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Boutique virtual analog - the real deal or virtual insanity? How online users respond to Roland's digital recreations of their classic analog synthesizers

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1. Introduction

In 1996 the electronic musician Norman Cook released the first single under his alias Fatboy Slim - *Everybody Needs a 303*. What is a 303, and why might everybody need one?

Fig. 1: The original vinyl single of *Everybody Needs a 303*

The Roland TB-303 Bass Line synthesizer was an unassuming small grey box released in 1981 that was originally intended to be a substitute for a human electric bass guitar player in a band. In actuality it sounded nothing like a human playing a real electric bass guitar, and so it was a commercial flop. As a result the prices on both the retail and second-hand markets collapsed and soon cash-strapped dance music producers were buying them in second-hand shops and thrift stores. While it didn't sound like an electric bass guitar, the noise that a 303 could make, especially when fed through a distortion guitar pedal, is an unmistakable, gritty, squelchy sound (vocabulary often fails when describing sounds), and in the late 1980s Chicago-based producers such as Phuture used it to create a new genre: acid house[1]. This soon spread to the UK where the mantle was notably taken up in clubs in London and Manchester. Norman Cook left his job as the bass player in the English pop group the Housemartins and started to DJ and produce his own music, leading eventually to the release of *Everybody Needs a 303*, which, of course, featured the TB-303 very prominently, and then on to incredibly popular albums such as 1998's four-times platinum *You've Come a Long Way, Baby.*

Whether or not it is true that everybody needs a 303, the most significant problem in everybody owning one is the price. On *Reverb.com*, the largest online second-hand music technology website, the price currently hovers around €3.500. This for a machine that cost US$350 on release.

Because it became incredibly expensive due to the demand problem of its centrality to certain genres of dance music and the supply problem of its limited production run, amateur and professional producers have always been open to alternatives to the TB-303. Novation started a trend for TB-303 clones and sound-alikes in 1993 with the release of the Bass Station (one of which this author now owns). It was followed by efforts from, among others, MAM, Cyclone, Ladyada, and most recently Behringer. While these clones are all considerably cheaper than a second-hand TB-303 (the Behringer

[1] https://www.musicgateway.com/blog/music-industry/music-business/acid-house

TD-3 currently retails at €110), they crucially all contain the same type of analog[2] circuitry as the original.

As computer processing speed increased and digital audio workstations (DAWs) became more powerful, it eventually became possible to have digital software plug-in reproductions of the TB-303, starting with Propellerheads' ReBirth RB-338 in 1998. More recent software versions include AudioRealism's Bassline 3 and D16's Phoscyon2. These are priced at €95 and €119 respectively, but there are also free emulations available from other developers. These software emulations, along with the previously mentioned physical clones, have done much to democratise the production of dance music.

However, none of these products were actually made by Roland, the accidental originators. It wasn't until 2014 that Roland released the AIRA TB-3, a black and bright green hardware version of the TB-303 with a touchscreen, based on a digital technology known as 'virtual analog'. It was part of the AIRA range, which also contained a drum machine and a keyboard synthesizer, all based on the same technology. The TB-3 was greeted sceptically as it didn't look like the silver TB-303 and did not contain the same type of analog circuitry,[3] but it sold in large numbers.

In 2015 Roland released a new range to build on the success of the AIRAs: the Boutiques – small, 4-voice polyphonic desktop virtual analogs. The initial three were the JX-03[4], JU-06 and JP-08, all priced at between €300-400, and were emulations of Roland's 1980s keyboard synthesizers the JX-3P, Juno-106 and Jupiter-8, all incredibly sought-after synthesizers today. The Jupiter-8 is the sound of Toto's *Africa*, Michael Jackson's *Thriller* and Duran Duran's *Rio*, amongst many others, while the Juno-106 provided sounds for music as varied as pop songs such as Rick Astley's *Never Gonna Give You Up* and Wham's *Last Christmas* and electronic music classics such as Underworld's *Born Slippy (Nuxx)* and Mr Fingers' *Can You Feel It*. While not as famous, the JX-3P was used by electronic music luminaries such as Orbital, Vince Clarke and Future Sound of London. Importantly, while much smaller than their forebears, the Boutiques maintained the same styling. Prices for the originals on *Reverb.com* are currently around €1000-2000 for the JX-3P, over €2500 for a Juno-106 and around €30,000 for the Jupiter-8, making them unaffordable for most people.

They were joined in the Boutique range in 2017 by other virtual analogs, including the SH-01a, TR-09 and TR-08, all three being emulations of historically important instruments, and also by the TB-03, Roland's new version of their original acid machine. All these units, like the AIRA range, used Roland's

[2] A quick note on spelling. I will use the American English spelling – "*analog*" – instead of the British English spelling "*analogue*" in this work, as it is the most common formulation used on the Gearspace forums.
[3] https://sonicstate.com/news/2014/02/14/review-roland-aira-tb3-acid-for-the-21st-century/
[4] one of which this author purchased

proprietary digital ACB technology, standing for analog circuit behaviour, which is a type of virtual analog.

The online synthesizer communities, especially in their forums, were and remain divided by virtual analogs in general and the Boutiques in particular. The digital v analog debate has raged in many areas of the audio-visual arts, including photography, film, music recording and reproduction and, here, musical instruments themselves. Most analog devotees will talk of the warmth and organic nature of the sound/picture, and claim that digital versions are clean and cold, and for synthesizers that they don't feel alive like an analog synthesizer would. Hardware digital synthesizers have been described in online forums as software in a box. On the other side of the argument, people talk of the democratisation of these fields, and claim that analog fans are snobs, that nobody can really tell the difference anyway (certainly, for a synthesizer, not in a fully-mixed song). Divided communities make for interesting study subjects.

In which does camp Norman Cook sit? In a 2022 interview, he opined:

> Everybody needs a 303. Most importantly, though people might not know it, what they need is a real 303, not a clone. You can tell the difference between them and they don't quite get... the clones are good, but they're not a 303[5].

Cook believes he is on the side of an indescribable warmth and liveliness, but it is telling that he cannot quite articulate the difference between a real 303 and a clone, digital or otherwise, and that he thinks other people lack the knowledge to notice.

It is not the place of this study to take a position thereon. Rather, this study aims to find out how the Boutiques were received by the online synthesizer forums, how they were framed, which identities were constructed, threatened or reinforced by them, how the analog v digital debate was influenced, and how users configured themselves in their wake. It will begin by describing the current state of the art in the literature and the precise research questions to be answered. It will then describe the methods used to find, sample and analyse the data scraped from the online forums. The results of this analysis will be described in the empirical part, and these results will then be examined in light of the literature in the discussion section, to be followed by the conclusions.

[5] https://www.synthhistory.com/post/interview-with-fatboy-slim

2. State of the art

2.1. Introduction

This chapter will outline the relevant literature and situate this study within the state of the art. It is split into four sections: The Synthesizer; Digital v Analog; Users, Use and Non-Use; and Identity, Groups, and Boundaries. These sections are inevitably somewhat overlapping as, for instance, any discussion on competing user identities will often draw on their attitudes to digital and analog synthesizers, while any description of synthesizer technology cannot be divorced from its reception amongst groups of users. This is unavoidable for, as the aphorism has it, everything is connected to everything else. The next section begins by obeying the exhortation in *Sound Studies* to "follow the instruments" (Pinch & Bijsterveld, 2004, p. 639), and concerns the synthesizer itself.

2.2. The Synthesizer

Why is it important to investigate how these new technological artifacts, the Boutiques, were received? One possible answer was provided by Pinch and Bijsterveld (both of whom are involved in many of the relevant studies) in their work on the reception of new technologies in music, who stated that "reactions to new technologies could provide a fertile research site for investigating how technologies in general are embedded within conventional normative frameworks" (2003, p. 538). While the Boutiques essentially recreate vintage synthesizers using a new technology, the focuses of Pinch and Bijsterveld's study were genuinely new and ground-breaking music technologies, including one of the most famous synthesizers of them all, the Moog Minimoog, introduced in 1970. Given its influence on the synthesizer world, any discussion of synthesizers and the reaction to them necessarily has to include the Minimoog, and the most complete history of the Minimoog, its predecessors, and its competitors was provided by Pinch, with his collaborator Frank Trocco, in their authoritative and comprehensively researched book *Analog Days* (Pinch & Trocco, 2004). The book is required reading for this field and indeed will feature often in much of this chapter. It details how the first (now vintage) synthesizers came to be, and how, like all technological artifacts, they did not spontaneously spawn from a brainstorming session in a manufacturer's R&D department but are products of the society and culture from which they sprung. An appreciation of synthesizer and music technologies, and how they shape and are shaped by the society in which they are situated, is essential for a proper analysis of the reaction given to the arrival of the Boutiques, and the next section will outline how this analysis might be done.

Synthesizers and the Social Construction of Technology (SCOT)

One analytical model of the process by which synthesizers, and indeed all technologies, come to be can be provided by the idiom of SCOT, the social construction of technology, as outlined in Pinch and Bijker's seminal work on the development of the safety bicycle (1984). In a SCOT analysis, no technological artifact inevitably finds success but will triumph or fail in accordance with its acceptability to what Pinch and Bijker term 'relevant social groups.' In this reading, no design is inherently superior, and all designs have what they term 'interpretive flexibility', meaning that no technological artifact has one fixed use. Different groups may, therefore, use the artifact in different ways and for different purposes. Once there is a consensus that any problems that were experienced by the social groups in previous iterations of the technology have been provided with a solution and have therefore been sufficiently designed out, closure and stabilisation occur (at least temporarily). The history of the evolution of the multitude of bicycle designs, each offering different solutions to the problems faced by the relevant social groups (which were not necessarily the solutions the designers had intended), and which led ultimately to the safety bicycle, is matched very neatly by the development of the synthesizer. While all synthesizers are different, there is at the same time a set of features and functions that the majority share; in a sense this is the 'closure and stabilization' of SCOT. This outcome was, however, like the design of the safety bicycle, contingent, and Pinch and Trocco outline how in *Analog Days* (2004). They explain that at the outset of the development of analog synthesizers there were two competing individuals, both with eponymous synthesizer companies, whose philosophies were entirely different. In 1953, Bob Moog founded R. A. Moog Co. on the east coast of the US in upstate New York, and in conjunction with his users, engineers and many others, developed synthesizers that used subtractive synthesis. These synthesizers could ultimately be played from a specialised keyboard and coaxed into producing equal-tempered notes, which allowed for 12-note western musical scales to be produced. In 1963, in San Francisco on the west coast, Don Buchla founded Buchla & Associates. He developed a much more experimental and indeed temperamental set of machines based on complex oscillators; machines which were atonal, wildly unpredictable, and deliberately did not have a keyboard to discourage users from playing identifiable notes. Pinch and Trocco tell of how, eventually, the relevant social groups that affixed themselves to the Moog range, which included rock star keyboardists, gigging musicians, and church organists, all of whom needed to be able to play a synthesizer's notes as a traditional musical instrument would be played, outweighed the groups of experimental musicians and psychedelic pioneers that were drawn to the Buchlas' obstinate weirdness. This is why the majority of synthesizers today, including the Boutiques, are ideological descendants of the west coast subtractive technologies that Moog introduced in the 1960s and not of the east coast Buchlas. In the present work the concepts of relevant social groups and

interpretive flexibility may be applied to the arrival of the Boutiques as they have been to the arrival of the early synthesizers.

Continuing with the SCOT idiom, Harkins, in his study *Following the Instruments* (2021), analyses the Fairlight CMI, a hugely expensive 1979 synthesizer and workstation which was the first to use small chunks of digitised audio – samples, as they became known – as its primary oscillators (or raw sounds). As it was so expensive, at around £12,000 for the Series I (or roughly £57,400 in today's money[6]), prospective users were limited in number to those with either enough money to buy a unit or those with a sympathetic record label with the means to rent a high-end studio which had procured one. It proved to be incredibly fruitful for those early adopters, from a wide variety of musical traditions, who used the new capabilities to produce sounds and records of types not heard before. These users included, but were certainly not limited to, Peter Gabriel, Depeche Mode, Herbie Hancock, The Art of Noise, Kate Bush, and Pet Shop Boys.[7] Pet Shop Boys famously used two CMIs together with an impressive array of other high-end electronic music equipment to perform their song *Opportunities (Let's Make Lots of Money)* live on the BBC Television show *The Old Grey Whistle Test*[8] in 1986, thereby courageously pushing this nascent technology to its limits on live television. Harkins demonstrates how the users themselves tended to use the sampling technology of the CMIs to accurately (for the time) reproduce real instruments and drum sequences, or to make sound effects based on samples of bottles breaking, cylinders rolling, records scratching, or other mechanical audio chunks, using either the supplied samples or by making their own. This capability was essentially an afterthought for Fairlight, who expected their users to use the supplied samples the way oscillators were used in traditional subtractive synthesizers – as a basis for sound creation, not necessarily as an accurate representation - and were certainly not expecting users to create their own samples in the way that they did. Harkins details how the marketing materials issued by Fairlight changed over time – initially focusing on the synthesis capabilities, but by 1983 focusing on the sampling capabilities. This change in the way Fairlight promoted its product is a textbook case of, as Harkins puts it, "the technology being used by *actual users* in ways that did not correlate with the projected uses imagined by the designers." (ibid., p.159, emphasis in original). Indeed, the Fairlight CMI is remembered today as the first commercial sampler, and not as a digital synthesizer as was intended. While acknowledging that stabilization and closure might not occur once and for all in the realm of musical instruments, Harkins is nonetheless still able to use the concepts of stabilization and its related notion of interpretive flexibility, and by

[6] https://www.bankofengland.co.uk/monetary-policy/inflation/inflation-calculator
[7] For more information on the CMI series, see https://www.vintagesynth.com/fairlight/cmi-series-i-iii
[8] A recording of this performance is available at https://www.youtube.com/watch?v=I0mF9soHA8M. The two CMIs can be seen clearly at 1:08, although the output of their screens is also shown on the CRT wall behind the performers from the beginning, showing the ground-breaking internal sequencers of the CMIs

applying the idea of relevant social groups to the users and the producers, he constructs a SCOT analysis which ultimately gains valuable insights into the CMI. This study hopes to co-opt these ideas and approach and use them in analysing the Roland Boutiques.

The Boutiques in a contested historical context

While *Analog Days* provides a history of early analog synthesizers in general, and *Following the Instruments* analyses a particular individual synthesizer, Bijsterveld and Peters (2010) look at the history of musical instruments as a whole, and compare an STS approach with that of traditional organology. In their view, the main difference is that STS scholars "use theories on technology dynamics and innovation to explain the rise, decline, and changing design of musical instruments" (ibid., p.107), which they contend is missing from the more traditional approach. One of the ways they do so is by focusing on the practices of building instruments, especially modern recreations of older artifacts, for example the contemporary trend of recreating 18th century operas with restored or recreated instruments, costumes, and stage designs. These practices - the restoration, reinvention or recreation of classic technologies - have garnered interesting controversy about the authenticity of the performances; whether they should even be attempted or whether modern generations should perform in their own innovative ways. These practices were termed by Bijsterveld and Peters to be 'retro-innovation,' and while their work is not concerned with electronic instruments, there are parallels with the Boutiques in the concept of authenticity, given that the Boutiques are essentially modern recreations, with newer technology, of artifacts from the 1980s (as opposed to the 1780s). They describe the process by which new technologies "can only modify society gradually — after they have been appropriated, embedded, and transformed by that particular society" (ibid., p.114). It could be argued that the lives of Roland's legacy synthesizers can be mapped onto this process quite neatly, and have now been transformed by society into virtual analog versions of themselves. They are thus a prime example of 'retro-innovation' and it will be interesting to see if these ideas are reproduced in the empirical material of the current work, and whether the Boutiques then go on to modify society, gradually or otherwise. The classical history behind many modern musical instruments is also covered by Bijsterveld and Schulp, who see this history as something contentious and perhaps even stifling that instrument makers "have to cope with" (2004, p. 669). They develop the notion of 'recasting tradition,' an idea similar to Bijsterveld and Peters's later idea of 'retro-innovation,' both of which may be valuable when looking at the way the Boutiques relate to their legacy forebears.

Synthesizer Interfaces

Fig.2 – The Yamaha DX7s

As the Boutiques would be released without a keyboard as standard, the most obvious physical manifestations of the relationships between the analog legacy synthesizers and the Boutiques are the user interfaces, in both cases a series of knobs and sliders that allow the user continuously to control various settings on the synthesizers. The close relationships between the legacy interfaces and the Boutiques' can most easily be seen in comparison to the interfaces present on digital synthesizers. These are usually comprised mostly of buttons, taking their cue from the first mass-produced digital synthesizer, the 1983 Yamaha DX7 (see Fig. 2 and the button-festooned control surface of the DX7s). Knobs and sliders are seen by most synthesizer users as giving superior hands-on control, and indeed the JX-03, the Boutique version of the JX-3P, even comes as standard with the originally optional PG-200 controller, covered with knobs, built in (see Fig. 5). This was an interesting design decision on Roland's part, as the JX-3P was originally released without the PG-200, and, despite being analog, had a button-based interface intended to compete with that of the digital DX7. The Boutique version eschews the digital interface for a more analog-seeming one.

Synthesizer interfaces have garnered much interest of late (see, for example, Bjørn (2021) and Jense and Eggen (2015)), and some of this is due to the resurgence of analog synthesizers and their concomitant control surfaces. This resurgence began with two recent developments. The first development was the reintroduction, after many years of a predominantly digital synthesizer market, of affordable analog synthesizers such as the Arturia Minibrute (released 2012)[9] and the Korg Monotribe (released 2011)[10]. Since then, most synthesizer manufacturers have returned to analog in some part and a huge array of analog synthesizers from €45 to €10,000+ are available (ironically, Roland is one of the few manufacturers not to have self-produced a purely analog synthesizer, despite their heritage[11]). These synthesizers are self-contained instruments, able to be played almost straight out of the box. In sharp contrast to this ease of use is the second development, the reintroduction and repopularisation of modular synthesizers. The early synthesizers, such as the Moog System 55, were modular, as Pinch and Trocco outline (2004), meaning that the component parts (filter, oscillator, VCA, among others) could be taken out of the casing and replaced with other modules to provide the user

[9] For a contemporaneous review, see https://www.soundonsound.com/reviews/arturia-minibrute
[10] For a contemporaneous review, see https://www.soundonsound.com/reviews/korg-monotribe
[11] Roland did release a range of Eurorack modules in 2017 based on their classic System 100-m modular, but they were designed and produced by a third company, Malekko Heavy Industries; in the same way, their SE-02 Boutique was analog but designed by Studio Electronics

with a different set of capabilities. These modules had to be patched together with patch cables, as in their standard configuration the modules were not connected to each other. Each module had a series of knobs to control the voltages that were communicated across the patch cables between the modules, giving the user a tactile experience and the ability to hear and feel the changes they made to the synthesizer's settings as they played.

Fig. 3 – author's Eurorack system

Modular synthesis fell out of favour in the 1970s with the arrival of self-contained and integrated units such as the Minimoog and the ARP Odyssey, but bounced back when in 1995 Doepfer Musikelektronik GmbH released the A-100 modular synthesizer. This was built around their own Eurorack standard which uses 19-inch racks 3 units high, 12V or 5V modules, and a volt-per-octave tuning system.[12] Since then over 700 manufacturers[13] have produced modules for this non-proprietary standard, not all of which are analog, but most of which having tactile knob/slider based controls (see Fig. 3 for a representation of my very modest Eurorack system and the preponderance of knobs and sliders, especially in comparison with the DX7s in Fig. 2. Note that no patch cables are inserted at this time, as they tend to obscure the front panels). Eurorack's playability and tactility seem to have filtered into the rest of the synthesizer market, and users demand these traits of all new analog and virtual analog synthesizers. It is the Eurorack standard, and specifically the user interfaces that have been developed along with it, that Bates (2021) investigated, claiming that they "present … an opportunity to reassess theoretical assumptions that are typically unquestioned about instruments, why people make and play them, and why they are (re)designed the way they are" (p.171). Bates notes the experiential nature of turning a knob, of feeling and hearing in the sound any change in the filter cutoff value, for example. Bates also notes the high contemporary value afforded to knob-per-function interfaces, which enable all the parameters of the synthesizer to be easily and immediately controlled without the user diving into a screen-based menu system. While they are not 100% knob-per-function, the Boutiques have plenty of knobs and sliders so that at least all the performance aspects can be accessed via their own knob or slider. According to Bates, live performances are enhanced for the viewer if there is some evidence that a performance has actually taken place, in this case meaning that the event wasn't entirely pre-sequenced (or, worse, pre-recorded). In a live setting then, a control surface of knobs and sliders (as exemplified by Eurorack modules and the synthesizers that they have influenced) being

[12] For more information, see https://reverb.com/news/beginners-guide-to-eurorack-case-basics-oscillators-filters
[13] Current listing at https://modulargrid.net/e/vendors

manipulated on stage can provide visual proof of a performance. Bates describes the modern 'milieu culture' as being more tailored towards the analog interfaces which prioritise tactile control and haptic feedback over reproducibility, and offer multisensory interfacing. The present work will investigate if this aspect of the milieu culture has extended into the budget end of the synthesizer market, and if the modern desire for knobs and sliders is demanded of and sated by the Roland Boutiques.

The Boutiques in the Literature

Aside from the above investigations into the literature on synthesizers in general, it was also attempted to find any mention of the Roland Boutique range in particular. The only mention of the Boutiques to be found in the literature was made by Thorén (2019), and this was about the D-05 Boutique, Roland's digital clone of their own D-50, a classic digital synthesizer from the 1987. Roland called the technology behind it "Vintage Digital", and as Thorén notes, "[t]he very idea of a "vintage" or "unique" digital technology is controversial" (ibid.), as any copy of a digital original, if done correctly, is exactly the same sequence of 1s and 0s and does not change over time. While it was very popular and well-received, the present study will not investigate the reaction to the D-05 Boutique as, being a clone of a digital synthesizer, online users looked at it from a completely different perspective. Using digital technologies to effectively run the same digital program on an FPGA[14] as the program contained inside the original synthesizer is not seen as controversial, while using digital technologies to reproduce an analog synthesizer very much is. The controversy surrounding digital and analog will be examined in the next section.

2.3. Digital v Analog

The digital/analog debate has raged in many areas of the audio-visual arts but the debate in the synthesizer world has a special piquancy, as, in Bates's words, synthesizers "have a dual nature as technologies *and* instruments" (2021, p. 170, emphasis in original). This duality means that users will have a unique relationship with their analog synthesizers that is not experienced by aficionados of, for instance, vinyl records, who while no doubt having a deep affection for their technologies can only physically interact with them in a comparatively limited way. Despite the heterogeneous nature of analog technologies, most analog devotees of any stripe use adjectives such as 'warm' and 'organic' to describe their artifacts, claiming that digital technologies are 'cold' and 'harsh'. Hardware digital synthesizers are often described in the synthesizer community as being just VST instruments in a box

[14] Field-programmable gate array, a type of chip that can be programmed to emulate other hardware devices

(Virtual Studio Technology, Steinberg's popular proprietary software format for PC and Mac[15]), and as not feeling 'alive'.

