



Charli XCX vs. Taylor Swift

The Music Theory Behind the Beef

Based on Hooktheory's database of 650+ song analyses.



(alleged)

Diss Track Comparison

Two completely different harmonic approaches to throwing shade.
Like...**completely** different.

Sympathy is a knife

Charli XCX

brat



Actually Romantic

Taylor Swift

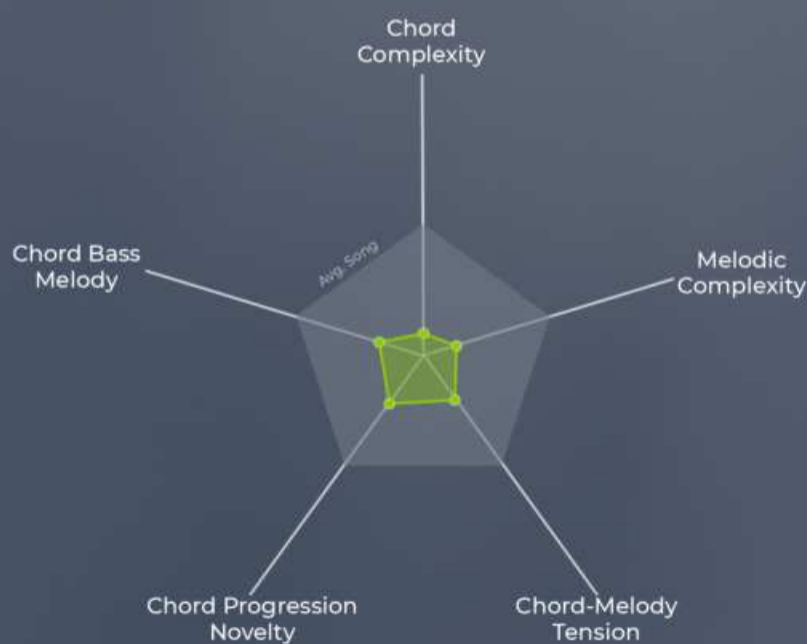
Key

E \flat Major / E \flat Lydian

Tempo

132 BPM

Chorus Chord Progression



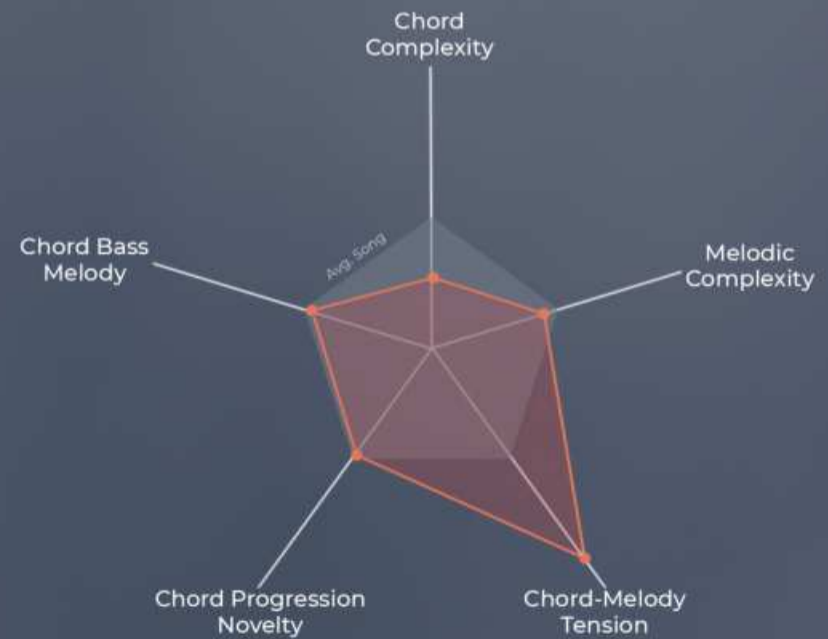
Key

E Major

Tempo

85 BPM

Chorus Chord Progression



Psst! See last slide for explanations of metrics →

Complexity Check

How their **chord** and **melodic complexity** has changed throughout their careers.



Variance

This score measures how **consistent** (low score) or **inconsistent** (high score) their songwriting is, in terms of complexity.



