

so, the last month of my life has been spent locked in my room, day in and day out, listening to 50 years of chart-topping songs. why? to prove a point. as I'm sure you know by now, I am obsessed with chord loops, but they're wildly understudied. very few music theorists even mention them with any real level of interest or scrutiny. for the last 6 years I've been on my own personal crusade to try and change that, with pretty limited success, until recently, I snapped and said y'know what, screw it. I'll do it myself. so I did. I listened to 500 hit songs from across the last five decades to collect as many chord loops as I could possibly find, and I'm really hoping they prove me right. let's find out.

(tick, tick, tick, tick, tock)

before we get started, if you want to see my next video a month early or just watch this one ad-free, those are both live now on Patreon. there's a link in the description, more on that at the end of the video.

I suppose I should start by explaining how I think about loops, because it's pretty different from other kinds of harmony. where a chord progression takes you through a series of harmonic locations building up to a final release, a chord loop is the harmonic location. you're not traveling through it: you experience the entire loop together as a single, unified whole. and there's some good evidence for this. the rise of the chord loop coincides with the rise of what music theorists call the harmonic-melodic divorce, the tendency for pop melodies to ignore the notes implied by the chords beneath them. you can hear this in Fast Car: (bang) where Tracy Chapman sings B on an F# chord and A over E major. in traditional theory, we could explain these as suspensions, extensions, or other kinds of -ensions, but those all make it sound super complicated, and it's not. you probably didn't even notice the clash until I pointed it out. and that's because, in a lot of popular music these days, this is incredibly normal. it's not weird enough to need an explanation. this is the tradition.

but I've always been suspicious of the harmonic-melodic divorce concept, because it seems to imply that we hear those two things separately. but we don't. it's all one track, so the sounds still need to make sense together. the melody is heard against the harmony, and it sounds good. and while there's plenty of explanations out there for how that all works, to my mind, the simplest answer is that the harmony just never actually changes. there's a single harmonic object that is the entire chord loop, and that object simply rotates so you see it from different angles. Chapman's melody isn't divorced from the chords, it's married to the loop. from that perspective, all the notes make perfect sense.

but then how do we describe these loops? why might you choose one over another? that's the question I've spent the last 6 years trying to answer. and of course, there's a lot of factors, but one that's exclusive to loops and one that, outside of my own videos, I've basically never heard anyone talk about, is what I call the loop's shape. this is the flow of motion that defines the loop's underlying structure, and it combines two things: contour and anchoring.

contour is about how each chord moves into the next. if the motion is strong, that means it creates forward momentum, and there's usually two ways to do that. one is the harmonic approach, where the chord moves up or down by a perfect 5th. that taps into centuries of Western musical traditions that have trained your ear to hear that motion as a resolution. we can hear strong motion in Special Lady: (bang) with its classic II-V-I, or in Scream and Shout: (bang) which keeps falling down in 4ths until it returns home. the other way to create momentum is the proximate approach, which is even simpler: you just move around in steps. the closeness of the chords gives it a walking sensation and a clear direction. (bang) these can be whole steps or half-steps, and they can be up or down. all of those count as strong motion.

weak motion is everything else, although usually it's moving in 3rds. weak motion isn't worse than strong motion, but it doesn't push the harmony forward. the chords just melt together. but that doesn't mean weak motion is smooth. the tritone leap in Sir Duke: (bang) and this Gb to A thing in Thank U, Next: (bang) are both really striking sounds, but they're disjointed. the dissonance doesn't come with a direction, so they can't create a resolution, just a break. the contour of a loop is a measure of how much strong vs. weak motion it has between chords, and how that strength is distributed.

anchoring, on the other hand, is about where the loop rests. and for this, we need to talk chord functions. but not the kind you'd learn in a traditional theory class. in this model, a chord's function isn't related to a key or a scale. it's all about how you enter and how it leaves. like, if a chord is approached by weak motion and then departs also by weak motion, that's an island, floating along as a simple little detour from the action. on the other hand, strong in, strong out is a connector, railroading your ears forward. but when it comes to anchoring, what matters most is the places where the motion changes. weak to strong, or strong to weak. these come in pairs, and I call them signposts and destinations. a signpost starts a chain of resolutions, kicking things up to a higher gear, and a destination closes that chain, bringing the music to a sort of stop. you can hear all those functions in Gangsta's Paradise: (bang) which is anchored at the end, with a destination in position 4.

so that's the theory, and anecdotally it's served me well. but anecdotes aren't good enough. I want a real test, and to do that, I need to collect a bunch of loops and see what actually happens in the wild. do my ideas hold up? and for that, I need to make some predictions. which, before I do, my oath as a music theorist requires me to say that this is all descriptive. I'm not saying what a good chord loop should do, I'm just trying to explain what a typical chord loop might do. breaking these so-called "rules" can be just as effective as following them, but understanding what normally happens gives us better tools to describe the impact of doing something different.

