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Herausgeber*innen:
Prof. Dr. Hans Aerts, Höchtestraße 7/3, 79350 Sexau, h.aerts@mh-freiburg.de
Dr. Patrick Boenke, Seilerstätte 26, A-1010 Wien, boenke@mdw.ac.at
Dr. Julia Freund, Neue Rabenstr. 13, 20354 Hamburg, Julia.Freund-1@uni-hamburg.de
Dr. Martin Grabow, B7 19, 68159 Mannheim, Martin.Grabow@staff.muho-mannheim.de
Anne Hameister, Hochschule für Musik und Theater Hamburg, anne.hameister@hfmt-hamburg.de
Prof. Dr. Andrea Horz, Ungargasse 12a/10, 1030 Wien, horz@mdw.ac.at

verantwortliche Herausgeber*innen dieser Ausgabe: Ralf von Appen (Gastherausgeber), Hans Aerts und Julia Freund
Korrektorat: Jakob Maria Schermann, Anne Ewing-Greinecker

Die Herausgeber*innen sind per E-Mail erreichbar unter: redaktion@gmth.de

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Gesellschaft für Musiktheorie (GMTH) e.V.
c/o Prof. Andreas Gürsching
Müggelstraße 13
10247 Berlin
info@gmth.de

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22. JAHRGANG 2025, AUSGABE 1

Editorial

In der *Zeitschrift der Gesellschaft für Musiktheorie* ist die Popularmusik – trotz der international wachsenden Bedeutung des Forschungsfelds – bislang nur vereinzelt zum Gegenstand analytischer oder theoretischer Auseinandersetzungen gemacht worden.[1] Mit dieser Ausgabe liegt nun zum ersten Mal ein Themenheft vor, das verschiedene musikanalytische und -theoretische Ansätze in der internationalen und deutschsprachigen Popularmusikforschung bündelt. Damit ist auch das Ziel verbunden, die Popularmusik stärker in den mit der Zeitschrift verknüpften musiktheoretischen Diskursen zu verankern. Wir freuen uns sehr, dass wir Ralf von Appen, Professor für Theorie und Geschichte der Popularmusik am Institut für Popularmusik der *Universität für Musik und darstellende Kunst Wien*, als Mitherausgeber für das Themenheft gewinnen konnten.

Aus der Vielfältigkeit der möglichen Ansätze, die auf die unterschiedlichen Erscheinungsformen des Gegenstands (als Live-Performance, produzierte Audioaufnahme, Musikvideo oder massenkulturelles Phänomen) zurückverweisen, kann hier freilich nur eine Auswahl an Perspektiven zur Sprache kommen. So richten die sechs Beiträge zu dem Themenschwerpunkt »Analysen und Theorien populärer Musik« ihren analytischen Fokus unter anderem auf tontechnische, metrische, (mikro-)rhythmische, harmonische, diskursive, kulturelle und performative Aspekte. Insbesondere im Einleitungsgespräch, das die fachlichen und terminologischen Unterschiede zwischen der US-amerikanischen *music theory* und europäischen musikwissenschaftlichen und -theoretischen Zugängen beleuchtet, geht das Heft dabei auch der Frage nach, wie eine genuine Theorie der Popularmusik aussehen könnte.

Die Jazzforschung haben wir bei der Konzeption dieses Themenhefts ausgeklammert, weil sich der Bereich längst zu einem vielfältigen Diskurs etabliert hat, dem annähernd gerecht zu werden unserer Ansicht nach ein eigenes Themenheft erfordern würde. Da die *lingua franca* des Forschungsgebiets, dem sich diese Aufgabe der *ZGMTH* widmet, selbstverständlich Englisch ist, sind deutschsprachige Texte diesmal stark in der Minderheit. Im Interesse der Reichweite haben wir bewusst auch von einer deutschen Übersetzung des einleitenden Gesprächs abgesehen.

Im ersten Artikel des Themenhefts arbeitet Jeremy Tatar (Northfield, Minnesota) ein analytisches Potenzial in der Praxis des Sampling heraus: Anhand von Beispielen von Usher, Slum Village, Disiz und Nas sowie im Fokus auf Aspekte des Metrums und der Phrasierung perspektiviert er sample-basierte Hip-Hop Beats als Resultat eines analytischen Hörens, das wiederum unsere Wahrnehmung der originalen Quellen beeinflussen kann.

Der darauffolgende Beitrag von Jan Herbst und Eric Smialek (Huddersfield) bietet eine Einführung in die Analyse von Klang und seiner Produktion in der populären Musik. In einer Fallstudie zeigen sie, wie das Mixen eines Songs (»In Solitude«) von verschiedenen Musikproduzenten aus dem Metal-Bereich zu unterschiedlichen klanglichen Ergebnissen führen kann und wie sich diese Differenzen der Klangqualitäten analytisch beschreiben lassen.

1 Neal 2003/05, Schönberger 2006, Kaiser 2011, Dreyer/Horn 2017, Huschner 2017 und Werner 2018. Vgl. in dem Kontext aber auch den gemeinsamen Kongress der *Gesellschaft für Musiktheorie* und der *Gesellschaft für Popularmusikforschung* 2017 in Graz (Utz 2017).

Christopher Doll (New Brunswick, New Jersey) bereichert in einer produktiven Auseinandersetzung mit Untersuchungen von Nicholas Stoia den Diskurs um »schemas« bzw. »schemes«, indem er in zahlreichen *popular songs* der 1930er bis 60er Jahre auf gemeinsame Strukturen hinweist, die neben musikalischen auch textliche Aspekte umfassen. Auf diese Weise zeigt er unter anderem, wie die Aspekte der Textstruktur die Wahrnehmung musikalischer Details beeinflussen können und umgekehrt.

Patrick Ainsworth (Southampton) präsentiert die Methodik und Ergebnisse einer systematischen Untersuchung von Microtiming (Swing, *back beat delay* u.a.) in vierzehn einflussreichen Tracks aus der Frühphase des Funk, die noch ohne Hilfe von *click tracks* produziert worden sind. Dabei entstand eine Datenbank von über 1000 mikrorhythmischen »Abweichungen«, deren Auswertung bisherige Befunde zum Microtiming im Funk bestätigt, aber auch um neue Einsichten ergänzt.

Bernhard Steinbrecher (Innsbruck) schlägt in seinem Beitrag zur Analyse von Punk-Musik einen »analytische[n] Bezugsrahmen« vor, »dessen Ankerpunkte […] das Spektrum an Möglichkeiten eingrenzen, warum Punk so klingt, wie er klingt.« Vor dem Hintergrund genre-spezifischer Diskurse und Praktiken lenkt er das analytische Augenmerk vor allem auf die musikalischen Dimensionen von Textur, Struktur und Spannungsgehalt (*tensity*).

Schließlich widmet sich Magdalena Fürnkranz (Wien) performancetheoretischen Ansätzen in der Analyse von Popularmusik. In Auseinandersetzung mit Musikvideoclips, der Live-Performance und den Lyrics zu Taylor Swifts »Look What You Made Me Do« (2017) diskutiert sie die Relevanz von Philip Auslanders Konzept der »Musical Persona«, Erving Goffmans »Rahmenanalyse« und Jens Eders »Uhr der Figur« für die analytische Arbeit mit popmusikalischen Phänomenen.

Der Beitrag von Jakob Bonasera (Karlsruhe) wurde beim 14. Aufsatzwettbewerb der *GMTH* 2024 mit dem ersten Preis ausgezeichnet und rekonstruiert musiktheoretische Perspektiven auf das (Simultan-)Intervall der verminderten Sexte anhand von Quellen aus dem 18. und 19. Jahrhundert. Abgerundet wird die Ausgabe mit einer Rezension von Markus Roth (Essen) über eine im vergangenen Jahr veröffentlichte Rekonstruktion einer Messe Jacob Obrechts, von der lediglich die Stimmbücher von Altus und Bassus erhalten sind.

Wir bedanken uns ganz herzlich bei den Autorinnen und Autoren dieser Ausgabe für ihre Texte und die gute Zusammenarbeit in den letzten Monaten. Ein großer Dank gebührt auch den Gutachterinnen und Gutachtern des Peer-Review-Verfahrens für ihre ausführliche Durchsicht der Texte und ihre wertvollen Hinweise. Wir danken zudem Anne Ewing-Greinecker und Jakob Schermann für das Korrektorat, Werner Eickhoff-Maschitzki für die Vorbereitung der Grafiken sowie Dieter Kleinrath für das Erstellen der PDF-Fassung.

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Hans Aerts, Ralf von Appen, Julia Freund

© 2025 [1]Hans Aerts (h.aerts@mh-freiburg.de, ORCID iD: 0000-0002-1972-7803), [2]Ralf von Appen (von-appen@mdw.ac.at, ORCID iD: https://orcid.org/0000-0001-8850-5617), [3]Julia Freund (Julia.Freund-1@uni-hamburg.de, ORCID iD: 0000-0003-3488-7538)

[1]Hochschule für Musik Freiburg [Freiburg University of Music]; [2]Universität für Musik und darstellende Kunst Wien [University of Music and Performing Arts Vienna]; [3]Universität Hamburg

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Studying the Fish and/or the Water?

A Discussion About the Past, Present, and Future of Popular Music Theory in Europe and the U.S.

Ralf von Appen, Trevor de Clercq, Anne Danielsen, Stephanie DeLane Doktor, Allan Moore

SCHLAGWORTE/KEYWORDS: disciplinary history; disciplinary self-reflection; Fachgeschichte; fachliche Selbstreflexion; interdisciplinary music theory; interdisziplinäre Musiktheorie; Popular Music Studies; Popularmusikforschung

Ralf von Appen (RvA)

Welcome everyone![1] I'm very glad that you are taking the time to be here! To start off, I'd like to ask you to briefly introduce yourselves – and also to reflect on whether you consider yourselves music theorists. Trevor, can you begin?

Trevor de Clercq (TdC)

So, my name is Trevor de Clercq. I teach at Middle Tennessee State University in the Department of Recording Industry. I'm a professor there and I've taught there for 13 years. I teach courses in musicianship and also in audio theory, sound recording, music production, as well as sound synthesis, midi sequencing, and digital editing and mixing.

And in terms of whether I consider myself a music theorist, I mean, I do have a Ph.D. in music theory, so I think I have to consider myself a music theorist in that regard. I've published a lot in journals that are explicitly music theory journals, such as the *Music Theory Spectrum*, and *Music Theory Online*, and *Journal of Music Theory*, so by all definitions, I would be a music theorist. Ironically, though, my job is not in a department of music. We have a Department of Music at MTSU but I'm not part it. As a result, a lot of what I teach is not music theory, and that's because of the needs of my department, which is a Department of Recording Industry. There's a schism at MTSU with regard to popular music and more traditional musical styles, and that calls into question whether I'm a traditional music theorist, compared to other people in America, but there may be similar things in Europe that parallel my situation.

Anne Danielsen (AD)

In Norway and in Scandinavia, we don't have a separate music theory education or program. So, I consider myself a musicologist. I was trained as a musicologist, and musicology in Norway is a quite broad discipline. It has become broader and broader over the

1 This conversation took place via Zoom on 11 June 2025. It was conceived and moderated by Ralf von Appen and has been slightly edited for publication.

years. So, music theory is a part of my education and part of what I do. But music theory has always been closely connected with more interpretive, textual, and contextual analysis. Ethnomusicology, popular music studies, historical musicology and music theory are integrated within our program and how musicology is defined in Norway and also in Sweden and Denmark. So, yes, I think for North Americans, I'm considered kind of a music theorist. I've also published in music theory journals, but also in popular music journals, in *Psychology of Music or Music Perception* journals. And that's because I've been broadening my competence in the direction of music perception and cognition in recent years.

RvA

But as a leading scholar in rhythm research, would you think that the work you do is basically music theoretical? Or would you say it's musicological?

AD

Well, music theory hasn't traditionally been very concerned with contextual aspects. But I think we understand music theory differently in different parts of the world. In the U.S., it's a very specific kind of training. You are either a music theorist, or an ethnomusicologist, or a historical musicologist. That's not the case in Norway. I work on rhythm and groove, and part of that falls under music theory, but it also involves aesthetic and cultural perspectives, as well as aspects related to perception and cognition. Sometimes I think that I've established my own multidisciplinary field of rhythm and groove research. But it aligns quite well with how musicology is understood in Norway.

Allan F. Moore (AM)

I'm Allan Moore. I'm a professor emeritus at University of Surrey, but I finished there nearly 10 years ago, so my perspective is warped. I'm not a music theorist, but one of the assumptions behind the question is that we can divide up these activities we do in relation to music in fairly well-framed ways. And I've never managed to do that. I think of myself simply as a musical thinker. That's what I do with and around and because of music. And some of it has theoretical tones, some of it is more historical, some of it is more analytical. It depends on what the issue is that grabs me. So, I worry about "what is theory?" Yeah, I worry about "what is popular music." I think all of these things are problematic and so that could be fun. These days, I'm a practitioner, I compose, I paint, and I carve. I don't write anymore – or try not to.

RvA

But wasn't *Song Means*[2] aimed at putting together a theory of popular music? Of how we find meaning?

2 Moore 2012b.

AM

Ah, yes, but I call that a methodology. I think there's a difference between methodology and theory. A methodology is how you go about things. A theory is to do with how you assume things hang together. And I'm not sure things do hang together. You have to maneuver a way through. And that's what I was trying to do there.

Stephanie DeLane Doktor (SD)

My name is Steph Doktor. I'm an Assistant Professor of Music Theory at Temple University in Philadelphia. I've been there for three years, so just finished my third-year review and go up for tenure in three years. I teach the undergraduate part of the music theory curriculum, and I was hired to redesign it from the perspective of somebody not traditionally trained in music theory, and also someone who works on issues of inequality and inclusion in their research. I teach undergraduate and graduate courses that are required for students, but my *research* is definitely more historical oriented. I was actually trained by a historian, not a musicologist, and I got my Ph.D. at the University of Virginia, in Critical and Comparative Studies, which was partly created to blur the boundaries between the disciplines. So, it didn't really always matter who you studied with. A lot of people studied with Fred Maus, but they are ethnomusicologists or musicologists, even though he's a trained theorist. There was a lot of blurring of the boundaries in really productive ways that I hope my research reflects as well.

I *want* to be a music theorist. *So bad!* I want music theorists to accept me. And I've always wanted to be a music theorist. I think because I didn't get the mentorship I wanted I ended up gravitating towards working with musicologists, it's like a kind of unfulfilled dream. Well, now it's a fulfilled dream because I have a job in it, but still… I just went to the TOPS conference, the Timber Conference at McGill,[3] and I still think they don't treat me like a music theorist because I didn't go to Eastman, I didn't go to Yale. And the way that I talk about music is different than what a lot of people do. 50% of the research is very theoretical and analytical, but I'm also deeply concerned about what that has to say about culture and issues of inequality. So, I am always wanting to be a music theorist, but will never be that, I guess.

RvA

What I learned from your answers is that in Europe, we don't really have this distinction. But in the U.S., where this distinction used to be very clear, as you said, the boundaries are now being blurred as well. We have two cases here of US scholars who would not consider themselves music theorists – or perhaps would see themselves as music theorists, but not without complications. So, who would you consider *prototypical* popular music theorists in the U.S., Steph and Trevor?

3 *Timbre and Orchestration in Popular Song* (TOPS), 5–7 June 2025, see https://www.mcgill.ca/tops2025/ (3 July 2025).

TdC

I trained with John Covach. But then the irony is that John Covach who I think was one of the leading voices for popular music theory in America, at this point, is probably most famous for his History of Rock book.[4] So, you know, to consider even him a pure music theorist of popular music is itself also problematic. Because he's really steeped in history and teaches history, more than he does music theory courses. So even somebody who's the traditional, prototypical popular music theorist has some issues with that. David Temperley is really strong, I think, and he was my advisor as a Ph.D. in Popular Music Studies. But, of course, he does more than just popular music. I think he's a music theorist, first and foremost, and studies all types of styles, one of which is popular music. So those are two examples. I can't come up with someone who's only a popular music theorist and just does that. Well, that's not true, Christopher Doll and Brad Osborn kind of fall into that category, but there's a lot of people that really push the boundaries of what that might be. Steph, what do you think?

SD

I was going to say, Trevor! Well, it's just funny to hear everyone on this call say that, because I assign all of you and reference all of you in my classes. So, I think of you all as, whether you like it or not, as music theorists. And I was not drawing on any of your research as much when I had a pretty straightforward musicology job.

RvA

Allan and Anne, we first met at a summer school that we called "Methods of Popular Music Analysis."[5] Where do you see the difference between music theory and music analysis?

AM

Well, music theory is the general, and music analysis is the particular. That seems to me to be the balance, and so the two are interrelated. You can't separate them. And that's what was interesting to me in the way Steph and Trevor were talking. When using the term "music theory," I was thinking: well, you also mean analysis, you don't separate the two. But because we've got two words, I think, and because we don't recognize the boundary in the UK and in Europe generally, we think that music theory and music analysis are two things that have to remain, have to be joined, whereas they're actually not distinct, as far as I can see. As I say, one tends towards the general rule and one tends more towards the particular.

AD

That's how it's been used here as well, music analysis, pretty close, I think, to what you would call music theory in the U.S. context. You analyze something in particular, you

4 Covach/Flory 2006.

5 Five-Day International Summer School *Methods of Popular Music Analysis* of the *Arbeitskreis Studium Populäre Musik* (ASPM, nowadays GFPM) at the University of Osnabrueck in September 2011.

really dig into a work or a song. Whereas music theory – we use that term here as well – is more general. It's actually *satslære*, or what you would call, in the classical field, Schenker analysis or something. It comes from the German term *Satzlehre*. That's what we call music theory in my context. You learn counterpoint or general rules, whereas analysis is about digging into one particular musical work or song.

RvA

When we put together the book that came out of the summer school, *Song Interpretation in 21st Century Popular Music*,[6] our aim was to do something that hadn't been done before: to collect analyses of specific songs. We wondered why this had never really happened. It only occurred to me later that music theorists would not typically publish analyses of a single song. So, in *Music Theory Online*, you probably find none, or only very few, papers offering in-depth analysis of just one song. Because the aim of music theory may not be to focus on the specific – the word "theory" implies a search for the general, for understanding how popular music works in a broader sense. Would you agree?

AD

No, well, I've actually had some experiences with *Music Theory Online* where we submitted work that was too general. They didn't want it because we didn't have one specific song or particular work that we digged into. Of course, you also want some more general theoretical contributions, I guess. But in our case, the paper was rejected because it didn't include a detailed analysis of a specific song.

RvA

Trevor, have you written about one specific song?

TdC

I did, but it was in the *Dutch Journal of Music Theory*, so maybe that's not a good example.[7] I tend to not do music analysis, but there are music theorists in the U.S. who primarily do music analysis – I tend to do more theoretical stuff.

But I do think when we talk about what music theory actually is – that kind of broad question – I just think that term can mean so many things in different contexts. On some level, it's exactly what Allan said: There's this more general notion of music theory, and then there's analysis which is more specific – and those are kind of complements. But at the same time, music theory is this broader rubric, under which both the general and the analytical forms fall. In the U.S., I think "music theory" is not really the right label for what people who get those degrees actually do. I mean, the reason someone gets a music theory degree in the U.S. is because they want to teach, as Anne said, counterpoint, Schenkerian analysis, sight singing, rhythmic dictation – all those skills. It's really a skills-

6 Appen et al. (Eds.) 2015.

7 De Clercq 2016.The *Dutch Journal of Music Theory* turned into *Music Theory and Analysis* after the submission of the paper.

based curriculum that you're teaching, part writing for example. It ends up at higher levels, you maybe will teach more analytical stuff. But it's primarily music skills and techniques. And then, you theorize about those as a researcher, or analyze to inform your understanding of those techniques. But it's all coming back to the technical stuff.

The term "music theory," I think, just has many different meanings, for better or for worse.

SD

Well, it's so funny, Anne, that you said that – because when I've submitted to the Society for Music Theory conference, I've tried to present some broader generalizations about queerness and sound, and it hasn't been accepted. And I wonder if that's why. I just wrote a 21,000-word article on one song – but it is in the *Journal of the American Musicological Society*.[8] So, yeah, it's kind of the set distinction that Allan is talking about: where it's not music theory, but it's a hell of a lot of music analysis.

RvA

And then there's also been the term "popular musicology." I think it emerged in Britain about 20 years ago. Allan, do you have more context on where that term comes from or how it developed?

AM

Yeah, because in the UK, at that time popular music studies was a form of cultural studies. So, we needed something else that distinguished what we were trying to do, which was to actually deal with the notes and the sounds. That's where that term came from. I don't think we interrogated it at all. It was just a good idea.

RvA

And would that be a broader term than popular music theory? Or theory of popular music?

AM

Well, I think so. What was strong about the popular music work that was being done was its cultural questioning. It was contextually very strong and it dealt with audiences but it ignored the music. All we were trying to do was to complete the circle rather than to just look at the music. In the UK, I think we've always found it rather strange – though I don't think it's this like this anymore – that music theory articles never used to talk about context. I mean: What are you doing? Where are you starting from? It's as if music was a little bubble and you didn't need to do anything else other than just investigate the bubble. I think that's always been different in the UK. I'm not sure that it still is.

8 Doktor 2024.

RvA

Allan, you had this brilliant quote in your keynote speech at the Liverpool conference[9] a couple of years ago – where you described the fish in the aquarium as the text, and the water as the context. I can't recall the exact wording – do you remember it?

AM

I reviewed Chris Rojek's book,[10] where he made some comment about how musicologists look at the fish without the water. And I said: well, the problem is that he's writing about the water and doesn't know there's any fish there. That was the context – I can't remember exactly what I said.

RvA

But that would have been my next question: What it the relationship between popular music theory and popular music studies? Is the divide really so stark that the people in popular music studies don't write about the actual sounds?

AM

I think these are just these are just labels, they're bureaucratic labels, different institutions insist on different labels. I don't think there's a fundamental difference between these things. It's all a case of whether or not you deal with music as an experience or music as something external. That seems to me to be the fundamental thing. By and large, I read music theorists as dealing with music as a sort of abstract game, and I read analysts as dealing with music as something that's experiential. To me, that's the key dividing line. I can't any longer think about popular music studies as separate from music studies, because popular music is a term that only exists in the academy. It doesn't exist anywhere else. It's not a thing. It's an artificial term that we have developed in order to be able to understand what we're trying to do. But it has no real bite outside the academy. Nobody else knows what "popular music" is.

RvA

Well, people do use the term "popular music" in English, but the German *Popularmusik* is really a term that nobody outside of academia would ever use. It's a translation that has no equivalent in our everyday language. We'd talk about "Popmusik," but not "Popularmusik." It feels like a made-up word.

AM

Well, I think it comes from the origin of IASPM.[11] They were trying to find a way of demarcating what it was that needed studying and wasn't... You know, "jazz" doesn't work,

9 *PopMAC, International Conference on Analyzing Popular Music*, University of Liverpool, 2–4 July 2013.

10 Moore 2012a.

11 International Association for the Study of Popular Music, founded in 1981, see https://www.iaspm.net/welcome/ (3 July 2025).

"rock" doesn't work. Any of these other terms don't work. "Popular music" seemed to cover it all, but it was an artificial term.

RvA

Okay, then let's talk about the parameters of music that we research – about changes in the field, and how different parameters have become more important. I think we can say that melody, pitch, and harmony have traditionally been at the center of popular music theory. But this has opened up, first, perhaps, to rhythm, and more recently to timbre, sound, and voice. And now, in this Special Issue, there's also a paper about performance aspects. So how do you experience the role of different parameters, and perhaps a hierarchy between them?

AD

Well, it's interesting because it's been a development, as you say, within the field. The focus on melody, pitch and harmony is actually coming from the field of classical music. I think many of the popular music scholars that try to make their way into musicology, doing work on popular music, they had to focus or analyze the same musical aspects that were important in the field as a whole, in more traditional musicology. They also felt they had to pick the songs or works that were interesting when you were looking at music through that lens. It constrained what kind of music was studied. Of course, there were some styles, some popular music traditions where there was more to say about those parameters. Even Middleton, in his 1990 *Studying Popular Music*[12] pointed to the need to expand the field – to include those aspects that are probably the most important in at least many popular music styles: sound, timbre, microrhythm – elements that are not captured by notation. He coined this term, "notation centered analysis." It's been a very exciting development the last decades. I mean, the whole field of music production, where I've also been involved. And rhythm and groove has emerged as a separate field in itself, and also timbre research. The focus on melody, pitch and harmony didn't come from nowhere. It was something that we inherited, so to speak, from the more traditional musicology.

RvA

Steph, as the youngest among us, how do you see this development, and which parameters are you focusing on in your work?

SD

I was just thinking about what Anne was saying. There are some racialized implications behind that, as you've already argued in some of your research. Popular music studies – trying to validate itself within the academy – had to use these means that were already valued, but these means, these methods were developed around classical music. And that was white music, right? It was this tradition that sort of cohered around whiteness and white supremacy. So a lot of the features that really matter to non-white music, like tim-

12 Middleton 1990.

bre, like microrhythm, got ignored. And it's really lovely that I don't have to fight for their inclusion. That's already happened. It's totally normal for me to give a talk on microrhythm. There's a multi-million-dollar research initiative in Canada on timbre and orchestration, which is so cool. It's really nice that I can build off of that work that's already been done and not have to fight for it to be included. That said, within the academy, in the music theory sequence, it's still not included. So I do feel like I'm trying really hard to say: we should have units where we teach students about microtiming, about timbre, and about different ways to analyze and make sense of these elements. But that hasn't quite happened yet. And I'm hoping that will start to change. I've just started to include it in my theory sequence – whether or not my more senior colleagues appreciate it, or even know that I'm doing that. I'm just sneaking it in because I know the students love it. These are the really meaningful elements to their experience. They're all listening to popular music. And yet we teach four semesters – two full years of theory, and we don't talk about timbre? That is insane. The great thing is, I have research I can bring into the classroom, which is so nice. Because that work's already been done. So I can say: look at what people are doing – these parameters, secondary parameters, so to speak, they're very meaningful. I feel like as a younger scholar, I've got it a little easy. I don't have to fight so hard for these things to be included. But I'm still working to include them in the classroom.