One subscriber to this view of the difference between analog and non-analog synthesizers put it this way: "[t]erms such as "digital", "sampled" or "virtual" are commonplace, though tell us very little about what the instrument actually sounds like. But when we hear the word "analog", we get an instant idea of the type of noise we can expect – a certain sense of power, simplicity, and richness, which dates back to the earliest days of electronic music" (Jenkins, 2020, xiii). According to this view, there is a certain sound which we ascribe to analog instruments that is rooted in our perceptions of their sonic history, as delineated by Pinch and Trocco in *Analog Days*, whether the instrument in question is actually vintage or not.

On the other side of the divide, the discourse is of the democratisation of music-making that affordable digital units enable, that analogue fans are snobs, that nobody can really tell the difference anyway (and certainly, for a synthesizer, not in a final recorded mix). In a personal take, Savage blames the coldness of modern recordings not on digital technologies per se, but rather on how they are used with excessive caution in order that any of the grit and imperfection that might make a recording interesting and alive is ironed out, lest it put off potential consumers (2019). On this reading, it is capitalism and not digital technology that is to blame for the lack of warmth.

The whole chain of music production, from the instruments themselves, the recording of them, the production and post production of the resulting sound files in DAWs, and finally the streaming services delivering the audio files to users' mobile devices, has been digitalised, as outlined by Théberge (2015) (see also Théberge (2004)). That people nevertheless still desire explicitly analog voices in today's digital technological environment demands an explanation, especially as "old and valuable instruments are actually for many musicians a pain: they are fragile, insurance policies may circumscribe use, and they are an inviting target to be filched" (Pinch & Reinecke, 2009, p. 152). One notion that could be fruitful is that of 'technostalgia,' Pinch and Reinecke's attempt to explain the appeal and usage of vintage analogue synths, guitars, amplifiers and pedals in modern music (2009). In contrast to nostalgia, which hankers after an ideal imaginary of a past which never existed as a method of escapism from today's problems, technostalgia "is an attempt to mediate between past and present to achieve a particular sound and feel" (ibid., p.153). In their study of working musicians, they found that what was claimed to be desirable was a certain kind of sound from the past that can add a certain something to modern recordings, whether that was the authentic twang of a vintage guitar, the breaking up of an old effects pedal, or the warmth and saturation that magnetic tape can add to an otherwise digital

[15] For more information, see https://www.steinberg.net/de/technology/

recording. As far as synthesizers are concerned, and in addition to the tactile nature of an analog synthesizer (see section 2.2), Pinch and Reinecke's respondents were looking for a specific sound from their instruments, as "each synthesizer [...] becomes recognized for distinctive and characteristic sounds" (ibid., pp. 157–158). The utility of these sounds was not experienced homogeneously by the respondents – some expressed that the sounds helped their otherwise digital recordings gain some vitality, others felt that analog instruments better express human creativity, while others could be characterised more as collectors. What they all had in common, though, was a desire to use these vintage instruments in a modern setting and not to go back to the past. Given this, a digital emulation that accurately reproduced the sound of a vintage synth, with all its foibles and idiosyncrasies but without its unreliability and heft, while also offering tactility and something of the feel of the original – such as the Boutiques – might be an interesting prospect for musicians. This possibility is rather discounted by Thorén & Kitzmann, who claim that their studies show that "the possession or appreciation of analog synthesizers and the rejection of their digital counterparts is [...] more about a solitary activity that is deeply emotional, experiential and carefully untainted by the impurity of digital processing and equipment" (2015). If digital is seen as 'impure,' then no digital emulation, no matter how accurate, could be acceptable – analog is seemingly necessary for some users at a visceral level.

A study by Stuhl (2014) is less enamoured by this analog exceptionalism and also provides a rather less charitable response to the modern desire for vintage analog synthesizers than Pinch and Reinecke's idea of technostalgia. This study more critically describes the belief that vintage instruments can add any value to recordings as 'analog fetishism,' and claims that professional sound engineers are not at all enthused with the trend of musicians bringing large, heavy, and unreliable artifacts from the 1970s into their tightly-scheduled studios. Stuhl claims that fetishizing these old machines is a form of technological determinism, ascribing to the tool of the synthesizer all the magic which might otherwise be considered to be produced by the human performer. In this sense, instead of the tactility and vivaciousness of an analog synthesizer adding to the performance, it is actually detracting from our perception of it. Further, a proper understanding of the nature of a modern digital recording studio, as also outlined by Théberge (2004), acknowledges the possibilities of a networked digital studio for collaboration and the concomitant democratisation of music production. In Wallach's study of two Indonesian studios, he noted that digitised files enabled the hybridisation of music styles from all over the world and across recorded history, by a much larger demographic than ever before possible (2005). Indeed, Wallach called the digital studio "the quintessential transcultural instrument" (ibid., p. 152), something an expensive, rare, vintage analog synthesizer could never be. Stuhl goes even further, stretching the definition of performance to cover the sound engineers and producers in the studios who impart so much of their selves and their knowledge to the final track, not to mention all the human

and non-human actants in the studio and all across the recording and distribution network (2014). In this reading, the idea of a performer with an exclusive analog synthesizer gaining all the credit for a song could be an entrant in the great man theory of history (Carlyle, 1966). This is an entirely different perspective to that of Pinch and Reinecke. By 2021, Pinch, with Mooney, had a more expansive of view of the synthesizer as a part of a 'sonic imaginary,' even noting that they wished to "challenge the conception of the author or composer as the sole originator of creative works, [and] also draw attention to activities, practices, and actors that constitute the imagining process in the sociomaterial worlds in which they operate" (Mooney & Pinch, 2021), which is much more in line with Stuhl, Théberge and Wallach.

Even if one analyses synthesizers as part of a sonic imaginary, however, vintage analog synthesizers still retain a kudos and iconicity which demand an explanation. In their exploration of the iconicity of synthesizers, Lanier and Rader (2021) retrace synthesizer history from its modular beginnings to the integrated analog synthesizers of the 1970s, as also outlined in *Analog Days*, then extend it through to the digital synthesizers that became popular in the 1980s and 1990s, and then into the subsequent resurgence of analog as represented by the Eurorack format, which has continued to this day. The digital revolution was first popularised with the advent of the Yamaha DX7 in 1983, but its synthesis engine, frequency modulation (FM), was soon superseded by first samplers and then by "romplers", such as the Roland JV-1080, which were essentially samplers with preset voices stored in ROM (hence the moniker). The first samplers claimed to offer creativity limited only by the amount of memory installed in the machine, and after the expensive Fairlight CMI and E-mu Emulator keyboards came samplers for the masses such as the Akai S950 and Akai MPC60. It is not hyperbole to suggest that without these samplers we would not have any form of rap music and only a paucity of dance music today. However, these samplers mostly remained within the confines of studios or bedrooms, leaving gigging synthesizer musicians with FM and rompler-based synthesizers to take on the road. The advantage of the early digital synthesizers was that a keyboard player could take just a relatively light DX7 out with them, and it would do a passable impression of the incredibly heavy Rhodes pianos and Hammond organs essential to many rock and pop songs, along with polyphonic brass and string sounds far more realistic than those possible from an analog synthesizer. The disadvantage was that FM keyboards, such as the DX7, were notoriously difficult to program and interact with, as firstly the engine is much more complicated than subtractive analog synthesis but secondly because of their interfaces, which were mostly comprised of a large number of buttons and a small seven-segment screen, as used on the first calculators (see Fig. 1). There is an apocryphal story that when the first batch of DX7s were returned to Yamaha for maintenance, the engineers found that none of the presets had been modified by the users as it was just too complicated to do so, meaning that only the preset

sounds were ever used. True or not, the presets on the DX7 were ubiquitous in pop music in the 1980s (see also section 4.2.2.2 of the Empirical Part) and soon became tired clichés. The romplers were no more easy to program and thus these sounds also often entered the pop landscape unchanged. It is not impossible to be sonically creative with these synthesizers, especially those with FM, as artists such as Brain Eno and Aphex Twin have proved. However, these digital synthesizers of the 1980s and 1990s, with all their difficulties to program, tended to push musicians into certain ways of working and into limited sound palettes. The Roland JV-1080, for instance, has a huge range of usable electric piano sounds, all perfectly suited to pop music, but experimentation is harder to achieve; it just wasn't designed for it. For Lanier and Rader, the synthesizer had become "somewhat homogenized," and was being used to produce music that was "derivative rather than truly experimental and groundbreaking" (ibid., p. 609). This seems to be a case of technological determinism, as the artifacts push the musicians into certain ways of working and the reuse of a finite set of preset sounds. For Lanier and Rader, therefore, this is the explanation for modern musicians walking away from digital synthesizers and reembracing analog synthesis with the Eurorack standard. They describe the feeling of moving back to analog as users "want[ing] to unleash the inherent power of the instrument from the cage of cultural clichés" (ibid., p.596). As Pinch noted, "we humans put agency into synthesizers and the synthesizers assert agency in constraining the sorts of music we can make" (2008, p. 479).

Lanier and Rader do not mention it in their study (2021), but there is a paradox inherent in extolling the Eurorack phenomenon as a return to analog. Many of the most interesting and indeed bestselling Eurorack modules are actually digital, such as the IME Piston Honda or the Mutable Instruments Clouds (see Fig. 4), both of which have interfaces with plenty of knobs and/or sliders. They can encompass a variety of digital synthesis engines, such as sampling, granular, virtual analog, and wavetables, and also provide interesting mathematical function generators and effects units. Bates suggests that, unlike in the 1980s and 1990s, these days "no *a priori* analog/digital distinction should be assumed - either regarding sound or interface" (2021, p.178). What work then is actually being done when we differentiate between analog and digital? For Bates, the distinction is in the tactility of the interface - the analog-ness is in the feel and the haptics, not the technology of sound generation. This is corroborated by a study by Kitzmann and Thorén (2022), who found that while users exhibited a latent preference for analog over digital sound generation, in practice what was teased out was a phenomenon which they termed 'analog practices,' that the meaning a unit had for the user was independent of its digital/analog nature and was rather based around their mediation with it through its interface. They also found that users

Fig. 4: Mutable Instruments Clouds

had a high regard for the aesthetics of a synthesizer, something which is often underestimated. This focus on how a synthesizer looks and feels, what they call “the embodied interaction, and its symbolic expression” is quite a break from those who claim there is something magic about the sound itself that can be generated by analog (ibid., p.52).

In another study, Thorén et al. also wish to emphasise “the importance of understanding the material and expressive reconfigurations that underline technological use” in today’s society (2019). In terms of synthesizers, they explain that the resurgence of analog is not merely a transient occurrence but a longer term result of a hybridization of analog and digital technologies in modern synthesis, whether that be within a single artifact or by the fact that many studios, home and professional, have a number of digital and analog synthesizers working together. They take this a step further by claiming that perhaps these reconfigurations can counter any analog fetishism and may even allow us to move beyond the digital/analog dichotomy. The title of their study, though, “The hipster’s dilemma: What is analogue or digital in the post-digital society?” betrays the problem with this prognosis – they still believe that there is a grouping of people, which they rather pejoratively term ‘hipsters,’ for whom the usage of analog is inherently a result of fashion, and perhaps even of identity (which will be explored in section 2.5). The forum posts used in their study (coincidentally also taken from a Gearspace forum thread), full of angry users who definitely stand on one side of the dichotomy or the other, do nothing to disabuse one of this notion.

Fig. 5: The 1981 analogue TB-303 (not to scale)

Fig. 6: The 2017 digital TB-03 Boutique (not to scale)

Despite this idea of a future post-digital world of contented hybrid users, in the online synthesizer world the divide between digital and analog and users’ perceptions of these technologies - their sound, their feel, and their appearance - remains incredibly present. It should be noted here though that the Boutiques, while digital, have been produced to sound, look, and feel like the original analog equipment they aim to emulate. This is especially true for those Boutiques based on originally keyboard-less synthesizers, such as the TB-03 (see Figs. 5 and 6 to see the similarity in form between

Fig. 7: the 1985 Roland Juno-106 (not to scale)

Fig. 8: the 2015 Roland JU-06 (not to scale)

the TB-03 Boutique and the original TB-303). It is less true of the keyboard synthesizers, but Roland endeavoured to use as many elements of the original designs, such as the layout, font, and colour scheme, as possible – see Figs. 7 and 8. While the Juno-106 is 992 mm[16] long and the JU-06 is only 300 mm long,[17] the similarities in design are obvious. It will be interesting to analyse the online users' comments in this light, and their perceptions of these digital, virtual analog, recreations.

2.4. Users, Use and Non-Use

Pinch and Trocco claim that "[t]echnologies are never neutral; they are always embedded in and generated by a cultural context, and the most important cultural context is that of use" (2004, p. 309). It is almost self-evident that the present study should fully consider the users and the use of synthesizers, but it is also instructive to consider their non-use as well, with which this section will conclude.

Any consideration of users and use will resurface the idiom of SCOT, as discussed in section 2.1, where users, in assemblages conceived of as rather self-forming relevant social groups, use a new technology to address their own shared problems, and if the technology provides successful solutions – whether it was thus designed to do or not – it can be temporarily stabilized (Pinch & Bijker, 1984). This grants users a degree of agency that later studies would query to a certain extent. Woolgar (1990), for instance, in his study on the introduction of new IT technologies, agreed with the idea of 'interpretive flexibility', especially as a bulwark to the wildly-held contemporaneous idiom of the social construction of users by technologies, but saw that it itself had limits. A new range of computers, like any new technological product, does not have infinite interpretive flexibility. As a product goes through the design process, parameters of its use are contested between groups such as designers, the board, engineers, and the legal department, among others, all of whom have a different conception of 'the user.' The whole history of a new artifact, therefore, "can be construed as a struggle to configure (that is, to define, enable and constrain) the user" (ibid., p. 69).

Alongside this idea of a technology configuring the user, other authors had begun to argue that, while they didn't believe in a naive version of technological determinism, technological artifacts certainly could have some agency in shaping society, perhaps even including some amount of political or moral agency (for example, Winner (1980) and Latour (1990)). In studying technologies that were imposed upon users with no prior consultation, Akrich (1992) claimed that the idealised way that a technology should be used by its users is 'scripted' into its design, based upon what she termed the 'projected

[16] https://support.roland.com/hc/en-us/articles/201966419-Juno-106-Technical-Specifications
[17] https://www.roland.com/global/products/ju-06/specifications/

user'. As the designers imbue the projected user with "specific tastes, competencies, motives, motivations, political prejudices, and the rest" (ibid., p.208), these traits are scripted into the artifact. She further observed that it is fruitful to look at the tension between the way the projected user and the user in the real world use the artifact – as she calls it, "*the world described in the object* and *the world described by its displacement*" (ibid., p.209, emphasis in original) - especially when a technology has exclusionary impacts. She calls her analytical process 'de-scription', and it could be useful when applied to the Boutiques. For synthesizer users in particular, Pinch examined, in what was essentially an expansion of some of the ideas in *Analog Days*, the role of David Van Koevering in the development of the Moog Minimoog (2005). Van Koevering was a mixture of synthesizer player, salesperson and demonstrator, and he was charged by Robert Moog to face a significant problem: "there was no known market for this instrument, and synthesizers had never before been sold to music dealers" (ibid., p. 257). By travelling around the US demonstrating the Minimoog to sceptical musicians and dealers, by co-opting famous keyboard players such as Keith Emerson, and by employing some rather sharp sales practices, he not only built a market from nothing, but also a user base. These users were more than just configured – they were constructed from thin air from people who had previously never heard a synthesizer in the flesh.

Later works took the idea of the user and expanded upon it, bringing new conceptual roles that users can play. The Boutiques are based on old artifacts which use an analog technology that users still revere to this day - indeed, we should look at vintage synthesizers as "technological artifacts with unique user communities" (Pinch & Bijsterveld, 2004, p. 638). In this sense, Lindsay's exploration of the roles taken up by users of the TRS-80, a home computer that had ceased production more than twenty years before her work was published and was thus archaic in computer terms, corresponds well with this thesis and is instructive (2005). For many of the TRS-80's users, parts of their identities are bound up with the machines and their histories with them, whether as rebellious hackers or studious engineers (section 2.5 will examine identity in more detail). Lindsay teased out a number of narratives from her interviews with the TRS-80's users. For some, ease of use and simplicity in comparison with up-to-date machines were the guiding factors. Others had a sense of nostalgia about the machines – they liked the way things were done in the old days, felt that using a TRS-80 constituted 'real' computing, and claimed that the old machines had a sense of fun that the PCs of the day sorely lacked. Finally, she reported a sense of resistance from the users, in that they felt they were refusing to do what they perceived they were being funnelled into doing, i.e. using a new machine with a new operating system. This sense of resistance is not as fully expanded upon in her work as the other narratives, but it seems relevant to this current work. In the process of her research she found that the users had taken on a variety of new roles, including "developers, producers, retailers, advertisers, publishers, and technical

support staff" (ibid., p.50), and also that different groups constructed themselves in different ways across the lifecycle of the computers. Both of these insights – the new roles and the temporality of the groups – may be instructive for this thesis.

An additional insight from Lindsay's study was that the TRS-80 had been given a new lease of life by online communities of users, who shared code and patches, and sold spare parts. This took place completely independently of the manufacturer, and this is echoed by von Hippel's notion of 'horizontal innovation networks' (2007). The thrust of von Hippel's study is about how users can actually form groups that will modify a product or even produce their own innovations entirely independently. As he notes, this notion is a particular form of what he terms the more general 'user content networks,' (ibid., p.311). Von Hippel further describes these networks as not necessarily being quite as interpersonal as, for example, a community, but being more a collection of content. The Gearspace forum, from where the data for the present study was harvested, could easily be described as such a 'user content network,' and while users certainly share content and opinions on Gearspace, it will be interesting to see if any description of the forums will stretch to include any notion of community. As its users opine on and possibly affect the actual development of synthesizers, it might also be possible to fit them into the category of 'horizontal innovation network'.

A further, similar, role for users was described by Schot and de La Bruheze - that of mediator (2005). In their case studies they showed that the process of bringing a product to market was mediated by users, whether real or 'projected.' Instead of there being a disconnect between a company launching a product and its first interactions with users, they found that the process was much more integrated. While every company and every launch is different, they found that there was often a negotiation between users (either real or represented) and producers through the media of "product tests, user panels, market experiments, consumer research, conferences and workshops" (ibid., p.243). In this sense, the user is part of what they term 'the mediation junction,' and has an integral part to play in product development. This is entirely different to the process in SCOT, where a product is brought to market fully-formed and survives or fails on its ability to solve the problems experienced by the relevant social groups – the mediation junction instead provides a mechanism where users actually help to configure products before launch, even if it is a messy and imperfect process. It could be the case that the users of Gearspace play some sort of mediation role, too. This is further explored in section 2.5.

Given the dual nature of the Gearspace users – they use the social media but also the synthesizers – it is important to investigate them in particular. They are of course shaped by but also shape the technologies, both the forum and the synthesizers. They are ascribed natures by the designers but also

find ways to subvert them, to impose interpretative flexibility on the units, perhaps even to influence future designs, as described in the above. The forum users examined in this study are slightly unusual as they are not necessarily yet using the artifacts on which they comment online, and indeed for some of the empirical part of this thesis they have not even seen or heard representations of them. They do, however, have an interest in them (in many cases) as potential users.

Despite not having actually used the synthesizers on which they are commenting, it is still fair to assume that these "users do not come to technology unprepared. They are part of a wider culture of use, and they learn within that culture" (Pinch & Trocco, 2004, p. 311). In their discussions about vintage analog synthesizers, Pinch and Trocco include an indication of why users might be interested in virtual analogue synthesizers such as the Boutiques in the first place: "in users' adaptation of and reversion to old technologies we see salient criticisms of how the synthesizer has evolved and expressions of genuine feelings of loss." (ibid., p. 318). Pinch and Bijsterveld also seem resigned to the fact that users will not accept new artifacts unless there is something familiar in their values: "[n]ew instruments are important because they allow people to do new things in new ways. But acceptance seems to depend on an alignment between old values and new practices. Old norms and values, it seems, die hard." (Pinch & Bijsterveld, 2003, p. 559). This is very much in alignment with what Lanier and Rader and Bates opined on as outlined above. In their discussions of these 'genuine feelings of loss' Pinch and Trocco are talking about how users missed the tactile approach of analogue synthesizers as they were deposed in the marketplace by digital synths such as the aforementioned Yamaha DX7, but also its contemporaries the Korg M1 and Roland's own D-50, which too were characterized by a user interface of buttons and menus rather than knobs and sliders. This study will ascertain if this alignment is reflected in the reaction online users give to the new old world of the Boutiques, whose unique nature of being an affordable virtual analogue clone of a desirable analog synthesizer could make the online reaction to them also unique.

The idea of their being a (relatively) affordable version of a cherished analogue classic is not the only reason that the Boutiques could be attractive to users. As Kitzmann and Thorén note, "much of the pleasure comes from the act of acquiring and anticipating the acquisition of new gear and from experiencing the simple presence of the equipment itself" (2022). In other words, synthesizer users are addicted to consumption as much as any other group. Indeed, there is in the music technology world a phenomenon called GAS – or Gear Acquisition Syndrome, akin to an addiction to buying more and more gear (see also section 3.2). There is a saying that the number of synthesizers you need is always equal to x + 1, where x is the number you have at the moment. This is explored by Prescott-Steed, who argues that for users, "GAS is not inevitable, it is constructed. There are more sustainable alternatives and we could decide to be happy with the synthesizers we already possess" (2020, p.100).

He contends that while GAS is a personal phenomenon, it is at the same time almost universal, and so if users can understand its nature, that it is constructed, they may have a chance to fight against it. While his argument is somewhat persuasive, in my own personal experience as a user, GAS certainly is, unfortunately, inevitable. When investigating the forum posts, the notion of GAS will be invaluable.

To conclude this section, it is also instructive to examine the non-use of artifacts as well as their use, as the acts of resistance and rejection, and those who resist and reject the new artifacts, can tell us as much in any analysis as the converse. Wyatt, for instance, studied users and non-users of the internet in order to see which assumptions were generally held about each group (2005). Building on the ideas of SCOT, she notes the ways in which resistance, and indeed anti-artifact activism, can shape the development of a technology. Despite the demonstrated relevance of non-users, she quite reasonably asks the question, "would mobile phones make such irritating noises if non-users had been involved in their design?" (ibid., p. 78), and therefore rather sharply notes that the commonly held notion of 'following the actors' is not quite so simple if the actors, in this case non-users, are essentially invisible. She concludes that use of a new technology is more often than not seen as desirable, while non-use is often seen as the result of a lack of education or infrastructure, rendering "informed, voluntary rejection of technology" as not even a possibility (ibid., p, 79). It may be the case that the posts belonging to non-users of the Boutiques, or indeed of the synthesizers before them, had (or should have had) an impact on synthesizer design – it may also be the case that, on the forum at least, non-users are vocal and not invisible. In an later work Wyatt et al. outline a 4-part taxonomy of technological non-use, and this demarcation between different types of non-users will be instructive (Wyatt, Thomas, & Terranova, 2009). In their taxonomy the first group are termed the 'resisters', who have decided not to use the artifact at all. The second group, the 'rejecters,' once used the artifact but subsequently decided to stop doing so. The third group is the 'excluded', who for financial or other reasons never had access to the artifact, and the fourth is the 'expelled', who have stopped using the artifact for reasons beyond their control. This taxonomy will be used in the empirical part when talking of non-users.

