Comparative Study

PG Research Methods
Frederik den Toom
Student no. 21435376
Module - MU70168E

2020

Word Count: 2800

Index

Introduction

This comparative study will analyse two different case studies, herein reviewing and comparing their methodologies in depth. Expectantly this will provide a clear indication of the effectiveness of each study's respective methodology, both in acquiring data, as well as the relevance this data holds in respect to the their research objectives. Furthermore, the way in which the gathered data was analysed will also be critically inspected. It must be stated that equal weight will be given to both studies; this is to ensure no preconceived judgements or bias in favour or against either study is developed. To achieve this an alternating 'point by point' structure will be employed.

Study 1 - *Production and The Listener: The "Perfect" Performance* (Gwilliam, 2009).

Study 2 - *The Effect of Microtiming Deviations on the Perception of Groove in Short Rhythms* (Davies et al, 2013).

Personal Motivations

Both studies investigated the perception of music, more specifically audience's reactions to 'perfect' versus 'imperfect' performances. In particular with regards to perceived quality and emotion, which as research by Venkatesan (2018) suggests are directly related judgement of authenticity. The concept I have for my master's final project is practise based and will incorporate aspects of Musicology, Creativity & Innovation, and Sociolinguistics. More specifically it will look at improving and differentiating an ensemble performance that is recreated by a single person through means of 'overdubbing'. Normally a click track would be used to achieve this, allowing for the sequential recording of all instruments, but as Leckie (as cited in Zak, 2001, p. 135-136) states; this compromises '*'human essence*" and can '*'render the track somewhat lifeless*". Of course this approach could be appropriate, depending on the genre, but seeing I will be recording material in line with 1970s Rock tradition, a live aesthetic is paramount in attaining authenticity, as suggested by Zak (2001, p. 57). My research will be an inductive investigation of several conceptualised methods that are expected to facilitate a higher sense of 'agency' between multiple separately recorded agents, as if they were a simultaneous live performance. Sonically, a good example of what I'm attempting to achieve can be found in the comparison of two bands that are both clearly stylistically inspired by the 1970s: *Dewolff* and *Greta Van Fleet*. Next to adopting a more 'modern' production sound overall, it is clearly audible that Greta Van Fleet's effort '*Anthem of the Peaceful Army'* (2018) employed cotemporary practices such as; metronomic recording, autotune, quantization, and the involvement of multiple producers. *Dewolff's* 2018 album '*Thrust'* stayed true to the original 1970s aesthetic, being centred around live 'free time' performances, it sounds more authentic in my opinion. As Moore suggests (2002) there are three 'perspectives of authentication'. In order to validate the effectiveness of the concepts I will be employing in my project, I will have to measure this from all three perspectives. Achieving 'first person' authenticity depends on my ability to convey my work convincingly as performer and producer. Gauging my own integrity is something I could do myself. However, 'second' and 'third person' authentication will require validation by appropriate audiences who can show whether the 'goal aesthetic' was met more or less effectively, by comparing recording methods. Herein the two selected studies by Davies et al (2013) and Gwilliam (2009) are not only informative in respect to their subject matter, data and conclusions, but also their general methodologies and procedures in measuring perceived authenticity.

Motivations & Approach

Notwithstanding both studies examined how the quantization of an organic performance to an absolute 'grid' can influence the perception of the listener, they employed different research approaches and have different frames of reference, with one pertaining to Rock and the other to Swing and Funk. Davies et al (2013) reference a variety past studies and theory, seeking to further expand upon, and confirm, previously established notions and research. By firstly defining 'what' constitutes groove and forming a proposition, they are able to create set of well-defined, absolute, testable hypotheses. This reductive manner of working is clear evidence of their deductive approach (Collins, 2010). Contrarily, Gwilliam's effort (2009) takes a more philosophical approach, referencing literature on Aethestics (Grayck, 1996) and performance (Auslander, 2004) within popular recorded music. Herein he examines the specific role of recorded music and editing practices that have become the norm, asking a more general question; what is the influence of "*real life*" and "*strict tempo"* regulation on the reception of a Rock track, fitting of his inductive method (Greener and Greenfield, 2016).

