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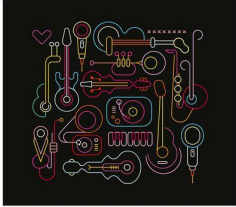
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CHROMATIC LINEAR PROGRESSIONS IN POPULAR MUSIC

Neil Newton

Popular music often makes use of swift, sometimes seemingly unprepared modulations, scalar shifts, or alterations to the macroharmony (the collection of pitches from which harmonies are sourced). In response to these modulatory practices, Guy Capuzzo has hypothesised a sectional tonality, or sectional centricity, where different sections of songs can be conceived as having different or multiple tonalities or pitch centres.¹ In situations where the pitch centre does not change, David Temperley has explored the role of scalar shifts and has noted that, while common, shifts in scale collection have been given relatively little attention.² Furthermore, these swift changes to background structures of a song's harmonic/melodic organisation can often be terminal. This brings into question traditional notions of tonality when applied to popular music.³

In this chapter, I concentrate on chromatic linear progressions (which I will refer to as CLPs) that occur in some popular-music compositions. The CLP is one device that enables swift modulations, shifts in scale collections, and changes in macroharmony. CLPs, at their simplest, are stepwise chromatic lines moving in one direction that stretch beyond the macroharmony that was previously in use. My goal here is not to displace current techniques for analysing modulation and scalar shifts, but instead to offer a new technology to can help to explore movement between different tonal and centric sections.

When tracking CLPs, Dimitri Tymoczko's separation of centricity, scale, and macroharmony during modulations is particularly useful. According to Tymoczko, a "macroharmony is the total collection of notes used over small stretches of time",⁴ centricity is phenomenal, concerning how a listener hears a certain pitch as referential or stable, while a scale is used to measure distance, and might not include all members of the macroharmony, or members not in the current macroharmony.⁵

Macroharmony and scale are often, but not always, identical in many of the analyses that follow. However, CLPs generally point to a moment of flux and will often coincide with the points at which macroharmony and scale separate and centricity becomes unstable. A common separation between macroharmony and scale occurs in minor keys where both minor and major sixths and sevenths are employed, creating a nine-note macroharmony. However, it would be unwise to think of the scale containing nine steps, rather than as having variable sixth and seventh degrees (or the three scales: natural, harmonic, and melodic

minor). For instance, it is not typical to count a–c in **A** minor as a third, while considering f \sharp –a in the same key as a fourth (as it would if the scale were to contain both major and minor sixth and seventh: f \sharp –g \sharp –a).

The advantage of the concept of the macroharmony is further demonstrated by Tymoczko's claim that "tonal music makes use of the same voice-leading techniques on two different levels".⁶ One level is the voice-leading between chords in progressions, and the other is between scales and macroharmonies, where "modulation, or motion between macroharmonies, can be represented by voice-leading".⁷ This idea has similarities with Schenkerian theory, but Tymoczko stipulates that he views "macroharmonies and scales (rather than chords and melodic lines) as the primary vehicle".⁸ My primary focus is on how certain scalar shifts can create fleeting occurrences of CLPs, which sometimes act as the connective tissue between two macroharmonies, and at other times contribute to creating larger, more chromatic macroharmonies. Furthermore, in the songs that I will be analysing it is sometimes difficult to determine which harmony is structurally more important. In these situations, the tools provided by scalar shifts, macroharmonies, and CLPs prove to be more useful in examining the underlying background organisation than a Schenkerian model would be.

In a modulation, the relationship between scale and voice-leading in macroharmony exists in two stages:

Modulation is often initiated by voice leading between scales, the fourth degree gets raised by a semitone, the leading note gets lowered, and so on. This change permits the introduction of the new key's V⁷ chord.⁹

For example, in the key of **C** major, if f moves to f \sharp the resulting macroharmony can produce the V⁷ of **G**, but can no longer produce the V⁷ of **C**. Likewise, if b moves to b \flat the new resultant macroharmony can produce the V⁷ of **F**. In this way, a macroharmony will often change before the tonal centre, as the macroharmony changes to create the new dominant. The dominant will often only then point to a new tonal centre, after the new macroharmony is in place.

The nature of the diatonic collection, or any collection built solely of tones and non-consecutive semitones, means that if a pitch class that has a neighbour one semitone away is transposed away from that neighbour by a semitone, it will then be a semitone away from its new neighbour: in the key of **C**, f is one semitone from its neighbour e, if f is transposed to f \sharp , it will now be one semitone away from g. This relationship means that a four-note CLP can sometimes occur as one diatonic macroharmony shifts to become another.¹⁰ If the macroharmony changes from the diatonic collection built on **C** to the diatonic collection built on **G**, this can be enacted by a scalar shift of $\hat{4}-\sharp\hat{4}$, as part of the chromatic line e–f–f \sharp –g. Such CLPs are capable of achieving a change in both centricity and macroharmony. The disjunction between changes in macroharmony and centricity can be heard with the macroharmony changing at the third pitch of the CLP, f \sharp , while the centricity could be viewed as shifting on the fourth, g. It can be particularly important to modulate efficiently when working within a three-minute composition that might contain alternating verse and chorus, each in distinct keys, and both needing to convincingly modulate to the other.

