

GEORGIA ANN MEEK

UNIVERSITY OF WALES TRINITY ST DAVIDS

TILEYARD EDUCATION

Semester 2 (Development) Module Code: ADAD7005_LON

Element 2b

Discipline Tutor: Ciarán Robinson

WORD COUNT: 4,000 (+/- 10%)

When first presented with the task of creating a unique instrument, I asked myself, what is my workstation missing? What would I buy tomorrow that would immediately inspire a new song or production with its sound, and what would bring new life to my existing works. As a vocalist, I have spent ten years cycle recording bizarre noises using my voice to add texture and variation in elements of my production, particularly in the earlier days when I was still getting to grips with sound manipulation and processing. In more recent years, I have been asked by peers to curate samples of my voice, each time tailoring what I'm doing specifically to a track or genre. When I considered the time and resources spent on achieving that, paired with the additional collective time I have spent over the years creating and recreating vocal effects for my own projects, I was struck with the fairly obvious conclusion that the instrument waiting to be made was one that could take on all that work and save hours of time. An instrument to bank all of those organic droplets of ear candy and make them easy to lay down into a track without having to get into a vocal booth, or set up to record for the sake of making one 'ah' sound, just to pack everything down again. I have many vocal samplers in my library, but find each of them limited to a one dimensional concept; a set of vocal chops, long legato choral notes, a pitched down run on twenty five different notes. Why, when we rarely use these elements more than a handful of times in a track should we be running whole processing units in devotion to them? I imagined something that could be a drum kit, a bass, an arp and a lead, with some generous ear candy in the gaps. If you can lay out a whole drum kit in one sampler, then you should do the same with organic sound. Although it's not impossible to find more varied sample combinations on the market, there always seem to be issues in their development which make them difficult to transfuse, whether it be stylistic bias, lack of flexibility or simply oversaturation.

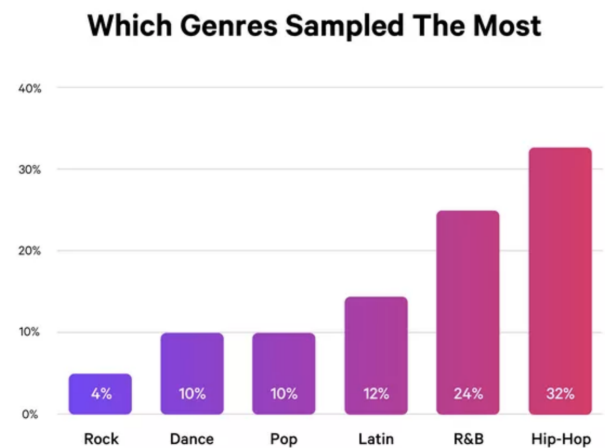
In a recent studying on the trends and developments of sampling by RouteNote online, it is stated that *"Sampling is thriving in the modern market and is more common than ever before"*⁽¹⁾ and so I knew my first task in approach would be to gather market research,

looking at various product popularity and trends, in order to fully analyse and address a gap I needed to fill. According to an accompanying survey (see *right*), the sample market has historically been flooded with HipHop and R&B genre-based sounds.

Pioneers “like Adam Horowitz from the *Beastie Boys*, were not only rapping for the band but was also generating most of their

beats using the *EMU Sp1200*.”⁽²⁾ Due to its origins, sampling is still weighted in rhythmic sounds and phrases/loops, with demand from producers seeking quick and impactful products to create beats and percussion.