Another study on resistance to use was provided by Kline, who examined the introduction of the telephone and electrification in rural America (2005). His study built on the SCOT framework but also took into account the notion of power relations between the relevant social groups. One of the interesting ideas propounded was that local co-ops of rural farmers resisted what they saw as the imposition of the structures of electricity distribution, including power lines, as being centrally dictated by Washington. The spread of these new technologies was contested and resisted, and as Kline puts it, "farmers contested efforts to urbanize rural life by resisting each technology, then weaving it into

existing cultural patterns to create new forms of rural modernity." (ibid., p.51). It will be interesting to see if echoes of this can be seen in any resistance to the Boutiques. Interestingly, Kline found that resistance to large technical systems, such as the power grid, was more severe than the resistance to small consumer products, such as radios (or, perhaps, Boutiques).

A further explanatory source of resistance to new items is provided by the notion of tacit knowledge, that the owner of a vintage artifact has built up a relationship and a workflow with it that cannot be described in words. This is especially this case for the intimate and often emotional use of musical instruments. This notion is brought forward by Bijsterveld and Schulp (2004) and developed further by Bijsterveld and Peters (2010), who claim that musicians can become very guarded of their tacit knowledge and even defensive of it – their livelihoods and even their identities depend on it, after all. This means that they can become resistant to new technologies that might supplant their own, cherished artifacts.

Musicians can form deep relationships with their instruments, and Verbeek explores the relationship between humans and physical products in his book *What Things Do* (2005), concluding that the materiality of a product is as important, if not more, than its functionality or semiotic qualities. A meaningful relationship between a product and a human can thus not be designed for in advance as it experiences a more organic development. As Verbeek puts it, to build a durable relationship with a user, a product requires an "engaging capacity," which can "invite attachment during the product's use by allowing trusted interaction with it and by involving people in the functioning and aging processes. In both cases a sensorial relation with objects as material artifacts arises, through which people are actually engaged with the very product that is present here and now" (ibid., p. 233). As analog synthesizers age they are subject to wear and tear which can warm a user towards their product, but users frequently also report that analog synthesizers change their tonal qualities as they mature, as the diodes, resistors, capacitors, and other discrete electronics age. It might be the case that as people engage with their instruments over time – as they manipulate the knobs, sliders and keys - they mature concurrently, building a durable relationship; one that would, on being threatened by a newer, digital version, foster resistance. Furthermore, digital synthesizers, whether virtual analog or not, do not change over time, possibly engendering in forum users an implicit resistance to use due to a perceived lack of what Verbeek would call engagement capacity. As Thorén and Kitzmann noted in their study, while digital gear can be perceived as making an otherwise analog signal chain 'impure,' it is in fact the very impurities and imperfections of analog, which deepen over time, that add character to the sound of an analog synthesizer, and for some people these impurities and imperfections can never be replicated by a digital synthesizer (2015). These challenges to engagement – a necessary

absence of growing with a new instrument, and the fact that being digital it will not mature concurrently with its user – might contribute to any explanation of non-use of the Boutiques.

2.5. Identity, Groups and Boundaries

The notion of identity can be traced all the way back to Freud's work in the 1920s on the subconscious and conscious minds (Freud, 1923/1989), and became more modern with the symbolic interactionists, notably George Herbert Mead (Mead, 1934/2015) and then especially Erving Goffman (Goffman, 1956/1990). His ideas of people being actors, interpreting and playing roles from a specific and limited set available to them in the society in which they are situated, and their being performative at all times whether deliberately or not, could be especially helpful in the analysis of the online synthesizer communities and the identities taken up by groups and individuals among them. Identity was then later updated by Anthony Giddens' structuration theory in the 1990s, which argued that individuals forge their identities, they are not passively handed down to them, and in doing so they also change the global society in which identities are forged, regardless of how locally they are situated (1997). This dual structure, a combining of agency and structure into one, may well be observed as users post their opinions on the forum.

STS studies have added extra dimensions to notions of identity, including the concept of boundary-work, as introduced by Gieryn (1983). Gieryn investigated the ways in which scientists construct and contest the boundaries of their subjects, initially by looking at the active demarcation of science and non-science by, and as a practical benefit for, scientific practitioners. He teased out three scenarios in which boundary-work is done. The first is when the practitioners of one discipline wish to expand into the domain of another discipline; the second is when practitioners wish to exclude others from having any dominion over the authority and expertise which they would claim for themselves (often done by using pejoratives such as "amateur"); and the third is when practitioners wish to abrogate responsibility for their actions by blaming any negative consequences on actors and actions outside of their boundaries (which Gieryn calls 'protection of autonomy') (ibid., p. 791-2). As Gieryn notes, other professionals in fields outside of scientific research can be shown to exhibit boundary work, including artists and medical doctors. It will be interesting to see if the boundary work which Gieryn described scientists as being engaged in can be mapped onto the online users' comments as they jostle to define and configure themselves, especially as they seek to demarcate themselves and others as experts or amateurs, and exclude other users on that basis.

A few years later, Star and Griesemer introduced the idea of boundary objects while studying professionals in a museum setting (1989). They conceive scientific work as a diverse undertaking

comprised of heterogeneous social groups, which at the same time requires cooperation between them. There are a number of more or less successful ways to finagle cooperation into existence between diverse groups, and Star and Griesemer found in the museum two ideas that helped it function effectively - methods standardisation and the creation of boundary objects (ibid., p.392). The focus here will be on boundary objects rather than methods standardisation. As Star and Griesemer put it, "the intersectional nature of the museum's shared work creates objects which inhabit multiple worlds simultaneously, and which must meet the demands of each one" (ibid., p. 408). They found four different types of boundary object, the first being 'repositories' (such as a museum, a standardised collection of items); the second being 'ideal types' (such as the notion of a species, which describes no single organism but is an abstraction of the characteristics of all the organisms so grouped together); the third being 'coincident boundaries' (such as those found on a map, which while physically the same for all groups may have different meanings); and finally standardised forms (meaning that amateur and professional alike had to fill in the same form when, for instance, inspecting or borrowing a museum item). These boundary objects may be concieved of differently in the different social worlds they inhabit, but they "go beyond mere trading across unjoined world boundaries. They begin to devise a common coin which makes possible new kinds of joint endeavors"and are not imposed by any one group on another, but instead function as "anchors or bridges" (ibid., p. 413-4).

Pinch and Trocco are convinced that the idea of boundary objects can be translated onto music technology, stating that the "synthesizer is a form of 'boundary object'" and even that it "is something that can pass between different worlds, that can take on different meanings in these worlds and in the process transform these worlds" (2004, p. 308). Indeed, they then take a step further and introduce the concept of 'boundary shifters,' essentially mapping the concept of the synthesizer as boundary object onto the individuals who populate *Analog Days*. In this sense, they argue that as the characters they describe move through multiple and heterogeneous identities, "categories like engineer, musician, and salesman [sic] are constantly being called into question as actors refuse to comply with the labels that we analysts give them" (ibid., p. 313). A boundary shifter, then, is somebody who "cross[es] boundaries and in so doing produce[s] a transformation" (ibid., p. 314). Treating the Boutiques as boundary objects and the forum posters as boundary shifters could be very fruitful in terms of analysis. Pinch (2005) builds on this concept by introducing the concept of "missing masses" onto a particular set of boundary shifters - the early synthesizer sellers such as Van Koevering. For Pinch, these sellers were indispensable to the creation of the synthesizer market outside of elite groups of rock musicians and do not receive the credit or weight of enquiry that is warranted, and hence can be seen as 'missing'. It could be the case that missing masses in the modern markets are to be found

in the forum posters who construct much of the knowledge available to other users, or in the YouTube reviews that they so revere.

In their article on 'Big Tech,' Birch and Bronson introduce the notion of 'boundary assets,' which are both "an organizational or ecosystem boundary – as a flexible interface, rather than separation – and provide the tools and devices necessary for other techno-economic entities then to cross that boundary" (2022, p. 9). This term was meant to describe, for instance, the APIs used by *Twitter* (now *X*), but it could be argued that the Boutique range (along with the optional MX-1 mixer[18] which is somewhat proprietary in the way it interfaces with the Boutiques and other Roland gear but still allows equipment from other manufacturers to connect to it) builds the very type of ecosystem that Birch and Bronson describe. It may be somewhat harsh to describe Roland as 'Big Tech,' Birch and Bronson reserving the term for the likes of Apple, Meta, and Alphabet, but in the music technology world Roland are one of the big players. By making their ecosystem digital and bringing many other companies in the industry along with them, parallels could at least be drawn. Perhaps these ideas about big tech and their digital technologies can be seen in the work performed by the users described by Kitzmann and Thorén as having analog synthesizers as part of their identity and to whom the notion of not obeying the digital-peddling industry appealed (2022). This is echoed by the TRS-80 users described by Lindsay, who didn't want to succumb to what they saw as industry imposition of a new technology (2005), it being a challenge to their identity as a TRS-80 user.

In her article *Mediation Theory*, Born directly tackles the question of how music "materialize[s] identities" (Born, 2015, p. 359). She details the complexity of how media, technology and society are interwoven – an 'imbrication,' in her words – beginning by showing how music differs from other cultural and artistic practices in four ways. The first is that music does not necessitate the existence of a physical object for it itself to exist. Sound is "non-representational, non-artefactual and alogogenic," and engenders in humans meanings that are "visual, sensual, emotional and intellectual" (ibid.). As such it does not lend itself to linguistic descriptions. The second is that given its different forms of existence – Born lists "sonic trace, discursive exegesis, notated score, technological prosthesis, social and embodied performance" – to conceptualise music requires one to think of a unique constellation of heterogeneous mediations. Her third observation is of the "bidirectional nature" of music – that music is produced in societies but also then contributes to the construction of societies, in an echo of Giddens's notion of the duality of structure (1997). In her fourth observation, Born notes that musical mediations, given their complexities, must be analysed on four planes, which she sets out as follows: music producing its own social mediations; music constructing imaginaries of listening communities;

[18] see https://www.musicradar.com/reviews/tech/roland-aira-mx-1-mix-performer-640859 for a review

music crossing and being crossed by a variety of social groupings along lines such as class, 'race,' and gender; and music being a part of the social and cultural institutions that enable its production and reproduction. To elaborate on these ideas, she explores the notions of genre and affect. Genres are an example of the bidirectional nature of music and encompass all of the four planes she delineates, an example given being the practice of making 'black' music with all its complexities and, she notes, teleological nature. 'Black' is personally rather too catch-all a term, and modern electronic music, which the Boutiques would primarily be used for, is far more splintered when it comes to genre. There are too many estimates online for the number of dance music genres to explore here, but they often list over 100 even without counting sub-genres, each identified by a constellation of qualities such as geographical origin, beats per minute (bpm), amount of swing[19], the tonal qualities of the instrumentation, and the equipment it was performed on. The notion of genre being a social and cultural thing, though, is a useful one. By affect, Born notes the bodily and intellectual impact that music has on performers, listeners and audiences, which can be individual and collective, such as tapping your foot or feeling euphoric. It is difficult to disagree with her conclusion, that music is a unique and complex social constellation, comprising unique and heterogeneous mediations. This can surely be particularised to the instruments and instrumentations that make modern music, in this case the synthesizer, and the identities that form around and within it.

Modern instruments and instrumentations, including both vintage and contemporary synthesizers, are much less easy to categorise than classical instruments – is a tape loop as used by Brian Eno on *Ambient 1: Music for Airports*[20] or the Beatles on *Tomorrow Never Knows*[21] an instrument? Hardjowirogo (2017) attempts to clarify the identities of instruments by delineating 7 criteria necessary for instrumentality, and concludes by mentioning that "musical instruments are a lot more than just arbitrary objects that produce sound. They are complex, culturally freighted artifacts allowing for particular ways of interaction that result in particular sounds" (ibid., p.22). While this schema is perhaps a little restrictive (tape loops would not be included, for instance), the identities of particular instruments and their users are important to investigate. Many of the genres of dance music mentioned above are indeed intimately bound up with certain sounds and the instruments that make them. To have the identity of an acid house producer, one needs a Roland TB-303, or at the very least something that can approximate its sound. Many French electronic acts, such as Air and Daft Punk, rely quite heavily on the filter characteristics of the Korg MS-20[22], which is notoriously difficult to reproduce in software.

[19] Swing, or groove, is achieved in a DAW by making some 16th notes sound a little later, often used in drum patterns for a more human feel. See for example https://www.izotope.com/en/learn/swing-and-syncopation-understanding-daw-groove.html
[20] https://www.youtube.com/watch?v=LKZ3fGR2SDY
[21] https://www.youtube.com/watch?v=m4BuziKGMy4
[22] https://www.perfectcircuit.com/signal/korg-ms-20

Electronic pioneer Jeff Mills is bound up with the Roland TR-909 drum machine.[23] On a stage, where a performer's instruments can be seen and identified by the audience, the contribution of an instrument to a performer's identity is multiplied. For other artists, it is the vast collection of vintage synthesizers in their studios that become part of their identity, and not just an individual artifact. Pinch & Reinecke (2009) explore these ideas of how vintage synthesizers become important to modern genres in their article *Technostalgia*. The problem, however, with these vintage artifacts such as the Roland TB-303 the Korg MS-20, and the Roland TR-909 being bound up with genre and identity, is that "[v]intage synthesizers [...] have acquired such a legendary status that they are unaffordable to most working musicians". (ibid., p. 152). The price of a vintage synthesizer, then, divides users into at least two groups – those who can afford them, and those that cannot. Furthermore, by mentioning 'working musicians,' Pinch and Reinecke implicitly exclude those amateurs and hobbyists who would also desire a vintage Roland Juno-106 or a Jupiter-8. In the case of the Boutiques, the affordable price mixed with the promise of vintage sound and feel was therefore an attractive proposition to many cash-strapped musicians before release.

Scholars have looked at software recreations and modern hardware equivalents of vintage synthesizers, such as Pinch and Bijsterveld (2003), who claim that the mass-production of affordable versions of these instruments has been important in the democratization of musical opportunities, a sentiment that I think uncontroversial. Before the Boutiques, however, there had been no recreation or equivalent with their unique constellation of characteristics - being virtual analogue recreations of vintage and desirable synthesizers in a small form factor, retaining the style of the original and being produced by the same company, and being reasonably priced. This uniqueness is perhaps why they seem not to fit neatly into any of the literature. Their set of qualities does not crossover with any that has been studied before, and so it will be instructive to use the myriad ideas outlined in the literature to analyse the reaction to the Roland Boutique range among a set of online forum and synthesizer users.

[23] https://musictech.com/news/gear/jeff-mills-roland-tr-909-tony-allen/

2.6. Research questions

Given the situation in synthesizer technology at the time of the Boutique's release and the importance of user reactions to new artifacts, the research questions to be answered by this study are as follows:

Main question: How do online users respond to Roland's Boutique range of virtual analog synthesizers?

What sort of imaginaries do online users construct of this new range of synthesizers as they are announced and put into use before their eyes and ears? What different frames do they use? What identity and boundary work do their responses reveal? How do the users configure themselves in response to these new technological artifacts? What do the responses to the virtual analog nature of these instruments reveal about the users and their perception of the analog v digital debate? How does the reaction to these artifacts reveal any normative frameworks?

- **Sub-question 1: How do online forum users respond to the announcements of the Boutique range?**

  As the announcement of the first three Boutiques was made, music technology forums went into overdrive. How was this initial announcement received by the different communities and how did they construct the new synthesizers before hearing them or seeing them in the flesh? How does this compare with the later instruments? Which identities are constructed and which groups form at this stage?

- **Sub-question 2: How do online forum users respond to reviews of the Boutique range and comparisons to the original analog synthesizers?**

  As the new instruments became available, the music technology YouTube channels started to make videos demonstrating them, some even comparing them with the legacy instruments. How do the online users respond once they have actually heard them? How do they respond to them now that they can compare them with the originals? How is the analog/digital debate manifested in this? Which identities are constructed and which groups form at this stage? What other work do their comments perform?

The unique set of attributes the Boutiques possess will be of great value when answering these questions, especially when analysed in the light of the literature as outlined above, and the insights gleaned will potentially enable answers to further questions, such as what can the responses tell us

about the complex relationships between the producers and the users? How does the forum mediate these relationships, if at all, and how is this mediation seen by the forum users? How do the different groups of users and non-users interact with each other in terms of the language used and the level of acrimony? What other narratives and framings present themselves in the data once it has been analysed?

3. Methods

3.1. Introduction

This section describes the methods and processes by which the data was identified, chosen, collated and analysed. It is split into four sections: 1. The Empirical Data, which outlines how the data was found and the decisions made about which data to use; 2. Data Collection, which describes the processes involved in turning the data into an analysable form; 3. Sampling, which outlines the decisions made about which parts of the overly large dataset would actually be analysed; and 4. Data Analysis, which provides information about the qualitative coding process which was employed. It should be noted that throughout this process a detailed coding journal was kept, which greatly helped in writing up the following.

3.2. The Empirical Data

The first decisions that had to be made were about from where to source the data. Within the synthesizer community, there are two main forum pages called *Gearspace* and *Modwiggler*. Additionally, there are also Reddit threads dedicated to synthesizers, most notably *r/synthesizers*, and using the comments sections on YouTube reviews of the Boutiques was also considered. This idea was superficially attractive, especially given the audio-visual nature of YouTube, but on examination the comments themselves appeared to be very short and lacking in detail. They also tended to be limited in number. The Reddit threads, likewise, tended to be shorter and less detailed than those on Gearspace and Modwiggler. Having more experience with Gearspace, and having noted that there was an extremely long thread with hundreds of different posters concerning exactly the first three Boutiques to be released, it was decided that the data for this study would be taken from these pages.

Gearspace is registered in the UK, but has users worldwide. It celebrated its 20th anniversary in 2022, and at that time had an estimated total of over 400,000 members, who had posted over 13 million replies to over 1 million threads[24]. These twenty years were not without controversy, however. It should be noted that the forum changed its name to Gearspace in 2021 after a petition from users, having previously been named Gearslutz. According to the website itself, “Back when the forum was started in 2002, […] [t]he name was chosen to humorously poke fun at the lack of control our community members had over their equipment buying. At the same time, another humorous phrase

[24] More information can be found at https://www.tpimagazine.com/gearspace-celebrates-20-years/

was often used: Gear Acquisition Syndrome or 'GAS'. So, a Gearslut would have 'GAS'."[25] While no doubt meant humorously originally, using the word 'slut' in the website's name was both exclusionary and anachronistic, and the name was changed to provide a more welcoming and inclusive experience for users. Essentially the same thing happened at Modwiggler, which changed its name from Muffwiggler soon after Gearslutz changed to Gearspace. It is not within the scope of this work to delve too deeply into these name changes, although they would be interesting to research. However, it should be noted that during the time that the data for this study was posted online, the name of the forum was as it was before the renaming.

Having decided from which forum the data would be collected, the next decision was about which threads to use. As previously noted, there was a thread dedicated to the release of the first three Boutiques which covered the time period of Roland releasing the very first teaser pictures, through to the initial reviews, the first user purchases, and then continuing for many years afterwards. It comprises 226 pages and a current total of 6776 posts. This thread is still open today, but new posts are infrequent, and nothing new has been posted since June 2023[26].

Since the release of the original three Boutiques, Roland have expanded their line, most notably with the SE-02 (one of which this author owns), the TB-03, and SH-01a. The SE-02 is an analog synthesizer and in any case not based on a Roland original (nor even designed by Roland, it being a collaboration with Studio Electronics[27]), and so it was decided not to seek out any threads thereon. The SH-01a, while based on the venerable Roland SH-101, did not appear to add anything significant that the original three didn't cover, and so was omitted from this study. The TB-03, though, was an interesting case. Of all the Boutiques, it is by far the closest in terms of footprint and design to the original on which it is based, the Roland TB-303 Bass Line. It was decided that this additional characteristic, of its form factor being not appreciably different from the legacy synth, was important enough and differentiated the TB-03 to such an extent that it should be included in the study. It would also be remiss not to admit that a redesign of the TB-303, given its storied history in dance music, would in any case be difficult for this author to leave out. As the TB-03 was released some time after the original three, it has its own dedicated thread on Gearspace[28]. This comprises 64 pages and a current total of 1917 posts. Once again, this thread is still open, but no posts have been added since July 2022. This

[25] https://gearspace.com/board/gearslutz-com-gearspace-com-the-name-change/1424623-gearslutz-com-gearspace-com-history-name-change.html
[26] https://gearspace.com/board/electronic-music-instruments-and-electronic-music-production/1031061-roland-boutique-three-new-roland-synth-products.html
[27] see https://www.roland.com/us/products/se-02/
[28] https://gearspace.com/board/electronic-music-instruments-and-electronic-music-production/1111611-roland-tb-03-a-64.html

thread, having been started some time after the initial three Boutiques had been released, lacked the speculation about form that existed on the first thread, as it was (correctly) assumed that it would have the same form as the previous Boutiques and be virtual analog. Any speculation was essentially therefore limited to the sound qualities.

At the time the research was initially conducted, there were also two other Boutiques on the market, the TR-08 and the TR-09, both of which are drum machines and not synthesizers, so they were omitted from consideration for this work. More recently, Roland has released a new range of three Boutiques: the D-05, based on the vintage Roland D-50; the JD-08, which emulates the vintage Roland JD-800; and the JX-08, which emulates the vintage Roland JX-8P. There are good reasons for not including these three in this analysis, however. The D-05 and JD-08 emulate digital synthesizers from the 1980s and are therefore not comparable to either the original three or the TB-03, which all seek to emulate analog originals. The JX-08, meanwhile, though emulating an analog original, uses an entirely new modelling technology - Roland's Zenology - instead of ACB, giving it a higher polyphony count but less accurate sonic characteristics. Given these differences, and as these newer units were released after the present work had been started, they were also omitted from consideration.

3.3. Data Collection

The original plan was to use the qualitative data analysis software Atlas.ti to collate and then analyse the selected data. There is a function in Atlas.ti that allows the user to automatically scrape posts and entries on social media, and this would have been ideal. Unfortunately, after much research and attempted tweaks, it was ascertained that this tool requires the user to utilise an external web-based tool to convert the social media posts into a MS Excel file that Atlas.ti can work with. It is not possible to do this with a forum, only with recognised social media platforms such as Twitter (now X) and Facebook. This tool does also work with Reddit, which briefly led to thoughts of returning to r/synthesizers, but the data was so much richer at Gearspace that a new method had to be found.