Charli XCX: **77.2**



Taylor Swift: **18.51**

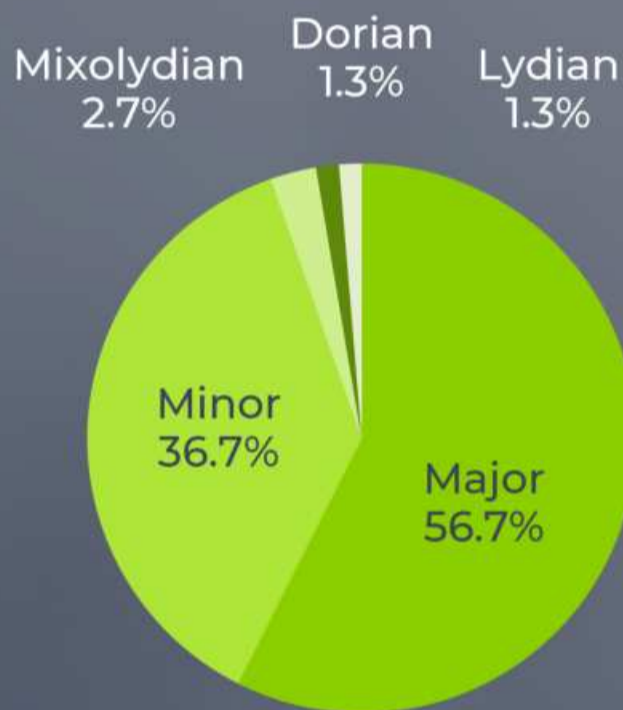


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Moods and Modes

Modes are musical “moods” built from variations of the major and minor scale; these graphs show which ones appear most often.

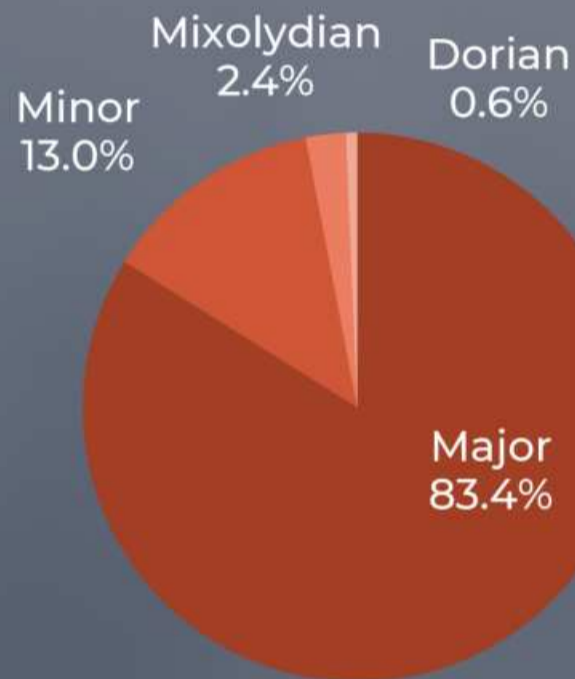
Charli XCX



Songs in Specialty Modes

Beg for You	Mixolydian	chorus
Breaking Up	Mixolydian	verse
You're the One	Mixolydian	chorus
Gold Coins	Mixolydian	chorus
Break the Rules	Dorian	chorus
Girls Night Out	Lydian	pre-chorus · chorus
Sympathy is a knife	Lydian	chorus

Taylor Swift



Songs in Specialty Modes

Shake it Off	Mixolydian	whole song
gold rush	Mixolydian	verse
seven	Mixolydian	verse
Come in with the Rain	Mixolydian	chorus
The Prophecy	Mixolydian	chorus
Ruin the Friendship	Mixolydian	verse
The Life of a Showgirl	Mixolydian	whole song
Christmas Tree Farm	Mixolydian	verse, chorus, bridge
Cowboy Like Me	Dorian	bridge
seven	Dorian	chorus
Vigilante Sh*t	Dorian	chorus
The Fate of Ophelia	Dorian	verse, pre-chorus



Tension Report

Chord-Melody Tension climbs whenever the melody lands on **notes outside the current chord**, adding instability to the song.

