homeDJing101.9 Lesson 2:

Loops, and loops, and loops

(and loops, and loops, and loops...)

http://www.citr.ca/index.php/programs/dj-training/
Revision 1. Written October, 2011 by Oker Chen.

Previously in DJing101.9, we learned how to mix two tracks together in a pre-arranged way, using set cue points. But you want to be more fluid in your mix, and give your musical cookies that little bit of milk to dip into – it makes the whole thing go down smoother.

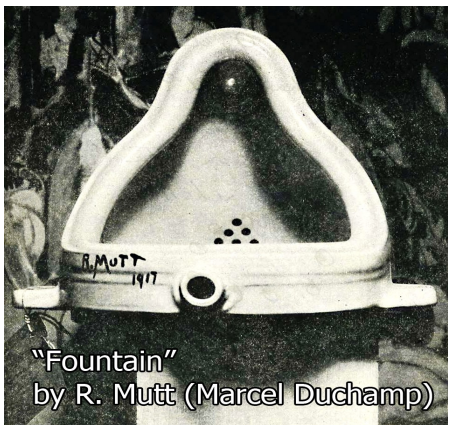
We stated that we're going to be focusing on a fixed tracklist set to minimize mixing mistakes. This is still valid. What loops provide for us are three main things:

1. **Error correction** – usually from mismatched beats
2. **Sampling** – looping a segment from one song
3. **Transitions** – extending an existing loop to 16 or 32 beats to dial down

And within these three uses of loops is what we're ultimately after: **creativity**. The homework of this lesson is extremely important. Do not skip this or you will end up stuck behind static mixes.

Making Room for Creativity

The conventional understanding of creativity is to come up with original content, especially in the context of breaking expected experiences of the medium in question. In the fine art world in 1917, Marcel Duchamp did exactly that when he submitted a urinal as a fine art sculpture to criticize the rigid structure of the art establishment in Europe. Critics, patrons, and curators were largely dismissive or downright hostile.



"Fountain"
by R. Mutt (Marcel Duchamp)

However, it began a series of events that led to the modernization of the art world, because the field of visual art had fallen under preconceived rules, defined by art authorities such as institutionalized galleries. A direct line can be drawn from the urinal, slyly titled *Fountain*, to the painted soup cans of Andy Warhol and today's abstraction in arts. Look at an electronic dance music album cover. That's Duchamp's legacy.

This development was mirrored in music – just as art underwent an industrial revolution, so too did songs, samples, and ultimately the performers themselves. This is very obvious today with large development teams under gigantic recording labels. You have teams dedicated to creating, licensing, and copying everything from drum loops to whole melodies. These are passed to the actual producers who arrange it together into a song. Then a singer/performer is found to record the actual track. At any point, like parts in an automobile, each person can be replaced by another person. It's an assembly line.

So what does that have to do with creativity? There are two structures at work here.

1. **Music structure** – the notes in the scale, the 4x4 time signature, the length of song, etc.
2. **Industry structure** – this is quite complex, from how (or if) music is sold, marketed, and packaged, and what falls under the different genres like "rock," "pop," or "Bollywood death metal."

Marcel Duchamp broke expectations within the **industry structure** but not the **art structure**. His piece still was a sculpture on a pedestal, and if you visit it today, you enjoy the same sensation of visiting a formal masterpiece. His creativity still accounted for the fact it was intended for public consumption.

That is how we want to treat creativity. Even if you're making a revolutionary music statement, you are intending it for public consumption.

In concrete terms, this means you want to stick with things like 4x4 time signatures, established music scales, harmonic tones, and keep rhythms consistent, even if you want to mix in the chorus of your Bollywood-death-metal into a Madonna track. Ultimately, DJing is a public performance, and the reality of paid gigs is that you're working as more of a person to engage audiences than as a curator of niche music, until you're famous enough to develop a following who will pay to listen to your style of sound.

