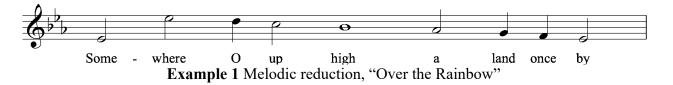
Blended Analysis and Reharmonization Techniques: Comparing Three Harmonic Treatments of "Over the Rainbow"

Ian Sadock

The greatest song of the 20th century was written and rewritten again, composed and recomposed. Originally purposed for the 1939 film *The Wizard of Oz*, "Over the Rainbow" was composed by Harold Arlen with lyrics by Yip Harburg. Reflecting narrative in medium, the emergence of the 3-strip filming process in the early 1930s afforded a juxtaposition between the monochromatic rural Kansas and the vivid, fantastical Land of Oz – a Technicolor beacon of hope. Arlen addresses this intertextuality in his composition: "She [Dorothy] had never seen anything colorful in her life except the rainbow", necessitating a "melody with a long broad line" (Frisch 2017, p. 20). Indeed, the rising-falling contour of the melody (Example 1) evokes the imagery of a rainbow.



The initial octave leap perhaps represents the protagonist striving for a distant place: "Some-..." (E^b4, colorless middle America) "...-where" (E^b5, a vibrant other world) – octave equivalency's "same but different" quality might also represent Dorothy's familiar self against the unfamiliar backdrop of a foreign and magical Oz. Tone painting (musical representation of the text's meaning in a literal way) is skillfully employed throughout the phrase: the word "over" (as in "over the rainbow") marks the change in melodic contour and "way up high"/"bluebirds fly" is written in the upper register while words evoking groundedness or familiarity ("land", "lullaby") are written in the lower range of the melody. In "Over the Rainbow", Dorothy yearns for a better place, a safer one for Toto, to contrast her misfortune just as one hopes for a rainbow to follow the clearance of dark rainclouds.

Largely unaddressed in scholarly work on "Over the Rainbow" (save for a brief statement in a 2017 Italian newspaper (*Il Messaggerro*) article) is the striking similarity to an Intermezzo from Pietro Mascagni's 1894 tragic opera *Guglielmo Ratcliff*. Comparing reductions of the two melodies (Example 2b), this is easy to see. Both composers harmonize $\hat{6}$ with IV in the third measure of the melody (Example 2a, m. 9 & Appendix B, m. 27) and cadence with V underneath $\hat{2}$ (Example 2a, m. 12 & Appendix B, m. 31). However, Arlen's harmonization feels more optimistic due to his exchange of Mascagni's minor qualities for their relative majors (Example 2a, m. 7 & Appendix B, m. 25) or other mediant relationships (Example 2a, m. 8 & Appendix B, m. 26) and vice versa (Example 2a, m. 10 & Appendix B, m. 28). Additionally, closure is provided by an authentic cadence to the tonic in Arlen's composition while Ratcliff's fate is mysteriously undetermined, left in a half cadence at the end of the phrase. It is unknown whether Arlen was aware of Mascagni's composition (let alone influenced by it) but the critical intertextuality persists for modern listeners familiar with both works.



Example 2a Orchestral reduction and **2b** Melodic reduction comparison (transposed), "Intermezzo" from Act III ("Ratcliff's dream") of *Guglilemo Ratcliff*, Pietro Mascagni

In the year of the film's release, "Over the Rainbow" was first published in print by Leo Feist, Inc. (yet notated a fourth lower than Garland's AbMajor performance, in EbMajor). 15 years later, British jazz pianist George Shearing published his reharmonization of the infamous ballad. 45 years after its original premiere, prolific American composer-pianist Keith Jarrett reimagines "Over the Rainbow" extemporaneously, as an encore to a 1984 performance in Tokyo. Jarrett would continue to refine his interpretation of the Great American Songbook classic for the 30+ years of his career that followed.

The hopeful ballad was nearly left on the cutting room floor of the original film for fear of losing children's interests (perhaps "too serious" for a pigtailed 11 year old to sing in a film with witches and flying monkeys). Nevertheless, "Over the Rainbow" would go on to win the 1939 Academy Award for Best Original Song, being also inducted into the Grammy Hall of Fame, and would be voted the "greatest song of the 20th century" in a joint survey by the National

Endowment for the Arts (NEA) and the Recording Industry Association of America (RIAA). Walter Frisch (2017) conducted a thorough harmonic and formal analysis of both the 1939 original as well as a 1995 performance by Keith Jarrett. Here I hope to add new insights to the existing conversation surrounding the legacy of the greatest song of the 20th century by engaging modified analytical methods to address four methods of reharmonization: tritone substitution, "backdoor ii⁷ – V⁷" progressions, ii⁷ – V⁷ progressions from secondary keys, and unconventional deployment of augmented-sixth-like chords. Form and melody are addressed and interrogated in relationship with the text and intertextuality. Explored here are Harold Arlen (composer) and Yip Harburg's (lyricist) 1939 original publication (following the Judy Garland film performance), George Shearing's 1954 notated interpretation, and Keith Jarrett's 1984 live improvisation at Kan-i Hoken Hall in Tokyo, Japan.

Analytical Methods

Jazz and Classical music have traditionally employed different stylistic "rules" (or norms) of harmony, however both academic subdisciplines provide valuable insight into harmonic, melodic, and formal techniques employed in reharmonizations. Here I propose the blending of traditional analytical notation with modified methods. From roman numeral, figured bass, and non-chord tone analysis, we can glean significant insights into instances of functional harmony. Nevertheless, these imperfect tools were designed to make sense of a narrow swath of music's global history: Western European Art & Religious Music composed in the 16th – 18th centuries. Lacking is the ability to sufficiently analyze Jazz and Popular music's unique treatments of dissonance – modification is necessary. "The master's tools will never dismantle the master's house" (Lorde 1984). Increasingly chromatic and extended functional harmonies, as well as differing conventions surrounding the resolution of non-chord tones necessitate a difference in nomenclature.

Modern Device M	odification Necessary
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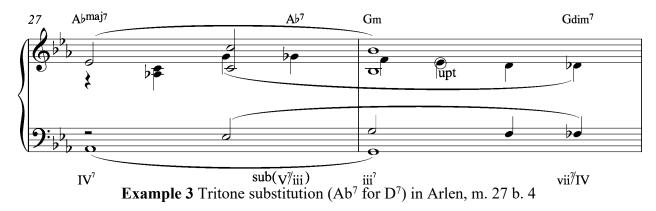
Routine use of extensions beyond the seventh	Figured bass confined to harmonic implications within the octave (as well as 9 – 8 suspensions)
Tertiary functions within chord progressions (secondary dominant of a secondary dominant)	Tertiary key shown in [brackets] ¹ beneath secondary dominants
Major sixth chords (as in " E ^b 6") not functioning as vi ₅ ⁶	Non-functional sixth expressed in chord symbol but not in roman numeral/figured bass analysis
Unprepared/unresolved suspensions or neighbor tones	Circled in score but not represented in figured bass
Secondary progressions (>1 chord from a	Horizontal line divides roman numerals/figured
local secondary key), not sufficiently	bass with secondary key beneath constituent
modulatory in nature	functions

 $^{^1}$ Note that perceived "disagreement" can occur between the chord quality of the secondary dominant and the local tertiary key, in brackets below. An intrinsic quality of the secondary **dominant** is that of a major triad quality. However, the tertiary key could be either major or minor. To avoid confusion surrounding the conventional implication of certain roman numerals (i.e. that III implies a chord built on $b\hat{3}$ and similarly for II and VI), the major quality of the secondary dominant is not reflected in identification of a tertiary key.

Tritone and backdoor ² substitutions	sub(X) = X/bV, "backdoor" label in addition to
	secondary progression notation

Harmony

Jarrett and Shearing primarily employ four harmonic devices in their reharmonizations, which serve to either quicken harmonic rhythm or to decorate with chromatic harmony while maintaining functional substructures. The most predominant technique was that of tritone substitution – the replacement of one V^7 chord with another whose root is a tritone away $(V^7/bV,$ analyzed as "sub (V^7) ")³.



