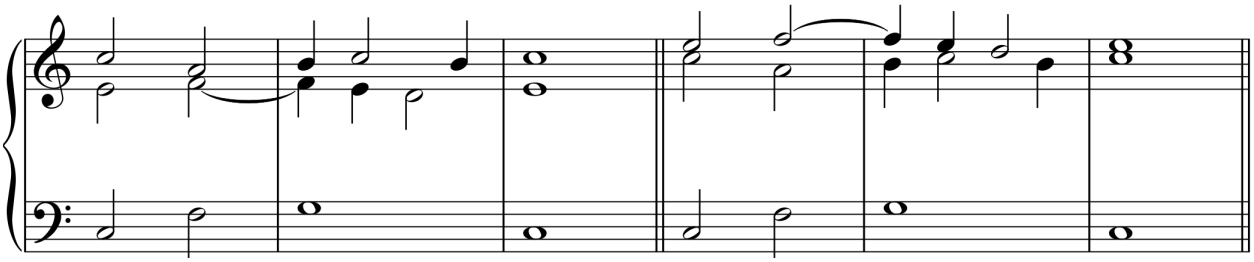
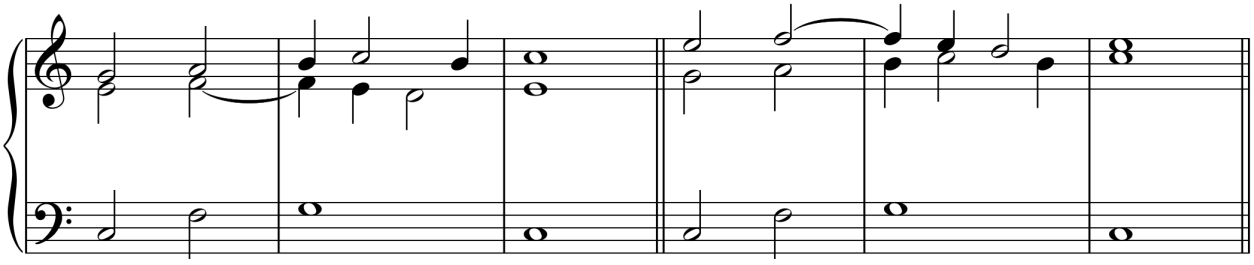
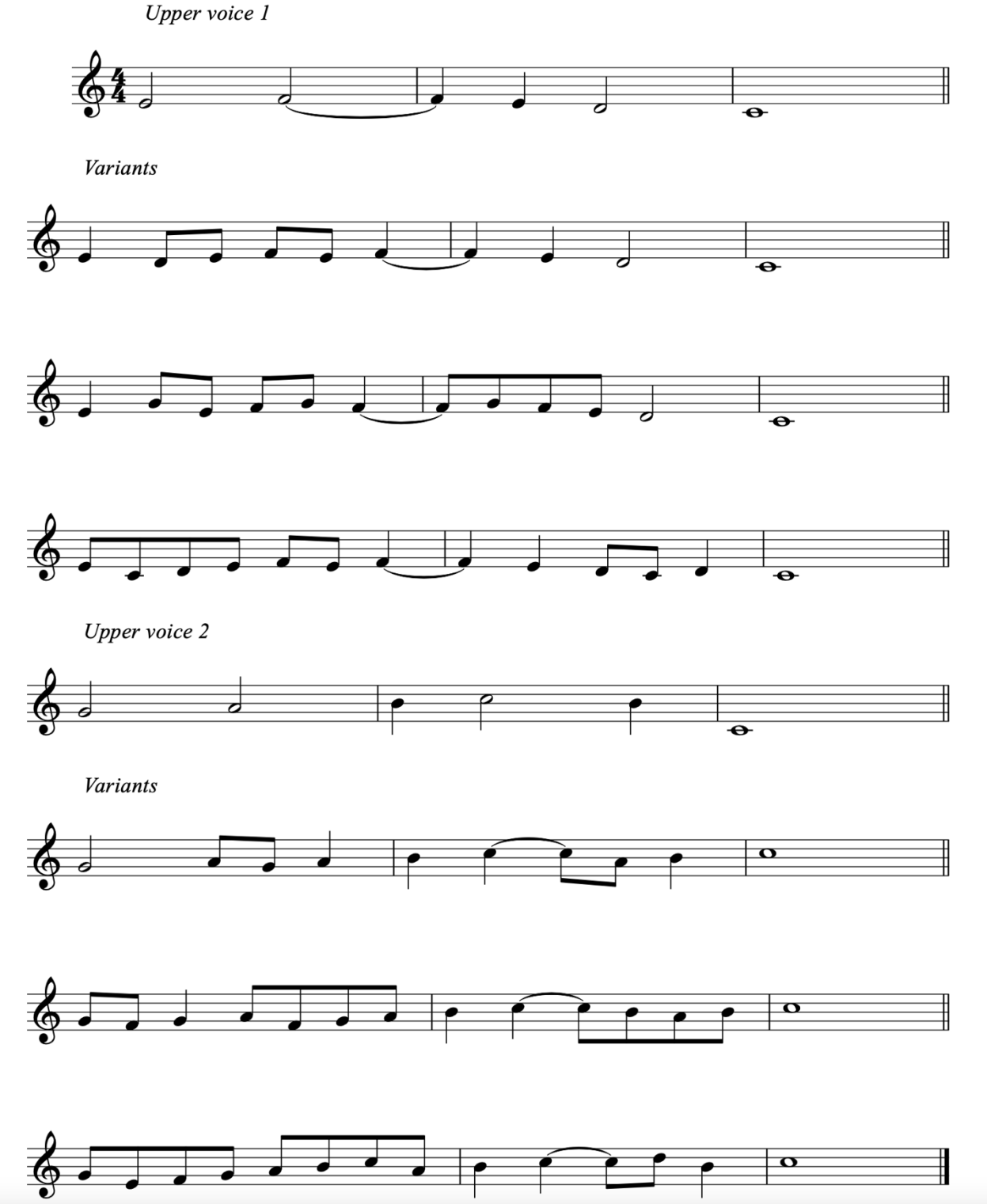


Figure 5.49. Bergamasca, full triad in opening chord and seventh interval.



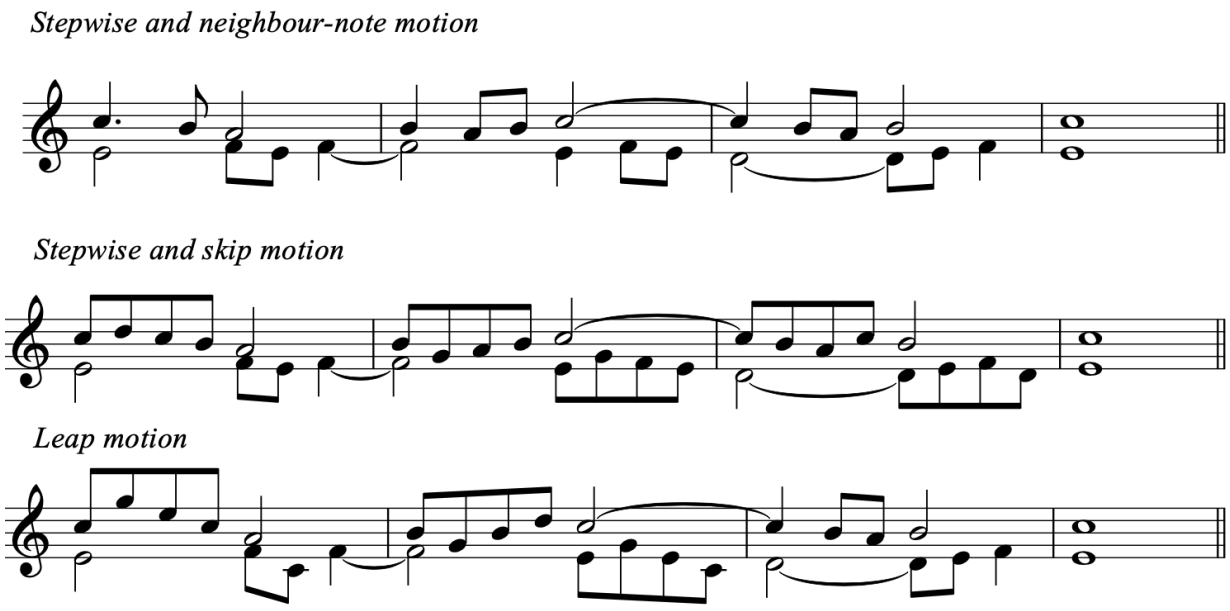
These added structural tones, combined with intervallic suspensions, can expand the melodic possibilities for variations using stepwise motion from scale degree 5 to the tonic note above. This gesture can be expanded into variants, either in a two- or three-voice texture. The challenge for a teacher is to generate variants simple enough for beginners to manage by ear, with stepwise and neighbour-note motion being the most obvious options. The best approach is likely to drill variants on each of the upper voices in isolation. (Figure 5.50)

Figure 5.50. Variants on top two voices in Double Cadence; use of seventh interval in upper voice.



Two-voice variants are only possible on instruments capable of multi-voice execution, such as piano or guitar.[175] Simple stepwise variations, with one voice stationary while the other is in motion, will allow students to focus on the movement and interaction of the two voices. When modeling variants, it is important that changes are small, simple, and sequential, to use students' memory of the previous iteration to help with the execution of the following one. It is even better to play the two voices in isolation, forgoing the bass voice altogether. This particular area of drill should be proceeded by plenty of drill in three-voice textures, so that the student retains the memory of the sound of the upper two voices against the bass. Step, skip and leap motion can be used (Figure 5.51). Note that in the "Leap motion" example, stepwise motion is ultimately necessary to resolve the final set of suspensions.

Figure 5.51. Stepwise, skip and leap motion in upper two voices of Double Cadence.



[175] As stated previously, improvised contrapuntal textures are also possible on string instruments such as violin, cello and viola da gamba. Realistically, this is more feasible with advanced students than beginners and intermediate players.

To summarize, Azzara and Snell 2016 identifies "six elements of music teaching and learning that can provide a catalyst for creative music making and assessment: repertoire, musical vocabulary, intuition, reason, reflection, and exemplars" (Azzara and Snell 2016, 11). The manner in which these elements combine is set out in the following :

> Learning a large repertoire of music by ear provides context and inspiration for musicians' creativity. Knowledge of repertoire should be comprehensive, including internalization of melodies, bass lines, harmony parts, rhythm parts, tonality, meter, and style. This is similar to learning a large repertoire of stories in language. Learning repertoire – musical *stories* – establishes a foundation for becoming aware of context, syntax, and structure (beginning, middle, and end) when improvising our own music. Awareness of repertoire provides inspiration and a foundation from which to group and create rhythmic sequences, understand tension and release, and learn harmony in context. (Azzara and Snell 2016, 11)

I would like to add to this list of tasks two further ones, which I regard as crucial: drill and transposition. Drill is clearly seen by Azzara and Snell as self-evident; exemplars have no purchase in the mind or body without regular repetition, and "learning a large repertoire of music by ear" is impossible without it. But without being clearly stated as a required element, the importance of regular practice is in danger of being under-emphasized. Drill can potentially be downplayed or ignored by both teachers and students, especially by classical musicians accustomed to giving improvisation practice little or no time, in comparison with other skills pertaining to score reading and performance. As improvisation is still considered adjunct to score interpretation in many curricula, adding drill to a list of important elements makes it clear as possible that regular, ongoing exercise, rather than intermittent practice (or a unit within a discrete course), must be the standard, and that this should entirely integrated with other elements of standard classical training, as it is with jazz and other musical styles. Unequivocally

specifying drill as an essential element helps mitigate the possibility that improvisation training will a perfunctory afterthought in required training.

As well, the ability to transpose models to different keys should be fostered at beginner levels of training. Instructors should be always considering how to introduce and foster this skill. To improvise freely, musicians must be able to conceptualize pitch relationships in abstract as well as specific terms, and be able to replicate these relationships from any key center. This is a crucial corrective to the type of classical training in which regular transposition exercise is rarely required, fostering a crippling dependence on written scores and allowing students to neglect the physical and aural practice necessary to build this skill.[176] But even institutional jazz and popular music training in general is not always rigorous in this respect, especially for singers.[177] This skill should be integrated into every type of training, and not merely emphasized for musicians whose works requires it regularly – instrumental jazz soloists, jazz guitar and keyboard accompanists, and church organists being the most common. The exercises in this paper are all in the key of C major for the sake of brevity. But as a student begins to demonstrate reasonable ability to improvise in one key, they should be required to shift practice to different major keys and their corresponding minor modes, with appropriate intervallic alteration. The manner and speed in which this is done is a judgement call on the part of a teacher; the simplest and most obvious way is through the order of sharps and flats, moving from C major/A minor to G major/E minor, D major/B minor, etc., and in the opposite direction with F major/D minor, Bb major/ G minor, etc. The assessment component to any improvisation curriculum should include

[176] Transposition practice in music theory class is often a written exercise. Jazz training tends to require transposition as an element of performance. In classical performance, transposition is likely to be most regularly required of wind and brass players, and organists.