Throughout the analyses that follow I use CLPs to explore modulations, scalar shifts, and alterations and extensions of macroharmonies that cannot always be adequately analysed with common-practice techniques, such as pivot chords and newly introduced dominants.

While CLPs offer an explanation for some types of modulation that cannot be explained by traditional tools, they do not account for all of the modulations and scalar shifts found in popular music, nor all of those found within the songs I analyse, but the technique serves an additional tool to composers and/or theorists.

While scalar shifts that form four-note CLPs can connect closely related macroharmonies, as in the C, F and G example, they can also connect macroharmonies less closely related (in terms of shared pitch classes). The six macroharmonies that can be connected by a short four-note CLP are shown in Figure 16.1. The six collections alter between 1–3 pcs, both on the sharp and the flat sides. Thus, this relatively simple technique moves efficiently between

The figure consists of eight horizontal musical staves, each representing a different modulation. Each staff begins with a diatonic scale in a specific key, followed by a four-note chromatic bridge (CLP) that leads into another diatonic scale in a different key. The keys and their corresponding CLP notes are as follows:

- Staff 1:** C diatonic (C4, D4, E4, F4, G4, A4, B4, C5) → CLP (G4, F#4, E4, D4) → G diatonic (G4, A4, B4, C5, B4, A4, G4, F4).
- Staff 2:** D diatonic (D4, E4, F4, G4, A4, B4, C5, D5) → CLP (C5, B4, A4, G4) → D diatonic (D4, E4, F4, G4, A4, B4, C5, D5).
- Staff 3:** D diatonic (D4, E4, F4, G4, A4, B4, C5, D5) → CLP (C5, B4, A4, G4) → D diatonic (D4, E4, F4, G4, A4, B4, C5, D5).
- Staff 4:** A diatonic (A3, B3, C4, D4, E4, F4, G4, A4) → CLP (G4, F#4, E4, D4) → A diatonic (A3, B3, C4, D4, E4, F4, G4, A4).
- Staff 5:** F diatonic (F3, G3, A3, B3, C4, D4, E4, F4) → CLP (E4, D4, C4, B3) → F diatonic (F3, G3, A3, B3, C4, D4, E4, F4).
- Staff 6:** B \flat diatonic (B \flat 3, C4, D4, E4, F4, G4, A4, B \flat 4) → CLP (A4, G4, F4, E4) → B \flat diatonic (B \flat 3, C4, D4, E4, F4, G4, A4, B \flat 4).
- Staff 7:** B \flat diatonic (B \flat 3, C4, D4, E4, F4, G4, A4, B \flat 4) → CLP (A4, G4, F4, E4) → B \flat diatonic (B \flat 3, C4, D4, E4, F4, G4, A4, B \flat 4).
- Staff 8:** E \flat diatonic (E \flat 3, F3, G3, A3, B3, C4, D4, E \flat 4) → CLP (D4, C4, B3, A3) → E \flat diatonic (E \flat 3, F3, G3, A3, B3, C4, D4, E \flat 4).

Figure 16.1 Modulations between macroharmonies using a four-note CLP

relatively diverse macroharmonies. CLPs of differing lengths will be explored in the later analyses, although I have found the most frequent to be four-note CLPs whose connecting macroharmonies share 4–6 common tones. CLPs are often utilised in transitions between sections, with the CLP either traversing the two sections, or concluding immediately prior to the change of section. Occasionally CLPs can also be found within a section.

Because macroharmonies are a background abstraction and operate within pc space,¹¹ when tracking how CLPs lead voices between and within macroharmonies, I utilise what Richard Cohn refers to as “idealized voice leading”.¹² Furthermore, Lerdahl notes that inner voices are perceptually masked, allowing for changes in register to go unnoticed, as opposed to the outer voices, which do not have such freedom of register.¹³ The voice leading in the harmonic instruments in popular music is secondary to that of the vocals and bass.¹⁴ This leads to the harmonic instruments providing a role closer to that of inner voices, providing another reason to explore CLPs in pc space.

Preliminary Example: “Rocket Man”

Elton John’s song “Rocket Man”, a harmonic reduction of which is shown in Figure 16.2, introduces the use of CLPs to lead voices between macroharmonies and scales. The macroharmonies are related by six common pcs—as closely related as possible for two non-identical diatonic collections. After this introductory example, I will explore compositions in which the CLPs span less closely related macroharmonies.