I conducted current market research of my own by combing the charts and multiple popular online streaming services, following which, I cross referenced titles with articles and interviews to learn more about how samples are being used today. One record that stood out to me was ‘*Black Skinhead*’ by *Kanye West*’⁽³⁾. Post intro, the rhythm section is composed of samples, although not from a drum kit. West uses obscure breaths, vocals sounds and claps/body percussion to create a modern, polished sound while retaining an organic sound. I was surprised to learn that production on the record was overseen by the recently disbanded duo Daft Punk, as they are known for heavily processed, electronically generated sound. Commonly used sample libraries such as Splice and Loopcloud present users with over half a million royalty free samples, but I found that my searches were less successful when I looked for sounds of this nature. It seems there is an abundance of drum sounds, as well as vocal phrases, however, more obscure percussive vocal sounds were much rarer. I knew I had found a market gap, particularly in my own lane of alt-pop. Despite there being a lack-of obscure vocal sounds on the market, they are not completely unattainable, as with almost anything today online, so my next mission was to establish how I would develop my concept to provide an edge that allowed it to stand apart from the crowd.



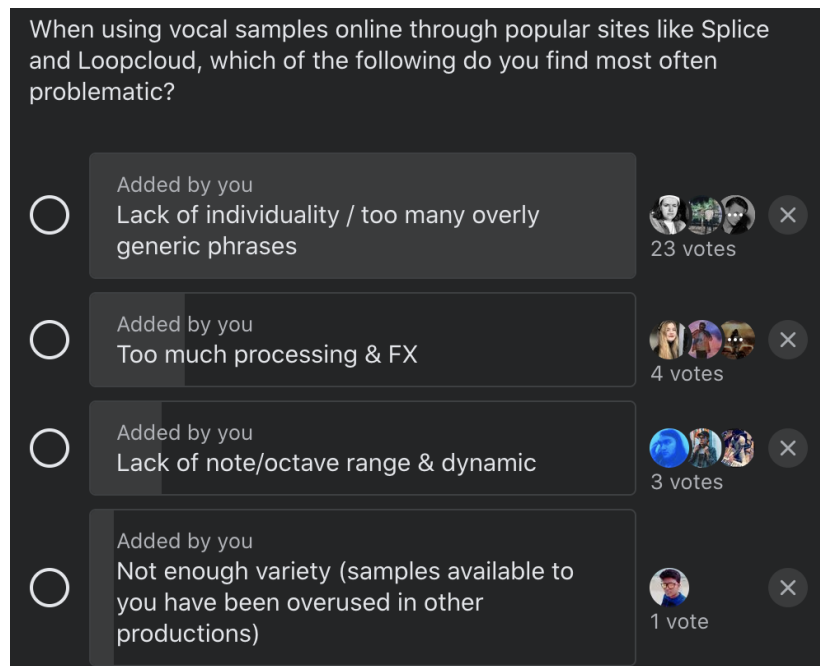
I conducted a survey among production students at Tileyard Education, where creators were asked various questions about where they struggle with vocal samples, what they feel the setbacks are, and what deters them from use. Some examples of feedback were as follows;

“Over processed vocals really limit what you can do with them creatively, making a lot of sound design difficult or impossible, which is a shame if the vocal takes are really well done pre-processing.”

“I’m finding more and more vocal samples to be overcompressed, leading to a serious lack of dynamics in pop records. For me, it removes any human feel that was in the original sound.”

“Vocal samples often come with effects already applied making them almost unusable to me. You have to spend a lot of time treating them if they aren’t already perfect for the track. They can suck the creativity out of the workflow, whereas a dry sample has a lot more room to be manipulated and crafted into your own style.”

I also conducted a poll within an online forum of over twenty seven thousand pop music producers in which I posed the question - “When using vocal samples online through popular sites like Splice and Loopcloud, which of the following do you find most problematic?”. These results were fundamental in my decision making when it came to



the sample phrasing. I knew following this that my instrument should include any lyrical factors, as the highest voted problem was that the market is oversaturated with generic phrases. It was interesting to connect with people in the discussion thread below and bounce ideas off of different people from around the world. It also reinforced the feedback from the Tileyard survey, in which almost every person showed frustration around bias processing within vocal sample packs and instruments.

From my research, a market gap had presented itself, indicating a potential unique selling point for my sample instrument. Once I had this information, my approach was simple. I spent a further week practicing vocal replications of obscure rhythmic sounds and some backbone sounds like the sub and kick, snare and hi hat. FKA Twigs, Kanye West, Tove Lo and Grimes were just a handful of artists included in my sonic references for creating the samples themselves.

