A Beginner's Guide to Sampling

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While many musicians identify **sampling** (digital snapshots of songs, speeches, and other audio) and **looping** (samples that have been prepared to play over and over again) with Hip-Hop, R&B, or techno, the truth is that the sampling process has been around for decades. After the invention of the tape recorder in the late 1930s, avant-garde composers like Karlheinz Stockhausen and Edgar Varèse began using tape loops to patch together fragments of pre-recorded sounds in an early form of electronic music called *Musique Concrète*.

PRE-FAB FOUR

In the 1960s, The Beatles introduced sampling to the pop music world through their use of the **Mellotron**, which is an analog sampler based on an earlier invention, the **Chamberlin**. The Mellotron plays prerecorded tape samples of real musical instruments through an amplified speaker. The classic, and very experimental, Beatle single *Strawberry Fields Forever* begins with notes played on the Mellotron.

It wasn't until the mid 1980s that sampling really became part of mainstream music making. With the invention of digital samplers, the sampling process became an integral part of the production of a wide array of pop music, including at the time the music of Depeche Mode, Erasure, Run-DMC and MC Hammer.

Until recently, samplers were available only as expensive hardware units with complex operating systems and limited capabilities. To get into sampling required a substantial investment both in terms of time and money. But over the past few years, a whole crop of inexpensive software tools have been introduced that open the doors up for anyone with a desktop computer system to explore the art of sampling.

SAMPLE THIS!

Digital samplers are by far the most convenient and versatile option for anyone interested in sampling. Digital samplers allow musicians to easily record and manipulate sounds in unique ways, like playing sounds backward; layering different sounds on top of each other, cutting sounds up and splicing them back together in a new order, and changing the pitch, sustain, attack and release of these sounds. "Digital samplers open up a whole different way of approaching sound," says David Doms, professor of the online music production course *Sampling and Audio Production* at Berklee College of Music's online extension school. "You're able to capture everyday occurrences, like wine glasses clinking together in the kitchen or steam coming out of the kettle, and transpose, reverse or manipulate them. Digital samplers provide you with the freedom to explore and play musical ideas based on sounds you've actually created."

MIDI WHAT?

Digital samplers work hand in hand with MIDI (**M**usical **I**nstrument **D**igital **I**nterface), which is a communications protocol that allows your sampler and any other electronic instruments (like a drum machine or a sequencer) to "talk" to a computer.

"A sampler is not only a digital recorder of sound, but also a performance instrument," says Doms. "MIDI allows you to hook up a keyboard, which functions as a triggering device for your sampler. Working with a keyboard means you can manipulate your sampled sounds to achieve some really cool effects like pitch shifting, filtering and envelope shaping, all in real time."

LOOP ON AND ON

Once you've got the basic hardware together (a decent Mac or PC, a good microphone, and a MIDI controller), the easiest way to get started is to purchase some host software like Pro Tools, Logic Pro, Reason, Cubase, or Sonar, which either include built in samplers, or allows you to work with inexpensive plug-ins. Apple's GarageBand software is a good place for beginners to sketch out ideas and experiment with loops and built in virtual instruments, but lacks the capabilities of some of the more powerful music software applications.

"In my online course we use Propellerheads' Reason software because it comes with a solid set of different sampling modules, as well as a built in sequencer, notes Doms. "For someone just starting off, I definitely recommend using software samplers as opposed to the hardware option. With sampling software you have a larger screen to work with, which makes it much easier to learn. And another big plus is the price – software synths are a fraction of the cost of the real thing."

BLANK SLATE

Sampling does more than open up the door to the creation of your own unique sounds. There are extensive pre-made sound libraries that you can use to add convincing orchestral sounds, like a brass section, into your compositions. Ultimately, a sampler is a blank slate, which you can use to take your music in any direction you like, from John Cage-esque esoteric sound collages, to composing electronica, to adding and sampling contemporary popular music in the vein or Radiohead or Beck.

Many people find David Doms' instructor-led online course at Berklee's extension school, Berkleemusic.com, to be really helpful in developing their sampling skills. The course helps students create fully functional sampler programs with their own source material, as well as prepare an audio project based entirely on the use of sampling and samplers.

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