

Grunge Music In Bloom: Musical Analysis of Nirvana's Hit

Gilad Cohen

(Updated Jan 1st 2009)

Nirvana's music would probably not be the first choice of music scholars for analysis. Despite the band's tremendous success¹ in the early 1990s as one of the leaders of the grunge genre², the band's remarkable significance in pushing alternative music into the mainstream³ and its influential precedents⁴, very few popular music scholars have chosen to investigate Nirvana's music in depth⁵.

It seems that the band's direct, rough sound with its scream-like singing and thunderous distorted guitar⁶, made music scholars believe that there was little room for careful musical analysis. The short, repetitive harmonic successions, the dogmatic instrumental arrangements, the fixed rhythmic patterns and the basic strophic rock-song forms - all seem to thwart any attempt to discover "hidden complexity" and richness below what might be conceived as simplistic surface⁷.

However, a closer look at the music of the leading grunge bands would unveil unique, innovative characteristics. Nirvana, Alice in Chains, Soundgarden and Pearl Jam – all share similar harmonic idioms, in which they present a fascinating mix of using traditional rock patterns from previous decades, while seeking new harmonic possibilities⁸. The common use of the Phrygian mode⁹, the use of power chords¹⁰ as the basic harmonic unit (which many times blurs the definition between major and minor keys), the frequent cross relations between sequential chords and chromatic clashes between melody and harmony – all became trademarks of the genre¹¹.

¹ Nirvana has sold over fifty million albums worldwide since the release of their debut album, *Bleach*, in 1988 (Armstrong, 2002).

² Robert Walser defines grunge music as "a subgenre of 1990s alternative rock... forging a new sound out of the Heavy Metal... combined with the post-punk styles" (Walser, "Grunge" in Grove Music Online). The genre emerged in the late 1980s in the State of Washington, particularly in the Seattle area. Walser also states that "grunge came to national and international attention after Nirvana's *Smells Like Teen Spirit* was released in 1991 and achieved enormous success" (Ibid)

³ Ibid.

⁴ Azerrad, 1993.

⁵ Historical-musicological scholarly writing about Nirvana is quite common; however, the only scholarly writings I found which analyze their music are Chris McDonald's "Exploring Modal Subversions in Alternative Music" (McDonald, 2000), which will be discussed in the current study; short references in Walter Everett's "Confessions from Blueberry Hell, or, Pitch can be a sticky substance" (Everett, 2000); and Tim Hughes' "Nirvana: University of Washington, Seattle, January 6, 1990" (Hughes, 2006), which analyzes a live performance of Nirvana in 1990.

⁶ Electric guitar which is amplified through a "distortion" effect (or "overdrive" or "fuzz" effects). Distorted guitar is one of the main characteristics of grunge sound.

⁷ Rock scholar Walter Everett was told by one audience member during a discussion of Nirvana's song *Lithium*, that all the "dealing with notes" had been irrelevant, since "the only thing of importance in Nirvana is the timbre of Kurt Cobain's guitar" (Hubbs, 2000). According to Hubbs, Everett later commented that playing the pitches and rhythm of a song by Nirvana on a keyboard would probably still be more recognizable by that person, than playing a song by a different band using Cobain's guitar sound... (Ibid)

⁸ When discussing the harmonic uniqueness of popular music, Everett describes an "evolutionary relationship between the "classic" pop of the 1950s through the 1970s and the sometimes quasi-atonal grunge of the 1980s and 1990s that is analogous to the sea change of tonal function over the past three centuries of art music." (Everett, 2000)

⁹ The Phrygian mode can be defined as a minor mode with a lowered second degree (for detailed explanation see Aldwell & Schachter, 2003.)

¹⁰ *Power chords* consist of merely a bass note and a fifth above. Chris McDolands explains their origins and significance: "the addition of distortion to a guitar sound... has the profound effect of increasing the harmonic complexity of the resulting soundwave. Distortion significantly increases the amount of audible upper partials, creating a very thick tone. As a result... it became possible, and even desirable, for guitarists in hard rock to simplify their chordal sonorities. Many guitarists thus eliminated thirds from their chords, since the sound of the open fifth through distortion generated a soundwave that was rich and complex enough to be satisfying" (McDonalds, 2000). Also see Everett, 2000: p. 330-332 regarding the same issue.

¹¹ Other characteristics of the genre include a dark, thick sound and heavy, slow grooves (in contrast to the typical virtuosic guitar-playing of Heavy Metal [Walser, "Grunge"]), while focusing on the instruments' low register, and texts that deal with pain, cynicism and bitter humor (Ibid).

In this study I will concentrate on one of Nirvana's biggest hits, *In Bloom*, taken from the band's second and most successful album, *Nevermind* (DGC, 1991)¹², written by singer/guitarist Kurt Cobain. In analyzing the song, I intend to point out aesthetic characteristics, not unlike those found in classical music, arrived at from an intuitive process, and by musicians who lack any classical music training. The unique way in which these qualities are applied in the harmonic, melodic and rhythmic context of rock, particularly grunge, will be comprehensively explored. Furthermore, I will suggest possible intuitive ways by which Nirvana arrived at some of these exceptional ideas, such as the process of trial and error or the electric guitar practice, both of which are in the basis of rock's creative process.

I believe that such qualities can often be observed in rock music, and are part of the reasons this genre should not be disqualified by music theorists, and should be further examined. I also believe that pointing out these qualities can help both classical and rock composers in their own creative process and enrich and inspire their vocabulary, not less so than the analysis of classical music.

In order to point out stylistic characteristics throughout this study, I will present examples from other songs by Nirvana and by other grunge bands, as well as examples from other genres in rock music. I will also make a use of excerpts from the classical music literature, in order to illustrate differences in the approach to and the application of some aesthetic characteristics and phenomena.

In this study I will use M / m to indicate major / minor chords (respectively), and upper / lower roman numerals to indicate major / minor degrees¹³ (resp.); upper roman numerals will be used for undefined cases. Power chords, which consist of only a bass note and a fifth above, will be indicated by the root letter followed by a "5" (e.g. B \flat 5). Whenever there is a strict indication of a chord's quality due to a melodic note or a rare triad in the guitar, I will use the appropriate indication (M or m); however, in ambiguous cases or when discussing the guitar playing in particular, I will rather use the X5 notation, or solely the root letter, as the latter reflects the linear-contrapuntal thought process of many Nirvana's bass lines. In discussing note alterations, I will use the common notation from common-practice analysis, in which lowered sixth degree in B \flat major would be notated as \flat VI (for G \flat), while in E major it would be notated as \sharp VI (for C). In discussing intervals, I will use the customary two-character shortcut such as m3 and p5 which stand for minor third and perfect fifth (resp.).

