

# IMPROVIZ

## Visual Explorations of Jazz Improvisations

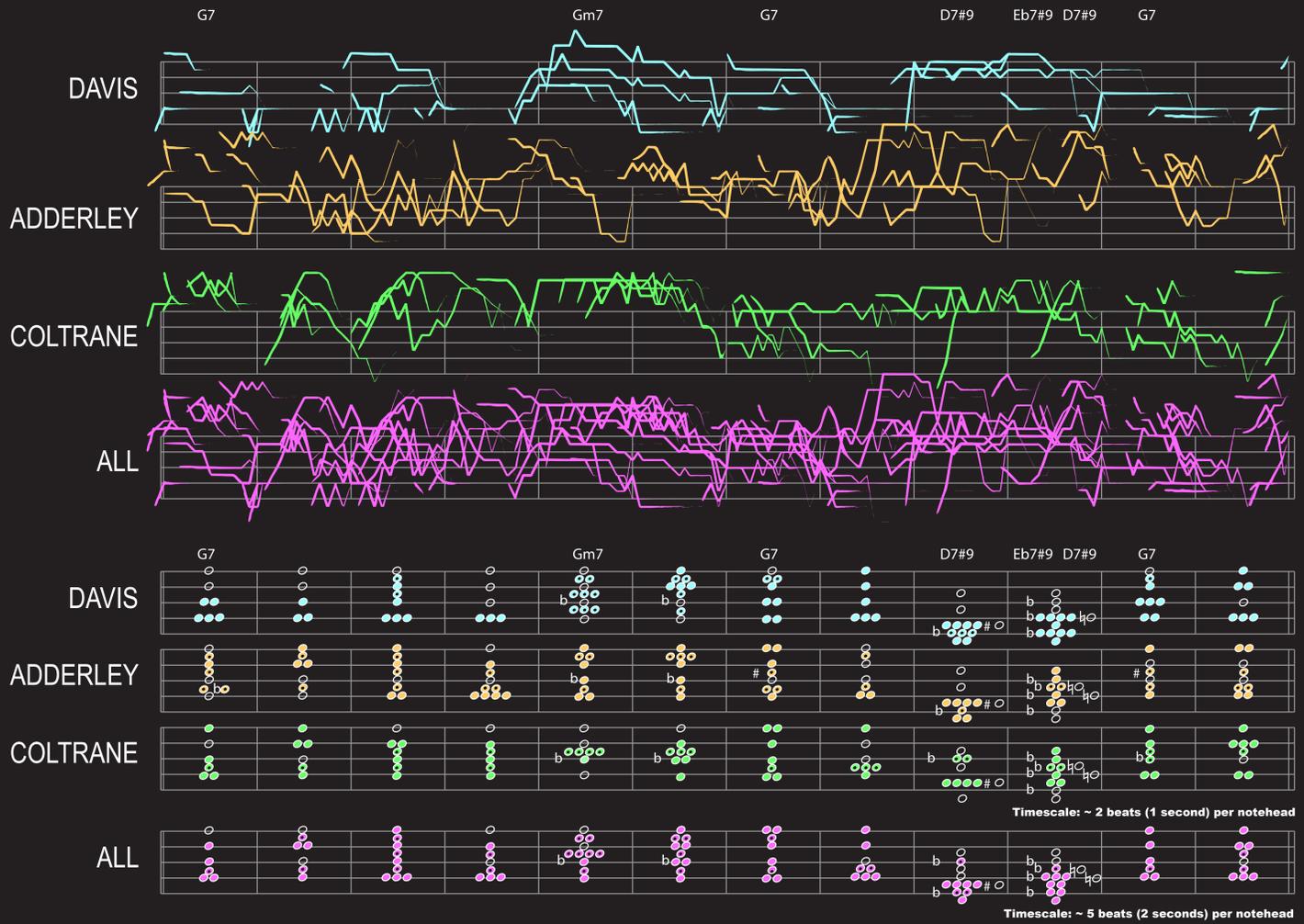
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Is it possible to see how a jazz musician improvises? Is it possible to see how one improviser's style is distinct from another? ImproViz attempts to answer these questions through two visualizations: (1) *melodic landscapes* show the general contours of musical phrasing; and (2) *harmonic palettes* represent the musician's tendency to use a particular combination of notes in a given part of the song. In this example, a composition from the classic Miles Davis recording *Kind of Blue* was explored. Viewing *All Blues* through the lens of ImproViz illustrates the contrasting melodic and harmonic styles of three musicians.

