1. Introduction

The goals of this essay are as follows:

- Explain briefly the history of looping technology's development.

- Discuss the technical possibilities of a number of current devices and how these devices are used by a selection of musicians.

- Find/compile a universal definition for the term 'Live Looping'.

- Look at the application of looping technology in recording and performance and discuss how these fit within the term Live Looping

I hope to achieve these goals by undertaking largely online research and by communicating directly with people involved in Live Looping. As a relatively new concept, Live Looping has yet to have many substantial texts written directly relating to the research I'm undertaking.

The term looping technology refers to devices that are used to record or sample live audio and play it back repeatedly, usually controlled with the use of foot pedals. Live Looping is a relatively new term that is used to describe the use of looping technology in realtime performance. The term is also used within the "International Live Looping Movement" (Walker, R. 2005) to describe what has been considered to be a new genre of music born out of this movement. Throughout this essay I will use the term Live Looping to refer to the use of looping technology in realtime performance (not limited to public performance) rather than the genre or movement associated with it. The terms Live Looper and Looper can be applied to all musicians who use looping technology in their work but this tends to lean the focus toward the technology rather than the music, which many

musicians disagree with so I will avoid these terms unless they are specifically used by any musician in question. Looping Music, Loop Based Music and Loop Music are terms sometimes used to describe any type of music incorporating looping technology but calling all music that utilises looping technology by these terms would be inaccurate as looping technology is often used as a tool to aid the performance and production of music rather than acting as the building blocks of the music itself.

Looping technology has applications not only within live performance but in composition, practice, improvisation and teaching. The core element of looping is the repetition of audio. In Live Looping a loop is recorded in realtime to create a repetition of audio. This process often happens many times over creating a collage of recorded audio and loops that are often altered, reversed, cut and otherwise treated. Andy Butler writes on his personal website:

> *"LiveLooping music is a way of extending the musical possibilities of instruments without resorting to the use of pre-recorded material. Sounds can be layered, altered, mixed and edited on the fly as the music is performed."*

I. Brief History

The early loop was a physical loop of magnetic tape[1] that passed continuously over the play/record head of a tape player, explored by Pierre Shaffer and Pierre Henry in the 1950s. The 1960s San Francisco Tape Music Center spawned the introduction of tape loops into mainstream compositions and live performances by composers such as Terry Riley, Pauline Oliveros, Steve Reich, Morton Subotnick, Richard Maxfield, Ramon Sender

---

[1] Vinyl was also used with a single linked groove that would play continuously but was far less versatile and wax was also used before vinyl.

and La Monte Young, their music largely falling under the bracket of minimalism, a term born out of the music of many of these composers.[2] The most influential composers and innovators using looping technology in the 70s were Brian Eno and Robert Fripp. Fripp has been hugely influential to the development of looping technology largely with his Frippertronics system developed out of Eno's tape delay system (itself a development of Terry Riley's system) and through working with a large list of other hugely influential artists over the last two decades. The 80s saw Fripp develop his solo work even further into "Soundscapes" while other artists of many different styles contributed to the development of Live Looping.

Recently there has been a rise in the use of looping technology, largely through the creation of a number of online communities (LoopersDelight.com, Ableton.com, Cycling74.com, LiveLooping.org and Looping Music Boards). A number of currently active influential musicians utilising Live Looping, among many, include Andy Butler, Andre LaFosse, Rick Walker, David Torn, Kid Beyond, Amy X Neuburg, Per Boysen, Steve Lawson and Zoe Keating. The development of looping technology over the past two decades has been the main contributing factor in the rise of its popularity as hardware and software has become more powerful and affordable.

The most notable and affordable early digital loop processor was the Lexicon PCM42, designed by Gary Hall in the 1980s. This was primarily a digital delay unit which was adapted to achieve loops of up to 60 seconds. Lexicon later went on to release the JamMan in the 1990s[3], a unit still favoured by many current live loopers (not to be

---

[2] Another term, Systems Music, was used by Brian Eno to categorise a particular style of music often that utilised looping, including pieces such as Reich's 'It's Gonna Rain'.

[3] *"Like most great "inventions", the JamMan was really the work of a team: Joe Waltz, Steve DeFuria, Wayne Hall, Will Eggleston, me (Bob Sellon) and many others who shaped the concept into the JamMan."* http://www.stecrecords.com/gear/jamman/ Bob Sellon, 2005

confused with the DigiTech JamMan released in 2005). Arguably the most important development in the 1990s was the Paradis Loop-Delay by Matthias Grob, which later became the Gibson Echoplex Digital Pro, largely regarded as one of the most advanced hardware looping device around even today. 2006 saw the release of the LP1 by Looperlative. Created by Robert Amstadt, this device offers 8 stereo loop tracks totalling four minutes thirty seconds of recorded audio space, a significant technological development in response to the demand for more layers in looping. As computers have become more powerful and have started to develop their place in live performance, looping technology has found its way into software form. Ableton Live, Mobius and SooperLooper are the front runners in Live Looping software, while programming software packages such as Cycling 74's MAX/MSP and Steim's LiSa X offer unprecedented versatility not just within Live Looping but in all areas of sound manipulation and recording. Kaiser Looper by Jeff Kaiser is a relatively simple looping 'patch' written in MAX/MSP.