FURTHERING THE DRUM'N'BASS RACE:

A Treatise on Loop Development

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All statements are IMHO.

Forward:

So, you'd like to make some beats? Want them to sound like 'real' beats, not the lame beats you've been making? Maybe you've read some tips in 'Keyboard' or 'Future Music' and are wondering why they haven't helped. At all. Well, we've all been there. But now, I'm going to tell you how beats are really made. This is the stuff those posers at the magazines don't even know, and the pros don't want you to. But I say forget secrets: let the music stand on its own merit, not on some simple tricks!

In this article I will cover two ways of making drum loops, with extra information for jungle programming. But that is information all drum programmers need as well, as it is vital to how your new beats will sound and feel.

Before You Begin:

If you are no good at music-making at all, or are completely new to this, this article won't make you the Chemical Brothers (well, a Chemical Brother... er, whatever). But if you're OK at making beats, here are some basic and not-so-basic tips for you try, or at least be familiar with:

1. When you sample off a record, or even any other source, you may want to add to the sound without changing it a lot. To do this, mix it in with another drum sound. It is very common to make a snare by combining the attack of one and the tail of another.   An easy way of doing this quickly is to just layer them and then turn up the attack time on the one you only want the tail of (make the envelope smooth when you do this!). This is especially important when layering kicks in with a sampled loop: they are often impossible to match up perfectly (as you have probably found out yourself). Lengthening the attack of one so it blends in after the attack of the other will thicken the sound without flamming the transients.

Alternatively, do it in SoundForge, or your sampler if it supports cut and paste well.

2. A quick trick to changing the feel of a loop is to cut up a breakbeat in WaveSurgeon (www.wavesurgeon.com). But cut it into eight even sections. Then send each section to one key on your sampler. Eight 8th notes, with a bit of rhythmic content. Now, you can program the loop with a different feel by changing the order of the notes. Try it. (We'll revisit this later).

The other thing you can do that is really cool is if you change the tempo down a few bpm it will open up the pocket for any 16th notes that fall in the second half of each 8th-note 'loop bit'. Don't do this until you are finished working on your loop, though, because it introduces timing errors that sound human but are hard to match beats up to later. Do it last, and don't do it too much. 2-4 bpm is enough! Any more may sound good at first but when you try and add instruments and stuff it will sound too sloppy. Do it just enough so it's barely noticeable, if at all. Subtlety is good.

3. Vary the level of your hi hats. Forget what they always say in Keyboard; you can hard-quantize them if you want. I do. But by varying the velocity of the hats that you add to the loop, it will definitely sound better. Be careful with your hats: it's a really sharp sound whose whole purpose is to cut through the mix. Just turn a couple down, or make them 'cycle' between louder and softer. By 'cycle' I mean transition them smoothly, like an LFO or a filter sweep.

4. Try not to overwrite your work. Often, you will be trying different tricks, layering things, tempo changes, etc. Trying to go back and undo a snare that was too loud is no fun, but you can go into SoundForge and do it (sort of) if you want to.   That's an inconvenience. Far worse is when you realize that your loop is out of time, or has a bit of bad timing (not quite the same thing). Luckily, you can always go into WaveSurgeon and re-cut your loop if you have too. What this won't fix is that one hi-hat hit that is just *slightly* ahead of the beat. Actually, it may be possible, but my point is you want to avoid having to do it. Stuff like this happens all the time thanks to the 'tightness' of MIDI, samples of human players, and transferring sounds to and from various media: it's a disaster waiting to happen if you don't stay on top of it *all the time*. If you don't, you won't be able to layer drums at all. Well, you can, but they won't sound tight.

This also applies to the other meaning of 'overwrite'. It's a fine line that seperates a cool loop from a messy one. Sometimes eliminating something will make everything else sound better. For example, if you are layering a loop and some individual drum hits, turn down overly redundant parts: hi-hats and such. If you're layering to make the kick louder or better, turn it up and not everything else.

5. Do <u>not</u> try that 'layer a beat with a beat at half-speed, one octave down' trick those losers at Keyboard tried to pass off as a 'breakbeat breakthrough'. I almost died when I read that! I did that trick when I was 13, and it was no good back then, either. Don't even bother; it <u>always</u> sounds stupid.

6. Finally, there are exceptions to every rule- I give *lots* of opinions in this article, but everyone has different tastes. Do what you like.