The exception to this rule is experimental noise art, but that's usually purposely designed to agitate listeners. While trying to be creative, **you generally want to follow the structure of music, but not necessarily the structure of the industry.** Be daring in mixing in different styles, but keep counting those 16 beat melodic loops and audiences will join you on your sound journeys.

Loops let us do just that.

Making Loops

Making loops is easy. Let's open up Virtual DJ.

Download and extract the lesson 2 homework file, available from our website:
http://www.citr.ca/index.php/programs/dj-training/

Take a quick listen to the Maestro song, *Stick to Your Vision*. Note the funk guitars in the background that repeats for the whole song. The sample for that is from possibly one of the most incredible Canadian funk songs, The Guess Who's *These Eyes*. It's a beautiful song that's now best known for its appearance in the bromance scene of the film *Superbad*.

We are going to try to recreate the same loop. Load up The Guess Who's *These Eyes* on either deck. Notice that the deck area can be subdivided into several areas:

1. Track information - at the top
2. Track waveform – just under information
3. Deck controls – left side, play/pause buttons, the virtual turntable, etc
4. Effects & sampler – middle right, adds audio effects to the deck
5. Loop controls – bottom right, with numbers, a few buttons, and a dial

Making a Loop

Before we start, **if the lock shaped icon on the loop control area is yellow, click on it to turn it grey**.

This prevents the beginning of loops from being locked onto the beat guides that is set for the track. We never want to use the beat guides as anything more than just that, guides, because they tend to clip into vocal parts of the song when you're trying to grab an instrumental part, or vice versa.

On the loop controls, we have numbers that double each time, starting from 1 and ending at 32. These buttons represent the number of beats in a loop. However, don't use your mouse – save your mousing actions for the mixer. You want to use keyboard commands! The loop commands correspond to the 1 to 0 number keys of your keyboard (above the alphabet keys):

Number Key (on keyboard)	**Loop Effect**
1	Set 1 beat loop
2	Set 2 beat loop

3	No effect
4	Set 4 beat loop
5	Set 8 beat loop
6	Set 16 beat loop
7	Set 32 beat loop
8	Halve the loop length (while loop is set)
9	Double the loop length (while loop is set)
0	Restart the current or last formed loop

Setting a loop is as easy as pushing the corresponding key, whether the deck is playing or not. Pushing 1 will result in a deck with a one beat loop. You'll see two lines extend from the bottom to the top of the waveform, corresponding with the beginning and end lines, which we'll call our **in-line** and **out-line**. Upon reaching the out-line, the playing line will automatically go back to the in-line. This is true even if you drag or nudge the track forward.

However, the opposite is not true – if you rewind the deck, it'll ignore the in-line. This lets you set up a loop before you start playing the track. The loop will automatically trigger when it gets to where you set the out-line.

We're working on a non-fixed tempo, since the track is recorded from a live take. We are going to manually set the beginning and end lines of our loop. There really isn't anything to it – find the first beat (time 00:11.9), and push the **In** button to set the in-line. This will set where the loop goes to when it reaches an out-line.

When you get to the next beat 1 (time: 00:21.4), click the **Out** button to set the out-line. Now it will automatically jump to the in-line when you reach the out-line for a manually created loop.

Congratulations, you have set your loop! To summarize, the **1-7** keys allow you to set automatic loops, while the **In** and **Out** buttons let you set manual loops.

But wait! If you set the loop according to where the beat 1s are (corresponding to the above times indicated), you'll notice a huge problem: it catches the beginning of the vocals. It's quite common for vocal parts of songs to start on the 15th or 16th beat of the 16 beat melodic loop that we went over extensively in lesson 1. In this case, the vocals start on beat 16, which sounds terrible when it gets caught in the loop.