This affords the opportunity for chromatic harmony (and all the satisfying half-step resolutions that go along with it) while maintaining the proper voice leading of guide tones. The third and seventh (guide tones) are enharmonically equivalent between V^7 and V^7/bV ($\hat{3}$ of $V^7 = \hat{7}$ of V^7/bV and vice versa). Interestingly, Shearing (most overt in his harmonic adventurousness) begins his reharmonization with $A^7(^{b9}_{b5})^4$. This is a creative choice for establishing an E^b Major tonality, imparting forward harmonic motion via the instability of (1) dominant-seventh (Mm⁷) functionality and (2) tritone root distance from the expected tonic. This chord also exhibits a tertiary function⁵, tonicizing $D^7(^{b9}_{s5})$, which itself serves as secondary dominant to Gm^7 (iii⁷) rather than the leading-tone function typically associated with chords built on $\hat{7}$. The listener's expectation is subverted. We must wait five excruciating measures before the tonic is introduced (Appendix B, m. 30), and yet it is heard in a hypermetrically-weak position (one-quarter of the way through the consequent of a nearly-parallel period). The first strong assertion of I occurs in the eighth measure (Appendix B, m. 32), quickly defused by the injection of chromaticism that follows on b. 2. Shearing's use of tritone substitution is usually preceded by a pre-dominant-

³ This technique was also employed (albeit less frequently) by Arlen in his original composition (see Appendix B, mm. 27, 35, and 51; all repetitions of the same gesture). Arlen's use differs in that he employs the tritone substitute to connect two harmonies with roots a step apart.

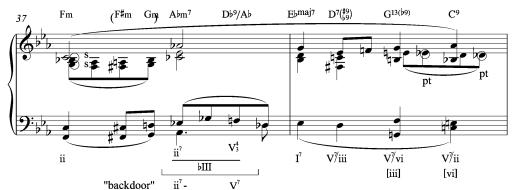
² Defined in next section.

⁴ Similarly, Keith Jarrett begins the "A" section of his last chorus with a tonic tritone substitute, albeit with a more stable m⁷b5 quality.

⁵ Secondary dominant of another secondary dominant.

functioning ii⁷ from the remote key (ii⁷/sub(V⁷) or sub(ii⁷))⁶. Two noteworthy exceptions occur: (1) the use of alternating $ii^7 - sub(V^7)$ in a circle-of-fifths progression (Appendix B, m. 44), resulting in a satisfyingly chromatic descending bassline, and (2) tritone substitution of an entire circle-of-fifths progression⁷, as seen in Appendix B, m. 72. In the second situation, the harmonic device is confined to root movement as qualities are constricted to major-seventh chords in an Impressionist-esque employment of "real" planing (one consistent chord quality harmonizing several different (sometimes chromatic) roots). As a result, the analytical device (sub(vi⁷ – ii⁷ – V⁷)) imperfectly describes the situation: while representing major-seventh chord qualities, the seemingly contradictory vi⁷, ii⁷, and V⁷ are used to both avoid confusion with VI implying b6 and also to represent the functional roles of the original sequence being substituted. Keith Jarrett, whose commitment to diatonicism evokes a sense of serenity, sparingly deploys tritone substitution via modal interchange, either as (1) a deceptive cadence from the parallel minor (Appendix B, mm. 55 and 67) or (2) a phrygian vamp between I⁷ and bII⁷ (Appendix B, mm. 56 -57). Jarrett also choses to subvert heavily-established expectation with a chromatic gesture (Appendix B, mm. 65-66) accompanying the final melodic phrase in the form proper (save for the bridge-reminiscent coda), tertiarily tonicizing vi (heard here as V^7/ii) via sub(V^7/vi), momentarily interrupted by chromatic unt motion in all voices.

The second most common harmonic device is the "backdoor ii⁷ – V⁷" progression, a cadential substitution wherein the tonic is preceded by a ii⁷ – V⁷ gesture in the key of bIII. This highly chromatic maneuver is successful for two reasons: (1) seemingly-chromatic mediant in relationship, bIII is actually the relative major of i (the parallel minor), and (2) a similar mutual guide tone relationship as that of the tritone substitution. V⁷/bIII's guide tones (third and seventh) are the same as those of vii°⁷ (the leading tone fully-diminished seventh chord): $\hat{2}$ and $b\hat{6}$, resulting in functionally satisfying half-step collapse to $\hat{3}$ and $\hat{5}$. Just as was the case with tritone substitution, the functionality can be extended to include the pre-dominant from the "remote" key, as well.



Example 4 "Backdoor" ii⁷ – V^7 in Shearing's reharmonization, m. 37 bb. 3 – 4

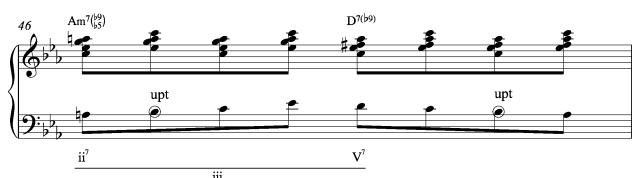
⁶ Note that, unlike tritone substitution of dominant chords, tritone substitution of the supertonic does not result in enharmonically equivalent guide tones. Nevertheless, half-step resolutions still do occur in a "mirror image" fashion, affording the listener to ignore the more-global chromatic confusion for local functional closure.

⁷ This harmonic device has been codified as the "Lady Bird turnaround", given Tadd Dameron's use of sub(vi – II – V) in the last two measures of the jazz standard.

⁸ Written here in scare quotes given the earlier suggestion of a (somewhat dubious but perhaps) functional relationship between the keys of the tonic and that of bIII.

The backdoor $ii^7 - V^7$ progression was employed most by Jarrett (see Appendix B, m. 37), albeit usually truncated to exclude $ii^7/bIII$ (see Appendix B, mm. 29 - 30, 38, 52 - 53, and 61). Shearing's implementation (see Appendix B, mm. 29, 37, and 66 - all repetitions of the same gesture) excites harmonic rhythm⁹ by substituting V^7 for $ii^7/bIII$ and $V^7/bIII$, reframing the iv - I mode mixture trope originally employed by Arlen ($ii^7/bIII$ is iv^7 in the key of the tonic). Shearing also writes the backdoor V^7 with the "wrong" quality¹⁰ (see Appendix B, mm. 31 and 39 - again, repetitions of the same gesture), although these are more likely heard as tritone substitutions ($sub(V^7/vi)$) of the "wrong" quality.

Secondary $ii^7 - V^7$ progressions¹¹ are employed by Shearing (see Appendix B, mm. 26, 34, and 50 (repetitions of same gesture), as well as 44, 46, 47, and 52) and Jarrett (see Appendix B, m. 47), as well as in Arlen's introductory verse (see Appendix B, m. 16). Secondary function is extended to the pre-dominant as a means of exciting the harmonic rhythm of the tonicization gesture with local functionality (i.e. V^7/vi can be preceded by ii^7/vi , as in the key of vi). Although establishing a secondary tonality through pre-dominant \rightarrow dominant \rightarrow tonic motion, this does not quite rise to the level of a modulation given how quickly the original tonality returns.



Example 5 Secondary ii⁷ – V⁷ progression in Shearing's reharmonization, m. 46

Shearing occasionally combines the use of secondary $ii^7 - V^7$ progressions with tritone substitutions (see Appendix B, mm. 26, 34, and 50) and they are also used in circle-of-fifths progressions (see Appendix B, mm. 44, 46 – 47, and 64¹²). The use of secondary $ii^7 - V^7$ progressions serves primarily to create excitement by quickening harmonic rhythm when compared to the memory of the original harmonization, although Shearing's use of the device in circle-of-fifths progressions serves to decorate with chromatic harmony while maintaining local functionality.