[177] Hargreaves (2016) observes that jazz vocalists, whose key choices may be constrained by vocal range, do not get the same regular practice in key transposition as instrumentalists.

schematic transposition as an essential requirement in training. While the exercises in this chapter have been demonstrated with the major scale, various minor scales should be deployed as appropriate, and stylistic variation involving more complicated and idiomatic scales can be combined, including forms commonly used in jazz and blues. Further research can be done into the possibilities of deploying intervallic suspensions within these styles.

In terms of required elements in graded training: scale, chord and interval drill should have an integrated creative component, in addition to rote practice of existing models, and this element should extend to exam requirements. While the focus of this paper has been of the beginner exercises with beginner schemata, further research should address the challenge of integrating improvised schema practice into pre-existing educational structures. This is not a task to be accomplished quickly, but as an example, below is a sample model for a graded curriculum of introduction for the cadence sequence and the Rule of the Octave, the first models taught in partimento instruction. Conservatory training in classical music is commonly organized in a series of graded exams.[178] Each of these grades has required technical elements such as intervals, chords, scales, etc., but these are commonly listed and tested as discrete elements, rather than being embedded in schemata. Taking a ten-grade model as an example, the following table sets out a proposed sequence for integrating the cadences and RO into graded studies:

[178] The Associated Board of the Royal Schools of Music (ABRSM) and the Australian Music Examinations Board (AMEB) have eight grades, followed by an associate diploma. Canada's Royal Conservatory of Music has ten grades, as do the U.S. Certified Music Exams (USMCE), which partners with Conservatory Canada, another Canadian music examination program.

Table 5.2. Cadence Sequence and Rule of the Octave in ten grade curriculum.

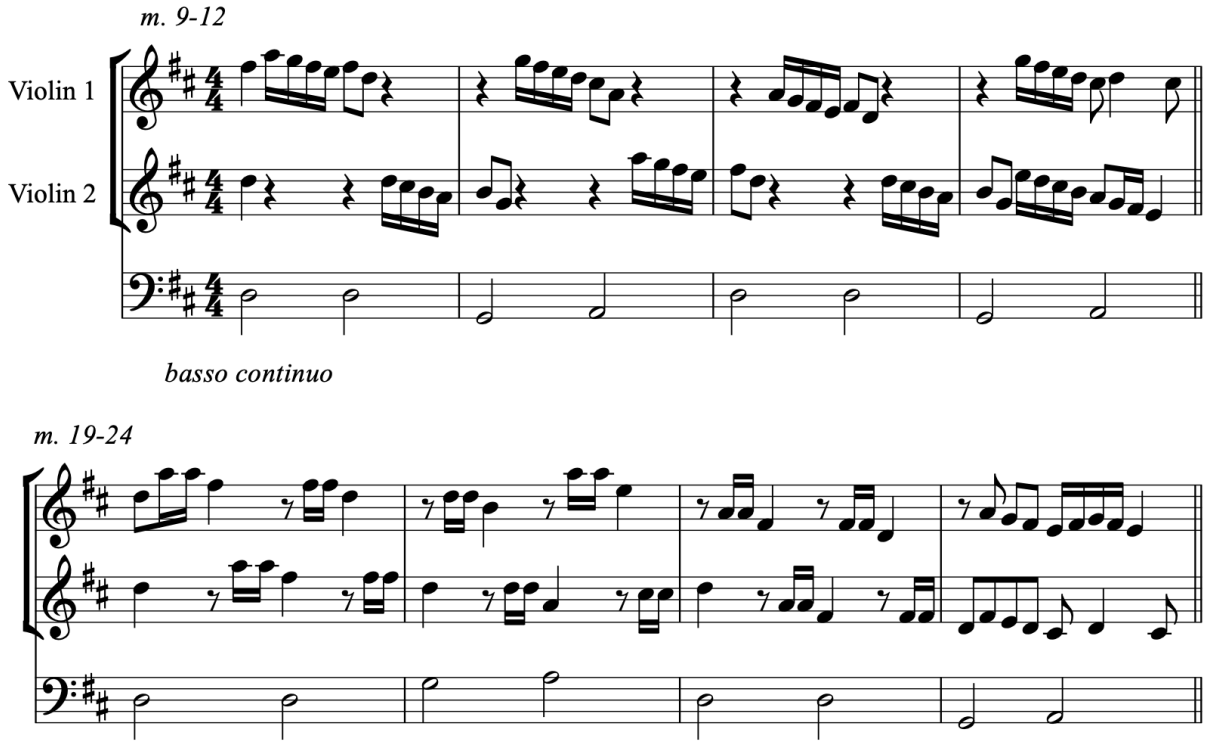
Grade	Function	Keys	Structure
1	Cadence sequence (PCS)	C major, G major, F major	Two voices
2	PCS	A minor, E minor, D minor	Two voices
3	PCS	D major, B minor, Bb major, G minor	Two voices
4	PCS, Bergamasca (fourth scale degree in bass)	A major, F# minor, Eb major, C minor	Two voices
5	PCS/Bergamasca Rule of the Octave (RO)	PCS/Bergamasca: E major, C# minor Ab major, F minor RO: C major, G major, F major	PCS/Bergamasca – three voices RO – two voices
6	PCS/Bergamasca RO	PCS/Bergamasca: B major, G# minor, Db major, Bb minor RO: A minor, E minor, D minor	PCS/Bergamasca – three voices RO – two voices
7	PCS/Bergamasca RO	PCS/Bergamasca: F# major, D# minor, Gb major, Eb minor RO: D major, B minor, Bb major, G minor, A major, F# minor, Eb major, C minor	PCS/Bergamasca – four voices RO – three voices
8	PCS/Bergamasca RO	PCS/Bergamasca: C# major, A# minor, Cb major, Ab minor RO: A major, F# minor, Eb major, C minor, E major, C# minor, Eb major, C minor	PCS/Bergamasca – four voices RO – three voices
9	PCS/Bergamasca RO	PCS/Bergamasca: all major and minor keys RO: B major, G# minor, Db major, Bb minor, F# major, D# minor, Gb major, Eb minor	All schemata four voices
10	PCS/Bergamasca RO	PCS/Bergamasca: all major and minor keys RO: C# major, A# minor, Cb major, Ab minor	All schemata four voices

Of course, this basic guideline can be expanded to include other schemata, including those proposed by Gjerdingen and others. Other possibilities include the introduction of ground-bass sequences such as the *Romanesca*, *Folia*, *Passamezzo Moderno* and *Passamezzo Antico*, all

of which, like the *Bergamasca*, provided the structure for many professional compositions.[179] While specific references to ground-bass models are rare in partimento documents, bass motions that resembled the older grounds still appeared in eighteenth century compositions.[180] Expanding this area of beginner training also creates the possibility of cross-referencing schemata with repertoire, integrating score interpretation with improvised variation. This approach is already common in Early Music performance, but has not yet been integrated into general exam requirements in classical training. To take one example among a legion of compositions, Uccellini's popular *La Bergamasca* – popular in Early Music circles, anyhow – has instances of dialogue between two different instruments above a ground, providing examples and possible material for group improvisation in which two players/singers can trade phrases (Figure 5.52).

[179] Erhardt (2014) is illustrated with multiple examples from compositions from the sixteenth through to the eighteenth century, from Attaignant and Ortiz, through to Caccini and Rossi, Muffant, Pachelbel and Biber. See also Rebours and Boquet (2007, 56).
[180] The exploration of the "Morte" in Rice (2015) demonstrates the bridges between eighteenth century composition and the older ground-bass ciacconas and passacaglias.

Figure 5.52. Uccellini, *Aria Sopra La Bergamasca* (1642), m. 9-12 and 19-24.



In performance, we assess improvisors by the exceptional and unique quality of their work. The ability to surprise is often valued highly by aficionados of improvisation, who scorn predictability and cliché. But approaching improvisational skill-building in this spirit can be a trap. A great deal of work is necessary to train musicians to a level at which any flight of originality conceived in the mind is instantly translatable to the hands or voice. It requires drill in which the predictable is not only experienced but fully explored, if for no other reason than to extend inventiveness beyond predictability. Within a session of variation and imitation, teachers are modelling not just sounds to be imitated, but a process of listening to and assessing what you are playing, as you are playing it; Pressing's "event interpretation" and "decision-making" combined (Pressing 1998, 51). It is more useful that variations be thorough and systematic than

novel. Just as sequential variation is one of the core characteristics of the combination of the three cadenzas, a sequential approach to improvised variants can be part of the process of teaching, learning and developing students' abilities. Teachers can use the experience of having played one variation – possibly even several times – to lead to another related variation. Students will eventually understand that assessing previously executed material is a musical technique in its own right. Beginner improvisors may prize speed over simplicity, or create random melodic gestures that lack motivic unity. Both speed and elements of randomness have their place in musical creation. But at this level the process is not about creation for its own sake; it is about creation in the service of building the analytical and aesthetic skill of musical observation – enacted in real time, as it must be in improvised performance and practice.

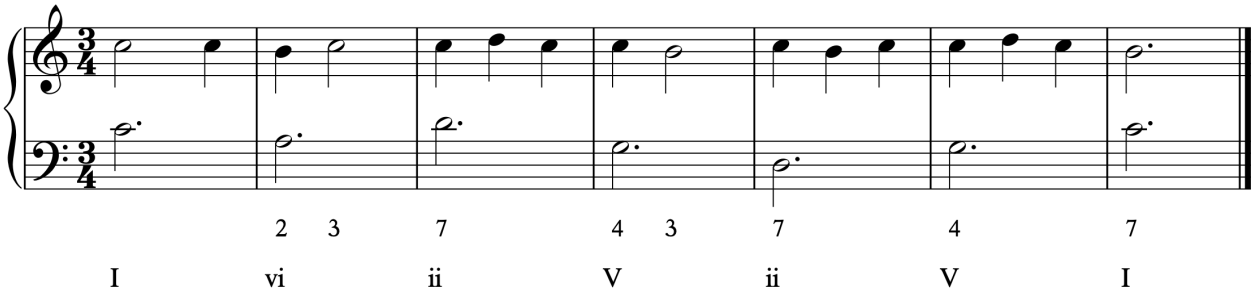
The sequential nature of the cadences, combined with their simplicity of form and execution, makes it clear that even the most basic exercises can combine elements of metre, rhythm, harmony, and melody in a way that allows the exercise to sound like an utterance that the student will recognize as possessing the narrative quality – Azzara's "musical *stories*" – of actual music. Partimento models share this narrative quality with songs, which are the principal models through which musical forms and customs are disseminated in non-institutional learning in North America. Some improvisation training begins with pentatonic scales or stationary bass ostinatos, excising both semitones and bass movement, in an effort to simplify musical textures. But the absence of the semitone interval removes a crucial sound from the area of beginner training; and a lack of exercises including it are a missed opportunity in aural skills training and improvisation training. These cadences introduce clear demonstrations of movable bass and semitone use, in simple forms manageable by beginners. This is not to state that isolated musical elements, pentatonic scales and static basses cannot be part of beginner music training; it is

rather to encourage teachers to not be afraid to move beyond these, to elements that might currently be considered intermediate or advanced.

All the examples in this chapter, the six-point group of elements set out by Azzara and Snell, and the added elements suggest above, can be pared down to the following suggestion, which I want to emphasize as a key element of this dissertation: drill variations on complete contrapuntal schemata in multiple keys. “Complete” in this sense means a model that has a clear and discrete beginning, middle and end, according to standard perceptions of musical form and tonal completeness; and that has treble and bass parameters that clearly illustrate contrapuntal structure and foster contrapuntal awareness. And while a new – or rather, old – approach to suspensions in modern training requires some alterations to current pedagogical custom, none of the above is so incompatible as to require a radical break with modern curricula. The “cadenza fiesta” set out in chapter three, or a comparable version of the sequence, can be combined and integrated with current chord-based approaches to cadence nomenclature, should teachers wish to retain chord-sequence designations such as plagal, imperfect, etc. It can be combined with the modern terminology for the tonic-dominant chord sequence, such as PAC and IAC. It can also be integrated into the type of beginner training that focuses on pentatonic scales as the central group of introductory pitches, often with a tonic pedal ostinato note; when the full scale and additional bass notes are introduced, it is a simple matter to factor in exercises that demonstrate suspensions with more deliberate intention than is currently practiced. In jazz training, beginner harmonic schemata, such as the standard I-vi-ii7-V7-I7 chord sequence, can also be adapted to two-part

textures that introduce basic elements of jazz harmony while integrating elements of suspension pedagogy[181] (Figure 5.53).

Figure 5.53 – Standard jazz bass motion with suspensions in treble voice



This chapter concludes by noting the three-cadence sequence demonstrates a model of compositional form that can be found in many style areas within western classical and popular music:

- The high voice attracts the listener's attention, and will be is perceived as the chief point of interest in a musical passage;
- The higher voices are cognitively contextualized in relation to the lower voice;
- The lower voice moves at a slower rate of change than the higher voices.