RvA

You've just called them secondary parameters. So there is a hierarchy?

SD

Well, I'm thinking about Leonard Meyer, isn't that his work?[13] There's definitely a hierarchy. I think, at least in the United States, that hierarchy sometimes is perceived in a way that timbre studies or microtiming studies are seen as less rigorous – more experimental, more about feeling. There's certainly a gendered component there, too. They're seen as secondary in the sense that they're considered more valuable in musics that are often derided for their commercialism instead of more serious or artistic music, which is more pitch centric. But I think that hierarchy is changing because of the changes in the institution and the research that's being done. I hope it is!

AD

I think that within the field of music theory, the traditional structural aspects have been privileged. Melody, rhythm, harmony, those are the primary. And the rest is like, more performative or less rigorous, like more up to the performers, less systematic. I guess there is something there that's still circulating.

RvA

So how do you see the relationship between traditional music theory and popular music theory? Could they learn from each other? Should they learn from our expansion of ana-

13 Meyer 1983.

lytical parameters – and perhaps also from our choice of repertoire? And on the other hand: how important is what's happening in traditional music theory for your work? Do you follow the journals in that field to draw on theories that might be useful for popular music?

AD

If I can try to answer the first question – I think, actually, we've seen what's been called a performative turn, at least here, and I think in Europe in general. There's been growing interest in performance, also within research primarily focused on classical music. There was this project in the UK, the CHARM Project,[14] which was about performative aspects of classical music. Perhaps you will not get those people to admit that they were inspired by popular music studies. But I think actually the focus on performative aspects within the field of popular music studies might have had some influence.

AM

It did, yeah, it did!

RvA

Trevor and Steph, how do you see this development in the U.S.?

TdC

I've just been thinking about what Steph said earlier, and reflecting on my own thoughts on the issue of timbre and how that relates to music theory. It's really a question I've been struggling with. Just to recap the way my department is structured: it's a department that primarily teaches audio engineering. And so we have courses on audio fundamentals, on sound synthesis, on microphone techniques, on mixing techniques, signal processing, dynamics processing, equalization. Basically, the entire curriculum is about timbre and how timbre affects sounds, and how you manipulate sounds through timbre. I teach some of those courses, but I also teach this little bit of music theory with rhythm and pitch. It's almost the opposite of the way a music department is structured, where you have all this work on pitch and rhythm and maybe just a little – or maybe none – on timbre. And I wonder if a music theorist is supposed to cover all of this, all this audio engineering and sound recording, timbre work, and be an expert and teach that as well? And also still do all the traditional areas, pitch, rhythm, and form and those kind of things? I wonder if the issue is not that we need to put more timbre into music theory, in terms of teachers, but simply to hire audio engineers and sound recording experts and mixers and those kind of folks to teach that to our undergraduate students. Maybe music theory is a wrong term for what the people do over here. They teach pitch and rhythm and music techniques. That would be another category of person.

In California, there's a difference in the way music theory is taught. On the East Coast, I think it's people who have degrees in music theory teaching music techniques. But in

14 Arts & Humanities Research Council (AHRC) Research Center for the History and Analysis of Recorded Music (CHARM), established in 2004. See https://charm.rhul.ac.uk/index.html (3 July 2025).

California, it's usually the composers who teach music theory. There's really not such a thing as a "music theorist" on the West Coast. I mean, there *are* music theorists on the West Coast, but that's a kind of a different system. Even within America, there's contrast: you have the composers – or songwriters, in a popular music context – who are writing melodies and harmonies, and they're teaching those techniques. And then you have the audio engineers, who are teaching timbre and using timbre. And maybe they're all music theorists in the sense that they're doing research on theories of how these things work. But maybe music theory, as a field itself, shouldn't exist as a standalone field, because it's really just something that encompasses all fields. And maybe the European model, where music theory always has a component of musicology and everything is that kind of global is a better model.

RvA

So it seems that music theory is very closely linked to practical aspects. You're teaching how to *do* something, right? Especially the audio engineering people who are training students to become record producers. When we go back to Aristotle's definition of theory, for him the highest state a human being can reach is that of a theorist. And that's not about *doing* something at all, it's about understanding the world. It's about grasping the essence of things and to understand, regarding music, how music works – not about how someone should compose a certain piece, or how to EQ a track. So we call it "theory," but very often, at our universities at least, it's actually oriented toward practice, right?

TdC

Yeah, I would agree with that.

RvA

So, Trevor, when we met in Nashville last week, we talked about the opening up of music theory in the U.S. and that includes not just different analytical parameters, but also different repertoire. How would you describe the current situation in the U.S.? What does this "opening up" actually mean, and how does it manifest itself – in conferences, in journals? What exactly is being opened up? And is this a process that's only happening now, or has it already been underway for the past decade, as Steph suggested?

TdC

I just came back from a workshop at NYU. It was a three-day workshop on broadening the curriculum for music theory studies.[15] I gave a little workshop on popular music and related topics. But there were workshops on Japanese song, on Korean music, on Turkish music, the whole gamut of possible global musics that maybe should exist within a music theory curriculum. Historically, that music theory curriculum was structured primarily

15 Transitions: A Pedagogy Workshop for Evolving Music Theory Curricula, 6–8 June 2025 at NYU Steinhardt, New York, see https://societymusictheory.org/events/transitions-pedagogy-workshop-evolving-music-theory-curricula-2025 (3 July 2025).

around classical music. Obviously, because those curriculums were kind of driven by professors at Eastman or at Florida State, who are primarily teaching cello and oboe players who were going, at least historically, to be in a concert career. So that music theory would explain those styles. But, of course, as Steph said, those styles are heavily, at least traditionally, oriented around the music of white men. Obviously, we need more diversity in the repertoire.

But it becomes a really thorny situation. Because, even after taking a workshop on Turkish music, I wouldn't consider myself enough of an expert on Turkish music now to go teach even a module on Turkish music. It's just too foreign to me. It starts to beg the question again. I mentioned that silo of music theory or music techniques, and then the silo of audio engineering. But there's another silo of ethnomusicology. How much is music theory going to be overlapping with ethnomusicology?

I know that's beyond the question of popular music, but as music theory itself questions what it teaches and who it teaches, it opens up this question of not just what is music theory, but what are the silos we have for music studies? And who's studying what, and who's teaching what? In the U.S., I think it's just completely a disarray, maybe not in the day-to-day curriculums that you see from fall to spring semesters. But I think right now it's not clear what a music theory curriculum, if even a music curriculum, should look like for undergrad or graduate students.

SD

Yeah, and I think this just circles back to what you were saying before, Trevor. At Temple, we have an incredible music tech program – that's fairly new. I had already done work on timbre, but without the deep, spectrogram-based analysis. When I got to Temple, I was struck by how high the student enrollment for the tech program was. Because this is what students want to do. We have way less classical music performers, even though we're known as a city conservatory because we have all these people from the Philadelphia Orchestra teaching. We have a decline in enrollment in classical music and an incline in people who want to write and perform pop music, various different types of pop music, electronic music. And I wanted to reach those students. They're doing all this work and they're building recording skills. How can I help them analyze and hear timbre better? That's why I changed the curriculum a little bit, because I think our students are heading in a different direction. So the field's going to have to grapple with that at some point.

And I think you're right – in the U.S. even the sequences are somewhat in disarray. Especially after Schenkergate,[16] when America finally realized the thing that the Germans already knew, there's been this push to change the curriculum, to change our scholarship. It is a little chaotic and all over the place. I was hired to bring in this pop music content – but then the students are still taking a classical music curriculum. Then all of a sudden, they take my pop music class. We're in this real moment of flux and transition. And I'm hoping to see that it irons out over time.

I wanted to say one more thing – and also echo something else Trevor was saying. Some of the best kind of rethinking of music theory and skills-based teaching is happening at places like Oberlin, where they start by asking: what are the basic elements of

16 Ewell 2020; Ewell 2023.

sound? Pitch, rhythm, timbre – that kind of thing. When you're teaching through that lens, or approach your scholarship through that lens, you can use any repertoire you want to get into that. I have studied classical music, jazz, and popular music, so I can bring all that in. But I would love to bring non-American music and non-Western music in to really diversify the curriculum. But like Trevor said, I'm not… I would feel uncomfortable teaching even a short unit on something I don't feel familiar with. Still, I would love to see students being able to get exposure to studying music theory, but from music around the world, different types of commercial music, folk music, art music – because if you're teaching about rhythm, you can get down that pathway through *any* type of music.

RvA

So the way forward would be team teaching and bring together experts from ethnomusicology and popular music studies? But our universities wouldn't allow that, because it's twice as expensive, right?

SD

There you go, that's it! I mean, honestly, team publications! Writing across the disciplines seems like really helpful for music theory.

AM

A couple of things have come to mind as everybody's been talking. One is, there's a real *risk* in only being taught by experts. Some of the best teaching I've ever done is when I've had to take on a class at a week's notice about something I didn't know *anything* about. Because I have some experience, I can *show* my students how it is that you come to knowledge of this – the *process* of understanding it. Because I'm going through it, *too*, just a little bit further ahead. I think that can be really instructive.

And that relates to this other thing: The problem I have with theory *per se* is that we only have theory because we want to control. Theory is a means to control! And this is the reason that we start off by theorizing pitch. Because it's a closed system, because we can measure it, because we can control it in all its aspects. We've never talked in the same way about timbre or even rhythm, to a certain extent. Because we couldn't control it in the same way! But now that we've got spectrograms and what have you, we *can* control those other spheres. So that's why they're coming into theory, and that's why I think it's a problem. Because I actually think that exerting control over what it is that we're doing is part of the problem that we all have.

RvA

What is being controlled? People or theories or methodologies?

AM

People are being controlled. Because as you as you think you know something, then you pass that knowledge onto somebody else, and you control the knowledge of somebody else. That's the fundamental problem I have with theory per se.

SD

I think that's really relevant, Allan! You just said the part out loud that I feel like I can never say as a junior scholar and as a woman. I think back to Fred Maus's "masculine modes of music theory."[17] That article changed my life, and I actually still assign it all the time. It's the scientification of music that seems really linked to control. And I get it. Like, I want to control things in my life, that makes me feel like not everything is just like flying around me, and it eases my mind a little bit. I'm so glad you said that, Allan! But we also have to, at the end of the day, teach students, communicate with others, and we have to have a shared system in order to communicate in some way. And so a lot of these methodologies, notation systems, ways of thinking and talking about music have been an effort for us to not always control, but to have a shared form of communication.

AM

We need to remember they're provisional. They're always provisional. And that's what we sometimes forget. "You never use perfect fifths in succession! You don't do it! It's a rule!"

AD

But if we remember that it's provisional, then it's quite useful, actually.

AM

Oh, absolutely! But we forget it. And students certainly don't think it's provisional because we give them a red cross when they do it.

RvA

Coming back to the question of repertoire: it's not only about including repertoire from all over the world; even with Western popular music, there's also been an opening towards hip-hop, for example, or electronic dance music. But that's a slow process, right? What is your view on that?

AD

I'm not sure if it's been so slow. Well, of course, it depends on the time perspective. But when you were asking about who are the "pure" music theorists these days, I would, for example, mention Mitch Ohriner. He's done extensive, quite rigorous theoretical work on hip-hop, and he's quite respected for that. So I think actually both electronic dance music, electronica, whatever you call it, and hip-hop have entered the repertoire. I would say that it's quite accepted, but I'm more in doubt as to whether mainstream pop is accepted within our fields, because that's always been something that's been…, that's partly a gendered thing as well. It seems that these new, groove-based repetitive musics are more respected, I think, than great, fantastic pop ballads.

17 Maus 1993.

RvA

So you mean that rock – as opposed to pop – has been a much more frequent subject of research?

AD

Yeah, that's always been the case! It's probably also part of the reason why we don't call it pop music studies, because then you exclude the rock fans and all the serious male scholars, mostly. And I think hip-hop is also a male dominated genre, in a way. Yeah, it's interesting that this tension between pop and rock and the downgrading of commercial, or what I would call mainstream pop, is still there. I mean, if you compare, for example, work on Prince compared to work on Whitney Houston, there's a massive difference in terms of quantity. Why is that?

AM

It's because we're interested in musicians, not music.

AD

Musicians? But Whitney Houston is a fantastic musician. She's one of the most fabulous singers!

AM

No, absolutely! But the focus is on *who* did, rather than what was done. The focus is on the music as a means of communication. And we want to understand the music because we want to understand that star.

AD

Yeah. But why are we interested in those stars? The stars also belong to a genre. It's not only about the gender. It's also about styles, I think.

TdC

I think, Anne, you're onto something for sure here. And it's not just Whitney Houston, it's obviously Mariah Carey as well. But it's also Garth Brooks – I don't think I've ever seen a paper on Garth Brooks in any music theory journals, yet he's one of the biggest stars in country music. Honestly, this has been a problem, even going back to classical music. I played in orchestras as a cellist for many years, and I think I can say that a lot of undergrad symphony players love Tchaikovsky. One of the best composers, I think, that students want to play. But Tchaikovsky's music is never something you see analyzed in a music theory textbook. Why is there this distinction? Why do we separate composers we study from ones, like Allan said, we want to know more about – or that people listen to. Why is there that schism?

RvA

So what desiderata remain for us? Where do we go from here? What are the questions we need to address most urgently in popular music theory?

SD

Just to build on what Anne was saying, there is a growing emergence of, for example, Taylor Swift studies. Chelsey Hamm, who's done a lot of work for Open Music Theory, just gave a talk on Taylor Swift.[18] I think younger scholars – especially women and queer and feminist music theorists – are looking at extremely commercial music, studying timbre, studying some of those types of music, and the elements that have been lower on the hierarchy. It's just becoming more common. I won't name this person, but there was a senior pop music studies scholar whom I adore, but they mentioned that they're having a hard time getting into music theory conferences, because really popular, Top 40 music, is what's starting to dominate some of the conversations. So I'm hopeful, I think it is changing and there's a lot more questions of valuing *really* commercial music, because that's also what our students are listening to. They *want* us to analyze that in the classroom. They want us to be talking about it. They're not listening to the Rolling Stones.

AD

As I mentioned before we started, we got this funding of this AI and Creativity Center in Oslo today. I think that's one thing that will be interesting to look into. How will AI actually influence the field of popular music? How good can AI be? What parts of the field will be taken over by AI? But perhaps it will also strengthen the identity and importance of other areas. That's going to be a topic that will be on the agenda for several conferences in music production, and music theory, and popular music studies in the years to come. One possibility is that AI-generated music will actually increase the value we place on music where you can really hear the presence of a human being. So maybe, paradoxically, it will strengthen the importance of human creativity and performative qualities.

RvA

Going back to the *really* popular music and the hierarchy of parameters – when you bring up Taylor Swift, the common prejudice seems to be: Oh, sure, she's interesting from a sociological or cultural perspective. But musically? People often assume there's nothing worthy of analysis – just the same four chords over and over again, verse-chorus forms, and pentatonic melodies. It's the intersection of two forms of bias: one against the really popular music, one against its musical content as supposedly simplistic.

SD

Yeah, I think those things are definitely coexisting. But when I'm reading some of the work on Taylor Swift, it's – as you know – so much more than just four chords. Or, thinking about some of the work that Trevor has done, there's a lot we can do with four chords –

18 Hamm 2025.

thinking through this in really thoughtful ways. And not to keep bringing it back to the students, but *they* don't have a problem with these four chords – they seem to love it. So it does seem like the old critique of highly commercial music being simplistic just isn't sustainable anymore – especially now that we're studying these secondary parameters.

Chelsey Hamm's paper was on timbre, and she did this really fine-tuned timbral analysis of the ways in which Swift is resonating her voice in certain ways, at certain points of the song. Maybe the harmony is straightforward – not always actually – but even if it seems that way, the microtiming and the timbre can be quite complex.

TdC

Well, and even if the chords are simple – we have all these theories of harmony in popular music and music theory, but theories of *melody* in popular music hardly exist. And if you look at Taylor Swift's melodies, they're not doing the classical model of chord tones and non-chord tones, and it's not just pentatonic scales being run up and down. So how does melody interact with these simple chord progressions? Do we have concepts that are equivalent to classical notions of chord tones, non-chord tones, appoggiaturas – and if so, how do they work, and how to implement? I don't even think we have a great theory of melody for classical music either, barring some sources like Anton Reicha's.[19] I think there's a lot of research to be done – even on the traditional topics that music theory would cover with regard to some things that we think are simple, maybe harmonically, but are really not. Because I don't know how I teach a theory of melody to my students. How do you write a melody over a looping chord regression? How do you create tension? How do you create release? How do you cadence, given that there's not really a kind of coordinated resolve on a tonic chord, you know?

AD

Yeah, and you can turn the question around and ask, why is it that we actually like to hear the same chord progressions again and again? What is the magic that makes those four chords new and fresh and interesting? It's always interesting to try to dig into those simple forms and see what can be done and what *is* done with those simple forms. And why do they work?

RvA

That reminds me of the work of Asaf Peres,[20] who analyzes recordings by Max Martin and Taylor Swift with a focus on production techniques, melody, and harmony. He decided not to stay in academia, but instead creates videos on YouTube and markets his knowledge directly to songwriters – offering workshops aimed at that audience. This also raises the idea of really *popular* music theory – meaning popular on platforms like YouTube. People like Adam Neely[21] come to mind. I think it's great that music theory has become so accessible and popular in this way. It attracts many of our students, as well as people outside of academia, who want to understand, for example, how the Beatles used the

19 Reicha 2001.

20 https://www.top40theory.com(3 July 2025).

21 https://www.youtube.com/adamneely(3 July 2025).

Dorian mode, or how the current number-one hit works musically. So there's now a broader audience for music theory beyond the university, which is kind of exciting.

AM

But a lot of this work treats theory as a fixed thing – applied, which is part of the problem. That's always been part of the problem with theory. Theory is prescriptive. And now, with the rise of this sort of thing on the internet, that idea that theory is always prescriptive is *so* much stronger. And so when you get your students in, it's that much more work to do to unbreak that.

RvA

Going back to what Anne said – about what it is in those four chords that's so compelling, and why we want to hear them again and again – I think there has been a lack of interdisciplinary work that brings together music psychology and popular music theory.

There *is* a connection between music cognition and music theory, of course, but questions like "What makes a melody work?" or "When does a hook truly become addictive?" haven't been explored deeply enough in a collaborative way. There's some great work – like the book by Jadey O'Regan and Tim Byron,[22] where a music theorist and a music psychologist actually team up. But that kind of collaboration is still rare, I think what's missing is that music psychology hasn't fully opened up to explaining how music works – not just how we respond to it, but why we like certain musical features. Do you know of any other good examples?

TdC

I was recently criticized for trying to talk about that in a *Music Theory Online* paper. I had something about looking at all the most popular songs, and then comparing some parameters, like how long the intro is or whatever, to some of the more deeper cuts. And seeing if there's differences so we could explain why maybe some songs are more popular. It's this field called hit song science, which has problems, I'll agree. But there is a potential research area there. But the reviewer said, "Is this person even a music theorist? This is not what music theorists do. This is not something we're interested in." And I thought – well, maybe I'm not. I don't know. But it does sound interesting if we could figure some of this out. Maybe it's inherently interdisciplinary.

RvA

A discipline "disciplines" what we do, right? It tells us what to do, and it sets boundaries.

SD

Back to what Allan was saying about control…

22 O'Regan/Byron 2023.

AD

Yeah, music theory has been expanded, as you said, in the direction of music cognition. And I suppose I'm a representative of that expansion myself. Of course, you can come up with interesting explanations. But I'm still not sure if music cognition can explain why we like those four chords and why we want to hear them again and again. It can be explained to a certain extent. But beyond that, a lot remains open – to new theories, or maybe it's just ultimately unexplainable.

AM

Well, I think that's why the phenomenological approach is so important, because we do write as if we're anyone, but we're not. We're one particular person in a particular situation. And if you make that apparent, then you can talk about your own experience, because then someone can measure those against it. That seems to me really important, rather than trying to be anonymous.

AD

I totally agree. And I think the best explanations I've read of why a certain song is "magic" are those deep phenomenological, subjective interpretations where you talk about *everything* and also connect all the different aspects of a song.

RvA

Yes, Allan, your work has been so important in this regard, because you keep emphasizing that point. These days, if a student hands in an analysis paper without using "I," I tell them that's not acceptable. You can't write about a song as if you know how everyone else in the world is experiencing it. You *have* to be subjective when writing about music – at least in analysis papers, if not necessarily in theory papers.

Anyway, this has been a brilliant conversation! Thank you all so much for your time and contributions!

TdC

Well, thanks for inviting us! This has been a unique opportunity to have a little open discussion.

AD

Yeah, thanks. Very productive and thought-provoking!

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© 2025 [1]Ralf von Appen (von-appen@mdw.ac.at, ORCID iD: https://orcid.org/0000-0001-8850-5617), [2]Trevor de Clercq,[3] Anne Danielsen, [4]Stephanie DeLane Doktor, [5]Allan Moore

[1]Universität für Musik und darstellende Kunst Wien [University of Music and Performing Arts Vienna]; [2]Middle Tennessee State University; [3]University of Oslo; [4]Temple University; [5]University of Surrey

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Hip-Hop Sampling as Analytic Act

Jeremy Tatar

In der Musikproduktion bezeichnet Sampling die Praxis der digitalen Weiterverwendung von Elementen aus bestehenden Aufnahmen, um neuartige Musik zu erschaffen. Seitdem es Mitte des 20. Jahrhunderts innerhalb der Musique Concrète entwickelt und in den 1970er und 1980er Jahren von Discjockeys in der Bronx übernommen wurde, ist das Sampling zu einem allgegenwärtigen Merkmal der zeitgenössischen Musiklandschaft geworden. Auf Grundlage von Konzepten aus dem Bereich der Performance-Analyse wird in diesem Artikel untersucht, inwiefern die Produktion samplebasierter Hip-Hop-Beats als eine Form von Musikanalyse fungieren könnte. Ich argumentiere dafür, dass samplebasierte Beats – wie auch andere analytische Handlungen – a) Produkte eines ebenso geschulten wie genauen, von Expert:innenwissen geprägten Hörens sind und b) das Potential aufweisen, auch das Hören und Interpretieren *anderer* Musik zu beeinflussen. Meine Analysen konzentrieren sich vor allem auf Fragen des Metrums und der Phrasierung und gehen auf folgende Themen ein: Wie interpretieren Produzent:innen eine metrisch mehrdeutige Quelle? Wie rekontextualisieren sie Material in einem anderen Metrum? Und nicht zuletzt: Wie kann die Betrachtung dieser Praktiken unsere eigenen Interpretationen des ursprünglichen Materials bereichern (und verändern)? Anhand von Beispielen von Usher (»Lil' Freak«, 2010), Slum Village (»Raise it Up«, 2000), Disiz (»Une Histoire Extraordinaire«, 2005) und Nas (»I Can«, 2002) zeige ich, wie Sampling ein lebendiges Archiv erschafft, das die Hörpraktiken einer musikalischen Expert:innengemeinschaft bezeugt.

In music production, sampling is the practice of digitally repurposing elements from existing recordings to create new musical works. Pioneered by *musique concrète* studio traditions in the mid-twentieth century and later adopted by disc jockeys in the Bronx in the 1970s and 80s, sampling has since become a ubiquitous feature of our contemporary musical landscape. Drawing on concepts established in the field of performance analysis, this paper explores the potential for sample-based hip-hop beats to function as a form of musical analysis. I argue that – just like other analytic acts – sample-based beats are a) products of skilled, close listening informed by expert knowledge; and b) commentaries with the potential to shape how *other* music is heard and interpreted. Focusing particularly on issues of meter and phrasing, my analyses consider issues such as: How do producers interpret a metrically ambiguous source? How do they recontextualize material from one meter for another? And, most importantly, how might attending to their choices inform (and transform) our own interpretations of these source materials? Through close readings of examples by Usher ("Lil' Freak," 2010), Slum Village ("Raise it Up," 2000), Disiz ("Une Histoire Extraordinaire," 2005) and Nas ("I Can," 2002), I demonstrate how sampling creates a living archive that documents the listening practices of an expert musical community.