with that out of the way, what would I expect to see? and to keep this simple, I'll stick to two main questions. the first is about contour: what kinds of loops do we think will be most common? to my mind, a chord loop is usually a balancing act between two competing forces: momentum and structure. loop-based songs tend to lean forward, pulling you through with strong motion to keep you engaged. the best chords for that job are connectors, so we'd expect to see those.

structure, on the other hand, is the ebb and flow, and for that, you need the motion to change, implying a destination. putting that together, I'd expect the majority of loops to be what I'll call balanced loops, with at least one connector for momentum and one destination for stability. (bang)

I'd also expect to see plenty of loops that just optimize one or the other, with all connectors for max momentum: (bang) or alternating signposts and destinations for maximum structure. (bang) we'll call these extreme loops, 'cause they take one goal to the extreme. what I don't expect to see is what I'll call subdued loops, with more than one island. I mean, it does happen. in fact, you even get loops with all islands sometimes: (bang) but since these accomplish neither of the things a loop is typically good for, I'd expect them to only show up in special circumstances where the point is to sound unmoored.

the second question has to do with anchoring: we expect there to be destinations, but where? which of the four chord positions is most likely to have one? and that seems pretty obvious to me. from experience, it has to be position 1. having a resolution right at the moment where the loop resets means that by the time you get that closure, the song's already into its next statement. (bang) you can pause to catch your breath, but it never seems to end. it's always ready to pick back up. on the other hand, the least likely spot should be position 2. this is right after the downbeat, so hitting it with too much emphasis destabilizes the meter, making it hard to feel a resolution anywhere. much like having too many islands, loops with a destination on their second chord seem to float: (bang) as if they're nervous about ever having to land. the anchor is buried, so you get the stopping effect of a destination without really grasping the structure.

the other positions are harder to call. they both seem solid, for different reasons. position 3 is the furthest from position 1, so a destination there serves as a pit-stop, a break point in the middle before picking back up. it's more active than position 1: (bang) so these work for loops that want to sound a little restless without letting you get too lost. position 4, on the other hand, is incredibly stable, because it releases the tension of the loop before the reset point. you enter the next statement with very little baggage. to that end, I suspect most of these will be closed loops, which start and end on the same chord: (bang) for maximum rest. if I had to guess, I'd say position 3 will be more common, but I expect them to be close.

with those predictions made, I can finally start collecting data. I debated some different approaches, but ultimately went with something fairly simple: ten songs per year for the last 50 years. while there were chord loops back in the '50s and '60s, the modern tradition seems to have grown out of the '80s, so starting in 1976 and moving forward should give me a pretty good picture. to make sure the songs I grabbed were representative of what was popular at the time, I picked them at random from the Billboard year-end top 100. for each song, if I heard a loop, I transcribed it, and if I heard more than one I picked whichever seemed to be most integral to the song. I'll talk more about how I made those choices in the extended Patreon cut.

but I still had one problem left to solve: what about really close cousins? if there's a repeating pattern of, say, 3 chords, or 5, does that still count, and if so, how should I interpret it? and to

answer that, we're gonna have to ask what we mean when we say "chord". because in a loop, I don't think of a chord as a collection of notes played together. many of the songs I looked at don't even play full chord voicings, instead implying them through bass motion alone. no, for our purposes, a chord isn't so much a harmonic object as it is a metric one. each loop is divided into four roughly even chunks of time, and each chunk is a chord. so when we see what looks like three chords: (bang) one of them will pretty much always be twice as long as the others to take up the extra space. we can treat that as two different chords that just happen to sound the same, and not moving feels like pretty weak motion to me. similarly, with five chords: (bang) two of them will be smushed together in one slot, and we treat those two as a single chord. to work out that chord's function, we use the first half for its entrance and the second for its exit. in this case, we have strong in and strong out, making it a connector. that's my current theory, anyway, although whether or not it's a good approach is also something I want to test.

so! we've got all our parameters, the only thing left to do is the interminable slog through 50 years and 500 songs. I wish I had some fun stories to tell you from this part, but the truth is it's kind of a blur. I spent hours a day in a sort of flow state, listening to as many songs as possible and trying to get all the information I needed while it was playing to keep from taking even longer. fortunately, my music tastes are relatively broad and kinda mainstream, so I enjoyed a lot of the things I heard, but I'm not sure I could even name most of the songs without checking my list. the experience was exhausting, but also satisfying, and that's all I can really say.

