

A Corpus Analysis of Harmony in Country Music

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So my chapter, “A corpus analysis of harmony in country music,” was written back in 2017. I was really into the Netflix show *Stranger Things* back then, so allow me to take you back in time to 2017.

Background

[NEXT] Actually, it does seem like we’re living in the “Upside Down” these days.

[NEXT] Anyway, you may know me from my corpus work with Davy Temperley on harmony in rock music [NEXT], which is part of a larger body of research by music theorists on harmony in rock music, [NEXT], or pop-rock music as it is sometimes called.

[NEXT] As you may also know, pop and rock music comprise a large proportion of listenership in the United States. [NEXT] Yet there has not been an equivalent amount of research on harmony in other styles that have a large proportion of listenership, such as R&B or country music. So I was interested in looking at harmony in country music because of a blind spot in existing work.

[NEXT] One reason that harmony in country music has been overlooked by researchers may relate to a stigma that it is overly simplistic. The songwriter Harlan Howard, for example, is famously quoted as saying that country music is just “three chords and the truth.” [NEXT] But Jocelyn Neal has pushed back on this caricature, saying that it’s a “misconception that country music relies on three-chord harmonic progressions.” Now Jocelyn Neal does not offer any empirical evidence to support

her claim, so I thought a corpus study of harmony in country music could add some insights.

[NEXT] For those of you not familiar with country music, it's a style where we know its practitioners actively think in terms of functional harmony. For example, here is what is known as a Nashville number chart for the song "I Know You Won't" by Carrie Underwood. These Nashville number charts have been used since the 1950s by the professional musicians that write and record country music. I don't have time to get into the details of the Nashville number system, but all you really need to realize is that it's similar to Roman numerals, but instead it uses Arabic numbers to track chord functions. So in the key of A, as shown in the top left of this chart, for example, [NEXT] the four minor over one chord in the second bar represents a D minor chord with an A in the bass. So as you can see, there is some cultural validation to study harmony in this style. That brings me to my methodology.

Methods

[NEXT] This project was catalyzed by the fact I wrote a fakebook of Nashville number charts for 200 country songs, which was published by Hal Leonard in 2015. [NEXT] Here's one of those charts. Without too much additional effort, I turned these published charts into a machine-readable text-based format [NEXT], as seen here. And then I wrote a bit of Python code to parse the files and generate some statistics. Now I haven't publicly released this corpus, since I have some concerns that Hal Leonard, the publisher, would not be too happy about having a text-based version of the book out there, but send me an e-mail if you're curious.

Before getting into some details of the harmonic analyses, I'd like to first talk about how I selected the songs for the book and thus the corpus. [NEXT] When Davy

Temperley and I were creating our rock corpus, one of the questions that we wrestled with was which songs to choose. And as you may know, we made a subjective decision by settling on the *Rolling Stone* magazine list of “500 greatest songs of all-time.”

[NEXT] In contrast, my approach for the corpus of country music was somewhat more objective. Instead of picking a single list, I aggregated more than a dozen lists of award-winning or chart-topping or critically-acclaimed songs. [NEXT] To do so, I simply made a spreadsheet in Excel, and then gave one point to a song for each list that it was included on. I then just sorted the songs on the number of points received and picked the top 200 songs. That’s not a perfect methodology, I’ll admit, but I think this sort of meta-list approach to creating a corpus is a good idea, since these corpora and our analyses of these corpora sometimes end up being taken as canonical representations of a style.

Results

I don’t have time today, of course, to dig deeply into my results. But I’ll offer a few teasers that look at some fairly broad and general issues. For example, we might wonder what percentage of the 200 songs in the country corpus use just “three chords and the truth.” Well, I can’t offer any data on the truthiness of these songs [NEXT], but I can report that in the country corpus, which I’ve abbreviated here as the NN200, about a quarter of the songs use three chords or less. So is that a lot or a little? [NEXT] Well, here is the comparable data for the RS 200, which is the corpus of rock music that I created with Davy Temperley. As you can see, the proportion seems to be about the same. Based on this data, then, country music doesn’t seem to have a significantly larger proportion of three-chord songs than, say, rock music.

[NEXT] In fact, both the country corpus and the rock corpus have about the same proportion of songs with four chords or less as well, which is about half in each case.

But, maybe it's not about the number of chords in a song, but rather which chords the songs use. In other words, maybe country music has a much more limited palette of chord types. Well, let's see: [NEXT] about 82% percent of chords in the country corpus are either one, four, or five chords. [NEXT] The next most common chord, six minor, is not even close to cracking the top three. [NEXT] And it turns out that this distribution is not very different from rock music, where one, four, and five chords account for about 79% of all chords total if we limit the corpus to songs with a major key.

As a sidenote, almost all the songs in the country corpus are in a major key, and as another sidenote, the rock corpus has some issues with how songs with a minor tonic are encoded, which I talked about at the Future Directions of Music Cognition Conference this past summer and also touched on in my paper on the main SMT program yesterday. So by limiting the rock corpus to songs with a major tonic only, I'm trying to compare apples-to-apples. [NEXT] And actually, it turns out that the distribution of chords in both country music and rock music is not so different from that found in classical music from the early common-practice era, where one, four, and five chords account for about 75% of all chords total, according to work by Helen Budge. To be clear, common-practice era music modulates a lot more than country music or rock music, so even though the proportions of these three chords functions are similar across styles, I think we'd find in classical music a greater variety of chord names, like E major or D-flat major, in a single piece.

So what are some other similarities or differences between these styles? [NEXT] Well, one particularly interesting difference regards the behavior of chord roots. In classical music, for example, the distribution of root motion by interval is skewed. In particular, classical music favors “progressive” rather than “retrogressive” root motion—that is, it favors root motion by ascending fourth, descending third, or ascending second. [NEXT] In contrast, Davy Temperley and I found that root motion in rock music is more evenly balanced between ascending and descending versions of the same interval.

So what about country music? [NEXT] Well, here is a chart of root motions by interval for the corpus of country music. Without getting into any inferential statistics, I’ll just point out that the distribution of root motion in country music looks somewhat like a blend of the distributions found in classical music and rock music.

OK, so I’m going to end my talk here with a big conceptual leap, so hold on to your hats. Based on these patterns of root motions, if we take harmonic syntax in classical music to be, let’s say, more traditional and more restrictive or structured, and we take harmonic syntax in rock music to be less traditional and let’s say more liberal or free, then harmonic syntax in country music seems to be a bit more traditional or more conservative-leaning than say rock music. And that kind of mirrors, if you will, the type of political or social views we generally tend to find with listeners of country music, who tend to be a bit more conservative-leaning than listeners of, say, rock music. Maybe, therefore, the music somewhat reflects people’s politics, or vice versa. So now that I’ve brought politics into it, it’s probably a good time to stop talking. Thank you all for listening!