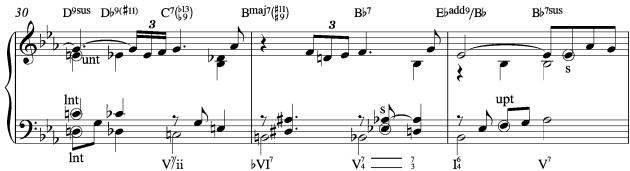
 $^{^9}$ Note that the use of chromatic passing tone chords, and 9-8 and 4-3 suspensions aid in exciting harmonic rhythm of Shearing's reharmonization.

¹⁰ This technique was also employed by Arlen in his original composition (see Appendix B, m. 18), however this is heard as an elaboration of Cm (if not an augmented-sixth chord "gone wrong").

¹¹ Exclusive of the previously discussed ii $^{7}/bIII - V^{7}/bIII$ gesture.

 $^{^{12}}$ This instance is understood as a circle-of-fifths progression given the substitution of ii $^7/bIII$ and $V^7/bIII$ for V^7 . Jarrett does the same.

The final harmonic device worth noting is that of the augmented-sixth(-like) chord of the "wrong" quality (truly, not an "augmented-sixth chord" at all). Jarrett (see Appendix B, mm. 31 and 39) and Shearing (see Appendix B, m. 32) build major-seventh chords on $b\hat{6}$, as is typically done with the +6 chord. While not bearing the typical V7-ish (Mm7) quality, a similar voice leading is obtained: $\hat{1}$ and $b\hat{6}$ descend to $\hat{7}$ and $\hat{5}$, respectively.



Example 6 Unconventional deployment of augmented-sixth-like chord in Jarrett, m. 31 b. 1-2

Alternate hearings could also include sub(V/V), as well as tonic substitutions via enharmonically equivalent chord tones (the third of bVI is $\hat{1}$ and the seventh is $\hat{5}$). This rounds out the reharmonizer's harmonic toolbox: tritone substitution, backdoor $ii^7 - V^7$ progressions, secondary $ii^7 - V^7$ progressions, and bVI^7 gaining pre-dominant function. Jarrett also employs an additional device in his final chorus, treating the same melodic material with a different harmony. Perhaps his arrival on the other side of the rainbow is different than expected, substituting the I chord at the beginning of the phrase with the "distant yet familiar" (recalling above discussion on tone painting of octave equivalency) ii^7/iii : the most distant possible change in root (a tritone existing between E^b and A) with several common tones (E^b , G (and C – if originally voiced as E^b 6)). This affords him the opportunity to effect closure on the hypermetrical level, compared to the very first statement of the theme – the hopeful upward deflection of the theme is now reconciled against a descending root movement (A, A^b , G...).

Form & Melody

All three harmonic treatments vary with regards to their form. Essentially, the song is composed of an AABA form (the disembodied "Chorus" of Arlen & Harburg's original). Arlen & Harburg's original composition employs an introductory verse, commonplace in the Great American Songbook but oft forgotten in translation to the jazz idiom and curiously absent in *The Wizard of Oz*¹³. Also left out of the film is a repeat of the AABA form, resurrected by Keith Jarrett as a vehicle for improvisation and melodic decoration. Shearing's interpretation is curt, packaged alongside a collection of nine other popular songs (similarly limited to two pages in length) for commercial release by Robbins Music Corporation. Unique to each is their approach to the ending. Both reharmonizations pay homage to the original's coda-like return (see Appendix B, m. 70) of the bridge melody (from Appendix B, m. 41, "B"), yet both skip the additional instrumental "interlude" iteration of the "B" melody (as in the film) that precedes it – perhaps too much repetition for a solo piano orchestration? Jarrett chooses to draw out tension by

¹³ Finally popularized by Ella Fitzgerald's 1961 recording.

severely prolonging the final cadence – two eighth notes, each now stretched to the length of half notes along with their accompanying harmonies. This disrupts the listener's expectation created by previous repetition of the form, highlighting a tender sendoff into the next section.

One part of the work is deemed (nearly) sacrosanct: the bridge (Appendix B, mm. 41 – 48). Reharmonizers dare not fiddle too much with the contrasting middle section, envisioned by the original composer as reminiscent of "a child's piano exercise" (Frisch 2017, p.22). Similar sparse harmonic treatments are employed by Jarrett and Shearing, although the latter does interject a garish gesture of descending chromatic harmonies beneath a fifth mode of melodic minor (Messiaen's mode six) soprano melody in opposing thirds. Harmonic rhythm excited at the cost of innocence adulterated.

Musicians performing in the jazz idiom are afforded much creative liberty with their interpretations of melody, both in an original statement of the theme as well as in improvisation. In his instructional text, Scott Reeves compels performers to "improvise on the melody of the tune, adding embellishments and commentary, without losing the core of the song" (1998, p. 5). Thus, Keith Jarrett's extemporaneously constructed interpretation of the melody frequently differs in rhythm from the original while George Shearing's pre-composed arrangement presents it strictly as imagined by Harold Arlen. Jarrett's (improvised, and thus, looser) interpretation of the melody maintains congruence with the "core of the song" by mostly adding simple rhythmic embellishments (see Appendix B, mm. 28, 30 - 31, 34, 38 - 39, 54, and 66 - 68), while exciting with anticipations (see Appendix B, mm. 29, 33, 37, and 62) and melodic flourishes adding additional notes (see Appendix B, mm. 35 - 36, 51 - 53, 55 - 56, and 62 - 64). Despite both reharmonizations lacking lyrics (as they are solo piano works), the text is so well known that perhaps the lyrics are entrained, imprinting an additional ghostly layer of reminiscent meaning upon these newer interpretations. As seen above, Jarrett capitalizes on this intertextuality in his last chorus. Shearing, too, in his application of the yearnful tritone-substituted tonic ($A^7(^{b9}_{b5})$) at the open of each "A" phrase.14

Conclusion

From these analyses, much insight can be gained surrounding deployment of reharmonization techniques: tritone substitution, "backdoor ii 7 – V^7 " progressions, ii 7 – V^7 progressions from secondary keys, and unconventional deployment of augmented-sixth-like chords. Traditional analytical methods need not be thrown out – they can be adapted for appropriate use in popular music ("both/and" rather than "either/or"). This can be appealing to instructors of the undergraduate Theory sequence teaching roman numeral, figured bass, and non-chord tone analysis. Reharmonizations of "Over the Rainbow" breathe new life into the composition, reincarnating a well-known standard through the adoption of fresh lenses. Further, the greatest song of the 20^{th} century's mark is left on more contemporary popular songs, notably David Bowie's 1972 "Starman", the chorus of which begins with a similar octave leap followed by motion within the tetrachord built on $\hat{5}$ ("circle and yearn", as described by Kapilow (2015)). Music journalist Peter Doggett compares the two: "Over the Rainbow" "used its cathartic rise¹⁵

¹⁴ Also worth noting (yet beyond the scope of this text) is Jarrett and Shearing's masterful use of inner voice motion, creating intrigue via counterpoint and forward momentum via manipulation of texture.

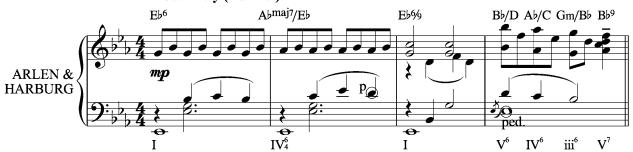
¹⁵ Referring to the iconic octave leap.