I recorded using an Aston Spirit Microphone in a small soundproof booth to prevent any bias room sound later down the line. I created thirteen audio tracks altogether, with some additional pitch transformations in mind to result in an eventual 25 piece instrument, with 12 additional triggers mapped to melodic developments of a route.

I designed it to work as a variable sample instrument easily translated to a sample 'pack' for use in different DAW's and software. In the circumstance of using a standard midi keyboard as the controller, Lungs default settings are set to C1 as the kick sound and the first playable sound. The following eleven keys in the first 12 note range are made up of a collection of vocal recordings, altered to mimic the effect of a standard drum sampler, whilst retaining their organic sound.

The kick attached to C1 is a quick, sharp release of air between pursed lips, layered with a gottled 'uh'. I found it tricky to achieve the punch required from a bass drum using either

method alone, so I combined them and used a small amount of subtractive EQ, with a slightly slower attack on the punch, and a tighter subtract on the 'uh', up to 100hz. In an article exploring this layering technique, Izotope mentions that *"A common example (is a) kick drum that has nice low and mid-frequency content, but is missing some high-frequency bite or click. In this case, we can layer a more clicky kick drum to compensate for what the first sample is lacking. With some blending, we can create the perfect kick drum that we're looking for."*⁽⁴⁾

I then used some very light compression and some mid-tone distortion to add power, being mindful to my research and avoiding any bias processing.

E1 triggers a 'snare' type vocal sound which has been recorded and processed with a similar nature, as with most of the other triggers in the first octave.

The most edited samples fall on D1, which triggers a pitched down vocal note, imitating a sub kick, E#1 - a shout on the word 'yeah' with over emphasised distortion, and the heavily autotuned 'uh' on G1, which has been layered with a digitally manufactured harmonic note. All sounds have been presented with only subtractive EQ, to enable free reign on user editing.

The second octave of triggers, commencing at C2, features a full melodic scale on the phrase 'oh'. Similarly to the percussive half of the instrument, the melodic half has been left with room for broad tailoring to the individual demands of a record. I used subtractive EQ and soft compression to clean up the route sample and made sure to leave a generous tail to allow for soundscaping.

The glottal onset and breath release of the phrase worked well with almost every reverb test I conducted, retaining natural sound in a huge variety of room shapes and sizes, as well as attack variables. This is a process I also applied when addressing the functionality between the triggers and playback, working on notes I collected from Sound On Sound's article series, *'The Lost Art Of Sampling'*; *"the attack of the volume envelope applied to the sound will lengthen as trigger notes are played more softly. In other words, the sample will fade in more slowly the softer you play."*⁽⁵⁾

Finding a good balance between processing and organic sound was potentially the most challenging part of creating the instrument. My original hope was that I could create a product with completely untouched raw audio sampling, however I quickly came to the conclusion that it would be at the cost of a substantial amount of range and dynamic. In order to pose as a percussive soundbank as well as a melodic one, I needed sub frequencies and extra impact at a level that the voice cannot produce alone. For a while, I toyed with the idea of layering some digital sounds beneath the dry vocal stems, but it really took away from the naturality and I felt I'd lost my unique selling point. Using subtle transient modification transformed the sound completely and I was happy with the eventual blend. Sample lengths also affected different factors in the useability of the instrument and I found. Using various reverb tests & soundscapes to identify problematic areas was invaluable. I took some MP3's from my iTunes library and dropped them into template projects of varying tempo and tonality, slowly finding appropriate decisions on the default one shot settings, sample lengths and comparative volumes by playing the instrument along to the track.

My efforts in creating cohesive audio stems have resulted in a competent and fairly unique instrument. After testing it on some original compositions, particularly the ones used in my infomercial and marketing videos, the sounds have familiarity whilst providing an edge and some original ideas.