So we have to back up **both the in-line and out-lines by a beat**. Set your in-line at the first 16th beat (time: 00:11.0) and the out-line on the second 16th beat (time: 00:21.0). You'll also notice pushing the **In** button won't work. You first have to disable the current loop by pushing the **Out** button before you can replace the in-line.

There's a lot of zen to making loops. You need to sometimes just imagine what the sound will be in your head to properly figure out the right kind of loop. Variables such as length and where the loop begins will make a huge difference to the style of loop you end up with. This time, we created a 16 beat loop, but a 4 or 8 beat loop is sometimes the better option. If you're catching a build, a 2 beat loop is sometimes best. This will all come to you in time.

Changing loop length and juggling loops

Once you have your loop set, keys 8 and 9 will halve and double the length of your loop, respectively. There are very few times when you need to double the length of your loop, as long as you're using keys 1 to 7. Halving your loop is useful to create builds of tension, before a chorus or a drop, when the sound "explodes."

The 0 key is a favourite for playing around – it allows you to juggle the beat. It'll always reform the last set loop and start playing from the in-line. Try spamming it.

The last thing is the **dial on the loop control** – this nudges the loop position let and right, like the arrow keys on the song, to fix slight timing issues.

Three Loop Strategies

As we covered in the beginning, loops allow us three major things: fix problems, sample segments, and transition smoothly. These will be shown in class and are much easier to understand intuitively.

1) Error Correction

We learned in lesson 1, if our mix of two songs are off by a beat or less, we can use the **left and right arrow** keys. But what if we miscounted and ended up 4 beats apart? This is where the brainy part of DJing begins.

Let's say **deck A is on beat 5** when **deck B is on beat 1.**

You'll see this is an extremely common error, as many people intuitively count up to 4 and some tracks will throw in a 4 beat interlude or bridge that completely throws off the 16 beat count we are used to.

Our goal is to have both decks end up back on the same beat.

<u>If we know how many beats we are off by</u>

In this scenario, we want deck A to go forward by 12 beats (both decks at beat 1) or deck B to go forward by 4 beats (both decks at beat 5). However, jumping forward is difficult with the tools we currently have. What about jumping backwards?

We'd want deck A to go backwards by 4 beats (both decks at beat 1) or deck B to go backwards by 12 beats (both decks at beat 5). Obviously it's easier to slow deck A down by 4 beats, as there's a loop to do just that.

1. Select deck A (the faster deck)
2. Push **4** to set a 4 beat loop.
3. Let the beat play once to delay it by 4 beats.
4. Once the loop starts again, immediately push **4** again to break the loop.

Now deck A has effectively been slowed down by 4 beats and both decks are in sync! Easy, peazy, lemon-squeezey, right?

No, not at all. It requires a long time to be able to know which deck is off and by how much in a live environment. In fact, this is one of the hardest part of DJing. It's far better to not make the mistake by keeping our 16 beat count and analyzing our tracks ahead of time for odd timings (anything that isn't a 16 beat melodic loop, like a 4 or 8 beat interlude).

<u>If we don't know how many beats we are off by</u>

It gets a lot uglier: imagine if you're off by 5 beats instead of 4? You'd have to set a 4 beat loop, break the loop, set a 1 beat loop, and break the loop. And you need to know which deck is faster. You're better off assuming you have no idea what's happening. These next steps are difficult, but if you can master it, you will have the fundamentals of mixing understood.

1. **Take a deep breath and relax** – you're performing live and you've just made a glaring mistake in front of all these beautiful people who're now turning their heads at you. Your body is against you – the release of adrenaline constricts your blood vessels and your extremities get sweaty and you lose fine motor control of your hands. You can't think because your heart is racing and you're panicking.

Take the next two seconds to meditate down your heart rate, which obviously is harder than it sounds. Focus on your big breath and relax. That whole zen thing? This is it.

