"Chords of Inquiry": Alternate Guitar Tunings, Harmony, and Text-Music Relations in Joni Mitchell's Early Songs

PETER KAMINSKY, MEGAN LYONS

In the 2003 documentary *Woman of Heart and Mind*, Joni Mitchell states, "Chords are depictions of emotions. These chords that I was getting by twisting the knobs on the guitar until I could get these chords that I heard inside that suited me, they feel like my feelings. You know, I called them, not knowing, chords of inquiry." In investigating Mitchell's music, we address the integration of guitar, harmony, and expression of feeling exemplified by "chords of inquiry." We take as a corpus her early songs from 1968 to 1972 in which she accompanies herself on guitar. Our study extends prior scholarly research and practical guitar lore by first offering a systematic, affordance-based integrative approach to Mitchell's use of alternate guitar tunings and their attendant chord shapes. We then show how her approach to the guitar influences text-music relationships in selected songs. Central to our analysis is "expressive opposition," that is, her creation of analogs between oppositions in her lyrics and oppositions manifested in her performed chord shapes and fretboard.

Keywords: Joni Mitchell, affordance, alternate tunings, text-music relations.

Since her surprise appearance at the Newport Folk Festival in the summer of 2022, Joni Mitchell seems to be doing everything, everywhere, all at once. Her winning the Gershwin Prize for Popular Song in 2023, the Grammy for best folk album in 2024, and performing in concert with guest musicians including Brandi Carlile, represent some of the most obvious signs of a new phase in her artistic life. To critics and fans alike, Mitchell ranks among the most important, creative, and lauded North American singer-songwriters of the past sixty years. Given her stature and the vast cornucopia of books, articles, interviews, and performance videos centered on her and her work, why does Mitchell's music remain under-investigated in so many ways?

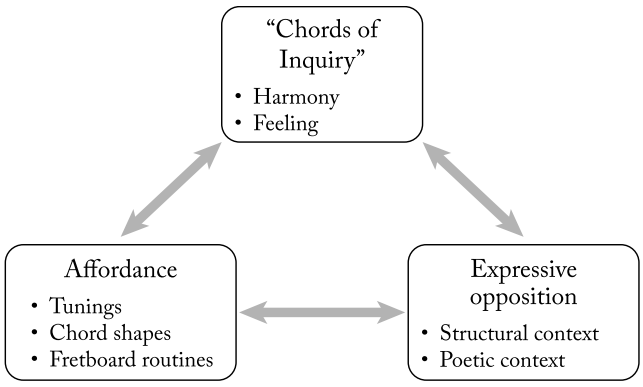
Our response to this question inspires the central aim of this article: her approach to the guitar. Indeed, there has been surprisingly little scholarship devoted to her guitar playing. Moreover, the extant research has largely related a consistent and tightly wound narrative, beginning with her contracting polio as a child; then the consequent weakening of her hands and its impact on her guitar technique, especially, her left-hand limitation to playing simple chord shapes; then her deployment and expanded use of non-standard alternate guitar tunings to accommodate her physical disability, enabling her to play more complex chords with simple fingerings; and finally the evolutionary progression of her alternate tunings from simple open-string major triads to more complex tuning configurations.[1]

This narrative is not inaccurate, as far as it goes. Its limitations stem from the relatively narrow focus on exclusively musical parameters, especially harmony and tunings, and on the physical constraints imposed on Mitchell's guitar technique. The fact that these concerns are inseparable from the expressivity of her music has received relatively little attention. In virtually all interviews in which Mitchell discusses her guitar playing, musical and expressive elements are interwoven. In order to investigate Mitchell's early songs and their depth of poetic and musical expression, we need to account for the interactive network of relationships grounding her approach to the guitar, as well as their expressive ramifications. Our approach extends prior scholarship by (1) bridging the gulf between practical and scholarly approaches to Mitchell's guitar playing, (2) referencing a sufficient corpus of songs to enable a systematic approach to her alternate guitar tunings and their attendant features, and (3) developing conceptual frameworks to better understand how Mitchell's relatively simple technical means can produce complex musical and expressive outcomes.

Example 1 shows three broad interrelated concepts that help address Mitchell's guitar craft and her musical expressivity:

Earlier versions of this research were presented at the Yale symposium honoring Dr. Patrick McCreless (1 October 2022), and the virtual conference *Joni Mitchell's* Blue *at 50: A Celebration of Her Life and Music* (9 April 2021). We thank the anonymous reviewers for their deep insight into our topic and their editorial expertise and suggestions. We are grateful to Patrick McCreless for his insights on an earlier draft of this article, and to Gary Kass for proofreading. Thanks to Lori Burns, Richard Cohn, and Matthew Brown for input on earlier iterations of the research presented here. We also acknowledge faculty members from the Center for the Ecological Study of Perception and Action (CESPA) at the University of Connecticut, to whom we presented our initial thoughts on affordance in relation to Joni Mitchell and the guitar.

1 Authors pursuing this narrative include Sonenberg (2003); Straus (2011; Straus quotes Sonenberg); Jones (2019); and Yaffe (2017). Whitesell (2008) and Bennighof (2010) say relatively little about Mitchell's guitar performance and by extension the disability angle in addressing it; they do refer to her use of "simple chord shapes" without further elaboration.



EXAMPLE 1. *Integrated network for Mitchell's early guitar-based music*

"chords of inquiry" (a term she coined), affordance, and expressive opposition. The concept of chords of inquiry is central to Mitchell's integration of harmony and feeling. The concept of affordance may be considered as the hub for three important components of her guitar playing—alternate guitar tunings, their resultant chord shapes, and the movement of these shapes on the fretboard. Expressive opposition in Mitchell's poetic themes and their musical correlates represents the core principle informing our analysis of text-music relations in her songs. We shall discuss affordance and expressive opposition in setting forth our methodology in Part 1. We begin with chords of inquiry, which, since it is Mitchell's own concept and term, supports our aim to use her musical commentary, where possible, as a point of departure.

Mitchell has described chords of inquiry on multiple occasions throughout her career. In a retrospective documentary, she notes:

> For years, everyone said, "Joni's weird chords, Joni's weird chords." And I thought, How can there be weird chords? Chords are depictions of emotions. These chords that I was getting by twisting the knobs on the guitar until I could get these chords that I heard inside that suited me, they feel like my feelings. You know, I called them, not knowing, chords of inquiry. They had a question mark in them. There were so many unresolved things in me that those chords suited me. You know, I'd stay in unresolved emotionality for days and days.[2]

Here she articulates important elements of her creative process and her general concept of harmony in relation to the guitar: the use of alternate tunings as a conduit through which these sonorities are expressed; the inseparability of harmony and feeling; and the linkage between unresolved emotions and unresolved chords. In an earlier interview, she offers a more detailed description:

> Chaka Khan once told me my chords were like questions, and in fact, I've always thought of them as chords of inquiry […]. For instance, a minor chord is pure tragedy; in order to infuse it with a thread of optimism you add an odd string to the chord to carry the voice of hope. Then perhaps you add a dissonant [*sic*] because in the stressful society we live in dissonance is aggressing against us at every moment.[3]

In this statement, Mitchell hints at how chords can convey emotions in a more nuanced way than minor/major depicting sad/happy, specifically through the addition of harmonic extensions ("an odd string") and/or dissonance. Implicit in both statements is the role of opposition in defining an expressive context: e.g., chords of inquiry necessarily stand out in relation to more normative chords of non-inquiry.

How did Mitchell come to these insights in creating her guitar parts? While we cannot fully address this issue here, her guitar "origin story" provides some clues. As documented on the *Joni Mitchell Archives, Volume 1: The Early Years (1963–1967)* (hereafter *JMA1*), Mitchell began her career as a professional musician by accompanying herself on baritone ukulele. Sometime between 1963 and early to mid-1965, she bought her first guitar and taught herself to play from *The Folksinger's Guitar Guide: An Instruction Record* by Pete Seeger, released in 1955 by Folkways Records, and its accompanying manual.[4] Judging by her early guitar performances on *JMA1*, Mitchell took away from Seeger's guide three important foundational guitar techniques: playing common folk-guitar chords and progressions in standard guitar tuning (SGT); using basic fingerpicking patterns; and, significantly, playing in common alternate guitar tunings (AGTs) used in traditional blues and folk music. For the latter, Seeger begins with "Drop D," minimally altering SGT by lowering the bass 6th string from E to D. He then lowers the 5th and 1st strings for "Open G," where the open strings play a G-major chord (DGDGBD). Seeger encouraged guitarists to experiment with AGTs besides the ones he demonstrated: "Now the student can easily experiment with other tunings. The advantage of using them is the special effects you can gain thereby."[5]

Despite Mitchell's downplaying of Seeger's role in her development as a guitarist, clearly she extended his instruction in creative ways. Besides her significant expansion of the number of alternate tunings, even her earliest songs in Open G far exceed Seeger's simple demonstration in their exploitation of harmonic, melodic, and timbral affordances of the tuning.[6] Equally important is her discovery that simple fingerings or chord shapes for triads and seventh chords from standard tuning (a.k.a. "cowboy chords") could be exported to alternate tunings to create a wide array of harmonic extensions and dissonances, thereby enabling chords of inquiry.

2 Lacy (2003).

3 Mitchell (1988).

4 Seeger (1955).

5 Seeger (1955, 17).

6 See Seeger's (1955, 16) arrangement of "Poor Howard's Dead and Gone."

Our article addresses salient technical and expressive aspects of Mitchell's guitar playing and their integration in her early songs. Part 1 of this article builds on prior scholarship that discusses her approach to the guitar, as well as on her own trenchant observations. For the presentation of our conceptual framework, we begin with a short exposition of James J. Gibson's concept of affordance and its musical adaptation by Jonathan De Souza; we then briefly review poetic and musical concepts relevant to our methodology that are found in the work of Lloyd Whitesell, Daniel Sonenberg, Timothy Koozin, and Matthew Jones. In engaging the technical side of Mitchell's guitar craft, we focus on three interactive pillars: AGTs, chord shapes, and fretboard movement. Taking as a corpus her thirty-four guitar-based songs from the period 1968–1972 (during which she recorded her first five studio albums), we offer a model for organizing all of the AGTs Mitchell employs into *tuning families* based on her own criteria. We then provide a consistent classification system for chord shapes connected with her AGTs and introduce the concept of *chord-shape types*; our system thereby moves beyond the common generic description of Mitchell's "simple chord shapes." Finally, we turn to *fretboard routines*, our term for her efficient motion along the fretboard. Each of these pillars is illustrated by a short musical example. Part 2 explores selected aspects of two songs: "I Don't Know Where I Stand" (1969/©1967) and "Just Like This Train" (1974/©1973).[7] Here we employ the ideas previously introduced, including chords of inquiry, affordance, and guitar-based opposition, to investigate the stunning range and depth of expression in the combined lyrics and music. We should note that the example of "Just Like This Train" slightly extends our timeframe for what count as Mitchell's early songs. Because it employs the same AGT as three earlier songs dating back to 1968, its inclusion enables us to compare Mitchell's treatment of the tuning as her style changes. Our analysis will demonstrate that "Train" moves beyond her early songs, including "I Don't Know Where I Stand," both musically and expressively, signaling a more ambitious and sophisticated stage in her songwriting.[8]

PART 1. A SYSTEMATIC APPROACH TO MITCHELL'S ALTERNATE TUNINGS, CHORD SHAPES, AND FRETBOARD ROUTINES

Why is it important to study Mitchell's tunings, affordances, chord shapes, and fretboard motion in analyzing her early songs? What does examining her music from this perspective do that other approaches don't? These are pertinent questions in undertaking a systematic approach to Mitchell's guitar performance and its structural and expressive function in her songs. To answer them, we develop five theoretical strands from prior scholarship: affordance and its musical adaptation for analytical purposes; Mitchell's "polarity of freedom" as poetic theme; the analytical salience of Mitchell's guitar performance; expressive opposition in guitar voicings; and Mitchell's guitar-tuning families.[9]

Ecological psychologist Gibson formulated the concept of affordance in researching visual perception, offering an alternative to prevailing cognitivist approaches:

> The *affordances* of the environment are what it *offers* the animal, what it *provides* or *furnishes*, either for good or ill. The verb to *afford* is found in the dictionary, but the noun affordance is not. I have made it up. I mean by it something that refers to both the environment and the animal in a way that no existing term does. It implies the complementarity of the animal and the environment… .
>
> An affordance cuts across the dichotomy of subjective-objective and helps us to understand its inadequacy. It is equally a fact of the environment and a fact of behavior. It is both physical and psychical, yet neither. An affordance points both ways, to the environment and to the observer.[10]

Gibson's reconsideration of perception as a dynamic and complementary relationship has proven attractive to music theorists.[11] It involves modeling the interaction of a sentient subject with an environment and its relevant features, e.g., performing musicians and their instruments.

In his groundbreaking 2017 book *Music at Hand: Instruments, Bodies, and Cognition*, Jonathan De Souza brings together a wide range of disciplines in applying Gibson's affordance theory to the relationship between musician and instrument. He presents the musician as an expert perceiver and executor, interacting with an instrument amenable to a wide range of techniques and sonic possibilities; he stresses the

7 In the dating of Mitchell's songs, the first year given is the year of their appearance on a studio album, followed by their copyright date, e.g., 1969/©1967. A date without a slash indicates that release and copyright occurred in the same year.

8 It is important to acknowledge our reliance on published transcriptions in conducting our research. Appendix 3 shows all songs from which we draw examples and the sources of their transcriptions. For all songs, we compared each transcription carefully against the studio recording (and, where relevant, live and demo recordings) and edited the transcription to minimize any inaccuracies.

9 Our main sources, respectively, are Gibson (1979) and De Souza (2017); Whitesell (2008); Sonenberg (2003, 2009); Koozin (2011); and Jones (2019). In our appendices, we include charts organized by tuning and tuning family for all of Mitchell's early guitar-based songs on her first five albums (Appendix 2), and also for her original songs prior to her 1968 debut album, released in 2020 on *JMA1* (Appendix 1). For Appendix 1, we include those songs that were "non-keepers," i.e., songs Mitchell did not include on any subsequent studio album or compilation.

10 Gibson (1979, 127–29). Later work in ecological psychology informing our research includes Turvey and Shaw (1995) and Chemero (2003). Useful introductions to the field of ecological psychology include Lobo, Heras-Escribano, and Travieso (2018) and Vaughan et al. (2021).

11 These include Clarke (2005) on the process of musical perception from a listener's perspective; De Souza (2017) on the interaction of performing musicians and their instruments; Hannaford (2019) on the socio-musical interaction in (partially) free group improvisation; and Shea (2020) on guitarists' motion on the fretboard and its impact on musical structure.

inseparability of musician and instrument, and the complementarity of their interactions.

De Souza extends Gibson's idea of affordance by adding two concepts relevant to Mitchell's approach to the guitar, namely, *enactive landscape* and *idiomaticity*. The term "enactive landscape" comes from cognitive scientist David Kirsh. De Souza uses it to address a difficult issue for affordance theory—why some affordances are exploited and others are not, and what factors determine their selection (or rejection):

> An object's affordances are potentially endless. A chair never forces me to sit in it. I could stand on the chair instead. I could hide behind it. I could use it as a doorstop, an end table, a clothes horse, or a music stand […].
>
> If affordances are theoretically innumerable, why are certain uses of an object preferred over others? […] To this end, David Kirsh offers the idea of the "enactive landscape," a set of affordances that are activated for an agent. In other words, an enactive landscape is a space of possibilities, in which technology and technique coevolve.[12]

The notion of an enactive landscape conceives affordance as a space where uses of an environmental object may or may not be activated by a human actor. However, it does not adequately address the factors underlying the selection of afforded uses within a *musical* context. Enter "idiomaticity":

> From an ecological standpoint, idiom must involve *both* instrumental affordances and players' habits […]. The instrument itself does not give rise to an idiom. The idiom is realized in players' overlearned actions, in the ways they typically move through an instrumental space, revealing some affordances and concealing others.[13]

While De Souza does not provide a concrete definition of the term "idiomaticity," we understand it as the interaction between an instrument's sound production capabilities and a performer's attributes—physical strengths and limitations, musical background, influences, and so forth—in choosing which affordances to activate. Idiomaticity represents the process through which these elements coalesce in creating a distinctive musical profile.