Substitute "underlying chord" and "melody" for "lower voice" and "higher voice," and a two-voice version of the CC provides us with a simple example of common musical structure. Of course, there are many ways in which this method of musical organization can be introduced; but it would be difficult to find a more concise model for introducing this approach to musical organization than a two-voice version of the Neapolitan cadence sequence. In the final chapter

[181] A contrapuntal approach to harmonic elements in jazz theory has been explored in Stover (2018). See also Terefenko (2014).

we will conclude by taking note of further aesthetic concepts that the three cadences can both demonstrate and represent.

Chapter Six: Conclusion – an unstated aesthetic in two notes

In summary, the main points raised in this dissertation are as follows:

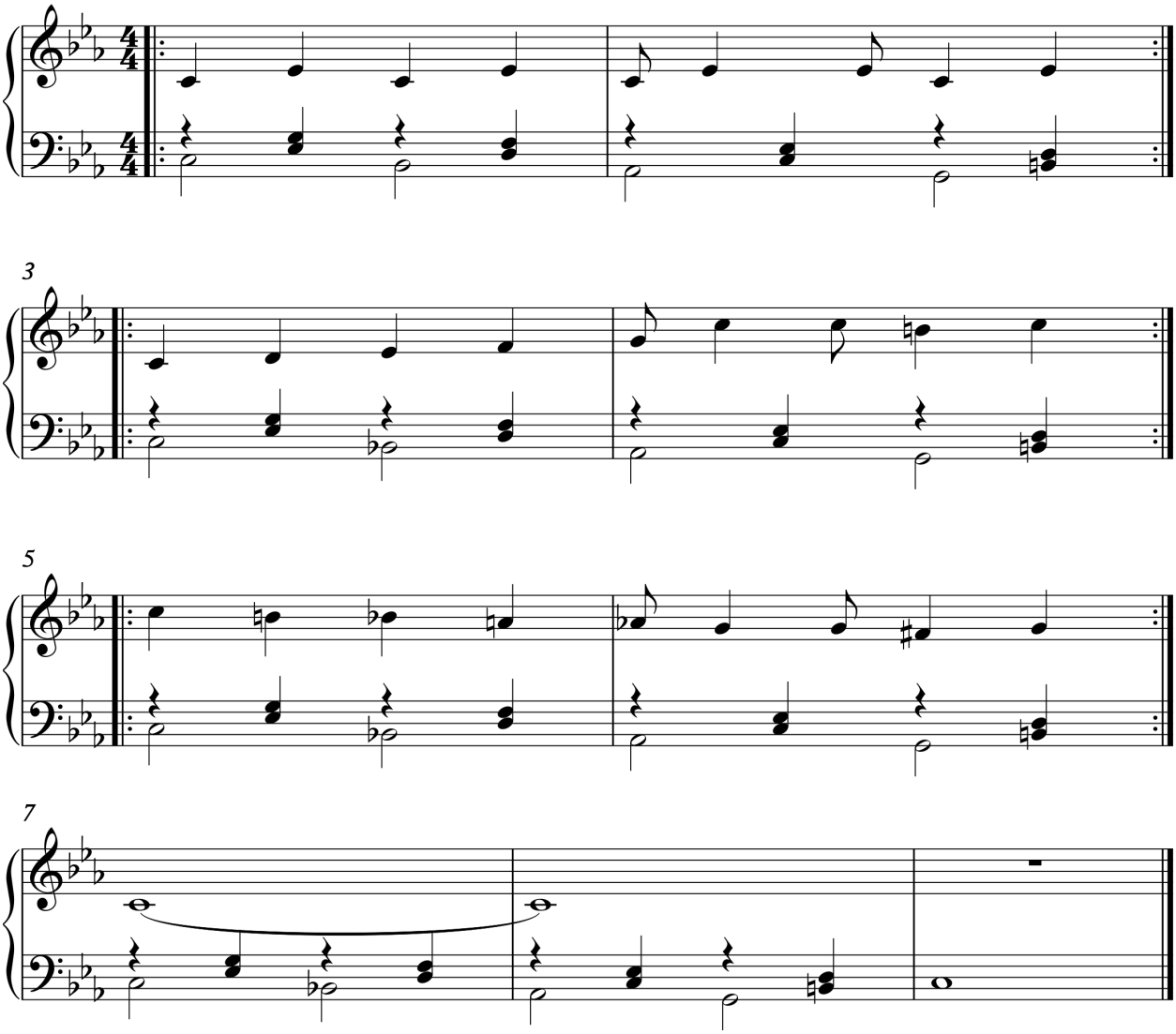
- in past centuries music instruction included cadences identified by the nature of their contrapuntal bass-treble interaction, as well as their harmonic character;
- at present there are no comparable schemata in standard beginner music instruction;
- there is a history of music writing and pedagogy that identifies intervallic suspension as an important element in both musical composition and aural skills training;
- modern music cognition research reinforces the importance of the emotional and psychological effects of intervallic suspensions, as deployed in tonal composition;
- there are many pedagogical possibilities for schemata deploying intervallic suspension to be used as tools for improvisatory practice, and in the introduction of essential technical elements in music training;
- intervallic suspensions and dissonances appear in many different types of modern popular music, in the form of accented non-chord tones as well as suspended 4-3 chords, making their pedagogical use applicable to a range of musical styles.

The focus on intervallic suspension in this dissertation arose for two reasons. First, the cadences used in partimento training, which are defined by intervallic suspensions, have not attracted a great deal of attention in partimento research. Second, my own research confirmed the degree to which suspended intervals are haphazardly addressed in modern training, in such notable contrast to the efficient way that beginner partimento training grouped and illustrated

them. The dissertation, which had begun with the intention of exploring many different schemata – some borrowed from Gjerdingen, others taken from ground-bass literature – instead became increasingly canalized toward an exclusive focus on these cadences. This focus resulted in an odd occurrence that took place towards the end of the writing: I had my own memory of a formative musical experience involving intervallic suspensions. My youthful music training involved being verbally abused (and having my small fingers manhandled) by my piano teacher for not being able to correctly execute Toronto Royal Conservatory of Music scores. This went on for several years, until I rebelled and refused to return to her studio, demanding instead to take up guitar, an instrument that I learned sufficiently well to provide an entry into professional employment.[182] But my own learning, as distinct from private lessons, withstood the dysfunctional methodology of my early instructor, and I never gave up playing piano. Unlike too many children comparably maltreated who stop playing music altogether, I played constantly, repeating patterns that I had either figured out alone, or had been taught by older children. My approach to practicing resembled something similar to partimento drill. Over and over, I played simple sequences on the piano, schemata that I found more satisfying than a weekly assignment of the dull repertoire in children's beginner piano instruction books. No music teacher actually taught me the two-measure sequence ground-bass sequence below; an older child was playing it, and at some point I must have asked him to demonstrate it to me. My recollection is he played a set of melodic variations over it, of which I can recall only the following fragments (Figure 6.1):

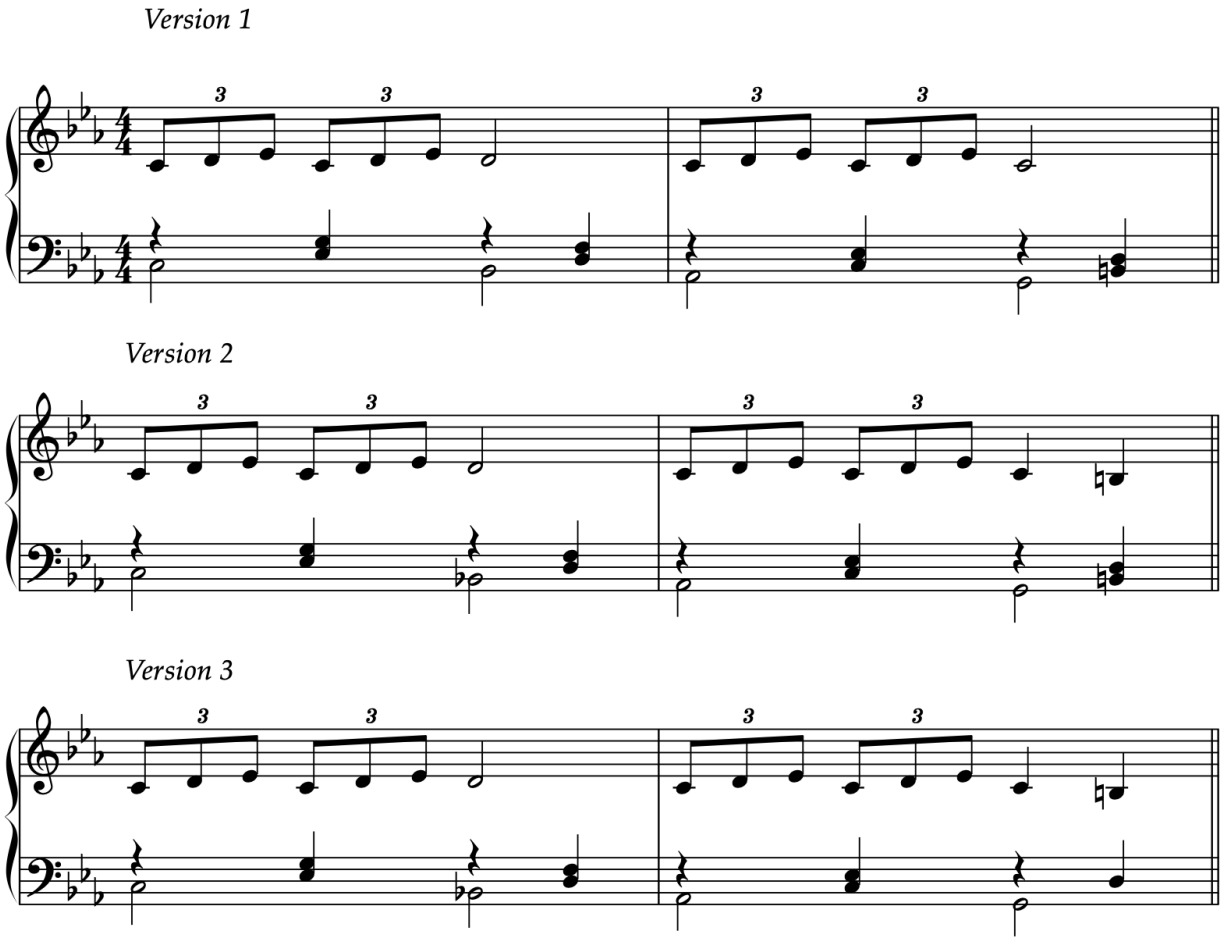
[182] Ironically, I eventually undertook multiple Royal Conservatory exams in classical guitar, voice and piano, both enjoying the music and finding the exam strictures helpful for building technique and learning repertoire according to a set schedule. I also pursued a concurrent, more free-wheeling education in rock, rhythm and blues, and folk music. I learned this repertoire by ear, and taught myself lead guitar by playing along recordings, as well as jamming with older blues and folk musicians. Early in my training, it was clear to me that vernacular music learning addressed technical and creative elements that the RCM system ignored, but that there was also value in the skills required in RCM exams. I regarded these two areas of musical learning as complementary, rather than exclusive or oppositional, and I was fortunate to have teachers who were sufficiently open-minded to not insist that one path be chosen to the exclusion of the other.

Figure 6.1. Passacaglia.



I recall playing this *passacaglia piccola* incessantly. Either this older child also taught me the following short variation, or some point I came up with it myself (Figure 6.2).

Figure 6.2. The Stein.



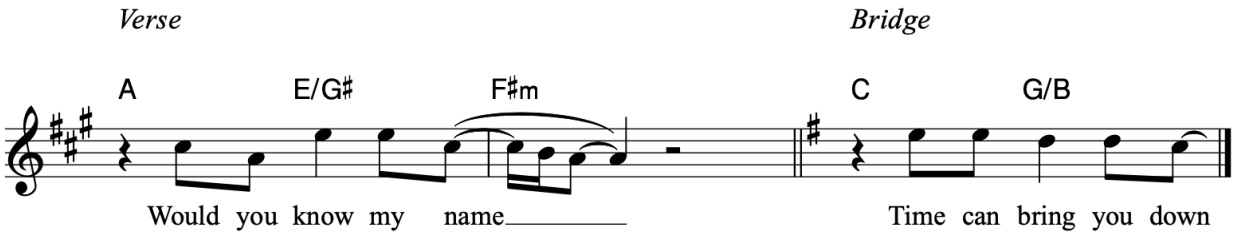
The melody line of version 1 is an interpolation of a simple melodic cell: 1-2-1, or *do-re-do*. For some time, this melodic fragment was satisfying to my ears as a self-contained composition, and I played this two-measure sequence for months, possibly even years (when I sang the melody for my sister and father, they both gave groans of weary recognition). At some point, I began to notice that the descending bass line underpinning the melody created a dissonant moment in measure 2, through the juxtaposition of the C in the treble on beat 3 against the B in the bass chord one beat 4. Of course, I had no concept of what dissonance was, and would not have been able to define it, or identify what musical elements created it. But I had

heard enough music to have become used to the multistylistic parameter of melody notes corresponding to the notes of an underlying chord, and the proximity of the treble C4 to the bass B2 registered to me as a less stable, and therefore cognitively unsatisfactory, element. At the time, I would have only been able to describe it the words of Sesame Street: "one of these things is not like the other/one of these things just doesn't belong." The sound did not trouble me consciously, but it clearly registered in my brain as a challenge to be solved, because at some point – I have no idea when – I altered the melody to make it correlate with the underlying chord, resulting in version 2. At a further point, I also noticed the sonic imbalance created by having the B doubled in the bass and treble, and removed the lower doubling, illustrated in version 3. This sequence of alterations occurred before I had acquired any declarative knowledge about harmony, melodic and harmonic structure, the concept of a leading tone or voice leading protocols.