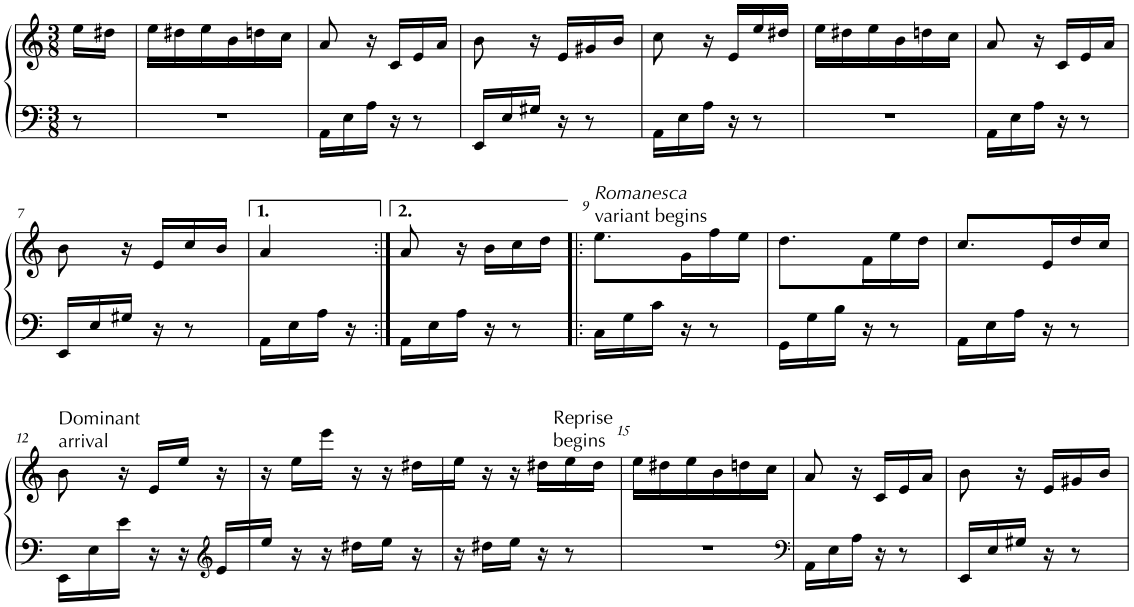
SCHLAGWORTE/KEYWORDS: Analyse; analysis; Hip Hop; meter; Metrum; music production; recontextualization; sampling

Introduction – and "Für Elise"

In a 2015 article concerned mainly with music theory pedagogy and the relative neglect of musical meter within standard models of conservatory education, Richard Cohn closes with a brief analysis of Beethoven's bagatelle for piano popularly known as "Für Elise."[1] Cohn focuses on the passage linking the arrival of the dominant in measure 12 (which follows a brief *Romanesca* variant that begins in measure 9) with the reprise of the sec-

1 Cohn 2015, 17.

tion's main theme in the pickup to measure 15.[2] Across these three measures, the music rockets upward in register through a series of repeated Es before settling on an alternation between E5 and D♯5, as Beethoven's notation directs his pianist to divide these gestures between their hands (Example 1).



Example 1: Ludwig van Beethoven, Bagatelle No. 25 in A minor, WoO 59, "Für Elise" (1810), measures 1–17

Central to Cohn's analysis are recordings of "Für Elise" by two of the twentieth century's piano titans: Artur Schnabel and Alfred Brendel. Audio Example 1 presents Schnabel's recording, beginning from the second-time bar.[3] Schnabel plays one E-D♯ alternation too many before the section's reprise, effectively adding an extra eighth note and momentarily expanding the notated 3/8 meter into 4/8, as shown in Example 2. For comparison, Audio Example 2 presents Brendel's recording of the same passage.[4] Remarkably, Brendel plays one E-D♯ alternation *too few* at this moment, subtracting an eighth note and contracting the meter into 2/8, as shown in Example 3.

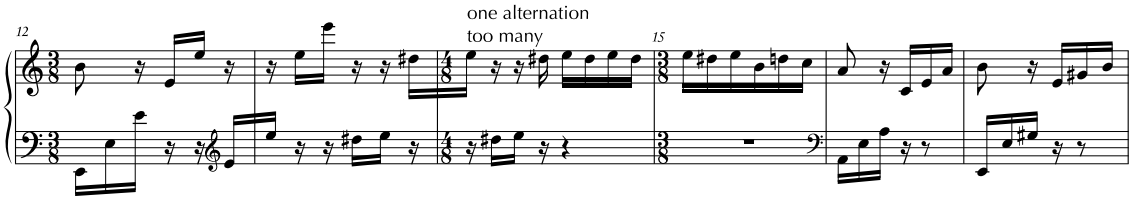
https://storage.gmth.de/zgmth/media/1221/Tatar_Sampling_Audio01.mp3

Audio Example 1: Beethoven, "Für Elise," performed by Artur Schnabel

2 On the *Romanesca* schema and its variants, see Gjerdingen 2007, 25–43.

3 Schnabel's performance was recorded on November 10, 1938, and appears on the compact disc Artur Schnabel, *Beethoven Piano Works Volume 10*, Naxos Historical #8110764. This excerpt is from Schnabel's second pass through the section (Cohn 2015, 17, n. 17).

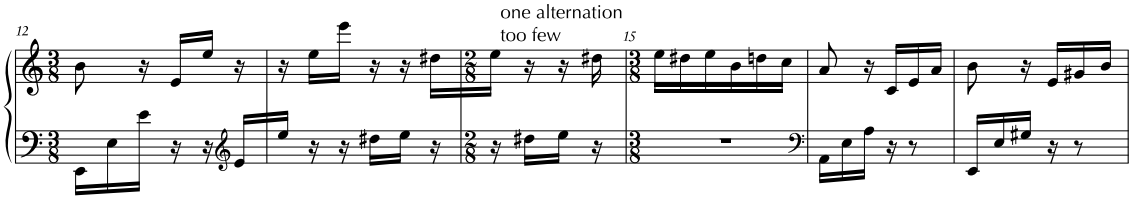
4 Brendel's performance was recorded in the early 1960s and appears on the 1992 compact disc Alfred Brendel, *Beethoven: Variations & Vignettes for Piano*, Disc 3, VoxBox 3X 3017. This excerpt is from Brendel's first pass through the section (Cohn 2015, 17, n. 18).



Example 2: Transcription of Artur Schnabel's recording of "Für Elise," which has one E-D♯ alternation too many

https://storage.gmth.de/zgmth/media/1221/Tatar_Sampling_Audio02.mp3

Audio Example 2: Beethoven, "Für Elise," performed by Alfred Brendel



Example 3: Transcription of Alfred Brendel's recording of "Für Elise," which has one E-D♯ alternation too few

How could such esteemed musicians make such elementary mistakes? Cohn makes two important observations about these performers and their recordings. First, both Schnabel and Brendel "have well deserved reputations as among the most scholarly of musicians, for whom textual fidelity is a particularly cherished value."[5] Tellingly, these miscountings are one-off occurrences in their discographies, and it is therefore difficult to defend their deviations from Beethoven's score as forms of artistic license – Cohn argues, instead, that they are outright errors.[6] Second, he further points out that this section of the bagatelle's dominant prolongation is hardly a moment of taxing pianism, since "the left hand is inactive, and the right hand plays two adjacent pitches, one at a time, in a moderate tempo."[7] The slips of Schnabel and Brendel cannot be attributed to the technical difficulties of "Für Elise," either, and Cohn emphasizes that "if the demands are not physical, then they must be cognitive."[8]

We will return to the metric strategy that Cohn recommends as a remedy for "getting this passage right"[9] much later below, but for now I wish to concentrate on the idea that – in some shape or form – an individual's performance of a work contains important information about how they hear and understand that work. This is by no means a new idea, of course, and the potential connections between performance and cognition have long been rich areas of inquiry. Writing in 1973, for example, Leonard Meyer makes the connections between performance and analysis explicit:

5 Cohn 2015, 17.

6 Cohn writes, for example, that in Schnabel's 1932 recording of "Für Elise" he "adopts a slower tempo and plays it to perfection" (Cohn 2017, 17, footnote 17; this recording is widely available on YouTube). Brendel, too, has recorded the piece several times, and in no other version does a similar miscounting occur. While it is true that different pianists from different generations and different schools of interpretation have different relationships with the musical score-as-text, it is nonetheless unlikely that such flexibility might apply in this case, given how faithfully Schnabel and Brendel reproduce Beethoven's score – and, indeed, the scores of other composers – on other occasions.

7 Cohn 2015, 18.

8 Ibid.

9 Ibid.

> analysis is something which happens whenever one attends intelligently to the world. Whenever stimuli are grouped, ordered, and related into coherent patterns and processes, analysis has taken place. The performance of a piece of music is, therefore, the actualization of an analytic act – even though such analysis may have been intuitive and unsystematic. For what a performer *does* is to make the relationships and patterns potential in the composer's score clear to the mind and ear of the experienced listener.[10]

Sentiments that echo Meyer's understanding of performance as "the actualization of an analytic act" abound in the subsequent literature. John Rink builds directly upon Meyer when he writes that

> While it is true that performers and analysts often speak different languages, one should not assume that the more technical and in some respects more sophisticated vocabulary necessarily describes musical phenomena *better*, only (at times) with greater precision. The vast terminological gulf between analysts and performers blinds us to the fact that good performers are continually engaged in a process of 'analysis', only (as I have implied) of a kind different from that employed in published analyses. The former sort of 'analysis' is not some independent procedure *applied* to the act of interpretation: on the contrary, it forms an integral part of the performing process.[11]

More recently, the notion that a performance proceeds from and to some extent conveys a music-analytical interpretation has been the springboard for a substantial body of research. Such studies explore a more expansive range of musical activities beyond the traditional, score-based understanding of performance that Meyer originally conceived, and some prominent strands of inquiry concern distinctly embodied forms of musicking, such as dancing and headbanging.[12] Two other publications in this vein are studies by Olivia Lucas and William O'Hara, which examine the analytical dimensions of concert light shows and cover songs posted to YouTube, respectively.[13] While both articles have been influential on my thinking for this project, for reasons of space I will focus only on Lucas's.

Lucas presents an innovative study of the light shows that accompany concert performances of the Swedish metal group Meshuggah. Created by lighting designer Edvard Hansson, these visual spectacles are tightly choreographed with Meshuggah's music. Yet, as Lucas argues, the light shows often go "beyond *coordination* with musical events to *communication of abstract ideas about the music*."[14] Choreographing these light shows depends on Hansson's extensive knowledge and understanding of Meshuggah's music, and he uses various techniques – such as strobing, color-coding, and changes in intensity and direction of movement – to convey particular interpretations of features like rhythm, grouping structure, and form within Meshuggah's songs. Lucas writes that "the design and preparation of the shows [involves] close, expert listening, followed by decisions about how to enhance the sonic experience visually, followed by the technical labor of putting together the actual show."[15]

10 Meyer 1973, 29; emphasis in original.

11 Rink 1990, 323; emphasis in original. In his subsequent paragraph, Rink quotes directly from the same passage of Meyer's text ("analysis is something which happens…") shown above.

12 On dancing/choreography, see Gain 2023, Short 2019, Simpson-Litke 2021, and Simpson-Litke and Stover 2019; on headbanging, see Capuzzo 2020 and Hudson 2022.

13 Lucas 2021; O'Hara 2022.

14 Lucas 2021, paragraph 2.4; emphasis in original.

15 Ibid., paragraph 2.2.

When Lucas's descriptions of Hansson's craft are compared with Meyer's statements about performance, several shared concerns emerge that illuminate the very core of any analytical endeavor. First, both Lucas and Meyer identify the period of close, expert listening that precedes and informs the different activities that they discuss. Second, there is an element of considered choice in the parameters of focus for both activities – not just any solution or presentation will do. And third, there is the outward communication of this work to others, which itself involves particular and often highly specialized forms of labor.

Lucas also highlights a fourth feature of analysis via Hansson's light shows: its potential to transform how listeners hear Meshuggah's music. As Lucas writes:

> By emphasizing one rhythmic percept over another, the light show can offer clarity where the musical experience on its own might be more ambiguous […]. In addition, by leading the audience's attention from one percept to another, the light show can also play with expectations, create musical climaxes, and generate understandings of form. In many ways, Hansson's light show determines *how* listeners hear the music.[16]

Just as our favorite and most cherished analytical readings can shape, guide, and even transform how we hear a piece of music, Lucas focuses our attention on the similarly transformative power of Hansson's practice.[17] And, once again, it is worth emphasizing how this kind of language has previously been mobilized in praise of performers, particularly those working in Western art music traditions. For example, in Daniel Barolsky's article tellingly titled "The Performer as Analyst," he writes that "[w]e often come upon performances that surprise us, interpretations that challenge our expectations and, if we are lucky, renditions that inspire us to hear and understand the music in a new light."[18] As we move through the examples discussed below, I ask that you keep Barolsky's words in mind; I believe that you'll soon agree that we are quite lucky indeed.

With this framework in place, we can now turn to sample-based hip hop, and to the figure of the producer at the heart of this musical culture.[19] My overall goal is to highlight the explicit connections between hip-hop sampling and the other kinds of "analytic acts" described above.[20] Through their repurposing of elements from existing recordings to construct new musical works, producers are expert listeners who possess many forms of expert knowledge. Likewise, the beats that producers create are the result of multiple interpretive choices, and represent, in many respects, the ways that they *hear* their sources. These beats themselves are also deft communications of these hearings, a tangi-

16 Ibid., paragraph 5.3; emphasis in original.

17 My framing of "analysis" here echoes Kofi Agawu's (2004, 270): "analysis sharpens the listener's ear, enhances perception and, in the best of cases, deepens appreciation. Detailed and intensive scrutiny of a work brings one into close contact with the musical material, leaving the analyst permanently transformed by the experience. No subsequent hearing of the work can fail to reflect this new, heightened awareness of its elements."

18 Barolsky 2007, paragraph 3.

19 Both "hip-hop" and "hip hop" (without the hyphen) are commonly used in the literature. Following Ohriner (2019a, xxv, footnote 2), I use "hip hop" when referring to the genre and cultural practice, with the hyphen only used for the adjectival form. In direct quotation, however, I retain the form used in the original text.

20 Pioneered by *musique concrète* studio traditions in the mid-twentieth century and later adopted by disc jockeys in the Bronx in the 1970s and 80s, sampling has since become a ubiquitous feature of our contemporary musical landscape. According to a survey by the music licensing company Tracklib, for example, 17% of all the songs to chart on the *Billboard* Hot 100 in 2022 featured sampling of some kind (Tracklib 2022).

ble object that others can engage with. And, finally, these beats have the potential to change how audiences hear and understand the source materials used to create them. Importantly, this is how some hip-hop producers see themselves and their work, too, even if they might not use language framed explicitly in these terms. According to DJ Evil Dee, for example, "once you DJ… it's like you automatically become a producer. When you take a record and you're cuttin' it up, when you're blending it, that's your interpretation of that record. You produced that interpretation of that record."[21]

In the scholarship of hip hop (and of Black music more generally), this engagement with the music of the past has often been framed in terms of Signifyin(g).[22] Theorized by Henry Louis Gates Jr., Signifyin(g) is a mode of African American rhetoric concerned with the expressive and communicative properties of repetition, irony, misdirection, and figurative (rather than literal) language.[23] As Samuel Floyd Jr. elaborates:

> In African-American music, musical figures Signify by commenting on other musical figures, on themselves, on performances of other music, on other performances of the same piece, and on completely new works of music. Moreover, genres Signify on other genres – ragtime on European and early European and American dance music; blues on the ballad; the spiritual on the hymn; jazz on blues and ragtime; gospel on the hymn, the spiritual, and blues; soul on rhythm and blues, rock 'n' roll, and rock music; bebop on swing, ragtime rhythms, and blues; funk on soul; rap on funk; and so on.[24]

The practice, in other words, involves not only the invocation of the past but also an explicit commentary on it. In his book *Rhymin' and Stealin'*, Justin Williams mobilizes Gates's Signifyin(g) to investigate "how earlier material is borrowed in primarily 1990s and 2000s US mainstream hip-hop music has unearthed questions on larger issues, most broadly questions of history (chap. 1), genre (chap. 2), space (chap. 3), death/memorial (chap. 4), and lineage (chap. 5)."[25] What I argue here, however, is that sampling also unearths fundamental questions about music *qua* music, too – questions that can lead us to our own transformative encounters with producers' source materials. If, as Joseph Schloss suggests, sampling "allows producers to use other people's music to convey their own compositional ideas," this article uses close readings of both sources and their deployments as samples in four songs released between 2000 and 2010 to examine the musical implications of these "compositional ideas."[26]

21 DJ Evil Dee quoted in Katz 2012, 122.

22 For example, see Costello and Wallace 1990, Diaz 2023, Potter 1995, and Williams 2013.

23 Gates 1988. Concerning the orthography of Signifyin(g), Gates proposes the upper-case "S" to distinguish it from the standard (read: white) sense of signification – as in, the blue areas on the map signify bodies of water – as well as the parenthetical "g" to better reflect its pronunciation – "signifyin'" – by speakers of African American Vernacular English (Gates 1988, 44–46).

24 Floyd 1995, 95.

25 Williams 2013, 5.

26 Schloss 2004, 138. One feature of sampling that is largely beyond the scope of this study is the question of publishing and copyright, and the consideration of how these issues might also influence the interpretations available to producers. The ever-stricter application of copyright law, coupled with the ever-expanding technological ability to detect uncleared samples, has meant that producers are continually adapting the ways in which they use borrowed material. Williams (2015, 212) suggests that "It is safe to say that copyright legislation over sampling has had a measurable effect on the sounds of hip-hop," and Claire McLeish (2020, 146) further explores how a series of prominent sampling lawsuits in the early 1990s had varied impacts on different styles of hip-hop production in the direct aftermath. The collage-heavy style epitomized by the Bomb Squad, for example, fell largely out of favor, while the synthesizers and interpolations associated with the West Coast and Dr. Dre rose sharply in prominence. For more on copyright and sampling, see also McLeod and DiCola 2011.

Before turning to these close readings, there is one additional difference to address between my approach and that of Williams. Drawing on terminology developed by Serge Lacasse, Williams distinguishes between "autosonic" and "allosonic" quotation as a means of describing how borrowed material appears in new contexts.[27] In this usage, autosonic quotation is a form of sampling that directly uses the original recorded sound, while allosonic quotation involves the re-recording or re-performance of the original material, a technique that is also often called "interpolation."[28] For Williams, and for others, this is a meaningful distinction because it can be used to signal certain kinds of aesthetic priorities on the part of producers. If a sample-based beat retains the audible hiss and crackle of vinyl playback due to its autosonic quotation, for example, we might thus infer that the producer is invested, in some way, in a form of authenticity grounded in the very use of vinyl as a medium.[29] Nonetheless, for the purposes of my argument here, I find the distinction between autosonic and allosonic quotation to be a less salient issue. Regardless of whether the "notes" of a sample are drawn directly from a source recording or re-recorded by other musicians, the fact remains that their musical features are derived from borrowed material. What is being transformed, commented on, and *analyzed*, in either case, is an earlier musical work.

"Lil' Freak"

My first example demonstrates in more concrete terms how sampling might function analytically in the sense described above. Usher's song "Lil' Freak" was released in 2010 on his album *Raymond v. Raymond*, and also supported the album as its second commercial single. Produced by Polow da Don, "Lil' Freak" features a prominent sample from Stevie Wonder's "Living for the City" (*Innervisions*, 1973) beneath its chorus.[30] The section sampled from "Living for the City" – a song in which, as in most of Wonder's recordings, he plays all the instruments himself via studio multitracking – begins at 1:09, and I will refer

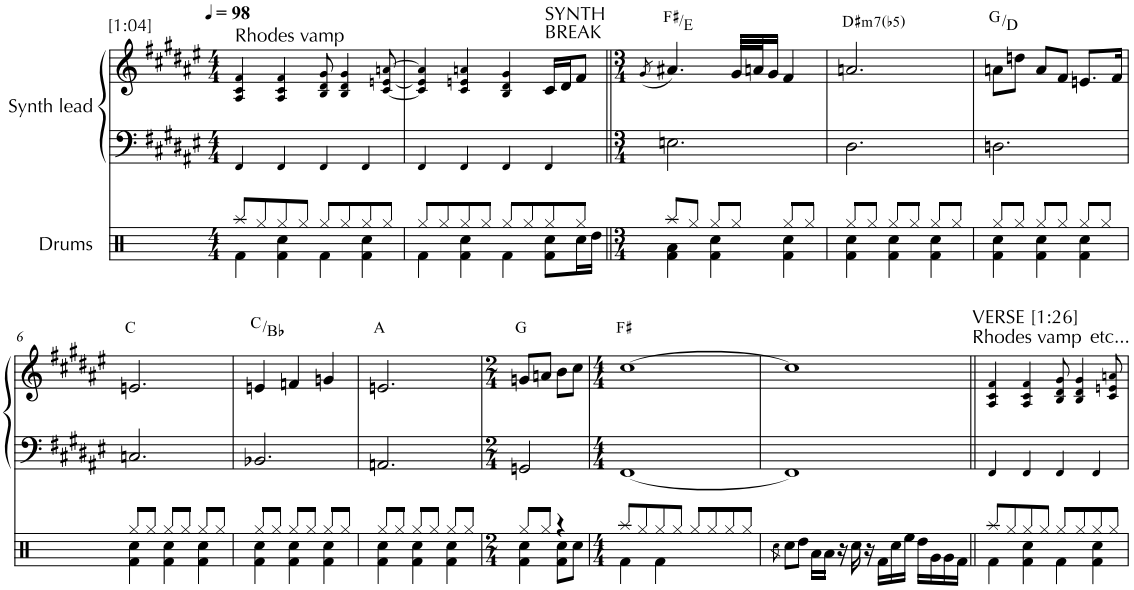
27 See Lacasse 2000. Lacasse's terms are themselves adapted from the American philosopher Nelson Goodman's notion of "autographic" and "allographic" art forms, as described in his 1968 book *Languages of Art: An Approach to a Theory of Symbols*.

28 Williams 2013, 3. A common instance of allosonic quotation is when an MC repeats or otherwise alludes to lyrics already performed by another artist; Williams (37–38) offers the example of KRS-One riffing on the opening lines of Kurtis Blow's "The Breaks" (1980) in the song "MCs Act like They Don't Know" (1995).

29 For some producers, such as those interviewed by Schloss (2004, 109), there is a strong sense "that vinyl records are the only legitimate source for sampled material." (Schloss's interviews were conducted in the late 1990s and early 2000s with musicians based mainly around Seattle.) Schloss argues that this cultural sensibility "is closely tied to the practice of digging in the crates […] and represents an intellectual commitment to the deejaying tradition as the foundation of hip-hop" (109). More broadly, Williams (2013, 68) argues that vinyl-based samples, especially from jazz recordings, are strongly coded with "hipness and coolness." As Zachary Diaz (2023, 48) notes, however, the physical act of sampling from vinyl has declined in popularity in recent decades, even if the aesthetic and aural qualities – that is, these very hisses and crackles – nonetheless remain popular.

30 "Living for the City" is one of Wonder's most celebrated recordings and was awarded the 1974 Grammy for Best R&B Song. Timothy Hughes (2003, 21–22) argues that while the song clearly belongs within the lineage of politically active Black music-making of the 1960s and 70s associated with artists such as Marvin Gaye and Curtis Mayfield, "'Living for the City' stands alone for Wonder's use of dramatic narrative to illustrate and amplify his political message and for the combination of a broadly generalized subject with sharply pointed language."

to this material as the song's "synth break" in the discussion below.[31] Example 4 transcribes this break, also showing two measures of the preceding verse texture for context: here, the music is in a steady 4/4 anchored by Wonder's drum backbeat and a two-measure harmonic vamp in the Fender Rhodes.[32] Beginning with a pickup into the third notated measure of the example, however, the break itself appears to signal a change in meter. The harmonic rhythm speeds up, and the chords start changing every three beats across a sinuous, descending progression. The drum pattern also changes, and the backbeat that supported the verse – with its characteristic timbral, textural, and gestural alternation between bass drum and snare in a clear duple patterning – is replaced by a series of combined snare-and-bass-drum hits, with relatively little differentiation between successive beats. I hear this as a genuine change of meter that shifts the music momentarily into 3/4, as shown in the transcription. Crucially, interpreting this break in 3/4 necessitates inserting what Nicole Biamonte has termed a "partial-bar link"[33] in the notated measure 9, before 4/4 resumes in measure 10 to lead into the next verse. The "Living for the City" synth break can be heard in its entirety in Audio Example 3.



Example 4: Stevie Wonder, "Living for the City," *Innervisions* (1973). Simplified transcription of synth break (1:04–1:28)

https://storage.gmth.de/zgmth/media/1221/Tatar_Sampling_Audio03.mp3

Audio Example 3: Stevie Wonder, "Living for the City," *Innervisions* (1973), synth break, 1:04–1:32

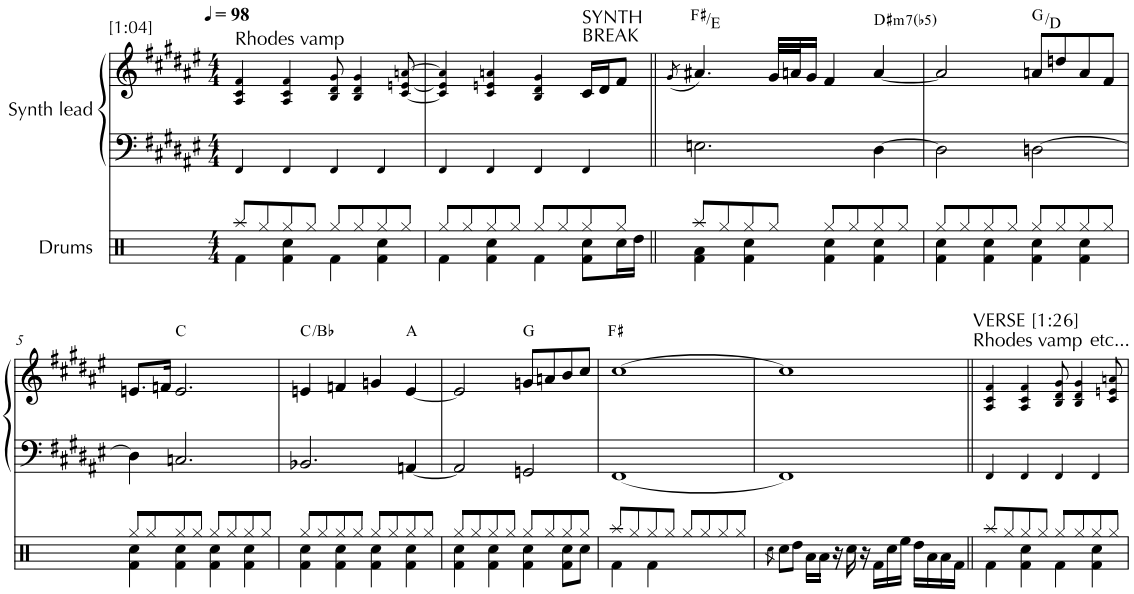
This 3/4 interpretation of the synth break privileges harmonic rhythm as the determinant of its meter, but this is not the only possible way of hearing the section. A listener with different priorities or aesthetic orientations might instead privilege the rock-steady 4/4 of

31 According to the sampling database *WhoSampled.com*, as of early 2025, "Living for the City" has been sampled or quoted in 28 subsequent releases. Usher's "Lil' Freak," however, is the only one of these to draw material from the synth break.