We propose that the concept of affordance helps illuminate Mitchell's idiomatic employment of AGTs. In addressing her unique and complex relationship to the guitar, we extend De Souza's approach to affordance in three ways. First, we include Mitchell's childhood polio and its aftereffects under the umbrella of her individual enactive guitar landscape. In so doing, we choose affordance theory, as opposed to disability studies or other disciplines, as a perspective through which to address her guitar craft.[14] Second, we consider her AGTs within an affordance framework by conceiving of them—both as a group and individually—as a kind of environment that both enables and is influenced by a tuning's associated chord shapes and motion on the fretboard. Third, we add chords of inquiry to the investigation of affordances within a given tuning. This too is inspired by De Souza, who writes in his introduction that his "analyses—which compare various styles of harmonica playing—suggest that *idioms emerge at the nexus of instrumental 'sweet spots' and players' embodied habits*."[15] Our inclusion of chords of inquiry in that nexus adds another dimension to the concept of affordance: Mitchell's lyrics and their representation of feelings. That is, as is suggested by her commentary quoted above, Mitchell's experimentation with AGTs becomes intertwined with their potential for expressing emotion.

Lloyd Whitesell's 2008 book *The Music of Joni Mitchell* remains a foundational source for its deep insight into her lyrics and music. Whitesell identifies Mitchell's complex and conflicted perspective on personal freedom as a central thematic concern:

> The pull of freedom in its multiple guises forms a grand theme running through Mitchell's songwriting. Right from the beginning, however, we feel the tug of a counterweight. Imagery of weaving, dancing, dreaming, and flying is tangled up with imagery of entrapment, stone (hardening, sinking), hollowness, and illusion. Musical gestures play with contrapuntal possibilities of constraint and release, elation and deflation. Following a dialectical way of thinking that remains characteristic, Mitchell expresses the urge to be free as a tension between love and solitude, idealism and worldliness, abstract yearnings and concrete realities. It is this skeptical turn of mind, *her attraction to polarity and contradiction*, that enables Mitchell to explore such rich sources of significance in her chosen thematic domains.[16]

Here, Whitesell states two key ideas, one poetic, the other musical. The first is the grand theme of the *polarity of freedom*, which is really a set of themes that have this core notion as a common element. The second is Mitchell's employment of musical gestures that express this theme. Subsequently, in his chapter titled "Harmonic Palette," Whitesell specifies these musical gestures, focusing on *modes*—specifically, the "mixture" of diatonic modes and polymodality—as fundamental to Mitchell's musical practice. Modality, chromaticism, polytonality, and tonic pedal points are the categories of harmonic organization through which he filters her songs.[17]

In an otherwise glowing review of Whitesell's book, composer-theorist-guitarist Daniel Sonenberg raises two related issues: (1) the debatable salience of modality for explicating Mitchell's harmony and (2) Whitesell's insufficient consideration of her guitar performance and alternate tunings.

12 De Souza (2017, 52).
13 De Souza (2017, 77).
14 Cf. Jones 2019, which situates Mitchell's approach to the guitar within disability and queer studies.
15 De Souza (2017, 5), our emphasis.
16 Whitesell (2008, 115), our emphasis.
17 Whitesell (2008, 120–25 and table 5.1).

Regarding the necessity of a performance-based perspective, Sonenberg writes:

> Though Mitchell's modal practices are eye-raising [*sic*] in the context of traditional Western tonal practice, Whitesell does not comparatively situate them in the context of rock, where adherence to a small body of standard guitar chord fingerings has made so-called polymodality more the rule than the exception. It may indeed be true that Mitchell's modal wanderings are more prolonged or extreme than those of her contemporaries, but without comparison it is difficult to know how to weigh the category. Additionally, Mitchell is perhaps most famous—musically speaking—for her own approach to the guitar, in which she retunes the instrument for nearly every one of her compositions. The harmonic and timbral implications of such "twiddling," as Mitchell calls the practice, would seem to be equally important as Whitesell's categories, but goes largely untreated.[18]

In his 2003 dissertation on Mitchell's early music, Sonenberg takes a critical preliminary step in discussing her approach to the guitar. Though he limits his investigation to one chapter and one analysis (of the 1968 song "I Had a King"), he touches on several important topics: the structural potential of the song's unusual tuning; the linkage between tuning and chosen chord fingerings; the correlation of the guitar part, formal structure, and vocal line (melody and register); text-music relations (though this is somewhat underemphasized); and Mitchell's use of both traditional and more exotic alternate tunings on her debut album, *Song to a Seagull*.[19] In short, Sonenberg regards Mitchell's approach to the guitar as equal in importance to Whitesell's abstract (non-guitar-based) structural features. Our conceptual framework and analytical application take Sonenberg's study as a jumping-off point.

At first glance, Timothy Koozin's 2011 article "Guitar Voicing in Pop-Rock Music" seems to have little connection to Mitchell's early music: There are no examples from her songs, and his focus on pop-rock genres, standard tuning, and electric guitar performance would not be appropriate for the songs we discuss. Nonetheless, he offers a concept that is relevant to our linking of Mitchell's poetic themes and the performative gestures that animate her guitar playing: *expressive opposition*. Writing from the perspective of theorist and performing guitarist, Koozin explores the physical and aural distinction between open chords and barre chords and how this distinction has important expressive implications.[20] These include:

Open chord voicings	Barre chord voicings
Collective	Individualized
Letting open-string chords ring	Grasping chords: Asserting persona
Directed voice leading	Parallelisms
Rural	Urban
Grounded	Free
Pastoral	Heroic[21]

Some of these qualities (pastoral versus heroic) do not apply to Mitchell's songs, while others may be appropriate with some qualification.[22] We broaden Koozin's focus on guitar voicings by viewing them as one among several relevant guitar-based oppositions.

Musicologist-guitarist Matthew Jones is perhaps best known for his study of Mitchell's guitar approach through the lens of disability studies. His 2019 essay provides a "pathography" that traces Mitchell's childhood polio, its effect on both her hands, and its consequent impact on her playing. In addition, he gives a brief but useful introduction to some of her alternate tunings and their grouping into tuning families:

> To facilitate movement between different tunings [in live performance], Mitchell groups them into closely related families which allows her to "twiddle" only a knob or two at a time rather than risk breaking a string or causing extreme instability in the overall intonation. Family resemblances between tunings become clear when they are written in Mitchell's notation style […]. Most feature strings five and four tuned at the seventh fret [creating a P5] while the upper three strings exhibit some variations.[23]

Mitchell's "notation style" provides a numerical array of the intervals between adjacent open strings from lowest to highest in register (strings 6 to 1). For example, Open D tuning with the pitches D_2 A_2 D_3 $F\sharp_3$ A_3 D_4 would be represented by X-7-5-4-3-5.

18 Sonenberg (2009, 46). To our knowledge, Mitchell never mentions the modes by name in any of her interviews, in stark contrast to her detailed commentary on chord shapes, movement along the fretboard, alternate tunings, and their combined impact on her music.

19 Sonenberg (2003, 23–57, 162–72). Whitesell served as associate advisor for the dissertation, and he cites Sonenberg in his own extensive analysis of "I Had a King" (2008).

20 Open chords (technically, open-chord shapes) may be defined as guitar fingerings for 4-, 5-, or 6-string chords that include at least one open (unfingered) string. Sonenberg (2003, 30n22) explains that in standard tuning (EADGBE), "barre chords are played by placing the index finger across all six strings, shortening the neck as if with a temporary capo, while the remaining fingers form open chords (most often with the A [major or minor] or E [major or minor] fingerings." Sonenberg also includes a useful table of open chord possibilities including common seventh chords (31, table 2-1).

21 Koozin (2011, table 1).

22 For example, Koozin (2011) assigns "directed voice leading"—presumably including at cadences—to open chord voicings, in contrast to "parallelisms," i.e., maintaining an invariant chord shape by using barre chords in parallel motion. For Mitchell, these categories may be overlapping or porous. Specifically, her use of a wide range of *open* chord shapes in *parallel* motion is perhaps her signature fretboard routine. Moreover, she regularly deploys this routine with directed voice leading in creating cadences.

23 Jones (2019, 32–33). Russell (1998–2023), one of a group of guitarists who transcribe Mitchell's guitar parts and post them to her website, discusses Mitchell's "tuning patterns" from a performer's perspective.

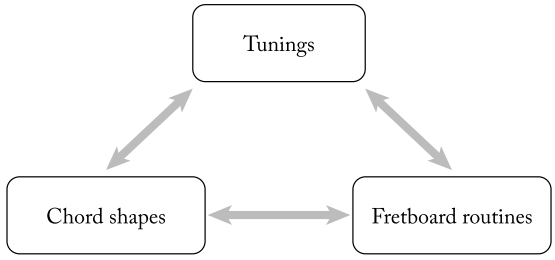
This representation has both physical and abstract dimensions: it specifies the fret on which to place one's finger for the pitch of the next open string (e.g., the 5th string A_2 fingered at the 5th fret sounds D_3), and it identifies the intervallic distance in semitones (4 = M3, 7 = P5, etc.). (The "X" denotes any registrally appropriate pitch from which to generate the tuning.) Tunings are transpositionally equivalent and for practical purposes the same as long as they maintain the same interval configuration. While Jones includes seven sample AGTs employed by Mitchell, he does not specify how they group into families. We shall provide criteria for tuning families and expand their scope to account for nearly all of her early songs.

Jones's examples of alternate tunings—as well as open- and barre-chord shapes, a single "chord-shape type," and an instance of parallel movement along the fretboard—represent a selective culling from almost thirty years of Mitchell's song output. For this study, we concentrate on the early songs (1968–1972), treating the thirty-four guitar-based songs as a mini-corpus. By doing so, we can home in on tunings, chord shapes, fretboard movement, and their interaction in greater detail.[24]

Mitchell's approach to the guitar may be thought of as comprising three interrelated pillars, shown in Example 2: tunings, chord shapes, and what we term "fretboard routines," or the patterned movement of chord shapes on the fretboard. For a given song, Mitchell's chosen alternate tuning serves as a kind of pre-compositional system, influencing her choice of chords, qualities, voicings, and fretboard locations. As we shall see—and as is evident to anyone with even limited experience playing the guitar in standard tuning—the chord shapes employed by Mitchell in alternate tunings look quite familiar; indeed, they are imported directly or with slight tweaks from standard tuning. Of course, they sound unfamiliar and oftentimes, well, magical. Our classification strategy will help explain the relations between the affordances of tuning and chord shapes. Fretboard routines comprise the range of progressions, sequences, and loops in Mitchell's songs, including the ubiquitous movement of open chord shapes in parallel motion. These three pillars become visible from practice-based as well as scholarly perspectives on Mitchell's guitar work.[25] We will discuss each pillar individually, then bring them together as a heuristic for the analyses in Part 2.

Tunings and Tuning Families

Using *JMA1* as a reference, Example 3 traces a rough chronology of Mitchell's tunings, beginning with the four years prior to her 1968 debut album. She starts with standard tuning learned from Pete Seeger's instruction manual and then turns to traditional "simple" alternate tunings—Drop D, Open D, and Open G—well-known to prior generations of blues and folk guitarists. But beginning March 1967 (see column 2, lower table), Mitchell dramatically shifts to more complex configurations of her own invention. In that year alone she composed ten original songs in five different and newly devised tunings. (Appendix 1 lists all her original songs released on *JMA1* along with their tunings, keys, and date of first appearance.) Column 3 of Example 3 shows the number of songs in each tuning that were released 1968–1972 on the first five studio albums (not including songs written earlier and subsequently released on *JMA1*). Clearly, Mitchell phased out standard and traditional altered tunings in favor of more novel ones that offered greater compositional possibilities.[26] Nonetheless, we first need to examine the older tunings, especially Open D and Open G, to understand how they serve as "parents" for her subsequent tuning families.



EXAMPLE 2. *Interrelated pillars of Mitchell's early guitar style*

Example 4 shows Mitchell's earliest tunings: SGT and the three traditional AGTs mentioned above.[27] These AGTs share three important qualities: they have either the same three or four open strings in common; the strings are changed by only a half step or whole step, making retuning relatively easy; and each has a perfect fifth between its bass string and the next higher string. On the surface, that last statement seems inaccurate, as Open D and Open G differ significantly in their bass intervals of a fifth (D–A) and a fourth (D–G), respectively. However, the brackets highlight their intervallic similarity: for Open G, if we consider string 5 as the bass, the succeeding interval succession exactly matches that of Open D by rotating its interval structure by one place (hence the ø sign under string 6). Moreover, Mitchell's playing in Open G (and close tuning relatives) corroborates this rotational relationship, as the 6th string is played sparingly (often limited to the dominant chord on D). Going beyond her early songs, the "operative" bass P5—rooted

24 In future research, we will extend our theory and analysis beyond the early songs to Mitchell's entire output.

25 Scholarly studies include Jones (2019) and Sonenberg (2003); practical studies include Rodgers (2000) and content on jonimitchell.com, especially at the link to "Transcriptions."

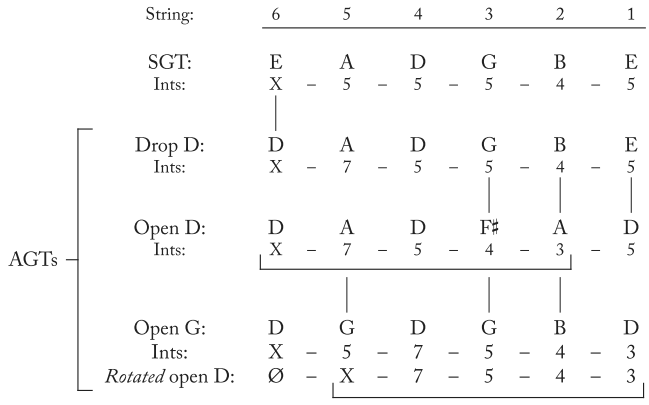
26 Sonenberg (2003, 41–42) and Rodgers (2000, 37ff.) make similar points.

27 Mitchell uses all four of these tunings for her six-song set recorded in November 1966 at the 2nd Fret in Philadelphia: "Brandy Eyes" and "What's the Story Mr. Blue" in Drop D; "Urge for Going" in SGT, "Eastern Rain," and "The Circle Game" in Open G; and "Night in the City" in Open D. On her earliest recording of original works on *JMA1*—a birthday tape for her mother, Myrtle Anderson, dated 1965—the three songs use SGT, Drop D, and Open G.

Traditional tunings (standard and alternate)		
	Pre-1968: number of songs [date of first appearance]	**1968–1972: number of songs** (not including JMA1)
Standard (EADGBE)	5 [1965]*	0
Drop D (DADGBE)	5 [1965]	1
Open D (DADF♯AD)	12 [1966]	3
Open G (DGDGBD)	11 [1965]	3
Non-traditional tunings		
	Pre-1968: number of songs [date of first appearance]	**1968–1972: number of songs** (not including JMA1)
See Appendix 1 for a complete list of tunings and songs pre-1968	10 [March 1967] (5 different tunings)	11 (7 different tunings)

* Data drawn from JMA1; performance dates are listed variably by day/month/year, month/year, or year only

EXAMPLE 3. *Chronology of Mitchell's early tunings*



EXAMPLE 4. *Mitchell's earliest tunings*

on string 6 or rotated to string 5—underpins the vast majority of Mitchell's tunings throughout her repertoire.