Methodologies

Although both efforts employed professional musicians to record their stimuli the ways in which they were recorded and quantized vary significantly between the studies. Davies et al (2013) chose to record their musician to a metronome, only quantizing disparities relative to the 'grid', whereas Gwilliam (2009) recorded a free time performance, which he then edited. This means the 'organic' recordings in Davies et al (2013) were still restricted to some a form of 'rhythmic hierarchy', suggesting a smaller difference between their 'organic' and 'edited' version. However, it must be acknowledged that it is possible to purposefully play 'behind' or 'in front' of the beat when using a metronome (Dean, 2014), although it won't allow for tempo changes similar to free time performance.
As opposed to Gwilliam (2009) who used two 'absolute' versions (organic and quantized) as stimuli, Davies et al (2013) both 'reduced' and 'expanded' the original disparities. Herein they generated a scale with multiple versions, ranging from versions with double deviations to a perfectly quantized performance, with the original sitting in the middle. This allowed them to see more precisely if any preferences among participants would increase or decrease proportionately between different versions.

It could be argued that both parties adopted seemingly opposite approaches, with one quantizing a human performance and the other synthesizing a human performance from exaggerating present deviations in a metronome based performance. Of course 'swing' is widely applied when quantizing, in order to give performances a more 'human touch', although Henning et al (2011) indicate listeners prefer human "*long-range"* fluctuations to artificial randomized computer fluctuations in rhythm. Notwithstanding, Davies et al (2013) exaggerated already present natural deviations, which is different from applying swing. In relation to my project this is interesting as it can shed light on whether an organic 'feel' in a performance is and innate human touch, or something that can be added and simulated.

Another notable difference is the duration of each study's recorded stimuli, with Davies et al (2013) playing specifically selected 20-second excerpts of their original recordings, and Gwilliam (2009) playing the full song, possibly providing a context that is more representative of real world music consumption. However, it must be acknowledged that Davies et al (2013) investigated the effect of time manipulation on the experience of 'Groove', not specifically its effect on the 'authenticity' or 'quality' of a whole song, albeit these elements are related.

Audiences

As Collins (2013) asserts, a significant sample audience is needed to make inferences about the general population based on small-scale study results. Although the sample size (159) of Davies et al (2013) study is significant, the validity of their study suffers from a lack of sample randomization, which is important getting representative data (Blaxter and Tight, 2006). Examples of this are the mean age of the audience being 24,4 years, and the fact that all participants were German speaker recruited from two universities within the same city. As Moore (2002) indicates, ‘*”authenticity is a matter interpretation*” and depends on ‘’who’’, suggesting that the specific background of his participants could have altered their definitions of authenticity. This is also supported by the sociological idea of ‘status definition’ (Clarke an Cook, 2004), further suggesting it could impinge results.

As Collins (2013) asserts, control groups are a valuable way of ruling out alternative explanations for registered phenomena in data. Both studies were comprised of musician and non-musician groups. In Davies et al (2013) a ratio 79 musicians to 81 non-musicians seems balanced, however the non-musicians still had five years of median experience practising and instrument, therein not really qualifying as ‘non experts’, but rather as being less experienced, possibly taking away from the validity of this groups answers.
Although Gwilliam (2013) also states he used a combination of musicians and non-musicians, he doesn’t provide any data with regards to the size of his audience, their mean age, or other valuable information, which significantly comprises the validity of his study.
From the graphs he presents it does become clear that the oldest age group that participated in his study was 25-35, which suggests that similar to the other study by Davies et al (2013), the mean age was also relatively low.
x