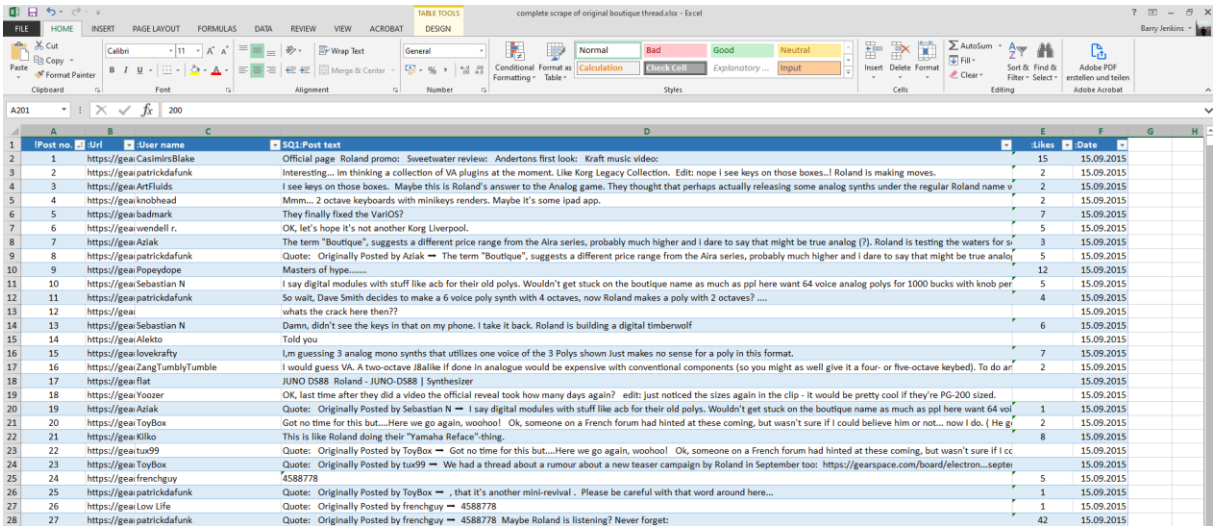
One idea was to manually copy and paste the information into an Excel file for subsequent import into Atlas.ti, but this idea was discarded due to the amount of time required to do so with more than 8000 posts. As programming a script in Python is beyond my capabilities, I looked into online scraping tools. My initial scepticism was alleviated when I used a tool called import.io. This is an incredibly expensive tool, costing €399 per month for even its entry-level subscription, but it is possible to use it for a limited time for free. The learning curve is quite steep, and as the time is limited this adds extra pressure to the process. However, it reliably scrapes your chosen fields from the pages and can process ten

webpages at once, saving considerable time when compared to manually copying and pasting so much data into MS Excel.

The fields chosen were:

- Post number
- URL
- User name
- Post text
- Likes
- Date

These fields provided a wealth of data about each post and enabled decisions to be made about sampling, as will be discussed in the next section. At the end of this process I had two separate Excel files, one being from the original thread, totalling 6771 posts, and the other being from the TB-03 thread, totalling 1917 posts. Fig. 9 shows a screenshot of the first:



Post no.	Url	User name	SQ1:Post text	Likes	Date
1	https://gea	CasimirsBlake	Official page Roland promo: Sweetwater review: Andertons first look: Kraft music video:	15	15.09.2015
2	https://gea	patrickdafunk	Interesting... im thinking a collection of VA plugins at the moment. Like Korg Legacy Collection. Edit: nope i see keys on those boxes..! Roland is making moves.	2	15.09.2015
3	https://gea	ArtFluids	I see keys on those boxes. Maybe this is Roland's answer to the Analog game. They thought that perhaps actually releasing some analog synths under the regular Roland name w	2	15.09.2015
4	https://gea	knobhead	Mmm... 2 octave keyboards with minikeys renders. Maybe it's some ipad app.	2	15.09.2015
5	https://gea	badmark	They finally fixed the VariOS?	7	15.09.2015
6	https://gea	wendell r.	OK, let's hope it's not another Korg Liverpool.	5	15.09.2015
7	https://gea	Aziak	The term "Boutique", suggests a different price range from the Aira series, probably much higher and I dare to say that might be true analog (?). Roland is testing the waters for s	3	15.09.2015
8	https://gea	patrickdafunk	Quote: Originally Posted by Aziak The term "Boutique", suggests a different price range from the Aira series, probably much higher and i dare to say that might be true analo	5	15.09.2015
9	https://gea	Popeydope	Masters of hype.....	12	15.09.2015
10	https://gea	Sebastian N	I say digital modules with stuff like acb for their old polys. Wouldn't get stuck on the boutique name as much as ppl here want 64 voice analog polys for 1000 bucks with knob per	5	15.09.2015
11	https://gea	patrickdafunk	So wait, Dave Smith decides to make a 6 voice poly synth with 4 octaves, now Roland makes a poly with 2 octaves?	4	15.09.2015
12	https://gea		whats the crack here then??		15.09.2015
13	https://gea	Sebastian N	Damn, didn't see the keys in that on my phone. I take it back. Roland is building a digital timberwolf	6	15.09.2015
14	https://gea	Alekto	Told you		15.09.2015
15	https://gea	lovekrafty	I,m guessing 3 analog mono synths that utilizes one voice of the 3 Polys shown Just makes no sense for a poly in this format.	7	15.09.2015
16	https://gea	ZangTumblyTumble	I would guess VA. A two-octave JBalike if done in analogue would be expensive with conventional components (so you might as well give it a four- or five-octave keybed). To do an	2	15.09.2015
17	https://gea	flat	JUNO DS88 Roland - JUNO-DS88 | Synthesizer		15.09.2015
18	https://gea	Yoozer	OK, last time after they did a video the official reveal took how many days again? edit: just noticed the sizes again in the clip - it would be pretty cool if they're PG-200 sized.		15.09.2015
19	https://gea	Aziak	Quote: Originally Posted by Sebastian N I say digital modules with stuff like acb for their old polys. Wouldn't get stuck on the boutique name as much as ppl here want 64 voi	1	15.09.2015
20	https://gea	ToyBox	Got no time for this but....Here we go again, woohoo! Ok, someone on a French forum had hinted at these coming, but wasn't sure if I could believe him or not... now I do. (He g	2	15.09.2015
21	https://gea	Kilko	This is like Roland doing their "Yamaha Reface"-thing.	8	15.09.2015
22	https://gea	tux99	Quote: Originally Posted by ToyBox Got no time for this but....Here we go again, woohoo! Ok, someone on a French forum had hinted at these coming, but wasn't sure if I cc		15.09.2015
23	https://gea	ToyBox	Quote: Originally Posted by tux99 We had a thread about a rumour about a new teaser campaign by Roland in September too: https://gearspace.com/board/electron...septe		15.09.2015
24	https://gea	frenchguy	4588778	5	15.09.2015
25	https://gea	patrickdafunk	Quote: Originally Posted by ToyBox , that it's another mini-revival . Please be careful with that word around here...	1	15.09.2015
26	https://gea	Low Life	Quote: Originally Posted by frenchguy 4588778	1	15.09.2015
27	https://gea	patrickdafunk	Quote: Originally Posted by frenchguy 4588778 Maybe Roland is listening? Never forget:	42	15.09.2015

Fig. 9: Screenshot of the Excel spreadsheet for the original thread

The next process was to import the data into Atlas.ti. Here it would have been difficult to add the two Excel files separately, as there would be duplicate entries in the “Post number” field. The two files were therefore combined into one large Excel file, with each post receiving a new ‘ID number’ field in order that they were unique, and a ‘thread’ field so it was simple to ascertain from where the post had originally been scraped. At this point the file was imported into Atlas.ti as a survey, giving 8688 separate documents to be coded. As this would be excessive time-wise, it was decided that a representative sample from different key time points would be taken and analysed.

3.4. Sampling

It was decided to sample from three distinct time periods, which will be introduced in this section, and also to sample from the top rated posts, to give an indication of what the users themselves considered to be important.

1. **On Roland's announcement of the boutique range**. The first 200 posts of the thread were coded to gain insight into the users' posts before they had seen or heard the synths either in real life or in reviews. One might call this the pre-construction phase. The first post was made on 15th September, 2015.

2. **After release of Tranche 1 (JX-03, JU-06 and JP-08)**. It was difficult to pinpoint an exact time to be considered 'after release,' as the Boutiques were released in different regions at different times. However, this period produced some particularly salient data, so a decision had to be made. The important differences between this chosen time period and that antecedent thereto were considered, and it seemed that the most important distinction was that the users would have had the chance to see and hear the units, if only vicariously. This meant an end to any speculation on form and sound, and that the users could actually discuss the physical synthesizers. Coding therefore began with the appearance on the thread of the first posts to mention SonicState's review of the JU-06 on YouTube, which occurred on 9th November, 2015[29]. SonicState is an important music technology website, whose YouTube reviews can make or break instruments, and many of the comments made before this review was published mentioned that the user was waiting for SonicState's appraisal before they made a decision on whether to buy one of the Boutiques. This was the first time a generally trusted reviewer had published a video on any of the Boutiques and so constitutes an important event in the timeline of these instruments. Apart from reviewing the JU-06 on its own merits, the reviewer (Nick Batt) compared the sound with his original Juno-106. 158 posts later, on 14th November, came the first posts following the publication of the SonicState review of the JP-08[30], which once again also featured the original legacy synthesizer, in this case the Jupiter-8. The next 100 posts were coded to ensure inclusion of data on the two Boutiques which had been subject to trusted reviews. This provides insight into how users accepted (or otherwise) the Boutiques once they had actually seen and heard them. In total, this section comprised the coding of 258 posts. As SonicState did not review the JX-03, and as it was generally the least highly anticipated and least commented upon synthesizer of the original three, it was not specifically included in the selection criteria at this stage. It was, of course, mentioned in dispatches along with the other two Boutiques.

[29] https://www.youtube.com/watch?v=Y4c0CR7s4Fo
[30] https://www.youtube.com/watch?v=5IW45FSMaR4

3. **After release of the TB-03**. The TB-03 was released almost a year later, on 10th September, 2016. Nevertheless, it was deemed important to include it in this study as it is far closer in size and design to the original TB-303 Bass Line synthesizer than any of the Boutiques in Tranche 1 are to the legacy synthesizers on which they are based, as discussed above. This was done with the aim of ascertaining if effectively neutralizing the differences in the haptics and aesthetics would have an effect on users' perceptions. 200 posts were coded.

4. Apart from these time periods, all posts satisfying the criterion of having a total of 20 likes or more, **the top rated** posts, were also analysed in an effort to best represent some of the more popular opinions expressed by the posters. There were 49 such posts. Most of these posts fell outside of the sampled areas as outlined in sections 1-3, but if they contained in vivo codes that were particularly apposite and better expressed an opinion than any of the posts in the sampled areas, they are included in the analysis of these sections in the empirical part. In total then, 707 posts of necessarily varying length were selected for analysis.

3.5. Data Analysis

The analysis method used in this work is based the constructivist grounded theory approach as outlined by Charmaz (2014), and the selected posts were analysed using incident by incident coding. I feel that line by line coding introduces an element of arbitrariness and cuts meaningful chunks of data into less meaningful and incoherent slices, while treating incidents as discrete allows for more judicious decisions to be made about what should be coded and how.

Of course, being judicious necessarily entails using judgement, and here it should be noted that my judgement may well have been clouded by the fact that I had some knowledge of the field in advance. As a hobbyist musician with a modest collection of synthesizers, I was not approaching this as an anthropologist being presented with an entirely new group of people, unfamiliar with their symbols and language use. In that sense, there is the possibility that I took some of the data at face value and did not interrogate it as much as I should have when coding, given that I had a fair idea of the meaning of a poster's words. This lack of objectivity should, I think, be balanced against the fact that so much of what was being said would be entirely alien to an 'outsider.' I believe that analysing this data without prior knowledge, while perhaps being useful in a different way, would not have yielded the results that this work has, which are based on a detailed understanding of what the posters were actually trying to say. It would be difficult to understand any of the meaning expressed when posters were using the functionality of one synthesizer to describe their imaginary of the Boutiques unless one actually knew

what this functionality was. It would also be very hard to discern irony, sarcasm, and even condescension with no prior knowledge.

As the coding process continued, I noticed that while many of the incidents deserved an abstract code which could be reused for other incidents, for many of the incidents an in vivo code would also have to be added. Perhaps it is the limited spatial nature of a forum, or of social media in general, that lends itself to pithy phrases, full of symbolism and meaning. Certainly in this environment, where so much detail is hidden behind the technical language and tacit knowledge of the synthesizer world, certain phrases demand to be quoted. Many of these are featured in the empirical section to follow. In this regard, Gearspace is a public forum, and anybody can read these posts without registering. Additionally, most of the posters use pseudonyms and are essentially anonymous. Users do not display even basic personal information when posting – names, gender and age are all kept back. In this sense, it was felt that using these in vivo quotations in this work was ethically acceptable.

As I coded the first set of posts, I formed the coding group "Speculating before release," which meant I was able to shape the empirical part into pre- and post-release phases, enabling a comparison of the two. Another group was "Expressing hope," which also denoted a post from the pre-release phase.

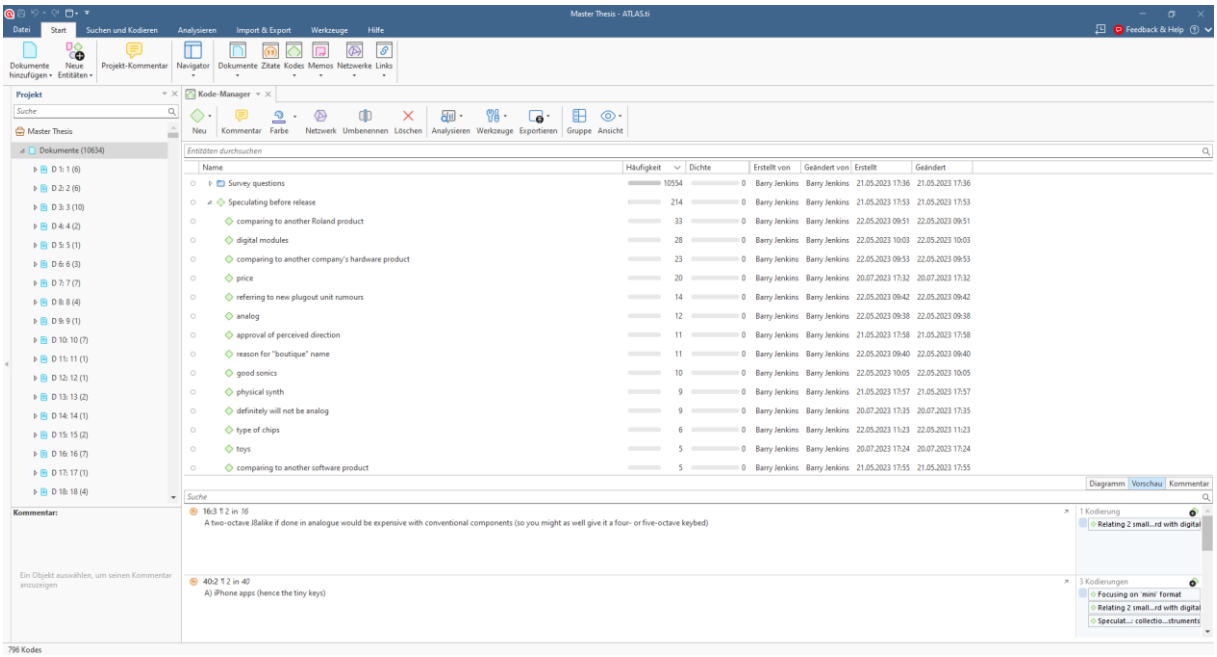


Fig. 10: Screenshot from Atlas.ti group "Speculating before release"

Within these groups, and without them, it is possible to see which codes occurred most often. Fig. 10 shows an example screenshot of the group "Speculating before release" from Atlas.ti.

In total there were 796 codes, which is more than the total number of posts. Many of course were not relevant to my research questions, and so were not taken into consideration. By noting the frequency of the codes, and by re-reading the posts from which they came (which is a simple task in Atlas.ti), I was able to make observations about the different phases, see which groups started to self-form, and investigate the narratives that were being constructed and employed. I was also then able to find suitable in vivo codes to illustrate these observations from the sizeable (103) collection that I had accrued. These observations are detailed in the next chapter, the Empirical Part.

4. Empirical Part

4.1. Introduction

This section presents the results of the data analysis performed on the data scraped from the two threads selected from the forums on gearspace.com, as described in the methods chapter. The posts analysed comprise 707 posts sampled from three specifically chosen time periods and one other more general criterion. These time periods were: 1. On Roland's announcement of the Boutique range; 2. After release of Tranche 1 (JX-03, JU-06 and JP-08); and 3. After release of the TB-03; while the top rated posts, those with more than 20 likes, were also coded.

The next sections will focus on the analysis of these four collections of posts, giving a general description of the collections, focusing on any phase-dependent observations, detailing the narratives that could be teased out, and delineating any spontaneous (or otherwise) group formation.

It should be emphasised that this thesis does not aim to evaluate the sound or build quality of the Boutiques, nor any of their other characteristics, whether technical, aesthetic or haptic. Rather, the aim is to investigate the effect that these recreational recreations have as artifacts introduced into a heterogeneous community of self-described synthesizer enthusiasts; which identities are revealed and which stories and histories unfold.

4.2. On Roland's announcement of the Boutique range

4.2.1. Phase-dependent observations

Before release comes what one might call the pre-construction phase. As nobody has actually seen or heard the Boutiques at this point, save for a limited amount of intentionally vague visual marketing material published by Roland, each poster is constructing their own imaginary of what constellation of characteristics the impending three synthesizers might have. The following observations come from the first 200 posts in the thread, all posted on the 15th and 16th of September, that is to say very early after the release announcement.

4.2.1.1. Tacit knowledge

It is interesting at this point to note in the codes just how much of the speculation is done using other extant synthesizers as a type of language. This can be seen as communication using tacit knowledge,

as other synthesizers are used as symbols in people's imaginaries of the product to come. This neatly describes the thought-processes of the users – how do I describe this potential new synthesizer? By describing its characteristics in terms of those of an existent synthesizer.

Here are some typical examples of this type of post:

> "After watching the videos I'm gonna guess its just a System 1 with different colored lighting. Boutique colors." - User *kslight,* post 169

This user, like many others, was comparing the Boutiques to a previous Roland product, in this case the Roland System 1. Other users compared the Boutiques to other manufacturers' products, in particular the Yamaha Reface range, which were seen at the time as digital toys cashing in on Yamaha's venerable synthesizer history:

> "This is like Roland doing their "Yamaha Reface"-thing." – User *Kilko*, post 21

> "problem is it looks more indeed like roland's answer to yammy's reface then true high-end boutique stuff" – User *xanax*, post 41

One of the first to post suspected that the new products would be software instruments and not hardware, and used Korg's products as an example:

> "Interesting... im thinking a collection of VA plugins at the moment. Like Korg Legacy Collection." – User *patrickdafunk*, post 2

Finally, one user, who was certainly not alone, took the opportunity to take a humorous sideswipe at Roland with the following:

> "Roland is building a digital timberwolf" - User *Sebastian N*, post 13

This quote in particular contains a huge amount of unspoken meaning. To understand this post, one would firstly need to know that the 2015 Akai Timberwolf has become known as a legendarily bad analog synthesizer, and secondly that throughout these threads (and, it is thereby here assumed, the synthesizer community as a whole), digital is often considered to be inferior to analog. A 'digital timberwolf' is therefore about as harsh a criticism as can possibly be directed at an upcoming product.

No reader without this tacit knowledge would be able to understand the meanings contained within these posts. While it is difficult to conclude that exclusion is the point here, more that other synthesizers provide a convenient semiotic shortcut, they are exclusionary in that sense.

4.2.1.2. Dissatisfaction with Roland's pre-release marketing campaign

Many of the very early postings expressed dissatisfaction with the marketing campaign, Roland being seen as the quintessential exemplars of companies beginning to market products that were not entirely finished and merely interested in building hype (this mantle has recently been handed over to Behringer, who have acquired the nickname "edgelords"[31]). Given that any viral marketing campaign would depend upon the users of such forums as Gearspace spreading the word, it is notable that the users themselves are very cynical about these marketing efforts. Two posters sum up the exasperation they feel at the prospect of another Roland marketing campaign:

> "Hope they don't make a teasing fest again.....it gets tiring and frustrating. Only time will tell though..." - User *Aziak*, post 8

> "OK, last time after they did a video the official reveal took how many days again?" -User *Yoozer*, post 18

Another early poster succinctly encapsulates the prevailing feeling:

> "Masters of hype....." - User *Popeydope*, post 9

Finally, this cynicism is taken to a new level by a poster named *HaveItAll*, who concludes that it isn't just the marketing departments of big companies like Roland who are at fault - even the designers themselves have no interest in the product apart from how well it can be monetised:

> "The reality is the people designing synths are not actual synth fans. Its image run by marketing" - User *HaveItAll,* post 174

4.2.1.3. Relative lack of interest in the sonic capabilities

While many of the posters do comment on what they imagine the Boutiques will sound like, they concentrate solely on whether they will be authentic sounding (and therefore good) or not (and therefore bad). The codes "expressing hope: units will sound good" or "speculating before release: good sonics," were only found 15 times, while even speculation on the nature of the internal circuitry was found 10 times, something that might be expected to be nowhere near as relevant. It was expected before the analysis was carried out that the sound would be the facet of the new synths that would be the main concern of the posters, but actually more time was expended talking about the physicality of them, the polyphony, whether there will be a keyboard, and whether they will be analog

[31] For a performer and YouTuber's rather sceptical take, see https://www.youtube.com/watch?v=p5RSIWbZ6Vc

or digital. For instance, codes that focused on the speculated analog or digital nature of the Boutiques were used 53 times. All these issues will be covered in upcoming sections.

4.2.1.4. Speculation

Interestingly, while enthusiastically taken up by others, speculation itself is frowned upon by some. In one of the well-liked posts, one user said:

> "This thread has gone on for 9 pages with nothing to go on except for a very hazy still from a video. Just about every comment is based on pure speculation" – User *DFourV*, post 271

while another popular later post contained the following:

> "too many kidults flock to speculation threads "Help Stop Premature Speculation"" – User *Blackbelt Jones*, post 1898

4.2.2. Groups in terms of approval

In the pre-construction phase, it is possible to tease out three distinct groups according to their stated speculative opinions on the Boutiques, which I will term generally approving, generally disapproving, and generally agnostic. It should be noted that while the members of these groups express notably homogeneous opinions, very little positive group work is actually done. This was unexpected, as it was assumed before the coding was carried out that forums, like other social media, were at best places where people could meet like-minded souls and at worst echo chambers that drive polarisation. It seems that remarkably little actual interlocution is carried out, and that which is done tends to be negative in tone and effect.

4.2.2.1. Generally approving

A section of the posters seemed to be excited about the prospect of the new synthesizers, and their speculations focused on four main areas:

<u>Physicality</u>

The first tranche of Boutiques, even as could be perceived from the hazy marketing material, were quite obviously smaller than the full-size Roland synthesizers which they attempt to recreate. For many posters, this was seen in a positive light:

> "Seems like cute little synths […] My guess is they will be around the $500 mark each, since that seems to be the price point many synth manufacturers are aiming at with their little minikey synths.
> I wouldn't mind if Roland decided to release the software for the System 1 as well.. then again, it's kinda nice to have a dedicated box running the new synths" – User *payt*, post 197

This poster, typical of the generally approving, describes the Boutiques as 'cute' and 'little' (twice), words that members of other groups use as pejoratives. Interestingly, this poster also posits a price (which was a rather high prediction, as it turned out), as do many others, and they also mention mini keys without disparagement. Mini key synthesizers are a sensitive issue in the synthesizer community, with some people professing to hate them as they sense the trivialisation of a musical instrument into a toy. This will be expanded upon in section 2.2.2. User *payt* also warmly mentions a 'dedicated box' to run the synths. This physical box is compared favourably to a software plugin for an existing hardware synthesizer, or a VST running on a computer.

The following quote exhibits the tacit knowledge outlined in section 2.1.2 when mentioning the PG-200, a small external controller for the original JX-3P which was sold additionally by Roland to enhance the haptic control of a synthesizer that was low on knobs and sliders (see Fig. 5).