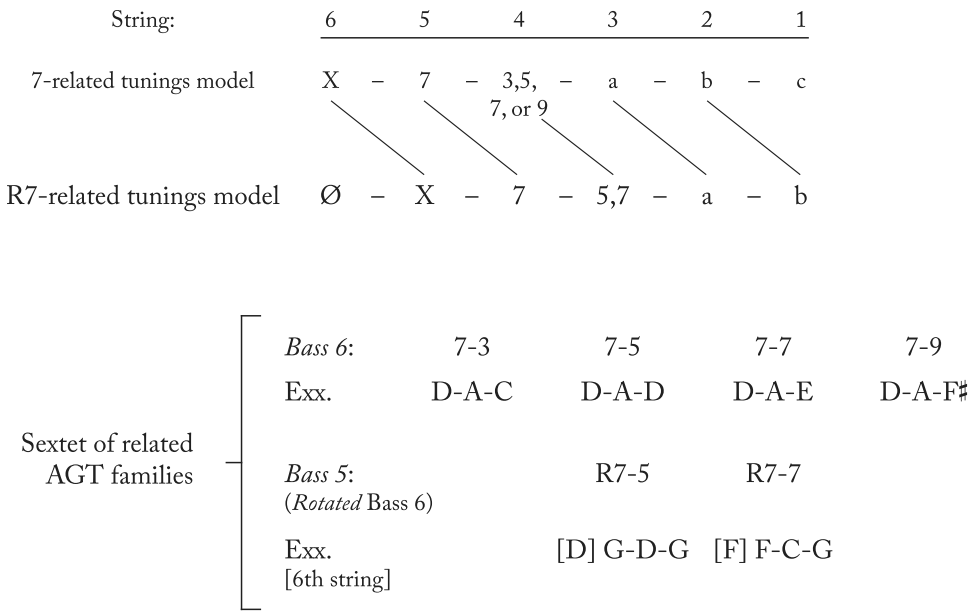
Mitchell groups her tunings into related families based on the interval succession of the lower strings, 6, 5, and 4. She notes:

> Standard tuning's numerical system is 5 5 5 4 5, with the knowledge that your bass string is E, right? Most of my tunings at this point are 7 5 or 7 7 [e.g., DAD and DAE, respectively], where the 5 5 on the bottom [usually] is. The 7 7 and the 7 5 family tunings are where I started from […]. However, the dreaded 7 9 family—I have about seven songs in 7 9 tunings—are in total conflict with the 7 5 and the 7 7 families. They're just outlaws.[28]

Our classification system for Mitchell's AGTs builds on her description of tuning families. Example 5 divides her AGTs into two related sets: those featuring the 6th string as the operative bass note or *Bass 6*, and rotated or *Bass 5* tunings. The top half of the example provides a general model, starting with a given bass note X with 7 (P5), followed by odd interval 3, 5, 7, or 9 (excluding interval-class 1), and variable strings 3, 2, and 1 (abc). As with Open G cited above, the model designates the 6th string as null, assigns X to the 5th string, and proceeds accordingly. For Bass 5 tunings in the early songs, the "ø" 6th string lies either a P4 below the 5th string (as in Open G) or, more rarely, a unison or octave below. The bottom half shows the six related AGT families generated from these two sets. For Bass 6 AGTs, we add the 7-3 family to Mitchell's self-acknowledged 7-5 and 7-7 tunings. (Note that the "outlaw" 7-9 family does not occur in the early songs; it was first used in the 1974 song "Help Me.") Mitchell employs only two Bass 5 rotated (R) tuning families, R7-5 and R7-7.

This sextet of related 7- and R-7 families forms the core tuning repertoire for Mitchell's entire song output. Example 6 provides a corpus perspective, beginning with a total of 171 songs appearing on seventeen studio albums, and, moving downward on the chart, 105 guitar-based songs, eighty-eight of which

28 Rodgers (2000, 40).



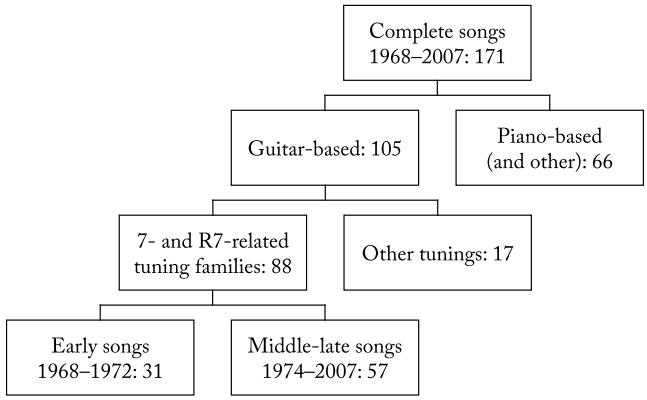
EXAMPLE 5. *Mitchell's 7- and R7-related tuning families*

feature these families.[29] As noted, between 1968 and 1972, Mitchell released thirty-four guitar-based songs. Of these, thirty-one are in the 7- or R-7 family. Of the remaining songs, two are in SGT; only one song, "The Dawntreader," features an outlier AGT, DGDDAD or X-5-7-0-7-5.[30] (Appendix 2 provides a list of these thirty-one early guitar-based songs sorted by tuning family.) The intonational features of this sub-corpus have significant analytical ramifications: the affordances of these tunings strongly influence Mitchell's chord shapes, with important consequences for harmony, tonal organization, guitar-based oppositions, and text-music relations.

Chord Shapes and Chord-Shape Types

In her interview with Rodgers, Mitchell described the integrative process of creating tunings and chord shapes:

> You're twiddling and you find the tuning. Now the left hand has to learn where the chords are, because it's a whole new ballpark, right? So you're groping around looking for where the chords are, using very simple shapes. Put it in a tuning and you've got four chords immediately—open, barre five, barre seven, and your higher octave, like half fingering on the 12th [fret]. Then you've got to find where your minors are and where the interesting colors are—that's the exciting part.[31]



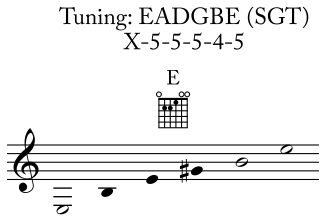
EXAMPLE 6. *Mitchell's 7- and R-7 tuning families in her early period (1968–1972): a corpus perspective*

Here she hints at some of the musical sources for her expressive guitar gestures. Implicitly she takes major-key tonality as a starting point, then specifies the fret location for primary harmonic functions (open string tonic, fret 5 subdominant, fret 7 dominant, fret 12 tonic 8va). Then comes "the exciting part": locating minor chords and "interesting colors." Minor chords may be diatonic or result from mode mixture. As a self-taught musician who does not read music, and, by her own self-description, a painter first and musician second, Mitchell frequently employs color and art metaphors in discussing her

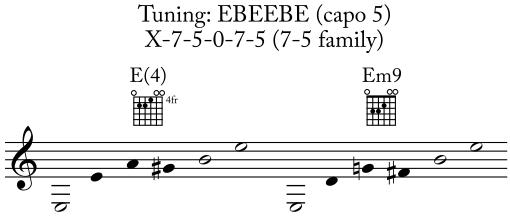
29 This count excludes live recordings, compilations, and the studio albums *Both Sides Now* (2000) and *Travelogue* (2002), neither of which contains new original songs.

30 The two songs in standard tuning are "Tin Angel" (on *Clouds*, 1969) and "Urge for Going" (first released as the B-side to the single "You Turn Me On, I'm a Radio" in 1972, and later on the compilation album *Hits* in 1996).

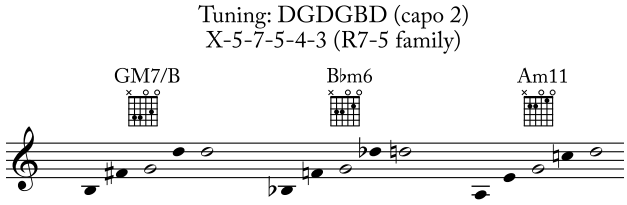
31 Rodgers (2000, 38).



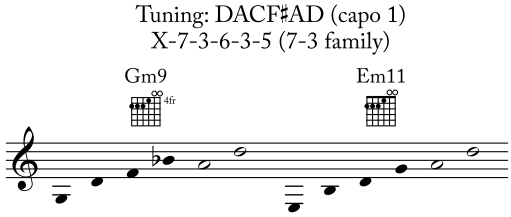
EXAMPLE 7(a). *E-major source chord shape*



EXAMPLE 7(b). *"I Had a King" (1968), 0:00–0:09*



EXAMPLE 7(c). *"Morning Morgantown" (1970/©67), 0:08–0:15*



EXAMPLE 7(d). *"Barangrill" (1972), 0:12–0:16*

creative process.[32] Based on evidence from her harmonic palette, "interesting colors" generally signifies harmonic extensions, chords of inquiry, dissonance, or a combination thereof.

Mitchell's early songs strongly suggest that standard tuning serves as the primary source for her repertoire of chord shapes in alternate tunings. As noted earlier, scholarly sources tend to attribute her choice of "simple shapes" to the aftereffects of polio.[33] This undoubtedly impacted her left-hand technique and contributed to its limitations. At the same time, her brief but formative experience playing folk songs and writing original folk-rooted songs in standard tuning provided a creative wellspring that she drew on for different tunings.

Example 7(a) takes one such shape, the E-major chord in SGT, and traces its modified recurrence in three representative early songs, each in a different AGT family. Example 7(b), the opening of "I Had a King," features one of the more unusual tunings in the 7-5 family. It replicates traditional Open E tuning (Open D transposed up a step), except for the 3rd string: instead of the major third G♯, it is detuned down to E, creating a unison with the open E on the 4th string.[34] Mitchell's importation of the chord shape for E major into this tuning makes the 3rd string sound a half step *lower* than the 4th string (A–G♯), changes the mode of the sounding chord from major to minor by shifting the shape down two frets, and creates a chromatic descent, A–G♯–G–F♯, that becomes a key motive in the vocal line and later in the guitar part. In Example 7(c), the verse opening for "Morning Morgantown" in Open G, Mitchell plays a "gapped" form of the shape, moving her index finger over a string. As the shape moves down chromatically, the fingered strings preserve the resultant minor triad Bm–B♭m–Am while the open G string acts as a drone, changing its function with each shift (root, added 6th, and 7th). In Example 7(d), "Barangrill" adds a finger on the 6th string to the original shape. Note that fingered strings 6, 5, and 3 sound an open-spaced minor triad, just as "Morning Morgantown" does, shifted over one place to strings 5, 4, and 2. The rotational relationship between the songs' tuning families enables the creative use of the same basic chord shape.

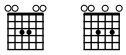
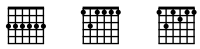
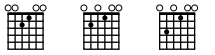
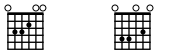
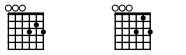
These examples enable us to distinguish between a single *chord shape* as a source in standard tuning and a protean *chord-shape type* (CST) that is able to assume several related forms in multiple tunings. With the latter, Mitchell vastly expands her range of harmonic color while maximizing efficiency of motion on the fretboard.

With few exceptions, Mitchell's entire stock of chord-shape types in her early songs comes from simple chord shapes in SGT; these are used in a wide range of AGTs and modified like the E-major shape in Example 7. Example 8 offers a classification system for all chord-shape types used in the early songs,

32 In Mitchell (1998), she tells interviewer and Austin DJ Jody Denberg: "My harmony is selected by my own interest in the same way that I would select to put that color next to that color […]. I think of myself as a painter who writes music […]. Basically, the reason I'm so unruly in this business is because I think like a painter, not like musician."

33 See Jones (2019) and Straus (2011, 131n13).

34 "I Had a King" is one of many Mitchell songs whose different transcriptions do not agree on the tuning. Sonenberg (2003) gives the tuning as DADEAD (X-7-5-2-5-5), while Bernstein, Libertino, and DuBrock (2014) and Howard Wright (on the Joni Mitchell [n.d.] website) give the tuning as we show it, EBEEBE (X-7-5-0-7-5). The live performance of the song (27 October 1967) on *JMA1* (disc 4, track 21) supports the latter: After breaking and replacing her 3rd string, Mitchell checks her guitar intonation by slowly playing each string from treble 1 to bass 6, confirming the tuning. The performance is virtually identical to the studio version released four months later.

Direction	Cardinality (of fingered strings)					
	Open chords			Barre chords		
	2	3	4	4	5	6
E	 $_2E$ (Em) $_2E_{SG}$ (A7)	 $_3E$ (A) $_3E_{SG}$		 $_4E$	 $_5E$	 $_6E$ $_{6(+1)}E$ $_{6(+2)}E$
NE	 $_2NE$ $_2NE_{SG}$ $_2NE_{FSG}$ (E7)	 $_3NE$ (FM7)				
SE	 $_2SE_{SG}$					
E-NE		 $_3E$-NE $_3E$-NE_{SG} (E)	 $_4E$-NE			
NE-SE "Triangle"		 $_3NE$-SE $_3NE$-SE_{SG} (D7)				

FG = fret gap

SG = string gap

FSG = fret and string gap

EXAMPLE 8. *Mitchell's repertoire of chord-shape types, 1968–1972*

based on the number of fingered strings and the direction of finger placement on the fretboard. Rows show *direction*, calculated from lower to higher register, or eastward across the strings; columns show the number of fingered strings, or *cardinality* (left subscript). We assign open-chord types (left of the dotted line) to one of five directional categories: East (*E*), Northeast (*NE*), Southeast (*SE*), *E-NE* (East-Northeast—the chord-shape type in Ex. 7), and *NE-SE* (Northeast-Southeast, or, more simply, a triangle); where applicable, the source chord shape and chord quality from standard tuning are shown in parenthesis below the diagram. Each of these open-chord types may be modified by means of a string gap (*SG*) that "widens" the basic shape or a fret gap (*FG*) that "lengthens" it; these are notated as right subscripts. For example, $_3E_{SG}$ denotes 3-fingered strings in eastward direction with a string gap. (*FSG* designates a fret and string gap used in combination.) Chord-shape types may be played at any appropriate position on the fretboard, contingent on tuning affordances and the combination of fingered and fretted strings at a specific location.

Barre chords in alternate tunings have somewhat different properties depending on the number of strings involved. Full barre chords ($_6E$) simply replicate the chord quality of the

open strings; the addition of one or two fingers is labeled $_{6(+1)}E$ or $_{6(+2)}E$.[35] Partial barre chords may involve four or five strings. For a 5-string barre that leaves the 1st string open, Mitchell may reach her left hand *over* the guitar neck (an "overhand barre").[36] Generally, a 4-string barre chord can be executed solely by the index finger only if it plays the higher-sounding strings, 4, 3, 2, and 1. In the example, $_4E$ leaves open the bass and treble strings; we still consider it a barre as opposed to an open chord, even though Mitchell generally plays it with four fingers, each taking a string, rather than with just the index finger.

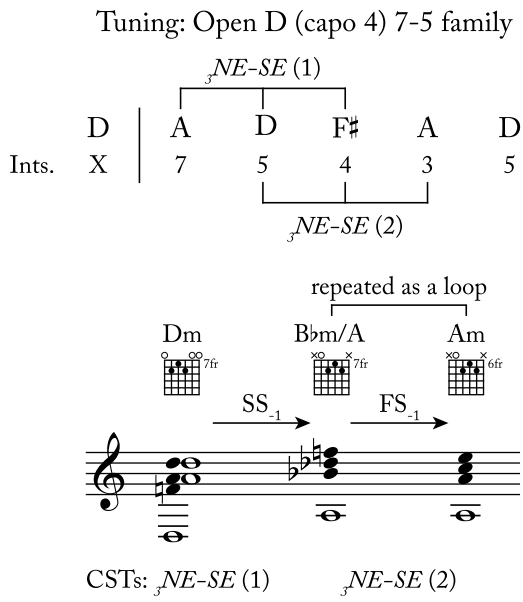
Differences in the number of chord-shape types in each cardinality/direction box reveal some of the constraints and preferences that inform Mitchell's guitar technique. For example, there is no *NE* type using four strings. The probable reason is that *none* of Mitchell's fingerings exceed a stretch of three frets—a property shared by all common open chord shapes in standard tuning—which contributes to ease of execution. Another example would be *SE*, which stands out as the lone chord-shape type occurring in only one form (and only one song, "Little Green"); clearly, Mitchell prefers eastern and northern directions.[37]

"Moving Blocks": Fretboard Routines

The third pillar of Mitchell's guitar approach—fretboard routines—represents what she actually does with her tunings and with the chord shapes afforded by them. She distinguishes between movement on the fretboard in standard versus altered tuning, saying that if you play primarily in AGTs, "you never really can begin to learn the neck like a standard player, linearly and orderly. You have to think in a different way, in moving blocks. Within the context of moving blocks, there are certain things that you'll try from tuning to tuning that will apply."[38]

By "moving blocks," Mitchell likely means *parallel chord-shape motion*, i.e., movement along the fretboard using a single chord shape, most often using open chord-shape types. While SGT offers limited opportunities for block motion,[39] she employs AGTs and their associated shapes in a wide variety of structural contexts, including sequential movement by fret and string shifts, loops, and cadential progressions.

Example 9, the opening to "The Pirate of Penance" (1968), illustrates fret shifts (FS) and string shifts (SS), Mitchell's most characteristic fretboard routines,[40] and it exemplifies her use of



"The pirate anchored on a Wednesday" (0:04–0:09)

EXAMPLE 9. *Moving blocks: fret shifts and string shifts in "The Pirate of Penance" (1968)*

minor chords and harmonic color in a given AGT. With the guitar tuned to Open D, this gothic murder ballad toggles back and forth between D minor and major. It features two versions of chord-shape type $_3$*NE-SE*, the first on strings 5, 4, and 3 and the second shifted over one place to strings 4, 3, and 2; we designate the shift as SS$_{-1}$.[41] Brackets show the origin of the chord-shape types in relation to the open strings: in both versions, the chord shape takes the middle note down one semitone, thereby changing the triad from major to minor. The chords progress simply but dramatically from D minor to the darkly dissonant B♭m/A (SS$_{-1}$), acting as appoggiatura to the minor dominant a semitone lower (FS$_{-1}$).