“Rocket Man” begins with the chord progression Gm^7-C^7 , which can only belong to the diatonic collection built on f .¹⁵ While the tonality within the song can be interpreted in multiple ways, I hear this progression as ii^7-V^7 with an F centrality. In this reading, before the tonic F triad is reached, a descending CLP, $f-e-e\flat-d$ occurs as part of the progression $Gm^7-C^7-E\flat-B\flat/D$. This alters the macroharmony, which now undermines the role of F , especially as it is the leading note that is displaced by the CLP. Subsequently,

Figure 16.2 “Rocket Man” by Elton John

this creates a situation where, once F is reached, it appears to function as a dominant of **B \flat** . This function is supported by the F being preceded by Cm, creating a ii–V in **B \flat** . The F then functions as we now expect, and resolves to **B \flat** for the chorus. Thus, the CLP f–e–e \flat –d alters the macroharmony from the diatonic collection built on f to the diatonic collection built on **b \flat** , while also playing an active role in destabilising the never-confirmed **F** centrality. The passage could also be heard as initially operating in **G** Dorian, with a i–IV⁷ progression. In this case the CLP shifting through e–e \flat would have a similarly destabilising effect, leading to the F being interpreted as V on arrival, rather than as \flat VII, which **G** Dorian would suggest. Regardless, the shift in macroharmony has helped to reorient the centrality.

The harmonic motion that begins the CLP is a chromatic-mediant progression in which two major chords are separated by a minor third: C⁷–E \flat . Minor third relationships between major chords are relatively common in popular music¹⁶ and necessarily contain non-diatonic pcs. This relationship potentially acts as the catalyst for the CLP, which must be dealt with once the non-diatonic element is introduced; e–e \flat has broken our diatonic expectations, even if only marginally, creating a stepwise chromatic motion outside the diatonic setting that is exploited to create a longer CLP that extends down to d. The role of chromatic mediant initiating CLPs will be seen multiple times in the analyses below.

Aside from providing an elementary example of a CLP voice-leading between macroharmonies, “Rocket Man” also provides an example of why the concept of tonality in popular music cannot be viewed in the same monotonal fashion as most common-practice music. Mark Spicer provides a useful vocabulary for such passages, with the concepts of “fragile”, “emergent”, and “absent” tonics, and the song can be viewed from these perspectives.¹⁷ If F is heard as the implied tonic at the beginning of the verse, it is only fragile. The CLP moves downwards, which results in a scalar shift that replaces the leading note e with e \flat prior to the arrival of F. When F does finally appear at the end of the verse, it is in first inversion. A longer-range view could also be taken by considering the arrival on **B \flat** at the beginning of the chorus as an emergent tonic. In this case, the F is initially suggested as a tonic, but is then found to be a dominant; the CLP brushes it aside to make way for the **B \flat** to emerge. This hearing considers the opening as vi⁷–V/V, a prolonged dominant preparation arriving at V in the penultimate bar of the verse.

Rather than considering F as the dominant of an emergent **B \flat** , it is more fitting to the sentiment of the song (in which a rocket man drifts in outer space with no fixed place to call home), to hear F as an initial fragile tonic while acknowledging that its fragility leads to a modulation to **B \flat** prior to its arrival, making it also absent as a tonic (present only as a dominant). This leads to a verse progression without a home, drifting without gravity. A further problem arises if we hear an emergent **B \flat** tonic in the chorus. **B \flat** folds back on **F** after five bars, with a statement of C⁹, or V⁹ of **F** (creating an echo of the f–e–e \flat –d CLP as part of **B \flat** –C⁹–E \flat –**B \flat**) colouring the final **B \flat** and E \flat repetitions of the chorus with shades of IV and \flat VII respectively. This can be considered reciprocal as F acts as V of **B \flat** , while **B \flat** is eventually transformed to IV of an **F** that is never confirmed.¹⁸

Analyses

We are now equipped to analyse modulations in songs that use four-note CLPs while enacting two or three pc alterations to macroharmonies. Following these analyses are two

examples of five-note CLPs, an additional example in which interlocking CLPs are present, and finally an example of an eight-note CLP.