32 The measures in Example 4 are numbered 1–12 for simplicity, even though the excerpt is not from the beginning of the song.

33 Biamonte 2014, paragraph 7.6.

the music that came before the break. Such a listener, in other words, would entrain to the preceding 4/4 groove so strongly that they continue to hear the synth break in 4/4. This interpretation is represented in Example 5, and I encourage the reader to listen once again to Audio Example 3 but now follow along with this example. We might call Example 5 a "persistent" interpretation of this passage, after Mitchell Ohriner, since this hypothetical listener persists in hearing an established metric patterning despite conflicting cues.[34] For such a listener, the synth break spans seven complete measures of 4/4, with a harmonic rhythm that projects an extended cross rhythm against the notated meter.



Example 5: Persistent hearing of "Living for the City," after Ohriner (2019a) and Imbrie (1973), which remains in 4/4

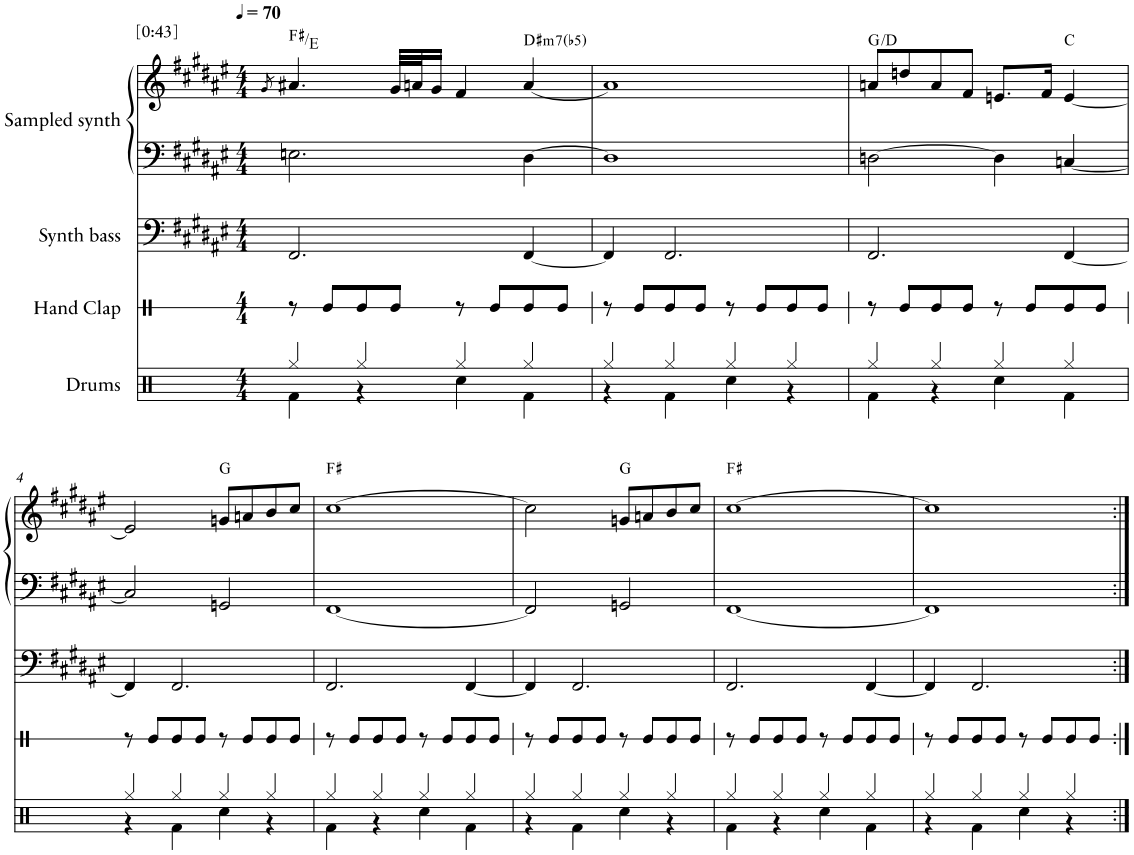
With this persistent hearing of "Living for the City" at hand, let us now turn to Usher's "Lil Freak." Example 6 transcribes the chorus of "Lil' Freak," which can be heard in Audio Example 4. Polow da Don builds this section around a sample from Wonder's synth break that has been placed unambiguously in 4/4. He leaves the sample's pitch unaltered but substantially speeds up its tempo, moving it from the quarter = 98 of Wonder's original to quarter = 140, an increase of approximately 43%.

I hear the drumbeat of "Lil' Freak" in a "half-time" feel, which is characterized by the consistent placement of the snare of beat 3 of each measure.[35] It is nonetheless also possible to hear the song with a "standard" backbeat that moves at quarter = 70, as shown in Example 7. In this version, the note values have essentially been halved, and the chorus pattern occupies four measures rather than the eight shown in Example 6. Regardless of which tactus one entrains to, however, the clearly duple setting of "Lil' Freak" bears

34 Ohriner (2019a, 95) contrasts a "persistent" listener with an "adaptive" listener, the latter of whom "seeks any chance to change the mental framework of meter." In this sense, the 3/4 interpretation previously represented by Example 4 would be an "adaptive" hearing of Wonder's synth break. A distinction between these two hypothetical modes of listening was originally proposed by Andrew Imbrie (1973), who used the terms "conservative" and "radical." As Ohriner (2019a, 96) points out, however, "these terms have unhelpful political connotations," and I thus adopt his suggested reframing of their labels.

35 On half-time drum feels, see de Clercq 2016 and de Clercq 2017.

much in common with the persistent interpretation of "Living for the City," and we might thus infer that this is how Polow da Don hears Wonder's song.

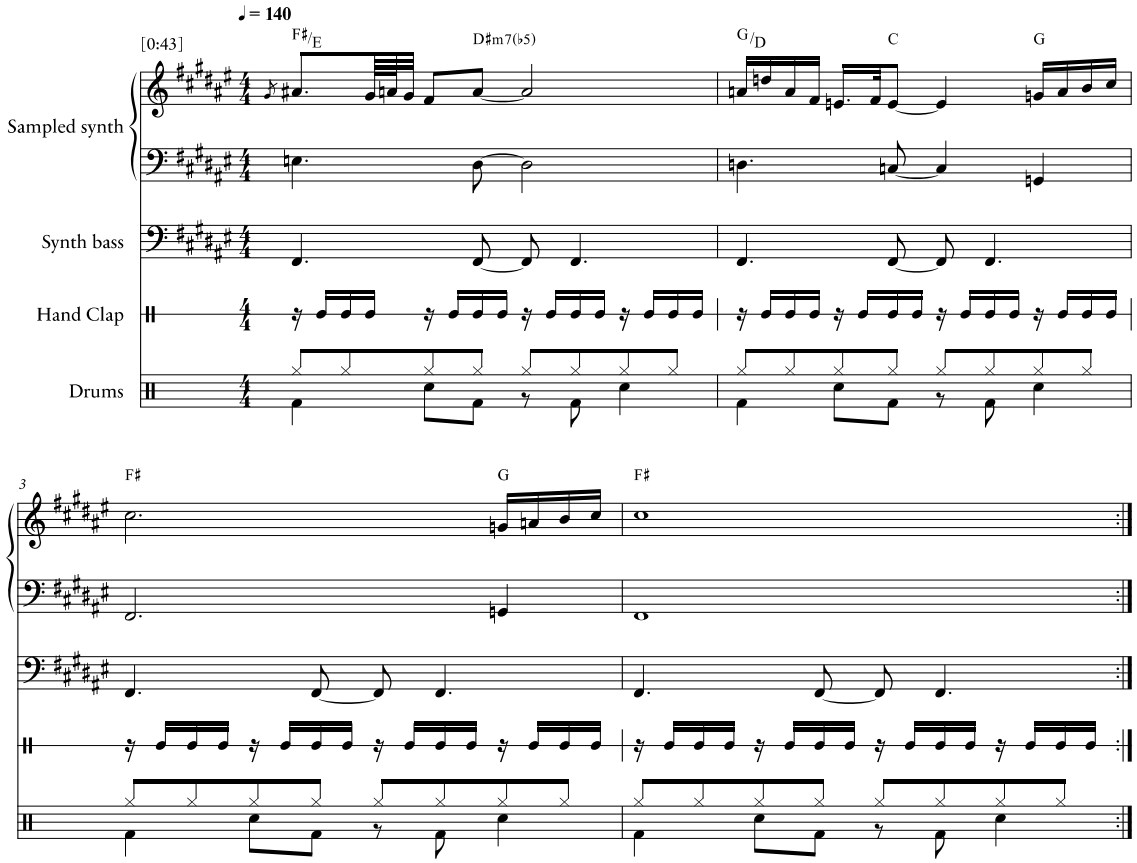


Example 6: Usher, "Lil' Freak," *Raymond v. Raymond* (2010), produced by Polow da Don. Chorus (0:43–1:10)

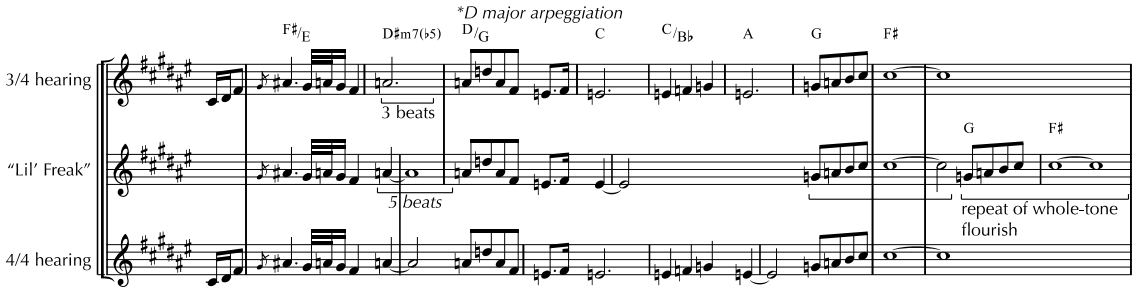
https://storage.gmth.de/zgmth/media/1221/Tatar_Sampling_Audio04.mp3

Audio Example 4: Usher, "Lil' Freak," *Raymond v. Raymond* (2010), chorus, 0:43–1:14

Things are not quite that simple, however. Upon closer inspection, there are certain aspects of "Lil' Freak" that also appear to engage with metric features present in the adaptive, 3/4 hearing of "Living for the City." Example 8 uses three staves to compare the metric setting of "Lil' Freak," on the middle staff, with the 3/4 and 4/4 hearings of "Living for the City," on the top and bottom staves, respectively. The lines that run vertically between the staves show which barlines of the two hearings correspond with Polow da Don's pattern. Notably, the melody's arpeggiated D major triad – indicated by the asterisk above the example – occurs on the downbeat of the third measure in both "Lil' Freak" and the 3/4 hearing of "Living for the City," despite their different overall meters. This metrical alignment is facilitated by the differing lengths of the melody's sustained A♮, which is three beats in Wonder's song but extended to five in Usher's, as marked beneath the staves. In the persistent 4/4 hearing, by contrast, this arpeggiated material occurs midway through a measure and is thus metrically weaker. Attending to this interplay between these potential and realized metric characteristics suggests that Polow da Don's hearing of "Living for the City" is more nuanced than a simple "copy-paste," and that his navigation of his source materials results from a close consideration of the phrase structure of Wonder's song.



Example 7: Alternate hearing of "Lil' Freak," notated at quarter = 70 with the snare falling notionally on beats 2 and 4



Example 8: Comparison between the 3/4 hearing of "Living for the City" (top), "Lil' Freak" (middle), and the 4/4 hearing of "Living for the City" (bottom)

Taking a broader view of Polow da Don's setting for Usher's chorus, we can see that the ascending whole-tone flourish that closes the "Living for the City" break – with its associated harmonic progression from G major to F♯ major – occurs twice in "Lil' Freak," as marked by the square brackets beneath the middle staff in Example 8. In the home key of F♯ major, this G major chord is the triad built from the lowered second scale degree, which is often referred to as "♭II" or the Neapolitan chord. In a recent SMT-V publication, Eron F. Smith highlights the strong links between ♭II (as either a lone scale degree or fully-fledged harmony) and topics like confidence, sexiness, and "hotness" in post-millennial

popular music.[36] Furthermore, they argue that the affective potential of this sonority is rooted in its invocation of a "non-specific otherness" that is closely tied with colonial legacies of exoticism, orientalism, and the fetishization and objectification of Black and Brown women's bodies. Many of these themes are overtly present in the lyrics and timbres of Usher's song – "I'm about to have a menage with these here ladies / Look at those freaks at the bar, yeah, they looking for a star" – and "Lil' Freak" also contains a guest verse from Nicki Minaj, an artist who features prominently in the corpus that Eron analyzes. In the realm of harmony, too, the marked repetition of the ♭II sampled from "Living for the City" in the chorus appears to further amplify these topical resonances.

After considering Polow da Don's beat for Usher's "Lil' Freak" and its repetition of a progression involving ♭II, we might then return to Wonder's song with these topical associations in mind. Although the ♭II in Wonder's synth break seems to conjure little sense of "hotness" in the original context of "Living for the City," attending to the gendered and racialized implications of this sonority perhaps then changes how we interpret the third verse, which immediately follows its first appearance (Audio Example 5).

> His sister's Black, but she is sho 'nuff pretty,
> Her skirt is short, but Lord her legs are sturdy,
> To walk to school, she's got to get up early,
> Her clothes are old, but never are they dirty,
> Living just enough, just enough for the city…

https://storage.gmth.de/zgmth/media/1221/Tatar_Sampling_Audio05.mp3

Audio Example 5: Stevie Wonder, "Living for the City," *Innervisions* (1973), end of synth break into beginning of third verse, 1:16–1:56

On the one hand, this verse simply describes the protagonist's sister in a manner similar to the way in which the other verses introduce the unnamed male protagonist and his father, mother, and, later, brother. On the other hand, however, the verse's fixation on the sister's race, physical appearance, attractiveness, clothing, and personal hygiene – features that are completely unmentioned in the descriptions of the other family members – now takes on the undertones of an external, sexualized white gaze. The sister is described in fundamentally different terms to the rest of the family, and the appearance of ♭II directly before this verse suggestively primes us to *hear* her in different terms, too. This example illustrates how reflecting on Polow da Don's use of "Living for the City" and its prominent ♭II sonority in "Lil' Freak" prompts us to reconsider issues of harmonic rhythm, hypermeter, and even "hotness" in "Living for the City," ultimately reshaping how we understand that earlier song.

"Raise it Up"

My second example is "Raise it Up" by the Detroit-based group Slum Village. Like "Lil' Freak," "Raise it Up" offers an opportunity to attend to a producer's hearing of their source, but, as I explore below, also suggests how they might interpret and express the further possibilities for its transformation. "Raise it Up" was produced by J Dilla and appears on Slum Village's 2000 album *Fantastic, Vol. 2*. The source for the song's main

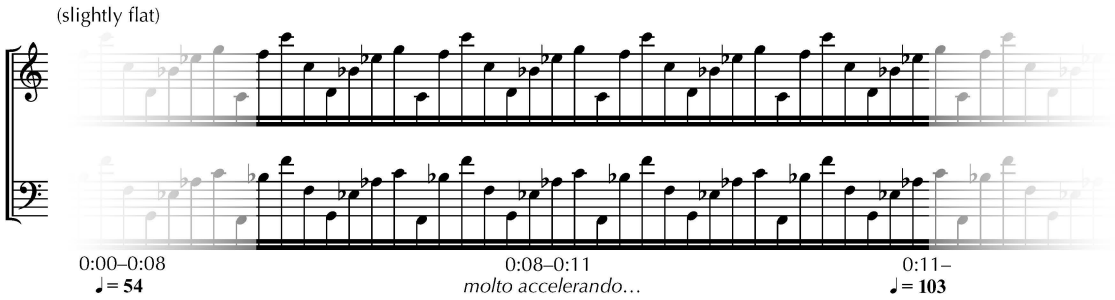
36 Eron 2022. (Note: Eron prefers to be cited by their first name and uses she/her and they/them pronouns interchangeably.)

sample is "Extra Dry," released in 1998 by the French electronic musician Thomas Bangalter, who is perhaps better known as one half of Daft Punk, alongside Guy-Manuel de Homem-Christo.[37] Audio Example 6 presents the opening of "Raise it Up," which is the section sampled by J Dilla; for now, we will leave aside the question of its transcription.

https://storage.gmth.de/zgmth/media/1221/Tatar_Sampling_Audio06.mp3

Audio Example 6: Thomas Bangalter, "Extra Dry," *Trax on da Rocks Vol. 2* (1998), opening, 0:00–0:14

In my hearing, Bangalter's "Extra Dry" contains what Mark Butler has called an "ambiguity of beginning." As Butler writes, "One of the most common types of ambiguity in electronic dance music involves situations in which the metrical type of a pattern is clear, but the location of its beginning point is not."[38] "Extra Dry" begins with a jagged synthesizer that loops through a repeating, eight-note pattern. After about five seconds, this synthesizer is joined by another synth that duplicates its line a perfect 12th underneath. The addition of this new layer has the effect of engulfing the original pattern, and the higher line quickly seems to be swallowed up by the lower, as if it were simply one of its upper partials. Soon after the lower part enters, the pattern then undergoes a *molto accelerando*: if the opening series of notes is interpreted as sixteenths at quarter = 54, it takes just three seconds for its speed to sharply ramp up to quarter = 130. Example 9 shows a somewhat contrived representation of this repeating pattern that attempts to obscure both its beginning and ending points, and the annotations beneath the staff summarize the progression of the accelerando. Listeners with perfect pitch might notice that "Extra Dry" sits somewhat in the cracks of standard tuning. Rather than complicate matters with microtonal notations, however, I have elected to "correct" the pitch of the transcription upward by roughly a quarter of a tone.



Example 9: Eight-note loop of "Extra Dry" with beginning and ending points obscured, showing the sudden increase in tempo across the opening 11 seconds

37 According to *WhoSampled.com*, "Raise it Up" is the only song that is known to have sampled "Extra Dry." Notably, J Dilla apparently sampled Bangalter's recording without seeking the appropriate copyright permissions. As Daft Punk's manager, Pedro Winter, recalled in a 2009 interview, the musicians were nonetheless able to reach an amicable agreement without resorting to legal intervention: "Jay Dee [another of J Dilla's aliases] as usual came up with an avant-garde beat. I did not notice the sample at first sight, but a friend of us was there and say, 'Hey hey hold on, isn't it a Daft sound?' […] Instead of loosing our time and react as ass holes and ask for money or shit, I propose to the Daft boys to take care of it and ask a remix in exchange of the use of that sample. I met Dilla in Miami and he was of course up for it and was really friendly. He is from Detroit and electronic music never scared him" (Stones Throw 2009; this quotation retains the original orthography of the source). The track that resulted from this negotiation was a remix of Daft Punk's "Aerodynamic" that appeared on their 2003 remix album, *Daft Club* – J Dilla was ultimately not involved, however, and the main production duties were instead handled by Karriem Riggins (see Groovement 2017).

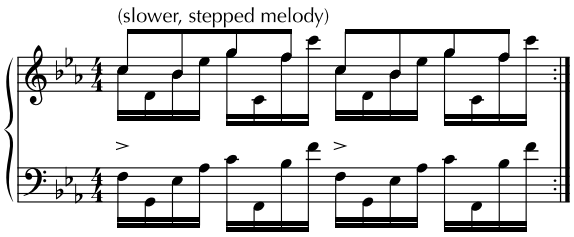
38 Butler 2006, 124. By the term "metrical type," Butler here means what are commonly called meter or time signatures, such as 4/4, 6/8, and so on.

While the pattern of "Extra Dry" is clearly duple in some sense, its orientation, as in Butler's formulation, is substantially more ambiguous. Where are the strong and weak beats? Such a question is not merely "academic," either: since a core aesthetic feature of electronic dance music concerns process-based cycles of expectation, subversion, fulfillment, and repetition, the underlying perception of metrical structure directly inflects listeners' experiences of these structures.[39] And it helps us dance, too. Audio Example 7 presents an excerpt from "Extra Dry" that I have slightly doctored, so that it loops continuously without accelerating. The reader is invited to now listen to this version and consider as it plays: where might the beginning of the pattern be, and what factors influence this interpretation?

https://storage.gmth.de/zgmth/media/1221/Tatar_Sampling_Audio07.mp3

Audio Example 7: Edited and looped excerpt of the "Extra Dry" pattern

In principle there are eight possible locations that this looped pattern could begin – one for each of its notes – but in practice there are perhaps just four more likely candidates; I will now discuss these briefly in turn. The first option is what I will call the "octave ascent" orientation of the pattern, so named for the octave that it traverses from its first to eighth note, as shown in Example 10. (Here, as in the subsequent examples, the accidentals shown previously in Example 9 have been collected into a three-flat key signature.) This is the orientation that my mind "naturally" settles on when I listen to the loop of Audio Example 7 – especially when I come back to it after thinking of other things for several days – and I find myself particularly gravitating to the stepped melody that emerges with every second note, which has been marked by the upward-pointing stems in the top staff. Audio Example 8 presents a version of the looped Audio Example 7 that has been further edited with artificial accents, in order to assist with the recognition of this orientation.



Example 10: "Octave ascent" hearing of the "Extra Dry" loop, which interprets the loop as reaching across an octave over the course of its eight notes

https://storage.gmth.de/zgmth/media/1221/Tatar_Sampling_Audio08.mp3

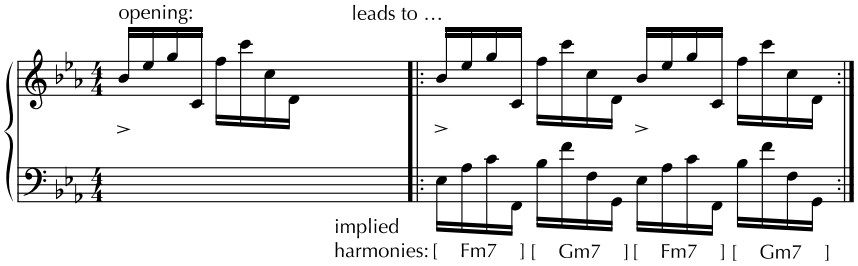
Audio Example 8: Edited and looped excerpt of the "Extra Dry" pattern, emphasizing the "octave ascent" interpretation

In contrast, another strategy for parsing this pattern might be to consider some further contextual clues. Closer examination of "Extra Dry" indicates that the track itself begins with the pitch B♭ in the melody: does the loop actually begin here, instead? Example 11 models such an orientation of the pattern, which might be called "strong beat early" after Fred Lerdahl and Ray Jackendoff's metrical preference rule (MPR) 2.[40] Audio Example 9

39 Ibid., 256; Garcia 2005.

40 Lerdahl and Jackendoff 1983, 76. As MPR 2 recommends, "[w]eakly prefer a metrical structure in which the strongest beat in a group appears relatively early in the group."

offers a correspondingly edited clip of the loop. Speaking personally, I find this orientation more difficult to entrain to, but there are nonetheless some appealing features, such as the neatness of its implied harmonic segmentation (shown beneath the staff).

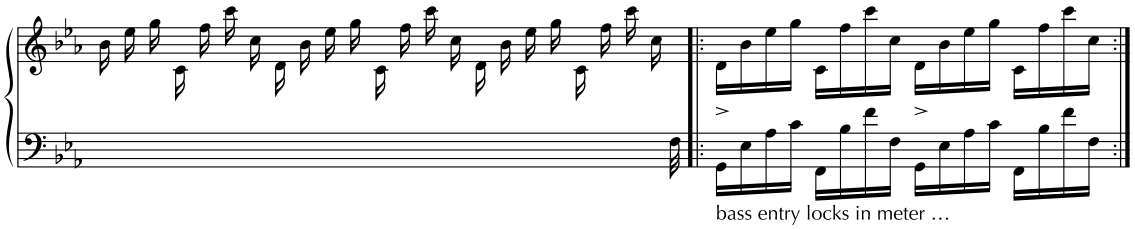


Example 11: "Strong beat early" hearing of "Extra Dry," which orients the loop according to the first pitch heard

https://storage.gmth.de/zgmth/media/1221/Tatar_Sampling_Audio09.mp3

Audio Example 9: Edited and looped excerpt of the "Extra Dry" pattern, emphasizing the "strong beat early" interpretation

In a similar vein, the next possible hearing draws upon the contextual clue offered by the eventual addition of the pattern's lower part. As this entry changes the timbre, texture, density, and dynamic mass of the line, we might understand it as marking a point of accentuation; in Lerdahl and Jackendoff's formulation, such a moment is an instance of a "phenomenal" accent.[41] Unlike the two previous hearings, however, this "bass entry" interpretation relies on subsequent information to retrospectively (re)orient the pattern.[42] Example 12 models this understanding by notating the opening attacks of "Extra Dry" as unbeamed and unmetered sixteenths, before the entry of the bass – supported by an apparent anacrusis, which is shorter in duration than the surrounding notes – serves to lock the pattern in place. In a similar manner to the previous audio examples, Audio Example 10 plays the "bass entry" orientation of the loop with its alleged beginning emphasized by artificial accents.