The following points will be examined through this study:

1. Alteration between natural and lowered sixth degree as *In Bloom*'s 'harmonic hook'
2. The verse's linear harmonic succession
3. Softening of the transition between the verse and the refrain
4. Harmonic implications as a result of additional vocal lines ("harmony line")
5. Discord between textual and musical phrases in the refrain
6. Melodic and harmonic overview from a Schenkerian perspective

I will first introduce the song, its form and its harmonic components.

¹² *In Bloom* was initially recorded already in April 1990 for demo purposes, one day after the band had rehearsed it for the first time (Cross, 2001b). In May 1991 it was rerecorded as part of the recording sessions for *Nevermind*.

¹³ There are a few other standard ways to notate harmony in popular music.

Introducing the song

In Bloom is an exceptional song in Nirvana's corpus of works, as its harmonic palette is wider than of most of the band's songs, consisting of chords based on ten different notes. Unlike most of the songs on *Nevermind*, which consist of three main musical sections (verse, refrain and bridge), *In Bloom* has only two (verse and refrain, and a short intro which also reappears as an Interlude and Coda)¹⁴. It is written in a typical "rock-song form"¹⁵ (see example 1), except for a "second intro" which appears before the first verse, in which the verse's chord progression is presented instrumentally¹⁶. All of the sections in the song follow the archetypal formula of bar numbers in rock, by which each section can be divided into phrases consisting of 4 bars each (or 2 bars each in the refrain). These phrases are likely to repeat themselves melodically and harmonically in Nirvana's music, usually using different text.

Section	Subdivision and number of bars	Harmonic pattern (roots only)
Intro	[4] x2	[B ^b -G-F-A ^b]
"Second Intro"	[4] x2	[B ^b -G ^b -E ^b -C ^b -A]
Verse I	[4] x2; [4] x2	[B ^b -G ^b -E ^b -C ^b -A] (last time: [B ^b -G ^b -E ^b -C ^b -D])
Refrain I	([2] x4; [2] x2) x2	[B ^b -G], [C-E ^b]
Interlude (identical to the intro)		
Verse II		
Refrain II		
Interlude (identical to the intro)		
Guitar Solo (based on the verse)		
Refrain III		
Outro (identical to the intro, except for the addition of a final tonic)		

Example 1: The form of *In Bloom*

A transcription of the song's melody and harmony appears on the next page.

¹⁴ In fact, originally *In Bloom* did have a bridge section; however, it was cut out by the album's producer, Butch Vig, after the song was recorded (Cross, 2001b). Fortunately, the song is rich and interesting enough even without the missing section.

¹⁵ A typical rock-song form is: intro – verse I (or I and II in a row) – refrain I – verse II – refrain II – instrumental solo (which is usually based on the verse's harmonic succession) – refrain III (or two refrains in a row), with or without a coda.

¹⁶ This is actually the only time in the song in which this succession appears with a full sound of the band, including distorted guitar.

In Bloom / Nirvana (Nevermind, DGC 1991)

lyrics and music: Kurt Cobain
transcription: Gilad Cohen

1 (5)
Intro (0:00)
1. 2.
9 (13)
distorted guitar
bass guitar
B \flat 5
F5
A \flat 5
B \flat 5
G \flat 5
E \flat 5
C \flat 5
A5
B \flat major:
17
Verse (0:26)
p
sell
bass only
the kids
for food
weath - er chang - es mood
25
spring
is here
a gain
re - pro due - tive glands
f
he's
distorted guitar
B \flat M
A5
C \flat 5
E \flat 5
G \flat 5
E \flat 5
C \flat 5
D5
33
Refrain (0:51)
the one
who likes
all out pret-ty songs
and he
likes to sing a-long
and he
likes to shoot his gun
but he
don't know what it means
42
don't know what it means
when I say:
he's the one
who likes
all our pret-ty songs
and he
likes to sing a-long
and he
likes to sing a long
and he
51
likes to shoot his gun
but he
don't know what it means
don't know what it means
when I say:
Yeah
Interlude (1:28)
1. 2.
Last time
bass:
bass:
(drums fill)
Back to verse

Alteration between natural and lowered sixth degree as *In Bloom*'s 'harmonic hook'

Ken Stephenson states that "in rock, the mode of the piece depends on nothing but the tonic triad" (Stephenson, 2002). Since a B♭M triad (with the third) appears when the guitar enters in the middle of the verse (bar 25), and the refrain's melody has an unfolded B♭M triad, I see B♭ major as the mode of the entire song¹⁷.

This definition, however, does not suggest that the harmonic palette being used in the song is drawn out from the diatonic degrees of the major key. On the contrary; as in many other rock songs which are written in a major key, most of the chords in *In Bloom* use notes which are not part of the scale. Rather than relating to these chords as mixtures¹⁸, which would offer a false sense of an exceptional and "exotic" phenomenon (which is not the case here), I view most of the chords in this song as part of one coherent harmonic system, which Stephenson defines as the "Chromatic Minor System" (Ibid). This system "consists of major chords based on every step of the natural-minor scale [including the Neapolitan ♭II, GC], with one exception: the tonic triad may be either major or minor." (Ibid). Stephenson regards this system as one of three harmonic systems, into which rock songs normally belong¹⁹. The Chromatic Minor System, as applied to the key of B♭ major, consists therefore of the following chords²⁰:

I	B♭M
(♭II) ²¹	(C♭M)
II♯	CM
♭III	D♭M
IV	E♭M
V	FM
♭VI	G♭M
♭VII	A♭M

Example 2: Ken Stephenson's Chromatic Minor System as applied to the key of B♭ major

It is clear that most of the chords in *In Bloom* fall into the above table, the only exceptions being G(M) (VI) in the intro and the refrain, A5 (VII^{♯5}) in the verse and brief D5 (III) at the end of the verse. However, although A5 and D5 do sound exceptional and foreign to the system (both will be discussed comprehensively later in this study), GM sounds quite organic in the context. One might see the appearance of G♯ in the refrain as an indication for a change from the Chromatic Minor Harmonic System in the verse to the Major System in the refrain (see foot note no. 19 for definition); nevertheless, I see the entire song as belonging to one harmonic system. Thus, both ♭VI and ♭VII are "organic" chords in the song which are two legitimate alternations of the same degree, being "two sides of the same coin".

¹⁷ The D♭ appearances in the melody throughout the song do not change this definition; In the verse's melody I see the D♭ as a result of the G♭M harmony, while at the end of the refrain it functions as a "blue note". These appearances will be discussed later in depth.