avg. tension

70.43



Song	Score
 Guess	100
 Set Me Free	99
 Enemy	99
 New Shapes	98
 Good Ones	98
 Father Figure	97
 The Man	96
 Elizabeth Taylor	95
 Paper Rings	93
 Actually Romantic	93

avg. tension

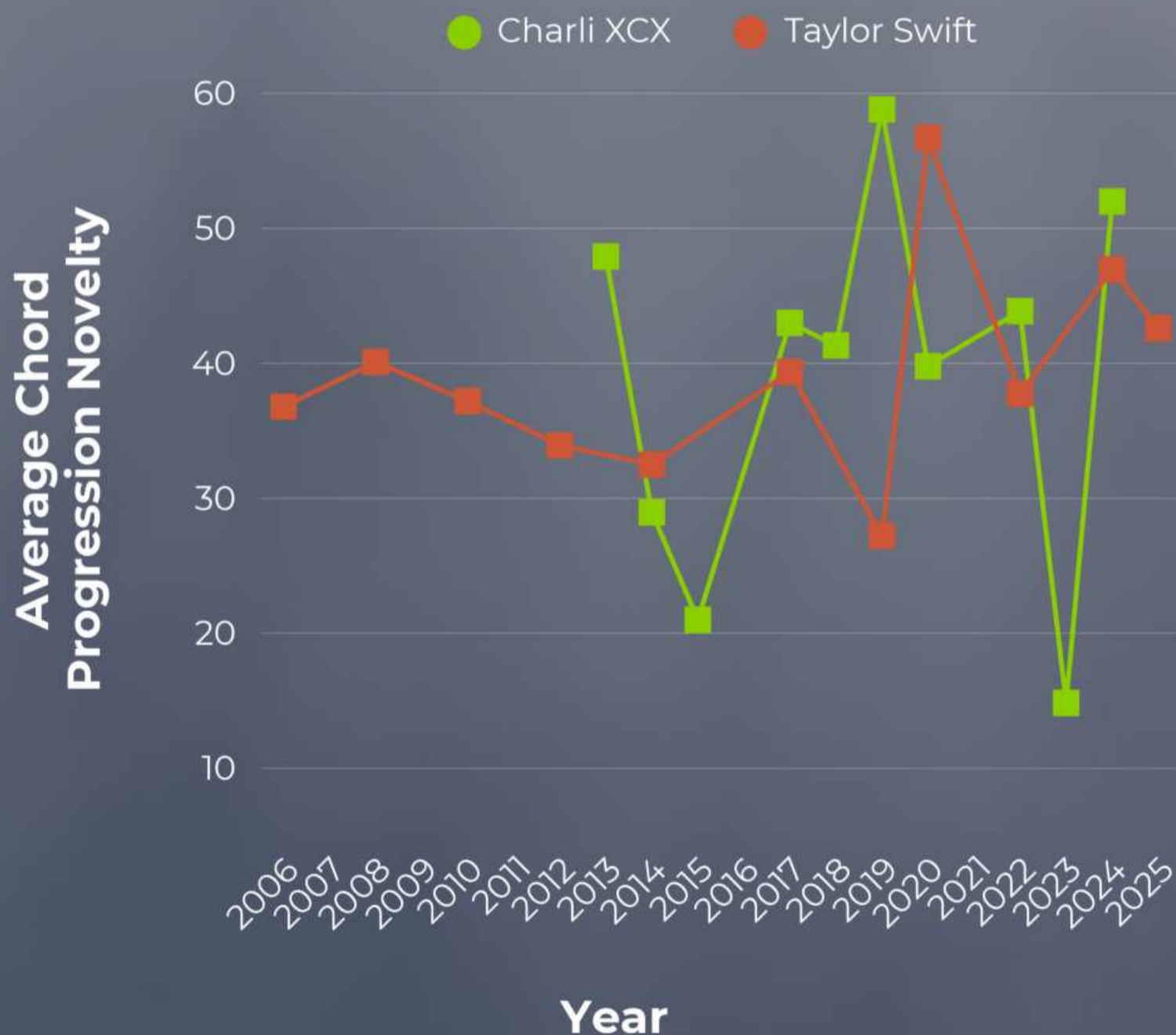
61.82



Psst! See last slide for explanations of metrics →

How Rare is That Progression?