The A-section of Janis Ian's song "At Seventeen", shown in Figure 16.3, uses a diatonic macroharmony built on *c* and is securely *in C*, consisting of a I–ii–V⁷–I progression. This is followed by a B-section in *C minor*, using the aforementioned nine-note minor macroharmony. The change in macroharmony is achieved by the four-note CLP *f–e–e_b–d*, underpinning the progression *G⁷–C–E_b–Dm⁷*, with the minor third chromatic–mediant relationship again used to exit the diatonic macroharmony. *C minor* is then confirmed as the centre, with a *V–i⁷* progression. Unlike "Rocket Man", which changes macroharmony within the verse section before shifting tonal centre for the chorus, "At Seventeen" changes macroharmony at the B-section. Here the *f–e* of the four-note CLP in the A-section is followed by *e_b–d*, with the *e_b* both beginning the B-sections and affecting the change in macroharmony. The macroharmony that produces *C minor* has three new pcs in relation to the macroharmony that produces *C major*. However, the only altered pc in the CLP is *e* to *e_b*, which allows the introduction of *E_b* as the harmony supporting the CLP. It is *E_b* that can then act as a pivot to shift the macroharmony into a new area that reaches beyond the one pc alteration.

There are other chromatic pcs within the verse, which have been omitted from the analysis, but could provide a short three-note CLP, and it is worth looking at why they have been omitted, along with the CLP. Within the verse progression, there are auxiliary notes decorating each chord, shown in Figure 16.4. If each harmonic area is taken as a collection that includes the auxiliary notes, *Dm* contains *c[#]*, which could be used to build a CLP running *c–c[#]–d* as part of the *C–Dm–G* progression. However, the *c[#]* would not be considered part of the macroharmony, nor part of the scale, and inclusion within one of these abstractions would be required for the CLP to be significant.

"Summer in the City", by The Lovin' Spoonful, shown in Figure 16.5, is in *C minor* for the verse and modulates to *F* at the beginning of the chorus with CLP *d–e_b–e_b–f* as part of

The figure shows a musical score for "At Seventeen" by Janis Ian. It is divided into two sections, A and B. Section A is in C major and consists of four measures with the following chords: C, Dm⁷, G⁷/B, and C. Section B is in C minor and consists of four measures with the following chords: E_b, Dm, G⁷, and G⁷. A four-note chromatic line (CLP) is indicated by a bracket above the vocal line, spanning the notes f, e, e_b, and d. The piano accompaniment is shown in two staves, with the right hand playing chords and the left hand playing a simple bass line. The key signature changes from one flat (C major) to two flats (C minor) between sections A and B.

Figure 16.3 "At Seventeen" by Janis Ian



Figure 16.4 “At Seventeen” verse guitar



Figure 16.5 “Summer in the City” by Lovin’ Spoonful

the progression $G^7-Cm-C-F$. Within the progression Cm to C at the end of the verse there is a clear emphasis on the replacement of e_b by e_n , which is highlighted by the stationary root and fifth. In this case, the new pitch, e , is introduced right at the end of the verse as part of V of F , the chorus then confirms the new macroharmony, with the first chord containing both the new tonic and the concluding the CLP.

This song demonstrates two types of CLP: the CLP described above helps to guide the song from one macroharmony to another, located at the transition between sections, and another CLP that occurs in the bass throughout the main verse progression, running $b_b-a-b-g$ as part of $Cm/B_b-F/A-A_b-G$. This bass CLP does not have the same structural role. Unlike the CLP ignored in “At Seventeen”, all the pcs of this CLP are part of the macroharmony. The CLP is a subset of the nine-note minor macroharmony, discussed above. For a CLP to have significance it must either extend or alter the prevailing macroharmony.

The above examples already demonstrate three ways that a CLP can affect a change in macroharmony, relating to a change in centricity, each with its own effect. In “Rocket Man” the early change of macroharmony enacted by a CLP in the middle of the verse (before the confirming modulation in the chorus), helps to create the feeling of drifting in

The figure displays three systems of musical notation for the song "Something" by The Beatles. The first system, labeled 'A', features a treble clef staff with a melodic line and a grand staff (treble and bass clefs) with chordal accompaniment. Annotations include 'four-note CLP' above the first two bars and 'five-note CLP' above the last two bars. Chord symbols are written below the grand staff: C, C^{major}/G, C⁷, F, D, G, Am, Am^(major), Am⁷/G D^(add9), F, E^b/G/D, and C. The second system, labeled 'B', continues the grand staff notation with chords: F, E^b, G/D, A, A, C^{minor}/G^F, F^{minor}, D, and G. The third system shows a key signature change to two sharps (D major) and continues with chords: A, A, C^{minor}, F^{minor}, D, G, and C. The bass line in the third system shows a chromatic descending line: A, G^{sharp}, G, F^{sharp}, F.

Figure 16.6 “Something” by The Beatles

the verse. The B-section of “At Seventeen” begins just as the CLP changes the macroharmony, although the confirmation of **C** minor does not occur until the third bar of the chorus. The A-section, beginning on the tonic with a progression that maintains tonic stability, outlines the life of the “beauty queens”, while the less sure B-section, with its late arriving tonic confirmation has a more introverted focus. By contrast, “Summer in the City” represents the norm: the CLP alters the macroharmony in the final chord of the verse, while the opening chord of the chorus confirms the new tonal centre.