Example 12: "Bass entry" hearing of "Extra Dry," which interprets the entry of the lower synthesizer line as the pattern's beginning

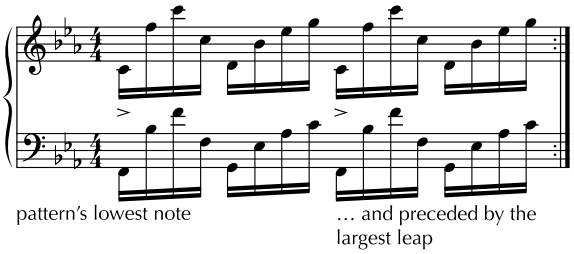
https://storage.gmth.de/zgmth/media/1221/Tatar_Sampling_Audio10.mp3

Audio Example 10: Edited and looped excerpt of the "Extra Dry" pattern, emphasizing the "bass entry" interpretation

41 Ibid., 17. "By *phenomenal accent* we mean any event at the musical surface that gives emphasis or stress to a moment in the musical flow. Included in this category are attack points of pitch-events, local stresses such as sforzandi, sudden changes in dynamics or timbre, long notes, leaps to relatively high or low notes, harmonic changes, and so forth" (emphasis in original). Butler (2006, 125) also describes the moment at which different layers coincide as creating a "density accent."

42 This notion of a "retrospective reinterpretation" is indebted to Schmalfeldt 2011.

Finally, the fourth entry in this shortlist of possible hearings also responds to a phenomenal accent. Example 13 shows the pattern oriented with the low F in the bass as its beginning; this is both the lowest note in the entire pattern and the pitch that is preceded by the largest surface-level leap, a perfect 12th. This orientation of the pattern is similar to the "bass entry" version shown above, but shifted in phase by 180 degrees. Audio Example 11 presents an edited excerpt of the "Extra Dry" loop to emphasize this patterning.



Example 13: "Lowest note" hearing of "Extra Dry," which places its lowest note at the start of the pattern

https://storage.gmth.de/zgmth/media/1221/Tatar_Sampling_Audio11.mp3

Audio Example 11: Edited and looped excerpt of the "Extra Dry" pattern, emphasizing the "lowest note" interpretation

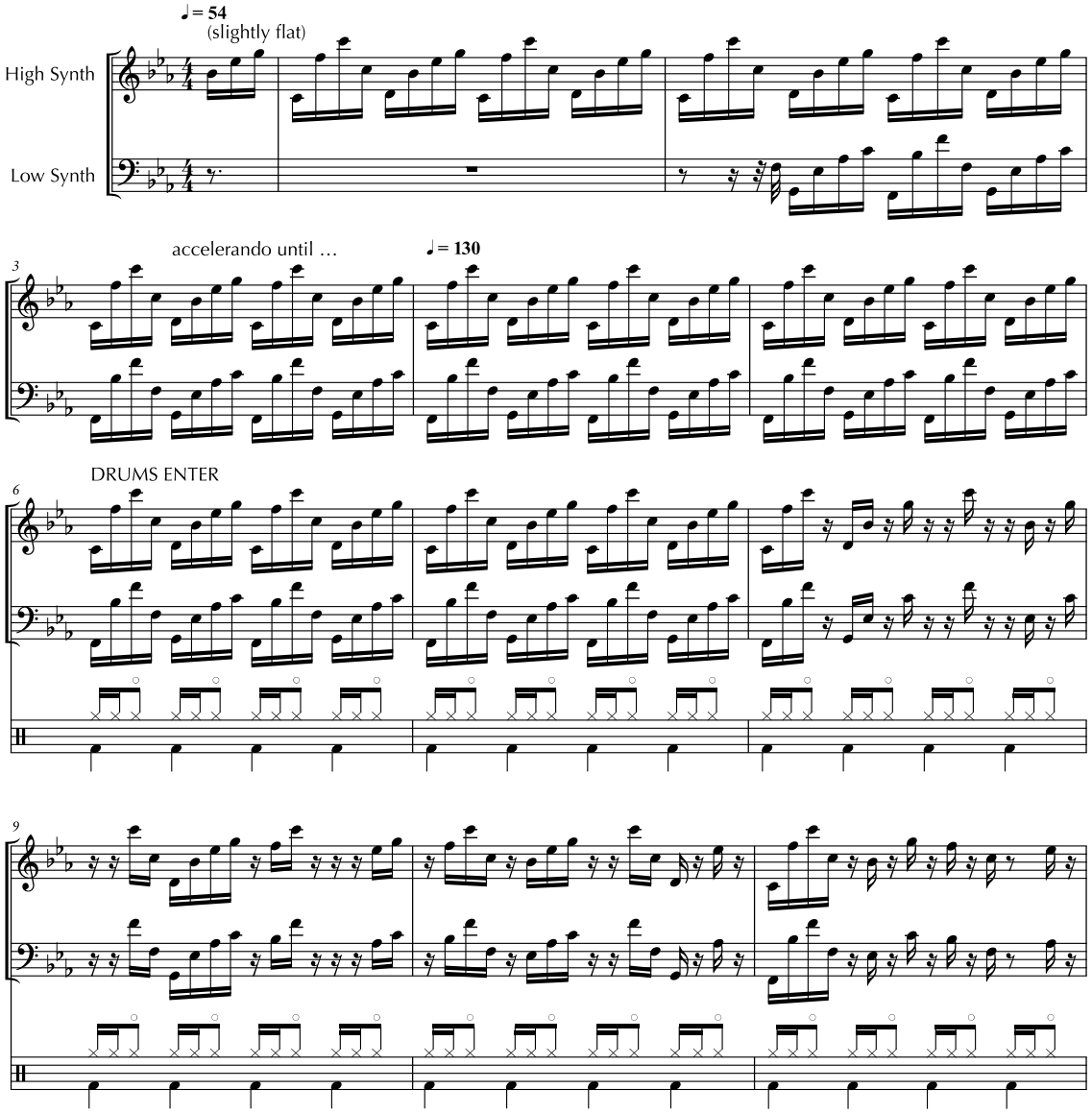
So, which of these four hearings is to be understood as "correct"? A brief period after the *accelerando* is completed, the bass drum enters suddenly at 0:15 and appears to confirm the "lowest note" hearing of the ostinato, shown above.[43] Example 14 presents a transcription of "Extra Dry" from its beginning that interprets the entry of the drums as marking a decisive downbeat. In this hearing, the song's first three sixteenths are cast as an anacrusis, while the entry of the lower synth part occurs on beat 2 of its second measure (Audio Example 12).

As Edward T. Cone once wrote, concerning the concert performance, "Every valid interpretation thus represents, not an approximation of some ideal, but a choice: which of the relationships implicit in this piece are to be emphasized, to be made explicit?"[44] J Dilla's "choice," in interpreting "Extra Dry" for "Raise it Up," is *not* the "lowest note" hearing that is eventually confirmed by the drum entry. Rather, he uses the "bass entry" orientation of the pattern (shown above as Example 12) for his sample, as indicated by the primary "Raise it Up" loop transcribed in Example 15. Here, J Dilla lowers the pitch and reduces the tempo of the excerpt by about 29%, which transposes it down by ap-

43 As Butler (2006, 127–128) writes, "the entrance of the bass drum in an EDM track often results in a decisive metrical interpretation." Butler nonetheless emphasizes that he rarely seeks a prescriptive position when discussing passages with potentially ambiguous metrical settings: "Rather than demanding a particular way of hearing from the listener, […] [I] encourage each of us to seek out our own preferred interpretation – to actively participate in the construal of our musical experience. In highlighting these qualities, and in choosing not to endorse a singular interpretation in situations in which multiple hearings are possible, I am […] seeking to highlight a characteristic that is central to the aesthetics of electronic dance music – namely, its structural and interpretive openness" (127). For an example of such "interpretive openness" played out in a hip-hop track, see Ohriner's (2016) study of the song "Mainstream" by OutKast, which investigates how different emcees attend to the different affordances of a metrically multivalent beat.

44 Cone 1968, 34.

proximately a tritone.[45] As a result of this slowing, I have chosen to re-notate the ostinato's sixteenths as eighths, where they are accompanied by newly added drums. In this setting, J Dilla uses the presence and absence of the lower synth part to articulate a larger sense of two- and four-measure phrases, and the continual ebb-and-flow of textural and dynamic intensity is mirrored in the group's delivery of the "raise it up / RAISE IT UP" hook. Audio Example 13 presents the passage notated in Example 15 followed by the beginning of the first verse, which is also rapped by J Dilla.

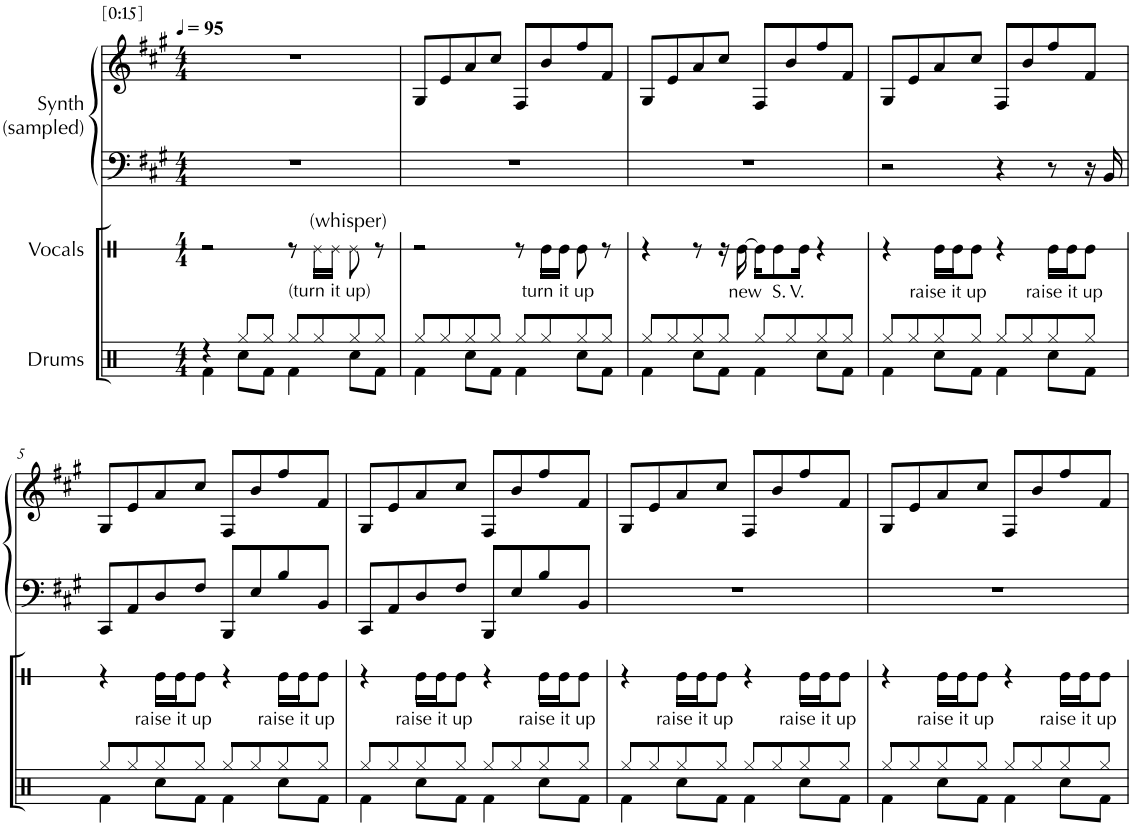


Example 14: Thomas Bangalter, "Extra Dry," *Trax on da Rocks Vol. 2* (1998), 0:00–0:22, transcribed such that the drum entry articulates a downbeat

https://storage.gmth.de/zgmth/media/1221/Tatar_Sampling_Audio12.mp3

Audio Example 12: Thomas Bangalter, "Extra Dry," *Trax on da Rocks Vol. 2* (1998), opening, 0:00–0:22

45 In "Raise it Up," unlike in "Lil' Freak," the pitch and the tempo of the sample are manipulated by the same amount in the same direction. One might imagine a similar effect to a vinyl record meant for playback at 33 1/3 revolutions per minute (rpm) being played at 45 rpm, where the speed and pitch would be increased by the same amount.



Example 15: Slum Village, "Raise it Up," *Fantastic, Vol. 2* (2000), 0:15–0:35

https://storage.gmth.de/zgmth/media/1221/Tatar_Sampling_Audio13.mp3

Audio Example 13: Slum Village, "Raise it Up," *Fantastic, Vol. 2* (2000), intro into beginning of first verse, 0:15–0:56

In this example, J Dilla's interpretation of "Extra Dry" asserts a metric patterning that is ostensibly at odds with the orientation suggested by the entrance of the drums in Bangalter's track. When compared with Usher's "Lil' Freak," "Raise it Up" thus marks a shift away from merely a "hearing" of a source to what might be better described as a "performative *re*hearing." Schloss notes that one appeal of sample-based production is the opportunity that it offers "individuals to demonstrate intellectual power," and this dimension is certainly at work in J Dilla's rendering of "Extra Dry."[46] In a move that bears the traces of play and misdirection that are characteristic of Signifyin(g), J Dilla effectively asks what it might *mean* to hear a downbeat in a location other than the one asserted by the original recording. What J Dilla is hearing and communicating, in other words, is his interpretation of the sample's potential for transformation. As Christopher Reynolds writes (albeit in reference to a completely different musical tradition), "Allusions are a source of musical ideas for a composer, ideas to play with or play against. They are a spur to creativity, even originality."[47]

When I return to "Extra Dry" after considering "Raise it Up" and entraining to this new orientation of the synth pattern, I am particularly struck by how this drum entrance will often catch me by surprise. Yet, crucially, this sense of "where" the downbeat is located

46 Schloss 2004, 138.

47 Reynolds 2003, 181.

ultimately proves to be quite fleeting. As "Extra Dry" continues and the synth line starts to fragment (as seen in the final measure of Example 14), it becomes increasingly difficult to parse its texture into meaningful groupings at levels above the pounding quarter note. Butler describes such situations, when there is insufficient musical evidence by which to decide on an excerpt's meter or downbeat, as being "underdetermined."[48] To demonstrate, Audio Example 14 offers a clip drawn from 1:05–1:29 of "Extra Dry," where the sense of grouping and orientation has once again – to my ears at least – been lost, with nothing but the repeated articulation of the kick drum remaining. By pegging the synth pattern of "Extra Dry" to a given orientation, then, J Dilla's "choice" for "Raise it Up" paradoxically serves to remind us of the very fragility of its meter in the first place.

https://storage.gmth.de/zgmth/media/1221/Tatar_Sampling_Audio14.mp3

Audio Example 14: Thomas Bangalter, "Extra Dry," *Trax on da Rocks Vol. 2* (1998), 1:05–1:29

"Une Histoire Extraordinaire"

My third example is somewhat shorter than the two previous discussions, but re-engages with some of the issues concerning the change in a source's metrical type that were first discussed in the context of "Lil' Freak."[49] "Une Histoire Extraordinaire" is a song by the French emcee Disiz (formerly Disiz La Peste) that was released on his 2005 album *Les Histoires Extraordinaires d'un Jeune de Banlieue*.[50] "Une Histoire Extraordinaire" was produced by Madizm and Sec.Undo, and Example 16 shows the four-measure loop that repeats for the duration of the song. The main melodic line is a compound pattern whose upper part is emphasized by a syncopated hi-hat, and the phrase is supported by a relatively sparse bass line.[51] The final eighth note in measures 2 and 4 is bracketed and marked by an asterisk, for reasons to be discussed below (Audio Example 15).

The source of the sample in "Une Histoire Extraordinaire" is Mike Oldfield's "Tubular Bells - Pt. I" (hereafter simply "Tubular Bells") from his landmark 1973 album of the same name – specifically the famous opening melody, which was also used in the soundtrack for William Friedkin's 1973 film *The Exorcist*.[52] For "Une Histoire Extraordinaire," Madizm and Sec.Undo increase the speed and pitch of "Tubular Bells" by roughly 33%,

48 Butler 2006, 111. In a subsequent passage, Butler also notes that some listeners and DJs "cherish the stark neutrality of ungrouped beats," and that such passages of underdetermined meter "reflect [EDM's] tendency to foreground beats in themselves apart from any larger metrical context" (115).

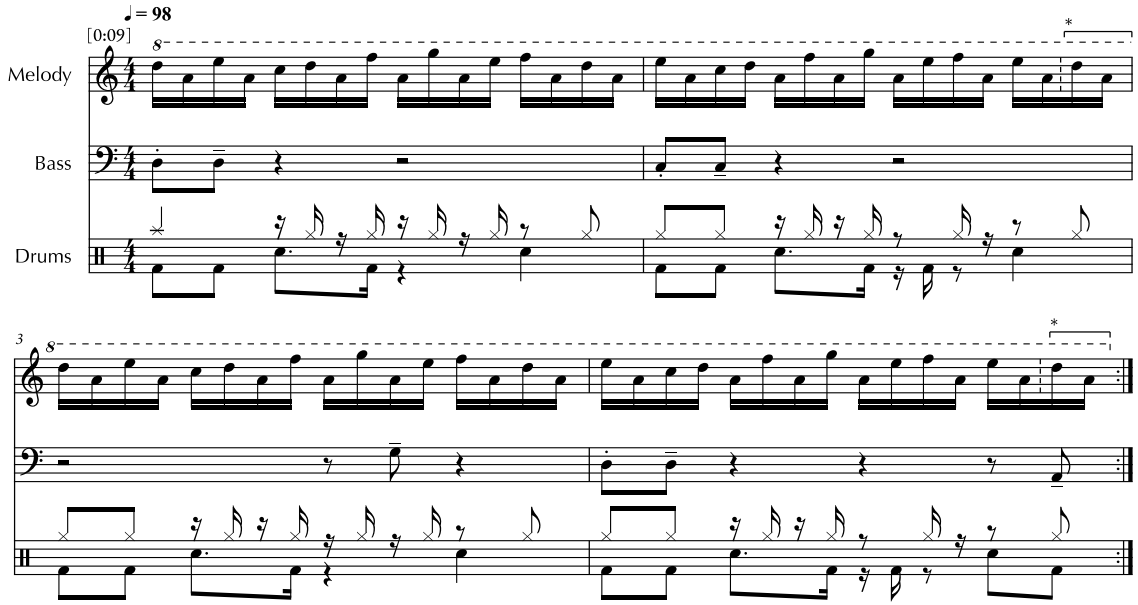
49 With this example I have also sought to include a discussion of a song from outside the Anglosphere.

50 I thank Kyle Adams for bringing this example to my attention (personal communication, 19 May 2020).

51 The drum pattern has been slightly simplified in the transcription, and Madizm and Sec.Undo use a wider array of hi-hat sounds than what is implied by the notation.

52 The opening melody of "Tubular Bells" has been sampled or subsequently referenced a relatively large number of times – 84 by the current count of *WhoSampled.com* – and some notable (Anglophone) examples that predate "Une Histoire Extraordinaire" include "Gotta Lotta Love (Tubular Bells Mix)" by Ice-T (1993), "Threesixafix" by Three 6 Mafia (1997), "Assassin" by Big Ed (1998), "Self Conscience" by Nas and Prodigy (2000), "Be Warned" by Tech N9ne (2002), and "All I Wanna Do" by Royce Da 5'9" (2003). In general, it appears that many of these examples deploy Oldfield's minor-mode piano melody for its sense of menace and "hardness" – affects that are no doubt bolstered through its associations with *The Exorcist*. On the potential intersection between minor and menace in a hip-hop beat, see Williams 2013, 197; on "hardness" as a topic more generally, see Krims 2000, 71–75.

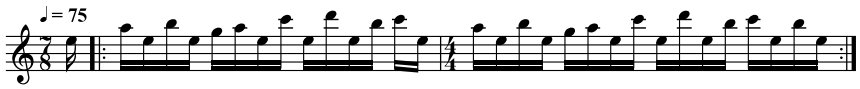
transposing it up five semitones. Oldfield himself describes the metrical structure of the melody as alternating between measures of 7/8 and 8/8, as shown in Example 17 at its original pitch and speed.[53] Partitioning the phrase in this way emphasizes the melodic parallelism between the measures, and the beaming of the sixteenths shows how interpreting the first measure in 7/8 means that the second half of the pattern essentially duplicates the first but extends it by an additional eighth note (Audio Example 16).



Example 16: Disiz, "Une Histoire Extraordinaire," *Les Histoires Extraordinaires d'un Jeune de Banlieue* (2005), produced by Madizm and Sec.Undo. Main loop (0:09–0:30)

https://storage.gmth.de/zgmth/media/1221/Tatar_Sampling_Audio15.mp3

Audio Example 15: Disiz, "Une Histoire Extraordinaire," *Les Histoires Extraordinaires d'un Jeune de Banlieue* (2005), end of intro into beginning of first verse, 0:09–0:30



Example 17: Mike Oldfield, "Tubular Bells," *Tubular Bells* (1973). Opening melody parsed as 7+8, counting in eighth notes (0:00–3:45).

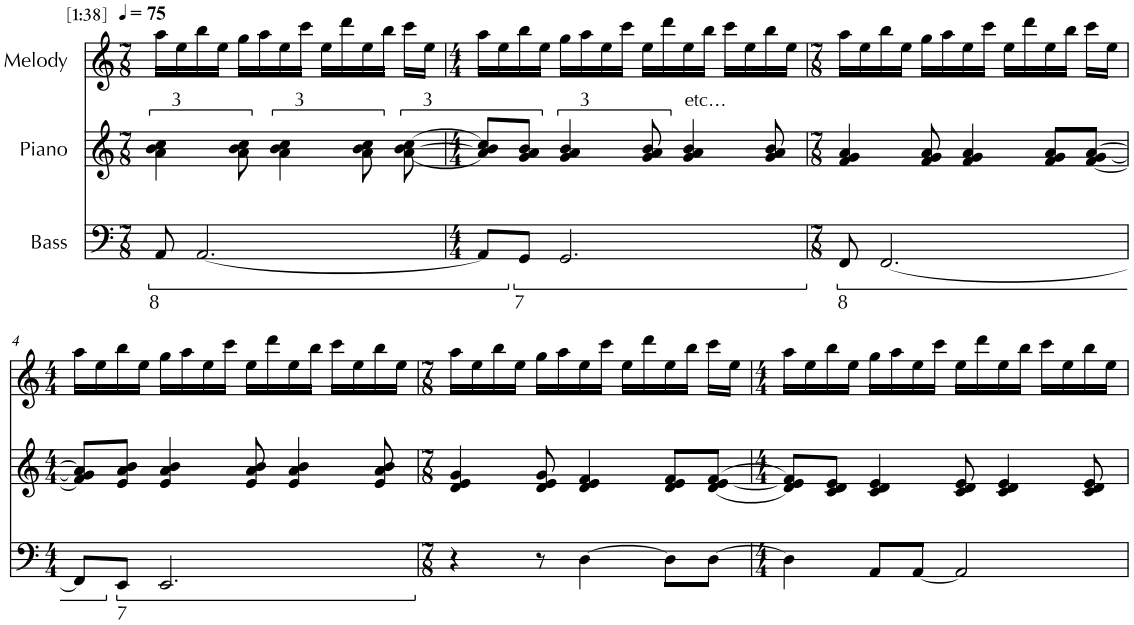
https://storage.gmth.de/zgmth/media/1221/Tatar_Sampling_Audio16.mp3

Audio Example 16: Mike Oldfield, "Tubular Bells," *Tubular Bells* (1973), opening melody, 0:00–0:21

Despite Oldfield's statement, there are nonetheless other ways of hearing the melody's underlying metric structure. As more musical layers are added over the course of "Tubular Bells," several competing interpretations of this melody are implied. Although Madizm and Sec.Undo only sample the very beginning of "Tubular Bells" (and flesh out the texture by adding other instruments and lines), I believe that a slightly later section in Old-

53 Oldfield discusses the structure of the "Tubular Bells" melody in the following clip, between 44:52–45:02, and he counts out the eighth notes while the melody plays in the background: https://youtu.be/UQLDGpcgNTM?si=m2_ZOIjOl_68aijV. As he explains, "it's one bar seven, one bar eight." I have interpreted the "eight" that Oldfield refers to here as eighth notes in 4/4.

field's composition offers a clue as to how they might have settled on the final structure of the sample for their song. Their listening, in other words, was informed by sustained engagement with their source. Beginning at approximately 1:38 in "Tubular Bells," the initial melody is joined by gently repeated clusters in the piano and a descending line in the bass. Example 18 shows how this bass line suggests partitioning the melody as 8+7 (counting in eighth notes), while the consistent groupings of three in the piano clusters move in and out of phase with the harmonic rhythm (Audio Example 17).