The instrument itself is easy to use, and easily expandable, making for a positive outlook in terms of product development and profitability.

It also adheres strictly to the requirements of a modern production tool, flexible and dynamic whilst simple, it would be easy to drop in to a processing template in a session with an artist or writer.

I found myself immediately excited to use elements from it in my own pre-productions, which is a really positive indicator that a product is not only working, but also boasting a creatively attractive edge.

The flexibility of 'Lungs' makes it widely marketable and allows for multiple versions of demonstrative presentations.

Whilst I am happy with the results of my work, I am viewing them as a jumping off point for a much larger concept. As well as the instrument being improved by a vastly expanded soundbank, I would also like to work more on the concept of user addition. I plan to eventually bring lungs out of a pre-set sampler environment, and onto a patch that doubles up as a plugin. This would enable the user to not only take advantage of unlimited sample pack releases, but also the processing within the artefact.

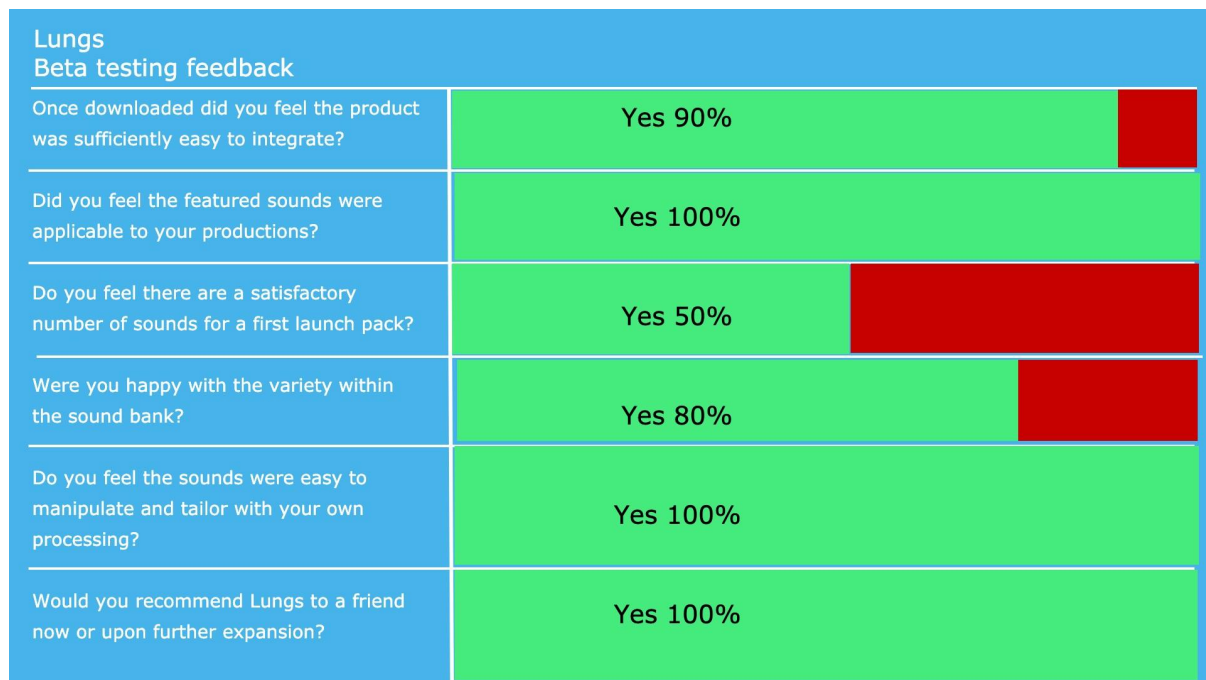
For example, rather than using the default sub kick, the user could record their own audio through Lungs, and the plugin would auto-manipulate the sound into its 'sub kick replacement' setting. This would also mean that the user could expand on the existing samples using their original, identical processing, without having to fix tricky sound variants between phrases - minus the obvious factor of recording room size, microphone type and distance, however, the original recording information could be made available in a visually appealing graphic pop-up window, as well as advice on how to best match the original audio. Whilst I feel that the market is oversaturated with choral vocal samplers, I feel my instrument would be more rounded with a choral section featured in its core soundbank, which would be a simple case of recording additional legato vocal notes and expanding the trigger zone into an additional octave.