The Beatles’ “Something” demonstrates how much can be achieved with CLPs. Chromatic movement is essential to most of the harmonic interaction in the song, and is elevated to a foreground motif that connects the end of the A-section back to its beginning (see Figure 16.6). The verse progression begins with a CLP moving through $c-b-b\flat-a$ as part of the progression $C-C^{Maj7}-C^7-F$, and also forms the melodic material of the opening two lines. The CLP implies a change in diatonic macroharmony from c to f , although **C** retains centrality. The **F**, which ends the preceding CLP can now be heard as part of a new CLP, this time rising $e-f-f\sharp-g$ as part of the $C^7-F-D-G$, causing a shift away from implied **F** diatonic collection as it arrived at, through the use of the $F-D$ minor third chromatic mediant relationship. Following this is another falling five-note CLP, $a-g\sharp-g-f\flat-f$, as part of $Am-Am^{Maj7}-Am^7-D^{add9}-F$. The final chord harmonising the CLP with **F**, links to the next CLP, which is the central guitar motif, $a-b\flat-b-c$, as part of $F-E\flat-G-C$, returning the A-section to its beginning and an implied **C** diatonic collection, this time utilising the major third-related $E\flat-G$ chromatic mediant.

The abundance of CLPs in the A section of “Something” helps to create an elusive quality that George Harrison is referring to: there is “something” about the central figure of the

song, but he is not quite sure what exactly he is fixated on. If the whole A-section is taken into account a *c* centrality can be heard, and the vocal melody is comparatively conservative; only the note *b*_b sits outside the *c* diatonic collection. However, the macroharmony is extended by the CLPs to be 11 pcs, only *c*[#] is missed by the searching chromatic lines. This demonstrates the effectiveness of CLPs in structuring chromatic progressions around largely diatonic melodic material.

To achieve a move towards **A** in the B-section, the guitar motif (Figure 16.7) is altered to end on *c*[#], the missing pc from the A-section, rather than *c*, the former centre. It is possible to hear another CLP at the end of the A-section that now emphasises the new *c*[#], rather than the previous *c*: *e*–*e*_b–*d*–*c*[#], as part of the *D*^{add9}–(*F*)–*E*_b–*G*–*A*. With *f* between *e*–*e*_b being considered a neighbour. This CLP takes liberties regarding my statements above, but demonstrates that flexibility is required. Firstly, considering *f* as a neighbour, and therefore removing it, means that the *e* and *e*_b are not members of consecutive harmonies. Secondly, the *e* (part of *D*^{add9}) is arguably a chordal embellishment, and not a true member of harmony. However, within the context of a song that contains so many CLPs, such a hearing is perfectly possible.

The bass line of the B section contains a non-structural CLP, which has a decorative function, rather than altering the macroharmony. The six-note CLP moves from a down to *e*, harmonised solely by *A*, in bar 4 of the B section. The CLP cannot be structural as its static harmonisation means that the macroharmony is not affected. If the CLP was harmonised with chords from outside the current macroharmony it would be considered more structurally significant, although not necessarily more significant aesthetically.

The Beatles provide another example with “Sun King” (Figure 16.8), this time with an interlocking CLP. The B section of “Sun King”, where the vocals enter, opens with a four-note CLP that moves *c*–*b*–*b*_b–*a* as part of *C*–*C*^{Maj7}–*Gm*⁷–*A*⁷. As the progression repeats, it creates a longer six-note CLP with the *Gm*⁷–*A*⁷ linking back into *C*–*C*^{Maj7}–*Gm*⁷–*A*⁷. This forms the CLP *d*–*c*[#]–*c*_b–*b*–*b*_b–*a*, creating a moebius strip-like effect as the progression continues. The loop back from *A*⁷–*C* to restart the progression utilises a minor third chromatic mediant, and contains the semitone relationship *c*[#]–*c*_b. However, as opposed to the above instances, the chromatic mediant performs the task of continuing, rather than initiating, the non-diatonic CLP, which *Gm*⁷–*A*⁷ had already set in motion. The CLP segues into a longer seven-note (*d*–*c*[#]–*c*_b–*b*–*b*_b–*a*–*g*[#]) CLP at bar 9, which goes on to end the B-section and facilitates the shift to the *A*' section. As a transition into the longer CLP, the *c*[#]–*c*_b shift previously underpinned by *A*⁷–*C*, is now reharmonised as *A*⁷–*F*: a major third chromatic mediant. To demonstrate the structural importance of the CLP, the stretch *b*–*b*_b–*a* is also retained, but given a new harmonisation: *Em*⁷–*C*⁷–*F*, rather than *C*^{Maj7}–*Gm*⁷–*A*⁷. That the integrity of the CLP is retained with multiple harmonisations, I think, demonstrates its centrality to the overall coherence of the piece. The CLP continues in the transition to the *A*' section. Here the CLP's fourth pc, *a*, harmonised in the previous bar by *F*, is retained in the new *F*^{#m}, Lewin's slide transformation, before finally continuing down to *g*[#] as part of *E*.