The next examples show some of Mitchell's characteristic diatonic and chromatic gestures. We begin with diatonic progression in two of her most famous early songs. Example 10 gives the opening of "Both Sides Now"; here the progression takes the gapped chord-shape type $_2NE_{SG}$ (in SGT, the E7 shape) down by FS$_{-2}$. The resulting sonorous chords, emblematic of Mitchell's early folk-rooted style, take advantage of specific properties afforded by the Open D tuning: the M6 between non-adjacent strings 5 and 3, with the fingering changing this to a m6, and with the remaining open strings serving as a drone sounding D over three octaves plus the fifth A. Virtually every song in Open D from 1968 to 1972 uses this same chord-shape type and parallel FS$_{-2}$ movement, and

35 Our labeling is adapted from Jones (2019, 34, table 1.2).

36 See "Michael from Mountains," 0:25–0:38. "The Circle Game" features 5- and 4-string overhand barre chords, 0:31–0:37; the latter leaves strings 1 and 2 open.

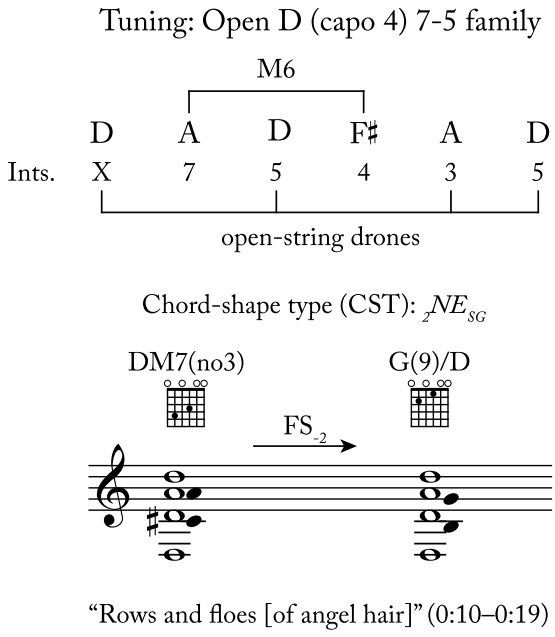
37 Mitchell's preference for *east* and *northeast* chord-shape orientations in her AGTs is corroborated by Hanson (1995) and Weissman (2006) in their guitar tuning manuals as a general preference for guitarists.

38 Rodgers (2000, 40).

39 Some examples of block fretboard motion in SGT are the Allman Brothers' "Sweet Melissa" and Cream's cover of Skip James's "I'm So Glad."

40 Our "fret shift" is similar to De Souza's ShiftUp and ShiftDown in concept and in preserving open strings. See De Souza (2018, 27–29).

41 String shifts of a chord shape may or may not entail a simultaneous fret shift. For the sake of simplicity, we label only the string shift unless an accompanying fret shift is analytically noteworthy.



EXAMPLE 10. *"Both Sides Now": parallel-shape fretboard routine*

all have a similar folky vibe. Stylistically, the consistent combination of Open D tuning, gapped two-finger chord shape, and diatonic parallel motion may be considered a *folk-music signifier* in her early songs.

Mitchell's equally well-known 1970/©1966 song "The Circle Game," shown in Example 11, features a similar combination of features. As noted earlier, the Open G tuning rotates the interval succession of Open D; it follows that the gapped M6 interval afforded in Open D now shifts over to strings 4 and 2. In addition, the gapped chord-shape dyad from "Both Sides Now" ($_2NE_{SG}$, dotted brackets in the chord diagrams) expands to three fingers ($_3E\text{-}NE_{SG}$, the tweaked E-major shape in SGT). The fingered m6 becomes the upper interval of a minor triad in open spacing, derived from the major triad sounding on open strings 5, 4, and 2. Mitchell's guitar introduction artfully uses this chord in sequence to evoke the opposition of natural and human temporality, the circles of the song's title. The chord loop, iterated twice, suggests the circular passage of the seasons ("And the seasons they go round and round"); the directed motion of the cadence suggests the irreversible passage of human time, from child at the beginning of the song to young man at the end ("Yesterday a child came out to wonder […]. So the years spin by and now the boy is twenty"). As with "Both Sides Now" and its tuning mates, virtually all of Mitchell's other songs in Open G are similar in character; moreover, they deploy the same chord-shape type, parallel motion, and FS_{-2} movement, thereby serving as a folk-music signifier in similar manner to Open D tuning. Mitchell's use of these shapes and routines changes along with her stylistic evolution: her phasing out of traditional AGTs and their characteristic fretboard routines aligns with her desire to explore other alternate tunings and, in doing so, shed the label of female folksinger.[42]

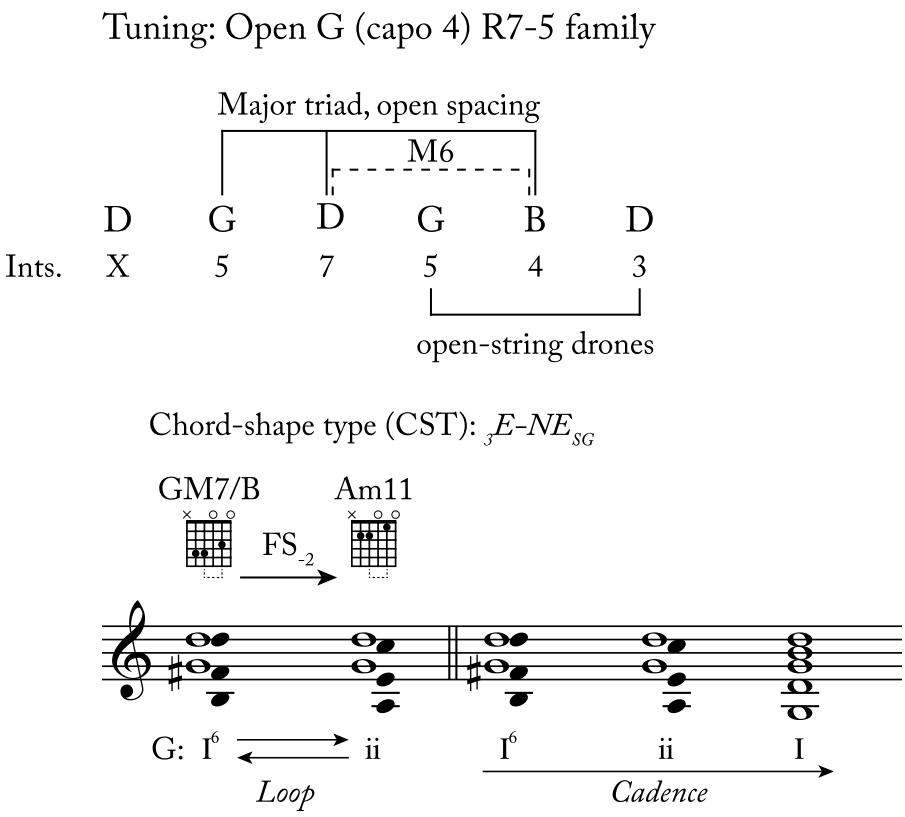
Example 12 shows the guitar introduction and accompaniment to verse 1 for Mitchell's 1972 song "For the Roses." The song employs a variant of Open G with the bass string tuned an octave lower(!) than the 5th string. The progression follows her parallel-motion playbook in creating a chromatic descent. After the opening tonic sus chord and resolution, a simple gapped dyad shape, $_2E_{SG}$, leads down to the tonic in parallel M6 s; we add the third chord G7 (without third) in parentheses to propose an elided step in the progression (G–G7 or I^{8-7}), which allows direct comparison to similar chromatic descents. Both chord shape and motion are afforded by the open M6 between strings 4 and 2, similar to the preceding diatonic gestures in Open D and Open G. Expressively, the presence of the open 1st string D as dissonant drone, together with the modal mixture of the penultimate minor subdominant, contribute to the pungency of the passage and foreshadow the speaker's conflict over her popular success and the loss of artistic integrity it entails.[43]

Diatonic and chromatic progressions are only two of a variety of guitar gestures deployed by Mitchell for purposes of musical opposition. Example 13 identifies the principal guitar-based oppositions that we see as representing thematic polarity in Mitchell's early songs; these oppositions are grouped under the three pillars of Example 2. At a global level, Mitchell's choice of AGTs that are simple/traditional or more complex influences the resulting harmonic vocabulary and tonal organization of a given song. Chord-shape oppositions include differences in types, tension, and voicing, as well as contextual factors emerging from the chord-shape types and movement within a specific song. Mitchell's fretboard routines create a broad spectrum of chord colors, harmonic movement, and dramatic effects in dynamic interaction with her lyrics.[44]

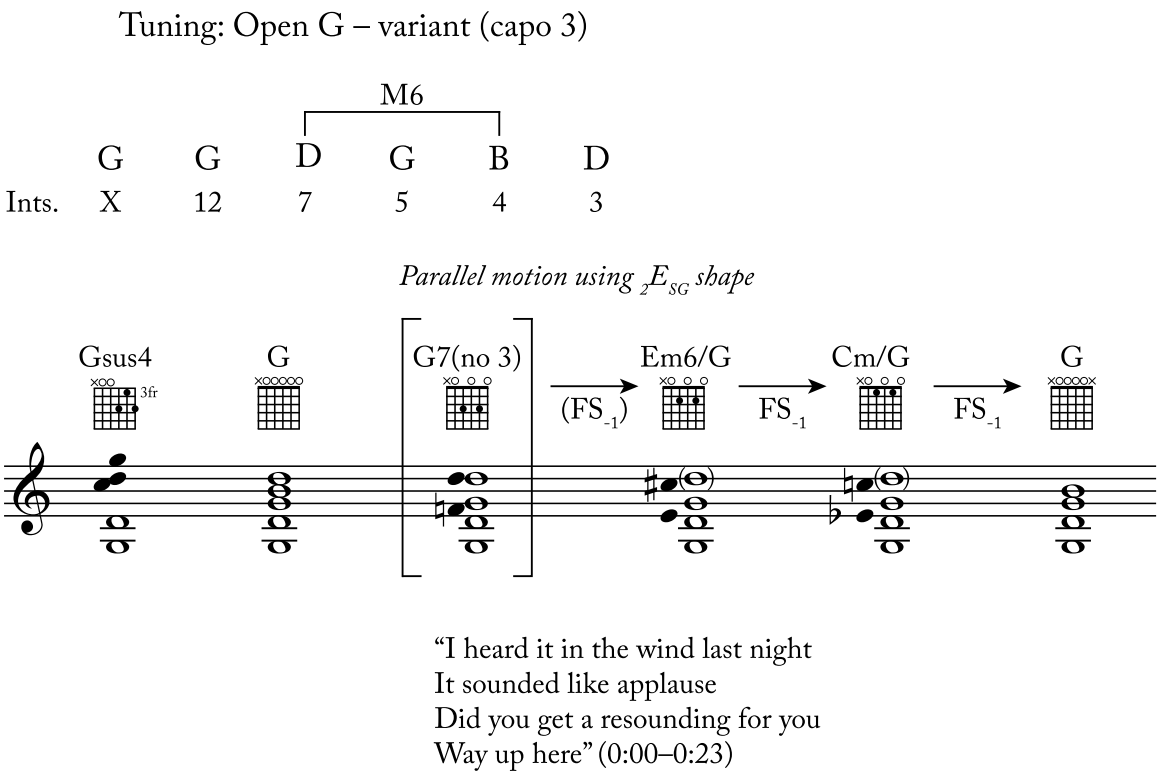
42 In an interview with Cameron Crowe (2020) in the *JMA1* booklet, Mitchell comments, "Folk music was easy to imitate. It was a good place to start" (5). Crowe asks, "Did the furrowed-brow folk singers seem authentic to you at the time?" and she answers, "No. Folk music was very cliqueish [*sic*] and very exclusive and very unfriendly towards me, a newcomer. I never really felt close to that community" (7).

43 Mitchell's contemporary, the English singer-songwriter Nick Drake, employs the same variant Open G tuning and similar descending chromatic progression in the song "Tow the Line," albeit with completely different chord shapes and voicings requiring far greater technical exertion; these include a left-hand stretch on the fingerboard of a whopping five frets! Recalling De Souza, we can consider Mitchell's and Drake's radically divergent approaches to the same altered tuning in terms of their differences in idiomaticity. Koozin (2016) analyzes selected songs of Nick Drake in terms of the use of AGTs in his guitar playing.

44 Our list of guitar-based oppositions does not include Mitchell's right-hand picking technique. While it is a crucial factor in her expressive and performative arsenal, its complexity—as well as its indirect connection to the tunings, chord shapes, and fretboard motion that are the subjects of this article—demands a separate dedicated study. Rodgers (2000) and Jones (2019) offer useful insights; we plan to address this topic in future research.

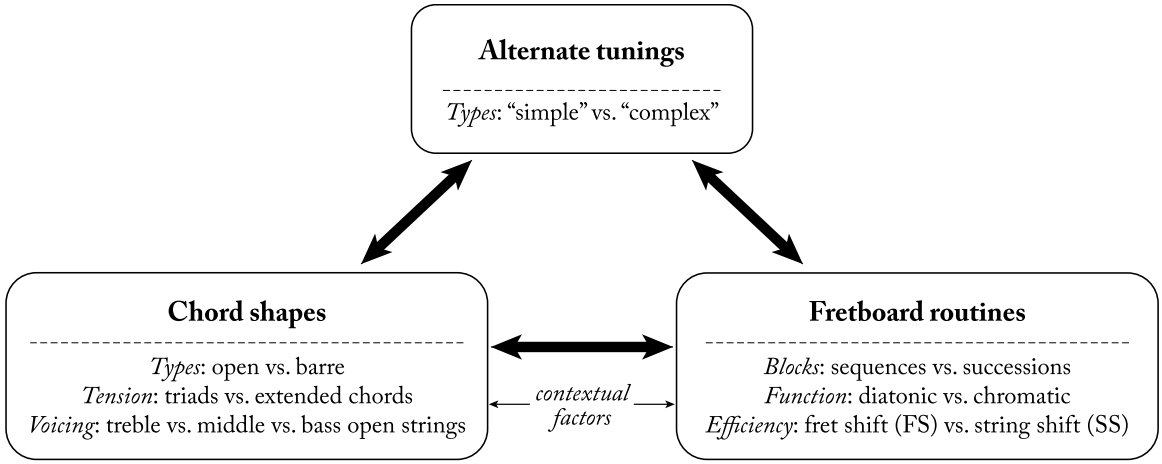


EXAMPLE 11. *"The Circle Game": parallel-shape routine in the guitar introduction*



"I heard it in the wind last night
It sounded like applause
Did you get a resounding for you
Way up here" (0:00–0:23)

EXAMPLE 12. *"For the Roses": guitar introduction and opening of verse 1*



EXAMPLE 13. *Interrelated affordance pillars and Mitchell's guitar-based oppositions*

Part 2 uses Example 13 and the preceding song excerpts as a guide for analyzing text-music relations in two of Mitchell's songs: "I Don't Know Where I Stand" (1969/©1967) and "Just Like This Train" (1974/©1973). As in most investigations of text and music, we seek to understand how poetic and musical narratives unfold in time. Taking Mitchell's guitar pillars and their attendant oppositions as a starting point, we conceive of our analytical strategy in terms of the "equation":

Guitar-based musical opposition + Text
= Expressive opposition

We here adapt Koozin's term "expressive opposition" by (1) expanding the concept beyond guitar voicings to account for more elements of Mitchell's guitar practice and (2) demonstrating that these oppositions are central to her notion of expression, as evidenced by her pithy remark that "chords are depictions of emotions." Earlier, we quoted Whitesell on the ambivalence of Mitchell's notion of freedom, an ambivalence she communicates with images of entrapment and illusion. We've already seen how Mitchell creates a range of precise musical analogs for these images in "The Circle Game." Our analysis will show how these analogs go beyond text-painting to plumb deeper levels of text-music narrative.

PART 2. ANALYSIS

What the Words and Music Say, and What Lies Beneath: "I Don't Know Where I Stand"

"I Don't Know Where I Stand," released in 1969 on Mitchell's second album, *Clouds*, earlier appeared on "'A Record of My Changes'—Michael's Birthday Tape," recorded in May 1967.[45] The tape comprises five songs and an improvisation and was subsequently included on *JMA1* (see Appendix 1). In "I Don't Know," Mitchell's guitar not only provides a setting for the lyrics, but also, through the expressive force of the music itself, makes explicit a layer of meaning that is only implicit in her poetry.