¹⁸ Mixture – a phenomenon in which there is a use of chords that are "borrowed" from the parallel key, or when diatonic chords change their quality from major to minor and vice versa (see Aldwell & Schachter, 2003 for a detailed explanation)

¹⁹ Stephenson's two other systems are the **Natural Minor system**, which consists of the diatonic chords of the natural minor scale, with a minor V and excluding the diminished II, and the **Major system**, which is "a chromatic system involving variable qualities (major and minor) of several chords whose roots are built on the notes of the mixolydian scale" (Stephenson, 2002)

²⁰ I would rather use the customary notation in music analysis for scale degrees in major than the notation suggested by Stephenson, as I find the latter somewhat confusing, besides being probably unfamiliar to most readers.

²¹ The ♭II degree, a.k.a the Neapolitan chord, usually appears in first inversion (6.3) in classical music, partially in order to avoid the triton leap in the bass from ♭II to V. In rock, it is most common in root position, for two main reasons: Inversions are rare in general (and especially in grunge music), and the triton bass motion is not foreign to the genre's aesthetics (In fact ♭II rarely resolves into V in rock music – as can be seen in the song discussed here).

Since $\flat VI$ is used solely in the verse and $\natural VI$ is used solely in the refrain (excluding the intro²²), I see the alteration between the two as *In Bloom*'s 'harmonic hook' - a harmonic phenomenon that characterized the song. The lowered VI contributes to the verse's dark, gloomy character (otherwise pronounced by the voice's low register and the hollow texture of voice+bass+drums in the first half of the verse), while the brighter, natural VI corresponds with the change of dynamics and orchestration in the refrain (the entrance of distorted guitar and the change of register in the voice). The use of a GM triad in the guitar (rather than a power chord) in the refrain enhances this change in color.

Alternation between lowered and natural sixth degree as a central harmonic force in a composition is not so rare in popular music, as well as in classical music. Nevertheless, it is interesting to observe how it is being applied by different musicians. Compare this phenomenon in Nirvana's *In Bloom*, Soundgarden's *The Day I Tried To Love*, The Beatles' *It Won't Be Long* and Chopin's Piano Etude in A flat major (from *Trois Nouvelles Études*) in example 3 (continued on the next page)²³.

Example 3: Excerpts with alteration between natural VI and flat VI from the literature

Example 3a: Nirvana's *In Bloom* (*Nevermind*, DGC 1991)

Example 3b: Soundgarden's *The Day I Tried To Live* (*Superunknown*, A&M 1994)

Notice the similar $\hat{5}$ - $\hat{6}$ motions in the melodies of *The Day I Tried To Live* and *In Bloom*, and their different functions in each song: In *In Bloom*'s refrain the natural $\hat{6}$ note (G) anticipates²⁴ the following natural VI chord (GM), and therefore signifies the change from the use of lowered VI in the verse to natural VI in the refrain. *The Day* illustrates the opposite concept: the natural $\hat{6}$ note (C#) produces cross relations with the following lowered VI (CM) both in the verse and in the refrain. A natural vi (C#m) appears only at the fourth bar of the refrain²⁵.

²² Natural VI is first presented in the intro; its reappearance in the refrain after only lowered VI chords appear in the verse, "fulfils the promise" which was given in the intro.

²³ Nirvana's *About a Girl* (Bleach, 1988) also presents an alternation between lowered and natural VI, both in the refrain.

²⁴ Anticipation is "a situation in which the next harmony or scale-step is anticipated by a note or notes, either in one or in more intervals of this harmony or scale-step" (Schenker, 1954: p. 303). The progression discussed here illustrates well a case in which "a dissonance, introduced stepwise, suddenly changes direction... this may occasion a harmonic relationship between this dissonance passing note [the nonchord tone G in our case; GC] and the subsequent consonance" (Ibid: p. 302).

²⁵ Additional points of resemblance between the two songs which are worth mentioning are the similar bass riffs (in both songs in the intro and throughout the verse), and the octave leap in the melody's register from the verse to the refrain.

Verse Refrain

E major: I CM I C#m EM C#m EM C#m

Example 3c: The Beatles' *It Won't Be Long* (With The Beatles, Parlophone 1963)

Ab major: I V/vi VI V I IV

ii7 V I VI V⁴/bVI

Example 3d: Chopin's Piano Etude in A flat major (from *Trois Nouvelles Études*): bars 10-19

Chopin's Etude, although using the sample basic principal as the other excerpts, differs in the way the two types of VI are being arrived at: The arrival to vi (F minor; third bar in example 3d) is diatonic, through a secondary dominant, and the arrival to \flat VI (enharmonically equal to E major; eighth bar in the example) is through a whole-tone-scale motion in the bass, with a passing tone $G\flat$ between $A\flat$ and $E\flat$. Nevertheless, the arrival to these degrees in the rock excerpts above is much more direct and less smooth, as they arrive without any harmonic preparation, and as a result stand out in the harmonic succession. Furthermore, in the three songs there is a subtle correlation between the harmonic successions of the verse and the refrain²⁶, which highlights the difference between the two types of the VI degree by making them correspond with each other.

²⁶ In *It Won't Be Long*'s verse the lowered VI appears between two tonics, and in the refrain the tonic appears between two natural VIs. In *In Bloom* and in *The Day I Tried To Live* both the lowered and the natural VI appear right after a tonic.

The verse's linear harmonic succession

In Bloom's verse presents an unusual harmonic succession. Even though it does not follow the common-practice aesthetics of tonal directionality, it has its own vivacious, satisfying way in which it sets a strong sense of harmonic direction, using rock language's tools.

In this succession, which is clearly drawn out of a contrapuntal-based bass line, a potential equal-division-of-the-octave using descending M3s (B \flat -G \flat -D-B \flat), is broken up by a descending m3 (originally an ascending M6) between G \flat and E \flat (see example 4). As a result, the next descending M3 "misses the tonic", and surprisingly leads into C \flat 5, the \flat II degree of the scale. However, according to the aesthetics of Nirvana's music, this succession has to resolve back into tonic, in order to begin the next cycle²⁷. Cobain's solution is surprising: The C \flat 5 chord is followed by A5, and by that creates a double chromatic neighbor²⁸ (\flat II-VII \sharp 5-I), which encircles the tonic before reaching it.