Having experienced how the sound and character of a melody note altered with a change in the bass, I formed the habit of perceiving music as a dialogue between higher and lower pitches – most often, melody and underlying harmony. It's a mode of listening that I continue to rely on to this day. It became a standard procedure to identify the precise elements of bass and treble juxtaposition according to a simple assessment: is the melodic note consonant with the bass, according to standard major and minor chord formations; if so, which note of the chord is sounding; if not, what is the chord note in closest proximity that the melody is moving towards? As my ability to read music increased, and as I accrued understanding of note function, chord construction and standard harmonic structures, this growing procedural knowledge combined with the sonic memory of years of learning songs by ear, singing while accompanying myself on piano and guitar. It became a regular habit to associate interval combinations and bass/treble

relationships with the scale patterns and chord formations I had learned on the two instruments, and to begin to connect them to the iconography of music notation. It was increasingly quick work to associate visual representations of interval relationships in musical notation with the memory of chord configurations on piano and guitar. Often, when listening for a melody to play, notate and assign chords to, I would create a mental picture of a musical score, guitar fretboard, or piano keyboard – the three became interchangeable – and visualize the sounds being executed in one or more of these three mediums. If a song moved from one key to another, my first act would be to assess the nature of the melodic note above the chord, and construct a mental picture of what the necessary harmonic support would be. For instance, Eric Clapton's "Tears in Heaven" is in the key of A major, with a bridge that shifts to G major before transitioning back to the original key (Figure 6.3). The melody of the bridge begins on an E4, harmonized with a C major chord (IV in the new key). Having heard the E4 sung several times in the chorus, I could distinguish between its function as scale degree 5 in A major, and scale degree 3 in the context of a C major chord. Theoretical knowledge allowed me to understand this; but years of playing standard A and C chords on the guitar, both of which have E4 as the highest note, were part of a memory database that I could refer to.

Figure 6.3. Tears in Heaven.



I have no precise memory of the first time I attempted the musical challenge mentioned in the first chapter – accompanying *Happy Birthday* – but the mental process involved was likely similar to the above processes. When listening to the first three notes of this song, the first piece of information I would have noticed was that these were not scale degrees 1-2-1 – a easy trap to fall into with *Happy Birthday*, especially if you have been given the unreliable advice that first note of a given melody is most likely the tonic – but instead 5-6-5. This was possible because of years of observation, leading to familiarity, of the sound of scale degree 5 above a tonic, and the sound of the upper neighbour 6. At this point I would assign these two notes to any key that I chose – guitar players are generally more comfortable in sharp keys such as E, A and D major. Having played both chords and scales in those keys, if I imagined these notes as B and C#, I would be able to correlate them with scale degrees 5 and 6 and play the appropriate E major chord to harmonize them. Having played this chord hundreds, even thousands of times, I could recall the sound a B above an E chord – or rather, scale degree 5 above a tonic – as having a distinct sound and character. The process would have continued with the rest of the song, with each note identified as a particular scale degree with a corresponding simple harmony. Every element of the sound was recalled as relating to the songs I had played or composed. Having identified scale degree, function and the appropriate harmonic accompaniment, it became increasingly easy work to transpose these elements into any key, and to be prepared in any number of situations in which *Happy Birthday* – and eventually, more complex and better-paying pieces of music – might be called for, and select appropriate keys accordingly. Having learned that harmonic relationships between chords were transferable by the process of transposition, I made it standard practice to put songs in keys that suited my voice, a skill that became very useful as I began to work as an accompanist for other singers. When presented with a melodic

line, perhaps sung by a student in a song-writing exercise, I could quickly ascertain in what key the student was formulating a melodic fragment, and come up with different harmonic possibilities. How was I able to reference the correct chords for *Happy Birthday*? My kindergarten teacher was an adept pianist – piano skills used to be a standard teaching requirement in early childhood education – and I likely registered the standard harmonization of this song upon repeated classroom iterations for myself and my classmates. *Happy Birthday* is hardly anyone's idea of a masterwork, but it is likely one of the most well-known songs on the planet, guaranteed to be heard by most children several times a year, in moments of heightened intensity and concentration, from the time they are very young.

Confirmation bias is an elementary trap in argument and a siren lure in academic research; at the conclusion of a dissertation, it is likely unwise to mention a formative childhood experience that appears to support elements of your thesis. Considering that this paper is a work of advocacy, in mentioning the experiences above I run the risk that all the arguments mustered, and sources cited in the previous chapters, might be reduced to a simple formulation: this experience helped me in becoming a musician, and what worked for me will surely work for everyone else. So, I can only state that my encounter with this modern passacaglia was recollected only towards the end of the time during which this paper was written. It is only one of many formative musical experiences, and its recollection is at most an interesting coincidence, rather than a post facto justification for an entire dissertation. But my childhood experience of playing, hearing and ultimately attempting to solve the sound of an intervallic dissonance is hardly unique, in the sense that learning occurred via the experience of physical repetition. When I figure out songs by ear, I often automatically move my hands in patterns of piano or guitar chords, or melodic intervals that I have played thousands of times. Huron recollects:

> My childhood involved lots of music lessons and many thousands of hours of practice…Over the years, my auditory system was exposed to roughly a million instances of harmonic major thirds and a comparable number of melodic major thirds. Moreover, my exposure was not simply passive perception. My perception was linked to various motor activities. I was 'acting out' individual tones by moving individual fingers and 'acting out' chords by moving an entire hand. (Huron 2016, 192)[183]

I puzzled over the question that the dissonance in the "Stein" schema formed in my mind during a period of weeks or months. A controlled exercise assigned by a teacher, in which that element was explored creatively, might not require the amount of time that was necessary for me to figure it out on my own. A curriculum that incorporates dissonance training in children's music education can help expand an understanding of specific bass-treble intervallic juxtaposition, through both creative play and execution of existing repertoire. As stated earlier, it is my recommendation that the cadence sequence be reintroduced as a standard aspect of beginner training. The sooner a schema is introduced in training, the sooner it will become a point of reference and resource in later experiences and perceptions, especially if the experience of it involves creative, physical variation. But what cannot be verified, at this time, is the degree to which introducing this cadence sequence would improve music education. In the absence of observable data, it is impossible to assert that to deploy suspensions in the manner explored in chapter five could empirically guarantee an across-the-board improvement in aural and improvisational ability; and to amass this data is no quick or simple process. As Margulis points out, cognition research is a multi-year, multivalent project involving harvesting information from a variety of sources:

> Progress in the psychology of music occurs incrementally across dozens and dozens of projects. Often, limitations in one experiment can be addressed by running a new experiment that controls for a potential confound (another variable that might have been influencing the results) or operationalizes the topic in a new and more powerful way. This

[183] See also the acclaimed *Ways of the Hand,* (Sudnow 1978), for a description of the physical process involved in the understanding of sound and execution of improvised passages. The book was revised and republished in a 2003 edition.

> potential for progress across multiple studies helps the psychology of music drive toward deeper and deeper insight as a field, even though each individual study might contribute only a limited view. (Margulis 2018, 15)

From this perspective, one of the most useful aspects of this study may be in chapter four's conclusion that intervallic suspensions are haphazardly introduced and taught in current music training. A deliberate attempt to introduce intervallic suspensions as a standard introductory element in music training has potential to create data for the study of comparative test groups. There are already partimento/solfeggio derived education projects taking place, but it could be years before comparisons can be made between these new/old methods of training and other models currently in play.

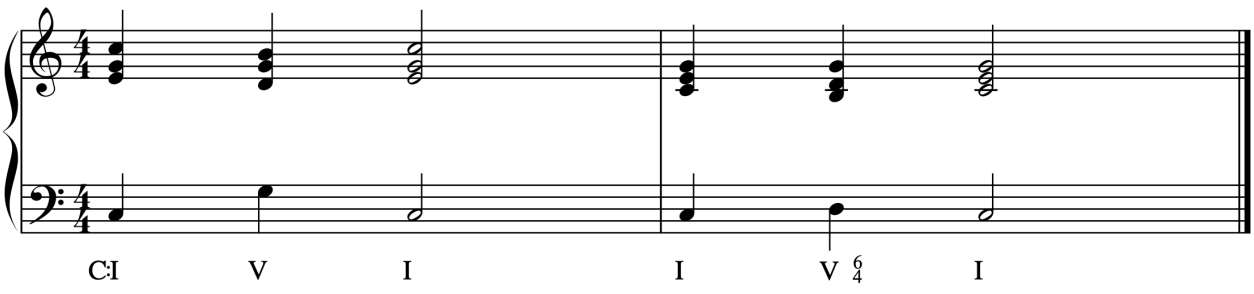
A long-term project comparing test groups undertaking early training, in which every element except intervallic suspensions is identical, or at least as close to identical as possible, could advance cognitive understanding and provide options for pedagogical initiatives. But the central concern of this paper is to contribute to current music pedagogy for classrooms and private studios. What further arguments can be made for the reintegration of suspensions in early training – more deliberately and systematically than is currently the practice – rather than waiting five, ten, or fifteen years for data to confirm that this is a useful course of action? The previous chapters have attempted to demonstrate that suspended intervals are small musical puzzles for the mind, the solving of which brings cognitive satisfaction. It should be obvious that we do ourselves no favours in children's education by withholding their pedagogical use and exploration until music students are teenagers or young adults. The exercises suggested above have demonstrated relatively simple methods of deploying the cadence sequence in specific technical areas of musical training. But these models also have other formal and aesthetic uses as well, and this dissertation will conclude by observing three final points.

First, an essential artistic parameter of the simple cadence, in its schematic form, is that it is an example of a melody with a pre-determined linear direction. The sequence 1-7-1 is a demonstration of ABA form; the parameters of the model require that scale degree 7 return to scale degree 1. The other two cadences are simple variations on the melody, but the linear goal of the tonic is the same in each schema. The variations on melodic cells found in ancient divisions treatises make it clear that part of the improvising musician's task has traditionally been to integrate spontaneous (if well-drilled) variations on an existing structure. Linear motion to a specific target note influences, and to some degree controls and dictates, the shape, trajectory and character of an improvised line. This model of melodic form has the potential to guide beginner improvisors to the creation of melodies in a different manner than the improvisation pedagogy sometimes found in beginner training. Commonly, students are enjoined to play a group of notes perceived to sonically "fit" with a specific harmonic background, which is the chord/melody, or chord/scale, model of organization. But when linear structure is neglected, the focus on "notes that work" harmonically may take too much precedence. This is the danger of the paint-roller, rather than a brush-stroke approach to sound: a group of note sequences that outline each part of a chord sequence, creating a generally pleasant-sounding sonic aggregate, but lacking a distinct melodic character, linear direction, or sense of tension and surprise. Hal Crook, a long-time professor at the Berklee School of Music, notes that improvising "on chords with chord scales means that a soloist can play melody notes that he or she does not recognize or cannot identify and control by ear. This can result in wandering, shapeless, directionless, or mechanical-sounding melody lines." (Crook 2008)[184]

[184] From "Chord-Tone vs. Chord-Scale Soloing by Professor Hal Crook," originally on a Berklee School of Music website page, now removed from website. Originally accessed January 2021. Internet archive:

Solfeggio/partimento examples demonstrate that the creation of Galant melody requires a near-constant awareness of treble/bass interaction and traditional voice leading protocols, and it is these elements that can be overlooked in some modern attempts at creative training. Written music theory exercises occasionally require students to compose a "classical" melody without training them to understand the role of counterpoint in the compositional process. Requiring that students hone their ears to be able to hear and identify the parameters of specific intervallic relationships between bass and treble, as well as internalizing the concept of linear direction and following the most basic of voice leading protocols – the avoidance of parallel fifths and octaves – can help students move beyond an incomplete focus on melody alone. One example of this process will suffice here. In partimento training, the second model taught after the cadences was the Rule of the Octave. The bass motion in the first part of the model is from scale degrees to 1 to 2. From the point of view of Roman numeral analysis, this is essentially the same chord as the middle chord in the simple cadence (Figure 6.4). In chord/melody improvisation instruction, an improvised melody using notes that fit with both versions chord might be the only parameter students are asked to observe.