There is also potential to expand the Lung brand onto hardware, especially in line with the concept of inbuilt, realtime processors. I have considered the idea of a 'Lung Pedal' for live performance, which would work similarly to a loop pedal but with combined effects settings to allow the vocalist to expand into more varied areas of the arrangement, for example singing a sub bass line or performing as the percussion whilst avoiding a beatbox sound. Despite many tastemakers describing sample hardware as dated and unnecessary in today's music industry climate, I still believe it's an area that retains value in collectability, similar to the idea of a fan buying a record on vinyl. Sample hardware can sell online for

anywhere from £300 upward, due to its nostalgia and novelty. It's important for both indie and established brands alike to provide its users with a sense of value and investment beyond quick downloads, which leads me to believe over time it would be a concept worth investing some consideration into.

Many vocal sample packs currently on the market focus heavily on specific phrases or areas of a vocal. Sites are particularly oversaturated with vocal chop triggers, following the rise and popularity of artists like The Chainsmokers, who's songs are famously centered around a chop-drop. One need only Google the trend nowadays, to be presented with tutorials and articles from huge industry players like Output, Izotope, Sound Oracle and almost everyone else you could imagine. This area of the market is also hugely dominated by choral and cinematic vocal samplers. Whilst many are processed to create more interesting soundscapes, they still fight to serve the same purpose when it comes to arrangement. If this concept, against my instrument comparatively, were to fall under the far right, its opposer on the left would be claimed by the ever resilient beatboxing. *"Too often people see it is as just a party trick" The Beatbox Collective told Newsbeat in an interview with BBC News in 2018.*⁽⁶⁾ The instrument I have developed pays an undeniable homage to beatbox, however, does not use traditional sounds one would come to expect during a beatbox paraphrase. This is largely down to the fact that I have used processing as well as vocal technique to create the final sound, rather than just one or the other. There are plenty of beatbox samplers available on the market, but many are deterred from using them organically in productions due to their gimmicky reputation and failure to translate into polished productions. That is not to say one day beatboxing couldn't make its comeback, just that analysis of the current production trends shows it to be less favourable.

Beta Test Results



The above graph presents the feedback I acquired from a selection of ten commercial producers across varying styles; three R&B, three alt/avant pop and four EDM. The most obvious development problems with the beta version of Lungs are the lack of variety of sounds and the amount of them provided. Although it was in my plan to expand on the bank once the first instrument was released, I now know I need to increase the first release catalogue in the launch stage. My intention is now to expand the instruments zone by an extra two octaves, featuring two more variants of melodic phrases over a full octave. I will ensure that each additional part fills a space that is not already occupied by the existing sounds, to enable the full kit to remain functional in real time use.

Feedback from one beta tester mentioned that he felt the instrument lacked a strong bass element, and whilst the kick and sub were nice and punchy, they weren't enough to create the rounded kit I was aiming to create.

With this in mind I will take vocal the technique I used to create the sub kick, but instead prolong the notes in a legato style, and begin the recorded note 4 intervals higher than the

route. This will allow me to use formant and pitch shifting to create a deep and earthy sound without losing the note itself or pushing it to sound too digitally processed.

The feedback regarding the instruments lack of legato notes was unanimous, so I plan to make the fourth and final 12 trigger sequence an octave range scale of choral notes. Despite my initial reservations around cinematic and atmospheric vocal samples due to their oversaturation, I cannot ignore that demand for it throughout my research and testing process. I would however like to test record a collection of audio recordings using different mouth positions and throat shapes, with the aim to find an interesting, less overused sound to fulfill the desire of a 'pad' space. I'd also like to experiment with different recording techniques to achieve this, for example the idea of recording an 'ah' sound through the blades of a moving fan has always intrigued me, but I would need to find a way to isolate the vocal sound. In short, there is plenty to think about following the beta test.