B \flat major: I \flat VI IV \flat II VII \sharp 5

Example 4a: The bass line of *In Bloom*'s verse

Verse (0:25) (0:37) NT Refrain (0:50)

PT: passing tone
DCNT: double chromatic neighbor tone
NT: neighbor tone
ANT: anticipation

B \flat major: I \flat VI IV \flat II VII \sharp 5

Example 4b: *In Bloom*'s verse – analysis

This solution is surprising, not only because of its exceptional aesthetic but also since it brings to mind similar compositional tools which are common in classical music²⁹. In its chromatic nature, it generates a strong contrast with the previous series of thirds in the bass line (and in general with the wide use of thirds throughout the album), and it builds up a harmonic tension toward the resolution of the tonic. How did Cobain come up with the A, instead of using A \flat , which would have been the natural choice here³⁰?

²⁷ In all of the songs on *Nevermind*, the verse is built on a repeated harmonic pattern which begins on the tonic. These patterns usually consist of between 2 to 4 chords (the only exceptions are *Lithium*, with a pattern consisting of 8 chords, and *In Bloom*, with a pattern of 5 chords).

²⁸ A double chromatic neighbor is a phenomenon in which a given note is being embellished by two chromatic incomplete neighbor tones in a row, one is a half-step higher than the main note, and one is a half-step lower (e.g. D-E \flat -C \sharp -D or just E \flat -C \sharp -D). Interestingly, the first neighbor tone only resolves into the main note after the second neighbor tone appears.

²⁹ Double chromatic neighbor in the melody as a preparation for a desired tonic is quite common in the classical literature (see, for example, Verdi's *Il Trovatore*, act 1 scene 3 bars 8-10). However, the straight-forward application that appears here (\flat II-VII \sharp 5-I) is a typical product of rock music.

³⁰ The progression C \flat -A \flat -B \flat (\flat II- \flat VII-I) would have sounded much more natural in the genre, as it represents a Phrygian mode in the bass line, which is quite common in grunge as well as in Heavy Metal (see Nirvana's *Smells Like Teen Spirit*'s bridge and *Pennyroyal Tea*'s refrain, as well as Alice in Chains' *Would* and *Sludge Factory*).

I would like to suggest a simple answer to this question, for which I will be relying on the common guitar practice. Although many rock musicians are not familiar with terms such as “neighbor tone” and “chromatic double neighbor”, the concept of a neighbor tone in itself is quite intuitive, especially for musicians who use the guitar as their main creative tool. The guitar offers a visual presentation of what neighbor tone is, simply by moving the left hand on the neck one or two frets to one side and then back.

Adding this to the fact that low A is an open string on the guitar, playing the bass line $C\flat$ -A- $B\flat$ (or $B\sharp$ -A- $B\flat$) would be quite idiomatic, even to an average guitar player: The player begins with playing the note B on the A string, then playing A on an open string, and then $B\flat$ right in between the previous two (see example 5a).

Considering that the verse begins with only bass guitar and drums, it is not unlikely that the verse's harmonic succession was written by experimenting this way, while playing merely the bass line on the guitar. In a similar way, playing this succession using power chords, as appears in the second half of the verse, is quite idiomatic as well (see example 5b).³¹



Example 5: Playing the end of the verse's succession on the guitar...

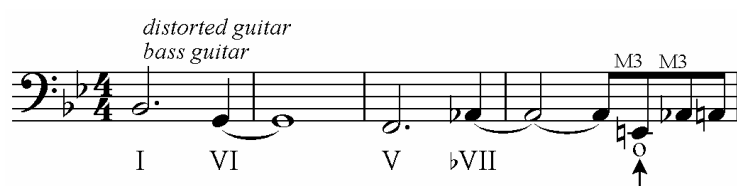
a: using solely bass notes

b: using power chords

³¹ Indeed, this is how guitarist Cobain and bassist Krist Novoselic perform this chord succession, as evident by many video clips taken at Nirvana's live performances (e.g. concert at Palasport, Modena, Italy on 2/21/94 <http://www.youtube.com/watch?v=VBGnKivsqeY>)

The chromatic ending C \flat -A-B \flat corresponds with the intro's bass line, as both present chromatic approach to the tonic and make a use of a chromatic note in an unusual context. In example 6a, the use of A \natural is simpler than it is in the verse; it functions as a passing tone between A \flat and B \flat (A \flat being the more structural note of the two). However, an E \natural precedes the A \flat , and gives the bass line a rough sound (partly because of it being a triton from the tonic, and partly because of the melodic leaps to and from it). Once again, Cobain's choice is surprising: it seems that the natural choice here would have been F rather than E (see example 6b), for two reasons:

1. F is the dominant, and it corresponds well with A \flat (\flat VII), a degree which traditionally functions in rock as a substitute for V³².
2. An F precedes the A \flat in the previous measure; therefore the F sounds familiar when reappearing after the A \flat .



Example 6a: The intro's bass line



Example 6b: With F instead of E \natural

Once again, I believe that the choice of E \natural is clearly a result of the guitar practice, this time the use of an open E string. After playing the long A \flat , the player simply removes his left hand from the neck, plays an open E and then places his hand back on the neck on the same place in order to play the next A \flat . This line is much easier to play than a similar line with an F instead of E (shown in example 6b), which requires an uncomfortable stretch (or a pretty quick motion) of the left hand. The result, in any event, is much more satisfactory: a fresh chromatic note has joined the song's pitch arsenal, and interestingly changed the lowest peak of this bass line (and of the entire song) from the conventional \wedge^5 to the tense $\wedge^{\#4}$ ³³.

³² Everett states that "the \flat VII chord is often tied directly to dominant function, even when that [V] chord is absent [in our case, the two are actually adjacent; GC]. The dominant, after all, has a largely contrapuntal role, in that its third, fifth, and – if present – seventh all resolve by step. So the \flat VII - I progression fulfills quite a few roles of V⁷" (Everett, 2000: p. 329).

³³ The E \natural has another significance in the broader sense: It forms a M3 for the first time in the song, and by that sets the ground to the consistent alteration between major and minor thirds in the verse.

1. A distorted guitar appears in the last bar of the verse (Bar 32), while in the rest of the verse the melody was accompanied by a "clean guitar" (electric guitar without a distortion effect)³⁴. Marking different sections with an alternation between "clean" and "distorted" guitar sound is a very common phenomenon in Nirvana's music³⁵, thus the entrance of a distorted guitar one bar *before* the refrain presents an interesting discord.
2. In the same bar Cobain shouts a whole-note F ("He's...") in his topmost register. After singing the entire verse in a low register, this sudden change is very effective, and prepares the refrain's high melody. The register leap is especially evident since both sections begin with an F, one octave apart, and is naturally accompanied by a change in dynamics: While the verse was sung very softly, this high F opens a section in which Cobain sings loudly³⁶. This high F stands out from another reason: After a series of consonant intervals between the melody and the bass throughout the verse, this F creates a triton over the bass (see example 7). A triton between the melody and the bass is very unusual in Nirvana's writing, but can be easily explained here: This F anticipates the following chord (B♭M), where it creates a consonant perfect fifth over the bass.