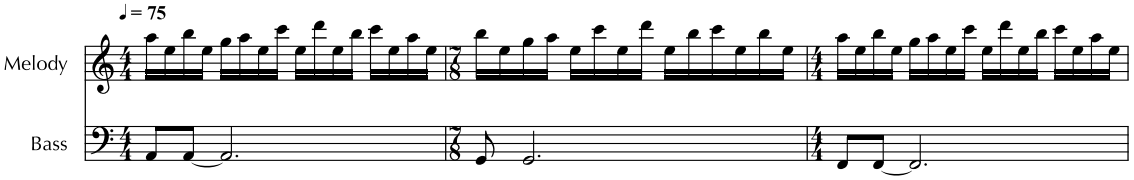


Example 18: Mike Oldfield, "Tubular Bells," *Tubular Bells* (1973), new piano layer (1:38–1:56)

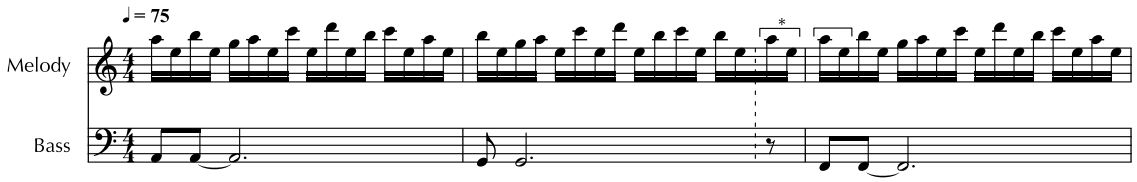
https://storage.gmth.de/zgmth/media/1221/Tatar_Sampling_Audio17.mp3

Audio Example 17: Mike Oldfield, "Tubular Bells," *Tubular Bells* (1973), new piano layer 1:38–2:00

For comparison, Example 19 re-notates the first three measures of the "Tubular Bells" melody (showing only the melody and bass lines) to reflect the 8+7 hearing implied by the bass. The melodic parallelism at the measure-to-measure level that characterized the 7+8 hearing of Example 17 is now largely obscured, though its resemblance to the pattern of "Une Histoire Extraordinaire" is substantially clearer, especially with respect to the bass line. Madizm and Sec.Undo's final change is to add an extra eighth note to the second measure of the melody, so that it fills out a complete 4/4 measure. This added eighth note is drawn from the very beginning of the melodic pattern, and this sense of anticipation – in a very literal sense – creates a feeling of anacrusis that gives forward motion to the looped melody. Example 20 shows this modification, using a dotted barline.



Example 19: Re-notated hearing of "Tubular Bells" melody, now parsed as 8+7



Example 20: "Tubular Bells" melody expanded into 8+8 through the anticipation of its first two sixteenths

By privileging the bass patterning from a later section of "Tubular Bells," Madizm and Sec.Undo disrupt the ready parallelism and composer-sanctioned reading of the melody. They make a choice, not unlike J Dilla in the case of Bangalter's "Extra Dry," that explores the musical potential of material that would otherwise have remained fixed, and their interpretation can likewise be understood as a performative rehearing. In particular, the metrical setting of "Une Histoire Extraordinaire" brings a new sense of syncopation to the piano melody and helps foreground the subtle rhythmic play that emerges across "Tubular Bells" as other layers are added. As in the previous examples, we see here how a source and its sample become intertwined through the producers' interventions, where the interpretation of one in turn inflects the interpretation of the other.

Conclusion – and "Für Elise" once more

In this paper, I have argued that sample-based hip hop shares much in common with other more widely recognized forms of musical "analysis." Hip-hop producers are expert listeners and communicators, and their beats offer us transformative opportunities for engaging with the sources that they draw upon. In several respects, the literature of performance analysis offers a ready template for understanding this aspect of producers' craft. Indeed, it is relatively untaxing to substitute "performer" with "producer" in many such contexts:

> Even the simplest passage – a scale or perfect cadence, for instance – will be shaped according to the [*producer's*] understanding of how it fits into a given piece and the expressive prerogatives that he or she brings to bear upon it. Such decisions might well be intuitive and unsystematic, but not necessarily: most [*producers*] carefully consider how the music 'works' and how to overcome its various conceptual challenges.[54]

Recognizing the analytical capacities of producers is perhaps most vital in light of the historic exclusion of hip hop's perspectives from the mainstream enterprise of academic music research. Although things are beginning to change, we – and I do mean "we," and count myself among those culpable – have generally refused to acknowledge the diverse expertise and craft of this music community. Writing in her 1994 book, *Black Noise*, Tricia Rose reflects on a seemingly innocuous exchange that, in many respects, remains remarkably familiar:

> In the spring of 1989, I was speaking animatedly with an ethnomusicology professor about rap music and the aims of this project [i.e., *Black Noise*]. He found some of my ideas engaging and decided to introduce me and describe my project to the chairman of his music department. At the end of his summary the department head rose from his seat and announced casually, "Well, you must be writing on rap's social impact and political lyrics, because there is nothing to the

54 With apologies to Rink 2002, 35.

> music." My surprised expression and verbal hesitation gave him time to explain his position. He explained to me that although the music was quite simple and repetitive, the stories told in the lyrics had social value.[55]

Things have changed in the intervening 35 years, to be sure. In 2024 I completed a PhD at a large, research-oriented school of music in North America with a music-of-hip-hop topic that would likely have been rejected by the anonymous music department that Rose describes. The study of popular music in general, and hip hop in particular, has become a major growth area for both music theory and musicology, and there are many signs of its increasingly mainstream position within these disciplines. In popular culture at large, too, hip hop has become a dominant and highly profitable force. Since 2017, "R&B/Hip-Hop" has been the most-consumed genre in the United States,[56] and, in 2023, Spotify reported that the genre accounted for "nearly a quarter" of global music streams.[57] Yet Rose's encounter with this department chair still stings, I think, because many of us nonetheless have friends, family, or colleagues who might harbor similar opinions – that hip hop is "quite simple and repetitive," with "nothing" to it. Perhaps we might even have held such a position ourselves at an earlier time. I know that I once did.

Rose's comments – or, rather, those of the department chair – are also oddly prescient because, even within this broad milieu of expansion, the theoretical study of hip hop has mainly focused on the activities of vocalists, with producers relegated to a very distant second.[58] This asymmetry of interest is all the more remarkable, however, if we consider that the "social impact and political lyrics" of the songs examined by such studies is rarely their explicit analytical focus.[59] In other words, if the sole redeeming qualities of hip hop (at least according to the department chair) appear to have had little bearing on music theory's bias toward vocalists, what other ideologies might instead be at work here? To be sure, hip hop's vocal components (often referred to as "flows") contain a wealth of properties that are ready marks for analytical engagement, including (but not limited to) rhythm, rhyme, pitch inflection, syntax, breathing patterns, syllabic density, and narrative. In comparison, the often-looped musical accompaniments (already subordinated by their name!) seem to offer fewer treasures, or, at the very least, far less interesting ones. But, as Schloss suggests in his ethnographic study of hip-hop producers, *Making Beats*, certain perceptions of musical value also sneak into the ways that we often engage with hip hop, even independently of its social meanings. Whenever Schloss talks about his work, one of the first issues that he finds himself being questioned on – after "what's the difference between rap and hip-hop?" – is whether or not hip hop is "really" music.

55 Rose 1994, 62.

56 According to Nielsen's data, R&B/Hip-Hop accounted for 24.5% of "Total Volume" listening, which includes physical album sales, digital track purchases, and on-demand streaming. The second most-consumed genre was Rock, which accounted for 20.8% of listening (Nielsen 2017, 31).

57 Spotify 2023. Unfortunately, however, I have been unable to find further details of the precise breakdown of this figure.

58 See, for example, Adams 2009, Condit-Schultz 2016, Duinker 2019, Duinker 2022, Komaniecki 2021, Mattessich 2019, Oddekalv 2022, Ohriner 2019a, and Ohriner 2019b. The notable exceptions to this trend, however, are Adams 2008, Adams 2016, and Manabe 2019.

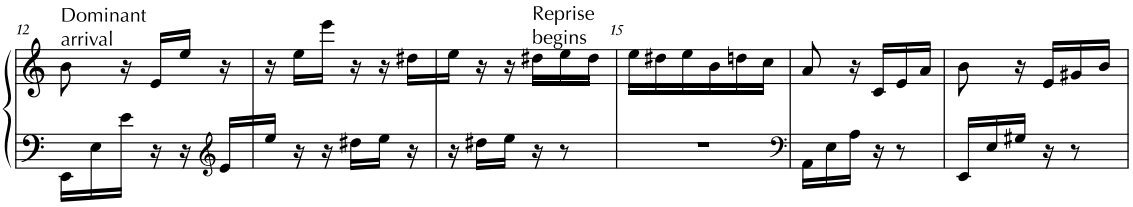
59 This topic is nonetheless foregrounded in Bungert 2019.

> As I take pains to point out, it is actually a question about what the word 'music' means, and it contains the hidden predicate that music is more valuable than forms of sonic expression that are not music. If one believes that only live instruments can create music and that music is good, then sample-based hip-hop is not good, by definition.[60]

While I don't wish to claim that music theory's relative neglect of hip-hop producers is due to the widespread perception of them as "unmusical," it is nonetheless clear that the general trajectory of research is doing little to change this narrative. Over the past five years, music theory, especially in the United States and Canada, has made significant investments in issues of diversity, equity, and inclusion. Although substantial work remains to be done in order to redress the legacies left by generations of discriminatory ideologies within this discipline, I have argued here that engaging with the analytical capacities of producers is a vital component in the recognition of their craft. Coincidentally, Meyer's comments about the analytic acts of performers were published in the very same year – 1973 – that is commonly cited as the "birth" of hip hop.[61] It is therefore fitting that, just over 50 years later, his ideas might now offer one of the paths forward.

We still also have some unfinished business with Beethoven's "Für Elise."

Example 21 reproduces the third system of Example 1, showing measures 12–17 of the bagatelle. The "problem" with this passage, recall, concerns the number of E-D♯ alternations before the reprise of the main theme in the pickup to measure 15. Despite the spareness of the dominant prolongation and the untaxing pianistic demands of the passage, this number apparently eluded both Artur Schnabel and Alfred Brendel.



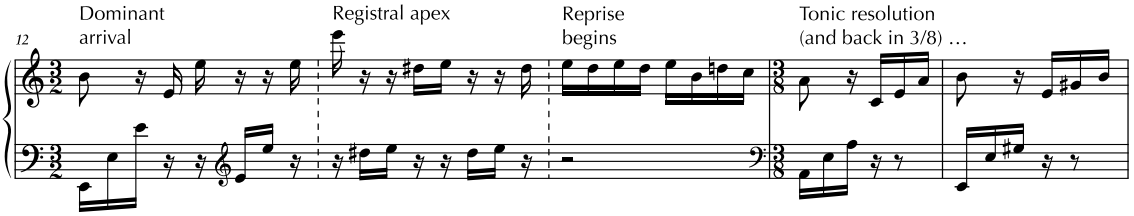
Example 21: "Für Elise," measures 12–17

Cohn's solution to this E-D♯ problem is as follows. Beginning from the downbeat of measure 12, which marks the arrival of the dominant, imagine that the running sixteenths are grouped into eighths (themselves parsed as 4 + 4). The half-note pulse that arises from these

60 Schloss 2004, 23.

61 In the popular imagination, hip hop culture was born on 11 August 1973, the night that Kool Herc – an eighteen-year-old born in Kingston, Jamaica – first performed as a party DJ. Billed as a "Back to School Jam," the party took place in the basement-level community room of 1520 Sedgwick Avenue in the Bronx, and was organized by Kool Herc's sister, Cindy. Recently, in 2023, this date has been further memorialized by a series of events and media campaigns celebrating hip hop's "50th anniversary" (e.g., Brown et al. 2023, McMillan 2023, Morris 2023, Reeves 2023, and Summers et al. 2023). As Mark Katz carefully notes, however, locating the precise birth of hip hop at *this* particular time and place is less straightforward: "There was no rapping at the party, there were no backspinning b-boys on the linoleum, and Herc wasn't scratching records, all things we might expect from a hip-hop jam. No one at the time knew this was hip-hop, and the music was not literally hip-hop as we know it today – it was largely funk, soul, and rock. Moreover, Afrika Bambaataa, one of the pillars of hip-hop culture, was spinning an eclectic mix over at the Bronx River Houses *before* Herc's first party, apparently as early as 1970" (Katz 2012, 22–23; emphasis in original).

regrouped sixteenths thus "momentarily overrides" the notated 3/8 meter.[62] This newly imposed metric value spans from the downbeat of measure 12 to the E6 on the third sixteenth of measure 13, which marks both the completion of the repeated E-octave ascending gesture initiated in the previous measure and the registral apex of the section. Projecting forward from this high E, another half note later brings with it the theme's reprise at the pickup to measure 15, and a final half note after *that* is the tonic resolution on the downbeat of measure 16. From here onward the piece locks back into the notated 3/8. Once we properly grasp what is effectively a large measure of 3/2 that is superimposed on this passage – and which neatly encompasses the successive phenomenal accents of dominant arrival, registral high-point, thematic re-engagement, and tonic resolution – Cohn writes that "there is no reason to play any more or fewer notes than what Beethoven wrote."[63] This interpretation is summarized in Example 22, which is adapted from Cohn's Figure 2.[64] This excerpt re-bars the passage shown previously in Example 21, with a single measure of 3/2 replacing what was previously four measures of 3/8. The 3/2 measure is further subdivided by dotted barlines to help mark the groups of eight sixteenths.



Example 22: Re-barring of measures 12–17 of "Für Elise" according to Cohn's analysis (with apologies to Beethoven)

Cohn then draws on Lerdahl and Jackendoff's notion of parallelism[65] to suggest that the opening of "Für Elise" should be understood in similar metrical terms to the E-D♯ alteration of the reprise: "we have strong reason to hear the opening eight-beat anacrusis as beginning at a metrically accented point, and projecting a quarter-note pulse."[66] This reinterpretation of the anacrusis is shown in Example 23, which compares the implied metrical structure of Beethoven's original (left) with Cohn's proposed revision (right). In this visualization, the "real" barline has been suppressed by the 4 + 4 grouping of the eight sixteenths, as shown by the beaming.

Example 23: Implied metrical structure of a) Beethoven's original notation of "Für Elise" and b) Cohn's proposed revision, based on a parallelism with his analysis of measures 14–16

Cohn's suggestions are illuminating, and his analysis of "Für Elise" has changed how I hear, play, and teach Beethoven's piece. His insights reveal an attentive consideration of

62 Cohn 2015, 18.

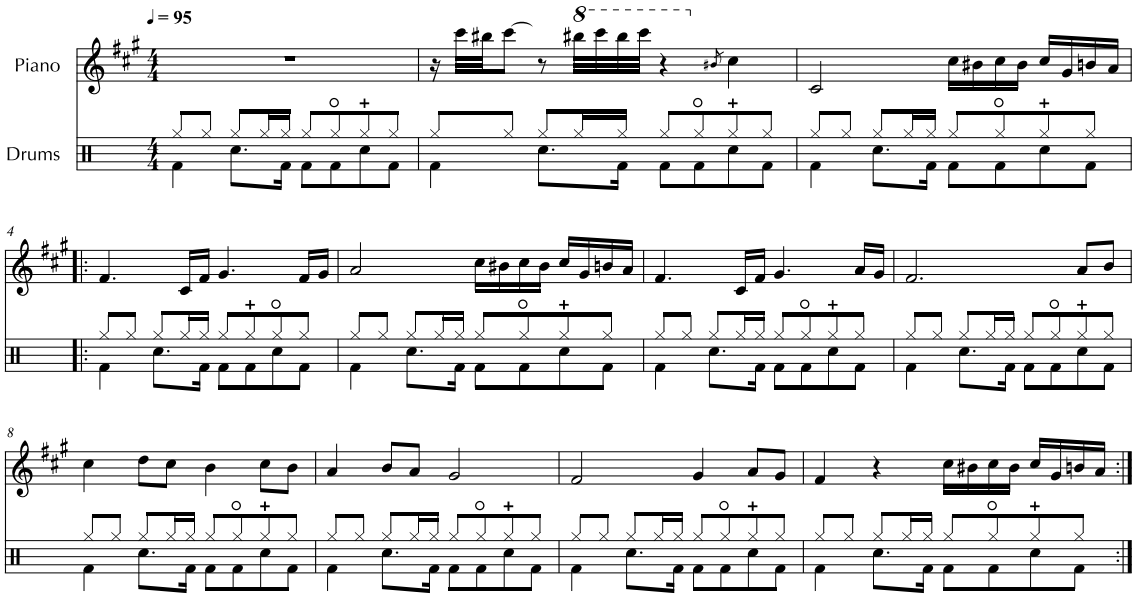
63 Ibid., 19.

64 Ibid.

65 Lerdahl and Jackendoff 1983, 75.

66 Cohn 2015, 19.

the bagatelle's metrical features and a careful presentation and communication of these ideas. What is more, there is also a certain generative quality to Cohn's reading, in which his engagement with "Für Elise" breathes new life into old materials. But perhaps the thing that I like the most about Cohn's metrical analysis is the way that it seems to agree with the reading proposed by another noted analyst of the piece, Salaam Remi. Remi published his analysis some thirteen years before Cohn's, and, like Cohn, he interprets the first eight notes of "Für Elise" as an extended anacrusis that moves in quarter notes and drives toward the tonic on the following downbeat. But where Cohn communicates his analysis using the prose and score examples that are the disciplinary norms of music theory, Remi instead uses sound. Remi's analysis is shown in Example 24, and, while his analytical representation of "Für Elise" has been transposed down by three semitones from Beethoven's original, his metrical intentions are nonetheless crystal clear (Audio Example 18).



Example 24: Nas, "I Can," *God's Son* (2002), produced by Salaam Remi; main loop (throughout)

https://storage.gmth.de/zgmth/media/1221/Tatar_Sampling_Audio18.mp3

Audio Example 18: Nas, "I Can," *God's Son* (2002), intro into beginning of first verse, 0:00–0:51

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© 2025 Jeremy Tatar (jeremy.tatar@mail.mcgill.ca, ORCID iD: 0009-0008-4512-0811)

Carleton University

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“Mixed” Results

An Introduction to Analyzing Music Production through Eight Commissioned Metal Mixes

Jan-Peter Herbst, Eric Smialek

Dieser Artikel führt Musiktheoretiker:innen und Analytiker:innen in Aspekte der Tontechnik und Produktion ein, die innerhalb der populären Musik weitgehend übertragbar sind. Wir reflektieren, warum die Analyse von Klang und seiner Produktion nützlich ist, gefolgt von einer Fallstudie zu »In Solitude«, einem original zu diesem Zweck geschriebenen und produzierten fünfminütigen Lied, das von acht der weltweit führenden Metal-Produzenten verschiedener Generationen abgemischt wurde. In dieser Fallstudie zeigen wir, wie Analytiker:innen Aspekte der Lautstärke grob auf einer virtuelle Klangbühne abbilden können, die Hörer:innen für subtile, aber folgenreiche Produktionsnuancen sensibilisiert. Um zu erklären, wie dieser virtuelle Raum funktioniert, führen wir die Leser:innen durch psychoakustische Beziehungen von Breite, Höhe und Tiefe. Anhand dieser Konzepte und ihrer Beziehungen zur (Psycho-)Akustik zeigen wir, wie die teilnehmenden Produzenten Hörereindrücke einer virtuellen Klanglandschaft unterschiedlich manipulieren. Diese Produktionsentscheidungen spiegeln nicht nur Umgebungseindrücke wider, sondern reflektieren breitere ästhetische Trends im Zusammenhang mit Subgenre-Erwartungen im Metal. Wir hoffen, dass diese Fallstudie als Grundlage dient, um Analytiker:innen populärer Musik zu helfen, Tontechnik in ihre Analysen einzubeziehen. Solche Arbeit muss das Rad nicht radikal neu erfinden; sie kann Produktionsqualitäten in traditionelle Beobachtungen zu Harmonie, Melodie, Rhythmus und Form integrieren. Wir argumentieren, dass die klanglichen Nuancen der Produzenten die Normen und Erwartungen einzelner Subgenres, wie sie auf der Aufnahme – dem maßgeblichen Text innerhalb der populären Musik – existieren, widerspiegeln und prägen. Dementsprechend könnten Analytiker:innen fragen, wie diese Normen durch Produktionsentscheidungen ebenso wie durch Elemente des Songwritings bedient oder durchbrochen werden.

This article introduces music theorists and analysts to aspects of audio engineering and production that are widely transferrable within popular music. We reflect on why analyzing sound and its production is useful, followed by a case study of “In Solitude,” an originally written and produced five-minute song that was mixed by eight of the world’s leading metal music producers spanning several generations. In this case study, we demonstrate how analysts can roughly map aspects of loudness onto a virtual soundstage that helps sensitize listeners to subtle, but consequential, production nuances. To explain how this virtual space works, we guide readers through psychoacoustic relationships of width, height, and depth. Using these concepts and their relationships to (psycho-)acoustics, we show how the participating producers variously manipulate listener impressions of a virtual soundscape. Beyond environmental impressions, these production decisions reflect broader aesthetic trends related to subgenre expectations in metal. We hope this case study serves as a primer in helping popular music analysts include audio engineering in their analyses. Such work need not radically reinvent the wheel; it can integrate production qualities into traditional observations such as harmony, melody, rhythm, and form. We argue that the producers’ timbral nuances reflect and inform the norms and expectations of individual subgenres as they exist on the record, the definitive text within popular music. Accordingly, analysts might ask how those norms are served or thwarted by production choices as much as songwriting elements.

SCHLAGWORTE/KEYWORDS: Analyse; analysis; Metal; music production; Musikproduktion; sound engineering; Tontechnik

Any discussion of the role of technology in popular music should begin with a simple premise: without electronic technology, popular music in the twenty-first century is unthinkable.

—Paul Théberge[1]

1. Introduction

As popular music analysis coalesced as a field, particularly during the 1990s, authors such as Allan F. Moore and Paul Théberge increasingly emphasized the significance of technological mediation and produced sound – developments that have been recognized as consequential since Walter Benjamin's famous essay on "The Work of Art in the Age of Mechanical Reproduction."[2] As Théberge's quote in our epigraph implies, technology has shaped the very artistry and aesthetics of the past 100 years to the point where an awareness of what happens behind the curtain of the audio engineer's workshop can fundamentally alter one's music analysis.

In 2006, the *Journal on the Art of Record Production*[3] was founded, which created an innovative space for analyzing popular music recordings with practical insights and a deep understanding of recording, mixing, and production. Foundational works, such as *The Art of Record Production* volumes 1 and 2,[4] as well as Routledge's book series "Perspectives on Music Production," address how practices and decisions in music production shape listening experience. In parallel but independent developments, works by Moore[5] and William Moylan[6] and colleagues[7] introduced inventive methods for visualizing spatial relationships of sound. Albin Zak's *The Poetics of Rock*[8] offered a pivotal glimpse into the ethnography of record production, showing us "from the inside," as Robert Walser's review put it, "how complex and multifarious this kind of composition is […] on every page."[9] Here, the kind of composition to which Walser refers is the combined efforts of not just songwriting and arrangement but also their refinement by producers to become the "tracks" we hear.[10]

Metal music's distinct aesthetics of heaviness, transgression, and extremity provide an ideal context for the study of music production. While the exigencies of metal music production are well documented,[11] the genre's exaggerated sound qualities invite an exploration of hyperreal mixing practices and their effects on interpretation and meaning. Metal's aesthetic of intensification makes production choices particularly salient, inviting

1 Théberge 2001, 3.

2 Moore 1993; Théberge 1997; Benjamin [1935] 1969.

3 https://www.arpjournal.com/asarpwp (4 Jul 2024).

4 Frith/Zagorski-Thomas 2012; Zagorski-Thomas et al. 2020.

5 Moore 1993, 2012.

6 Moylan 2002; see also Moylan 2020.

7 Moylan et al. 2023.

8 Zak 2001.

9 Walser 2007, 256–257.

10 Zak 2001, 24.

11 Herbst/Mynett 2022a, 2022b.

analysis of how producers achieve sounds and effects that exceed or transcend the everyday sound environment through their mixing strategies, a phenomenon relevant to contemporary music production more broadly. While heaviness is defined here as a central aesthetic criterion in metal – resulting from a complex interplay of sonic attributes, arrangement choices, and performance qualities[12] – this article uses it as a case study to explore the broader impact of audio engineering on musical meaning, demonstrating how production decisions reshape the listener's interpretive experience.

As a combined study of record production and popular music analysis intended to introduce music theorists and analysts to aspects of audio engineering and production that are widely transferrable within popular music, our article offers a case study of "In Solitude," a five-minute metal song originally written and produced by Mark Mynett and Jan-Peter Herbst for the "Heaviness in Metal Music Production (HiMMP)" research project.[13] The research consisted of a three-component design: 1) writing, arranging, and recording the song; 2) creating multiple mixes by professional record producers; and 3) documenting the process and the underlying conceptions ethnographically through video interviews. The first goal was to offer an intuitive working environment with a track that would sound convincing as a "real" song. During the mixing stage, each of the eight participating producers received the reference mix (see Audio Example 1) but was instructed to actively make creative decisions. For instance, producers selected different guitar and bass source tones by "re-amping" with other hardware or digital amplifiers using direct injection (DI) recordings (i.e., the raw, non-amplified signals from the instruments' outputs). They could also enhance or replace drum sounds with samples, i.e., layering the naturally recorded drum shells (e.g., kick or snare) with sounds from other drum kits or replacing the recorded material altogether to significantly alter the drum sound. Their choices could then be compared to their interview statements about production during the documentation stage, particularly regarding aesthetic preferences and guiding philosophies. Following Zak's lead, we use producer interviews to gain direct insights into their working process, at times connecting the statements of eight participating producers with examples that highlight each producer's individual style. Our analytical approach is two-pronged: we conducted an in-depth qualitative analysis of semi-structured interviews using both emic and etic frameworks, and we performed a comparative technical and auditory analysis of the recorded mixes to map the interplay between production decisions and listener perception. This dual analysis not only examines the technical intricacies of mixing but also lays the foundation for exploring how these decisions can shape listener interpretation.