The one producer who struggled to integrate the product was not familiar with built in samplers, so I have created a downloadable graphic book which prompts the user on where to add the audio files and sampler template once downloaded. This booklet also adheres to the graphic design of the infomercial, DAW icons and press packages related to Lungs, ensuring its visually interesting and easy to read.

The result I was most relieved with from the beta test was the 100% recommendation poll. Whilst a product can need refining in its development stage, it is essential that the user feels it has brought something new and exciting to their workstation, and from experience I know that this is no better demonstrated than by willingness in word of mouth.

In conclusion I feel that my extensive market research and subsequent analysis led to conceptualise a product with the potential to become a valuable tool for contemporary producers and creators across a huge variety of genres. Leveraging the increasing popularity and demand for simple and effective samplers has played a vital role in the

market placement of my concept, which has further pushed my vision for reimagining what a vocal instrument can be. Translating the sample mapping into a midi keyboard format has emphasised and increased the usability of the overall product, comparatively to standard downloadable sample packs where the user must first configure and assign zones for individual sounds.

My efforts to withhold unnecessary additive processing factors throughout the creative stages have made for a more dynamic and malleable instrument, capable of expanding its own possibilities and easily transforming under each individual's requirements.

Despite the fact that my product would undeniably benefit from further development, I feel I have worked carefully in order to overcome the various obstacles that I encountered whilst striving to produce a sound with its foot firmly in the space between organic and digital sound by using the various methods I have learned throughout the process, from both my research and trials.

Receiving beta test feedback has encouraged me to think more critically about the soundbank as an overall tool, whilst encouraging me to continue its production and expand on the existing ideas within the product so far. I've learnt that instruments with niche concepts can be at risk of becoming a gimmick if not adequately progressed and it is essential that the instrument evolves with use over time.

If I were to go back to the beginning of the process, I would have taken even more time to experiment with the full potential of the human voice, and the recording techniques that can be used to highlight certain frequencies in a natural way.

I'm generally pleased with my instrument and where I have taken it to, but I'm looking forward to seeing its evolution and development in the months to come. I am already planning to use the sounds in my own work.

Bibliography

1. Routenote.com, (2020). *Sampling culture: How has it evolved and how much of modern music uses samples?*. [online] Available at: <https://routenote.com/blog/sampling-culture-how-has-it-evolved-and-how-much-of-modern-music-uses-samples/> (Accessed on 26/03/2021)
2. Hannah, (2020). *Sampling: it's role in Hop-Hop & it's legacy in music production*. [online] Available at: <https://abbeyroadinstitute.co.uk/blog/sampling-role-in-hip-hop-and-its-legacy-in-music-production/?cn-reloaded=1> (Accessed on 26/03/2021)
3. West, K. (2013). *Kanye West - BLKKK SKKKN HEAD (Explicit)*. [online] Available at: <https://www.youtube.com/watch?v=q604eed4ad0> (Accessed on 26/03/2021)
4. Kennedy, J. (2013). *VIBE Exclusive: Daft Punk Speaks On Producing Kanye West's 'Black Skinhead' For 'Yeezus' LP*. [online] Available at: <https://www.vibe.com/features/editorial/vibe-exclusive-daft-punk-speaks-producing-kanye-wests-black-skinhead-yeezus-lp-166762/> (Accessed on 26/03/2021)
5. Brown, G. (2019). *Layering Drums: Benefits, Pitfalls, and Techniques*. [online] Available at: <https://www.izotope.com/en/learn/layering-drums-benefits-pitfalls-and-techniques.html> (Accessed on 26/03/2021)
6. BBC, (2018). *Beatbox Collective: 'Beatboxing should be seen as an art form'*. [online] Available at: <https://www.bbc.co.uk/news/newsbeat-42820405> (Accessed on 26/03/2021)