On the surface, the song is a simple confessional about falling joyfully in love that nevertheless remains uncertain about whether the love will be reciprocated. Example 14 suggests how both the technical refinement of the poetry and the expressive precision of the music belie the song's seeming simplicity. Each four-line verse is made up of two couplets and follows the same pattern in prosody and mode of address: the first couplet presents a *mise-en-scène* associated with something (the lover or nature) bringing joy to the speaker, and features rhymes at the beginning and end of each line (in bold). The second couplet opens with an alliterative phrase (in italics), giving voice to the speaker's emotional response to the scene, leading to the refrain "I don't know where I stand." With each verse the narrative becomes more nuanced: verse 1 describes the speaker's joy, verse 2 identifies the lover as the source of that joy, and verse 3 broadens the perspective, evoking a transcendental scene of crickets courting their mates. The refrain expresses the speaker's ongoing uncertainty amid this developing joyfulness.

Mitchell talked about the tuning in introducing the song on 16 September 1967, at the 2nd Fret: "This is a song that I wrote in North Carolina […]; and I discovered this new tuning which in an F9 tuning […]; It's my very own I think […] And it's a magical tuning because even discords sound great in it."[46]

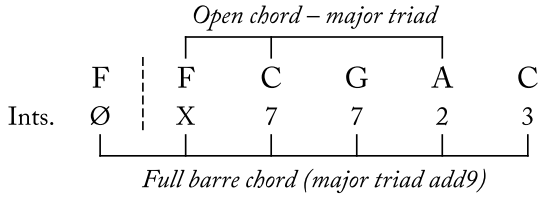
45 An even earlier recording, a live performance from 1966, is available on YouTube at https://www.youtube.com/watch?v=3zWPPHnbgks.

46 This quote is a footnote to the lyrics on the Joni Mitchell (n.d.) website, https://jonimitchell.com/music/song.cfm?id=128. We refer to the tuning as Major add9 to avoid implying the presence of a chordal seventh as one of the open strings. This follows the taxonomy used by Bernstein, Libertino, and DuBrock (2014). Note that Mitchell employs six different Major add9 tunings in her songs.

S = speaker L = lover	**Joy**	**Funny day**, looking for laughter and finding it **there** **Sunny day**, braiding wild flowers and leaves in my **hair**
	S's emotions	*Picked* up a *pencil* and wrote "I love you" in my finest hand
	Refrain	Wanted to send it, but I don't know where I stand
	L's voice → Joy	**Telephone**, even the sound of your voice is still **new** **All alone** in California and talking to **you**
	S's emotions	And *feeling* too *foolish* and strange to say the words that I had planned
	Refrain	I guess it's too early, 'cause I don't know where I stand
	Transcendental nature → Joy	**Crickets call**, courting their ladies in star-dappled **green** **Thickets tall**, until the morning comes up like a **dream**
	S's emotions	All *muted* and *misty*, so drowsy now I'll take what sleep I can
	Refrain	I know that I miss you, but I don't know where I stand

EXAMPLE 14. *"I Don't Know Where I Stand": lyrics and emotional progression*

Tuning: Major add9



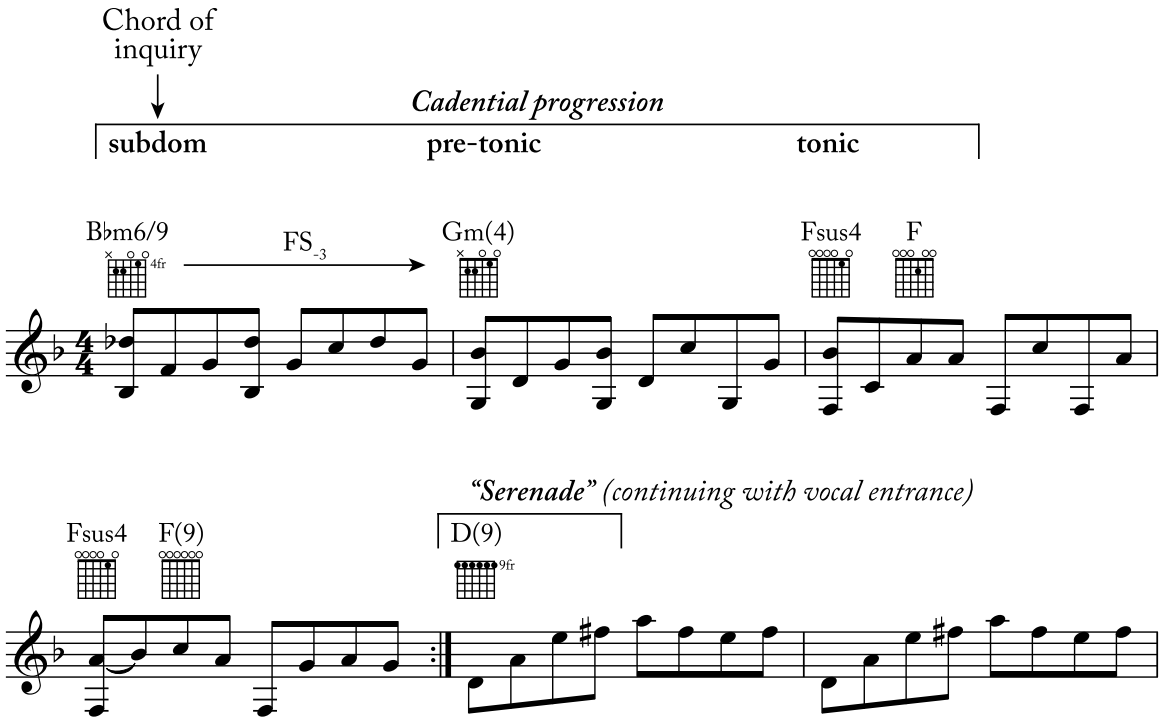
Guitar-based oppositions

	Speaker	Lover
Chord shapes	Open – $_3E$-NE_{SG} 	Full barre – $_6E$ 
Fretboard routine	Cadence and goal-directed progression	Loop and non-directed succession
Key	F (key of tuning)	D, A, G (end)

EXAMPLE 15. *"I Don't Know Where I Stand": tuning, chord shape, and opposition*

She proudly called attention to the tuning's novel feature displayed in Example 15: the "discordant" major ninth generated by the adjacent fifths between strings 5 and 4 and strings 4 and 3 (F–C and C–G). The tuning quite possibly represents her maiden voyage with 7-7 family tunings, albeit rotated; disregarding the 6th string (tuned up to a unison F and not played except on barre chords), it is an exact transposition of Mitchell's tried-and-true Open G, save for the added ninth. "I Don't Know" uses two familiar chord-shape types, $_3E$-NE_{SG} (turning the open major triad to minor) and $_6E$ (full barre), which Example 15 places in brackets to show how they emerge from the affordances of the tuning. As shown in the table, these limited elements generate a set of guitar-based oppositions that differentiate the characters of speaker and lover: open versus barre chord shape; directed versus non-directed harmonic movement; and tonal center F versus multiple sharp-side keys.

Example 16 provides an annotated transcription of the guitar introduction. Strikingly, the guitar introduction begins with a chord of inquiry, B♭m6/9, whose chord quality and structural context set the musico-poetic narrative in motion. The chord combines mode mixture (D♭ as m3) and harmonic extensions (G and C as added 6 and 9 on open strings 3 and 1); its expressive quality emerges from the chord shape together with its



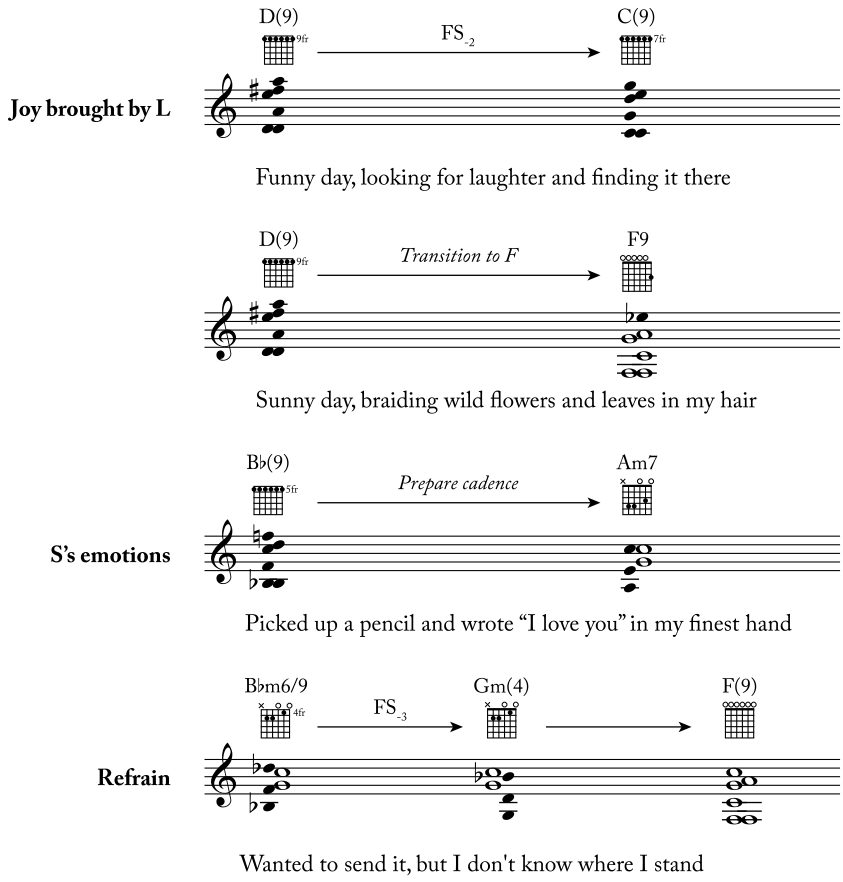
EXAMPLE 16. *Guitar introduction: cadential progression in F to "serenade" in D*

fretboard location. The first chord evokes the fundamental question of the song: where the speaker stands vis-à-vis the lover. Thereafter, the chord moves by FS_{-3} and on to the tonic, creating the cadential progression for the song. We may recall that "The Circle Game," which is in Open G tuning, begins with a similar cadential movement and the same chord-shape type (see Ex. 11). Its opening chord, however, begins one fret lower than the opening chord of "I Don't Know" and moves by FS_{-2}, resulting in an entirely diatonic progression. For "I Don't Know," the movement *from* chord of inquiry *to* tonic cadence suggests the speaker's motivation to resolve her insecurity; however, Mitchell's chords of inquiry by their nature are unresolvable, hinting at the speaker's ambivalent feelings. After sounding the cadence twice, the music abruptly modulates from F to D major, shifts from syncopated to even arpeggiated fingerpicking suggestive of a serenade, and changes fingering from open shapes to full barre chords. As with many of Mitchell's guitar introductions, the music signifies something not yet fully apprehended that only emerges over the course of the song.

Beginning with verse 1, the duality of joy and uncertainty is represented musically by dual keys, their associations with speaker and lover, and the dramatic connotations of the chord progressions. Example 17 maps this harmonic action onto the lyrics. The speaker is linked to F major, as in the cadential progression stated in the guitar introduction. In contrast, the lover is associated with the brighter key of D major. In the music depicting the lover, there is no cadence or sense of harmonic direction, only a succession of oscillating chords, D–C–D, which open the verse. This harmonic polarity, created by guitar-based oppositions in chord shape, location, and fretboard routine, sets up the musical narrative: each verse begins in the lover's bright key; the speaker's music brings the harmonic progression to a cadence in F; and the next verse returns to the lover's key. The move to cadence in F suggests a desire for commitment on the speaker's part that is understated in her lyrics; the way the lover's music whimsically reiterates multiple keys suggests his desire for freedom. The push-pull between these two poles drives the narrative forward.

This amiable toggling between the keys of lover and speaker takes on a new dimension, with higher dramatic stakes, in the three guitar interludes. Indeed, the song's juxtaposition of strictly strophic verses and varied interludes may be interpreted as a tonal battle over which character will take control of the harmonic progression and thereby direct the course of the relationship. Example 18 shows the introduction setting the stage, with the speaker's cadential progression in F giving way to the lover's serenade in the chromatic submediant D; the verses then reverse tonal course, with the speaker exerting her agency by cadencing again in F. In the first two guitar interludes that set Mitchell's wordless vocalise, the lover asserts his independence anew, transposing the serenade from D–C to A–G, after which the speaker reasserts her (tonal) will.[47] The tonal tables are

47 In her introduction to the song at Le Hibou Coffee House on 19 March 1968, Mitchell stated that the vocalises were intended as trumpet solos to encourage her father to begin playing his instrument again (*JMA2*, disc 2, track 18).



EXAMPLE 17. *Lover versus Speaker: chord oscillation in D versus cadential progression in F*

turned, however, with the third interlude: beginning again in D, the lover presents the strongest cadence in the song, with approaches to the goal key of G major by fifth *and* semitone (V–♭II–I). Moreover, the fretboard routine for his final cadence, shown in Example 19, parodies the cadential progression of the speaker by exaggerating the fretboard intervals on the way to the tonal goal. Here the cadence expands the root movement by a m3 to a tritone (B♭–G becomes D–A♭) and contracts the descending M2 to a m2 (G–F becomes A♭–G).[48]

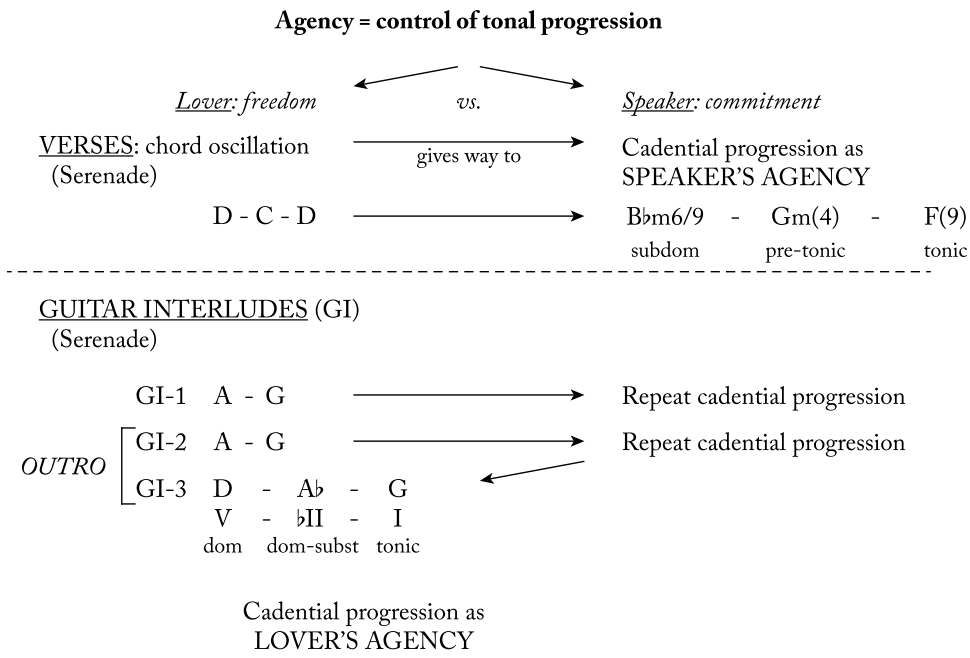
In closing, let us recall our prior reference to an earlier incarnation of the song on "A Record of My Changes," the 1967 birthday tape Mitchell made for a friend. On the tape, "I Don't Know" is the penultimate number, followed by a segment labeled "Joni Improvising." Here, with her guitar tuned to Open D, Mitchell strums a steady stream of chords while singing a wordless vocalise. The chord progressions constitute chromatic cadential approaches to D featuring chromatic step and mediant motion, e.g., D–A–G–F♯–D (I–V–IV–III♯–I). In this way, the improvisation serves as a telling coda to "I Don't Know Where I Stand": Mitchell's experimentation with un-folksong-like harmonic progressions foreshadows her increasingly ambitious strategies for musical representation and dramatic narrative.