Design & Data

In his research design Gwilliam (2009) employed a ‘multi methods’ approach, collecting both quantitative and qualitative data through a self-designed questionnaire that was comprised of open and closed questions. Seeing his study is based on ‘investigative theory building’, having an inductive approach, comparing quantitative and qualitative data can help shed light to what is ‘’*as yet an unknown reality*” (Collins, 2013, p. 49). Davies et al (2013) used a self-designed (AEG) questionnaire which was informed by relevant theory and past studies, based around a Likert scale. Next to this they also asked participants to fill in a SAM questionnaire and used motion tracking, allowing them to gauge the participants’ affective states and body language. As both questionnaires were scale based, these solely provided quantitative data. Unlike Gwilliam (2009), Davies et al (2013) tested their design thoroughly before commencing the experiment, herein refining the size of their Likert scale. It could be argued that something as emotional and subjective as art perception research benefits form the combination of both qualitative and quantitative research (O’Callaghan, 1996). However as Collins (2016) asserts, when testing investigative hypotheses, it is not necessarily logical to use qualitative data, as semantics can leave too much ‘wiggle room’ in defining whether procured data is against, or for accepting hypotheses. Another noteworthy difference between the studies is how they handle the potential issue of participant bias, which can impede the collection of valid data. In particular the ‘beneficent subject effect’ can be a problem (Dane, 2009), which is why both Gwilliam (2009) and Davies et al (2013) tried to ensure the participants in their studies weren’t aware of what was being researched.

Gwilliam (2009) states: ‘’*Care was taken not to lead them in any particular direction when explaining the survey to them”*.

Although Davies et al (2013) did inform the participants that their study was related to music perception, ‘*”no reference to microtiming, groove, or musical entrainment was given”*.

As becomes apparent from Gwilliam’s (2009) data, his approach might have had the opposite effect, as 86% of the participants preferred the edited version and 42% preferred the unedited version for reasons unrelated to ‘feel’ or ‘timing’. As he demonstrated in the summary of his method, the organic and edited tracks were the same sonically, both having a virtually identical mix, as is confirmed by his spectrographic analysis. Unlike Davies et al (2013), who randomized the order and versions each participant was

presented with, Gwilliam (2009) doesn't state he used randomization. As Greenfield and Greener (2016) indicate, 'random allocation' of what participants are presented with, in this case the different versions of the tracks, is vital in research.
When it comes to data presentation, Davies et al (2013) used a variety of different graphs, formulas and tables to illustrate the correlations between different groups in relation to their hypotheses. This also includes examples of their mathematical calculations and their evaluation of valuables that might skew results. Furthermore, their study was peer reviewed, which adds to the validity of their results (Dane, 2009) and prevents 'observer bias'. Gwilliam (2009) merges both the data qualitative and quantitative data that he procured and solely displays it in pie charts. Although this does provide an easily interpretable representation of data, similar to aforementioned aspects of his study, it is somewhat lacking in detail and also fails to showcase his analysis processes.

Discussion & Findings

As Gwilliam's (2009) study was inductive in nature being a self-labelled 'pilot' study, its goal was not to draw conclusions, but rather to serve as a platform form informing a future major research project. In analysing his data however, he did form several arguments strengthened by his findings. Although acknowledging this can in part be attributed to the imperfect design of his study, he concludes the test audience didn't have a conclusive preference for either version. He also suggests that the widespread use of editing in popular music might have already conditioned the average listener, herein making them less sensitive to differences and more likely to prefer 'perfection'. Next to this he also expressed interest in a more performance based angle of investigation on the same topic, which is how I will approach my project, seeing it will study perceptions as performer and producer, as well as audience's opinions on perceived authenticity.

Davies et al (2013) arrived at the following conclusions:

- *''Original micro-timing deviation and patterns will receive a higher 'groove rating' compared to manipulated timing, and groove ratings will be lower the more the timing differs from the original performance.''*

  This was found not to be true, as the opposite ''exactitude hypothesis'' was confirmed, seeing participants not only gave quantized clips higher overall groove ratings, but also incrementally preferred the versions between the original and fully quantized samples.

- *''Expert listeners will be more sensitive to timing manipulation.''*

  Expert listeners were found to be more sensitive to time manipulation, reporting irritation sooner than the non-expert group when presented with small incremental changes. Similar to Gwillaims (2013), Davies et al (2013) concluded that even if it can be proved that PD theory is correct (meaning microtiming is important for groove), deviations might be '' *a treat for the musical elite",* seeing normal listeners wouldn't be sensitive enough to notice them.