This research employs a novel, quasi-experimental ethnographic design where eight professional producers mixed the same song independently in their own studios, thereby faithfully capturing their engineering practices within ecologically valid professional environments. The HiMMP team (Herbst and Mynett) conducted video-recorded interviews in the producers' studios shortly afterward to capture their fresh reflections. From 2020 to 2024, fifteen hours of semi-structured interviews documented technical processes and producer conceptions of "heaviness."[14] These interviews consistently addressed key top-

12 Ibid.

13 Further information and a list of the project's publications are available on the project website https://www.himmp.net.

14 All videos are available at https://www.youtube.com/@HiMMP-Research.

ics, such as dynamic range, stereo imaging, and aesthetic intent, while allowing for unexpected insights.[15] While the quasi-experimental setting involves some differences from commercial environments, our combined emic and etic approach provides a robust basis for comparing mixing practices.

We selected producers based on professional standing, coverage of historically important regions for metal (UK, USA, and Scandinavia), and diverse experience across metal subgenres. Participating producers included Jens Bogren (b. 1979, SWE), Mike Exeter (b. 1967, UK), Adam "Nolly" Getgood (b. 1987, UK), Josh Middleton (b. 1985, UK), Fredrik Nordström (b. 1967, SWE), Buster Odeholm (b. 1992, SWE), Dave Otero (b. 1981, US), and Andrew Scheps (b. 1969, US).

Regrettably, a gender balance among the participants could not be achieved. This limitation arises not only from logistical constraints but also from the broader underrepresentation of women and non-binary producers, especially at the highest international level.[16] The sample reflects the current state of hegemonically dominant metal music production, centered around the Global North. Consequently, the findings should be understood as an invitation to learn from widely known representatives of metal while acknowledging that metal music production is a global phenomenon, with many producers of diverse genders, ethnicities, ages, and regions equally deserving of recognition.

While previous studies[17] have used retrospective interviews or single-case analyses of producer methodologies, to our knowledge, no study has directly commissioned multiple producers to mix the same recorded material for a controlled, comparative analysis. This innovative approach fills a significant gap in the literature.[18] By directly comparing the mixes of "In Solitude" produced independently by eight renowned metal producers, our study offers unprecedented insights into the diverse strategies and tacit knowledge that underlie contemporary metal music production. This controlled comparison isolates production variables and offers robust empirical evidence on how mixing decisions shape heaviness in metal music.

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio01.mp3

Audio Example 1: Reference mix of "In Solitude"

One of the innovation goals of the data[19] is that this situation would not ordinarily arise in the music industry – few labels would hire multiple engineers to create different versions of the same song. The resulting resource is thus unparalleled even among dedicated learning offerings such as "Mix with the Masters" or "Nail the Mix." Accordingly, YouTube footage[20] comparing the mixes has been met with curiosity and amazement. Some comments express relief that there is no single correct way to produce a song: different respected producers arrive at distinct results with individual qualities, and each sounds professional. At times, the comments contain puzzling contradictions – making declarations about authenticity yet favoring mixes that counter them – reflecting how aesthetic

15 See Herbst/Mynett 2025c.

16 See also Herbst/Mynett 2021.

17 For example, Turner 2009, 2012; Mynett 2017.

18 See Thomas 2015, 259.

19 All data is freely accessible at https://huddersfield.app.box.com/s/8gren2ma4kesvf5vwip2axzz1v8sawur.

20 https://www.youtube.com/watch?v=U_TtJo2_bh8 (8 Aug 2024).

beliefs and assumptions sometimes clash with empirical insights into the engineering process.[21] Overall, the dataset is valuable for studying metal music, heaviness, and for broader reflections on popular music analysis. Its value is especially evident from the following highlights:

1. nine different versions of the same track are uncommonly available for comparison;
2. audio stems for drums, bass, guitars, and vocals are available from all versions, allowing for detailed analysis and comparison;
3. unlike traditional analysis of released music, the produced result can be compared with the underlying audio material ('multi-track' recording; see Figure 1);
4. composing an original song allows audio examples to be freely distributed without copyright restrictions.

Building from ethnographic and analytical evidence, our study makes arguments about the emerging differences between how groups of producers construct a virtual space within their music production practices.

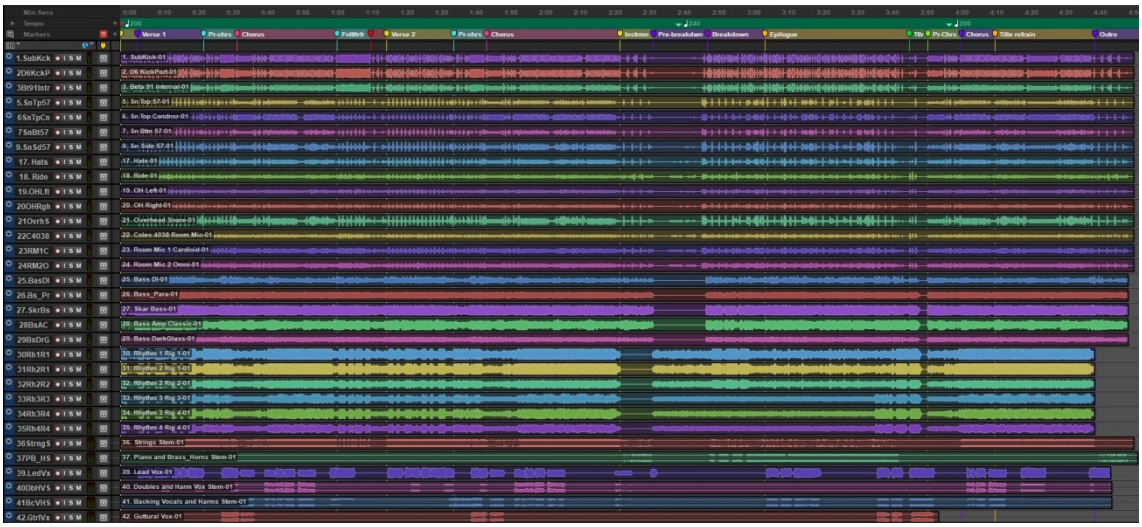

Figure 1: Arrangement view in Pro Tools; all tracks except toms and production effects

Music production allows artists to use sonic space as an artistic parameter in ways unavailable in the non-digital world. Overlapping with recent trends in electronic styles of popular music, such as like EDM (Electronic Dance Music) and hyperpop, metal producers have increasingly attempted to transcend the familiarity of acoustic soundscapes. Whereas acoustic instrumentation – unamplified folk ensembles, classical orchestras, choirs, and pianos – mostly depends on the natural acoustics of a performance space, heavy metal has long employed techniques that deliberately depart from such realism. For instance, early heavy metal did not necessarily aim to reproduce a live venue's acoustic environment. Instead, it often embraced deliberately contrived sonic effects, such as isolating individual drum parts, applying noise gates to distorted guitars, and employing pronounced stereo-width expansion. These techniques produce a hyperreal or even surreal aesthetic. By contrast, some producers strive to foster impressions of live fidelity by mimicking the natural acoustics of a performance space. Such contrasting

21 See Herbst/Mynett 2025a.

strategies and techniques suggest that "live fidelity" in heavy metal is not an inherent property of the sound but rather a specific artistic choice associated with heaviness, transgression, extremity, virtuosity, and authenticity.

As we will argue, these contrasting aesthetics loosely map onto two schools of metal production – old-school live fidelity and new-school hyperreality (Figure 2) – with intriguing complications and overlaps along the way. These contrasting approaches to mixing serve as operational concepts for our analysis and represent endpoints of a continuum rather than discrete categories. Although these distinctions are widely discussed informally within fan and musician communities, to our knowledge, they have not been systematically examined in scholarly research, and our study offers preliminary empirical evidence to substantiate and clarify these concepts. While previous writings do not explicitly frame this dualism, Niall Thomas and Andrew King provide comparative perspectives on older and newer metal production practices, and Mynett highlights that metal often departs from a live-fidelity aesthetic.[22] Together, these texts support our emerging framework and highlight the need for a systematic investigation of these contrasting approaches in metal production.

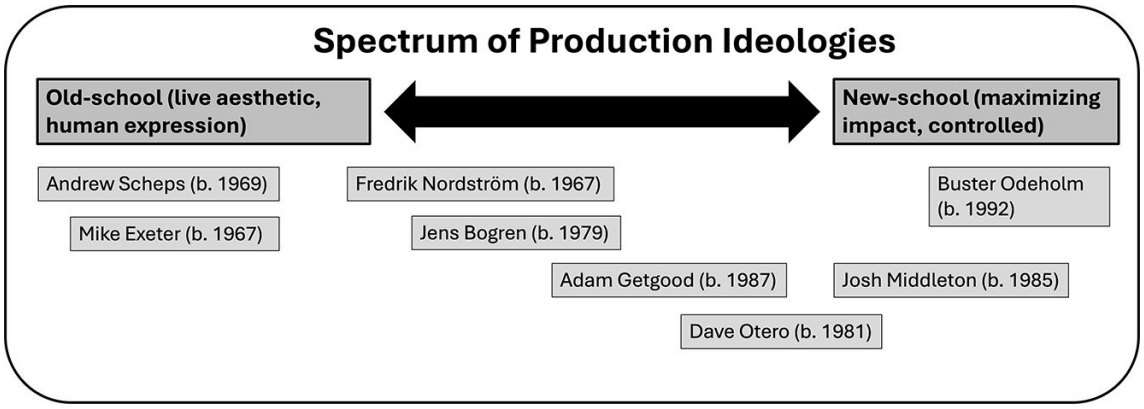

Figure 2: A conceptual spectrum of metal production ideologies, from live fidelity to hyperreality[23]

Among the novel contributions of this study is our demonstration of how producers reshape the recorded sound through deliberate mixing decisions. In particular, we introduce and clarify several concepts that have not been systematically examined or connected to musical examples: the meta-instrument, hyperreality in production, cohesion among sound sources, and the V-shape mix. These operational concepts not only illuminate new dimensions of production in metal music but also challenge traditional notions of authenticity and live fidelity by revealing the creative strategies that producers employ to transform the recorded performance into a fully produced product. Using the aforementioned methodological and analytical frameworks, we further demonstrate how analysts can map aspects of loudness onto a virtual soundstage that helps sensitize listeners to subtle, but consequential, production nuances. To explain how this virtual space works, we guide readers through psychoacoustic relationships of width, height, and depth. Through these concepts and their relationships to acoustics, we show how the participating producers variously manipulate listener impressions of a virtual soundscape.

22 Thomas/King 2019; Mynett 2020.

23 Reproduced from Herbst/Mynett 2025b, chapter 6.

Not merely limited to environmental impressions, these production decisions reflect broader aesthetic trends related to subgenre expectations in metal.

We proceed in three main parts. Our next section directly addresses the methodological and disciplinary question of why analyzing production is important for music theory. We then move to an examination of loudness that establishes the broad division of new- and old-school approaches to metal music production. Finally, our last section explores a virtual space through the three-dimensional metaphors of depth, width, and height. Throughout, we combine and apply a broad array of concepts from music analysis, psychoacoustics, and production techniques to examine how our eight producers shape these dimensions in their mixes.

2. Why Analyze Sound and Its Production?

The growing impact of production techniques on the aesthetics of popular music, detailed in historiographies of popular music recording and production,[24] makes sound production increasingly unavoidable when analyzing popular music. We concur with Walser that "any cultural analysis of popular music that leaves out musical sound, that doesn't explain why people are drawn to certain sounds specifically and not others, is at least fundamentally incomplete."[25] Several points are important in this regard.

Firstly, as Mads Walther-Hansen[26] has argued, sound perception is not arbitrary. Cognitive metaphors and embodied experiences are widely shared within and sometimes across cultures, reducing the number and breadth of likely interpretations.

Secondly, the analysis of music production is rarely confined to objective, quantifiable observations of sound properties. The "track," as Zak[27] defines it, combines song (representable on a lead sheet), arrangement (visible in a full score), and produced recording (playable through speakers). But rather than a one-way production line, the relationship of song-arrangement-production is better thought of as a feedback loop. That is, the requirements of recording and the capabilities of production technology now play an increasingly influential role in determining the arrangement. They can restrict certain arrangement choices or afford hyperreal sounds beyond the capabilities of a band or ensemble. Paying close attention to the requirements and affordances of the recorded medium allows us to better understand specific artistic choices and their likely interpretations. As Moylan summarizes, "[t]he record is a finely crafted performance; it reframes notions of performance, composition, and arranging around a production process of added sonic dimensions and qualities."[28]

Thirdly, and closely related to the previous point, the recording is popular music's "autographic"[29] (i.e., definitive) text, so most analytical contexts will be impacted by music production. Sound engineering impacts some of the most debated issues in popular mu-

24 Chanan 1995; Cunningham 1996; Moorefield 2010.

25 Walser 2003, 21–22.

26 Walther-Hansen 2020.

27 Zak 2001, 24.

28 Moylan 2020, 9.

29 Gracyk 1996, 31–36.

sic. It influences the artistic expression of identity and authenticity during production as well as an audience's mediated experience of them during listening.

Fourthly, timbral nuances – performed with the assistance of music technology and refined during production – shape and expand musical expression. Take guitar tone, for instance. Among the many facets of its appeal, distortion facilitates playing techniques uncommon on the unamplified guitar, including feedback, artificial harmonics, and two-handed tapping.[30] Beyond practical advantages, guitar distortion demonstrates how electronic mediation can transform the cultural significance of instruments and sounds – in this case, into a symbol of power and desire.[31]

In studio-oriented music, where sounds can be processed more effectively than in a live performance context, the transformation and extension of acoustic sounds goes one step further. Auto-Tune and Melodyne are pitch modulation tools that have created recognizable vocal sounds important in rap, pop, and electronic dance music. In these genres, and others, velocities (i.e., programmed dynamics), modulation filters of the frequency spectrum, dynamic effects such as pumping (through side-chain compression), and immersive spatial and modulation effects provide many of the expressive qualities most recognizable to audiences. With both technologically mediated live performance and pre-programmed music, the sounds are intentionally designed in detail and can even influence artists to recompose their compositions during the recording and production stages. Quite passionately, Moylan encapsulates both the pervasiveness of record production in the artistry of the final product as well as its innovative abilities to create once inconceivable sounds:

> [T]he record is not only a performance and a composition, but something else as well. It is also a set of sound qualities and sound relationships that […] do not exist in nature and that are the result of the recording process. These qualities and relationships create a platform for the recorded song, and contribute to its artistry and voice. […] The result is a reshaped sonic landscape, where the relationships of instruments defy physics, where unnatural qualities, proportions, locations and expression[s] become accepted as part of the recorded song, of its performance, of its invented space.[32]

Produced sound transforms the arrangement, performances, and aesthetic treatments into a cohesive work with unique qualities that exceed the acoustical limitations of natural space.[33] Zak expands:

> The performances that we hear on records present a complex collection of elements. Musical syntactical elements such as pitches and rhythms are augmented by specific inflections and articulations, which include particularities of timbre, phrasing, intonation, and so forth. Furthermore, the inscription process captures the traces of emotion, psyche, and life experience expressed by performers. That is, the *passion* of the musical utterance is yet another element of a record's identity.[34]

30 Walser 1993, 70.

31 Waksman 1999.

32 Moylan 2020, 10–11.

33 Zagorski-Thomas 2014, 8.

34 Zak 2001, 51, emphasis in original.

All these elements exist within a recording, but how intentional or coincidental they are, as Moylan[35] suggests, is not necessarily of concern; the produced record is a unique musical artifact that is unlikely to exist in the same way in the "real" acoustical world, nor is it typically possible to perform identically.

Whether deliberate or not, produced music inevitably contains spatial staging, the three-dimensional placement of instruments, voices, and sounds within a listener's perceptual imagination. It can be used to digitally simulate spatial relationships between musical objects and influence interpretations of song narratives and performer personae.[36] This alternative reality of staged sound simultaneously complicates a recording – adding hyperreal simulacra – and simplifies it, subtracting unwanted features. Unnecessary or detrimental aspects of sound (e.g., noise or excessive frequency energy) get removed, while those more useful or meaningful are emphasized in production. These decisions are what Simon Zagorski-Thomas calls "sonic cartoons,"[37] simplified, schematic versions of reality, which occur in most, if not all, popular music recordings. Their purpose is to foreground specific sonic characteristics such as heightened clarity, dynamic impact, and a refined spatial presence. These hyperreal qualities guide the listener toward an aesthetic interpretation focused on intended stylistic and emotional cues. Shaping the representation of a performance or programmed gesture thus "encourages a particular type of interpretation,"[38] namely one that privileges these targeted sonic features over the full complexity of the live event. Overall, then, the history of recorded popular music is one of improved "high-fidelity," the detailed reproduction of acoustical or environmental sounds, but done with the aesthetic goals of augmenting or refocusing meaning away from physical sound sources. With so much craftsmanship focused on carefully sculpting precise sounds, neglecting sound when analyzing popular music risks losing a significant part of the artistry behind making music meaningful to listeners.

Beyond affecting overall sound quality, production decisions fundamentally alter the perceived spatial environment of a recording, an important dimension we observed across our eight producers' mixes. We now turn our focus to how loudness and virtual space, conceptualized through dimensions of width, height, and depth, serve as models for understanding these effects.

3. Loudness: New-School Hyperreality vs. Old-school Live Fidelity

To enable controlled comparisons between mixes, and prevent louder mixes from automatically seeming "better," the HiMMP researchers used Scheps's relatively quiet and uncompressed mix as a loudness-normalization reference. Loudness comparison involves measurements in LUFS (Loudness Units Relative to Full Scale), a perceptual unit that accounts for both the intensity and frequency distribution of sound (e.g., brightness levels). Streaming services such as Spotify use these measurements to achieve relatively uniform volume levels and combat the "loudness wars" prevalent in metal production.[39]

35 Moylan 2020, 37.

36 Zagorski-Thomas 2014, 70–91; Moore/Schmidt/Dockwray 2011.

37 Zagorski-Thomas 2014, 49–69.

38 Ibid., 55.

39 Smialek 2016, 117–120.

The HiMMP producers delivered their mixes, representative of how their work would be presented to a real-world client such as a band assessing a mix engineer. These mixes typically include a degree of mastering to provide a more complete impression of the intended aesthetic. The loudness profiles in the next paragraph were measured on these quasi-mastered versions, ensuring that our comparisons reflect both the mixing and the subsequent processing choices. This mastering, although minimal, offers additional clues about the producers' aesthetic priorities regarding loudness and dynamic range, especially in the context of the loudness war.

Scheps's mix measures -10.4 LUFS, while the "hottest" mixes are closer to the clipping threshold of zero decibels in a digital system: Middleton (-7.6), Otero (-7.5), and Odeholm (-5.6).[40] Hot mixes like Odeholm's involve hyper-compression, which cannot be undone later, even if the volume is lowered. The more a producer applies dynamic range reduction – compression, limiting, and clipping – the more the short-term peaks (or transients – the brief, initial bursts of sound that give an instrument its attack) are removed from the signal. This means there is potentially less "punch," a descriptive term for a desirable signal envelope that emphasizes the attack and decay phases,[41] and less timbral individuality.[42] The more one compresses and distorts, the more sounds become uniform. Herein lies a trade-off: producers can sacrifice some punch to gain an impression of proximity, or "in-your-face" closeness, desirable in metal, resulting from the signal's brightness created by distortion.

A glance at the waveform diagrams in Figure 3 reveals differences in dynamic range between the mixes. The light blue portion of the signal represents perceived and average loudness, while the dark blue represents the signal's short-term peaks or brief transients such as percussive sounds. Comparing Scheps's signal with Odeholm's, we note that the light blue portion appears fairly similar. In fact, all the producers show similar amounts of light blue, which indicates that the perceived loudness is generally uniform. All the sound clips have been normalized to -10.4 LUFS. However, when comparing Scheps's and Odeholm's dark blue portions, stark differences in their levels of dynamic variation and clipping (i.e., the effects of high audio compression that lead to distortion) become apparent. Scheps's signal exhibits a series of spikes reflective of widely varying dynamic levels. During interviews, he stated his dislike for using compression altogether. Conversely, Odeholm's signal is the epitome of what producers affectionately call a "sausage": a signal that severely clips those spikes (i.e., turning a round waveform into a squared one), ensuring a constant dynamic level throughout (Audio Example 2.1). In his interviews, Odeholm spoke about his heavy use of compression and especially distortion to achieve sonic weight and density, intentionally removing transients. Consequently, the dynamic range in Odeholm's mix is very limited. It never reaches a dynamic range of 10 dB, whereas Scheps's mix achieves this dynamic range approximately 40% of the time (Audio Example 2.2). This stark contrast in dynamic range treatment exemplifies the fundamental philosophical difference between old-school and new-school approaches: preserving natural dynamics versus creating a hyper-controlled, maximized sound. Odeholm's squashed dynamic range (5 dB) is more typical of EDM (3–6 dB) while Scheps's 9 dB falls within a rock standard (8–10 dB) (Antares 2024). So the mixes differ in dynamic

40 Digital systems operate under the 0 dB (full scale) threshold. Anything above clips the audio signal.

41 Fenton/Lee 2019.

42 Herbst 2016, 120–134.

range but not in loudness following normalization. Yet even when LUFS units are equalized, brightness differences can make a mix seem louder or "hotter." By increasing brightness via distortion, producers can gain a competitive edge.

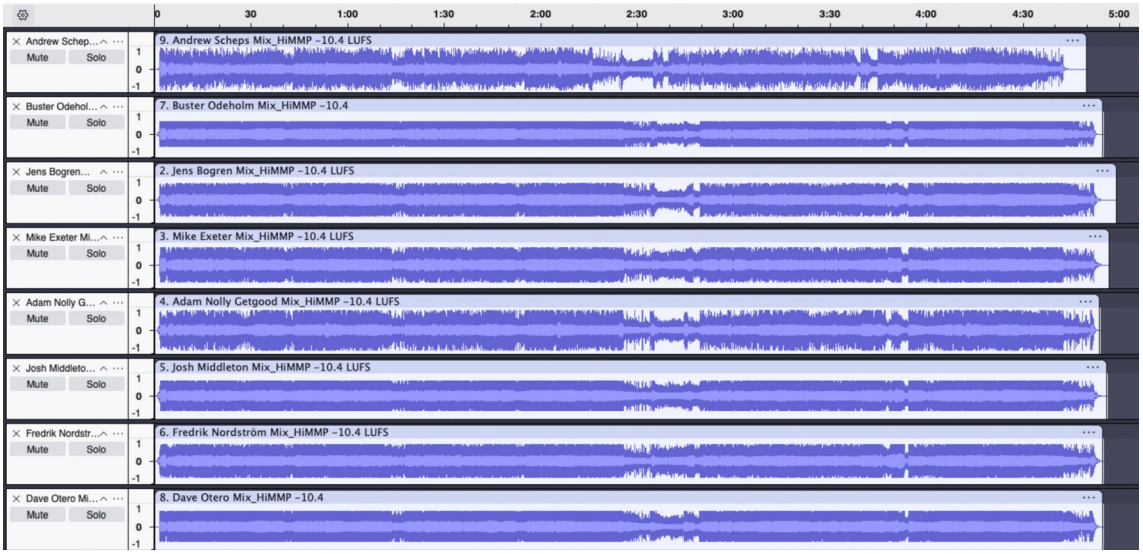

Figure 3: Waveforms of the final mixes of "In Solitude." Light blue is average loudness, dark blue represents peaks (created with Audacity)

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio02_1.mp3

Audio Example 2.1: Pre-chorus, Odeholm's mix of "In Solitude"

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio02_2.mp3

Audio Example 2.2: Pre-chorus, Scheps's mix of "In Solitude"

Loudness is not a priority for everyone. One group in the HiMMP sample can be defined by their relative prioritization of dynamic liveness rather than uniform loudness. Exeter and Scheps, while differing in individual ways, both make production choices that retain a sense of fidelity to a live sound. Scheps avoids compression, drum samples, and triggers (devices that electronically capture and enhance drum hits), whereas Exeter uses these techniques to enhance production as long as they result in a believable live performance. By contrast, another group of producers, including Odeholm, Middleton, Getgood, and Otero, shows the opposite tendency. They freely embrace digital alterations to create a hyperreal impression of intensity beyond what is achievable in a live studio performance alone. Odeholm goes as far as stating,

> I'm over the sound of a band – a guitar, bass, drums, vocals. That's boring. I want to maximize everything to make it sound new, or make it sound different, or make it compete with electronic styles that have that full frequency range. Sounds huge, and I want the band sound to be that huge as well.[43]

43 Information on the respective time and place of the interviews conducted as part of the "Heaviness in Metal Music Production" (HiMMP) research project can be found in the data section after the discography.

A hyperreal approach, such as Odeholm's, relies on "sonic cartoons,"[44] an approach that enhances and refocuses the musical qualities in a production, going beyond the conventional sense of high-fidelity. It moves away from representing musical performance towards its own ideal, where the carefully crafted production aesthetic becomes the autographic original. Live performance is no longer a primary consideration, as demonstrated by Odeholm and his band, Humanity's Last Breath, who recreate the album sound live using elaborate technological means. This includes using instrument tones taken directly from the record, automatically synchronized to the click track, plus an extensive playback of additional layers and effects.