Character Development: Deepened Text Expression and Guitar Agency in "Just Like This Train"

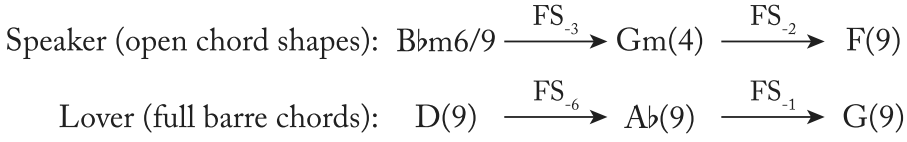
Example 20 lists "Just Like This Train" as one of six songs in the tuning CGDFCE (major with added M9 and 11). It is one of only two tunings (along with Open D) that Mitchell carried over from her early folk-rooted songs to her middle-period jazz/pop style. Rodgers notes that "it was more adventurous tunings like CGDFCE ("Sisotowbell Lane"), with its complex chords created by simple fingerings, that enthralled her and became the foundation of her music from the early '70 s on."[49] As a prelude to our analysis of "Train," we briefly compare the chord shapes and fretboard routines employed in the three prior songs in this tuning to highlight (1) the markedly different affordances Mitchell exploits for each song and (2) how "Train"

48 Whitesell (2008, 139–40) offers a quite different interpretation of the song. We modestly assert that in the songs discussed here, the guitar projects a sense of agency, an assertion that is corroborated by Mitchell's comments and by our analysis of what the guitar does in and for the song. Relevant sources on musical agency include Cone (1974); Maus (1988); Monahan (2013); and Hatten (2018).

49 Rodgers (2000, 37).



EXAMPLE 18. *Lover's chord oscillation, Speaker's cadential progression, and narrative agency*



EXAMPLE 19. *Speaker versus Lover's cadences*

Tuning: C-G-D-F-C-E
Ints: X-7-7-3-7-4

Song	Year	Album
Sisotowbell Lane	1968	*Song to a Seagull*
Ladies of the Canyon	1970/©1968	*Ladies of the Canyon*
Woman of Heart and Mind	1972	*For the Roses*
Just Like this Train	1974/©1973	*Court and Spark*
Coyote	1976	*Hejira*
Don Juan's Reckless Daughter	1977/©1976	*Don Juan's Reckless Daughter*

EXAMPLE 20. *Six songs in Major (9,11) tuning, 1968–1977*

builds on these songs—especially "Woman of Heart and Mind"—to create one of the most complex poetic and musical narratives she had yet devised.[50]

Example 21 and Example 22 track the main chord shapes and tuning affordances for the first two predecessors to "Train," each a blissful portrait of '60 s hippie life. In Example 21, "Sisotowbell Lane" contrasts open chords (two positions of $_2E$) with barre and partial barre chords. The barre chords, each shape located at the 5th fret, sound three different chord functions within the tonic C major: IV ($_6E$), I ($_5E$), and v ($_4E$). The expected opposition between open and barre chords, however, is minimized by the "hammer-on" gesture of the guitar introduction linking open C and full barre F(9,11), thereby emphasizing their rhythmic and gestural likeness.[51]

While "Ladies" also employs functional harmonic progression using the same AGT, the song exploits different tuning affordances than "Sisotowbell Lane" in using two different open chord shapes and almost no barre chords.[52] Example 22 gives a harmonic synopsis for the introduction and verse. For the introduction, the chord shape $_3$*NE-SE* (D7 in SGT shifted up one string) takes the middle note down a semitone, changing the (bracketed) m7 chord to a 7sus2, and the P5 interval to a m6. The movement of the shape down the fretboard from fret 9 to 6 to 4, all over the open bass pedal G, generates the notes of an extended dominant 7th (B, C, D, F, A and B♭ as M3, sus4, 5, ♭7, M9 and implied ♯9, respectively). The resolution to tonic C, marked by the change of CST to $_2E$, then leads to string and fret shifts for the verse, enabling the stereotypical double-plagal progression I–♭VII–IV back to I (denoted by the reverse arrow). Importantly, while both "Sisotowbell" and "Ladies" feature guitar-based oppositions, these are not explicitly linked to the text, and neither song features the thematic polarities discussed by Whitesell and encountered in "I Don't Know Where I Stand."

Example 23, a harmonic synopsis of "Woman of Heart and Mind," presents a more complicated picture. Composed four years after the first two songs, it signals a turn away from folk stylings toward a cooler, jazz-inflected idiom. The chord shapes for the harmonic progression of the verse are displayed in order of appearance. Like her earlier songs, this one uses the *E-NE* shape to transform the harmony that is afforded by the AGT by shifting one string down a semitone to the chordal third; the quintal sus chord (bracketed) generates FM9 and D9 in combination with the open strings 2 and 1. Notably, "Woman" departs from "Sisotowbell" and "Ladies" in its use of bluesy "dyad riffs," moving $_2E$ in parallel motion over a bass drone in two positions (Dyad 1 over tonic, Dyad 2 over dominant) while leaving the remaining three strings unplayed. The guitar outro clearly illustrates this dyad riffing, with the two $_2E$ shapes repeating the same fretboard sequence ($FS_{-1,\ -4,\ +2}$) to create the closing V → I progression.

We shall see that "Just Like This Train" uses the same chord-shape types and most of the same chords as "Woman," and it echoes the earlier song's riff-oriented groove. But there the similarities end. Using the same tuning as the previous three songs, "Train" offers a more complex and dynamic form—AABA with refrain—than does the short, strictly strophic form of "Woman." More importantly, its formal structure undergirds what the previous songs lack: a musico-poetic narrative based on expressive opposition, which begins with the opening guitar gesture and unfolds with increasing intensity throughout the song.

In its storytelling, "Just Like This Train" has a strong cinematic element, in that it interweaves laconic descriptions of the train and the station with the speaker's personal story of love trouble. In Example 24, we designate these storylines as "outer narrative" and "inner narrative," respectively. We use Temperley's terminology in describing the song structure as comprising three verse-chorus units (VCUs) with a short bridge between the second and third VCU.[53] Each verse has an AAB form; as is often the case with Mitchell's songs, the chorus of this one begins with different words in each iteration, but the rhyme scheme remains consistent (cards/yards/heart, bars/cigar/heart, stars/car/heart), as does the refrain ("Jealous lovin'll make you crazy").

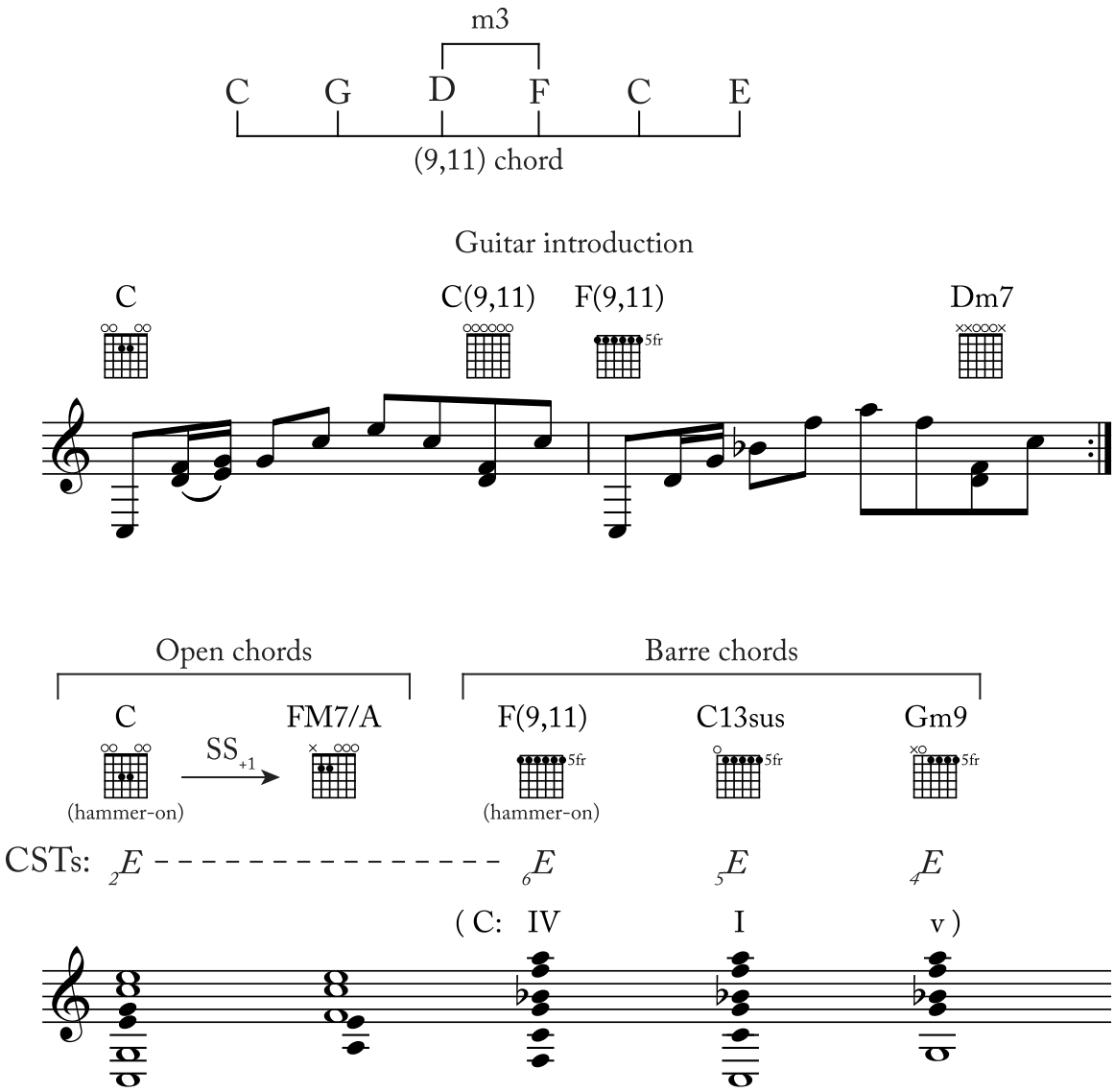
In VCU 1, which verbally depicts the train pulling into the station, the speaker announces the central simile that will bring the two narratives together: she—the speaker—is like this train, both in a general sense ("running behind") and more pointed ones ("count[ing] lovers like railroad cars"). She implies that she will no longer pursue love—unless perhaps the right somebody comes along ("I just let things slide"). But her forbearance doesn't last long: by VCU 2, she is in the station, looking for "any reason to resume." In the bridge, her dilemma comes to a head, as Mitchell's multi-tracked voice sings, "What are you going to do now." The final VCU begins promisingly: the speaker is now on the train, in the sleeping car, either with her lover or imagining his presence: "Dreaming of the pleasure I'm going to have/Watching your hairline recede." Because of the length of time this takes, we may infer that she believes this to be a serious long-term relationship. But the final refrain dispels this notion when the mode of address changes from second to first person ("Jealous lovin's bound to make me crazy"). No longer is the speaker offering advice (jealousy will make you lose your heart and your lover); rather, she blames her love's failure on her own jealousy.

50 The later songs, "Coyote" and "Don Juan's Reckless Daughter," which are contemporaneous with her momentous musical collaboration with bassist Jaco Pastorius, feature a very different approach to text-music relations than in the early songs and will not be addressed here.

51 This softening of opposition seems appropriate in light of what the acronym "Sisotowbell" stands for: "Somehow, in spite of troubles, ours will be ever lasting [*sic*] love" (the Joni Mitchell [n.d.] website, https://jonimitchell.com/music/song.cfm?id=16).

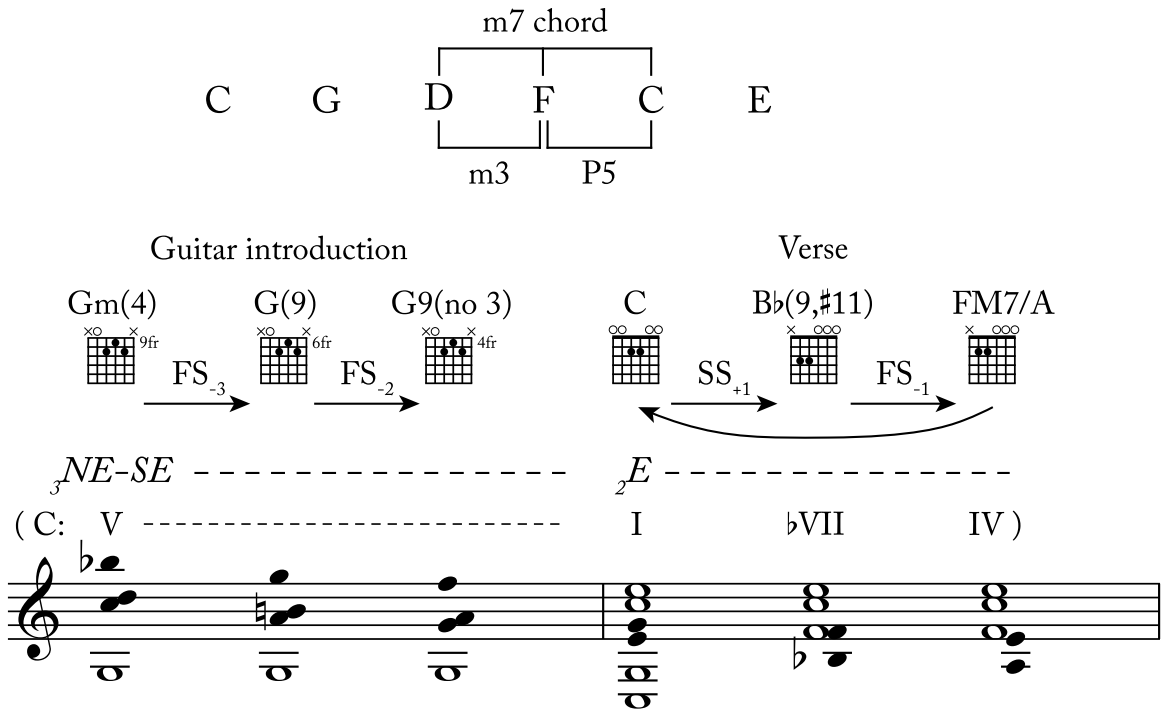
52 Mitchell reserves the partial barre chord $_5E$, A13sus, for the vocal high-point of the verse (in verse 1 with the words "[and her coat's a] second-hand one."

53 Temperley (2018, 155).

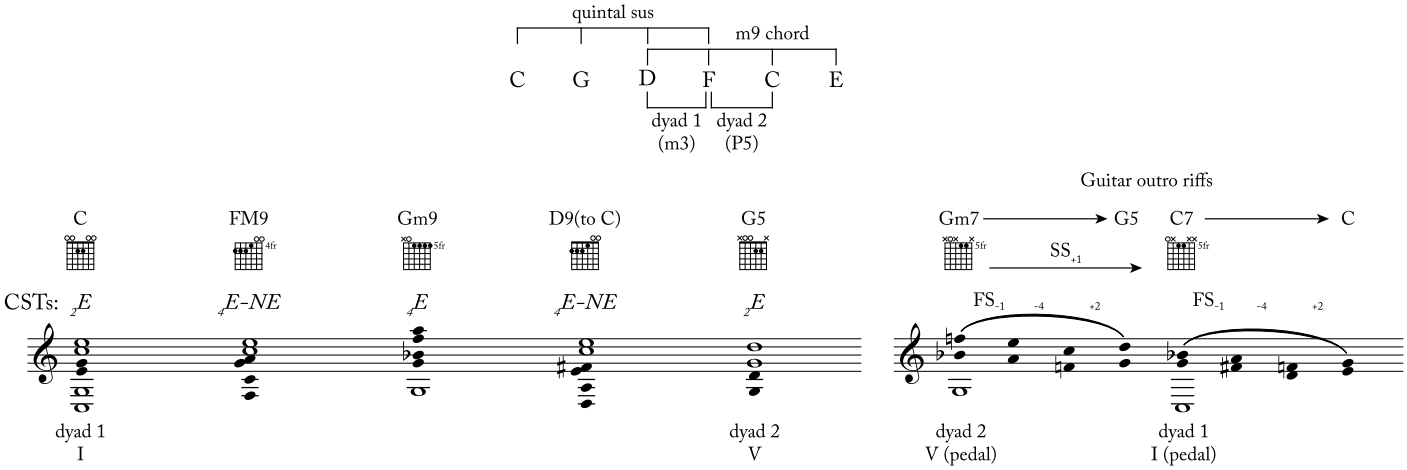


EXAMPLE 21. *Affordances and chord shapes in "Sisotowbell Lane"*

With even greater depth and nuance than "I Don't Know Where I Stand," "Just Like This Train" epitomizes Mitchell's compositional strategy of expressive opposition. Once more, the guitar introduction sets in motion a musical opposition expressing the inner narrative of the lyrics. In Example 25, the top line shows the main affordances Mitchell extracts from the tuning, each of them previewed in "Woman" (cf. Ex. 23). But in "Train," the guitar introduction exploits the opposition between the dyadic m3 and the tetrachordal m9 chord, enabling the expressive opposition underpinning the narrative. The introduction breaks into two parts, labeled motive x and y. Played by solo guitar, motive x (${}_2E$) conveys a modal, bluesy, laid-back groove that sounds like it will simply roll on and vamp a few more times, allowing the other instruments to enter. Instead, motive y (${}_4E$ followed by hammer-on) follows with a quicker chromatic, jazzy, agitated riff, sequenced upward to close on Bm9/C, maximally dissonant as a tonic sonority. We may interpret motive y, which dramatically interrupts motive x, as a musical rupture, and, later in the song, we may interpret the partial barre chord playing Gm9 as the *agent* of rupture. Note that our chord-agent is something of a secret agent: although timbrally signaled by the entrance of woodwinds, the chord goes by too quickly to register as something marked for future development. Moreover, the treble motion A → B♭ and metrical context make the chord sound like an appoggiatura to the following Gm7 chord. As in "Sisotowbell" and "Woman," Mitchell plays a Gm9 chord as a partial barre on fret 5 in the tonal context of C major. Unlike the previous songs, in "Train" the chord assumes a greater structural role as cadential dominant, albeit one for which, as a chord of inquiry, it is ill-suited, and whose appearance coincides with the speaker's acknowledgment of her failure in love. We shall see that the chord may thereby be understood as a narrative agent.