- *''Funk clips would receive higher groove ratings than Swing clips overall.''*

  Funk clips were not receive higher groove ratings, in line with their previous findings suggesting that style does not influence head movement. This might lead to the conclusion that; if there is a link between microtiming and 'groove', this is universal for all genres. However, no participants were presented with both clips (Funk & Swing) therefore no direct comparison is possible.

Notwithstanding these results, Davies eta al. (2013) do acknowledge that the physical tendency to move among participants didn't correspond to their reported urge to move, as the results from the questionnaires and motion tracking data contradicted each other. This raises the question whether the emotional indication data, or the body movement data among participants should be valued as more

important and representative, which Beattie suggests might be the latter (2014). In their discussion, they also attempted to cautiously draw comparisons between their results and other studies, something Gwilliam (2009) didn't consider. Finally they conclude their results can't support either of their general hypotheses, as microtiming wasn't proved to increase or decrease groove experience.

Similar to Gwilliam (2013), Davies et al (2013) also identified future areas of research, albeit their suggestions are more specific than Gwillaims' as a result of their deductive approach and specific goals. Despite doing an elaborate literature review, they conclude a further clarification of the psychological construct of groove future is vital in obtaining more conclusive results in the future. Next to this they acknowledge the need for other factors, other than microtiming, that could potentially influence groove perception.

Conclusion

It is important to acknowledge that the time frames in which both studies took place (2009 & 2013) could have potentially influenced chosen approaches and results, with popular editing tools such 'elastic audio' being first introduced in 2007, and 'Beat Detective' in 2001. If similar experiments were conducted today, new software and methods of quantization would possibly allow for 'better' or more creative manipulation of time. Next to this, similar to the consumer 'vinyl resurgence', analog recording has experienced a come-back (Edwards, 2019), not only for sonic reasons, but also for the creative limitations that come with it. Growing audiences of niche genres now attach great value to 'imperfect' organic recordings, suggesting results might differ today, although this would depend on the type of audience. Of course the practise of quantization is still very much appropriate and accepted in certain genres today, but similar to the 'loudness wars', the popularity of 'over-editing' might already have reached its peak. Of course a comparative study of popular music from different decades would be required to confirm or reject this with certainty.
Both Gwilliam (2009) and Davies et al (2013) clearly identified future areas for research and evaluated the weaknesses in their own methodologies. This was very useful in respect to shaping the concept for my final Master's project. I hope to use a similar inductive approach to Gwilliam's (2009), whilst displaying a higher level of academic rigour by extensively referencing literature and carefully designing experiments, inspired by Davies et al's (2013) methods. A few ideas the comparison of these studies has already led me to are investigating: organic tempo guides, different tempo reference tools (visual, vibrating etc.), and the possibility of adding 'human' elements in post-production.

Bibliography

Auslander, P., 2004. Performance Analysis and Popular Music: A Manifesto. *Contemporary Theatre Review*, 14(1), pp.1-13.

Auslander, P., 2011. *Liveness*. London: Routledge.

Beattie, G., 2014. Visible Thought. Hoboken: Taylor and Francis.

Berg, B., 2016. *Qualitative Researchmethods For The Social Sciences*. 9th ed. Pearson Education.

Collins, H., 2010. *Creative Research*.

COOK, N. and CLARKE, E., 2004. *Empirical Musicology, Aims, Methods And Prospects*. Oxford: Oxford University Press.

Dane, F., 2009. *Evaluating Research: Methodology For People Who Need To Read Research*.

Dean, M., 2014. *Drum Kit Secrets: 52 Performance Strategies For The Advanced Drummer*. Scarecrow Press.

Edwards, 2019. *Analogue Redux: The Reel-To-Reel Rebirth In Recording Studios*. [online] Eandt.theiet.org. Available at: <https://eandt.theiet.org/content/articles/2019/09/analogue-redux-the-reel-to-reel-rebirth-in-recording-studios/> [Accessed 4 April 2020].