> "just noticed the sizes again in the clip - it would be pretty cool if they're PG-200 sized" User *Yoozer*, post 18

Like others who applaud the small nature of the Boutiques, *Yoozer* can imagine one on a larger keyboard as an adjunct, one which does not take up much space in an otherwise possibly crowded (home or bedroom?) studio. The size of the Boutiques will become more controversial once the users are sure about their dimensions.

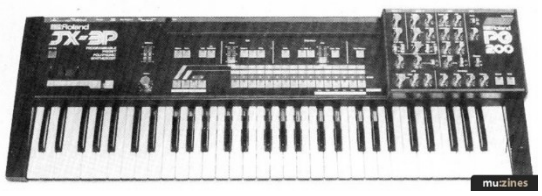


Fig. 11: A Roland JX-3P with PG-200 controller (top right)

Authentic sonic characteristics

The posters who made positive remarks about the possible sonic characteristics of the new models once again relied heavily on existent synthesizers and Roland technologies to make their points. This is a typical example, which in this case mentions Roland's recently introduced ACB technology:

> "I am pretty sure they are ACB, and that is fine with me […] ACB in my experience, has been amazing. I doubted it until I used it. If they can get in the same ballpark with the models being hinted at as they did with the SH-101- instant win." – User *lestermagneto*, post 135

It turns out that this user was correct in their assumption that ACB would be used in the Boutiques, but more interesting here is the focus on how authentic the sound will be, as the user considers the technology to have previously produced in the AIRA range of synthesizers a faithful reproduction of the SH-101, an analog Roland synthesizer introduced in 1982. The value is seen to be in authenticity, and not the sound in its own right.

A number of other posters seem confident that the Boutiques will sound good due to the quality of other recent Roland releases; here are two examples:

> "Roland's new machines (Aira, JD-X?) sound really, really good. I'm quite optimistic about these new offerings in terms of sound" – User *krakapow*, post 192

> "if its like Aira and the rest of their new gear, they will sound good" User *lilita*, post 77

Downplaying the digital

In this phase it is almost universally assumed, rightly as it turned out, that the Boutiques would be digital recreations of the analog originals. For most posters this assumption was based on practical considerations, such as that the amount of wiring and discrete circuitry necessary for full analog recreations would not fit into such small footprints, and would anyway be prohibitively expensive. This is not to say that some did not wish for analog Boutiques, as will be discussed below, merely that the vast majority speculated that Roland would be announcing digital modules. Many of the positive posters chose to downplay the digital aspect of the new synthesizers, as if it was an undesirable facet that should be at best ignored, and at worst denied. Not a single poster said that digital was in itself desirable, but here is a selection of ambivalent posts:

> "But really, the question is, does it matter if it's analog or digital?" - User *Rayek*, post 142

> "But I don't care digital or analog" - User *SynMike*, post 181

User *Rayek* doubts whether most people, even in the synthesizer community, can hear the difference between analog and digital:

> "9/10 people can't tell what's an old, crusty-ass vintage analog and what's essentially a VST" – User *Rayek*, post 143

and finally this succinct conclusion came from a poster largely sympathetic to the Boutiques:

> "I could give a f'all about what's making the sound, just give me the sound" – User *zerocrossing*, post 70.

Price

Many posters stated, in generally favourable posts, that the price would be a determining factor in their decision on whether to by the Boutiques or not. The following is a clear example of this:

> "if they are competitively priced..i can see all three being bought by me!" – User *cresshead*, post 96

The following poster used the by now familiar method of using other synthesizers to get their message across:

> "I'm hoping for £200 like the TB3 […] I just feel that if we all say on this thread on this well known website that we are expecting these to cost very low prices, like say a Volca price, then it couldn't hurt." – User *Opportunist*, post 79

This is also interesting as the poster seems to believe that if the users of the Gearspace forum can consciously coalesce around a preferred price point (in this case, the then very reasonably-priced Korg Volca series at around €150) then it might put some pressure on Roland to fulfil this prophecy and price the Boutiques at the same level. They are one of the few posters who appears to feel that an amount of power and agency lies with the consumers as opposed to with the larger manufacturers.

4.2.2.2. Generally disapproving

A second group of the posters seemed to be decidedly unenthusiastic about the prospect of the new synthesizers, and their speculations focused on five main areas:

Physicality

Many of the forum users complained on the grounds of the physicality and build quality of the Boutiques. In contrast to the generally approving users, who welcomed the smaller size of the Boutiques, this group feel that they will not be 'real' synthesizers, in their terms at least. Much of this was linked with the issue of mini keys, which are such are bone of contention they deserve their own section – see section 4.2.3.2. The following user succinctly sums up much of the disapproving pre-release feeling:

> "unfortunately everything roland release these days feels cheap, looks cheap, is cheap and doesn't even sound that good" - User *DiegoHostettler*, post 119

This next poster employs irony to outline what they imagine the consumer actually wants, stating knowledge from a fictional Roland employee that the essential (and analog) circuitry of the originals would be kept while being updated with precise digital controls, and that the new units would be offered in a choice of no keyboard (module) or high-quality 3 or 5 octave keyboards. This somewhat utopian imaginary of the new units ironically draws the comparison to the inevitable disappointments that they expect the Boutiques to be:

> "Obviously they are misleading us to think that it will be a disappointment. I heard, (from an imaginary Roland exec) that each of the three instruments will be fantastic updates of the original core architectures with modern digital interfacing. Each will be offered in module, 3 octave & 5 octave versions with semi-weighted high quality key-beds." – User Esla, post 129

Finally, the following user complains, again ironically, about Roland's perceived penchant for re-boxing their technology with a small number of purely cosmetic quality upgrades:

> "hey people complained about the aira/JDX look.. this year why don't we put silver knobs like on the originals?" – User *Xanax*, post 190

<u>Digital / inauthentic sonic characteristics</u>

Here in the pre-construction phase, none of the posters has actually heard the Boutiques and so there are no concrete sound examples to argue over. The yardstick is once again of authenticity, which for those who are generally disapproving of the Boutiques is inextricably intertwined with their (correctly) presumed to be digital nature.

An otherwise reasonably positive user, *payt*, sadly concluded that lack of space in the small form-factor (of which they approve) will inevitably mean Roland being forced into making the Boutiques digital:

> "Since there is no way to fit all the analog circuitry needed to reproduce the originals in such a small form factor, these will be digital emulations" – User payt, post 197

In the following extract, the user expresses disbelief when confronted with the idea that Roland could make a 'proper' recreation of their most famous classic, also thereby neatly outlining the way that analog is seen as 'real' and digital not (see also section 2.3.1):

> "Do you really believe there could be an 8-voice, analog Jupiter-8" – User WozNYC, post 48

Finally, *Dogboy73* humorously disabuses other users of the notion that Roland might release a 'real' analog synthesizer, whatever the price point:

> "Price aside, I think there's more chance of this being a holiday villa in the Algarve than an analog machine from Roland" – User Dogboy73, post 44

Toy / consumer-level products

Many posters concentrated on the consumer-level nature of the products, often comparing them pejoratively to toys. This idea is one of the factors that is strongly implicated in the identity work that is performed at this stage, as outlined in section 4.2.3.4 below, and it has a special place as a negative quality within the group of posters who are generally disapproving in their speculations.

Perhaps due to the identity work inherent in these posts, their tone is notably sharper and more dismissive, as evidenced by the following:

> "damn, so much ****ty [sic] consumer level products […] fabricated Fischer price toy" – User *patrickdafunk*, post 42.

The following post deserves to be unpacked as it contains a lot of tacit information:

> "if digital technology is able to render an awesome analog emulation, [why] see it wasted on a toy with only minikeys and a preset selector knob […]?" User *Gnalvl*, post 165

First, they doubt that digital technology is capable of a proper emulation, or otherwise Roland would support it by employing it in what the user would consider a physically proper synthesizer, unlike their perception of the Boutiques. This illustrates that *Gnalvl* does not equate the Boutiques with being proper. Second is the linking of toys and mini keys, two things that are inordinately important to a certain section of the synthesizer community, and which are explored further in section 4.2.3.2. The final interesting speculative claim is the pejorative use of a preset selector knob. Presets are pre-programmed sounds on many synthesizers that can be easily accessed from the front panel. Many presets are instantly recognisable and have defined whole genres and styles, such as *Organ 2* on the Korg M1 (heard on much well-known 1990s dance music, for instance *Show Me Love* by Robin S and *Gypsy Woman* by Crystal Waters[32], as well as more recently on Beyonce's *Break My Soul*), or *El Piano* on the Yamaha DX7 (heard on many 1980s ballads, including *Saving All My Love For You* by Whitney

[32] For a demonstration, see https://www.youtube.com/watch?v=BcUp6JdTqcU

Houston and *Sacrifice* by Elton John)[33]. The ubiquity of some presets, and the fact that they are created at the factory and not by the users themselves, leads a certain section of the synthesizer community to decry their use as inauthentic, and thus here *Gnalvl* is linking toys and mini keys with another thing, presets, that have been perceived to be not real enough and in some sense toy-like - this despite the enormous critical and commercial success that music created with presets has achieved.

Lack of faith in Roland doing the right thing

Apart from being disapproving of the Boutiques in particular, many posters appear to have no faith in Roland doing 'the right thing' in general, which it is taken for granted would be an analog recreation, as that is what it is perceived that everybody wants. This lack of faith is of course linked to many of the reasons users had to speculate negatively about the upcoming Boutiques as outlined above, but it has its own quality of a history of forlorn, previously-dashed hopes with this particular manufacturer.

User *DomiBabi* briefly outlined their lack of enthusiasm thus:

> Not getting my hopes up this time. – User *DomiBabi*, post 34

while the following post exhibits not only the hopeless, iterative disappointment the poster feels towards Roland, but also how this is linked to the fact that Roland are not releasing analog products:

> We've been down this road with Roland so many ****ing times […] Wake me up when something analog is actually revealed, which may be never. – User *Gnalvl*, post 81.

Finally, the following post outlines the commonly-held belief that Roland always find new ways to disappoint with their otherwise admirable products:

> Never underestimate Roland's ability to innovate in regards to hamstringing their products in new and creative ways. - User *SovietSpaceChild*, post 109

4.2.2.3. Generally agnostic

While most of the posters have rather strong speculative opinions when expressed, a third group could be considered generally agnostic about the Boutiques in the pre-construction phase, and these users

[33] For a demonstration, see https://www.youtube.com/watch?v=rE5DFsxKx9c

claimed mostly to be disinterested rather than uninterested. This disinterest could be rather benign and laissez-faire sounding, as with the following:

> "there are so many fun products that i'm not gonna kill myself just because roland is not making my dreams come true.." – User 4zet, post 68

User *OscIfo* appears to take a slightly more condescending route to expressing their contention that the Boutiques are just not aimed at them. This user does not explicitly denigrate nor laud the Boutiques, they simply express their disinterest. There is, however, much rich identity work being performed in this post, which will be more closely examined in section 4.2.3.4. For this section, a snippet of the post will suffice:

> For myself, no. A gift for my nephew? A strong possibility." - User *Osc1lfo*, post 90

4.2.3. Narratives

Aside from the groups which more or less form on a spectrum of approval, it is possible to tease out certain narratives in the pre-construction phase which are shared by many, if not all, of the posts, whether the posters themselves are favourably disposed to the Boutiques or not.

4.2.3.1. Analog v digital

There are a minority of posters, examples of which are provided the section "Downplaying the digital" above, who are happy to state that whether the circuitry inside a synthesizer is analog or digital is essentially unimportant. Even for this group, though, whether or not it *sounds* analog is important. However, for the majority of posters, being analog is akin to being authentic. Analog is the commonly approved benchmark, even for those who welcome the new Boutiques. For those who do not welcome the Boutiques, their very pretence towards having an analog nature is a stick to beat them with.

The following user neatly outlines the mind-set of the majority of posters:

> "Judging from the teaser pics, I'm guessing real analog..." - User *DomiBabi*, post 34

Analog here is seen as 'real', the implication being that anything digital, no matter how or how well it produces sound, is not. Other posters were harsher in their opinions:

> "i fear digi emus of some sorts" – User *Xanax*, post 41

> "I would never be interested in adding hardware that is just digital plug-ins in a tniy keyboard" - User *NoHo Kid*, post 89

In the first example above, user Xanax opines that digital emulations are something that would at best be disappointing, and at worst something to be feared. User *NoHo Kid* is absolutely adamant that, as the Boutiques are 'just' digital plugins, they will never own one.

Other posters are more sympathetic to the Boutiques and defend them on what they see as the Boutiques' own terms – affordable, digital recreations. The following user directs others to stop criticizing the Boutiques for what they are not supposed to be. Even in this post though, the implication is still that analog is 'real' and digital is not.

> "If you want a real analogue, go buy one" - User *StepLogik*, post 192

In the following post, the user is comparing the Boutiques to another digital hardware synthesizer – the Clavia Nord Lead A1. This synthesizer is incredibly well regarded and is priced much higher than the Boutiques (around €1600 today). The user claims that in a blind test most people cannot tell the difference between a digital synthesizer and an analog one:

> "Let's not kid ourselves, it's a software synth and if you think you can tell the difference between it and a plug in in a blind test (at 96khz) you're delusional, as most of us couldn't even pick out an OB-8 from a plug in" – User *zerocrossing*, post 139

Even in this post, though, there is a reverence for the Oberheim OB-8, a legendary analog synthesizer first produced in 1983, and an acceptance that some people, those with the 'best' ears, can tell the difference. The analog synthesizer is still more 'real' than the digital one.

4.2.3.2. Keys and the 'realness' of a synthesizer

Fig. 12: JX-03 with optional K-25m mini keys

As previously mentioned in section 2.2.1., the issue of mini keys is controversial in the synthesizer community. Mini keys are both shorter and thinner than full-size keys, and many posters associate them with cheaper synthesizers and toys, whatever the quality of the keys' feel or the sound that is actually produced. The Boutiques, in the end, did not come with keys at all – they are modules, which are synthesizers with no keybed , controlled by an external midi keyboard or a sequencer, such as a DAW. Roland does, however, produce an optional keyboard that the Boutiques can slot into, the K-25m[34] (currently priced at around €110[35]), and this has mini keys (see Fig. 12). This keyboard was just visible in some of the early promotional material, and so in the pre-construction phase speculation the Boutiques were associated with mini keys. Many posters, even before they had seen, heard, or felt the new keyboard, concluded that the Boutiques were not serious or real, that they were merely toys or gimmicks, purely because of the mini key association.

The following post, from a user with a generally unfavourable disposition towards the Boutiques, sums up much of the prevailing attitude to mini keys:

> "with god damn mini keys or keys that don't even feel like keys" - User *patrickdafunk*. post 42

The following post draws a comparison between the name of the Boutique range and their presumed keybed:

> "seriously? mini keys and boutique don't belong in the same sentence to me" - User *DomiBabi*, post 34

Finally, the following post exhibits a tendency that becomes much more prevalent in the phase after the release of the first tranche of Boutiques, namely that of redesigning them into the synthesizer the user would have preferred to have been released instead. The user claims that their imaginary of the

[34] https://www.roland.com/de/products/k-25m/
[35] https://www.thomann.de/at/roland_boutique_k_25m_keyboard.htm

perfect Boutique would have been commercially successful, and of course it would not have had mini keys nor only two octaves like the optional Boutique keyboard.

> "Roland could've made a 4 octave 2/3 size Jupiter 8 reissue (about the size of an OB12) with the original layout of sliders and it would've been a huge hit.
>
> This age of the 2-3 octave mini key synth needs to end." – User *7Wave*, post 86

4.2.3.3. Claims that Roland are 'milking' their classic synths

A common refrain among the forum users is that Roland is, as one poster described it, 'milking' the good name of its classic, vintage analog synthesizers. It seems as if the posters feel a sort of ownership mixed with reverence for the older, classic synthesizers, and feel affronted vicariously, or even in some cases personally, when these artifacts are perceived to be used in a base or even vulgar way to sell inferior, modern products. The following post exhibits this tendency, along with also lightly denigrating digital (in this case, in the form of virtual analog):

> "just speculating here. Who knows, maybe it's just VA hyped by the legacy stuff and that's it in the end" – User *Aziak*, post 19

The user posits that the synthesizers will be 'just' digital and that the good names of the Jupiter-8, Juno-106 and JX-3P are merely being used as marketing material. This conceit is echoed in the following:

> "Almost certainly more digital emulations that bare the same name as vintage Roland classics" – User *Dogboy73*, post 35

The following two posts restate the problem as Roland once again being untrustworthy custodians of their own intellectual property. Both posts echo the tendency for the users not to trust Roland to do the right thing, as discussed in section 4.2.2.2, but with an added sense of reverence for the vintage analog synthesizers. This tendency to mythologise especially the Jupiter and Juno ranges will be examined in the next section.

> "Just remember the last time Roland brought back the Juno and Jupiter monikers... didn't go over so well..." User *DomiBabi*, post 46

"Roland leaning on their Jupiter 8 namesake again? I'm sure this will end well." User *VST*, post 61

4.2.3.4. Identity work

Despite the fact that none of the posters at this stage had seen or heard any of the Boutiques, identity work was still be done in the speculation surrounding them. This work becomes firmed up in the sections to follow, but the roots thereof are clear to ascertain in the pre-construction phase. The first sign is that the users are very keen to let the others know about their expertise; in the synthesizer community this can be done in two ways – the first is to claim familiarity with or, better still, ownership of vintage synthesizers, and the second is to claim to be (or be friends with) a professional musician or industry insider. These assertions of bone fides are often invoked when either attacking the Boutiques as being less than serious instruments, or when defending them from these attacks.
The following extract was posted by somebody who is enthusiastic about the new digital Boutiques, but feels the need to invoke their bone fides relating to having used another set of Roland's vintage analog synthesizers before defending Roland's recent digital emulations:

"I have owned/used real System 100's, SH-101's and SH-2's, and I personally am really happy with the plug outs" – User *lestermagneto*, post 135

The following user (rightly) speculates that the Boutiques would be based on the technology already contained in the System 1 and claims that it sounds authentic. To do so, they also burnish their expertise by claiming that the System 1 sits next to two modern, but still expensive analog synthesizers:

"System 1 sits next to my sub 37 and Prophet 6" – User *A.M,* post 164

The user *lestermagento* returns with a new list of expensive, vintage analog gear that they own, and this time claims for themselves a level of expertise in being able to ascertain what might be only a slight difference to "some". This is an example of othering – the others being people who cannot hear a significant difference between analog and its emulations:

"But I love analog, love my Matrix12, love my moog stuff, love the system100m I am using, the go Korg MS10 etc.. […] It may be a slight difference to some, but you can't really "fake" the thundering monolith you can make out of the System100m, and the tactile experimental nature of it and others is undeniable." – User *lestermagneto*, post 140

This othering takes a different turn in this next post by a different user:

> "it's all so hipsters can sling em in their man bags, then ride their giant oversized skateboards down to the latte shop to meet other beard strokers, then get them out to play on street side tables and chairs under ear buds, all whilst some hot chick walks past, turns back and winks at them and her skirt blows up, oh and don't forget they come in a range of colours.." – User *fiddlestickz*, post 33

There is no doubt a level of irony in *fiddlestickz's* post, and it contains an unsubtle slight at Roland's typical marketing, which they imagine to include sexist imagery. But the list of symbols the user suspects will be arraigned – hipsters, beard strokers, skateboards, earbuds, man-bags, all used pejoratively – is instructive. The Boutiques, being small and able to be powered by batteries, appeal to the type of person who can take advantage of their portability – not the sort of person *fiddlestickz* is fond of. In their imagination of the sort of people the Boutique is aimed at, these people are not serious musicians with expertise but 'hipsters' interested in digital toys. This post might be somewhat tongue-in-cheek, but its spirit is pervasive among a certain section of the users.

The following post was a rebuke to the previous:

> If you spend time on a forum dedicated to talking about synthesizers, you are more of a hipster than the hipsters you make fun of. – User D_Davis, post 113

However, many of the other posters not only agreed with *fiddlestickz* but added to their assertions, *patrickdafunk* in particular damning the Boutiques as being:

> " […] for EDM boyz" – User *patrickdafunk*, post 42

This post, I believe, deliberately misspells 'boys' as 'boyz' to symbolise what the user perceives as the young and musically unserious nature of those who produce EDM[36]. The next poster bemoans the other posters on the forum as, again, not being sufficiently serious about their instruments:

[36] EDM stands for Electronic Dance Music, but it is unfortunately more complicated than that. To simplify, in the USA the term EDM is likely to be a catch-all for any dance music that has been produced electronically, and can include any genre. In the UK, EDM is more likely seen as the name of a genre in itself, one which is regarded as producing commercial, unsophisticated dance music and which became prevalent at US festivals quite some time after dance music became entrenched in the UK. In this case, EDM is used as a pejorative.

> "The smaller, cheaper, and less capable you can make a synth the more people on this forum seem to want it." – User *BTByrd*, post 67

Other posters were more generous in their treatment of the Boutiques, and while not quite defending them, they acknowledged that they had their place. This place, though, was of course not with a serious musician. The following extract from a post by user *Osclfo*, which has already been mentioned in section 4.2.2.3, neatly demonstrates this rather condescending attitude to those they see as others, in this case the 'young kids':

> "if you want analog there are plenty of vendors. These little guys are definitely not aimed at the GS crowd, and the young kids do not have $2K for a flagship product, nor do they yet know why they would want one, I think". - User *Osclfo*, post 90

It is interesting that *Osclfo* sees themself as speaking for the entirety of the forum users – the GS (Gearspace) crowd – despite the large number of posts from users that more or less welcome the Boutiques, or 'little guys' as *Osclfo* calls them. This post also expresses the idea that these less serious, young people have not yet acquired the expertise necessary even to know why they might want a more expensive synthesizer. This is quite a strong assertion. The post admits that there are 'plenty of vendors' which sell what the user considers to be real synthesizers – analog ones – and this is echoed in the following post:

> "As someone who has owned all the "popular" vintage polys, I can tell you the Prophet-6 is one of the finest sounding analogue polys ever made. No reason to cry over Roland when there are already plenty of options." – User *StepLogik,* post 192

This otherwise magnanimous post still exhibits the bona fides-asserting behaviour of other posts, by the user claiming to have owned a number of vintage synthesizers as their opening gambit.

As far as we can talk about two different sides, there was also identity work done at this stage by the other side too. These users relied much less on burnishing their bona fides by listing the synthesizers they either own or are familiar with, and tended instead to disparage the other users as stuffy and lacking in life spirit. The following is a succinct example:

> "Analog fetishism is, frankly, getting rather boring" - User *Space Captain*, post 156

This extract dismisses those who do not welcome the arrival of the Boutiques as analog fetishists and the next neatly encapsulates the stuffiness which this side associates with the other, and is the first mention of the word 'knobsniffers'. This is a bowdlerisation from 'corksniffers', a pejorative for a wine connoisseur, one who spends more time sniffing the cork than actually enjoying the wine. Here corks have been substituted for the knobs on a synthesizer, the implication being that 'knobsniffers' do not actually enjoy using their synthesizers, they just want to fetishize them:

> "I'll take people who have fun over knobsniffers any day. Hell, Warren Ellis has done some great stuff with the MicroKorg, there's still opportunity for this to be good" – User *chaosium*, post 88

This user also exhibits something that appeared four times in the data - using another artist or song to demonstrate their expertise, in this case the music of Warren Ellis, which the user claims was produced on a Korg MicroKorg, another virtual analog synthesizer.