ANT = anticipation

Verse

Refrain

ANT

P5 P5 P5 P5 P8 M3 A4 (m3) P5 P5

ANT

Bb major:

Example 7: Melody/bass intervals in *In Bloom*'s verse

³⁶ The difference in volume levels of Cobain's singing between the verses and the refrains was so big, that it made it difficult for the producer, Butch Vig, to balance it in the recording session (Berkenstadt; Cross, p. 70)

3. The verse's repeated harmonic succession changes at the last bar of the verse: instead of the progression {Cb-A-Bb} which ended the previous cycles and could have led very easily to the refrain's opening tonic, a brief, surprising D5 appears, replacing the A (see example 8). D has not yet appeared in the song, and it sounds both fresh and out-of-place³⁷, and therefore indicates well a transition to something new. This D is significant for several reasons:
- In a similar way to the F in the melody, the D5 anticipates the following chord, as D is the third of BbM^{38 39}. The preparation of a structural major degree with a triad built on its third is a phenomenon which can be seen in classical music. For example, in the fourth movement of Schubert's piano trio in Bb major, the dominant F is prepared by AM, a major triad built on its third degree (see example 9).
 - The D5 anticipates the change from Db in the verse's melody to D# in the refrain, which will be discussed later, and by that sets the tone for the entire refrain.

29 *p* *f* **Refrain**

re - pro duc - - tive glands. he's the one who likes

clean guitar *distorted guitar*

Bb5 Gb5 Eb5 Cb5 D5 Bb5 GM (full chord)

Bb major: I bVI IV bII (III#5) ANT-----> I VI#

Example 8: The transition between in *Bloom*'s verse and refrain

Bb major: "III#5/V" V7 I

Example 9: Preparing a structural major degree with a triad built on its third in Schubert's piano trio in Bb major (4th movement)

³⁷ As mentioned earlier, D5 is indeed not included in Stephenson's Chromatic Minor System, and its appearance is obviously too brief to be considered as a change in system, or even as an expansion of it.

³⁸ Although Bb5 appears in the guitar, it is clear by the following D# in the melody that it stands for a major triad.

³⁹ Interestingly, both the previous Cb5 and the D5 lead into the tonic in contradicting ways: The Cb5 *resolves* into Bb by being its upper chromatic neighbor (or a triton-substitute to V as it is interpreted in jazz), while the D5 *prepares* the BbM by coloring its third degree.

- iii. In the broader sense, the D5 plays another significant role: It allows a complete equal-division-of-the-octave to occur using a series of M3s, which has been prevented in the previous cycles by the m3 G \flat -E \flat (see example 10a). By shifting the M3 E \flat -C \flat half-step down to D-B \flat , an implied progression of B \flat -G \flat -D-B \flat is illustrated (example 10b).

Example 10a: The verse's harmonic repeated pattern (excluding the last cycle)

Example 10b: Implied equal division of the octave in the last harmonic cycle of the verse

Interestingly, since this "correction" is being done using an ascending augmented second (C \flat -D), which is enharmonically equal to a minor third, it allows a harmonic succession which is based only on major and minor thirds alternately, from B \flat to B \flat :

B \flat <M3> G \flat <m3> E \flat <M3> C \flat <"m3"> D <M3> B \flat (<m3> G)

Example 11: A series of seven major/minor thirds at the end of the verse

This use of only (major and minor) thirds for an entire succession (presenting a complex prolongation of the tonic) is perhaps the most extreme occurrence of Nirvana's frequent use of third motions between adjacent chords, which has become their harmonic signature⁴⁰.

⁴⁰ Harmonic motions in thirds, particularly minor, are an integral part of harmonic successions in at least 9 of the 12 songs on *Nevermind*. Their role in creating cross relations (or "third relations") is comprehensively studied in McDonalds, 2000, and will be discussed later.

Discord between textual and musical phrases

In Bloom's refrain presents an interesting phenomenon of a phase difference between textual and musical phrases. The textual phrases seem to be shifted backwards, so that each phrase actually begins on the last two notes of the previous musical phrase (see example 12). This discord breaks the over-regularity of the text/music correspondence which was dominant in the verse, and is highlighted by the strong closures of the musical phrases (through a $\hat{3}-\hat{2}-\hat{1}$ linear progression).

Example 12: Discord between textual and musical phrases in *In Bloom's* refrain

It would also be interesting to note that the refrain actually begins with a different kind of rhythmic discord, since its first note (on the word "he's") begins already at the last bar of the verse as a whole-note upbeat, and is tied across the bar line to an additional dotted half (see example). This one-bar shift motivates the text/music phase difference (of merely half a bar) which lasts throughout the entire refrain.

This atypical text/music discord is especially evident considering the simple, repetitive rhythmic aspect of the rest of the elements in the song, such as the fixed drum patterns and the harmonic rhythm.

This phenomenon immediately brings to mind a song in which the same technique is being used in a very similar way, by a band Cobain was a fan of⁴¹ – The Beatles' *Come Together* (see example 13). Naftali Wagner describes the significance of the textual/musical phase difference in *Come Together*:

"Textual musical units... overflow, and invade the adjacent units or connect with them, thus prevent over-punctuation and ensure the keeping of the momentum, i.e. the forward motion"
(Wagner, 1999: p. 123)

Just like in Nirvana's music,

"the metric regularity that dominates a large part of The Beatles' repertoire is what brings out every deviation or discord" (Ibid).

⁴¹ Cobain mentioned The Beatles and specifically John Lennon (who wrote *Come Together*) as a direct influence on his writing in Nirvana (Cobain, 2002; Cross, 2001a: p. 121). Furthermore, while trying to convince Cobain to double-track his voice during *In Bloom's* recording session, producer Butch Vig used the argument "John Lennon did it" (*Classic Albums - Nirvana: Nevermind*, 2004)

PT = passing tone
NT = neighbor tone

Nirvana's *In Bloom*
 ♩ = 140
 B \flat major
 He's the one — who likes all out pret ty songs — and HE

The Beatles' *Come Together*
 ♩ = 170
 D minor
 Here come old flat - top he come groov - ing up slow - ly HE got

I.B.
 likes to sing a - long — and HE likes to shoot his gun — but HE

C.T.
 joo - joo eye - ball HE one ho - ly rol - ler HE got

In Bloom's refrain

He's the one || Who likes
 all our pretty songs || And he
 likes to sing along || And he
 likes to shoot his gun || But he
 don't know what it means...