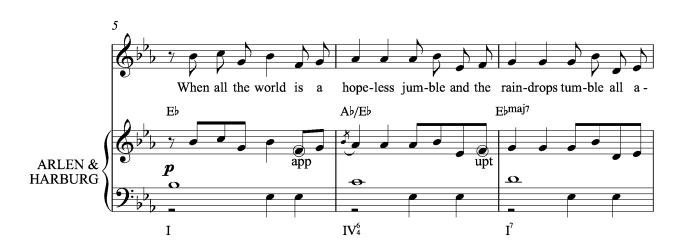
to introduce a refrain that was emotionally, and melodically, expansive", yet the leap in "Starman" "was followed by a more uncertain melody, reflecting his character's innate lack of confidence" (2012, p. 169). Indeed, the melodic contour following the initial leap in Bowie's song is downwards rather than ascending (as in Arlen's). "Similar but different" strikes again. Three (five if including Mascagni and Bowie) very contrasting works retain some element of the same ethos through their unique harmonic treatments. Perhaps the song "Over the Rainbow" is now itself in the Land of Oz, a fanciful Technicolor world of unimagined possibilities.

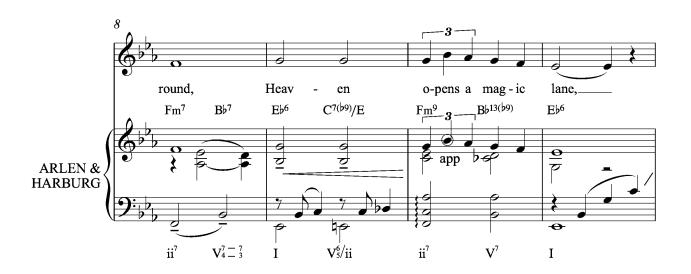
Appendix A: Non-Chord Tone Abbreviations

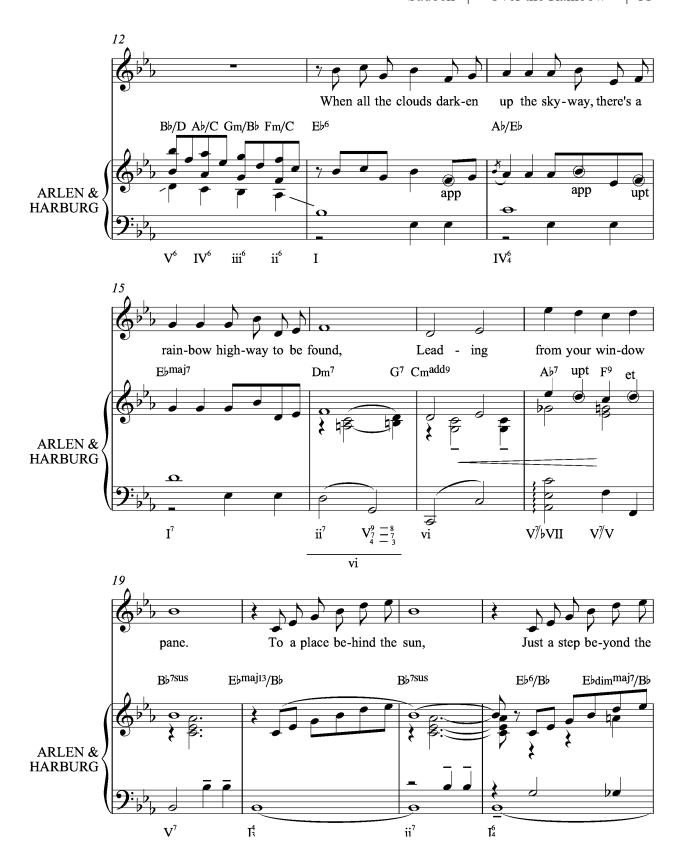
Abbreviation	Non-Chord Tone	Abbreviation	Non-Chord Tone
unt / lnt	Upper / lower neighbor tone	арр	Appogiatura
upt / apt / pt	Unaccented / accented	ct	Changing tones ("cambiata",
	passing tone		"double neighbor tones")
Ped.	Pedal point	et	Escape tone ("eschapée")
S	Suspension	r	Retardation
Ant.	Anticipation		

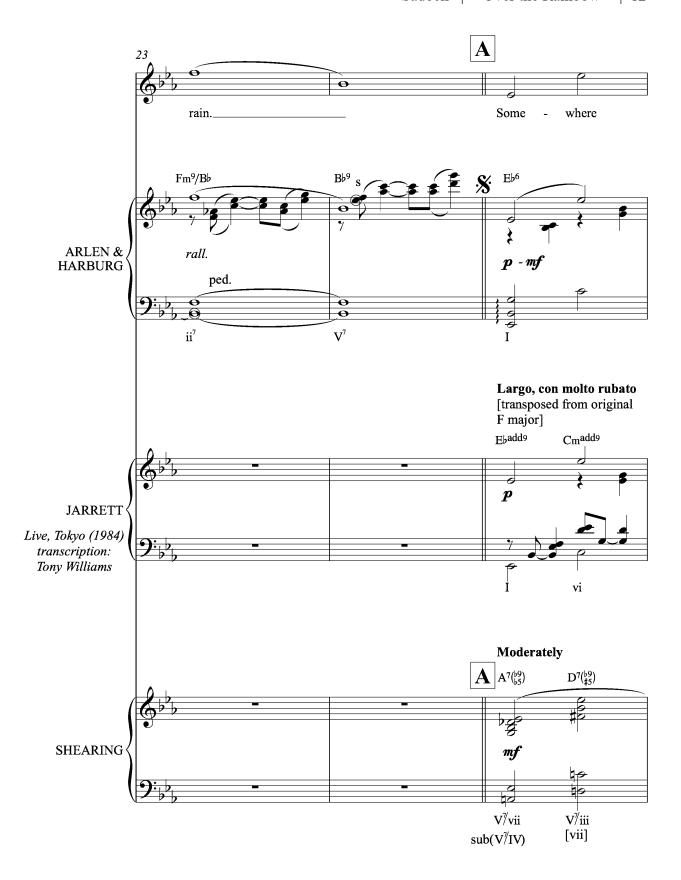
Appendix B: Comparative Harmonic Analysis Moderately (Not fast)