Finally, the following extract exhibits vicarious bona fide asserting by the user claiming to have a friend in the industry. This is an odd post because if the user actually had any information about the Boutiques they would have known if they were virtual analog or actual analog, as it was the first thing anybody wanted to know at the time, but it is nevertheless instructive of a certain type of identity work that was performed:

> "I've seen pics of them. I know what they are but I don't know if they're VA or analog. I want to say more but the info comes from a trusted friend and I prefer not to get him into trouble." - User *Alekto*, post 58

4.3. After release of Tranche 1 (JX-03, JU-06 and JP-08)

4.3.1. Phase-dependent observations

In this phase the Boutiques are out in the real world and on the market. Just as importantly, though, they have been reviewed in magazines and especially by online reviewers such as Nick Batt at SonicState, granting the users the opportunity to actually see and hear the Boutiques, albeit in a mediated fashion.

4.3.1.1. Reimagining the Boutiques as more desirable objects

Many posters saw and heard the Boutiques or reviews thereof for the first time and then immediately expressed how they wished they had been instead. Interestingly, most of this subset of posters were not concerned with the now-confirmed digital nature of the Boutiques, but with more prosaic functionality – they described non-existent synthesizers with keyboards, with more octaves than the optional K-25m, with more voices than the Boutiques, a larger footprint and bigger sliders. This focus on functionality will be elaborated on in section 4.3.1.2. Those who commented on how they wished the Boutiques to be are not necessarily resisters thereof (see section 4.3.2.1), they just volunteered an imaginary of the synthesizer that they would rather spend their money on.

The following is an example of these posts. The user has no problem with digital technologies, and in fact imagines their desirable module to be powered by ACB (a digital technology). In almost every other aspect, though, what they are asking for is a completely different artifact, with more knobs and sliders, more modulation possibilities, more voices, and a larger footprint.

> "Make me an 8 voice (or more!) poly synth module with ACB technology that has modern MIDI functionality at least as good as the V-Synth. Give me plenty of envelopes and LFOs. It doesn't need effects, but if you have a few COSM processors lying around, sure, throw'm in. Make it plenty knobby, and/or throw in a VST editor. Make this wonderful box with an MSRP of $1000 USD or so. Then I will love you forever, but I bet I'll have to get in line." - User *zerocrossing*, post 5071.

4.3.1.2. Focus on functionality

Apart from the previously mentioned desire of the users to talk about the artifacts they wished the Boutiques to be, posters in general are also now much more concerned about the functionality of the synthesizers than they were before release. It is as if, now the users can see and hear the Boutiques, a whole field of speculation has collapsed and debates can instead now be had on what is physically in front of them. In a way this is curious, as the Boutiques have almost identical functionality to the originals, albeit in much smaller boxes. Indeed, the JX-03 has more functionality that JX-3P, as it includes all the knobs from the PG-200 controller that Roland sold separately in the 1980s (see Fig. 3). Despite this, some users complain about things such as the patch memory, which is the number of 'patches' – a snapshot of all the settings on the synthesizer, such as filter cutoff frequency, which can be saved and recalled – that can be saved on the unit. In an otherwise positive post, user *OverTheTop* claims that:

> "16 user patches seem a little too few. I've already saved 5 of my own" – User *OverTheTop*, post 5344

This post echoes an earlier complaint by the user *Gnalvl,* who also talked of "arbitrary 'retro' limitations." It seems as if the users both want a high level of authenticity but also to have extra, modern functionality as well, two desires which are at best in tension and at worst mutually exclusive. In the next post the user complains about the midi specifications of the Boutiques, which, like the originals, have knobs and sliders that output sysex commands and not the more modern (although still reasonably old) midi standard of continuous controllers (CC), and indeed writes to Roland USA about it, publishing their response:

> "I contacted roland about the lack of CC and this was the response they sent me. Hope it happens :P
> 'We have already been letting the engineering teams in Japan know that users could use more options via MIDI, so we are hoping they could release an update in the future to add some of these types of features. We can't promise anything, but are hoping.'" – User *jonesy101*, post 5112

A further complaint about the midi functionality is detailed in the following extract about the outputs of the Boutique range's sequencers:

> I'd never noticed that the Boutique sequencers didn't output to MIDI. I thought, "Damn, that can't be right, is it?" Sure enough, it is. That's a bit of a bummer, was a strange omission. I'm sure I could have found a use for that. – User *rsaintjohn*, post 5334

Again, this is a complaint that the Boutiques cannot do something that the original synthesizers also could not do. Interestingly, though, this functionality was added by Roland in a later software update, an example perhaps of users exerting some influence on the future development of the product.

4.3.1.3. Mythologising of the legacy synthesizers

In this phase, we see a near-universal mythologising of the legacy synthesizers. There are a few, rare, voices which claim that the originals are difficult and costly to maintain and repair, which will be examined first. For example, the following post is one of the few that deals with the realities of owning a 40-year old electronic artifact, as there is a known issue with the voice cards on the Roland Juno-106, in that each keyboard has 6 (one for each voice of polyphony) and many are beginning to fail one by one. While this is currently a fairly uncomplicated thing to fix as replacement chips are still available, for most users it will require a visit (or visits) to a trained engineer. In that sense, the JU-06 is a worthy and sensible substitute:

> "in the case of the JUNO-106, with it's voice problems, it's a welcome alternative" – User *Synthio*, post 5135

Additionally, while this next post comes from slightly before the post-release phase, it was by then clear what the form factor of the Boutiques would be, and this is the only post which denigrates the venerable Jupiter-8:

> "Jupiter 8: ridiculously overpriced. Ancient and rotting. 50 LBS.! Requires big truck to move.
>
> Jup08: ridiculously underpriced. Tiny! New! SHINY!! 1Lb.! Fits in a backpack.
>
> I personally am glad it's not 1981 any more." - User *realtrance*, post 2571

However, apart from in the two previous extracts, all users, no matter their views of the Boutiques, mythologise and revere the Jupiter-8, Juno-106, and JX-3P, especially the Jupiter-8 which currently commands such a high price on the second-hand market. This mythologising is entirely independent of whether a user has ever owned, or even played, one of the legacy synthesizers. The following extract makes this clear:

> "And though I'd love a Jupiter-8 because I can see and hear how freaking amazing it is, I will never be able to justify the money they cost." – User *lu77*, post 5161

The following post also exhibits the almost mythic reverence the forum users hold for the Jupiter-8, especially, even comparing it to the bridge of the Starship Enterprise from the television show *Star Trek*:

> "never owned a Jupiter 8..i remember sound pad in leicester used to have a big hand written sign on the Roland Jupiter 8 when it was on sale in the shop in the early 80's...it read "DO NOT TOUCH" ..remember in the 80's it was £4000... and that was a king's ransom back then...still is almost today actually!
>
> anyhow i did get to play it a bit after asking nick the drum/tech guy permission and promising not to dribble over it!
>
> ...it was HUGE and back then felt like operating the starship enterprise!
>
> ...but i could not afford it so didn't want to play it too much as i'd get depressed not having it!" – User *cresshead*, post 5331

User *cresshead* seems to feel privileged even to have played a Jupiter-8, even for a short period of time, and there is real pathos in their not wishing to become accustomed to something they could not afford to buy.

4.3.2. Groups in terms of acceptance

Similarly to in the pre-construction phase, posters here can be split into three in terms of a dimension of acceptance – in this phase we have out and out resisters, enthusiastic supporters, and agnostics. As in the pre-construction phase, there is a notable and surprising lack of collaborative or interactive group formation – users self-declare their positions and rarely interact in any meaningful way. Any interaction in this regard is limited to disagreeing with a previous post.

4.3.2.1. Resisters

The resisters (per Wyatt et. al's taxonomy (2009)) have much in common with the generally disapproving group from the previous phase – the differences, though, are instructive. As the sound and form of the Boutiques have now been confirmed, the criticism focuses on these two characteristics, which will be detailed first. As well as decrying the sound and form, the resisters also rehash the arguments around their perceived toy-like and non-serious attributes and their non-analog nature, outlining which will constitute the third and fourth parts of this section. Further, the resisters exhibit a sense of being threatened (which they vehemently deny), and reveal how they feel that they can only have a lasting and maturing relationship with a proper, analog, synthesizer. These ideas will be further examined in sections 4.3.3.1 and 4.3.3.2.

<u>Inauthentic sound</u>

Now that respected reviewers have demonstrated the Boutiques on YouTube, the posters enthusiastically discuss the sounds that they have heard. For the resisters, the sonic qualities of the Boutiques do not match up to the originals, which have indescribable, almost mythic qualities. The authenticity is the point, not whether the new synthesizers sound good in their own right. The code "stating after comparison review that big differences could be heard" alone appeared 18 times. During the SonicState JU-06 review, the reviewer (Nick Batt) compared the new unit with his vintage Juno-106, giving the resisters the opportunity to resist the Boutiques on the basis of sound examples. The following is an extract from a very long post in which the user *Deleted b0d0e05* opines at length on the differences they claim they could hear between the Boutique JU-06 and the legacy synthesizer:

> "Without the extra nuance, the reliable and musical filter, the lack of harshness and nasal ear splitting you basically have something that is completely non-juno. They are fun for what they are but again don't think this is what the analog hardware actually sounds like in the entire range or depth." - User *Deleted b0d0e05*, post 5158.

The following extract, from the previously quoted *fiddlestickz*, more succinctly demonstrates that the resisters feel that the differences are too great for the JU-06 to be taken seriously.

> "I heard some really marked difference between the two...the real thing killed it imo..." - User *fiddlestickz*, post 5126.

While it was unlikely that this user would have become a fan of the Boutiques, given their antipathy to them as somebody generally disapproving of the new units in the pre-construction phase, this sentiment was not unusual among the posts.

Form factor

Now that the form of the Boutiques was no longer speculation, it became a tool of the resisters. Throughout the pre-construction phase, those who took against the new units were convinced that they would not be serious, would be too small, would be cheaply-built and would have mini keys. The general consensus now was that actually the build quality was more than acceptable for the price point, with the knobs and sliders being sturdy and the fascia being aluminium and not plastic. As there were no keys, mini or not, this left only the size as a point of contention. In their long post, *Deleted b0d0e05* was not complimentary about the form factor:

> "Factor in the ridiculous form factor, the tiny controls …" - User *Deleted b0d0e05*, post 5158

They were not alone, with nearly all of the resisters commenting on the small size of the Boutiques. Even posters who admitted that the sound was 'very close' to the original (at least as close as a very well-respected third-party software synthesizer – the u-he Diva - is able to produce) were unable to see past the small form factor, even complaining that it was almost unsuable:

> "Am I missing something here? I do not get the appeal. The sound seems to be in the same territory as Diva et al (ie. very close). The hardware (IMHO) appears to be borderland-unusable tiny" - User *Foxis*, post 5277

Toy-like, non-serious attributes

Closely related to the small form factor is the resisters' instance on the Boutiques being toys, and not being for serious musicians. This is of course closely intertwined with issues of identity work and engagement. The following poster states that the fact that the Boutiques can be battery powered, and are therefore portable, is a sign that they are fundamentally unserious, and not meant for proper musicians, along with mentioning their bone fides as a resident of a city which would be the first to take up a new musical production trend if it were real:

> "Honestly, I never seen a musician playing a synth in the train or on the streets and I'm from Los Angeles." – User *mpresev*, post 5106

As in the pre-construction phase, the resisters also think Roland are milking their classic, mythologised synthesizers for these new toys, which are unworthy of their storied names. As the form and sound of the Boutiques has now been revealed, however, the antipathy has an extra, non-fictional edge. The following poster expresses this, and further echoes the notion of having no faith in Roland to do what they consider to be the right thing:

> "Roland hates us all and just keeps teasing us with variants of the Jupiter 8" – User *realtrance*, post 5143

Non-analog nature

While many of the resisters claim not like the sound of the Boutiques, this was not always explicitly or solely due to their digital nature. Some of the posters were able to concede that some digital recreations are perfectly acceptable. But for others, the very non-analog nature of the Boutiques was in itself a reason to resist them. When talking about the JU-06 and its ancestor, the Juno-106, user *Deleted b0d0e05* opines that the JU-06 cannot replicate its famous predecessor either as a musical instrument or simply as an analog artifact:

> "they are not a replacement for it as an instrument or a robust analog sound source" – User *Deleted b0d0e05*, post 5167

For other resisters, the non-analog nature of the Boutiques was expressed by comparing them to VSTs in a box. They cannot therefore be a real, analog synthesizer as they are just software in digital chips, like a computer in a case. The following post is a typical example of this opinion:

"Reminds me of a VST versus the original." – User *marcgood*, post 5232

4.3.2.2. Enthusiastic supporters

Similarly to the case in the previous section, the enthusiastic supporters now focus on the two factors which have been confirmed, namely the sound and the form factor. First, they state that that the sound is very much like the original and that even the purists couldn't tell the difference. Here they once more say that the Boutiques sound analog, again confirming that sounding analog is in itself a benchmark. Secondly, they like the form factor (often due to space requirements in their studios), and focus on the fun element and the portability. This plays into the criticism from the resisters, who think that the supporters are all bedroom producers and not serious musicians, which will be looked at more closely in section 4.3.3.3. Finally, supporters who have actually got their hands on the units claim to enjoy the haptics, despite the small knobs and sliders. They also claim to be able to easily find "sweetspots," which are a combination of settings that produce an exceptionally good sound. A large number of easy to find sweetspots is a prized synthesizer trait, and is often considered to be a characteristic of analog synthesizers.

<u>Authentic sound</u>

For the supporters, as for the resisters, one of the benchmarks is authenticity. The following posts show that they believe this benchmark to have been met, for example:

"If you write music, have used the originals and want that sound, you will love these" – User *Space Captain*, post 5176

Space Captain was not alone in this view. *RonF* was of the opinion that not only was the tone, liveliness and diversity of the sound authentic, but also other practical features had been authentically replicated:

"Its surely closer to the original in a number of key areas (tone, features, parameters, interface, liveliness, diversity, layers) than any other synth I can think of" – User *RonF*, post 5191

The following user, *mpresev*, reports that the synthesizer has the aforementioned sweetspots, one of the indicators of an authentic synthesizer experience.

"It's actually a very good synth. Remember, the sliders have to be moved slightly because there are sweet spots in there." - User *mpresev*, post 5246

User *lu77* posits that, before the release of the Boutiques, there had existed something they dubbed the "fear of the remake," which the sound of the units had proven to be false:

> "Yeah I think the "fear of the remake" has turned out to be totally wrong." – User *lu77*, post 5169

The following extract demonstrates that it is not just the authenticity itself which the supporters found to be important, but also the democratising effect of something which sounds so close to the originals being available and within most budgets:

> "If people have access to a "99% there" 106 for cheap, that's amazing. It's a wonderful instrument!" – User *mclarensmps*, post 5179

The idea of such storied instruments, or at least very close replications of them, being available to the masses, including younger and more novice musicians, was a repeated theme. This idea of democratisation was particularly apparent in the identity work to be outlined in section 4.3.3.3.

<u>Analog sound characteristics</u>

Apart from focusing on the authenticity of the sounds the Boutiques produce and the convincing nature of the replications, posters also focused on the analog nature of the sounds. User Rewire even reports that comparing their JP-08 against a modern Roland analog-hybrid synthesizer, the JD-XA (released in 2015), made them sell the more analog one:

> "The JP-08 made me put my JD-XA up for sale.
> It's the oscs that did it. Two analog oscs detuned on the JD-XA sound more digital than the ones on the JP-08, that have a real, moving, alive feel" – User *Rewire*, post 5193

This extract captures a view that is prevalent amongst the posters, that analog has a quality of being alive, of being real, despite the difficulties one encounters when trying to use language to describe a sound. It states that the digital synthesizer actually sounded analog, and that the analog synthesizer sounded digital, as if the analog-ness of the sound produced is independent of whether the unit uses analog technology or not, and shows that, for this user at least, the word 'analog' has a meaning divorced from its original, technological one.

Form factor

While the resisters see the rather small footprint as a sign of inauthenticity, of a toy-like nature, the supporters see it as a boon. User *Diametro* speaks for many when claiming the size to be a good thing in itself:

> "I don't understand why some people keep going on about the small size ... It's a benefit in my opinion … the small size *is* an ergonomic benefit" – User *Diametro*, post 5287

User *rsaintjohn* echoes this sentiment, adding that the small footprint also leads to a favourable size to features ratio:

> "There's so much great sound and features per square foot here" – User *rsaintjohn*, post 5300

User *lestermagneto* cuts to the heart of the discussions about the form factor. They appreciate the footprint because they have limited space on their desk. This would not be the case in a professional studio environment, and in any case desktop-format synthesizers are not often chosen over full-size ones with a keybed.

> "and they work just fine... and in my world of cluttered desktop of stuff, the size factor is all good for me.." - User *lestermagneto*, post 5292

Lestermagento talks of their "world," and this world, co-habited by the other supporters, is not seen as the same as the world in which the resisters use their equipment – presumably a larger, more professional studio.

Haptics

Now that the users have the opportunity to touch the units, they can comment on the haptics. In contrast to the number of users who complain about the small footprint of the Boutiques, their haptic qualities are usually reported on positively by all. The following extract is an example of how some of the users report that the quality of the knobs and sliders give the impression of a 'real' and high quality instrument. This quality is seen as a characteristic of the Boutiques in and of themselves, and is not related to their replication of the feel or look of the legacy synthesizers.

> "one thing the reviews do not mention often is the "feel" and resistance of the sliders... these things have really good play.... its not some slippery akai or controller keyboard crap, those things have just the right feel..." - User *lestermagneto*, post 5292

The following extract mentions a prized characteristic in the synthesizer community – knob per function. If a synthesizer has many functions, it is common for some of these to share knobs, sliders and buttons by way of a shift key, akin to the shift key on a computer keyboard. Some synthesizers have a screen and a deep menu system, which means some of their functions can only be accessed by 'menu-diving.' Learning how to access these functions takes some time, and the act of accessing them is commonly reported to bring users out of their creative zones. Having a dedicated knob or slider for every single function is therefore seen as an aid to creativity and leads to a deeper relationship based on muscle memory.

> "Knob per function!!!!!!!!!! This has been so rare! But here it is! I can twiddle to my hearts content!" - User *lu77,* post 5161

Just as in *lestermagneto's* post above, the focus on knob-per-function is divorced from any notion of the authenticity of sound, digital or analog behaviour, or the accuracy of the replication from the legacy synthesizers (see also section 2.2.). The haptic nature of the Boutiques is seen as its own discrete feature.

4.3.2.3. Neutrals

In the previous phase, those who were neither generally approving nor generally disapproving towards the Boutiques were agnostic, often from a declared position of disinterest. In this phase, now that the Boutiques have been seen and heard, whether in person or in YouTube videos, a position of agnosticism is less tenable. Instead, the third group can now be described as the neutrals – they are keen not to be involved in any of the petty arguments and are more likely to raise themselves above the fray. Neutrals claim that they don't care about whether the Boutiques are digital or analog, or even if they sound like the legacy synthesizers. The claim is that they wish to evaluate the units on their own terms. Being neutral does not mean they have no opinion on the Boutiques, more that they wish not to be embroiled in arguments which they consider to be below them. Mostly, the neutrals in this phase report that the synthesizers sound good in their own right. Here is an example of this mind-set:

> "It doesn't even really matter so much whether its a perfect or even good approximation of the original Jupiter 8. What it is, is a VERY good poly-synth that sounds remarkable … [with] a number of features that inspire sound design" – User *RonF*, post 5191

Another common comment was that while there may perhaps be small differences between the Boutiques and the originals, they are too small to be noticed, especially in the context of a fully orchestrated and fleshed-out song:

> "Yeah, in a mix no one will notice a thing" – User *SSquirrel*, post 5245

This conceit, that a synthesizer's sound should be judged in the context in which it will actually be heard – a full arrangement – is tellingly rare in the forum, where most users judge the sound of a synthesizer on how it sounds when it is solo.

4.3.3. Narratives

In this phase it was possible to tease out four further narratives, being Boutiques as disrupters; Engagement; Identity work; and Appeals to authority.

4.3.3.1. Boutiques as disrupters

According to many of the posters, especially those we might term resisters, users develop a workflow with their synthesizers over time, and they become an extension of their body. The Boutiques, as a disruptive new technology, not only threaten to overturn the market for new synthesizers, and indeed perhaps the second-hand market for these until this point very valuable vintage artifacts, but also subconsciously threaten the users of these legacy units and their time-honoured working habits and tacit knowledge. User *SynMike* shows how important their Jupiter-8s have become to them, even having a favourite amongst their three:

> "I have owned 3 Jupiter-8s. I think I know it well. The one in this picture is the best of them and has been a centerpiece of my studio for 22 years. I take it out to my largest or most important live events, probably once a year" – User *SynMike*, post 2435

To have a favourite among three ostensibly identical units suggests that users such as *SynMike* have a deep relationship with their synthesizers on a par with those that people have with their pets. This intensity might explain why some of the others posters sense defensiveness on the part of owners of the legacy synthesizers. While no resister admits to feeling threatened – indeed, they rile against the accusation – the accusation is often made.

4.3.3.2. Engagement

Going along with the ideas of tacit knowledge in the previous section, the idea of engagement is often raised, if not explicitly using that language. People engage with their artifacts and their imperfections, and the imperfections even grow with use, meaning user and synthesizer mature together. This is much more likely in an analog synthesizer because they have sonic and user interface imperfections which can change over time; digital synthesizers do not. Users of the older synthesizers intuit this, and resist the digital synthesizers on the grounds that this engagement will not be possible.

> "You do realize that these instruments are 30 odd years old, and in that time the overall sound would have gone through very slight changes due to the aging of the electronics, and that no two vintage analogue synths of the same model sound 100% exactly the same?" – User *Way Out*, post 2460

4.3.3.3. Identity work

In this second phase, now that the synthesizers are confirmed physical entities, identity work is actually firmer and more rigid. The resisters are accused of being usually 'analog purists' and 'elitists', who cannot actually hear the differences they use to build their identities as sophisticated professionals. The supporters are accused of being amateurs, bedroom producers with unsophisticated ears. Before release, the posters couldn't use the sound in their identity work, but now they can, and do so with enthusiasm. There is less room for uncertainties, and the users indulge in othering more frequently and more directly.

The resisters often repeat that the differences between affordable and expensive, between digital and analog, and between clones and originals are real and important. It becomes part of their identity and they invest time and energy into it. Those who cannot hear these differences, or for whom they are not important, are placed in a different group:

> "There really ARE differences between good synths and cheap synths, but for some people it seems any impersonation will do." – User *ljefe*, post 5091

The following extract once again notes that the 'others' may have faulty hearing if they cannot tell the difference. The use of pronouns is also interesting:

> "I have to wonder if people who say they sound identical can actually hear straight … You like that digital synth, I/we like this analog synth" - User *Deleted b0d0e05*, post 5158

Deleted b0d0e05 very deliberated equates the "you" with digital, putting the "you" into a different group, and then equates "I/we" with analog, expanding their group from being just themselves (I) into a larger "we."