Come Together's 1st verse

Here come old flattop || He come
 grooving up slowly || He got
 joo-joo eyeball || He one
 holy roller || He got
 hair down to his knee...

Example 13: Text/music phase difference in Nirvana's *In Bloom* and The Beatles' *Come Together*

The similarity between *In Bloom's* refrain and *Come Together's* verse is actually remarkable⁴². Compare the following aspects in the example above:

1. The strong closure of the melody on the tonic (with a passing/neighbor tone preceding the ^1) at the end of each musical phrase, in a contradiction to the beginning of a new textual phrase.
2. The absolute pitches F, D and C (while, interestingly, the examples differ in key and harmony.)
3. The use of the third person in the text, and in particular the lyrics in the two "sliding" notes and the change in the position of the word "he".

⁴² Consciously or unconsciously, the association between *In Bloom* and The Beatles does not stay solely in the music; *In Bloom's* famous video-clip is a parody on musical performances of the 1960s, and looks very much like a typical live concert of The Beatles.

Harmonic implications as a result of an additional vocal line ("harmony line")

The entrance of an additional vocal line⁴³ in the second repeat of the refrain, although simply made out of a series of parallel 4ths and 3rds with the melody, adds a refreshing color to the song's hitherto thin two-part texture of melody and bass⁴⁴. The climax of this "harmony line" is definitely the surprising E♭M^{7,9} chord (see example 14a), made by the addition of an F over the D♭ of the melody. The surprising "dominant 9th chord" stands out especially in comparison to the rest of the chords in the song, all of them being either power chords or major triads. Furthermore, the addition of a m9 to the E♭M⁷ enhances the jazzy-bluesy nature of this chord (being a IV^{b7}), and the role it plays as a chromatic neighbor of the previous CM chord (as F and D♭ are chromatic neighbors of E♭ and C, respectively).

Interestingly, the vocal harmonies in the refrain of *Come As You Are*, the following song on *Nevermind*, present a similar effect. With a series of parallel 5ths between the vocal lines, an exceptional major-seventh chord is created (see example 14b), a rare color in Nirvana's music⁴⁵.

Example 14a: Vocal harmonies in *In Bloom*'s refrain produce a 9th chord

Example 14b: Vocal harmonies in *Come As You Are*'s refrain produce a major-seventh chord

These two examples illustrate a similar approach to vocal harmonies, in which an additional vocal line enriches the melody with a parallel motion of consonants, while its relation to the harmony remains quite vague. The resulting dissonances create colorful harmonic implications, which are not likely to be found in Nirvana's music in sections without backing vocals.

⁴³ Sung by drummer Dave Grohl.

⁴⁴ The impression of a richer sound is also a result of the double-tracked voices of Cobain and Grohl; each one of them recorded his part twice, and the four parts are played simultaneously in the last mix (*Classic Albums – Nirvana: Nevermind*, 2004). Both the vocal harmonies and the track-doubling fit the text well: "like to sing along..."

⁴⁵ Despite being very popular in jazz and somewhat common in acoustic-oriented rock, the major-seventh chord is quite rarely used in grunge. The dissonant M7 is very evident in the distorted guitar's sound, which is rich in harmonics; since each note includes a very audible series of harmonics, there are many more clashes between the harmonic series of the two notes within a M7 interval when played on a distorted guitar than there are when played on other instruments, such as the piano or the acoustic guitar. This is why, I believe, the major-seventh chord is less commonly used by bands that use distorted guitar as their main creative tool.

Melodic and harmonic overview from a Schenkerian perspective

In Bloom presents a unique, continuous "*Ursatz*"⁴⁶ throughout the verse and the refrain, which ties both sections together and maintains a constant momentum all through the song.

A strong correlation between the melodic/harmonic skeletons of the verse and the refrain ties both sections together. An arpeggiation of Bbm triad in the verse's melody parallels an arpeggiation of BbM triad in the refrain (see example 15). The melodic alternation between $\wedge 3$ and $\wedge 6$ corresponds with the harmonic 'hook' bVI/bVI discussed earlier, since the melodic notes Db and D# appear simultaneously with GbM and GM respectively, as these chords' fifths. Characteristically to Nirvana's music, the melodic Bbm triad and the bass line in the verse move in parallel fifths. Therefore, the bass line itself presents an arpeggiated Ebm triad, which similarly to the melody, parallels an arpeggiated EbM triad in the refrain. The latter, however, is prolonged throughout the entire refrain. These arpeggiated EbM/m triads reflect a motion from I to IV, which is the most fundamental harmonic progression in both sections.

Verse (0:25) (0:37) **Refrain (0:50)**

Bar numbers: 17/21 25/29 27/31 33/45 34/46 41/53 57

PT: passing tone
NT: neighbor tone
DCNT: double chromatic NT
ANT: anticipation
O: open string

Bb major: I M3 bVI IV I M3 bVI IV I m3 VI b7 IV b7 I

Example 15: Correlation between the melodic/harmonic skeletons of the verse and the refrain

Both the verse's and the refrain's melodies present a $\wedge 5$ - $\wedge 6$ linear progression. In the refrain it is a short, direct progression, while in the verse it is a longer, gradual one, using a chromatic passing tone (F-Gb-G#)⁴⁷. The progression F-Gb-G# is a direct linear illustration of the $\wedge 6/\wedge 6$ (or bVI/bVI) 'hook'.

In the broader sense, the melody in the first half of the refrain represents a diminished mirrored version of the verse's melody (see example 15): the verse begins with an arpeggiated triad which is followed by a prolonged 5-6 progression (over a period of 16 bars), while the refrain begins with a 5-6 progression followed by an arpeggiated triad (over a period of 2 bars, which repeat 4 times).

⁴⁶ "Fundamental structure" in English. In Schenkerian analysis, "*Ursatz* is the basic contrapuntal design that underlies the structure of a piece or movement; the final result of successive harmonic-contrapuntal 'reductions' in a layer analysis, and thus the representation of its musical background" (Drabkin, "*Ursatz*", *Grove Music Online*). I use *Ursatz* in quotation marks since *In Bloom*'s fundamental structure obviously does not follow the harmonic structure suggested by the original term.

⁴⁷ The same melodic progression ($\wedge 5$ - $\wedge 6$ - $\wedge 6$), accompanied by the same harmonic succession (I-bVI-IV) appears constantly throughout *Territorial Pissings*, also from *Nevermind*.