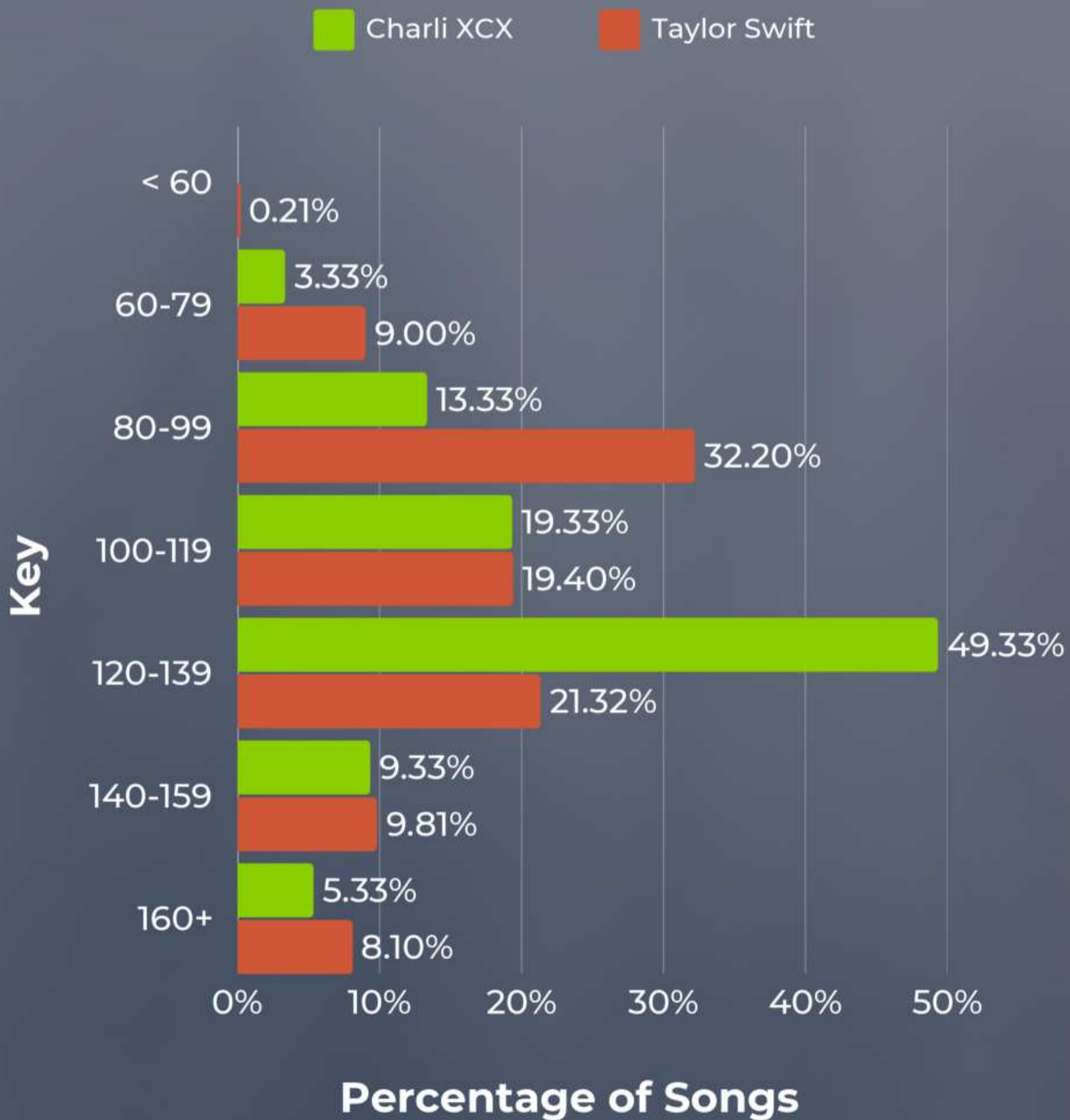
Chord-Progression Novelty measures how **uncommon** a song's chord sequence is; higher scores mean rarer and **more original progressions**.



Psst! See last slide for explanations of metrics →

Tempo Trends



Tempo defines the speed of the music and is measured by **beats per minute (BPM)**. See where the majority of their songs fall!



Progression Twins

Same progression. Different genres.
See how production transforms a song into a completely new vibe.

Song	Key	Chord Progression
 Detonate	F Major	Chorus: I IV V
 Paper Rings	D Major	Chorus: I IV V