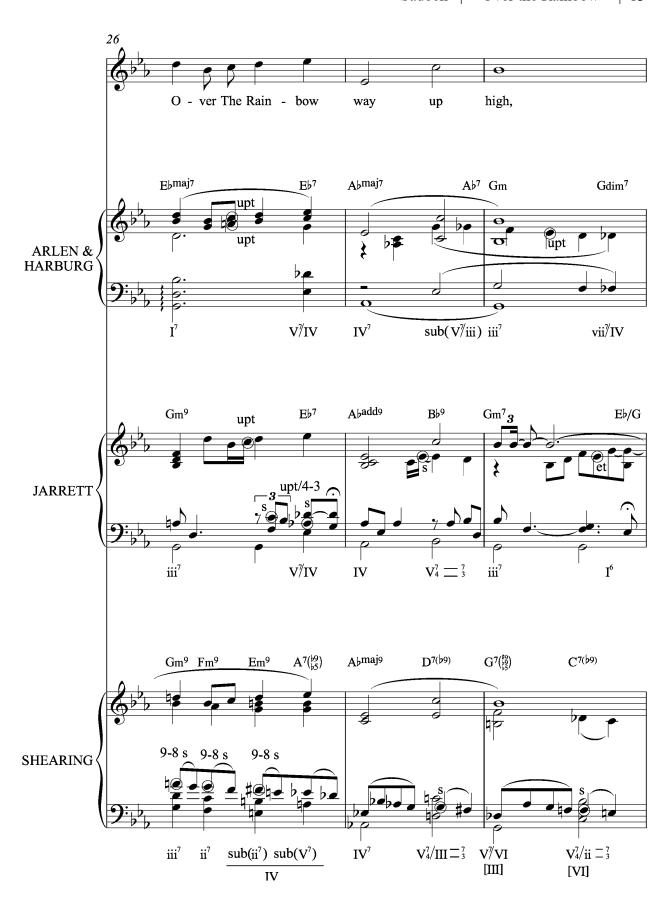


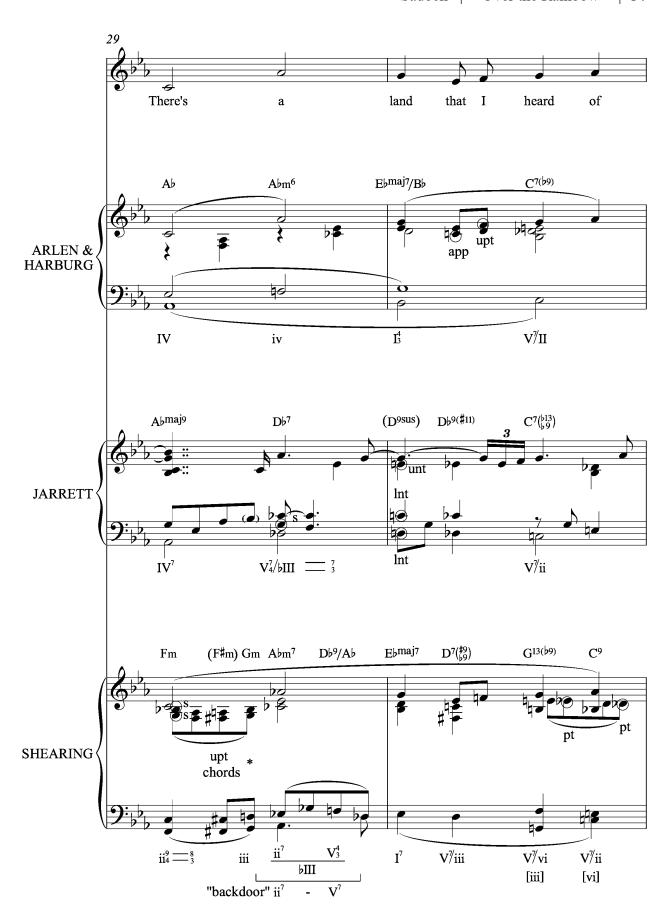


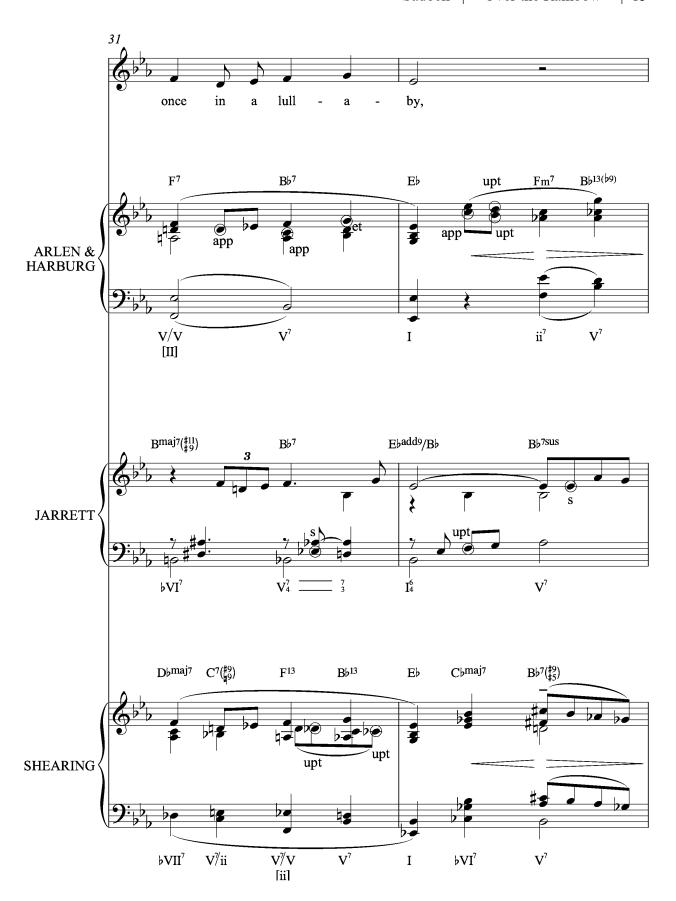




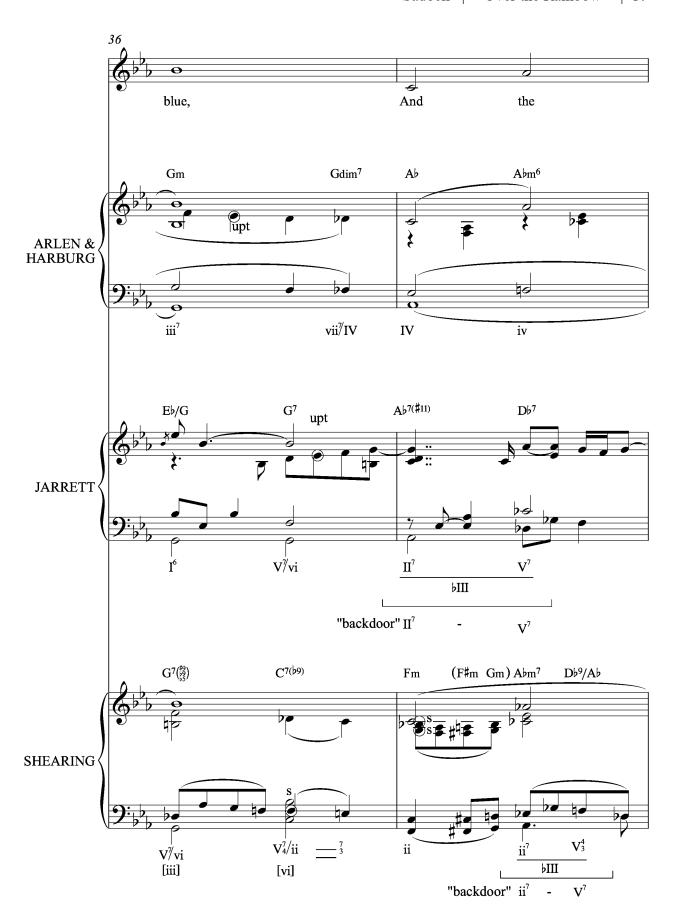




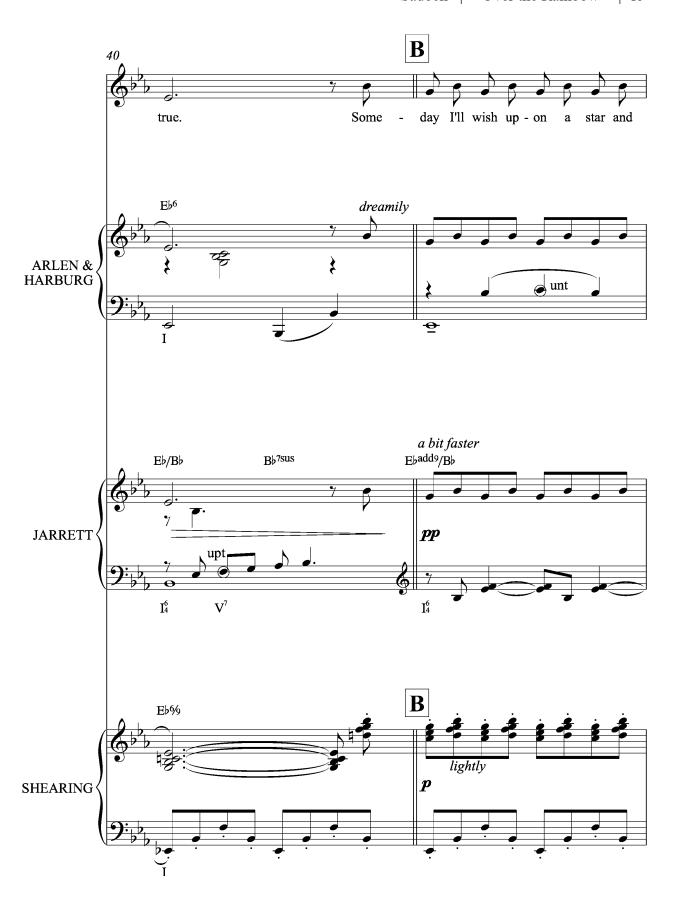