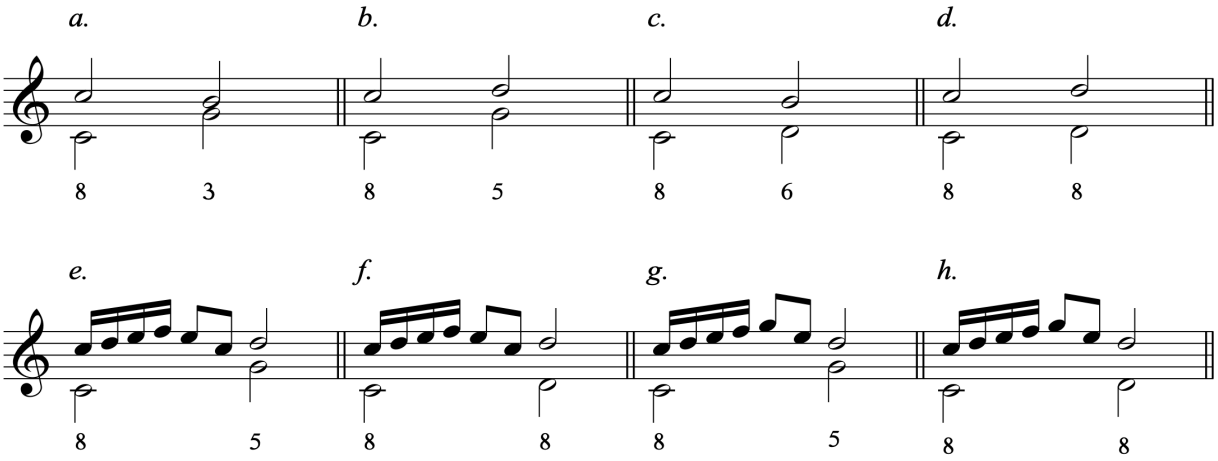
Figure 6.4. Cadenza Semplice and opening of the Rule of the Octave with Roman numerals.



https://web.archive.org/web/20110408160648/https://www.jazzguitar.be/forum/improvisation/14486-chord-tone-vs-chord-scale-soloing.html. For other discussions and critiques of improvisation pedagogy in jazz education, see Eitan (2014), Stover (2015), Goecke (2016).

A coherent melody can be composed over either chord; but when contrapuntal voice leading is factored in, and interaction between chord and melody is reduced to a two-voice texture, other challenges appear. The linear intervallic relationship between bass and treble emerges, unobscured by other notes, and horizontal voice leading protocols become more important. Below we can see what the options are for the creation of a line below this basic melodic cell (Figure 6.5). With the bass moving to 5, there two possible stepwise options: to scale degrees 7 or 2 (ex. 6.5a, 6.5b). However, the moment *Régle* bass motion is factored in, the option of moving to scale degree 2 in the treble is constrained. A melody line moving to scale degree 2 that will work with the CS (ex. 6.5c) will result is parallel octaves if the bass is moving stepwise ascending as with the Regle (ex. 6.5d). When the line includes smaller rhythmic values, the same problem occurs: a line that works with the CS will result in parallel octaves with *Régle* (ex. 6.5e, 6.5f). A possible solution might be to have the melody ascend to G5 – again, this works for the CS (ex. 6.5g) but even contrary motion in bass and treble does not solve the issue (ex. 6.5h). parallel motion has been avoided only on the most technical level. A line that approaches scale degree 2 from above will still result in the hollow sound of octave D's on a strong beat, which our ears are likely to connect to the perfect octave sounded two quarter-note beats earlier. The contrast between direct motion in the bass and the florid motion in the treble is not enough to escape the impression of stepwise octave motion. There is no avoiding it: when the bass ascends by stepwise motion, the most effective note to land on in beat 3 is scale degree 7.

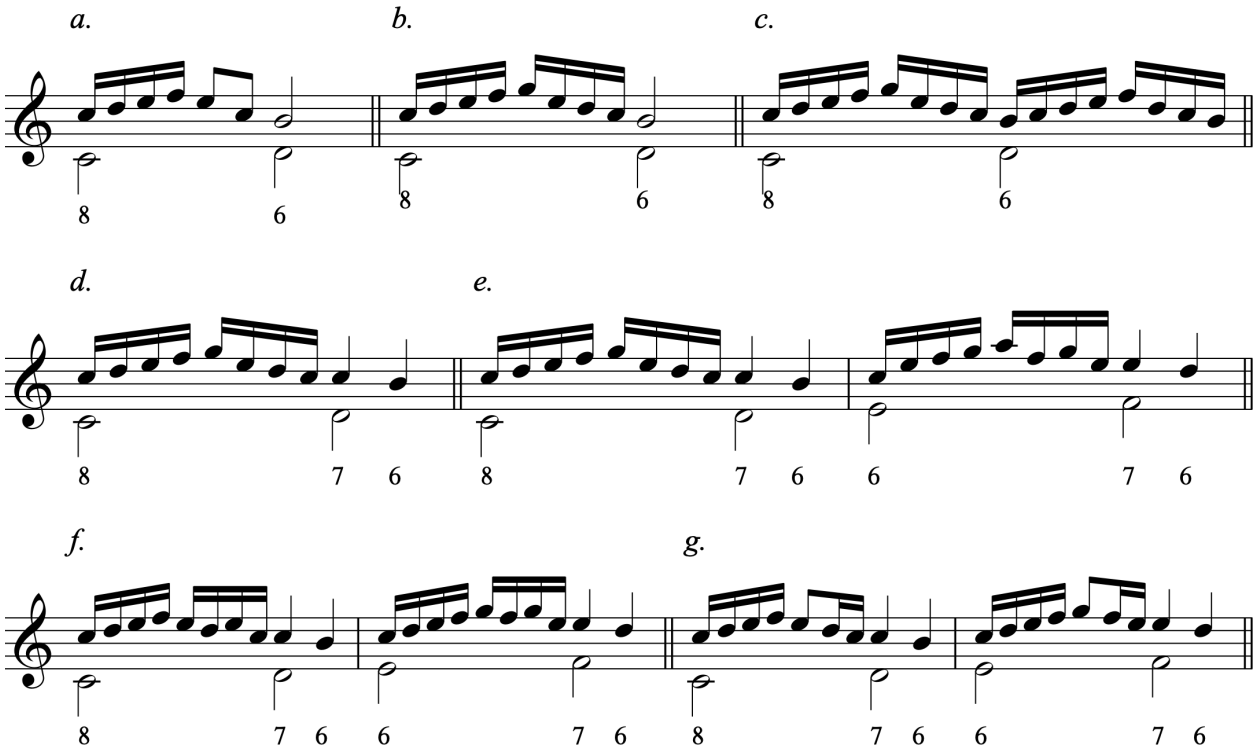
Figure 6.5. Simple Cadence and Rule of the Octave – melodic implications.



With the target note of the phrase now being scale degree 7, elements of the previous part of the line are subject to constraints of rhythmic division, if the line is to arrive at that target note at the moment selected. Different solutions can be found, through trial and error (Figure 6.6). The original melodic gesture from ex. 6.5 will work, with the target note altered to a B (ex. 6.6a). But if the line ascends to G5, then extra sixteenth note motion will be required to bring the melody to the B on beat 3. (ex. 6.6b) Of course, the melody is unfinished – the line unbalanced by busy rhythmic motion occurring in the first section of the bar, followed by a half-note sixth interval in the second section of the bar. An option, to balance out sonic activity, is to continue the sixteenth note motion (ex. 6.6c), but such a busy and mono-rhythmic phrase sets up an expectation of similar ongoing motion, with a possible frenetic character that may be difficult to sustain for the improvisor, and may become uninteresting for the listener. Instead we will add a 7-6 suspension (ex. 6.6d), a standard gambit with stepwise motion, and another of the important suspended intervals common in Neapolitan solfeggi, and taught in partimento realization. We now have a small two-part musical idea – rhythmic subdivision followed by intervallic

suspension – which distributes activity and tension equally throughout the line. For some sense of continuity, a comparable phrase should follow, with the 7-6 suspension now taking place the interval of a third higher than the first one, and the ascending bass being scale motion underpinning the melody. If we desire some sense of continuity, the sixteenth note motion in the second measure should incorporate a similar melodic contour to the previous measure (ex. 6.6e). In this example, the sixteenth notes are moving quickly, and are not likely to create noticeable dissonances with the bass; but in measure 2, if the A and F against the low E in beat 2 is not desirable, then different options are possible. One is to alter the first part of bar 1, saving the ascent to G 4 until m. 2 (ex. 6.6f). Another is to reduce the sixteenth note motion to create a less energetic but more stately line (ex. 6.6g).

Figure 6.6. Simple Cadence and Rule of the Octave – melodic implications in extended phrases.



The value of these cadences, and partimenti in general, is how well they demonstrate, rather than describe – show, rather than tell – profound musical concepts and methods of sonic organization. But only through drill and practice will these elements be fully explored and internalized. The role of the teacher of improvised contrapuntal bass/treble dialogue is to know the different options and possibilities inside out – or at least to have some sense of the structural parameters that lead to them – and to impart them to the student. The examples above are only a fraction of the many possibilities for two measures of an opening phrase, and the innumerable possibilities in Galant-derived improvisation and composition. Realistically, training to create melodies in a 250-year-old style is not going to be a desirable goal for many musicians. But drilling contrapuntal models can foster an awareness of bass/treble dialogue in many other musical styles, creating habits of listening that can be applied to many of the musical challenges listed in chapter one. Both melodic structure, phrase structure, and bass-treble organization in popular music continues to deploy musical structures that have served musical creation for hundreds of years. As we have seen, suspended notes in chord changes continue to be a useful element in popular composition. Another standard feature in popular songwriting is the descending stepwise bass line, with structural elements similar to the passacaglia I had drilled on the piano. Both diatonic and chromatic bass lines – Billy Joel's "Piano Man" (ex. 6.7) and The Left Banke's "Walk Away Renee" (ex. 6.8), for instance – are essential for creating phrases and organizing overall song structure. Popular composers continue to build songs around bass scale movement as a matter of course, and if you play enough repertoire from any point in popular music history of the twentieth century, you will absorb the skill and the schematic elements through drill and familiarity, not unlike the Neapolitan apprentices.

Figure 6.7. Piano Man.

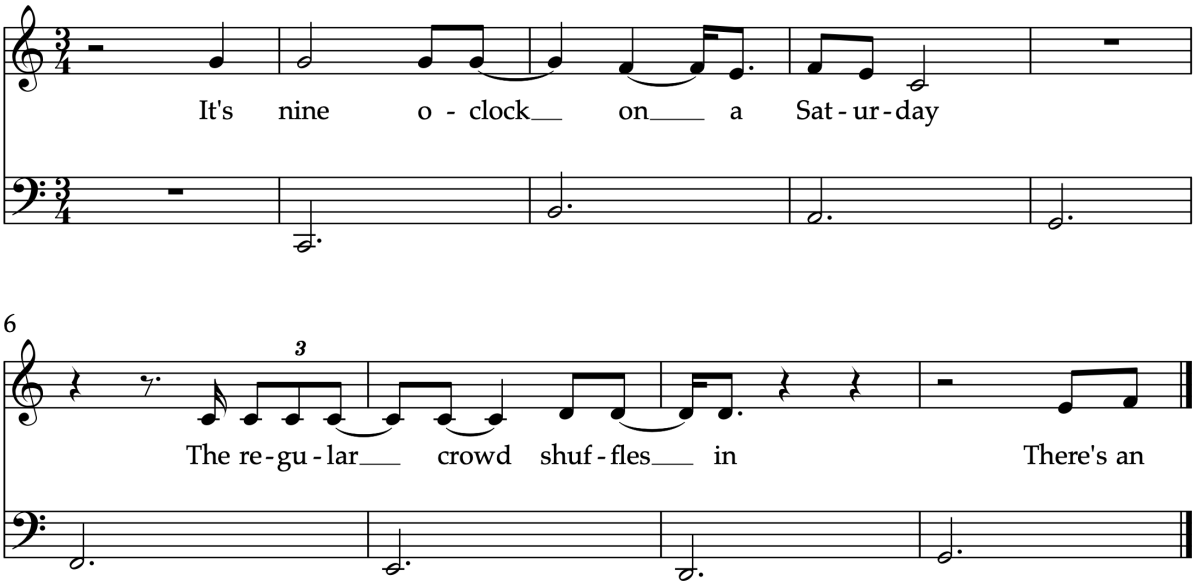
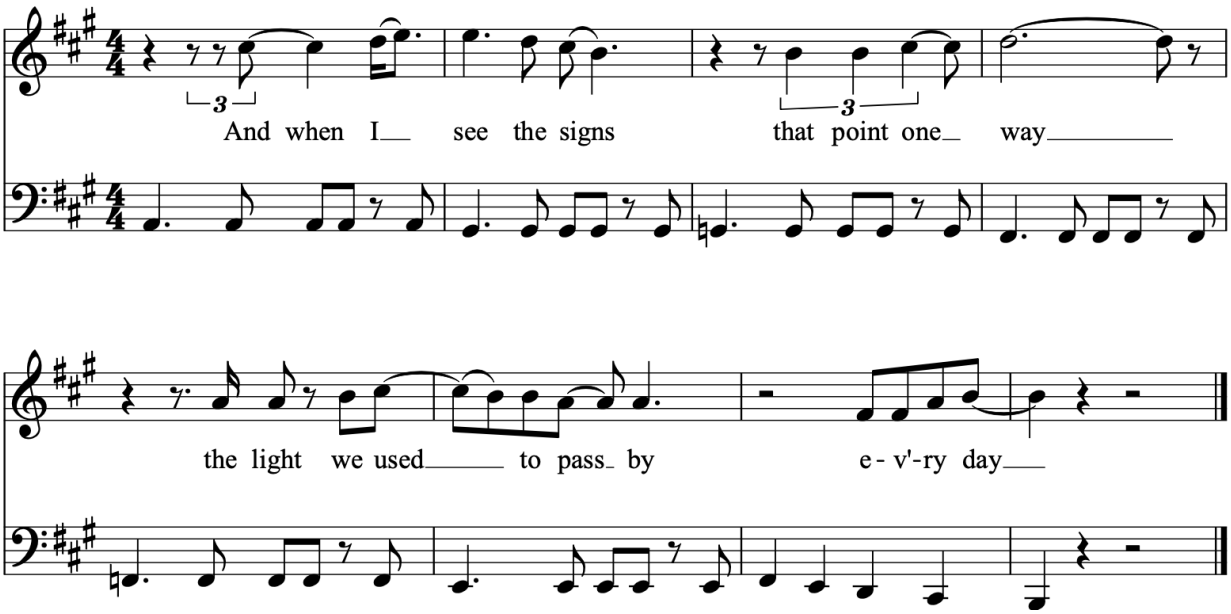


Figure 6.8. Walk Away Renee.