<u>A Word About Vinyl</u>:

Not sure where to find some good beats to sample? Well, there's always 'Vinylistics', or maybe 'Jungle Warfare', but don't limit yourself to sample CDs. They're really not as good as you think they're going to be when you see them advertised. They always fall short of your hopes, and even reasonable expectations of quality.

So where to look? Get some old records, just cheap ones. Even 'Thriller' has a beat you can lift (the intro to 'Billie Jean'). I know you've got a copy of that somewhere. Also, don't overlook drum fills. You can snip out the drum hits and make a kit out of that. I got a great one off of a drum fill on PFM's 'Photos Of Ghosts', if you want to try and find it. Most people just look for loopable bits, but all you really need is a few good hits. Long drum fills are perfect for that, because you get more variety than you would from just a loop: it's nice to be able to pick and choose. I have found old progressive rock records a good source for such fills. Not 'Yes', though. Dig deeper. Remember, it's the character of the sound that matters most, and you can only get that from records that are at *least* 20 years old.

Also, old soul or raggae records are a good source of drum sounds. Just the other day, I heard the best snare of my entire life on some dubby raggae track on the radio. Too bad I didn't catch the name of the tune! Let that be a lesson to you: keep a blank tape around at all times just for such situations. I do...now.

Another thing about records is that they have far more highs than any sample CD. 'Vinylistics', for example, seems to have processed everything through a lowpass to get rid of noise. Probably 8-bit grunge as opposed to real vinyl surface noise, or anti-alising from many generations of samplers, whatever. At any rate, when you sample off a record, you have the choice as to whether or not you want to retain that character.

Finally, you should sample in stereo. I can't stress enough how important this is for drums. If you don't believe me, test it for yourself: sample a loop off of a record, and compare mono and stereo versions of it. The stereo one sounds so much better... don't waste you time trying to tell yourself that it sounds 'good enough' in mono or attempting to fake it with a stereo delay. Drum sounds are so short they take hardly any RAM at all; if drums are important to you (and if they aren't then why on earth are you reading this?!!) then please do yourself a favour and sample in stereo. 'Vinylistics' and the others of its ilk, on the other hand, are almost always in mono. What a waste!

Drum'n'Bass Programming:

The key (besides the crazy kick/snare rthythms) is the 'ghost' notes. These are quieter notes that fall on the second half of the 8th-note 'loop bits' discussed earlier. If you want to hear them, try slowing down any decent breakbeat. It's not obvious, in fact sometimes it's impossible to figure out exactly what drum instrument it is! It's a quiet snare, often preceeded by a louder, harsher hi-hat, and sometimes a kick. Anyway, the best way to see this for yourself is to first do the 're-programming 8th-notes' loop trick, and then try it with a kit you've made yourself.

To make a ghost note, you can use a snare sample from your loop. Make it quiet, and make a few changes to it, such as a small pitch difference (only a few cents) and maybe turn the lowpass filter on it down a bit (not much, though). How good this will sound depends on a lot of things. If you have 'made' a snare by combining two or more different snares, try using the original snare, the one that came with the loop. It will be less distinctive, and blend in better. It will also help you show off your new snare by making it stand out a bit more. Also, making two or more different ghost notes for your kit is really a good idea. You may not use them both, but usually you end up using the one you thought you wouldn't! And, of course, vary the volume/velocity appropriately when sequencing.

The 'ghost' snare should be tighter than the regular snare. Tighten up the amplitude envelope so that it has less decay.   Sometimes cutting off part of the attack works. Use zero-crossings for that, though. If there isn't a good enough zero then just do a really quick fade-out in Sound Forge to make one. Finally, if you have several snares from the same loop, one is bound to sound tighter than the others. Use it.

Once you've gotten the hang of ghost notes, you will probably put too many in just because you can. And they will probably be louder than they need to be, too. Go back and fix this while you're still programming the loop. Sometimes they will need to be louder, other times setting the velocity to '1' in your sequencer will not be quiet enough, and you'll need to turn them down even more at your sampler. Experiment to get what you need.

You should also make some variance in your snare sound. The best way to do this is to really sample some drums that are played live; they will inherently have just-slightly-different sounds. If not, fine-tune pitch changes are OK. But remember they're never as good as actually having a few different snares. If you think your snares sound too different, layering the same snare 'tail' onto both the different attacks should do the trick.