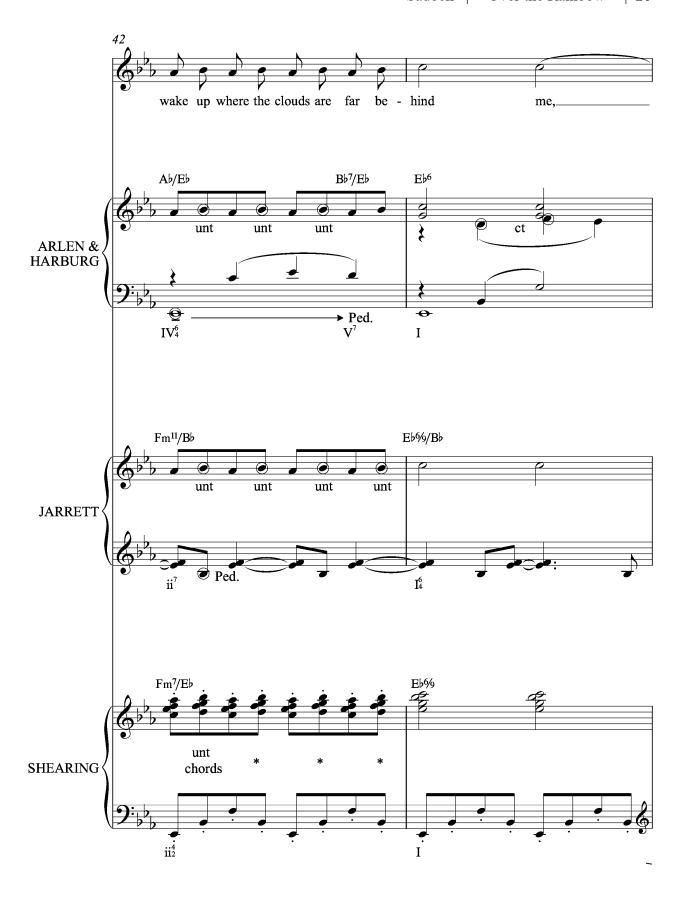


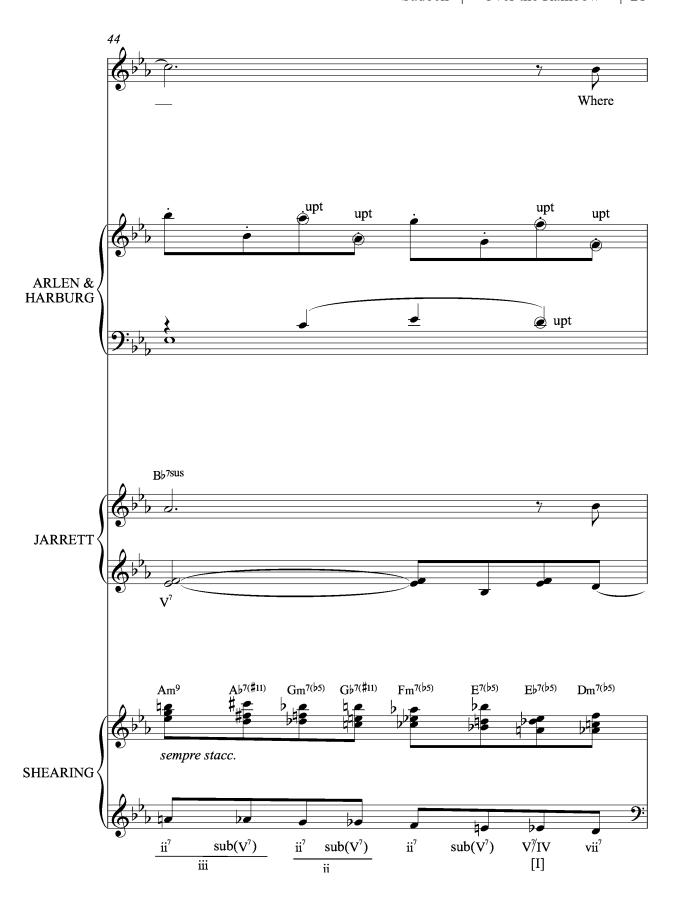


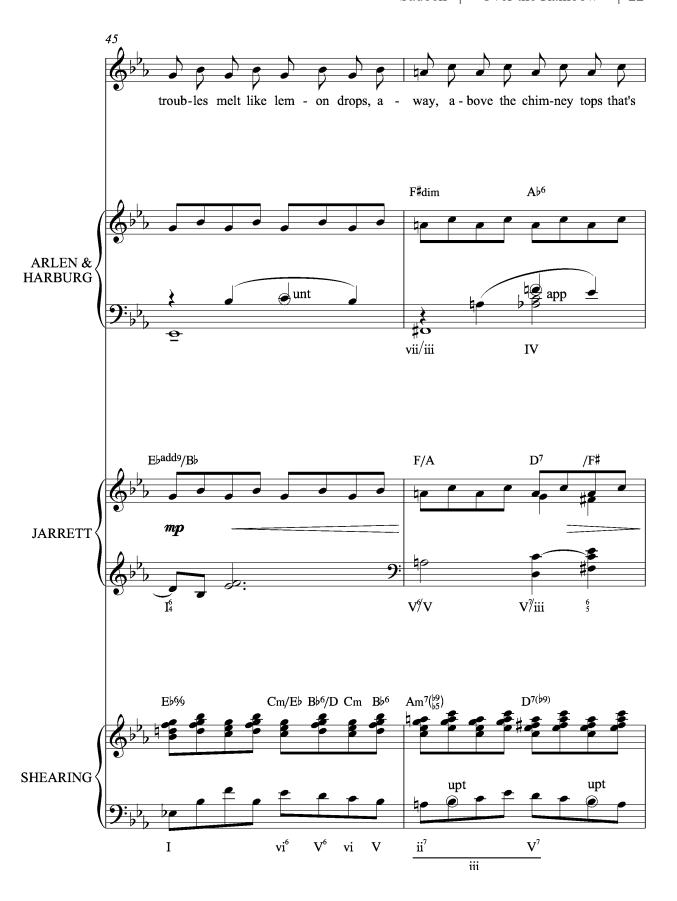


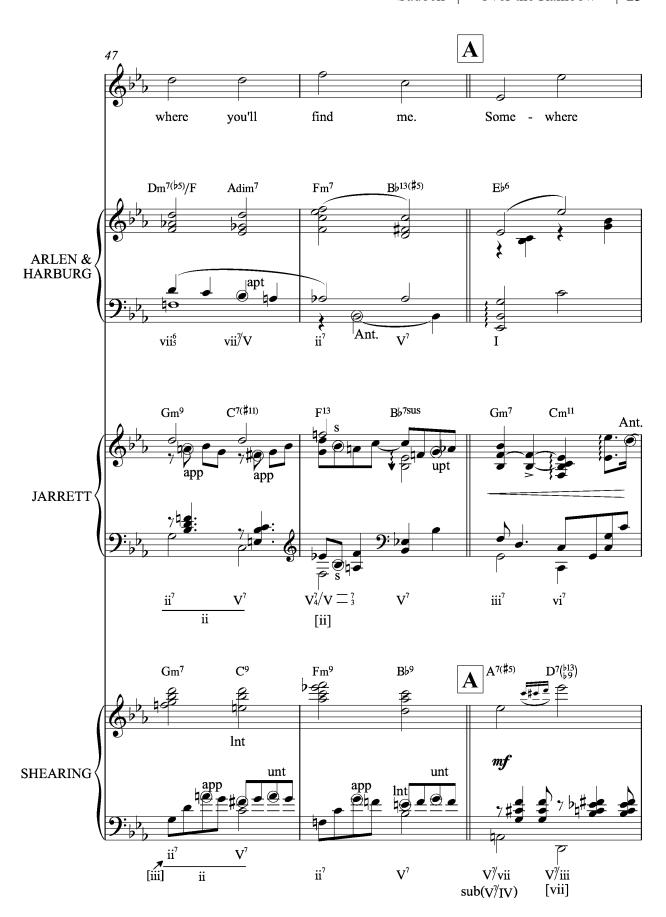


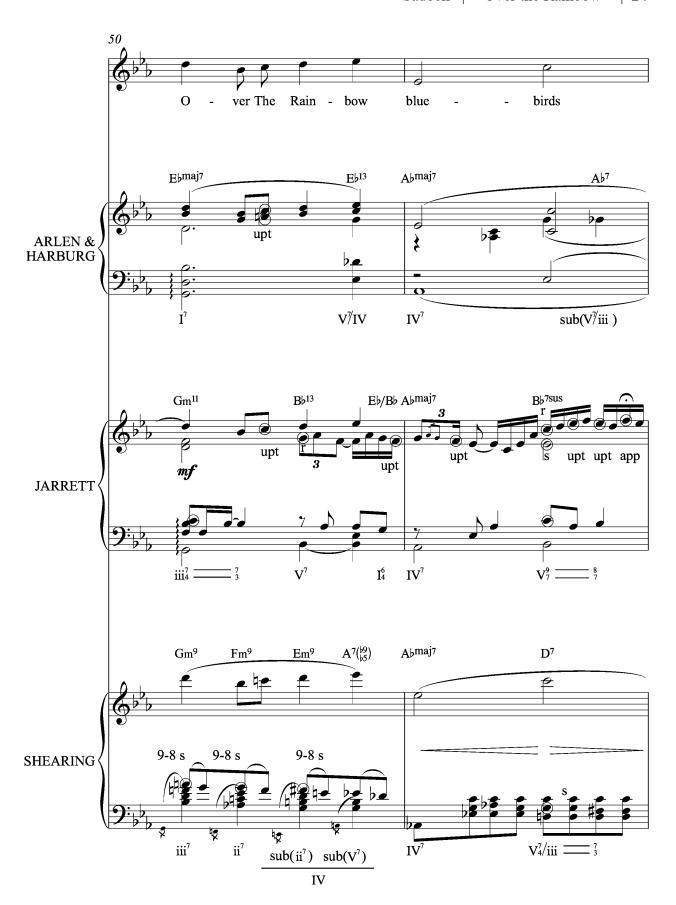