As shown in examples 15 and 16, the F in the melody is prolonged throughout the entire verse, and is tied to the F which opens the refrain (one octave higher), where a gradual descending linear progression from $\hat{5}$ to the final $\hat{1}$ begins. Therefore, the song's melody presents an almost perfect 5-line *Urlinie*^{48 49}, which helps keeping the momentum throughout the entire song. However, it does so while challenging many traditional voice-leading rules with characteristic rock techniques:

1. In the song's *Urlinie* there is a direct leap from $\hat{5}$ to $\hat{3}$, skipping scale degree $\hat{4}$ ⁵⁰.
2. Scale degree $\hat{2}$ (C) is embellished by a chromatic upper neighbor $\hat{b}3$ (D \flat). However, this D \flat differs in context from the one appears in the verse, as it functions as a "blue note". Its prominent, bluesy sound is enhanced by the m7 it creates with the bass. In fact, the stylistic choice for harmonizing the D \flat and F of the vocal lines would have been D \flat M chord⁵¹, which is also the ultimate neighbor-chord for the previous CM (presenting a progression CM-D \flat M-CM which produces the stylistic parallel octaves between the melody and the bass). The choice of E \flat M instead is a much more creative one, and enhances the D \flat 's bluesy sound.
3. Several cross relations contribute to the song's special, rough harmonic sound: most of them are caused by motions in thirds between two adjacent major chords, which, as mentioned earlier, are one of Nirvana's harmonic signatures⁵². These can be found in the verse between G \flat M and E \flat M, and in the refrain between B \flat M and GM and between CM and E \flat M (see CR indication in example 16). Additional cross relations appear between the two vocal lines in the refrain, where the upper part's D \sharp clashes with the following D \flat in the lower part (bar 53). A different, more direct type of chromatic clash occurs when B \flat is being sung over a GM triad in the guitar at the second bar of the refrain⁵³.

⁴⁸ "The upper voice of the *Ursatz*, called the *Urlinie* ('fundamental line'), consists of a diatonic stepwise descent to the tonic from the 3rd, 5th or octave" (Drabkin, "Ursatz", *Grove Music Online*). The term "5-line *Urlinie*" stands for stepwise descent from the 5th.

⁴⁹ Everett states that "harmonically-supported Schenkerian *Urlinien* appear in perhaps unexpected places, including... many Nirvana tracks" (Everett, 2000). He also points out that in these occurrences "sometimes the voice leading seems exceedingly static, only to finally give way to the structural descending line" (Ibid).

⁵⁰ One might argue that the upper neighbor tone $\hat{6}$ (G) is prolonged through the VI harmony, and resolves into the F in the upper vocal line at bar 53, creating a double-neighbor-tone progression together with the preceding E \sharp . Since this vocal line appears only at the refrain's second repeat and is obviously color-based, I find this interpretation quite forced.

⁵¹ This is probably why McDonalds mistakenly writes D \flat at this point in his analysis (McDonald, 2000). Beyond the recording which is quite clear, an E \flat 5 chord can also be easily recognized in Cobain's live performances of the song as well as in the official video clip (see <http://www.youtube.com/watch?v=wY3oEvaq71A>)

⁵² McDonald defines these instances as "modal subversions", which he finds copiously used in "power chord-oriented rock... occurring especially in grunge and related forms of alternative music" (McDonald, 2000). In particular, McDonald states that "Nirvana's repertoire... is filled with many apparent cross relations, comprising a salient feature of their songwriting style" (Ibid). Modal subversions occur when cross relations ("third relations") are caused by a motion of a third between two adjacent chords, which usually contradicts an established modality. As an illustration, McDonald uses Nirvana's *Lithium*, *About a Girl*, *Rape Me* and, of course, *In Bloom*.

⁵³ Most of the times a clear B \sharp can be heard as a part of the G chord in the guitar, which indicates that Cobain plays a full GM triad and not a power chord. In particular it can be heard on the first three appearances of the first refrain; in the fourth time it seems that Cobain plays G5. The official video clip of the song confirms that Cobain tends to alternate between full GM triad and G5 (see <http://www.youtube.com/watch?v=wY3oEvaq71A>).

An interesting similarity also appears between the harmonic successions of the refrain and of the intro, presenting two m3 motions in contrary directions (see example 17). Both begin with a descending m3 from I to VI, followed by different ascending m3 motions: the succession F-A \flat in the intro corresponds with the succession C-E \flat in the refrain. In fact, in the common guitar practice these two successions are very similar, as both can be played on the guitar's sixth and the third frets, in an opposite order. Therefore, it is likely that the intro's chordal progression was written as a variation of the refrain's progression (or vice versa).

An overview of the entire song's harmonic progression would point out prolongations of unusual structural scale degrees, specifically emphasizing IV as the main counter weight to the strong tonic (much more than V which is the counter weight in common-practice harmony). The repeated alteration between I and VI \sharp in the refrain blurs the domination of the tonic, and even suggests a temporary tonicization of VI⁵⁴. The refrain's fundamental harmonic progression thus is either VI \sharp -II \sharp -IV-I or I-II \sharp -IV-I (while I is prolonged through VI), both quite common as closed successions in popular music⁵⁵. The succession ends in a rock-characteristic⁵⁶ plagal cadence, moving directly from the bluesy VI⁷ to I.

Bar numbers: 1

Intro (0:00) (0:37)

Verse (0:25) (0:37)

Refrain (0:50) (0:50)

32 33/45 34/46 41/53 57

B \flat major: I VI V \flat VII

I \flat VI IV

I VI \sharp II \sharp IV \flat 7 I

PT: passing tone
 NT: neighbor tone
 DCNT: double chromatic neighbor tone
 ANT: anticipation
 CR: cross relations (a.k.a. third relations)
 O: open string
 */**: alterations between lowered (*) and natural (**) scale degrees

Example 16: *In Bloom's* fundamental structure in a Schenkerian perspective

⁵⁴ One might argue that there is a voice exchange at the beginning of the refrain between the melody and the bass, in which the melody unfolds between the high peak G and the low B \flat , while the bass is moving from B \flat to G. Therefore, the 8-bar repeated alteration between I and VI \sharp might be considered as a prolongation of VI. This interpretation might sound forced though, because of the short length of the G in the melody and the unarguable strong tonic at the beginning of the refrain.

⁵⁵ In songs such as The Beatles' *She Loves You* and *Eight Days a Week*, and also Pink Floyd's *Brian Damage*. See Allan Moore's important lists of common harmonic patterns in popular music (Moore, 1992)

⁵⁶ Ibid.

Conclusion

In Bloom represents a rich, fascinating musical world, in which hackneyed, dogmatic idioms from popular music are blended with distinct, innovative musical ideas and structures, some of which are reminiscent of classical music. Neither the song's repetitive harmonic successions nor its fixed rhythmic patterns weaken its strong, straight-forward momentum.