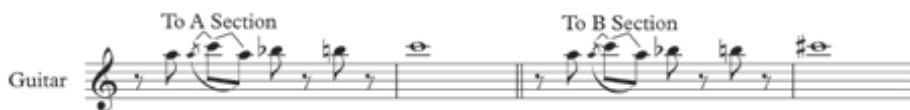


Figure 16.7 “Something”, guitar motif, The Beatles

The figure shows two systems of musical notation for 'Sun King' by The Beatles. The first system, labeled 'B', features a four-note CLP (C, Cmaj7, Gm7, A7) and a six-note CLP (C, Cmaj7, Gm7, A7, F, D7). The second system, labeled 'A'', features a seven-note CLP (F, D7, C, Em7, C7, F, F#m7) and a five-note CLP (F, F#m7, E). The notation includes treble and bass clefs, chords, and melodic lines.

Figure 16.8 “Sun King” by The Beatles

“I Hope I Never”, by Split Enz builds a reciprocal relationship between sections, with each of the alternating sections resolving to the other, similarly to “Rocket Man”, although with a more complex relationship to centrality. The opening oscillation of B–A⁷ (see Figure 16.9) is tonally ambiguous with three contrasting hearings, each supported by later sections of the song. Firstly, the progression can be heard as VI–V⁷ with the d[#] of B obscuring a potential **D** centrality; secondly, the progression can be considered as V–IV^{b7} in **E**, emphasised by the vocal melody hitting A $\frac{b}{2}$ over each B chord; finally, we could hear the progression as I– \flat VII⁷ in **B**.

In relation to the first hearing: the verse continues to Dm, turning A⁷ into V⁷. However, only two bars later an E \flat harmony enters. The note e \flat relates enharmonically to d[#] from the original B—a problematic pc in relation to a **D** centrality. By enharmonically emphasising the pc e \flat Split Enz initiate the move away from **D**, and begin a five-note CLP: e \flat –e–f–f \sharp –g as part of E \flat –C–F–B–Em. This CLP ends the verse in E minor, activating the second possible hearing of the initial B–A⁷, suggesting V–IV^{b7}.

The chorus makes use of Em as a pivot, and again shifts the focus towards **D**. Here Em acts as part of a ii–V progression in **D**, made more prominent by the strong arrival of D in the fifth bar of the chorus. **D** is then quickly undermined by D⁷. D is also part of a CLP, which once again leads us back to Em: c \sharp –d–d \sharp –e as part of A–D–D⁷–B–Em. This effectively prompts a quick alteration between the centres of **E** minor and **D**, and then back again; neither centrality, **E** or **D**, is capable of establishing itself as superordinate to the other.

At b. 19 of Figure 16.9, Em again finds itself as a potential ii, moving to A, and again resolving to D. However, it now continues to a resolution in **B**, presenting the third possible hearing of the opening two harmonies, which it then returns to. The movement between tonal centres is again bridged by a CLP: a–a \sharp –b as part of A–D–F \sharp –B. Now we are back to

The figure displays a musical score for the song "I Hope I Never" by Split Enz. It is organized into three main sections: Verse, Chorus, and three distinct chromatic linear progression (CLP) sections.

- Verse:** The first section features a melodic line in the treble clef and a piano accompaniment in the bass clef. The chords are B, A⁷, B, A⁷, Dm, C, E^b, C, F, B, and Em. A dashed arrow labeled "D^b = E^b" points from the Dm chord to the E^b chord. A bracket above the final four chords (E^b, C, F, B) is labeled "five-note CLP".
- Chorus:** The second section continues with the piano accompaniment. The chords are Em, A, Em, A, D, and D. A bracket above the final three chords (Em, A, D) is labeled "four-note CLP".
- Three-note CLP:** The third section shows a piano accompaniment with chords D^b/C, B⁷, Em, A, D, F[#], and B. A bracket above the final three chords (A, D, F[#]) is labeled "three-note CLP".

Figure 16.9 "I Hope I Never" by Split Enz

the verse and the B–A⁷ progression, which in this context now sounds like I– \flat VII \flat ⁷, until it moves on again.

The overall effect is of an ambiguous opening progression, suggesting possible centricities on **D**, **E**, and **B**. Aided by the use of CLPs, the song winds its way through repeated sections emphasising **D** and **E** centricity, with neither being able to fully establish itself. A CLP then helps the song to emphasise **B**, only for it to return to the opening ambiguous progression, which we know leads away from **D** and **E**. The slipperiness of centricity is achieved through the scalar shifts, which provide a coherent logic by the motion of the CLPs.