EXAMPLE 22. *Affordances, chord shapes, and fretboard routines in "Ladies of the Canyon"*



EXAMPLE 23. *Affordance and riff routines in "Woman of Heart and Mind"*

Only as the song progresses does the chord's agency become apparent. It reappears in a new context with the cadence marking the end of VCU 1 (and, in turn, VCU 2 and 3). Functionally, the chord represents a minor dominant 9 tonicized by its own dominant (D9) in the progression IV–II♯ (V/V)–v–I. At the close of the refrain, the chord's agency intensifies at the point where the speaker first reveals her heartsickness ("[If you can't find your] goodness / "cause you lost your heart"). Strikingly, with the bridge from VCU 2 to 3, the speaker's whole expression of her dilemma is set to the Gm9 chord ("What are you going to do now / You've got no one / To give your love to"). From its nondescript beginnings in the introduction, Gm9 morphs into a harmonic and formal marker for the song; its progressive increase in duration from eighth note (intro) to one bar (verse) to four bars (bridge) reflects its growth in expressive agency.

What, then, does our Gm9 chord of rupture have to do with chords of inquiry? Pretty much everything, as Example 26 suggests, albeit in a less obvious way than does the opening chord of "I Don't Know Where I Stand." First, it stands opposed to G7–G as a "chord of non-inquiry," serving as half cadence for the antecedent A1 phrase of each VCU; the

	VCU 1	VCU 2	VCU 3
Outer narrative:	Pulling into the station	In the station	On the train sleeping car
Inner narrative:	Give up on active pursuit of love	Reactivate pursuit of love	Realization of love's failure
A_1	I'm always running behind the time Just like this train Shaking into town With the brakes complaining	I went looking for a cause Or a strong cat without claws Or any reason to resume And I found this empty seat In this crowded waiting room (Everybody waiting)	Well I've got this berth and this pull down blind I've got this fold up sink And these rocks and these cactus going by And a bottle of German wine to drink
A_2	I used to count lovers like railroad cars I counted them on my side Lately I don't count on nothing I just let things slide	Old man sleeping on his bags Women with that teased up kind of hair Kids with the jitters in their legs And those wide, wide open stares	Settle down into the clickety clack With the clouds and the stars to read Dreaming of the pleasure I'm going to have Watching your hairline recede (My vain darling)
Chorus (*variable* + *refrain* (*R*))			
	The station master's shuffling cards Boxcars are banging in the yards	And the kids got cokes and chocolate bars There's a thin man smoking a fat cigar	Watching your hair and clouds and stars I'm rocking away in a sleeping car
R	Jealous lovin'll make you crazy If you can't find your goodness 'Cause you lost your heart	Jealous lovin'll make you crazy If you can't find your goodness 'Cause you lost your heart	This jealous lovin's bound to make me Crazy I can't find my goodness I lost my heart Oh sour grapes Because I lost my heart

Bridge

Inner: Stop trying or keep trying?

What are you going to do now
You've got no one
To give your love to . . .

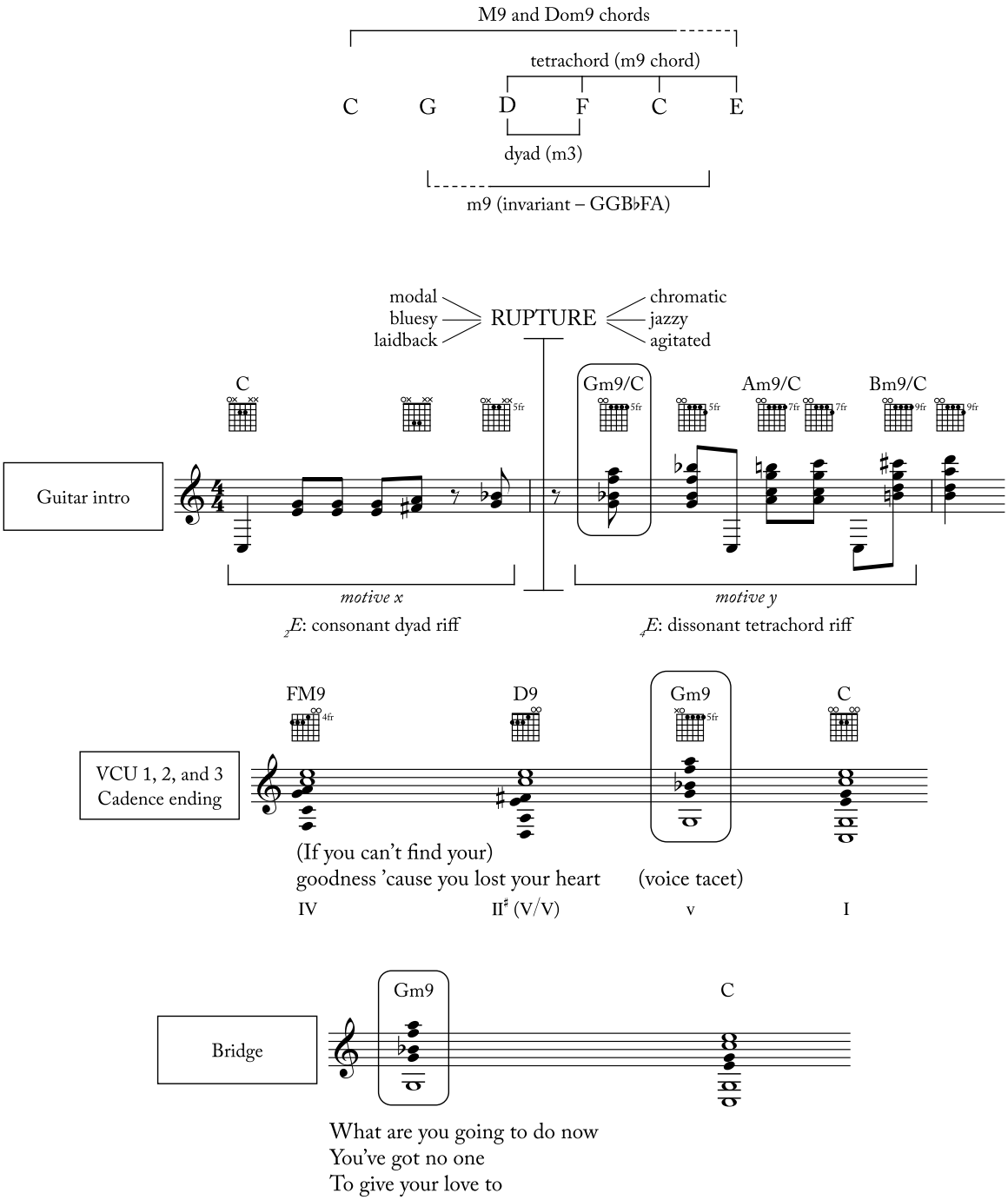
EXAMPLE 24. *"Just Like This Train": inner and outer narratives*

dotted line designates the chord's change of function from cadential in A1 to initiating in the refrain. Second, its main features—minor modality, cadential dominant status (in the refrain), and its association with the lyrics' inner narrative of heartbreak—all function within the oppositional context of what we may interpret as tonal expectancy and resolution (major V) versus tonal ambivalence and lack of satisfactory resolution (minor v). In "Train," Mitchell moves beyond her early songs with her sneaky, gradual rollout of the chord of inquiry, which gains momentum as the train rolls down the tracks.

Returning to the introduction and its initial expression of musical rupture, we may ask: What is being ruptured in the lyrics? They undoubtedly express the rupture of the speaker's belief in love. At the same time, her identification with the train as the literal and metaphorical vehicle for new places, experiences, people, and lovers, keeps the embers alive in her desire for lasting love. With the conclusion of the song, the introduction returns one last time, stopping without resolution on a dissonant final chord and thereby implying that this unfortunate cycle will go on indefinitely.[54]

To conclude, over the course of this article we have seen that our nominal subject—what Mitchell dubs "chords of inquiry"—can be interpreted as a stand-in for something considerably larger: the agency of the guitar in her early music. Mitchell herself alluded to this sense of agency when talking about the recording of *Blue*:

54 The demo version of the song, for solo guitar and voice, dated summer 1973, already shows the expressive precision of the guitar performance (*JMA3*, disc 3, track 4). However, there is no bridge ("What are you going to do now / You've got no one / To give your love to"); without it, the song is in straight strophic form. Mitchell added the bridge sometime between the demo and the release of the *Court and Spark* album on 17 January 1974. Our analysis has emphasized the crucial significance of the bridge for both lyrics and music. "Train" has remained in Mitchell's repertoire throughout her career, albeit with significant changes from the studio version: she cuts the bridge, and she rewrites the structural cadence for the three VCUs *without* the agential minor dominant ninth.

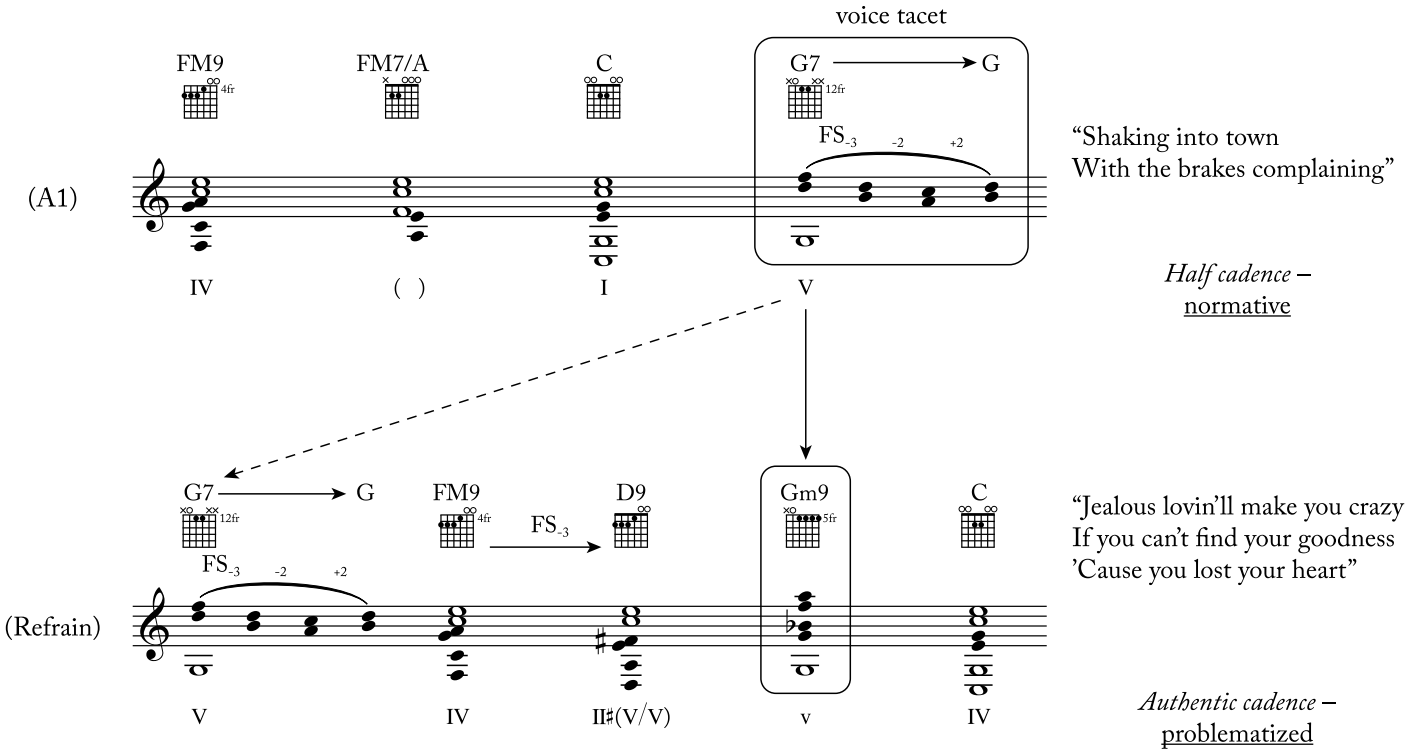


EXAMPLE 25. *Form, cadence, and inner narrative*

I had kind of a ten-hour period where my vocabulary dumped from stress, and I didn't have a word in my head. It was terrifying, but I'll tell you, when you don't have a word in your head you go back to infancy, and you see water is so watery. When you try to remember the name for water and the name for sand and the name for clouds, by God you really see these boiling things. Once the label has been taken off them, you see their is-ness. So people are not seeing the is-ness of my guitar playing by calling me a folksinger.[55]

Mitchell's last sentence here is quite astounding: she likens the essential nature of her guitar playing to her "altered state" of experiencing things as they truly are, and she contrasts this

55 Rodgers (2000, 50).



EXAMPLE 26. *Cadences, modality, and formal context*

"true" understanding with the status of the guitar as played by typical folksingers.

In this article, we have interpreted this "is-ness"—what sets her guitar playing apart from basic folk-song accompaniment—as a thoroughgoing reconception of the harmonic, timbral, and voicing possibilities for the acoustic guitar that creatively employs a limited number of familiar chord-shape types generated by a handful of alternate tuning families. In unpacking the sources of her guitar-playing agency, we have analyzed Mitchell's guitar-based songs from her first five studio albums, and have sought additional context in her earlier songs featured on *JMA1*. In conjunction with our employment of corpus study techniques, we have adapted Gibson's and De Souza's work on affordance and applied it to Mitchell, which enabled us to take a systematic approach to her alternate tunings and associated chord shapes. One of our main objectives has been to turn this technical musical apparatus to the broader purpose of interpreting expression. We take Mitchell's connection of her chords of inquiry with her "unresolved emotionality" as an expression of a state of opposition or polarity. With surgical precision, Mitchell assembles complex networks of poetic and musical oppositions in creating her highly idiosyncratic and compelling narratives of emotional expression. Of course, Mitchell's artistic growth as a singer-songwriter continues beyond these early songs. However, the building blocks of her music—alternate guitar tunings, chord-shape types, and her characteristic fretboard routines—remain largely consistent. We hope that the analytical strategies and observations offered here will prove useful for future scholarship on Mitchell's music and on that of other guitarist-songwriters who use alternate tunings, and will also appeal to the curiosity of performers and Mitchell fans who are interested in further exploring what makes her music tick.

Appendix 1. Original songs and tunings, 1965–1967. Source: *Joni Mitchell Archives, Volume 1: The Early Years (1963–1967)*

Key

Title

Alternate tuning

Playing key, concert key, capo fret*

Disc/track number

Date of earliest performance on *JMA1*

* Most of the tunings, keys, and capo fret (if applicable) may be found in the Transcriptions section of the artist's official website, http://www.jonimitchell.com. Some songs with versions by different transcribers offer different tuning options; for these, we chose the tuning that most closely matches the voicings and chord qualities of the recorded performance. For songs without a transcription on the website, we created our own transcriptions according to the above criteria.