## All Blues

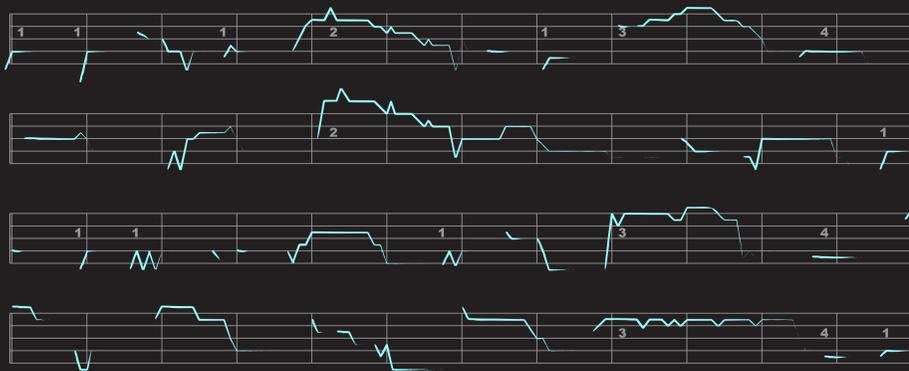
Written by Miles Davis  
Recorded April 6, 1959 (Take 1)



## MILES DAVIS

### Trumpet

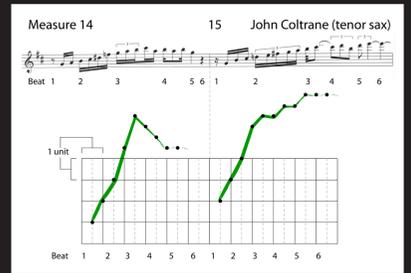
Davis plays extended phrases and punctuates them with equally long silences, creating a sparse *musical landscape*. He fills his solo with musical motifs, like the opening two-note riff that he develops and then returns to at the end, later echoed by the other soloists (1). He repeats a haunting fanfare in the middle of the tune (2) and finishes off each chorus by drawing out a mysterious, almost mournful tone (3), but then releases the mood with a simple figure (4).



## MELODIC LANDSCAPES

### Visualizing Melodic Patterns

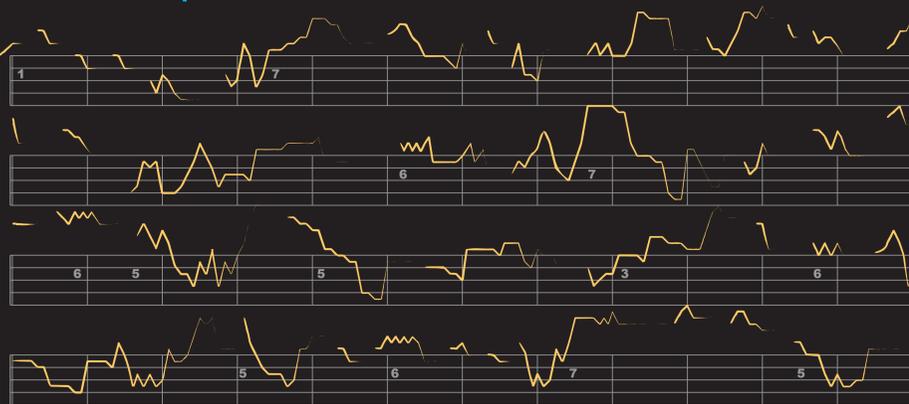
A *melodic landscape* is a contour map of the rising and falling pitches of a soloist that outlines the general characteristics of an improvisation but suppresses the detail of individual notes. In standard musical notation the width of a measure is variable, based on the number of notes that must be displayed. In contrast, ImproViz uses a fixed width for all measures which normalizes the x axis (time). This allows melodic ideas to be viewed over a consistent representation of time to further shed light on patterns.