The song presents a unique "*Ursatz*", using the harmonic language of rock and grunge music. In spite of the lack of traditional, directional harmonic progressions and melodic prototypical counterpoint found in common-practice music, the song finds its own way to establish a strong sense of harmonic and melodic directionality. *In Bloom*'s melody draws an almost perfect 5-line *Umlinie*. However, it does so while challenging many traditional voice-leading rules with characteristic rock techniques. The harmonic successions are based on an archetypal rock harmonic system, which is different from those used in classical music. These successions prolong unusual structural degrees, emphasizing specifically IV as the main opposing weight to the strong tonic. Additionally, exceptional chromatic chords are being used in innovative harmonic contexts.

A contrast between the verse and the refrain is achieved by differences in instrumentation, register and dynamics. Furthermore, distinction between these two sections is accomplished by using lowered versus natural scale degrees, both in the melody and in the harmony. These alterations, functioning as the song's 'harmonic hook', differ from their classical music counterparts in their harmonic treatment. At the same time, other features contribute to the coherence of the melodic and harmonic material throughout the verse and refrain, and the transition between the two is softened by a series of arrangement devices.

The simple, constant rhythmic patterns in the song are compensated by an atypical text/music discord, which takes the form of a phase difference between the textual and the musical phrases throughout the entire refrain, in a remarkable resemblance to The Beatles' *Come Together*. Additionally, the creative, contrapuntal-based vocal harmonies in Nirvana's *In Bloom* and *Come As You Are* enrich the otherwise basic chords, which form the usual harmonic language of Nirvana's music.

While the origins of some of these unusual ideas might be obscure, it is likely that at least some were a result of the guitar practice and the process of trial and error.

I find that this genre deserves further examination, both for academic and creative purposes. I am positive that careful examination of grunge music will reveal many fascinating, unique phenomena. Other directions for study in this field might include tracing grunge music's harmonic and melodic idioms, analyzing unique harmonic palettes and successions in Alice in Chains' music, tracing stylistic differences between the leading grunge bands, and tracing evolutionary developments in the genre's short lifetime.

Bibliography

Aldwell, Edward and Carl Schachter. *Harmony and Voice Leading* (3 ed.). Australia, United States: Thomson/Schirmer, 2003. ISBN 0155062425.

Armstrong, Mark. "Nirvana Tops 50 Million Mark In Worldwide Sales, 'Journals' Number One". Yahoo! Music. November 17, 2002 (Accessed August 18, 2007).

Azerrad, Michael. *Come As You Are: the Story of Nirvana*. Random House, Inc., 1993. ISBN 0385471998, 9780385471992.

Berkenstadt, Jim and Charles Cross. *Classic Rock Albums: Nevermind*. Schirmer, 1998. ISBN 0-02-864775-0

Biel, Jean-Michel and Christophe Gourraud. "They Said About the Pixies...". Alec Eiffel. http://aleceiffel.free.fr/misc_said.html (Accessed December 14, 2008).

Bobbitt, Richard. *Harmonic Technique in the Rock Idiom: The Theory and Practice of Rock Harmony*. Wadsworth Publishing Co., 1976.

Capuzzo, Guy. "Neo-Riemannian Theory and the Analysis of Pop-Rock Music." In *Music Theory Spectrum* 26/2 (2004): p. 177-199.

Classic Albums - Nirvana: Nevermind [DVD]. Isis Productions, 2004.

Cobain, Kurt. *Journals*. Riverhead Hardcover, 2002. ISBN 978-1573222327.

Covach, John. "We Won't Get Fooled Again: Rock Music and Musical Analysis." In *Theory Only* 13 (1997): p. 119-141. Repr. *Keeping Score: Music, Disciplinarity and Culture*, ed. Schwarz, Kassabian, and Siegel, University of Virginia Press, 1997: P. 75-89.

Cross, Charles (a). *Heavier Than Heaven: A Biography of Kurt Cobain*. Hyperion, 2001. ISBN 0-7868-8402-9.

Cross, Charles (b). "Requiem for a Dream." In *Guitar World*. October 2001.

Di Perna, Alan. "Brave Noise—The History of Alternative Rock Guitar." In *Guitar World*. December 1995.

Drabkin, William. "Ursatz." In *Grove Music Online*. *Oxford Music Online*. <http://www.oxfordmusiconline.com/subscriber/article/grove/music/28844> (accessed December 14, 2008).

Everett, Walter. "Confessions from Blueberry Hell, or, Pitch can be a sticky substance." In *Expression in Pop-rock Music: A Collection of Critical and Analytical Essays*, ed. Walter Everett. New York, NY: General Music Publishing Co., 2000: p. 269-345. ISBN 0815331606.

Hubbs, Nadine. "The imagination of pop-rock criticism." In *Expression in Pop-rock Music: A Collection of Critical and Analytical Essays*, ed. Walter Everett. New York, NY: General Music Publishing Co., 2000: p. 3-29. ISBN 0815331606.

Hughes, Tim. "Nirvana: University of Washington, Seattle, January 6, 1990." In *Performance and popular music: history, place and time*, ed. Ian Inglis. Ashgate, 2006: Chapter 14.

- McDonald, Chris. "Exploring Modal Subversions in Alternative Music." In *Popular Music* 19/3 (2000): p. 355-363.
- Moore, Allan, ed. *Analyzing Popular Music*. Cambridge University Press, 2003.
- Moore, Allan. "Patterns of Harmony." In *Popular Music* 11 (1992): p. 73-106.
- Moore, Allan. "The So-Called 'Flat 7th' in Rock." In *Popular Music* 14 (1995): p. 185-201.
- Morss, Benjamin M. *Pitch-Skipping in Rock Music*. Ph.D. dissertation, University of California at Davis, 2000.
- Schenker, Heinrich. *Harmony*. Oswald Jonas, ed. Elisabeth Mann Borgese, tr. University of Chicago Press, 1954.
- Stephenson, Ken. *What to Listen for in Rock: A Stylistic Analysis*. New York: Yale UP, 2002.
- Wagner, Naphtali. *The Beatles – The Seven Good Years*. Jerusalem: The Magnes press, the Hebrew University, 1999.
- Walser, Robert. "Grunge." In *Grove Music Online*. *Oxford Music Online*, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/49139> (accessed December 14, 2008).
- Winkler, Peter K. "Toward a Theory of Popular Harmony." In *Theory Only* 4/2 (1978), p. 3-26. Repr. *Critical Essays in Popular Musicology*, ed. Allan F. Moore. Ashgate, 2007: p. 251-274