Standard tuning: EADGBE	**Drop D: DADGBE**	**Open D: DADF♯AD**	**Open G: DGDGBD**	**Non-traditional alternate tunings**
"Urge for Going: — A, C, 3 II/1, II/15–16, V/22 1965	"Here Today and Gone Tomorrow" — D, G, 5 II/3 1965	"Sad Winds Blowin'" — D, F, 3 II/11 1966	"Born to Take the Highway" — G, A, 2 II/2, III/6 1965	"A Melody in Your Name" **CGCGCE** C, E, 4 III/18, V/12 May 1967
"What Will You Give Me" — A, B♭, 1 II/4 24 August 1965	"Let It Be Me" — G, C, 5 II/5 24 August 1965	"Just Like Me" — D, F♯, 4 II/12 24 October 1966	"Favorite Color" — G, B, 4 II/9 4 October 1965	"Carnival in Kenora" **CGCGCE** C, C, 0 V/13–14 27 October 1967
"The Student Song" — D, F, 3 II/6 24 August 1965	"Brandy Eyes" — D, F♯, 4 II/14 November 1966	"Night in the City" — D, G, 5 II/13, II/22–23, V/19–20 24 October 1966	"Eastern Rain" — G, C, 5 II/19, III/12–13 November 1966	"Songs to Aging Children Come" **CGCGCE** C, C, 0 V/15 27 October 1967
"Day after Day — Am, Cm, 3 II/7 24 August 1965	"What's the Story Mr. Blue" — D, F♯, 4 II/17–18 November 1966	"Both Sides Now" — D, F♯, 4 III/1–2, III/10–11, V/21 12 March 1967	"The Circle Game" — G, B, 4 II/20–21, III/3–4, V/6 November 1966	"I Had a King" **DADDAD** D, A, 7 IV/1, IV/21 June 1967
"Like the Lonely Swallow" — E, G, 3 II/8 24 August 1965	"Winter Lady" — G, G, 0 III/9 17 March 1967	"Blue on Blue" — D, D, 0 III, 14–15 19 March 1967	"Morning Morgantown" — G, A, 2 III/5, IV/4, V/18 17 March 1967	"Free Darling" **DADDAD** D, A♭, 6 IV/2, IV/22–23 June 1967
"Tin Angel" — A, E, 7 III/19 May 1967		"Conversation" — D, F♯, 4 IV/3, IV/11 June 1967	"Gemini Twin" — Gm, Gm, 0 III/16 May 1967	"I Don't Know Where I Stand" **FFCGAC** F, F, 0 III/20, V/10–11 May 1967

Appendix 1. CONTINUED

Standard tuning: EADGBE	Drop D: DADGBE	Open D: DADF♯AD	Open G: DGDGBD	Non-traditional alternate tunings
		"Gift of the Magi" — Dm, Em, 2 IV/6, IV/17 June 1967	"Strawflower Me" — G, C, 5 III/17 May 1967	"Michael from Mountains" **FFCGAC** F, F, 0 IV/8, V/7-8 June 1967
		"Chelsea Morning" — D, E, 2 IV/7, IV/14–15 June 1967	"Dr. Junk"† — B, B, 0 IV/5, V/16–17 June 1967	"Go Tell the Drummer Man" **FFCGAC** F, F, 0 V/9 27 October 1967
		"Jeremy" — D, F, 3 IV/10 June 1967	"Little Green" — G, B, 4 V/1 27 October 1967	"Cara's Castle" **DADFAD** Dm, Fm, 3 IV/9 June 1967
		"Come to the Sunshine" — D, E♭, 1 IV/12–13 27 October 1967	"Marcie" — G, G, 0 V/2–3 27 October 1967	"Song to a Seagull" **CGCGCC** C, C, 0 III/7–8 17 March 1967
		"Play Little David" — D, F♯, 4 IV/18) 27 October 1967	"Ballerina Valerie" — G, G, 0 V/4–5 27 October 1967	
		"Cactus Tree" — D, F♯, 4 IV/24–25 27 October 1967		

† "Dr. Junk" is in Open G tuning, transposed down a semitone (C♯ F♯ C♯ F♯ A♯ C♯); it is in the key of B, and the tonic chord is played as a barre chord on the fifth fret.

Appendix 2. Mitchell's guitar-based songs and tuning families, 1968–1972

Family*	Song	Year	Tuning (semitones)	Type	Tuning
7–3	Barangrill	1972	X–7–3–6–3–5	Dom 7th	DACF♯AD
7–5	I Had a King	1968	X–7–5–0–7–5	Open no 3rd	DADDAD
	That Song about the Midway	1969/©1968	X–7–5–2–5–5	Add9 no 3rd	DADEAD
	Cactus Tree	1968	X–7–5–4–3–5	Open D	DADF♯AD
	Night in the City	1968/©1966	X–7–5–4–3–5	Open D	DADF♯AD
	The Pirate of Penance	1968	X–7–5–4–3–5	Open D	DADF♯AD
	Both Sides Now	1969/©1967	X–7–5–4–3–5	Open D	DADF♯AD
	Chelsea Morning	1969/©1967	X–7–5–4–3–5	Open D	DADF♯AD
	Big Yellow Taxi	1970	X–7–5–4–3–5	Open D	DADF♯AD
	Conversation	1970/©1967	X–7–5–4–3–5	Open D	DADF♯AD
	You Turn Me On, I'm a Radio	1972	X–7–5–4–3–5	Open D	DADF♯AD
	The Priest	1970/©1968	X–7–5–5–2–7	Sus Add9	DADGAE
	I Think I Understand	1969/©1966	X–7–5–5–4–5	Drop D	DADGBE
	Song to a Seagull	1968/©1966	X–7–5–7–5–0	Open no 3rd	CGCGCC
	Songs to Aging Children Come	1969/©1967	X–7–5–7–5–4	Open D (var)	DADADF♯
R7–5	Marcie	1968/©1967	X–5–7–5–4–3	Open G	DGDGBD
	Nathan La Franeer	1968	X–5–7–5–4–3	Open G	DGDGBD
	The Gallery	1969	X–5–7–5–4–3	Open G	DGDGBD
	Roses Blue	1969/©1968	X–5–7–5–4–3	Open G	DGDGBD
	The Circle Game	1970/©1966	X–5–7–5–4–3	Open G	DGDGBD
	Morning Morgantown	1970/©1967	X–5–7–5–4–3	Open G	DGDGBD
	Little Green	1971/©1967	X–5–7–5–4–3	Open G	DGDGBD
	This Flight Tonight	1971	X–12–7–5–4–3	Open G (var)	GGDGBD
	Electricity	1972	X–12–7–5–4–3	Open G (var)	GGDGBD
	For the Roses	1972	X–12–7–5–4–3	Open G (var)	GGDGBD
7–7	Sisotowbell Lane	1968	X–7–7–3–7–4	Maj Add9,11	CGDFCE
	Ladies of the Canyon	1970/©1968	X–7–7–3–7–4	Maj Add9,11	CGDFCE
	Woman of Heart and Mind	1972	X–7–7–3–7–4	Maj Add9,11	BF♯C♯EBD♯
	Cold Blue Steel and Sweet Fire	1972	X–7–7–5–4–3	Open G 4th in bass	CGDGBD
R7–7	Michael from Mountains	1968/©1967	X–0–7–7–2–3	Maj Add9	FFCGAC
	I Don't Know Where I Stand	1969/©1967	X–0–7–7–2–3	Maj Add9	FFCGAC

* In Mitchell's subsequent studio albums, 1974–2007, she adds only one more tuning family, 7–9, with seven songs in this family. Generally speaking, she sets the basics for her use of alternate tunings in her early songs.

Appendix 3. Transcription sources

Our sources are the 2014 volume *Joni Mitchell: Complete So Far . . .* , with transcriptions by Joel Bernstein, Daniel Libertino, and Andrew DuBrock, and the Transcriptions section of Mitchell's official website, jonimitchell.com, with individual contributions from a team of transcribers.

"Barangrill"
Bernstein, Libertino, and DuBrock (2014, 140–42)
Mark Domyancich, https://jonimitchell.com/music/transcription.cfm?id=10

"Both Sides Now"
Bernstein, Libertino, and DuBrock (2014, 74–75)
Steve DiBartola, https://jonimitchell.com/music/transcription.cfm?id=233

"The Circle Game"
Bernstein, Libertino, and DuBrock (2014, 102–3)
Julo Cumani, https://jonimitchell.com/music/transcription.cfm?id=256

"For the Roses"
Bernstein, Libertino, and DuBrock (2014, 154–56)
Marian Russell, https://jonimitchell.com/music/transcription.cfm?id=303

"I Don't Know Where I Stand"
Bernstein, Libertino, and DuBrock (2014, 62–64)
Sue McNamara, https://jonimitchell.com/music/transcription.cfm?id=225

"I Had a King"
Bernstein, Libertino, and DuBrock (2014, 34–35)
Howard Wright, https://jonimitchell.com/music/transcription.cfm?id=539

"Just Like This Train"
Bernstein, Libertino, and DuBrock (2014, 184–87)
Marian Russell, https://jonimitchell.com/music/transcription.cfm?id=110

"Ladies of the Canyon"
Bernstein, Libertino, and DuBrock (2014, 84–85)
Howard Wright and Harlan Thompson, https://jonimitchell.com/music/transcription.cfm?id=258

"Morning Morgantown"
Bernstein, Libertino, and DuBrock (2014, 80–81)
Mia Ortlieb, https://jonimitchell.com/music/transcription.cfm?id=357

"The Pirate of Penance"
Bernstein, Libertino, and DuBrock (2014, 48–49)
Howard Wright, https://jonimitchell.com/music/transcription.cfm?id=223

"Sisotowbell Lane"
Bernstein, Libertino, and DuBrock (2014, 44–45)
Marian Russell, https://jonimitchell.com/music/transcription.cfm?id=123

"Woman of Heart and Mind"
Bernstein, Libertino, and DuBrock (2014, 160–61)
Mark Domyancich and Sue McNamara, https://jonimitchell.com/music/transcription.cfm?id=27

WORKS CITED

Bennighof, James. 2010. *The Words and Music of Joni Mitchell*. Santa Barbara, CA: Praeger.

Bernstein, Joel, Daniel Libertino, and Andrew DuBrock, transcribers. 2014. *Joni Mitchell: Complete So Far…*. Van Nuys, CA: Alfred Music.

Chemero, Anthony. 2003. "An Outline of a Theory of Affordances." *Ecological Psychology* 15 (2): 181–95.

Clarke, Eric. 2005. *Ways of Listening: An Ecological Approach to the Perception of Musical Meaning*. New York: Oxford University Press.

Cone, Edward T. 1974. *The Composer's Voice*. Berkeley: University of California Press.

Crowe, Cameron. 2020. "A Conversation with Joni Mitchell." Interview booklet. *Joni Mitchell Archives, Volume 1: The Early Years (1963-1967)*. Produced by Joni Mitchell and Patrick Milligan. Rhino Entertainment. Released 30 October 2020, 5 compact discs.

De Souza, Jonathan. 2017. *Music at Hand: Instruments, Bodies, and Cognition*. New York: Oxford University Press.

———. 2018. "Fretboard Transformations." *Journal of Music Theory* 62 (1): 1–39.

Gibson, James. J. 1979. *The Ecological Approach to Visual Perception*. Boston: Houghton Mifflin.

Hannaford, Marc Edward. 2019. "One Line, Many Views: Perspectives on Music Theory, Composition, and Improvisation through the Work of Muhal Richard Abrams." Ph.D. diss., Columbia University.

Hanson, Mark. 1995. *The Complete Book of Alternate Tunings*. West Linn, OR: Accent on Music.

Hatten, Robert S. 2018. *A Theory of Virtual Agency for Western Art Music*. Bloomington: Indiana University Press.

Jones, Matthew J. 2019. "The Hexagram of the Heavens, The Strings of My Guitar: Joni Mitchell's Crip Virtuosity." In *Joni Mitchell: New Critical Readings*. Ed. Ruth Charnock. 21–41. New York: Bloomsbury.

Koozin, Timothy. 2011. "Guitar Voicing in Pop-Rock Music: A Performance-Based Analytical Approach." *Music Theory Online* 17 (3). https://mtosmt.org/issues/mto.11.17.3/mto.11.17.3.koozin.html.

———. 2016. "Musical Gesture in the Songs of Nick Drake." In *The Cambridge Companion to the Singer-Songwriter*. Ed. Katherine Williams and Justin A. Williams. 144–58. Cambridge: Cambridge University Press.

Lacy, Susan, director. 2003. *Woman of Heart and Mind*. Eagle Rock Entertainment. DVD.

Lobo, Lorena, Manuel Heras-Escribano, and David Travieso. 2018. "The History and Philosophy of Ecological Psychology." *Frontiers in Psychology* 9: 1–15.

Maus, Fred Everett. 1988. "Music as Drama." *Music Theory Spectrum* 10: 56–73.

Mitchell, Joni. 1988. "Lady of the Canyon." Interview by Kristine McKenna. *Spin*. May 1988. Accessed 29 April 2025. https://jonimitchell.com/library/view.cfm?id=358.

———. 1998. "A Conversation with Joni Mitchell." Interview by Jody Denberg. KGSR-FM, 9 September. Accessed 11 August 2025. https://jonimitchell.com/library/print.cfm?id=998.

———. n.d. *The Official Joni Mitchell Site*. Accessed 6 July 2025. https://jonimitchell.com/.

Monahan, Seth. 2013. "Action and Agency Revisited." *Journal of Music Theory* 57 (2): 321–71.

Rodgers, Jeffrey Pepper. 2000. "My Secret Place: The Guitar Odyssey of Joni Mitchell." In *Rock Troubadours: Conversations on the Art and Craft of Songwriting*. 33–56. San Anselmo, CA: String Letter.

Russell, Marian. 1998–2025. "Tuning patterns." JoniMitchell.com. Accessed 29 April 2025. https://jonimitchell.com/music/tuningpatterns.cfm.

Seeger, Pete. 1955. *The Folksinger's Guitar Guide: An Instruction Record by Pete Seeger*. Folkways CRB 1. LP and instruction manual. Accessed 29 April 2025. https://folkways-media.si.edu/docs/folkways/artwork/FW08354.pdf.

Shea, Nicholas J. 2020. "Ecological Models of Musical Structure in Pop-rock, 1950–2019." Ph.D. diss., Ohio State University.

Sonenberg, Daniel. 2003. "'Who in the World She Might Be': A Contextual and Stylistic Approach to the Early Music of Joni Mitchell." D.M.A. diss., City University of New York.

———. 2009. Review of *The Music of Joni Mitchell*, by Lloyd Whitesell. *Bulletin of the Society for American Music* 35 (3): 45–46.

Straus, Joseph N. 2011. *Extraordinary Measures: Disability in Music*. New York: Oxford University Press.

Temperley, David. 2018. *The Musical Language of Rock*. New York: Oxford University Press.

Turvey, Michael T., and Robert E. Shaw. 1995. "Toward an Ecological Physics and a Physical Psychology." In *The Science of the Mind: 2001 and Beyond*. Ed. Robert L. Solso and Dominic W. Massaro. 144–70. New York: Oxford University Press.

Vaughan, James, Clifford J. Mallett, Paul Potrac, Carl Woods, Mark O'Sullivan, and Keith Davids. 2021. "Football, Culture, Skill Development and Sport Coaching: Extending Ecological Approaches in Athlete Development Using the Skilled Intentionality Framework." *Frontiers in Psychology* 12: 1–13.

Weissman, Dick. 2006. *Guitar Tunings: A Comprehensive Guide*. New York: Routledge.

Whitesell, Lloyd. 2008. *The Music of Joni Mitchell*. New York: Oxford University Press.

Yaffe, David. 2017. *Reckless Daughter: A Portrait of Joni Mitchell*. New York: Farrar, Straus and Giroux.

DISCOGRAPHY

Mitchell, Joni. 1969. *Clouds*. Composed and arranged by Joni Mitchell (no producer listed). Warner Records

R1 6341/603497844197, LP. Originally released May 1969.

———. 1974. *Court and Spark*. Composed by Joni Mitchell (no producer listed). Asylum Records 7E-1001, LP. Released 17 January 1974.

———. 2020. *Joni Mitchell Archives, Volume 1: The Early Years (1963–1967). Joni Mitchell Archives, Volume 1: The Early Years (1963–1967)*. Produced by Joni Mitchell and Patrick Milligan. Rhino Entertainment. Released 30 October 2020, 5 compact discs.

Music Theory Spectrum, Vol. 00, No. 0, pp. 1–30, ISSN 0195-6167, electronic ISSN 1533-8339.
https://doi.org/10.1093/mts/mtaf014