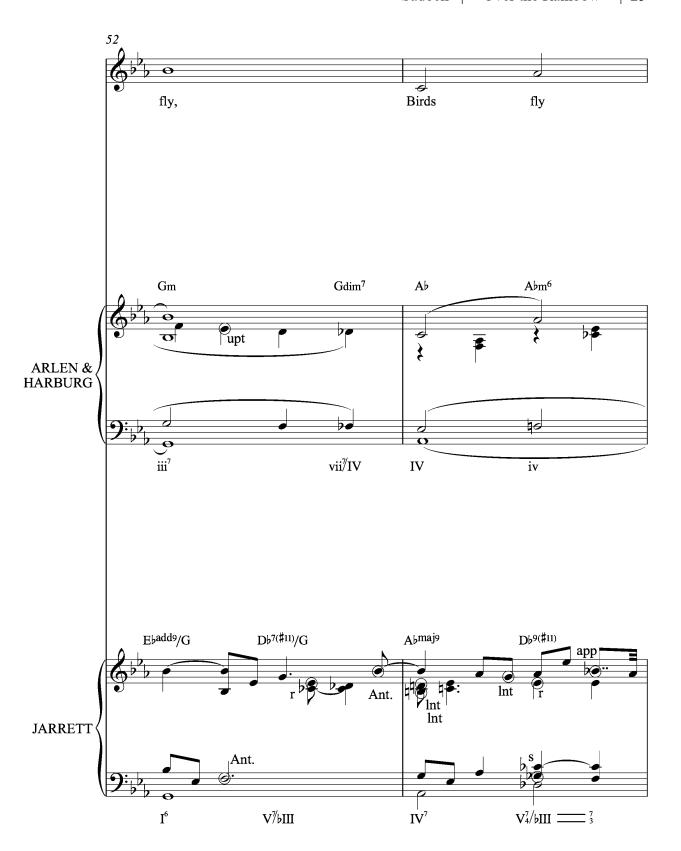




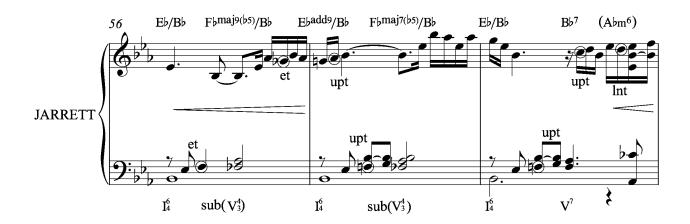


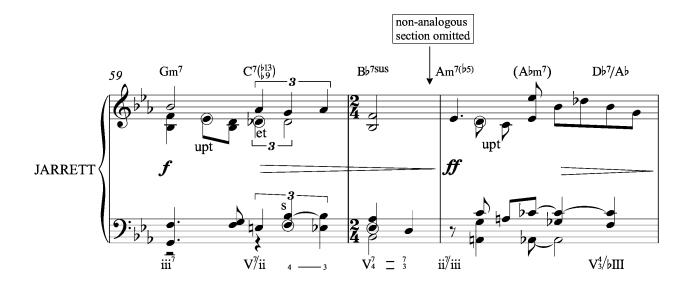


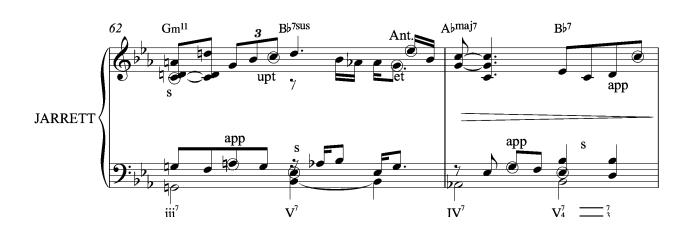


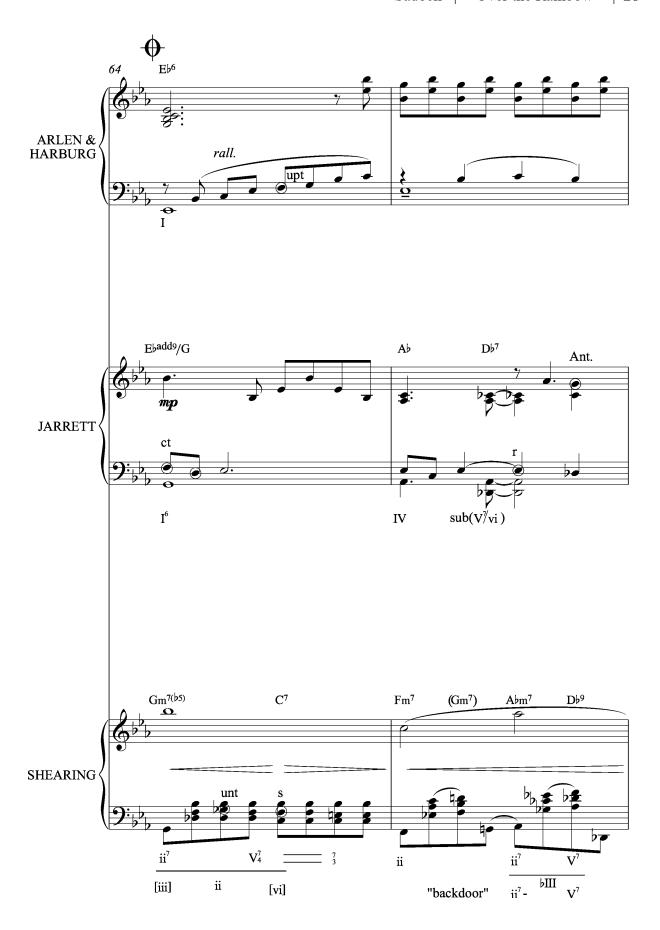