Secondly, the authors Sarath, Myer, and Campbell, of the CMS Manifesto, state the three main tenets of their proposals for curriculum reform as “creativity, diversity and integration.”

(Sarath 2017, 50) They advise against "surface change… through additive means" (Sarath 2017, 49), but recommend instead a "multi-tiered change protocol that surpasses in scope anything that came before it." (Sarath 2017, 83) The proposal in this paper is much less ambitious, but the manner in which these models were originally used is an example of integrated music training. Musicians sometimes opine that there is not always strong coordination of, and communication between, subject areas in institutional music training. Silos of music theory, history, performance, pedagogy, etc., all commonly have their own specialist teachers and curricular requirements, without much success at integration. But if both basic instrumental and vocal training is geared towards the goals of creatively varying schemata, in addition to score execution, integrative possibilities become stronger. Solfeggi, and the schemata embedded in them, were the locus of all study in the conservatories, drilled by all apprentices as vocal exercises before they were allowed to choose and specialize in instruments. To be able to improvise a coherent melody to a Bergamasca bass (or any other comparable ground-bass schema), both vocally and instrumentally, can address several different skill areas, especially when the melody is constructed with attention paid to contrapuntal voice leading protocols. Awareness of the intervallic relationship between bass and treble should first be an aural experience, but can be expanded to include specific intervallic identification, music notation, note function, transposition, and other technical elements. A historically sourced model such as the Bergamasca also allows us to draw on the work of centuries of composition, learning something of the history of musical style; but many classical schemata easily apply to popular music training as well. Bridging the gap between the past and the present, student musicians can feel themselves to be composers as well as interpreters; part of a tradition of creativity rather than an enactor-custodian of past works. Requiring that variations be sung as well as played

requires that singers gain creative proficiency on an instrument, and that instrumentalists do not neglect the skill of being able to sing. Cross-disciplinary study and use of schemata is integrative at the most basic level.

Finally, the 4-3 suspension functions as a simple illustration of the contingent nature of musical perception. Standard music training requires developing the skill of contextualizing music in relation to a central organizing tone. When musicians ask what key a composition is in, they are requesting information about how to formulate their perception of each note they will play or sing, based on the relationship of each note in the scale to this central tone. The process of intervallic suspension illustrates that that the very foundation of rootedness – the tonic note to which we ascribe a stable character, and which contextualizes our perception of every other note with which it is combined or juxtaposed – can easily be made to sound unstable by a contextualizing bass. This process demonstrates to us that the concept of the central stabilizing tone, so essential to shaping our response to sound, is only a mental framework, effortlessly altered by a simple musical gesture. No musical note, either on its own or in combination, has inherent or empirical qualities "but thinking makes it so." (Shakespeare circa 1601, 2.2.232)[185] In the Galant style, an uncompleted suspension would have been a breach of artistic and formal convention. But in a post-Galant world, in which both Romantic and Modernist composers did not just subvert, but made a concerted effort to alter or even destroy traditional norms, we can view the moment of cognitive destabilization in the suspension as a simple example of the artistic possibilities made possible by choosing to confound expectation, in a much larger sense than a brief rhythmic displacement of a consonant note. A child will find satisfaction in the resolution of a suspension: the things that briefly did not fit, now fit. The composer working with

[185] From *The Tragedy of Hamlet*.

familiar forms, asked to quickly compose for a television commercial, film soundtrack, or popular song, will readily deploy suspensions and resolutions, as a part of the creation of cultural products whose success depends on finding the balance between novelty and the fulfillment of expectations. But the composer looking to make their mark, to irritate or shock, to confuse or to challenge, may choose instead not to fulfill these expectations, and even to actively subvert them.

Huron makes the point that modernism's avant-garde aesthetic is often predicated on a thorough knowledge of standard structures, with the goal of composing music in which these elements – familiar cadences, meters, keys, etc. – is deliberately avoided.[186] Currently, musical artists are expected to critique as much as to reinforce societal norms. From this perspective, the conventions of intervallic suspension can be viewed as a question for modern musicians: what element in music is perceived and identified as secure and familiar, and what sonic gesture will confound this perception? The Neapolitan conservatory cadence sequence suggests that as soon as the basic organizational and cognitive premise of tonal consonance and stability had been demonstrated by the cadenza semplice, the most profound artistic lesson that compound and double cadences illustrated was not the pleasure of stability, but instead the necessity of disruption. The Galant style ultimately demanded tonal resolution; but before this occurred, musical training required finding the musical gesture that engaged their audience by impeding the structures that brought satisfaction, ultimately leading to a greater satisfaction when this impediment itself was removed – Zarlino's original observation regarding the effect of

[186] Huron argues that Wagner, Stravinsky and Schoenberg composed music that was "contra-cadential," "contra-metric" and "contra-tonal" respectively, in the sense that each composer deliberately created musical gestures that broke with standard models in the areas of cadence, meter and diatonic tonality. Using this formation, Galant improvisation can be seen as operating within a system of familiar schemata, and certain approaches to "free" improvisation can be seen as deliberately contra-schematic. (Huron 2016, 331-353)

suspended intervals on the listener. Did the Neapolitan maestros see the 4-3 suspension as a two-note shorthand for their aesthetic creed? The training of the Neapolitan *maestri* appears to have been rigorous and thorough, but rarely, if ever, introspective. No documentation from the conservatories has yet been discovered that indicates anything but a practical focus on technical skill. Their approach seems to have been: this is what works, so just learn what I have to teach and get the job done. But we do not need written records to gain insight into the core of their approach, because we have the story that this three-part sequence tells clearly: the simple cadence in which the sounds fit together comfortably, the compound cadence that demonstrated an impediment to that comfortable fit, and the double cadence in which the impediment is extended and developed before the final resolution. The Neapolitans' artistic values may not have been openly stated, but they were encoded in the simplest tools of their trade. From our modern perspective, the destabilization of the tonic, which is the core element of these models, can now be seen as an exhortation to the composer and improvisor to explore a simple but profound concept in composition, without which the creation of interesting music cannot take place: discover the sound that unmoors you from the mind's safe and familiar harbours, and sail into the archipelago of the uncharted to discover, explore, return and share your own journey.

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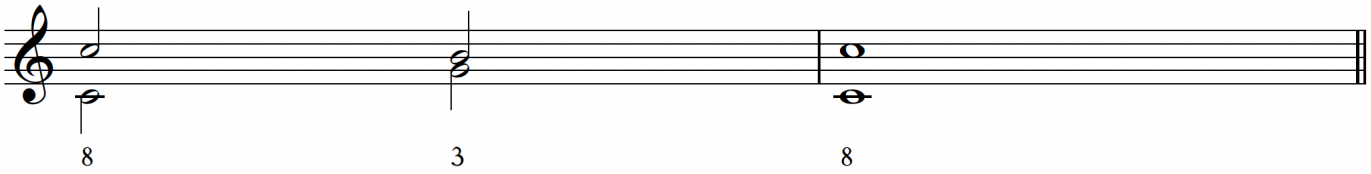
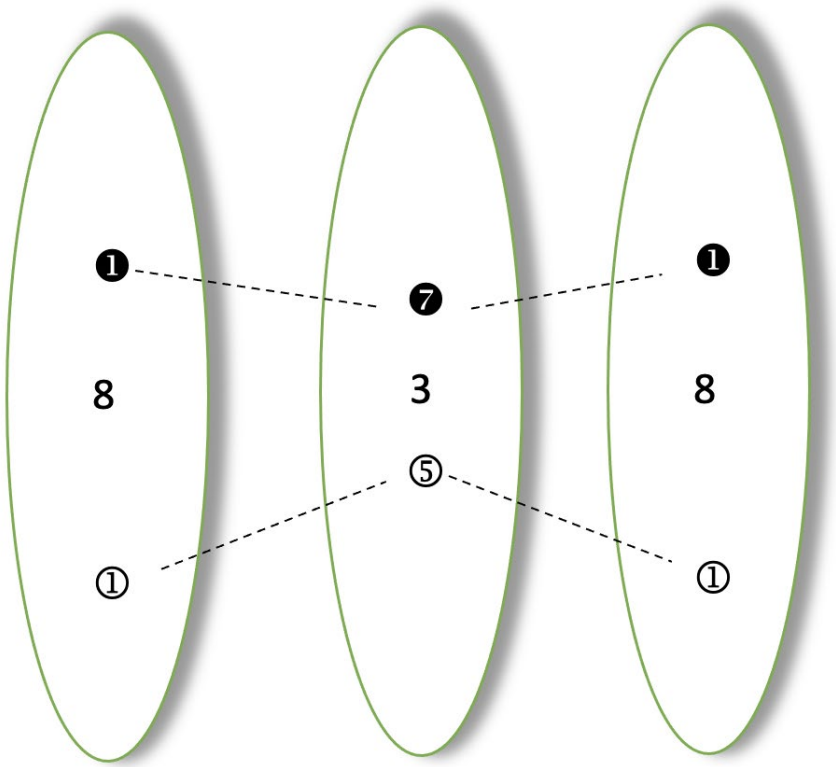
Appendices

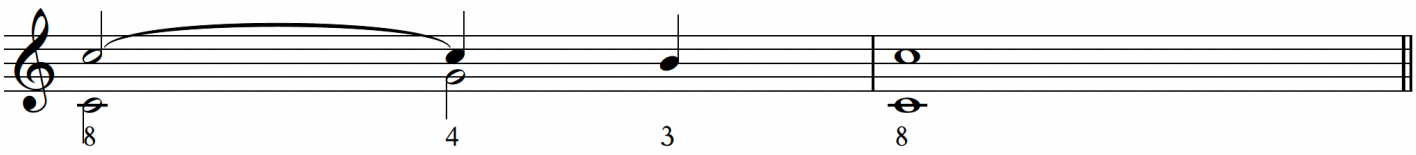
Appendix A: Cadences

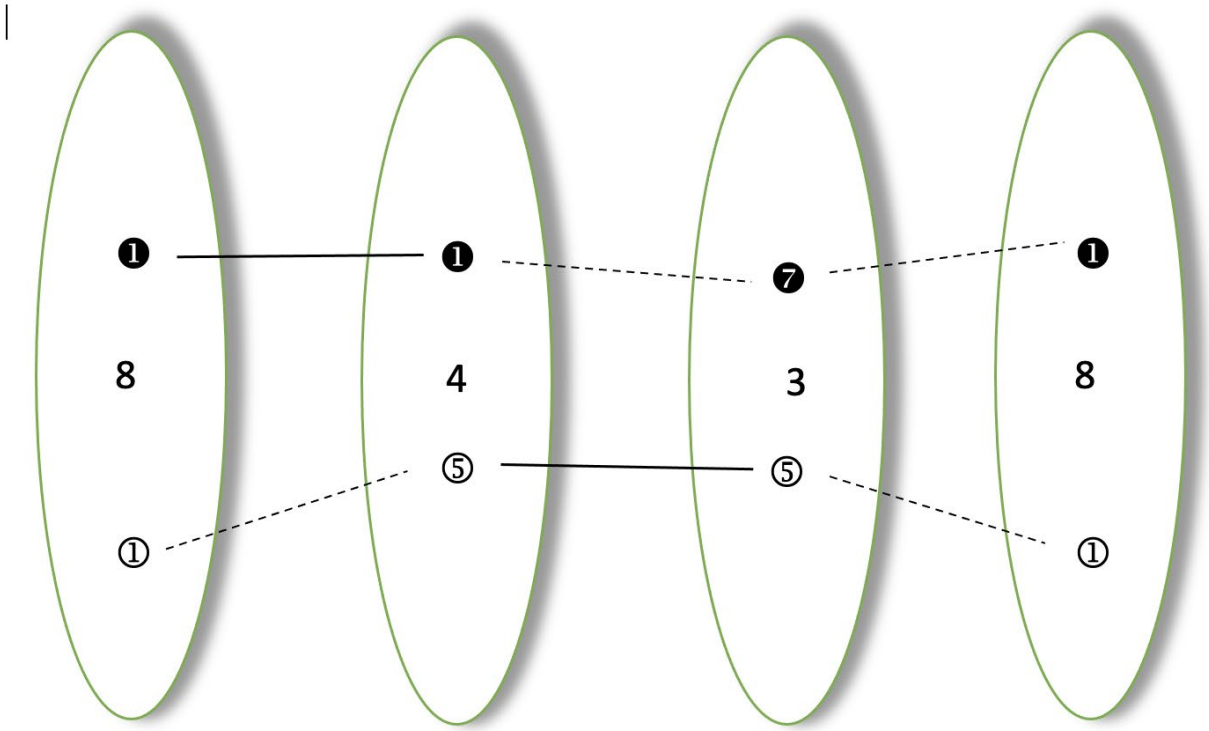
First Model: Cadenza Semplice (Simple Cadence)