Don't forget about the hi-hat on the beat before the 'ghost', either- it's usually vital to the feel of your loop. Work with it to make it louder but not obvious. This can be tricky- filters, EQ, effects, whatever it needs. Remember also that it isn't always needed. But if it is, keep playing with it until it sounds good. You really won't know until you've added all your other drum and percussion parts, so be patient. Using a different (but similar) hi hat helps a lot.

You should also have a few different kick drums. They are important, because you can use ghost kicks as well! The trick is to make them sound similar enough so that they don't stand out too much. Filter and EQ settings are crucial. But don't over-EQ your beats, and especially not your kicks, as this can cause all kinds of the headaches later on: mastering bass is difficult and frustrating. Use caution with the low end. Also, ghost kicks can be moved a bit before the beat to add some feel. Don't be afraid to do this; just don't overdo it.

Method 1:

This one isn't that secret but no one seems to do it, so here goes.   Take an existing beat and match your new drums to it. It sounds simple, but to do it right you have to be very patient. Often, you will hear how bad your individual drum sounds are when you do this and then listen to just your loop. Actually, even if you listen to your new drums and the loop together, you will probably hear how poorly they blend in together. This is usually a sign that your sounds just aren't up to snuff. But if you have good sounds and good programming skills, you should be able to turn off the loop and have only your

drums playing and have it sound <u>better</u> than the loop. This won't happen most of the time, but with experience it will happen more often, and you will be able to recognize what's missing right away (as opposed to taking four hours to realize your snare is no good).

Of course, you can always leave that sampled loop in with your own. That's OK, too. But I prefer to make lots of changes to the original beat's feel. Of course, with Wavesurgeon at the ready, that's always a possibility... you can cut and cut and edit and loop and paste and cut...

One last thing: if you're having trouble matching hits up, it could be because the quantization is all wrong for the 'human'-ness of the loop you sampled. This is true also for loops that have been cut up into 8ths because they still have rhythmic content. Sometimes, it is necessary to quantize a ghost note to a 32nd-note-triplet instead of just a 32nd or 16th note. This can also be done to the loops you've made yourself. At 170 bpm it's not exactly obvious, but it can really improve the feel, sometimes better than any other technique!

<u>Method 2</u>:

This one should be obvious by now, but I'll write it out anyway. Take a kit that you made from a breakbeat, and have layered all your drum sounds in it and just generally sounds great. Now that you understand ghost notes and such, program in a one-bar beat. If it's good, keep it, and program the whole tune. If you can't get a decent beat going, just program in a lame jungle beat with ghosts and everything and then cut up your whole loop with WaveSurgeon. Reprogramming your loop that way (with the eight sections) should do the trick. Be adventurous.

Then, you can always sample another kit, layer, take away, change. If you take the time and do some good programming, you can do wicked things that no one else does. Most people don't have the patience or the skill to make a good loop. It's up to you to develop both.

<u>Conclusion</u>:

Well, that's about it. I hope you can use this to make good beats, because it's important for the music to progress. If everyone just samples the same beat all the time, I mean, what's the point? I hate 'jungle night' at clubs because I have to listen to the same loop I have at home (on about three different sample CDs) all night long. So take these tricks and then add a few of your own. And become a wicked drum programmer. This article is meant to help you learn to learn, and hopefully it will lead you to brand new ways of beat-making. If all you do is follow this 'recipe', then your beats will sound just like mine. Don't do that. Make them *better*.

Good Luck!

If you feel I have left out something important, or want to make a suggestion, feel free to send that along. Contributors will be credited accordingly.

Are you in a hip-hop band? I am always interested in doing remixes of hip-hop. Also, any interesting band of any style.

I will also do mastering, but you should just do it yourself! If you don't have a suitable computer, or you really can't do it, I will sympathize and do any worthy project for cheap. No 'new country' please.

If this article has helped you please let me know. If you are extra grateful, feel free to buy a copy of my CD ($10 inc. shipping) - e-mail for details.

This article is dedicated to <u>all</u> the members of the ASR-X list. NOT dedicated to Ensoniq - "what bugs?" "the sequencer works fine" "let me ask our ASR-X 'expert'" "it's the ultimate groovestation" "the EPROMS should be there any day now" "here, have some more poorly executed 'features' in the next OS... no they're not the bug fixes we should have done before we released the product... why do you ask?" "what's 'e-mail'?" "what's 'tech support'?" "what's 'customer service'?"

Hey, how about "what's a 'customer'?". I hope Claude *does* sue you. Jerks.