Feld, S., 1984. Sound Structure as Social Structure. *Ethnomusicology*, 28(3), p.383.

Gracyk, 1996. *Rhythm And Noise*. 1st ed. Duke University Press.

Gwilliam, 2020. Production And The Listener: The "Perfect" Performance. Journal on the Art of Record Production, [online] (ISSN: 1754-9892). Available at: <https://www.arpjournal.com/asarpwp/production-and-the-listener-the-%e2%80%9cperfect%e2%80%9d-performance/> [Accessed 4 April 2020].

Greenfield, T. and Greener, S., 2016. *Research Methods For Postgraduates*. Chichester, UK: John Wiley & Sons.

Hennig, H., Fleischmann, R., Fredebohm, A., Hagmayer, Y., Nagler, J., Witt, A., Theis, F. and Geisel, T., 2011. The Nature and Perception of Fluctuations in Human Musical Rhythms. *PLoS ONE*, 6(10), p.e26457.

Howlett and Campello, 2013. The "Virtual" Producer In The Recording Studio: Media Networks In Long Distance Peripheral Performances. *Journal on the art of Record Production*, [online] 1754-9892(8). Available at: <https://www.arpjournal.com/asarpwp/the-%E2%80%9Cvirtual%E2%80%9D-producer-in-the-recording-studio-media-networks-in-long-distance-peripheral-performances/> [Accessed 4 April 2020].

Hughes, Tight and Blaxter, 2006. *How To Research*. 3rd ed. McGraw-Hill Education.

Kilchenmann, L. and Senn, O., 2015. Microtiming in Swing and Funk affects the body movement behavior of music expert listeners. *Frontiers in Psychology*, 6.

Kiszka, J., Kiszka, J., Kiszka, S. and Wagner, D., 2018. *Anthem Of The Peaceful Army*. Republic Records. Available at: <https://open.spotify.com/album/7zeCZY6rQRufc8IHGKyXGX> [Accessed 4 April 2020].

Mansfield, R., 2005. *The Savvy Guide To Digital Music*. Indianapolis: Indy-Tech Pub.

Middleton, R., 1993. Popular music analysis and musicology: bridging the gap. *Popular Music*, 12(2), pp.177-190.

Moore, A., 2002. Authenticity as authentication. *Popular Music*, 21(2), pp.209-223.

O'Callaghan, 1996. The relative merits of qualitative and quantitative research approaches in music therapy. *Australian Journal of Music Therapy*, [online] 7, pp.28-36. Available at: <https://www.austmta.org.au/journal/article/relative-merits-qualitative-and-quantitative-research-approaches-music-therapy> [Accessed 4 April 2020].

Senn, O., Kilchenmann, L., von Georgi, R. and Bullerjahn, C., 2016. The Effect of Expert Performance Microtiming on Listeners' Experience of Groove in Swing or Funk Music. *Frontiers in Psychology*, 7.

van de Poel, P., van de Poel, L. and Piso, R., 2018. *Thrust - Dewolff*. [CD] Mascot Records. Available at: <https://www.youtube.com/playlist?list=PLz8ufS3KEgcbshisdARr8rxMkthd9umNY> [Accessed 4 April 2020].

Vankatesan, 2020. *Beliefs About Authentic Music*. Undergraduate. Yale University.

Whittam, J., 2015. Music, Multimedia and Spectacle: The one-man band and audience relationships in the digital age. *Organised Sound*, 20(3).

Zagorski-Thomas and Capulet, 2017. Creating A Rubato Layer Cake: Performing And Producing Overdubs With Expressive Timing On A Classical Recording For 'Solo' Piano. *Journal on the art of record production*, [online] 1754-9892(11). Available at: <https://www.arpjournal.com/asarpwp/creating-a-rubato-layer-cake-performing-and-producing-overdubs-with-expressive-timing-on-a-classical-recording-for-solo-piano/> [Accessed 4 April 2020].

Zak, A., 2001. *The Poetics Of Rock*. Berkeley: University of California Press.