## CANNONBALL ADDERLEY

### Alto Saxophone

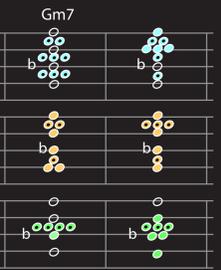
Adderley creates a funky, syncopated rhythm by starting and stopping phrases mid-measure. He sometimes begins with a high note and descends down the blues scale and up again to create big dipper shapes (5). He often zigzags between two blues notes (6). In his most complex phrases, he builds up tension by climbing upwards, comes down a little, then soars up to a peak and holds it for a climactic moment before descending (7).



## HARMONIC PALETTES

### Visualizing Harmonic Patterns

A *harmonic palette* is a breakdown of the notes each musician played in every measure of the 12 bar blues. It illustrates a musician's tendency to use a particular combination of notes at a particular point in the song's structure. In the 5th measure (left) we see that Davis (blue) did not play any of the notes in the G minor chord but instead plays an A minor triad (A, C, E). Why did he intentionally ignore his own chord changes? Meanwhile, Coltrane (green) spent most of his time playing a C, the tonic of the chord Miles told his band not to play! Adderley (orange) was the only musician to voice the full G minor chord in the fifth bar.



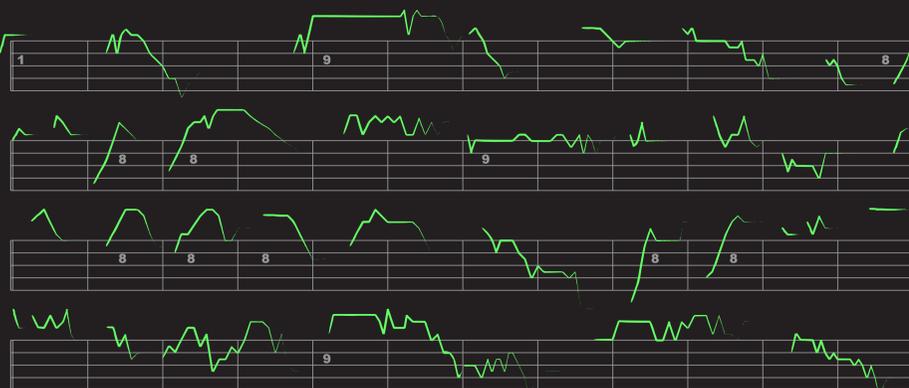
LEGEND ● Filled noteheads: notes played in the chord  
○ Filled noteheads with dots: notes played outside the chord  
○ Unfilled noteheads: notes from the chord left unplayed



## JOHN COLTRANE

### Tenor Saxophone

By 1959, Coltrane had started to experiment with playing continuous streams of notes. He often launches into these *sheets of sound* with a rapid ascent that quickly trails off (8). In the middle of each chorus, Coltrane climbs to a high plateau, holds steady on a key note, then tumbles downhill in another *sheet of sound* (9). He peppers his solo with numerous rests, giving the listener's ear a chance to recuperate before the next nonstop run of notes.



## COMPOSITES

### Comparing & Contrasting Styles

Composite *melodic landscapes* show a soloist's approach for improvising over the 12 bar structure by superimposing all four choruses on top of each other (top of poster). This view quickly reveals many of Davis' musical motifs (blue). Another composite consists of overlaying all three soloists on top of one another (inset graphic), shedding light on patterns of solo development and resolution. Composite *harmonic palettes* show the combined distribution of notes played by two or more soloists. The violet notes (top of poster) show a composite *harmonic palette* for all three improvisers.