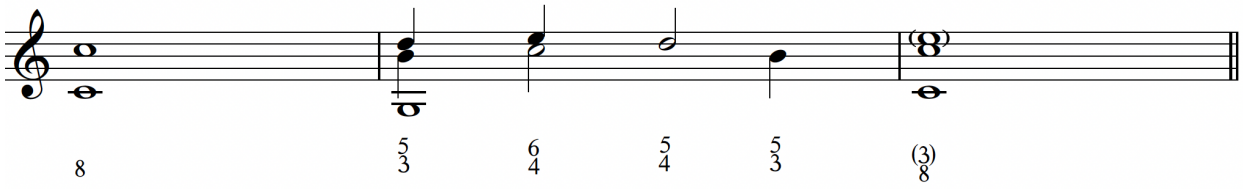


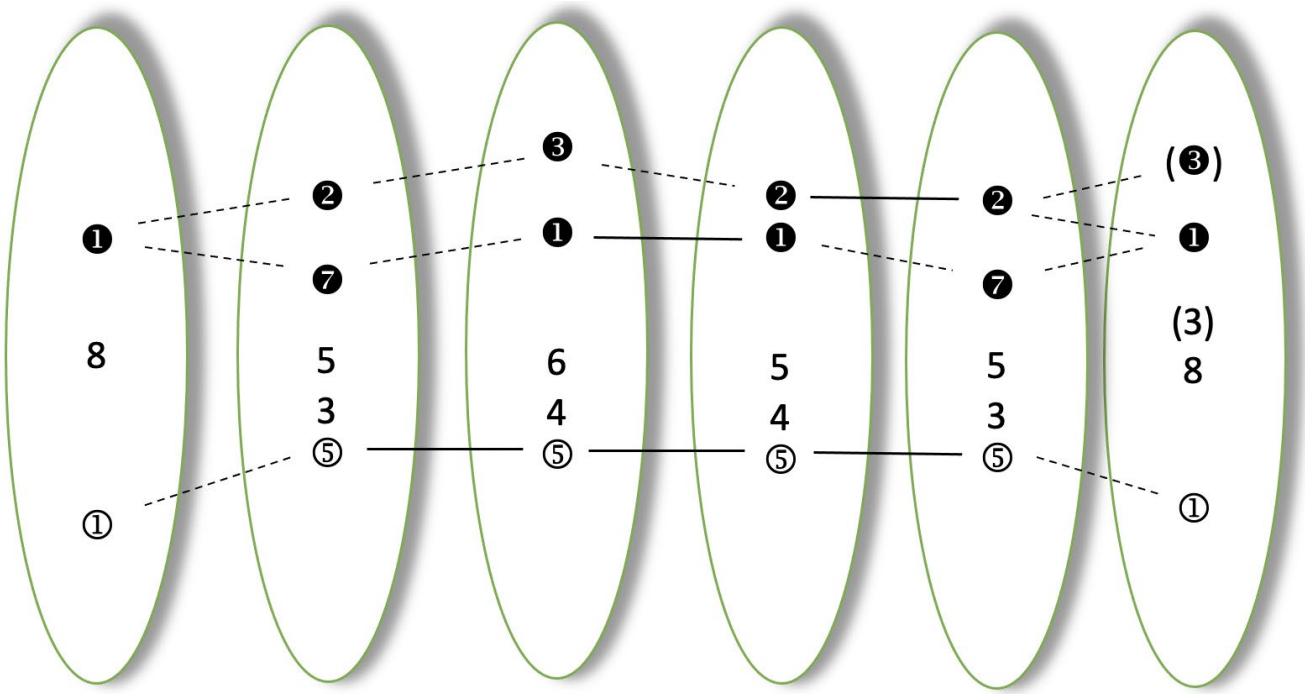
Second Model: Cadenza Composta (Compound Cadence)



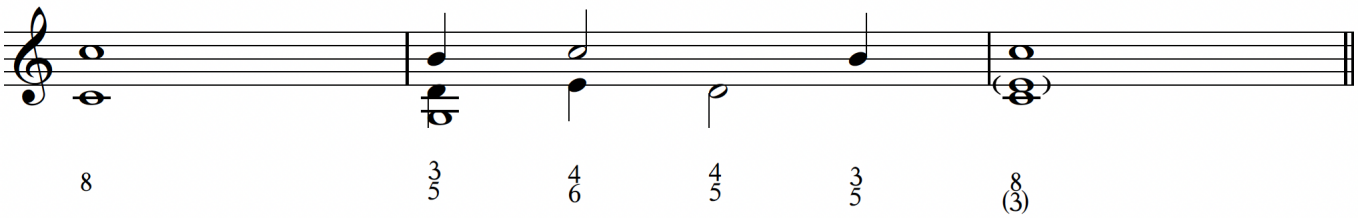


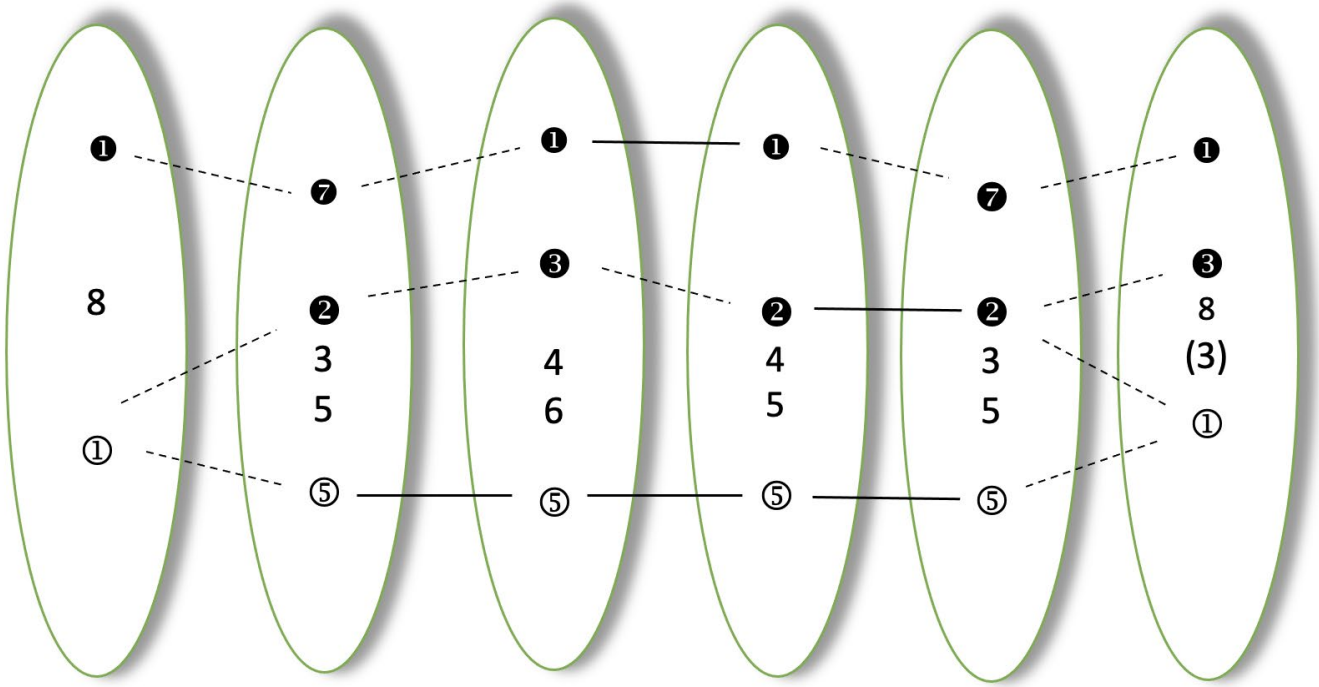
Third Model: Cadenza Doppia (Double Cadence)





Third Model: Cadenza Doppia – double cadence, inverted





Appendix B : 4-3 Suspensions in popular music

Below is a list of sixty-eight songs from a variety of different artists and style areas that make use of a suspended fourth above a dominant chord.

The majority of the examples contain a note in a prior chord that is made into a dissonance by a change in the bass. The note that becomes dissonant is embedded in standard diatonic pre-dominant chords: ii, ii7, IV, vi, and I. Minor chords are indicated by small case Roman numerals.

The basic parameter in the following examples is that the suspended note divides a larger metric unit in two; ie. lasting for half a measure, or one of two measures. In certain instances, the suspension lasts for three quarters of a unit, not just a half, but this is rare.

Some suspensions are embedded in a melodic line. Length of time spent on the dominant chord or bass note indicates that the suspension is structural rather than only a melodic interpolation.

Examples noted are the first occurrence in each clip; other instances may occur later in each song.

The table below includes:

- the first appearance of suspended interval in the recording
- location of the suspension, melody or accompaniment, instrumentation
- YouTube link to an audio recording
- notes
- the chord that precedes the section containing the suspension.

Artist/Source – Title **First appearance of suspended interval in recording** **Melody, accompaniment, instrumentation** **Video Link** **Notes**	**Chord preceding dominant chord (V) and suspended fourth interval**
Bachman Turner Overdrive – *Roll On Down The Highway* 0:25 – inner voice in guitar, prepared in same voice https://www.youtube.com/watch?v=tIJ1-v9jv2Q	bVI
Beatles – *I'm Looking Through You* 1:07 – guitar accompaniment, sounded in same voice in previous chord. https://www.youtube.com/watch?v=gH6i9JAdJrQ	IV
Beatles – *We Can Work It Out* 0:46 – organ accompaniment, held in same voice from previous chord.	bVI

https://www.youtube.com/watch?v=Qyclqo_AV2M Notes: suspension takes place on dominant of relative minor key of song, as the bridge is briefly in this key centre. Melodic line resolves to third (in duet vocal) while chord stays unresolved in accompaniment.	
Beatles – *What Goes On* 0:27 – harmony vocal, unprepared; appears on word "on" on beat 1 of the measure. https://www.youtube.com/watch?v=PtC_l4kz7yw	IV
Beatles – *You've got to Hide Your Love Away* 0:43 – accompaniment, sounded in same voice in previous chord. https://www.youtube.com/watch?v=V8nLraecPRY Notes: suspension is expanded to melodic neighbour-note sequence in guitar.	IV
Billy Bragg – *St Swithin's Day* 0:22 – Guitar intro, sounded in same voice in previous chord. https://www.youtube.com/watch?v=ljJl-E5bzm4 Notes: This song has a mixture of both resolved and unresolved fourths, sometimes occurring simultaneously in guitar chord formations.	I
Andrea Bocelli – *Time To Say Goodbye* 1:09 – lead vocal, prepared from previous beat. https://www.youtube.com/watch?v=M3mdHmhI3cs	I
Bon Iver – *Re: Stacks* 0:26 – guitar intro, sounded in same voice in previous chord. https://www.youtube.com/watch?v=GhDnyPsQsB0	IV6
Mariah Carey – *Hero* 0:45 – keyboard, sounded in previous chord. https://www.youtube.com/watch?v=u21TsBONu_I	bVI
Marc Cohn – *Walking in Memphis* 0:21– lead vocal, prepared from previous beat. https://www.youtube.com/watch?v=PgRafRp-P-o	IV
Coldplay – *Fix You* 1:14 – organ accompaniment, sounded in same voice in previous chord. https://www.youtube.com/watch?v=k4V3Mo61fJM	IV
Phil Collins – *Against All Odds* 0:53 – strings/piano accompaniment, sounded in same voice in previous chord. https://www.youtube.com/watch?v=sSkEFkl7vIY	ii7