This earlier post is an exemplar of the resister mind-set, once again using the second person, and deeming those who enjoy the Boutiques both lacking in judgement and lacking in money:

> "Enjoy your digital if that's what you like, but it is a poor mans' analogue. I every sense." – User *lu77*, post 1091

The supporters focus on the elitism when othering the rejecters. They once again call the other side 'knobsniffers', 'analog purists' and 'elitists', and claim that the others are worried about the waning exclusivity of owning a vintage synthesizer in a world where a replicate can be purchased for €300. Despite enthusiastically entering into the fray, they claim not to understand why the other side get worked up about something they are not interested in. The following is an example of these traits, and also includes an entreaty to the resisters to actually leave the thread altogether:

> "… you are some analog fetishist, collector, or person who loves to compare waveforms, you will probably complain about things that have little relevance to most people. Good luck and maybe start a "pure analog" thread so as not to constantly pollute these threads. – User *Space Captain*, post 5176

The following extract posits that those who fetishize the originals are doing just that and no more – fetishizing the originalness of the legacy synthesizers, and not their sound or other characteristics. The user imagines a world in which the chronological order of the Roland Juno-106 and the Boutique JU-06 is reversed.

> "In a parallel universe somewhere the JU-06 came out first and then the Juno 106. These people are currently busy arguing how the new version simply doesn't sound as good as the OG classic version." - User *Mushy Mushy*, post 5159

4.3.3.4. Appeals to authority

In this phase, selected to be after release of the synthesizers, we begin to see appeals to authority and rejections thereof. These authorities can be the reviewers on YouTube or in music technology magazines, other posters, or professional musicians. Some think the reviews prove the sound is exactly like the legacy synthesizers, some hear significant differences, some appeal to the authority of the reviewers and some say that you cannot hear the difference on a video anyway, you would need to hear it in the flesh yourself. At all times, sounding close to the original is synonymous with sounding good, authenticity once again being one of the most prized traits.

The following extract, from a resister, claims that the SonicState review revealed significant flaws in the behaviour of the JU-06's filter:

> "Then he plays it on the boutique and I WINCED when he opened up the filter, it sounded so nasal and harsh and just unpleasant" – User *Deleted b0d0e05*, post 5158

while the following, after watching the same video, is much more impressed and states that they wish to buy one (they are 'gassing' for one)[37]:

> "Now, I'm gassing for the JU-06.. I heard the demo from Sonicstate (Nick) and man, very nice sounding eh.." – User *mpresev*, post 5154

The following extract deserves to be unpicked as it is not as simple as it appears:

> "He starts the review with Duran Duran's 'Save A Prayer.'" – User *WozNYC*, post 5240

The song "Save a Prayer" starts with a revered sequenced ostinato on the Jupiter-8, Duran Duran's keyboard player Nick Rhodes being a noted Jupiter-8 user. Synthesizer enthusiasts know this, and by noting that Nick Batt at SonicState began his review with this sequence, *WozNYC* is imparting authority to the reviewer who obviously retains this knowledge.

The following extract also cites Nick Batt's review, interestingly this time ascribing not only authority in the sonic realm, but also in the physical one. When other posters claimed that the sliders on the

[37] This comes from the acronym 'GAS,' which stands for Gear Acquisition Syndrome, an affliction which compels enthusiasts to buy more and more gear. For more information, see section 3.2.

JP-08 were only 1 cm long (i.e. very short), *Way Out* relies on the SonicState review to claim that they are double that length:

> "Definitely NOT 10mm. I wish people would stop saying this. Where did that rumor come from? It's 2 cm - 20mm. Sonic State - he measured it." – User *Way Out*, post 5269

The following cites another respected YouTuber and reviewer, Marc Doty, to question the whole idea of the necessity of the Boutiques:

> "MARC DOTY OPINION: … On point as always… Marc Doty: "Is there really a need for small virtual analog poly synths in the market right now?"" - User *Jamie Monro*, post 1527

Other posters, however, doubt the whole idea of ascribing any authority to YouTube reviews for technological reasons. This earlier post encapsulates these reasons, incorporating some identity work at the same time:

> "Unfortunately online videos almost always have mpeg compression on the audio. Then most people listen with the DAC and contemptible analog output circuit of a computer or mobile phone. How on earth can you judge whether something "sounds" good that way?" - User *SynMike*, post 2460

Finally, the following extract outlines that some users doubt the veracity of the reviews:

> "I for my part dont give opinions from other guys too much weight, specially if they are the ones who received demo Units. of course they won't say anything which might really turn People off from a product.. they won't demo anything again in near future from any manufacturer" – User deleted, post 6915

This view, that reviewers are reluctant to report negatively on products lest they lose access to the manufacturers, is not confined to the synthesizer world, but it is interesting here because the output of a synthesizer, the sound, is available to all those who watch the video, if mediated through YouTube. In contrast to a car review, for instance, where the viewer has no experience of driving the car whatsoever, somebody who watches a synthesizer review will actually hear the synthesizer and need not take anybody's word for it. This extract appears to postulate that people are liable to ignore their own ears and listen instead to the reviewers' producer-sanctioned reports.

4.4. After release of the TB-03

Much of analysis in this section gives results similar to those for the original tranche. There are once more versions of supporters, resisters, and neutrals. Identity work is done in much the same way. While much is similar, there are some notable differences, the first being that there is much less focus on the small form factor and the related perceived toy-like appearance and feel. This first difference is to be expected, as the TB-03 is much closer in form factor to the original TB-303 than any of the original three Boutiques are to their legacy synthesizers as the TB-303 was itself a small synthesizer module (see Figs. 4 and 5). One cannot complain about miniaturisation if it is in fact about the same size. This cements the idea that when the users were complaining about the toy-like nature of the Boutiques, it was their size, and not their sound or functionality, which was paramount in their perceptions. Other differences will be outlined in the following sections.

4.4.1. Roland-centred comments

In this phase both supporters and resisters focus more on the fact that these are Roland-badged units than during the other phases. The resisters focused on the idea of Roland milking their legacy synthesizers more than they did after the first tranche, which is surprising, especially given the fact that many other companies had already produced hardware reproductions of the TB-303. It is hard to recreate an 8-voice 2-oscillator poly-synthesizer such as the Jupiter-8 purely due to the amount of discrete circuitry necessary for an analog clone, or the amount of modelling and CPU power necessary for a digital one. Conversely, a single oscillator mono-synthesizer such as the TB-303 is relatively simple, and so it had already been done multiple times, both in analog and digital hardware and in software, before the TB-03 was released. Perhaps the legendary reputation of the TB-303 in dance music meant that any Roland attempt to cash in on it was seen as vulgar or even sacrilegious. Perhaps, as it was the fourth Boutique in the range, some users had already seen enough of the Roland Boutiques.

Supporters, however, certainly hadn't, and some were happy finally to see Roland release a version of their own legendary acid box:

> "I used to wonder why guitar players bought so many guitars. Then one day I realized I have owned just about every major 303 clone at one time or another over the last 10 years.
>
> Not gonna lie... pretty cool to see a silver box with a Roland logo on it. I am such a lemming..." – User *Blackbelt Jones*, post 6773

This user apparently finds, with some self-awareness, that the cachet of a Roland-branded TB-303 clone will be hard to resist.

4.4.2. Abstract words

As noted before, it is difficult to use language to describe sound. Analog itself is often described as warm, or alive. Single components, such as oscillators, can have their distinctive sounds described in terms such as 'beefy' and 'weighty'. Filters are often described as 'smooth' or 'creamy' in a refined instrument, but the TB-303 can be an aggressive sounding synthesizer, and its filter is most often described as 'squelchy'. The filter in the TB-303 has a unique configuration, and it is the behaviour of this filter at high resonance settings that gives the TB-303 its famous sound, more so perhaps than the filter in any other synthesizer. Given its position as a legend of dance music, it is perhaps not surprising that more attempts are made to describe its filter's sound than the sounds of the filters of the units in the earlier phases. Most of these attempts used abstract adjectives and adverbs, and interestingly nearly all of these efforts are made to disparage the sound of the Boutique as lacking a certain something. Here is an example of a user commenting on the 'squelchiness' of the filter, while adding the adjectives 'liquid' and 'acid':

> "The TB-03 just doesn't have that liquid acid squelchiness of the analogue ones." – User *Ben F*, post 6909.

The following extracts, all by different users, expand upon the abstract vocabulary that is used to describe the je ne sais quoi of the original TB-303's sound, the sound which these users believe the Boutique cannot replicate:

> "It's definitely lacking that liquid elastic mojo of the original" – User *xanax*, post 6873

> "The OG is so alive so magical and swingy , and the boutique is dead." – User *DiGi_TaL*, post 6786

> "The TB-03 really lacks that hollow wonky sound which imo gives 303 it's character." – User *yesnoyes*, post 6890.

4.4.3. Appeals to the scientific method

New in this phase is the number of posters who appeal for a 'proper' scientific method-based comparison. In their view, the correct way to see if it is possible to discern the legacy synthesizer from the Boutique replication is a blind test, as is used in pharmaceutical trials. For instance, in response to somebody from the *ADSR*[38] website who announced on the forum that they were to make a comparison video of the different TB-303 clones and the original, user *Lixma* said "Do a blind test" (post 7355).

[38] https://www.adsrsounds.com/

In the next extract, the user equates scientific comparisons with rigour, and also denigrates the type of YouTube review that is not sufficiently well done and doesn't use a studio-quality microphone, an echo of section 4.3.3.4:

> "I'm looking forward to a rigorous scientific comparison, not some camera mic guess festival." - User *decoder23*, post 6874

The idea of blind (or even double-blind) tests is expanded upon in two later posts. In the first, user *Eigenwert* postulates that people would only prefer the legacy synthesizer over the Boutique if they know which one it is, and that this bias would disappear in a blind test. To do so, he compares the two synthesizers with the situation with modern violins and the vintage violin equivalent of a Jupiter-8:

> "People also prefer the Stradivari in tests. But that is not the case in blind tests." - User *Eigenwert,* post 7908

The next extract shows a propensity to use scientific terms such as 'double-blind' and 'placebo' to legitimise the user's opinion, while at the same time demonstrating some confusion about what these terms actually mean.

> "There would need to be equivalents to act as placebos to maintain "double-blind" that is required for legitimate research, maybe a softsynth then a newer popular analog like the BS2 or a eurorack then the original and the new boutique as well all played through the same speakers." - User *Discopotato*, post 8053

4.5. Top-rated posts

The top-rated posts were included to ensure that the general flavour of the forum was included in the analysis, and to mitigate the possibility that the sampled selection of posts had missed something important. In actuality, the top-rated posts were more often than not involved in bad-tempered exchanges. For instance, one well-regarded post decried another user failing to see the humour in a previous post, and then taking it apart in an overly logical manner:

> "But yeah good on you for Spocking what was obviously a jovial post." – User *lu77*, post 5216

However, interestingly, while posts from resisters and supporters did appear, many of the top-rated posts were either general appeals for calm or exasperated posts from neutrals. The following is an

example of the former, trying to take the sting out of the whole debate by minimizing the importance of synthesizers in general:

> "Guys, they're just synthesizers okay? Goes beep-de-boop like the rest of 'em." – User *STRL*, post 400

The next is an example of the neutral attempting to end the debate on analog and digital by stating that the synthesis method is unimportant in the overall picture of making music:

> "personally I don't give a f u c k if it's analog or digital or VA or ACB or yippity fekkin doodah aye technology, if it sounds good in a track who gives a toss.. ffs get a grip will you with all this analog hierarchy stuff.." – User *fiddlestickz*, post 6820

These top-rated posts saw the same groups in evidence as above, the main difference here being the intensification of the belligerence. This belligerence, which apparently was popular despite the sympathy posters had with the appeals for calm, led to more intense identity work and questioning of the other's credentials. One of the most frequent codes was for "accusing posters of elitism," the following extract being an exemplar:

> "This is another example of 1%ers expressing their "entitlement". Nothing more" - User *memorysplice*, post 1915

The stating of bone fides was also intensified in this set of posts. Two users stand out in this regard, the first being *SynMike*:

> "Bias: I have worked for Roland for 31 years […] I've owned a Juno-6, Juno-60 x 2, JUNO-106 x 3, Juno-1 +PG-800 x 2, Juno-2 and an MKS-50." – User *SynMike*, post 2435

The second is *Genshi*, who spends lots of their posts burnishing their credentials, for example:

> "Again, because I worked in the f*cking industry you troll!" – User *Genshi*, post 426

Genshi also seemingly threatens the other users that they will withdraw their industry experience, contacts, and expertise from the forum and deposit their knowledge in a different forum altogether:

> "I'm seriously so done with this forum. Too bad to, I was going to post pics and videos this weekend to the actual 100% Analog synth Roland is releasing, as I got an invitation to see the

> final production models of the Roland System-500 demo'd by Josh of Malekko Heavy Industry here in Portland. This will be the world premier of the actual final versions. I guess I'll post the videos on Vintage Synth forums instead..” – User *Genshi*, post 439

This extract is a good example of how the most popular posts seem to have an intensified level of emotion in them. The top-rated posts in general all exhibit a heightened intensity when compared with the other posts that were analysed and were often belligerent, even when calling for calm.

5. Discussion

This chapter will discuss the insights that can be gleaned from the results and how they can be interpreted with reference to the literature outlined in the State of the Art. Once again, there will be some cross-over between the sections as they are in many ways interrelated, these sections being 1. Phase-dependent observations; 2. Groups, identities and boundaries; 3. Authenticity and the digital/analog divide; 4. Synthesizers as objects of use and non-use; and 5. The specificity of the Boutiques.

5.1. Phase-dependent observations

The posts which were analysed came from four different sets - three encompassed distinct time periods and one was a collection of the top-rated posts. The more general differences between these sets are instructive, and are discussed in this section.

Before the units were released many of the posts contained, somewhat inevitably, unfounded speculation (to the chagrin of some of the users). But there is much information that can be distilled from this speculation. The first is what can be ascertained from the users' near universal use of depicting aspects of other synthesizers as a way of describing how they imagine (or wish) the functionality and form factor of the Boutiques to be. This tacit knowledge was used like a secret language that was to be immediately and without question understood by other forum users. This would suggest that the users were not interested in being understood by people who did not share this knowledge, or indeed that they did not expect their posts to be read by such people in the first place. This exclusionary behaviour might not seem surprising, but this use of an in-house language to describe functionality is not reported on in the literature, even in studies such as Lindsay's (2005) on the user community of the archaic TRS-80 computers, where one might expect such a language to be employed. Pinch and Bijsterveld (2004) describe how different groups of musicians and sound engineers have their own languages to describe sounds (which is difficult to do, as is seen in the present study's third phase when the sound of the TB-303's 'squelchy' filter is described), but they do not report the existence of such a proprietary form of language, nor one used to discuss functionality. This suggests that online forums, in comparison to, for instance, participant interviews or focus groups, particularly lend themselves to investigating self-describing groups of users as the posters feel as if they are in their natural environment, safely among people who understand and share their language (if not their opinions). They do not seem to assume that they are being observed by outsiders (such as STS students). Once the units were actually released, speculation based on other synthesizers naturally

decreased. The posters still tended to use technical jargon which outsiders could not be expected to understand, but no more than in any other context. However, there is something stark about the users' expecting everybody else to be cognizant of the functionality of a 40-year old artifact which demonstrates the nature of this forum.

Another interesting phase-dependent observation was the dissatisfaction with Roland's pre-release marketing campaign exhibited by all who commented on it. In any case, there were no posts in support of Roland's marketing despite the fact that these users had been made interested enough in this new product that they went to the trouble of posting about it on a forum. This suggests that the marketing was more effective than the posters would have liked to admit. Another possible explanation comes from the perception in this phase that Roland were 'milking' their classic synthesizers, which is also echoed in their being mythologised later on. The users seem to feel a sense of ownership over these vintage artifacts, even if they have never owned one, which they resent being used by Roland as a marketing ploy. Pinch and Bijsterveld (ibid.) discuss how vintage synthesizers have unique user communities – in the case of the Boutiques and their antecedents, even non-users and non-owners seem to include themselves as stakeholders.

Once the Boutiques had been released and had been reviewed both in magazines and by YouTube reviewers, more phase-dependent observations could be made. The first is that many of the posters took the opportunity to describe the synthesizer which they wished had been released instead, once again often using other synthesizers as a short-hand. Many of them seem to be addressing Roland directly or the synthesizer world more generally when they do so. It is not clear whether representatives from Roland read these posts or not (Gearspace being the largest online music technology forum, it is certainly not impossible), but in any case the posters seem at least to imagine themselves in the role of Schot and de la Bruheze's 'mediators,' playing a role in the 'mediation junction,' and having some agency in the shaping of any future Roland releases, some even posting their requests for firmware updates to the current units (2005). It should be noted that the addition of midi CC output in a later firmware update suggests that there might be some truth in this.

In this phase it is also possible to first tease out the related notions of disruption and engagement. The resistors in this phase are often owners of the legacy synthesizers, and can seem defensive about their relationships with the vintage artifacts. They deny that they fear any disruption to either the vintage synthesizer market or their working practices, but their very defensiveness does seem to speak quite loudly to the opposite. This fits quite neatly with Bijsterveld and Peters's ideas around the tacit knowledge a player has of their instrument and how this makes them resistant to change (2010). Further, now the Boutiques have definitively been revealed as digital, the resisters talk of how their

vintage analog synthesizers change over time, both in wear and tear and in sound due to the ageing of their circuits – something digital artifacts cannot do; they either remain the same or stop functioning. The relationship between human and analog machine is therefore capable of maturing in a way that the relationship with a digital machine is not. While the digital/analog divide will be focused on in more depth in section 5.3, this notion of a deepening relationship with a maturing synthesizer, first revealed in this phase, chimes quite resonantly with Verbeek's ideas around how engagement with artifacts can deepen as they age (2005).

In the third phase, after the release of the TB-03, the Roland brand comes in for scrutiny as it did in the first phase. This time though, there are also a cohort of posters who, having seen and perhaps even bought many TB-303 clones from non-Roland companies, are pleased to see a Roland badge on the new silver box. The TB-303 is uniquely bound up with acid house in a way that no other synthesizer – and perhaps no other instrument – is bound up with any other genre, and this history may play a part in the reception of a specifically Roland unit, which seems to provide some weight to Bijsterveld and Peters's notion of 'retro-innovation' (2010) and Bijsterveld and Schulp's idea of 'recasting tradition' (2004). The specificity of the Boutiques and their complex intertwining with historical vintage synthesizers will be looked at in the final section of this chapter.

Phases 2 and 3 both featured appeals to authority, but there was a marked difference in who the authorities were most commonly assumed to be. In Phase 2 the authorities were more often considered to be YouTube reviewers such as Nick Batt at SonicState, while phase 3 saw the first appeals to the scientific method of double blind trials. Many of these trials were actually carried out (as far as is possible) by other YouTubers and were referenced in the posts. A possible explanation, given some of the negative descriptions posted of YouTube reviews in this phase, could be that as the TB-03 was released some time after the first tranche of Boutiques the users were either inured to YouTube reviews or had learnt not to wholly trust them and reached for something they considered to be truly objective. This rejection has echoes of the work of Kitzmann and Thorén (2022) and Lindsay (2005), who also saw in their studies that rejecting big, commercial companies was tied up with the identities of some (non) users. Birch and Bronson's idea of 'boundary assets' can also be applied here, the users seeing Roland as a big tech company in the synthesizer world (2022). One thing that is not though apparent in the literature is that the users' rejection of the reviews is often accompanied by an accusation that the reviewers are 'shilling' for the big companies - a contention that the reviewers and the technology companies together form a co-dependent ecosystem (one could include the video host, YouTube, in this constellation too). While Birch and Bronson talk of the assets as having technological agency over other artifacts in a network, melding them into physical standards and communication

protocols, the users' idea of a network of producers, reviewers and video hosts who all tend to their interconnections, explicitly or implicitly, is rather novel.

The final set of posts to be analysed were the top rated posts. These exhibited many of the same traits as the other three, but it seemed as if the volume were turned up in them. Credential burnishing was also more intense, as will be covered in the next section. The reasons for these posts, along with appeals for calm, being the most popular are not immediately apparent. It could just be a result of confrontation claiming attention and clicks, as is the case on most other forums and social media.

5.2. Groups, identities and boundaries

It was certainly possible to tease out different groups from the forum users in each of the phases, and these sets of groups were closely related to those sets in the other phases. In all phases those with negative views of the Boutiques were encountered, who resisted or were generally disapproving of the Boutiques on the grounds of their variously being toys, cheap, unserious, and an affront to their analog forebears. Others could be grouped together in all phases as more positive about the Boutiques, as generally approving or as enthusiastic supporters and these, while claiming that the sonic characteristics of the units were impressive, accused the others of being elitists and 'knobsniffers.' In turn, those who were generally negative questioned the ears and tastes of those who were enthusiastic, saying that the Boutiques were poor imitations of the originals. This chimes nicely with Gieryn's notion of boundary work, especially in the second of the three scenarios which he delineated, in that the users were competing for the right to have an opinion in their field of expertise, and dismissed other groups with pejoratives such as 'amateur' (1983).

With people's identities as synthesizer users clearly being brought into question, it is perhaps not surprising that so much effort was expended on burnishing one's bona fides. Whether by claiming ownership of other, especially vintage, synthesizers or by professing industry knowledge, many claims and counter-claims were preceded by such self-burnishing. By declaring such knowledge for themselves and doubting the expertise of others, the users were involved in boundary work.

The sheer amount of boundary work that is performed by the users then raises the question of boundary objects (Star & Griesemer, 1989). It could be argued that the forum as a whole acts as a boundary object, as it is a repository of self-generated knowledge for all the different groups and has a standardised form and process for everybody to post their opinions. Further, with its posts being full of the frame that analog is inherently superior and the reverence that is afforded specific vintage equipment, opinions which are almost universal, it is evident that the forum exhibits, at least in an

implicit form, the concept of ideal types. The Boutiques themselves can be considered boundary objects in the sense that was afforded by Pinch and Trocco (2004), in that as they move across the different groups they acquire different meaning – democratising replica for one group perhaps, or plastic toy for another. This is not as wholesome as the original concept of boundary objects, where different groups use the objects in a productive way as "anchors or bridges" as Star and Griesemer had it. The belligerence of the posts and the boundary work performed therein mean that any bridges would only be used as openings through which to attack another group's territory.

Pinch and Trocco's notion of boundary shifters (2004) and Pinch's further notion of missing masses (2005) are also evident in the users and their reactions to the YouTube reviews. The users, who variously note that they are purchasers with GAS, musicians, music producers, technology fans, and forum posters, can be seen as boundary shifters, people continually shifting across boundaries and who defy easy definition. In a more charitable reading of the technology company-YouTube reviewer nexus than that provided in the previous section, the YouTube reviewers themselves can be seen in the posts to be part of the missing masses. Many posters see the opinions of reviewers such as Nick Batt to be indispensable in their decision to buy a synthesizer (or not), and given that these reviews of the Boutiques have by now several hundred thousand views each, a positive review can be incredibly beneficial for the reception of a new product.

In all phases there were also those who wished not to pick a side for a variety of reasons. Interestingly, it was this grouping whose characteristics most obviously changed after the Boutiques were on the market and the video reviews had been released. The definition of the group changed from a position of agnosticism to a position of neutrality, agnosticism being untenable once there was some audio-visual data on which to base opinions. Some of the users migrated from the agnostic group to be resisters or supporters on the basis of this data, while some then became neutrals. This change in group composition and outlook can be seen as an example of Lindsay's notion of the temporality of groups (2005).