Finally, we examine "I Can't Take My Eyes off of You" (Figure 16.10), which demonstrates an extended CLP that spans eight semitones, running from E down to G[#], or $\hat{8}$ descending to $\hat{3}$, the length of the entire verse progression. Each chord of the verse contributes to the CLP, and the overall macroharmony of the verse is extended to 10 pcs, missing only f \sharp and g \sharp ($\flat\hat{2}$ and $\flat\hat{3}$), all the while supporting an almost exclusively diatonic melody. Despite the CLP's length, it outlines a functional I–IV–I progression.

The song opens with the chromatic drop from $\hat{8}$ to $\flat\hat{7}$, turning the tonic into V⁷/IV, and then resolving to IV, functionally the same as the first four chords from "Something". However, where "Something" ends the CLP there, it is extended here by iv–I ($\flat\hat{6}$ – $\hat{5}$). The move to F[#]7 and then Am⁶, which extends the CLP through $\sharp\hat{4}$ – $\flat\hat{4}$ is less comfortable from a tonal perspective; F[#]7 suggests V⁷/V, with a \sharp acting as a secondary leading-note,

Verse eight-note CLP

Figure 16.10 “Can’t Take My Eyes off of You” by Frankie Valli

yet the progression to Am^{add6} , iv^{add6} , nullifies the leading tendency of $a\sharp$. The extensions to these harmonies, e in $F\sharp^7$ and $f\sharp$ in Am^{add6} , provide common tones between the two chords but allow for the Am to be additionally interpreted as $F\sharp^o$, which then falls to the tonic, E .

The eight-note descending CLP of “I Can’t Take My Eyes off of You” does not assist in a modulation, but instead extends the chromatic range that the harmonies can cover. The span of $\hat{8}-\hat{3}$ could perhaps be considered as helping to prolong that tonic, and could lead to hearing the $V^7/V-iv^{add6}$ as embellishing the tonic suggesting passing and neighbouring functions, elaborated by chromatic motion: $\hat{8}-\hat{9}-\hat{8}$, $\hat{5}-\hat{\sharp}4-\hat{\natural}4-\hat{3}$, and $\hat{5}-\hat{6}-\hat{b}6-\hat{5}$. It is in these situations that the logic of the chromatic line, running throughout the progression helps to unify the functional role of the harmonies.

Concluding Remarks and Speculation

Chromatic-mediant relationships, especially those related by minor thirds, are the most common non-diatonic progressions to appear in the above analyses, but they are by no means the only. Out of the twenty-three possible triads that one triad can move to, only two do not contain a semitone connection: C will have at least one pc related by $ic1$ to a pc within any major or minor triad, other than Gm and Am ; Cm has at least one pc related by $ic1$ to a pc in any major or minor triad, other than $E\flat$ and F . This creates a large set of progressions capable of harmonising a CLP, and this would be far greater if 7^{ths} and other chordal extensions and alterations were considered. To simplify the following remarks, I consider only major and minor triads, and focus solely on movement from a major triad. The vast majority of non-diatonic progressions in the analyses above begin on a major chord. Furthermore, the minor macroharmony is often extended in the songs above to include both 6^{ths} and 7^{ths}.

Out of the twenty-three possible progressions from a major triad to another triad, nine can be regarded as subsets of a diatonic macroharmony. The CLPs I have viewed as significant are those that break or extend a macroharmony. There are fourteen progressions from a major triad to another triad that are not a subset of a diatonic macroharmony, and all are capable of harmonising chromatic movement in pc-space. In the above analyses, nine different non-diatonic progressions are used to harmonise various pairs of pcs within a CLP, moving from a major chord to another triad. The five that are not used are the major and minor chords separated by a tritone (e.g. $C-F\sharp m$), the minor chord a major third below a major chord ($C-A\flat m$ —the hexatonic pole), the minor chord a whole tone below the

major (C–B \flat m), and surprisingly, both major chords a semitone above and below the major chord (C–B, C–D \flat). It is likely that at least some of these progressions occur in other compositions, yet it is interesting to note that none of them contain pcs common to the triad they move from. Out of the nine non-diatonic progressions that are used, seven contain common tones amongst triads.¹⁹ Of those two, one contains two common tones within the chordal extension: the move from major triad to the minor triad a minor third above, which is represented by F \sharp ⁷–Am^{add6} in “I Can’t Take My Eyes off of You”. Here the added 7th and 6th of the first and second harmony respectively supply e and f \sharp as common tones. The remaining progression is two major triads separated by an augmented fourth, represented by F–B in “I Hope I Never”, which is a not uncommon alteration of cycle of fifths, providing the middle two chords of a \flat VI– \flat II–V–i progression.