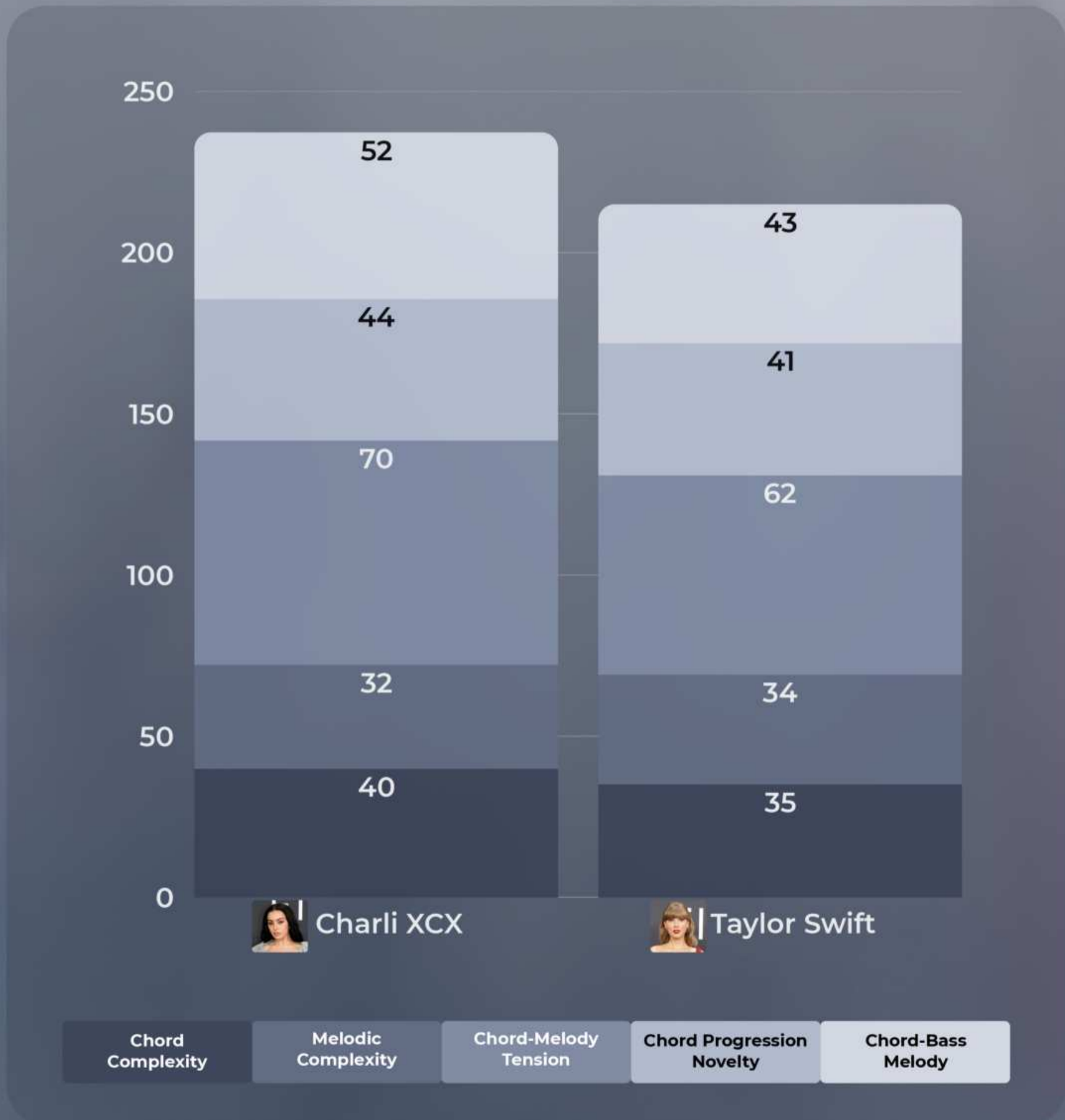
Song	Key	Chord Progression
 Boom Clap	E Major	Chorus: IV V I vi
 Paris	G Major	Chorus: IV V I vi

Song	Key	Chord Progression
 Apple	C Major	Verse: V vi IV
 Treacherous	D Major	Bridge: V vi IV



Theory Showdown

How Charli and Taylor use chords, craft melodies, and build tension, backed by data from every song they've written.



Psst! See last slide for explanations of metrics →

About Our Metrics

Chord Complexity

Chord Complexity tracks when a song goes **beyond simple three-note chords**—either by adding **extra tones** (like 7ths or add9s) or by borrowing notes from **outside the key**—creating richer, more sophisticated harmonies.

Melodic Complexity

Melodic Complexity reflects two factors: the use of **notes outside the key** and **rhythmic syncopation**, together capturing how intricate or surprising a melody feels.

Chord-Melody Tension

Chord-Melody Tension quantifies how often **melody notes fall outside the current chord**, producing dissonance that creates a sense of instability

Chord Progression Novelty

Chord Progression Novelty measures how **uncommon a song's chord changes** are compared to others in the Hooktheory database, highlighting progressions that deviate from typical patterns.

Chord Bass Melody

Chord-Bass Melody evaluates how smoothly the bass moves between chords, scoring higher when it travels **step-wise, ascending or descending**, instead of jumping directly between root position chords.