but enough about that. I've got the data, I crunched the numbers... how did I do? pretty good. like, surprisingly so. of the 500 songs, 234 had some kind of loop, which honestly proves my main point already. according to this sample, almost half of all the top songs of the last 50 years use this technique somewhere, with a quarter being built entirely on a single loop for the whole song. and, by the way, those numbers both go way up if we only count the last 25 years. it's not a surprising result, but part of my goal here is to make the case that these things are worth looking at, and even if everything else I said turns out wrong, those numbers are hard to ignore.

but the things I said weren't wrong. I said we'd see mostly balanced loops, some extreme loops, and very few subdued loops, and that's exactly what happened. I can't tell you how nervous I was to actually crunch these numbers, but in the end, 71% of the loops I found were balanced, 22% were extreme, and only 7% were subdued. and we can break these down further. like, balanced loops have to have a signpost, a connector, and a destination, but that leaves them with one free agent. if it's another connector: (bang) that's a Cascade loop, because as soon as it leaves home it's immediately starting the trip back. but if the extra chord is an island: (bang) that's... well, I originally called them piston loops, but I never really liked that name. these days I prefer Disc loop, short for Destination, Island, Signpost, Connector. it's a more classic shape, popular in the doo-wop era, but I felt like the cascade loop's greater sense of momentum would make it more common in modern music. and the data bares that out: about 2/3rds of the balanced loops are cascades.

and for anchoring... yeah. nailed it again. 100 destinations in position 1, 64 in position 3, 48 in position 4, and only 32 in position 2. honestly that's still more position 2s than I expected, but I

did notice that a lot of those came specifically from that time in the early 2010s where everything was borrowing heavily from EDM: (bang) and the unresolvable nature of a position-2 destination does make it great for evoking the sort of trance-like atmosphere those songs are going for. I think what we're seeing here isn't the model breaking, it's the model predicting a specific behavior that wound up having a moment in the spotlight.

I also said I wanted to test my approach to 5-chord loops. this has been a thorn in my side ever since I first started working on this model, and I had no idea if what I was doing with them actually made sense. so to check, I collected and analyzed every instance where two chord sounds appeared in the same chord bucket. there's only 38, but their behavior was remarkably consistent. 35 used strong motion between the internal chords, and 33 functioned as either signposts or connectors, moving into the next chord bucket by strong motion. which makes sense: it's an active gesture, we would expect to see it when the energy is building up, and the fact that we do is a good sign that I'm on the right track.

so, yeah. I kinda can't believe how well this went. I got basically the exact results I was looking for. but there are a couple caveats. first, sample size. 500 is a lot for one person to do in a couple weeks, and I believe it's enough to confidently show some trends, but there are much bigger data sets out there that could be used to get a more complete picture.

but more important is the data source: using the Billboard year-end charts means I'm only seeing whatever was most popular at the time. which was kinda the point, but it does mean that if there's a difference between the mainstream and more underground styles, it wouldn't show up. I can only speak to the sorts of musical practices that made it to the radio. and that also means I'm inheriting the cultural biases that shape those charts in the first place. almost 70% of the songs I used were written exclusively by men, but if there was even one woman or nonbinary person on the team, it was significantly more likely to use a chord loop at all. same for having a non-white songwriter. I'm sure that's partly because recent years have seen both more loops and more space for artists who aren't white men, but while the difference shrinks when we limit our search to the last 25 years, it doesn't disappear completely. there's even some differences in the kinds of loops used, although at that point the samples get small enough that I'm not sure I can count it as a real trend.

still, even with those acknowledgments, I stand by my results. the goal here wasn't to present the end-all, be-all of chord loop knowledge, it was to invite a conversation and maybe get a gut check on the techniques I've been using. and to that end, it feels like an unmitigated success. I'd encourage anyone with access to more time or more grad students to run a bigger, more rigorous version of the study, but until they do, I'm calling this vindication.

that said, there's still a lot more questions to answer. when I first started working on this video, my plan was to use the data I'd gathered to compare different kinds of loops and see if they behaved differently. are the destinations in fast loops used the same way as slower ones? are loops from the last couple decades more or less likely to be balanced? and I did do a lot of that analysis, but ultimately the answers were a little too complicated to get into here, so I decided to

put all that in the extended version on Patreon. with the way youtube's been headed recently, there's no way I could keep making these videos without the support of my patrons, so if you'd like to know more about all the little details I found, there's a link to that in the description.

and hey, thanks for watching. thanks to our featured patrons, Susan Jones, Jill Sundgaard, Howard Levine, Warren Huart, Damien Fuller-Sutherland, Neil Moore, Geoff, and Hibiya Mori! check out Patreon for a fuller outro, and as always, keep on rockin'.