Finally for this section, it is instructive to revisit von Hippel's notion of 'user content networks' and the more particularised idea of 'horizontal innovation networks' (2007). The users' belief that they have some agency to influence the shape of current or future Roland products, as outlined in the previous section, certainly gives the impression that they consider themselves to be something of a 'horizontal innovation network,' whether they have this agency in practice or not. That the forum functions like a 'user content network' is not a controversial opinion. The users share patches and tips as well as their opinions and buying guides, and occasionally spend time on arcane topics such as how to extend battery life and reduce ground hum. More interesting is von Hippel's contention that such a network

functions at just below the level of interpersonal relations present in a community. Despite the fact that posts are often replied to by other users, it is rare for a real sense of dialogue ever to come to the surface unless it is in belligerence. Support for other posters is rare, as is agreement. Perhaps it is the amount of boundary and identity work that is performed that makes the users construct themselves as a collection of individuals opining in discrete posts. In any case, it is difficult to find any trace of community spirit, save for the common niche language that is used.

5.3. Authenticity and the digital/analog divide

Over time, much of the literature on the divide between analog and digital synthesizers, including Pinch and Reinecke (2009), Lanier and Rader (2021), Bates (2021), Mooney and Pinch (2021) and Kitzmann and Thorén (2022), seemed to coalesce around a position that the analog-ness of a synthesizer, in the modern day at least, is less to do with its internal circuitry and more to do with its user interface, especially in the world of modular synthesis. For Bates and Kitzmann and Thorén, especially, the overtly tactile nature of modern synthesizers with their striving for knob-per-function operation demonstrated a shunning of the menu diving and button pushing seen on the early digital synths which Lanier and Rader claim to have pushed users into narrow and clichéd use of synthesised sounds. It is this tactile nature, what Kitzmann and Thorén called “analog practices” (2022, p.52), which it is assumed that users actually want, and not analog circuitry. The results of the present study, however, cast doubt on this conclusion, the tactility of modern synthesizers seemingly seen as a self-evident minimum requirement and not something to be striven for or remarked upon. In fact, the present study tends to support the earlier findings of Thorén and Kitzmann (2015), who noted a sense among users that digital was somehow impure. Throughout the data, even in posts which were enthusiastic about the Boutiques, the underlying framing was that analog was somehow real and authentic in a way that digital just could never be, even as it aspired so meticulously to do so. The sound of a Boutique might be close to or even indistinguishable from the legacy synthesizer it strove to recreate, it may even have exactly the same functionality, but for many of the users the mere fact of it being digital meant it lacked authenticity. Those who were enthusiastic about the Boutiques also used the authenticity of the sound, and not its quality in and of itself, as a reason for their support. These supporters praised the sonic characteristics as being analog-sounding, which shows that some were at least able to divorce the sound quality from the circuitry that produced it. However, even for these posters, it was clear that being as close to analog as possible was the goal to which the Boutiques had to aspire order to be considered in any way authentic.

It appears then that, at least for the Boutiques, which have their own unique place in the synthesizer market (which will be further examined in the final section of this chapter), the hopeful view expressed by some scholars that the divide between analog and digital synthesizers was one of practices and meanings and not of mere circuitry, and could therefore be easily bridged, is not borne out to a very great extent by this study. Indeed, it was far more likely that a post would fetishize analog than it would be one which attempted to scrutinise the Boutiques on their own terms, something also noted by Stuhl (2014). This tendency only increased with the advent of the TB-03, based on the TB-303, which, as mentioned above, seems to have such a storied sound in the annals of electronic music that any digital attempt on Roland's part to monetize the reputation of their original offering is seen by many to be somehow vulgar or sacrilegious, even as a minority welcomed a Roland clone amongst all the others.

This concentration on authenticity above all other considerations is touched on by Bijsterveld and Peters (2010) and Bijsterveld and Schulp (2004) in their studies on the development of musical instruments, but the focus there was on the authenticity of the performance produced by players of replications of vintage instruments, and not the authenticity of the instruments themselves. Perhaps there is something about the nature of a forum that inculcates a fear of being seen as inauthentic into the posters, related to their fear of being seen as unserious or not owning any hardware, which pushes them to judge these new instruments on their authenticity above all else. For many users then, to be seen as authentic in the eyes of the other posters means one must not accept authenticity claims from a digital synthesizer pretending to be an analog one. This means that, for many, only a stated preference for analog is acceptable – this is in a sense a performative authenticity.

Interestingly, almost all users agreed that the functionality, if not the physicality, of all the Boutiques was essentially the same as for the legacy synthesizers (apart from polyphony). Here, at least, they were seen as authentic. This was not universally welcomed, as this gave posters the opportunity to complain about the limited functionality of a vintage synthesizer as compared to a more modern design. In this sense alone, the authenticity was not welcome.

5.4. Synthesizers as objects of use and non-use

One of the more surprising general aspects of the forum posts was the lack of comment on actually making or performing music with the Boutiques, either before release, or, more surprisingly, once they had been on the market for some time. Posters frequently talked about making sounds, but rarely of making music. It could be the case that users congregate in other places – other forums or YouTube channels – to discuss making music in general, but in the particular place where people discussed the Boutiques as new synthesizers on the market, their utility in making actual music was barely

mentioned. Bates described the dual nature of synthesizers as both technological artifacts and instruments (2021) – in this present study at least, the users are likewise interested in posting about technology and its instrumentality, rather than posting about being musicians.

Scholars such as Pinch and Bijker (1984), Woolgar (1990), and Akrich (1992) reconsidered the relationships between users and artifacts, and the myriad of configurations of other actors and actants involved. It is certainly possible to read into the Boutiques – with their obvious physical, sonic and aesthetic harking back to previous artifacts while being at the same time small and affordable – some kind of ascription of what type of person Roland thought the users would be. Indeed, it was this construction of the ideal user that many posters railed against. This is of course tied up with identity, as discussed above, as the idea of, for instance, mini keys seemed to many to be an affront to 'real' synthesizers that no self-respecting synthesist could bear. It is instructive to see that the many of the users perceived what they thought Roland's ideal Boutique user might be, even before seeing or hearing the units, and almost instinctively rebelled against it, refusing to see themselves therein, rejecting what they saw as an imposed interpellation.

Non-users, as previously discussed, gave reasons such as the small physical footprint, lack of authenticity (usually meaning 'not analog'), and limited polyphony for their non-use. As we have seen, other, implicit reasons could be rebelling against big tech in the form of Roland, or rejecting becoming Roland's ideal user. In terms of Wyatt et al.'s four dimensions of non-use (2009), nearly all these non-users were resisters – while a few reported having tried and rejected the Boutiques in music stores, none had had them taken away, and none were excluded on grounds of price, so the vast majority just resisted using them. Wyatt's earlier work on non-use (2005) described the silent non-user as being essentially invisible. However else we describe the resisters on the forum, 'invisible' and 'silent' are not terms we might use. The growth of forums and other social media have certainly, at least in the synthesizer world, meant that non-users are nowadays seen and heard clearly, and in Wyatt's terms "informed, voluntary rejection of technology" has now become not only possible but often loudly proclaimed (ibid., p.79).

5.6. The specificity of the Boutiques

Hardjowirogo described the complex and often messy notion of instrumentality, and called instruments "culturally freighted" (2017, p.22). The Boutiques certainly fit this description, being at the same time aesthetically, functionally, and sonically similar to vintage analog synthesizers while being small, affordable, modern, and digital. This often contradictory constellation of attributes no doubt contributed to the often polarized reaction they elicited. In Born's terms, the 'imbrication' here

of the forum, the users, the Boutiques, and the synthesizers they impersonate is fraught with often belligerent mediations (2015). It is interesting that before the Boutiques were launched the speculation was not focused on their prospective sonic characteristics but on what might have been assumed to be peripheral concerns, such as how many octaves the keybed would have or whether the circuitry would be digital or analog. The posts on the forum reveal that these are actually cultural concerns as well as concerns about physicality and the like, and they are therefore concerns of identity for users and non-users alike. The Boutiques' dual nature makes the nature of these concerns more immediately apparent than would otherwise be the case.

The Boutiques also brought about a very specific set of groups. Using the idiom of SCOT, we can analyse the three groups that appear in the second and third phases of the reaction to the new units as relevant social groups, each with a specific set of problems that they desire to be solved (Pinch & Bijker, 1984). The neutral group are perhaps the easiest to categorise on the surface – they report desiring a synthesizer that sounds good in its own right and the Boutiques appear to fill this function. In performative terms, anybody that wished to place themselves above the fray between the other two groups on the forum could happily do so by posting from inside this group. The other two groups, however, require more explanation.

The enthusiastic supporters claim that the Boutiques are authentic recreations, authenticity once again being the most cherished characteristic. At the same time, these users also claim to appreciate the small footprint of the Boutiques as they lack space in their studios. They echo the claims made by Pinch and Bijsterveld (2003) that digital recreations are in essence democratising and inclusive. This group appeared to want a small, affordable, decent-sounding synthesizer to provide an authentic enough sound of the legacy synthesizers. The Boutiques seem to have delivered this, and given that they were limited editions that entirely sold out, closure successfully occurred. The supporters could happily burnish their credentials while at the same time calling the resisters 'elitists' and 'knobsniffers' from within this group.

The resisters, on the other hand, had an entirely different set of problems. They wished to have what they considered to be authentic – vintage, expensive, analog synthesizers. These new units, aesthetically and sonically similar to their legacy forebears, could be considered a threat, despite their protestations otherwise. Pinch and Bijsterveld found that vintage synthesizers are "technological artifacts with unique user communities" (2004, p.638) and as such a new group forming around a new version of their artifact might not be welcome, and this certainly seems to be the case for the Boutiques. It might have been expected that a lighter, more reliable version of the legacy synthesizers would have been a boon for serious live players, who could leave their expensive and heavy units safely

at home and take out a decent-sounding and easily-replaceable substitute. In these forums though, the legacy synthesizers seem not to be used on stage anyway, the posters seemingly more interested in studio technologies, and in comparison to these studio technologies the Boutiques were seen as mere toys. For this relevant social group, the Boutiques provided no solutions to their issues, and in fact potentially only added to them by causing depreciation of their vintage assets.

At this stage it is tempting look at these two groups and just see the difference as one having more funds available than the other. This division between was foretold by Pinch and Reinecke (2009), who noted the divide between musicians who could afford vintage synthesizers and those who couldn't a few years before the Boutiques were released. This however is too simplistic in this case. There are, for example, middle-aged hobbyists and/or collectors with the money to buy vintage synthesizers, and young professional musicians who do not – and vice versa. While some of the posters agreed that the division between the groups really was, at a fundamental level, purely one of finances, others claimed that their judgement of the Boutiques' sonic capabilities, and therefore on which side of the argument they stood, was not dependent on the Boutiques' price or even on their own identities. It is possible that both positions could be true at the same time, that finances do play a part but are only one factor influencing a poster's membership of one group or the other. The multifaceted nature of these factors, and the fact that no poster shared exactly the same set of motivations, possibly contributed to the lack of real community found in these online interpersonal relations. It does seem striking that these two relevant social groups appeared as two sets of disparate individuals, talking at each other and at cross purposes over the same artifact, a duality mirroring and even deriving from the dual nature of the Boutiques themselves.

6. Conclusions

The aim of this study was to examine the reaction of online synthesizer communities to the introduction of a new range of synthesizers that had a unique and unprecedented constellation of attributes – the initial production tranche of the Roland Boutiques. This unique set of features saw the reaction to them being also unique, as the units were the first Roland products that attempted to replicate the sound and feel of their now revered and very expensive 1980s technology using a newer technology and priced to be available for all.

In terms of group formation, however loose the groups were, it was the case that at all times the forum posters seemed to fit themselves into one of three states, being either enthusiastic about the Boutiques, resisting them, or being somehow neutral about or disinterested in them. As the units went through different stages in their release, from pre-launch marketing hype to release on the market and then being reviewed, the particularities of these groups changed and the posters could move between them. There was, however, little sense of community or dialogue and more a sense of individuals posting individual thoughts. The posts also demonstrated that the tendency to fall into one group or another was much more complicated than just either being able to afford a vintage synthesizer or not, as might have been expected prior to release.

From the way these groups behaved it was also possible to compare the results with the literature on use and non-use. With some differences, many of the theories and claims made in the state of the art were discernible in the posts, especially in the way that Roland had imagined who the users would be and inscripted this into the units, and consequently in the way that many of the users then resisted this imposition. The relationship between the posters, the forum, the reviewers and Roland was sometimes seen negatively as something like a reviewer-industrial complex, but for more positive posters these relationships were seen as dynamic and influential, ascribing some agency to the users in further developments of Roland products even including the Boutiques.

The posts further showed that, at the beginning at least, the users all expected each other to understand a language based on an assumed knowledge of the functionalities and even foibles of previously released synthesizers, some as many as 40 years old. Anybody without this knowledge would have found the posts impenetrable. This could make the forum particularly unwelcoming for outsiders or synthesizer beginners, not to mention the exclusion inculcated by the offensive name of the forum at the time. At the same time, there was much humour to be found on the forum, if you were able to understand it, much of it reserved for Roland and their unpopular marketing campaigns.

While most of the posts were not confrontational, there were a sizeable proportion that were, especially among the top-rated posts. Some of this can be attributed to the fact that all online communities are liable to degenerate into belligerence, and to a certain extent the release of the Boutiques provided the posters with an excuse to rehash old arguments and remount their hobby horses. However, another important factor was that the sheer amount of boundary and identity work carried out by the posters led to any views counter to a poster's own being seen as threats to their often multifaceted identities.

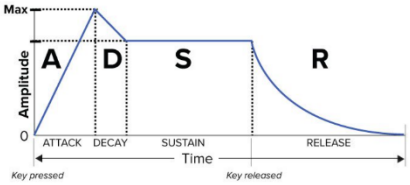
One of the most alarmingly received of these threats to a user's identity was found in the analysis to be an accusation, implicit or explicit, of inauthenticity, often centred on the perceived authenticity of the Boutiques themselves. This focus on authenticity was one of the hallmarks of the responses. It might have been expected that the authenticity of these recreations would have been judged primarily in regard to their sonic characteristics and how close the sound could be to that of the original synthesizers. Other considerations might have been expected to be the size of the keys, the polyphony, and the functionality. Indeed, this was the case for many of the posters, more so in some phases than others. But for a surprising amount of users the authenticity, or lack thereof, was more about whether the Boutiques were analog or digital. It was no surprise that the debate between analog and digital reared its head, but its centrality to the concept of authenticity was unexpected, especially in the light of some scholars' research which reported that the digital v analog divide was now one of practices and meanings and not one of circuitry. This may be the case for synthesizers that are entirely new to the market, but the Boutiques were based on analog synthesizers that are so rich in meaning that digital versions seemed to be an affront to a certain type of enthusiast. The discussions around the differences between the TB-03 and the TB-303 were especially animated in this regard, the TB-303's importance and legend in the acid house scene lending weight to the idea that the intense meaning of the legacy synthesizers to certain groups fosters part of the resistance to any replication carried out with perceived inauthentic technology. It would be interesting to see if this is replicated in other audio-visual fields, such as if a vintage class A hi-fi amplifier was rereleased with modern class D circuitry.

As a more general closing thought, the question arises of my knowledge of the synthesizer world before beginning this work. I was already familiar with the symbols, framings, and debates which were present on the forum, and while I am by no means either a professional musician or synthesizer technology expert, I did not come to this analysis with a blank state. There are no doubt some insights that I missed or glossed over by unwittingly accepting some frames or claims and not approaching them with proper analytical rigour, as might have been done by a researcher with no prior knowledge. However, there was so much information imparted by the language, the symbols, and even the

humour that the posters included in their missives that to disentangle the meanings and the subtexts from the texts would have been nigh on impossible without any prior knowledge. I am sure that it was a net benefit not to come at this subject as a total novice.

Finally, among the divides and belligerence, it should also be noted that most of the posts were cordial and that all the posters shared certain traits. Even those who claimed not to care about the circuitry still wished their synthesizers to at least aspire to analog-ness. They seemed mostly to be more interested in the technology itself and the sounds it could make, and not so much in the music you might make with them. And they all did at least agree that everybody actually does need a 303 (and a JX-3P, a Juno-106 and a Jupiter-8); only which type was contested.

Glossary

Term	Definition
Digital audio workstation (DAW)	A DAW is an application, usually on a computer, which can record, edit, process and master audio files, and sequence both audio and midi.
Envelope	A waveform that changes over time. The stages of the waveform are often in the form of attack, decay, sustain and release (ADSR), the waveform being initialised when the player presses a key. Envelopes are often routed to modulate the amplitude of the sound or filter cutoff frequency.  Fig. 13 – ADSR envelope
Filter	A filter reduces the volume and harmonics of a sound above, below or around a frequency determined by the user (the cutoff frequency), while letting the other frequencies through unchecked. A low pass filter (LPF) reduces the volume of frequencies above the cutoff while letting the others pass, while a high pass filter (HPF) reduces the volume of the frequencies below the cutoff. Band-pass and notch filters reduce or volume of the frequencies which are either close to or far from the cutoff respectively. Judicious use of the filter adds or subtracts harmonics and contributes to the timbre to a sound.
Filter cutoff	The frequency at which the filter operates. Often modulated by the envelopes and LFOs on a synthesizer to produce interesting and pleasing sounds.
Frequency Modulation (FM)	A form of digital synthesis in which the waveform is calculated by processing a number of sine waves together. These waves, known as operators, can either be sound sources (carriers) or modulators, which modulate the waveform of the carriers according to a number of algorithms contained within the synthesizer. This method became overwhelmingly popular in the 1980s with the advent of the Yamaha DX7.
Granular synthesis	A type of synthesis where an initial sample is split into very small sections, potentially down even to 1 millisecond in length. These sections are called grains, and granular synthesis then plays them back in different ways to produce often otherworldly or sometimes glitchy sounds.
LFO	Stands for Low Frequency Oscillator, which produces waveforms often below the range of human hearing, which can be routed to modulate other

	values. Common routings are to frequency cutoff or pitch, to produce tremolo or vibrato effects, but experimental routings can produce interesting results.
MIDI	Stands for Musical Instrument Digital Interface, a standardised protocol introduced in 1983 for communications between digital synthesizers, drum machines and computers.
Module	This is a synthesizer unit that does not have a keyboard. They are usually sequenced over MIDI by either an external keyboard or a DAW, while older synthesizers and modular synthesizers accept sequences as changes in control voltages.
Oscillator	This produces the audible sound that is the core of any sequencer. Usually the sound is very harmonically rich so that it can be sculpted over time by the filter.
Patch	This is a collection of the settings of a synthesizer, like a snapshot of all the current values of the knobs, sliders and other attributes. In many synthesizers this patch can be saved in memory and recalled at any time.
Polyphony	A synthesizer that can play more than one note at a time is polyphonic. A synthesizer that can play 6 notes at a time has a polyphony of 6, and can be described as 6-note polyphonic.
Preset	Presets are patches that come with the synthesizer, programmed in at the factory. Some synthesizers have none at all, while others are shipped with hundreds.
Resonance	A boost in volume for the frequencies around the filter cutoff frequency. The amount of resonance can usually be controlled by the user.
Sampling	The act of taking a small part of a sound recording and using it in another. Typically samples are either short hits (such as a snare drum), multisamples (such as a piano sampled across the keyboard), or loops (such as a drum break which is repeated to form the percussion of a track).
Sequencer	A hardware device or software application which can record and playback music files in an order specified by the user, whether audio, midi or control voltage.
Subtractive synthesis	The most common form of analog (or virtual analog) synthesis, in which the richly harmonic sound of the oscillators is sculpted by the filter subtracting therefrom, hence the name

VCO	Voltage-controlled oscillator – a type of oscillator whose frequency is determined by an analog voltage source.
Virtual analog (VA)	VA is a digital form of subtractive synthesis in which the waveform is calculated by an internal CPU rather than being produced by analog circuitry.
Wavetable synthesis	A type of digital synthesis based on the reproduction of a table of single waveforms stored in memory.

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Abstract (English)

In 1981, the Roland TB-303 Bass Line synthesizer was introduced to the world. It was able to produce sequenced bass lines and was intended to offer an alternative to human bass guitar players in the studio environment. It conspicuously failed at this task and was discontinued in 1984. However, enterprising electronic music pioneers used cheap second-hand TB-303s to create, among other things, acid house in the late 1980s. As a result of its small production run and its influence on electronic music, it is an expensive and desirable artifact today. Other influential 1980s Roland synthesizers, including the Jupiter-8, Juno-106, and JX-3P, have similarly become coveted by modern music producers. To capitalize on this desire, Roland released a series called the Boutiques in 2015, a range of small, virtual analog recreations of their vintage synthesizers. This range was intensively appraised in the online music technology forums at the time, the users discussing these new but simultaneously old artifacts with enthusiasm and sometimes venom. This thesis uses a grounded theory approach to analyse a selection of posts to these forums at carefully chosen points during the Boutiques' launch in order to gain insight into the groups formed and identity work performed, as well as to examine concepts such as users and use, the digital v analog controversies, and the nature of authenticity in synthesizers. The unique constellation of often contradictory attributes possessed by the Boutiques – being somehow vintage and modern, analog and digital, authentic and imitation – make the responses to them a fruitful source of insights, which are then discussed along with relevant insights gleaned from the Science-Technology-Society literature.

Abstract (German)

Im Jahr 1981 kam der Roland TB-303 Bass Line Synthesizer auf den Markt. Dieser konnte sequenzierte Basslinien erzeugen und sollte daher im Musikstudio einen echten Bassisten/eine echte Bassistin ersetzen. Dieses Ziel wurde nicht erreicht, weshalb die Produktion des Geräts bereits im Jahr 1984 wieder eingestellt wurde. Allerdings erkannten Pioniere/Pionierinnen der elektronischen Musik bald das Potential dieses Synthesizers und kreierten unter Verwendung von günstig erstandenen, gebrauchten TB-303s unter anderem die Stilrichtung Acid House. Aufgrund seiner geringen Produktionsmenge und seinem großen Einfluss auf die elektronische Musik ist der TB-303 heute ein teures und begehrtes Sammlerstück. Aber auch andere Roland-Synthesizer der 80er Jahre, wie der Jupiter-8, der Juno-106 und der JX-3P, sind heute bei Musikproduzenten/Musikproduzentinnen sehr gefragt. Um die gestiegene Nachfrage zu bedienen, hat die Firma Roland im Jahr 2015 die so genannte Boutique Serie, eine Reihe kompakter, virtuell-analoger Nachbildungen seiner Vintage-Synthesizer, herausgebracht. Diese Serie wurde in den Onlineforen sowohl begeistert als auch gehässig kommentiert. Die vorliegende Arbeit analysiert auf der Grundlage der Grounded Theory eine Auswahl der Beiträge dieser Onlineforen in den Anfangsphase der Boutique Serie mit dem Ziel, sowohl Einblicke in die Gruppenformation, die Identifizierungsstrategien sowie die Konzepte von Nutzern und die Verwendung dieser Foren zu gewinnen, als auch die Kontroverse zwischen digital und analog und die Frage der Authentizität von Synthesizern aufzuzeigen. Die den Boutique Synthesizern oft zugesprochenen widersprüchlichen Attribute wie Vintage und modern, analog und digital, authentisch und Imitation, macht die Reaktionen darauf in den Onlineforen zu einer reichen Informationsquelle, die anschließend zusammen mit relevanten Erkenntnissen aus der Fachliteratur der Science-Technology-Society diskutiert wird.