2. **Feel for a beat 1 on either deck** – let's say the synths on deck B are easier to hear. Listen for beats 9 to 16 so you can catch the next beat 1. Ignore the other deck. Closing your eyes to reduce sensory loads helps greatly for you to feel the music.
3. **Set a loop on beat 1** – if you activate a loop on beat 1, the tough part is now over. Frankly, it doesn't matter what the loop length is, but 8 beats is easiest to work with, so push 5 (to set the 8 beat loop) when you hit beat 1.
4. **Push 0 on every beat** – each time you do this, it'll reset the loop. This is called beat juggling; it's similar to manually looping the song.
5. **Feel for beat 1 on the unlooped deck** – just count on the other deck like nothing is wrong. Keep pushing 0 on every beat (or every second or fourth beat if you're feeling comfortable).
6. **Break the loop on beat 1 –** when beat 1 on the unlooped deck plays, push 0 one final time and then disable your loop by pushing the corresponding number key again (5 to break an 8 beat loop).

Congratulations, you just released both decks on beat 1! They're back in sync! Practice this because if you can do this on the fly, you'll never feel lost while mixing.

2) Sampling

This one's pretty easy. Say you like the synths from Justice's track *D.A.N.C.E. (MSTRKRFT remix)* from lesson 1's homework file. Say you like the vocal parts of Lady Gaga's *Born This Way* track. Open both up, jump to where only the instrumentals are playing in *D.A.N.C.E.*, and set a 16 beat loop with the 6 key. On the next beat 1, play *Born This Way* and you're sampling MSTRKRFT style synths in a Lady Gaga track. Notice we're still following 16 beat melodic loop conventions, because that sounds good to audiences, and we've just given *Born This Way* an electro edge.

This sometimes isn't so easy. We already know many tracks start vocals on beat 15 and some elements don't begin on a beat 1 either. Remember how 16 beat melodic loops come in in-going and out-going pairs? If the loop is weird, **try making a 16 beat loop (6 key) on beat 9**. It'll loop beats 9 to 16 of the ingoing 16 (where nothing new comes in), and then beats 1 to 8 of the outgoing 16.

Sometimes, you might just want a 4 beat loop. Listen to N.E.R.D.'s *Hot'n'Fun (Boyz Noise remix)* again to hear an excellent use of the 4 beat loop.

The last and very important thing about Virtual DJ – the built-in sampler (right beside Effects) is an automated process. We at DJing101.9 **strongly urge you to not use it**. The sampler will become de-synchronized as your beat grid strays from the actual beats, which inevitably happens. If you want to sample, sample by loops, which can be adjusted with the arrow keys.

3) Transitions

Remember in homework lesson 1, when we transitioned from *D.A.N.C.E.* to *Born This Way,* we had to mark where the vocals began and ended with cues?

We could just set a 16 beat loop in the instrumental section and never have worried about it, transitioning when we wanted to. Or we could have **never** transitioned. We would have let both *D.A.N.C.E.* and *Born This Way* play at the same time by keeping *D.A.N.C.E.* on a loop. Then we can break the loop at the bridge of *Born This Way* to play the rest of *D.A.N.C.E.*.

Hey, that's actually a great idea...

Homework

Open up both Justice and Lady Gaga songs from lesson 1's homework file.

1. Try setting a 16 beat loop on the instrumental part of Justice and a 4 beat loop on the “don't be a drag, just be a queen” bridge of Lady Gaga's single.
2. Now break the 16 beat loop of Justice and let both tracks play all the way (or transition all the way to Justice).
3. Then, using a loop (length is up to you!), transition from Justice to N.E.R.D.
4. Then set an 8 beat loop on N.E.R.D. and transition to Lady Gaga again.

Are you seeing something special? You're dynamically mixing songs. You can see that those cue points are still extremely important, but you're not being limited to mixing by them anymore.

Loops are incredible.

Try purposely miscounting by 3 beats and fixing that error. If you can do that, try miscounting by 5 beats. If you can fix that, you have accomplished one of the most difficult essentials of DJing.