Destiny's Child – *Gospel Medley* 0:09 – note prepared in lowest voice of acapella vocal harmony. https://www.youtube.com/watch?v=JM3CjPFeZ3o	I
Céline Dion, Peabo Bryson – *Beauty and the Beast* 2:42 – female harmony vocal; resolution takes place in accompaniment. https://www.youtube.com/watch?v=ippaCca4L6A Notes: also see film version at 0:29. (https://www.youtube.com/watch?v=-OTXp1n0wv4) Solo wind instrument (bassoon?) states suspension, resolved on beat four in keyboard. 4-3 suspensions on the dominant chord are consistently resolved throughout the recording.	IV Film version: I
Celine Dion – *My Heart Will Go On* (Theme from *Titanic*) 0:18 – guitar accompaniment. https://www.youtube.com/watch?v=AjnJDBHmN18 Notes: V-1 chord sequence is frequent in the song. The 4-3 suspension is treated in a variety of ways in the arrangement, including being supported by a V6/4 rather than a Vsus4, and resolving on beat 4 rather than beat 3. Commercial sheet music specifies a suspension in the dominant. Electric guitar line at 3:43 comes in on the suspended fourth; melody line at 4:10 begins with the "prepared" note from the previous chord.	IV
Elevation Worship & Maverick City – *Wait On You* 0:35-0:40 – piano accompaniment, sounded in same voice in previous chord. https://www.youtube.com/watch?v=K3TYG7Q_fj4	ii7
The Everly Brothers – *Let It Be Me* 2:26 – harmony vocal. https://www.youtube.com/watch?v=lvA-STM7oJk	ii7
The Fighting Temptations (film) – *Rain Down* 0:35-0:40 – piano accompaniment, sounded in same voice as previous chord. https://www.youtube.com/watch?v=K3TYG7Q_fj4	ii7
Four Tops – *Bernadette* 0:35 – guitar accompaniment, sounded in same voice in previous chord. https://www.youtube.com/watch?v=Y9l4MGwpQS0	I6
Kirk Franklin – *Now Behold the Lamb* 1:19 – organ accompaniment, sounded in same voice in previous chord. https://www.youtube.com/watch?v=7CK1R1suY6U	IV

Notes: similarly to the the Beatles' "We Can Work It Out", the melodic line moves to the dominant while the background accompaniment holds the suspension.	
Fun – *Some Nights* 1:20 – piano accompaniment, sounded in same voice in previous chord. https://www.youtube.com/watch?v=QxTBtHsh408	I
Crystal Gayle & Tom Waits – *Take Me Home* 0:24 – piano intro, prepared in top melodic voice. https://www.youtube.com/watch?v=2sglrbx6rVo Notes: suspension also in melody line: "I'm still in love with you" (2:14).	ii7
Glen Hansard – *When Your Mind's Made Up* 0:25 – guitar. https://www.youtube.com/watch?v=vVypmtPSwgs Notes: live recording; guitarist/composer deploys suspended chord on V, unlike the soundtrack recording for the film *Once*. Live, and with a smaller ensemble, this choice is likely made to make the musical texture more interesting. V chord is embedded in I-vi-V- IV sequence.	vi
Hercules (film) – *Go the Distance* 0:39 – piano, prepared in previous chord. https://www.youtube.com/watch?v=BvKNePELD2k	IV major7
Hillsong (praise and worship song) – *Holy Spirit Rain Down* 1:06 – piano accompaniment, prepared in previous chord. https://www.youtube.com/watch?v=d-SI_HRWooA	I 6/4
The Hollies – *He Ain't Heavy, He's My Brother* 0:36 – piano accompaniment, prepared in previous chord. https://www.youtube.com/watch?v=fBI9i3HlFVE	ii7
The Hunchback of Notre Dame (film) – *Someday* 1:32 – orchestral mix (unclear if prepared by same instrument, but note is present in preparation chord). https://www.youtube.com/watch?v=r0ExGPIpO6k	ii7
Michael Jackson – *Rock with You* 0:16 – synth patch, unprepared, likely because of harmonic character of previous chord. https://www.youtube.com/watch?v=5X-Mrc2l1d0	VI
Billy Joel – *And So it Goes* 1:25 – piano accompaniment, sounded in same voice in previous chord. https://www.youtube.com/watch?v=zo-QhF-aMFA	II7

Elton John – *Harmony* 1:05 – backing voices and strings; unprepared dissonance, part of melodic line in backing voices. https://www.youtube.com/watch?v=Qh123TonnOc	IV
Elton John – *Your Song* 0:40 – piano. https://www.youtube.com/watch?v=FT3D1Cu6g10 Notes: not a suspension so much as a upper-neighbour note above the second two measures on the dominant chord.	IV
Keane – *Somewhere Only We Know* 0:11 – piano accompaniment, sounded in same voice in previous chord. https://www.youtube.com/watch?v=Oextk-If8HQ	ii7
Chantal Kreviazuk – *Feels Like Home* 1:23 – strings or synth patch, sounded in same voice in previous chord. https://www.youtube.com/watch?v=t-ouxPhYy7Y	V6/4
Cyndi Lauper – *True Colors* 0:47 – keyboard sounded in same voice in previous chord. https://www.youtube.com/watch?v=LPn0KFlbqX8 Notes: suspended formations occur when V is used in verse and chorus sections, but resolution does not take place in an implicitly cadential section at the end of the chorus (1:06). This avoidance of a standard resolution at this structural point is consistent throughout the song.	I
Lil Baby – *Humble* 0:18 – string arrangement; unprepared and approached by melodic inner voice. https://www.youtube.com/watch?v=i8YB2xt_jsw Notes: section with suspension is a sample from *Up Against The Wind,* (Lori Perri, *Set It Off* soundtrack). In the original recording, the dissonance is prepared later in the song, which has the tonic note is sounded in a bIImaj7 chord. (https://www.youtube.com/watch?v=vL189h6BxIs, 2:34)	bII Original recording: bIIma7
Lukas Graham – *7 Years* 2:57 – synthesizer, prepared in previous chord. https://www.youtube.com/watch?v=LHCob76kigA	I
Madonna – *Borderline* 0:15 – keyboard, sounded in same voice in previous chord. embedded in V6/4-5/3 chord sequence. 1:18-1:21 – synth accompaniment, sounded in same voice in previous chord. https://www.youtube.com/watch?v=rSaC-YbSDpo	Intro – I6 Verse - IV

Notes: suspension at 1:18 embedded in "compound chord" formation played by synth horns – G chord over A bass.	
The Mamas & the Papas – *California Dreamin'* 0:16, Vocal interjections, 0:24 vocal interjections. https://www.youtube.com/watch?v=qhZULM69DIw Notes: chord sequence dictates both preparation and lack of preparation. At 0:16, harmony moves from bVII to V. At 0:24, harmony previous to suspension is bVI, which contains the preparation. In vocal interjection (0:24) section the suspension is not held from one phrase to the next, but the sounded in the previous phrase, and becomes a suspended interval in the following phrase.	First section: bVII Second section bVI
Barry Manilow – *Can't Smile Without You* 0:17 – piano, sounded in previous chord with upper neigbour note sounded before suspension occurs. https://www.youtube.com/watch?v=3V_7-7myPxM	ii7
Barry Manilow – *Ready to Take a Chance Again* 1:08 – string accompaniment, note present in previous chord. https://www.youtube.com/watch?v=9gAF7im7df0	ii7
Martha & The Vandellas – *Dancing in the Streets* 1:04 – horn line, unprepared. Tonic note is present in backing vocals in previous bar. https://www.youtube.com/watch?v=CdvITn5cAVc	ii7
Meat Loaf – *I'd Do Anything For Love (But I Won't Do That)* 3:55 – backing voices, prepared in previous chord. https://www.youtube.com/watch?v=9X_ViIPA-Gc	vi
Meat Loaf – *Two Out of Three Ain't Bad* 0:09 – solo piano intro, note is prepared in previous chord. https://www.youtube.com/watch?v=HVvXWUAKtus Notes: V-I chord progression occurs frequently in song, as does the suspended fourth.	V6
Christina Perri – *A Thousand Years* (Theme from Twilight) 2:45 – vocal and instrumental accompaniment. https://www.youtube.com/watch?v=rtOvBOTyX00 Notes: resolution is on beat 4, rather than beat 3 – an extended suspension. Suspension occurs in the backing vocals, resolution occurs in the strings. Prepared by backing vocals at 2:40; voices do not hold note, but re-sound it at 2:45. Similar musical gesture at 2:25, but occurring even later in the bar.	IV

Pippin (musical) – *With You* 0:39 – accompaniment (piano and strings), note present in previous chord. https://www.youtube.com/watch?v=ZsAtUdsXE2o	ii7
Pippin (musical) – *Morning Glow* 2:28 – vocal accompaniment, note present in previous chord. https://www.youtube.com/watch?v=y_0I6Jn5m3s	II6/5
Rachel Platten – *Fight Song* 2:39-2:41 – keyboard. https://www.youtube.com/watch?v=xo1VInw-SKc Notes: this is a double suspension, or a 6/4 to 5/3 chord progression.	IV
Pochahontas (film) – *Colours of the Wind* 2:25 – orchestral strings. https://www.youtube.com/watch?v=O9MvdMqKvpU Notes: suspension unprepared in previous measure, because of harmonic structure; ascending orchestral violin line lands directly on suspended fourth above bass V, becomes structural element in held dominant chord.	bVII
Rascal Flatts – *Bless the Broken Road* 0:18 – lead vocal. https://www.youtube.com/watch?v=lZp6pmgbZyU	IV
Matt Redman – *10,000 Reasons* 0:09 – piano accompaniment, note present in previous chord. https://www.youtube.com/watch?v=2KaHr_5U9Cg	I
Helen Reddy – *Candle on the Water* 0:35 – string accompaniment, prepared in previous chord. https://www.youtube.com/watch?v=VGbsrrkZm1s	I6
Ed Sheeran – *Perfect* 0:49 – top line in guitar accompaniment, neighbour note figure. https://www.youtube.com/watch?v=2Vv-BfVoq4g	IV
Ed Sheeran – *Shape of You* 0:19 – instrumental line; melodic obbligato to the vocal. Suspended note sounds in previous chord, but is embedded in melodic line. https://www.youtube.com/watch?v=JGwWNGJdvx8	IV
Michael W. Smith – *Draw Me Close To You* 1:17 – accompaniment, note embedded in previous chord. https://www.youtube.com/watch?v=67yWFbmVxAA	I

The Rolling Stones – *Ruby Tuesday* 1:10 – flute obbligato, prepared in previous bar. https://www.youtube.com/watch?v=ADtnUC_ctNk	I
Judee Sill – *The Kiss* 0:32 – Piano accompaniment, prepared in previous chord arpeggio. https://www.youtube.com/watch?v=UdnQkQYT63E	I 6/4
Michael W. Smith – *Heart Of Worship* (Live) 0:50 – guitar accompaniment, prepared in previous chord. https://www.youtube.com/watch?v=6s6RuoH9pME	ii7
Cat Stevens – *The Wind* 0:11 – guitar. https://www.youtube.com/watch?v=tkZs98iPVMA Notes: suspension is embedded in melodic material in guitar introduction.	IV
James Taylor – *Sweet Baby James* 2:15 – guitar. https://www.youtube.com/watch?v=fyoZLKgLcys Notes: unprepared suspension occurs at same structural point earlier in song, played in guitar (0:54).	II7
Third Day – *God of Wonders* 1:00 – guitar. https://www.youtube.com/watch?v=1CBNE25rtnE Notes: suspension gesture interval is embedded in solo instrumental line.	I
Shania Twain – *From This Moment On* 2:27– lower lead vocal harmony, note sung over previous harmony. https://www.youtube.com/watch?v=b4aTUaEgH0Q Notes: two vocal parts create V6/4 to 5/3 resolution.	I
Sleeping Beauty (film) – *Once Upon a Dream* 0:45 – string accompaniment, note embedded in previous chord. https://www.youtube.com/watch?v=TXbHShUnwxY	ii7
Snow White (film) – *One Song* 3:04 – unprepared dissonance, inner voice in string accompaniment. https://www.youtube.com/watch?v=54QeNL5ih6A	I (bass only – inner linear movement in string parts alters character of upper parts to notes of a V chord)
Snow White (film) – *Someday My Prince Will Come* 1:44 – unprepared dissonance, upper voice in string accompaniment. https://www.youtube.com/watch?v=NgP5790IzaE	I (bass only – inner linear movement in string parts alters character of upper parts to notes of a minor VI6 chord)

Tom Waits – *Ruby's Arms* 0:12 – brass introduction, note in inner voice in previous chord. https://www.youtube.com/watch?v=n11Z98o54Rw	ii7
The Who – *Pinball Wizard* 0:44 – guitar accompaniment, note present in previous chord. https://www.youtube.com/watch?v=UFrDpx7zLtA Notes: each of the chords in the verse is played with, and then without, a suspended fourth, but the final one on the dominant (0:46) is buried in the mix and can't easily be heard. But the resolution is present in the sheet music, and this is how it's taught and played.	bVI
Wicked (musical) – *Defying Gravity* (Glee soundtrack version) 0:38 – piano accompaniment, note in previous chord. https://www.youtube.com/watch?v=t7YD6bWkuXE Note: the 4-3 suspension on V occurs frequently in this song; often the following chord is a I or a vi.	IV
Stevie Wonder - *I Just Called To Say I Love You* 0:41 – strings, accented non-chord tone embedded in melodic string line. https://www.youtube.com/watch?v=1bGOgY1CmiU	ii7