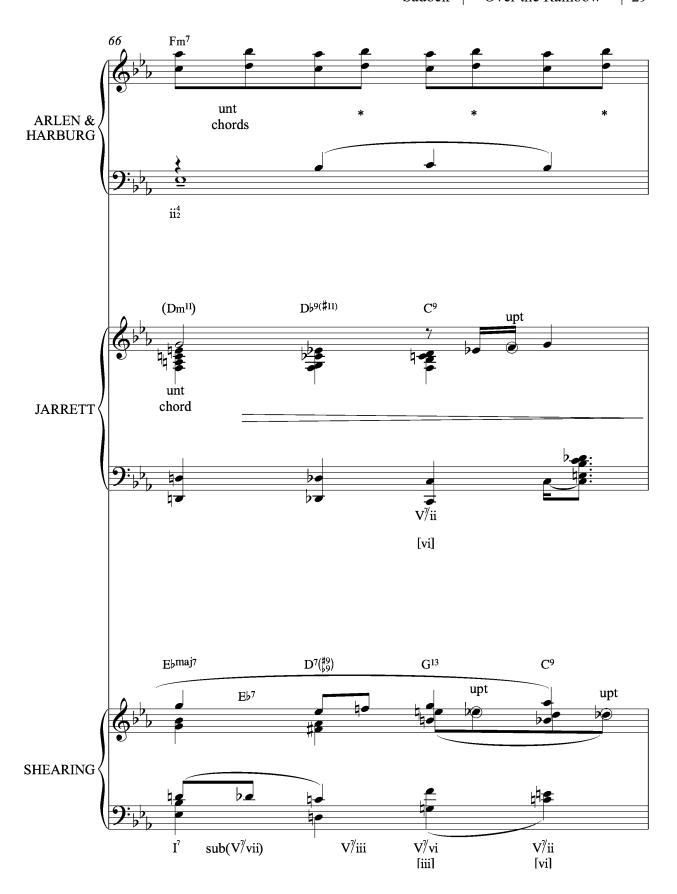


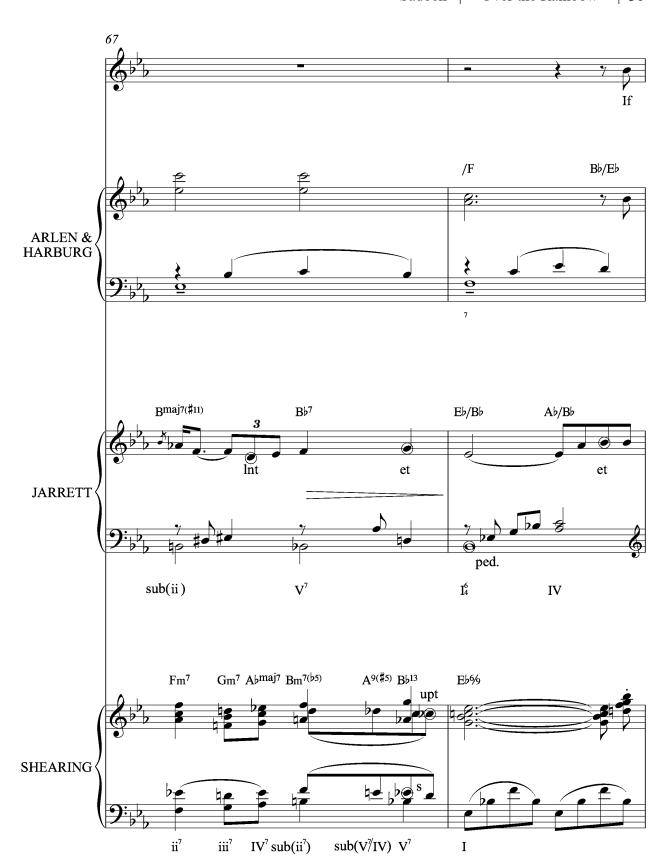


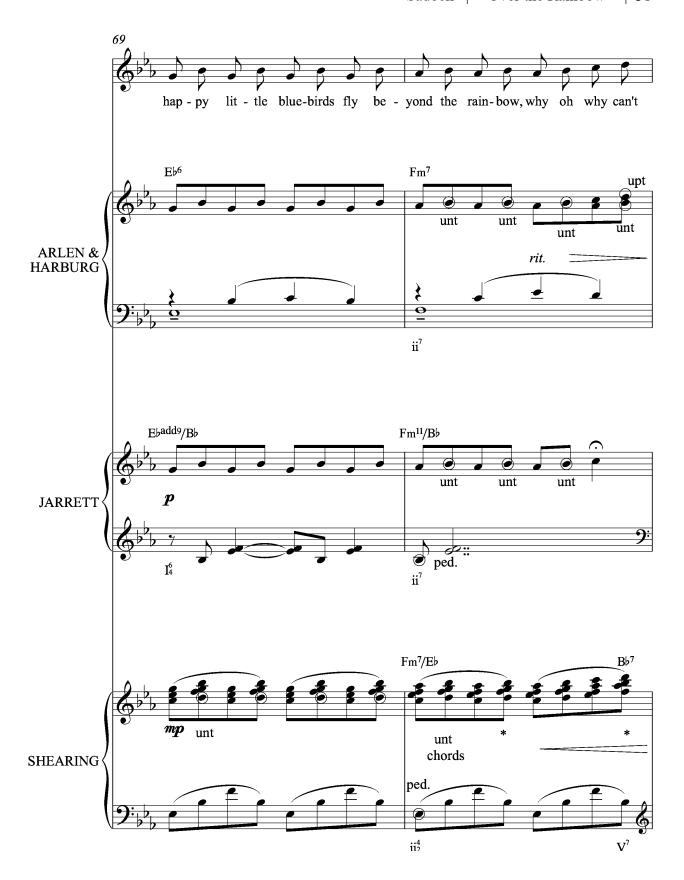


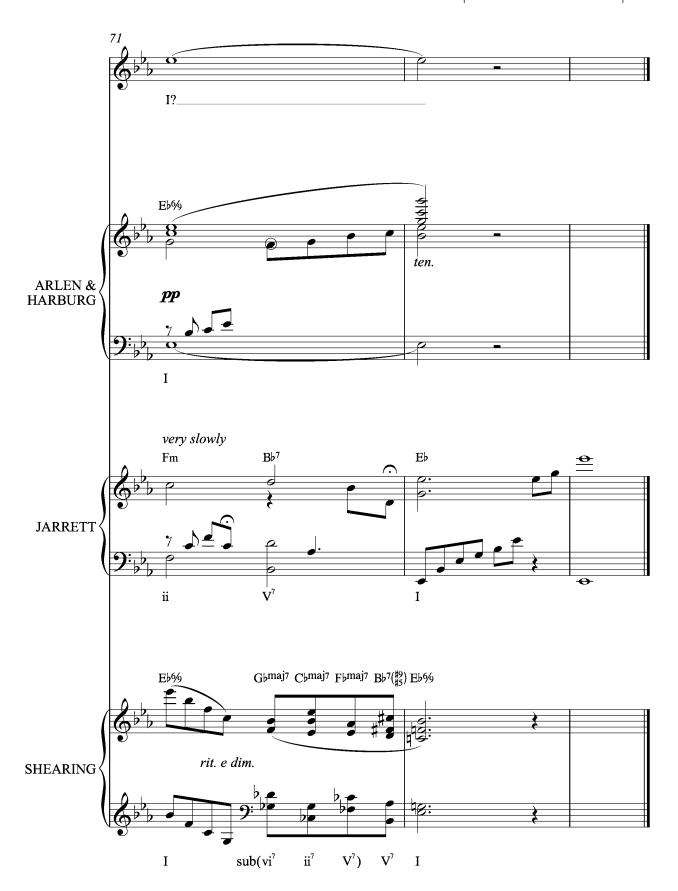












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