The prevalence of common tones in the non-diatonic CLP progressions likely offers stability at the point where the diatonic macroharmony is being stretched. The consistency provided by the common tones helps to smooth over the swift modulations, scalar shifts, and extensions of alterations to macroharmony. These techniques that break from the diatonic palette are an important aspect of popular music’s harmonic language. The CLPs provide a logical thread to progressions that stretch our expectations. CLPs can offer a useful tool for the examination of modulations, and can highlight new features of voice-leading between structural macroharmonies and connecting local harmonies. Clear separation of macroharmony, scale, and centricity, nuances our interpretation of popular-music modulations and harmonic progressions, especially at times when there is slippage between macroharmony and tonal centre.

Notes

- 1 Guy Capuzzo, “Sectional Tonality and Sectional Centricity in Rock Music,” *Music Theory Spectrum* XXXI, no. 1 (2009).
- 2 David Temperley, “Scalar Shift in Popular Music,” *Music Theory Online* XVII, no. 4 (2011): 1.6.
- 3 Bradley T. Osborn, “Beyond Verse and Chorus: Experimental Formal Structures in Post-Millennial Rock Music” (PhD Diss., University of Washington, 2010) demonstrates a diverse range of terminal modulations in popular music. For a further exploration of Rock’s slipperiness in relation to tonality see Walter Everett, “Making Sense of Rock’s Tonal Systems,” *Music Theory Online* X, no. 4 (2004). The issue is further explored in Everett’s, “Pitch Down the Middle,” in *Expression in Pop-Rock Music: Critical and Analytical Essays*, ed. Walter Everett (New York: Routledge, 2008).
- 4 Dmitri Tymoczko, *A Geometry of Music: Harmony and Counterpoint in the Extended Common Practice*, Oxford Studies in Music Theory (New York: Oxford University Press, 2011), 15.
- 5 Concerning reference to pitch centricity, when stating that a section has centricity on c, I am not referring to anything other than the pitch-class as a centre: It could be **C** major, **C** Phrygian, etc. In this essay pitch-classes are represented by lowercase letters, chords are uppercase, while keys and tonal centers are uppercase and bold.
- 6 Tymoczko, *A Geometry of Music: Harmony and Counterpoint in the Extended Common Practice*, 17.
- 7 *Ibid.*, 17.
- 8 *Ibid.*, 19.
- 9 *Ibid.*, 130.
- 10 CLPs always involve consecutive adjacent semitones and continue in a single direction.
- 11 While it is possible to imagine register specific macroharmonies, the songs examined in this article do not display any register specific features in their harmonic content.
- 12 Idealised voice leading is voice leading under octave equivalence, allowing for generative minimal voice leading to be observed in a surface that does not emphasize the minimal voice leading

- in performance. Richard Cohn, *Audacious Euphony: Chromaticism and the Triad's Second Nature*, Oxford Studies in Music Theory (New York: Oxford University Press, 2012).
- 13 Fred Lerdahl, *Tonal Pitch Space* (New York: Oxford University Press, 2001), 174.
 - 14 Lori Burns, "Analytic Methodologies for Rock Music: Harmonic and Voice-Leading Strategies in Tori Amos's 'Crucify,'" in *Expression in Pop-Rock Music: Critical and Analytical Essays*, ed. Walter Everett (New York: Routledge, 2008).
 - 15 In this chapter, when talking about diatonic collections, I will label them as built upon a certain pitch-class. This means that they are equivalent to the Ionian mode associated with that pitch class. However, I use the term without implying centrality: the diatonic collection built upon C could be D Dorian, E Phrygian, or any of the other modes sharing the same pitch-classes.
 - 16 See Guy Capuzzo, "Neo-Riemannian Theory and the Analysis of Pop-Rock Music," *Music Theory Spectrum* 26, no. 2 (2004); and Nicole Biamonte, "Triadic Modal and Pentatonic Patterns in Rock Music," *Music Theory Spectrum* XXXII, no. 2 (2010).
 - 17 Mark Spicer, "Fragile, Emergent, and Absent Tonics in Pop and Rock Songs," *Music Theory Online* XXIII, no. 2 (2017).
 - 18 Reciprocal relationships between tonal areas are explored further in Richard Kurth, "Moments of Closure: Thoughts on the Suspension of Tonality in Schoenberg's Fourth Quartet and Trio," in *"Music of My Future": The Schoenberg Quartets and Trio*, ed. Reinhold Brinkmann, Christoph Wolff, and David Lewin (Cambridge: Harvard University Press, 2000); and Cohn, *Audacious Euphony*.
 - 19 The progressions containing common tones are the four major to major chromatic mediants, the parallel minor, slide, and the minor chord a fourth above (which, while being common, especially as V-i in minor, is considered non-diatonic in the current major-oriented conversation).