In between these tendencies of live-fidelity and hyperreality is a group of compromises represented by Nordström and Bogren. Nordström (b. 1967) belongs to the same generation as Scheps (b. 1969) and Exeter (b. 1967) but has collaborated with contemporary bands such as Dimmu Borgir, Bring Me the Horizon, and Architects. His peers, Scheps and Exeter, are especially known for their work with older heavy metal bands such as Metallica (Scheps), Judas Priest (Exeter), and Black Sabbath (both). Exeter, in particular, developed an analog, live sound during a period when critics and fans used hard rock and heavy metal interchangeably.[45] Prior work with bands appears to impact a producer's approach and mindset significantly, particularly with influential bands. Referring to Black Sabbath's vocalist Ozzy Osbourne, Scheps noted:

> When you're working with a band like Metallica or Black Sabbath, obviously, the history has to be part of how you mix. You're not going to *not* put a delay on Ozzy's vocal; he's never *not* had a delay. So, you have to do that. Finding the right delay for his vocal was a big part of those mixes, to the point where it actually made me think about slap delay more. And so now, slap delay is a big part of what I do with vocals in general. […] So those bands have history in the sound.

Therefore, based on the clients of each producer, it makes sense that there are old-school, new-school, and in-between groups. These groups correlate roughly with age, although, as will become evident, the relationship is not clear-cut.

Bogren (b. 1979) approaches the age group of the hyperreal HiMMP producers, Otero (b. 1981), Middleton (b. 1985), Getgood (b. 1987), and Odeholm (b. 1992), but differs in his simultaneous interest in digital production enhancement and his ideal of human performance expression. In interviews, Bogren stated that technology can enhance musical expression, but he requires it to have a clear purpose. He seeks a balance between what he believes is best for the music, what the artist requests, what the record company expects, and what fans want.[46] While such a balance might sound reasonable for anyone, producers cater to different clients and audiences depending on subgenre. Furthermore, Bogren's mediating position between old-school and new-school approaches serves as a helpful reminder that these oppositions represent endpoints on a flexible continuum rather than discrete, mutually exclusive classifications.

44 Zagorski-Thomas 2014, 49–69.

45 Brackett 2014, 291.

46 Herbst/Bauerfeind 2021.

4. Virtual Space

In addition to loudness, these schools differ in how they shape virtual listening space. Moore models such differences with the "sound-box,"[47] a three-dimensional space that translates subjective aural impressions of spatialization into imagined physical locations of width, depth, and height (Figure 4). Width refers to the lateral spread of sound, depth to the perception of distance, and height to the placement of sounds in terms of high and low pitch. Within this section, we will explore these dimensions in detail sequentially. As an entry point, we first introduce a two-dimensional visualization tool for analysis, the soundstage.

The soundstage follows Moylan's concept of the "perceived performance environment," which captures the measurable spatial attributes of the mix.[48] The resulting spatial representation maps psychoacoustic cues that create spatial impressions, regardless of whether listeners consciously interpret them as instruments on a physical stage. Listeners may also engage with the mix more abstractly, a possibility reinforced by the mixing ideal of the "meta-instrument," discussed later in our section on high/low-frequency treatment, or height. Whether listeners visualize the traditional stage suggested by Moylan's model or experience abstract spatial impressions, our framework accommodates diverse ways in which metal listeners construct meaning from the mix.

Figure 5 visualizes sound distribution in Scheps's mix of the first chorus (Audio Example 3.1) using Moylan's two-dimensional soundstage in relation to a listener.[49] When listening to Scheps's production, one strains to hear the vocal harmonies as if emanating from the very back of a live stage. Accordingly, Figure 5 positions them at the back of the stage, using dotted lines to indicate that one may not detect them at all. By contrast, the bass guitar figures prominently near the front, along with a similarly salient snare drum and lead vocals. As one moves backward, other instruments in Scheps's mix draw more from the width effects of panning and so appear towards the sides (guitars, synth pads) or across the stage (toms). The kick is unusually subdued in the mix – a striking contrast with Odeholm (Audio Example 3.2), as we will see (Figure 6) – much like the cymbals. For those, we use arrows spanning the width of the stage to indicate that various cymbals are placed far back in the mix.

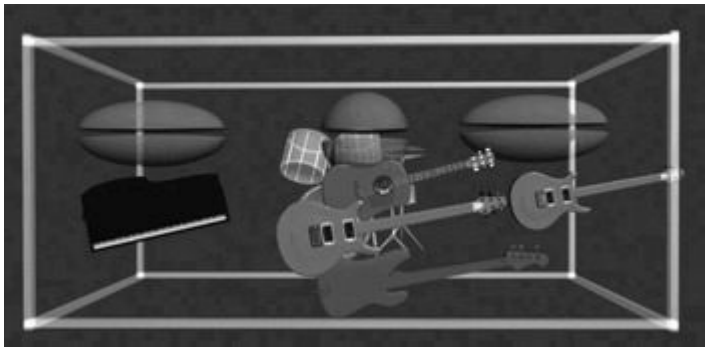

Figure 4: Moore's sound-box, reproduced from Dockwray and Moore[50]

47 Moore 2001, 120–126.

48 Moylan's framework, developed into a textbook from his extensive professional practice as an audio engineer, offers a practical, experience-based model for understanding how spatial cues, such as panning, reverberation, and frequency balance, contribute to listeners' perceptions of a recording's structure. His approach is particularly valuable for analyzing metal production because it acknowledges both natural acoustic phenomena and the intentional manipulation of these phenomena to create specific aesthetic effects.

49 Moylan 2002, 49–54.

50 Dockwray/Moore 2010, 193.

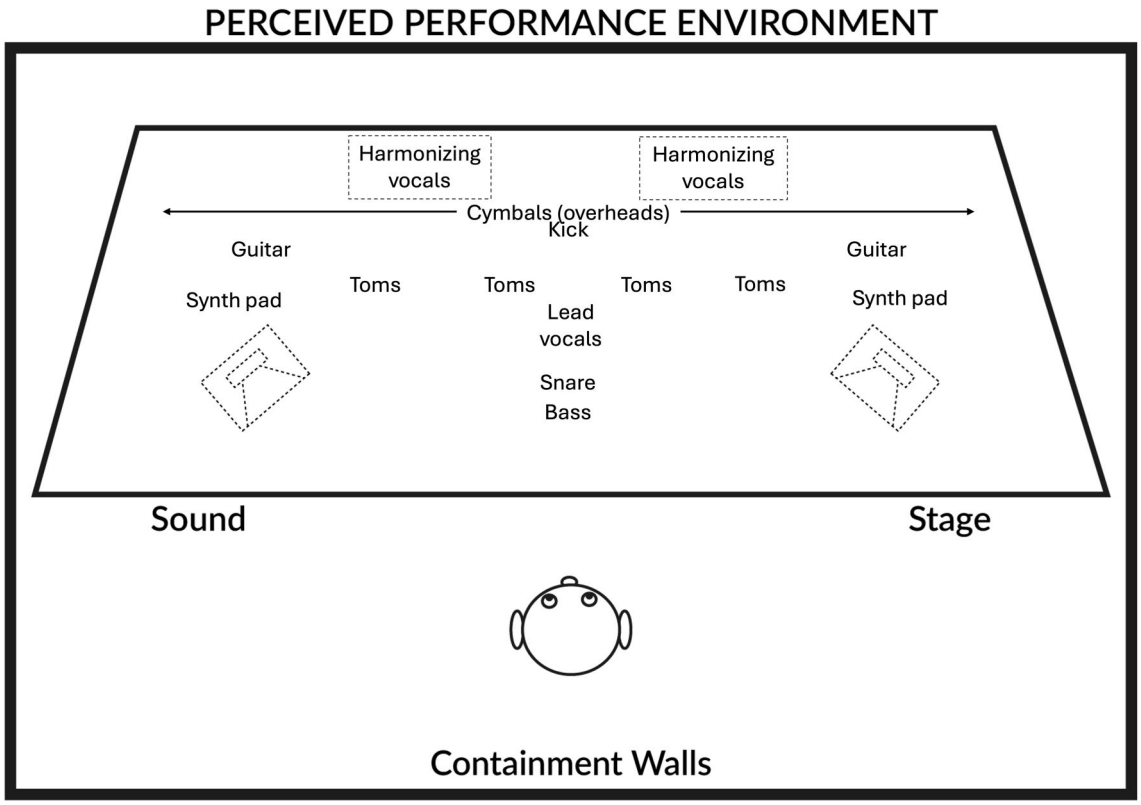

Figure 5: A spatial representation of sound distribution in Scheps's mix of "In Solitude," modeled after Moylan.[51] It shows the width and depth dimensions; height is not displayed.

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio03_1.mp3

Audio Example 3.1: Chorus, Scheps's mix of "In Solitude"

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio03_2.mp3

Audio Example 3.2: Chorus, Odeholm's mix of "In Solitude"

Regardless of the extent to which producers prioritize realism and live fidelity, the soundstage is relevant to all recorded music, as it usefully maps listener intuitions around spatial sources and their boundaries. These spatial relationships influence not just aesthetic impressions but also how listeners parse individual elements within a mix, determining which sounds are foregrounded, which blend together, and how these relationships shift throughout a song. Such considerations indicate how the soundstage serves as a model for analytical listening. It is a practical tool for interpreting how spatial cues in a mix correspond to listeners' intuitive experiences of sound placement and separation, insights that are particularly valuable in understanding the aesthetics of metal production.

Depth: Loudness, Brightness, and Spatial Cues

Technically and perceptually, an impression of *depth* is determined by three primary variables: loudness, brightness, and spatial cues. These three dimensions work together to create the listener's perception of distance and proximity in a recording, with each dimension offering producers different tools for spatial manipulation. The most important factor is vo-

51 Moylan 2002, 50.

lume, as we encountered above with the quiet backing vocals at the back of Scheps's stage. Secondary considerations include brightness and the spatial cues of reverb and delay.

The relationship between physical depth and acoustic brightness is environmentally learned.[52] Brightness, which music psychologists have shown to correlate with a high spectral centroid (i.e., a high average frequency within the spectrum),[53] creates a sense of directness and proximity based on learned ecological perceptions of how sound details change over distance.[54] Distant sounds exhibit a pattern whereby high-frequency sounds dissipate more than low sounds because their shorter wavelength cycles encounter more friction in the air. Whispers, for instance, cannot carry well over long distances, as one can imagine. Sibilants, the high-frequency sounds in "s" consonants, behave similarly, making them a tool for producers to create an impression of closeness. They enable Odeholm's previously cited goal to "maximize every detail on every level" partially by reinserting hyperreal amounts of high-frequency detail that would ordinarily be lost in an acoustic setting.

The in-your-face proximity that Odeholm seeks can be dramatically enhanced by not just raising brightness through equalization but also through the more drastic route of distortion. An equalizer raises brightness by selectively boosting the volume of individual frequency bands. Conversely, distortion boosts the volume across the entire frequency spectrum, resulting in a more complex timbre due to its enrichment of the signal with harmonic overtones.[55] By increasing harmonic content uniformly, distortion especially accentuates middle- and higher-frequency overtones, effectively brightening the sound more holistically than the targeted boosts of an equalizer. Rather than the localized brightness achieved through equalization, distortion creates a holistic rise in brightness and an overall saturated sound. This technique exemplifies how producers can exploit psychoacoustic principles to manipulate depth perception; in Odeholm's case, bringing sounds unnaturally close to create a hyperreal sensation of immediacy.

Odeholm heavily runs all audio signals through multiple distortion processors (e.g., saturation, overdrive, clipping), including the vocals. His guitars are extremely bright, and the kick and snare provide an impression of hyperreal closeness, as shown in Figure 6 (Audio Example 3.2). The closeness of central instruments and vocals in Odeholm's mix differs noticeably from Scheps's mix, as previously illustrated (Figure 5) (Audio Example 3.1). But however much one might link this use of distortion with new-school production centered around hyperreality, Scheps and Exeter also employ distortion towards different ends. Scheps, in particular, uses distortion to maintain transients and punch qualities (i.e., bursts of dynamic power or weight).[56] He does not like the sound of compression, which would reduce transients, and instead uses "parallel distortion," a technique of blending a distorted copy of the signal with the unprocessed signal. One could argue that this is a way of foregrounding live authenticity. A live engineer endeavors to preserve the idea of a band and enhance it (e.g., through punch). By contrast, Odeholm views production as autographic art; in his live performance, he strives to replicate the studio sound by incorporating many of the same sonic elements used on the record.

52 See Zagorski-Thomas 2014, 7–14; Walther-Hansen 2020.

53 Schubert/Wolfe 2006.

54 Moylan 2002, 185–188.

55 Herbst 2016, 120–134.

56 See Fenton/Lee 2019 and Herbst/Mynett 2022a, 22.

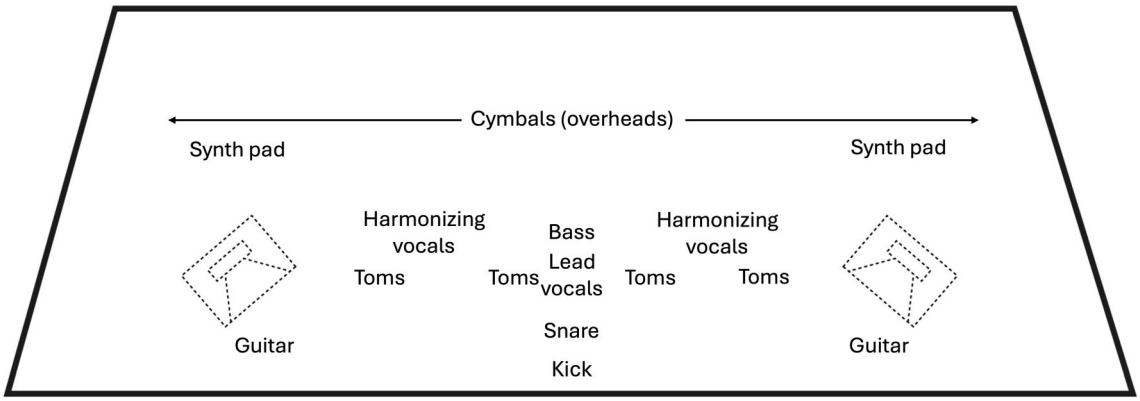

Figure 6: A spatial representation of Odeholm's mix of "In Solitude"

Other important components in controlling depth are time-based effects such as reverb and delay, which create a sense of space and locate instruments within the soundstage relative to each other and to the listener's position. Zagorski-Thomas introduced the concept of "functional staging," which refers to staging instruments and vocals based on ideal performance and listening situations.[57] Concerning rock music, Zagorski-Thomas argued that higher frequencies use audible reverb and delay to create a sense of being in a stadium or other large venue. By contrast, bass frequencies and instruments are often intentionally mixed "dry" because reverb and delay can detract from their intended function of providing clear rhythmic cues and low-end punch.[58] It is important to note that this selective treatment of frequencies – boosting reverb on high frequencies while minimizing it on low frequencies – is a basic mixing convention used across genres to avoid phase issues and muddiness. In metal, however, this practice is not merely technical but also contributes to aesthetic goals, exaggerating spatial cues in a larger-than-life manner. Functional staging is another example of "sonic cartoons" where beneficial aspects of sound are exaggerated while others are attenuated for musical and/or social reasons.

Compared to rock music, metal production tends to take this approach one step further. In metal, most instruments are kept completely dry to ensure maximum closeness and impact.[59] We have already pointed out how Odeholm keeps each instrument at the front of the soundstage or even manipulates sound to appear as if jumping out of the speakers, afforded by maximum loudness, extremely bright (distorted) sounds, and a complete lack of reverb.[60] There is a certain brutality to this "sledgehammer" aesthetic that forcefully closes the *stage-to-listener distance*, Moylan's term for "the distance between the grouped sources that make up the soundstage and the perceived position of the audience/listener."[61] According to Moylan, the stage-to-listener distance not only "establishes the front edge of the stage with respect to the listener" but also "determines the level of intimacy of the music/recording."[62] This kind of proximity may be familiar in the context of emotionally sensual performances – crooning, jazz combos, heartfelt ballads, or folk songs. But notions of proximity also apply within this

57 Zagorski-Thomas 2010, 252 and *passim*.

58 Ibid., 257.

59 Mynett 2017, 65.

60 Herbst 2014, 79–88.

61 Moylan 2002, 52.

62 Ibid.

more violent aesthetic where Odeholm is driven to impress upon the listener power and immensity. Hyperreal mixes that seem to leap out at the listener can be found among several new-school producers, albeit to a lesser extent than Odeholm.

Regarding proximity, both generally speaking and between instruments/vocals within the soundstage, different production schools vary in their treatment of a perceptual quality that audio engineers call cohesion. This quality refers to a particular impression of consistency around real or imagined sound sources, best explained through an example. For instance, drum sounds within a mix may or may not seem as though they originate from a single kit as one finds in a live acoustic environment. Indeed, drum sounds are particularly prone to fragmentation when they are recorded with individual spot microphones or when they are enhanced or replaced by samples. A mix engineer might strive for a cohesive mix by treating the drum parts in such a way that they consistently resemble a unified kit. Conversely, they might treat the component sounds independently to arrive at a more abstract or diffuse set of percussive sounds. In this way, the descriptor "cohesive" need not imply a preferential value judgment, and not all mixes strive for this kind of cohesion. While one might expect the groups of new- and old-school producers to fall neatly into two camps regarding cohesion, our examination of their drum treatments reveals that they did not all approach cohesion in predictable ways.

Within the old-school paradigm, one might assume that cohesion would be particularly valued. In a real acoustic setting, which old-school producers generally attempt to reproduce, the cymbals would be relatively balanced or possibly even louder than the other drums (i.e., toms, kick, and snare). Older rock records, such as AC/DC's "Back in Black,"[63] contain relatively loud cymbals because they naturally sound louder in a live environment. Likewise, within the new-school paradigm, one might assume that producers would eschew drum-kit cohesion for the exaggerated, independent treatments that result in hyperreal proximity. One might expect their hyperreal approach to focus on high-impact drums like the snare and kick while attenuating the cymbals, as they easily sound abrasive when heavily processed and distorted.[64]

However, our analysis reveals that the relationship between production approach and cohesion is more complex than a simple old- /new-school dichotomy would suggest. Mixes of some new-school producers, such as Middleton's (Figure 7) (Audio Example 3.3), do indeed favor separation over cohesion. While his kick drum and, to some extent, his snare are very present and upfront in the mix, the rest of the drum kit – toms and cymbals – sound as if they come from next door. Yet, this is hardly different in Scheps's mix, where the snare drum dominates, the kick is barely audible and back in the mix (although one could argue that this is how a kick would sound live without amplification), and the toms appear as though they originate from another room. Exeter's (Figure 8) (Audio Example 3.4) mix similarly emphasizes independence between drum components over cohesion: very loud kick, quiet snare, almost inaudible cymbals, and loud bass, with its low-end emphasized, separated from the mid-frequency focused guitars. In our opinion, the most internally cohesive drum mix is that of Bogren (Figure 9) (Audio Example 3.5). He achieves the balancing act of making the drums sound cohesive as an instrument, with effective shells and audible cymbals within a realistic room. The mix features distinct but not isolated-sounding drums, bass, guitars, and vocals while simultaneously obtaining an effective wall of sound with a balance of sonic weight and

63 AC/DC 1980.

64 Herbst/Mynett 2021, 639.

clarity. It is a contemporary metal mix that showcases and enhances the musical composition and recorded performances without veering into the hyperreal; at the same time, the mix can be perceived as a believable performance within the conventions of rock and metal.

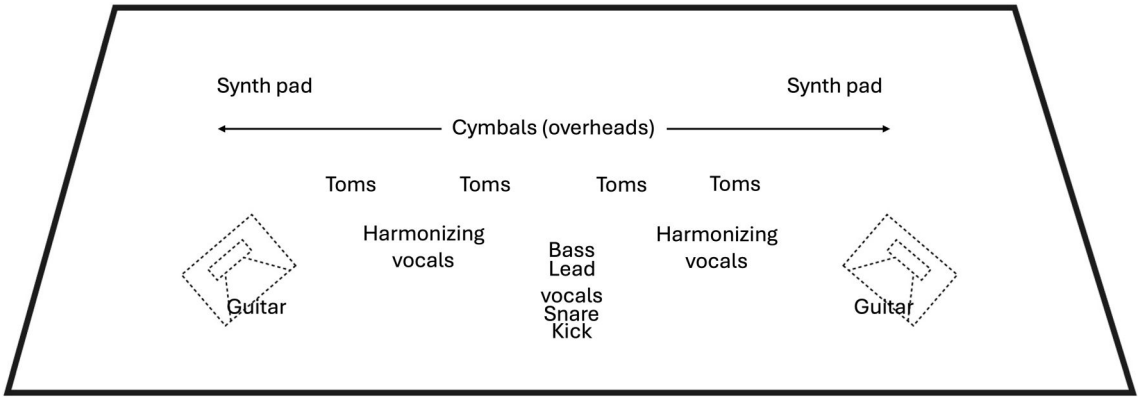

Figure 7: A spatial representation of Middleton's mix of "In Solitude"

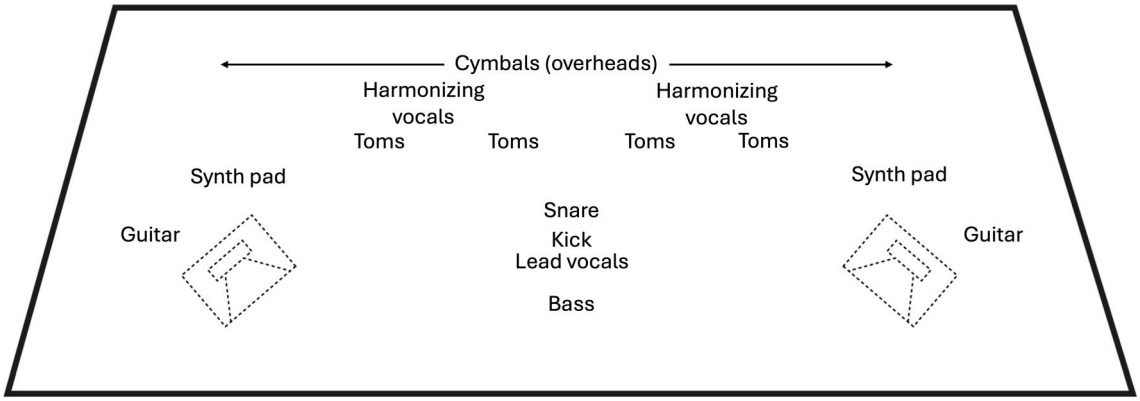

Figure 8: A spatial representation of Exeter's mix of "In Solitude"

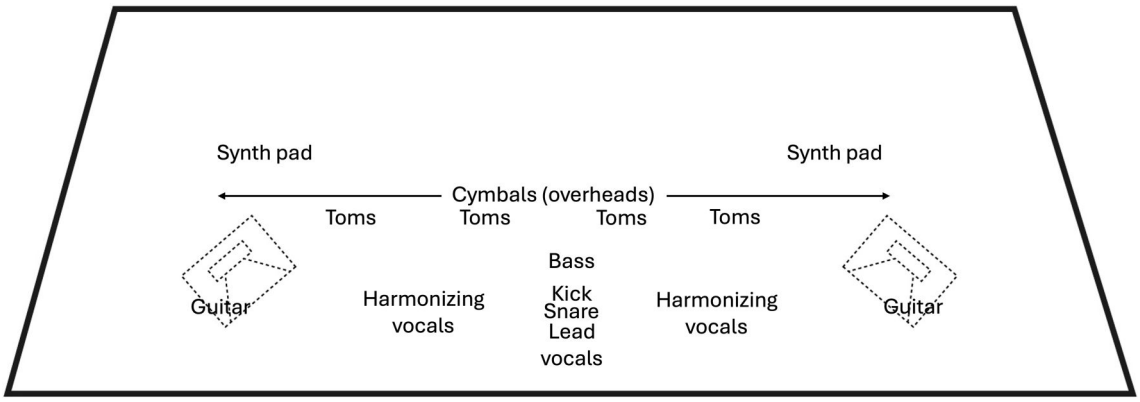

Figure 9: A spatial representation of Bogren's mix of "In Solitude"

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Audio Example 3.3: Chorus, Middleton's mix of "In Solitude"

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio03_4.mp3

Audio Example 3.4: Chorus, Exeter's mix of "In Solitude"

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio03_5.mp3

Audio Example 3.5: Chorus, Bogren's mix of "In Solitude"

Width: Panning and Stereo Impressions

Width is equally as important as depth for two reasons.[65] Firstly, a wide stereo impression facilitates the larger-than-life wall of sound desired in most metal genres. One way to achieve a wide impression is by using two slightly different versions of the same instrument or part – one panned to the left and the other to the right – whereas a narrow impression results when both versions are centered equally. However, panning is not the only way to achieve an impression of width. In addition to the horizontal separation of sound sources, producers can generate width by distributing frequency differently across channels and across the stereo image generated by time-based effects. Collectively, these factors combine to enhance perceptual wideness. And the wider the sound, the more it enhances impressions of size,[66] thus contributing to "heaviness," one of metal music's defining ideals.[67]

Secondly, width can supplement depth, augmenting impressions of proximity. For example, imagine listening to a band play live while standing close to the stage: the speakers are spread left and right, conveying great width (Audio Example 4.1).[68] If you stood further back, that impression would narrow, as the speakers would seem closer together (Audio Example 4.2).[69] A similar effect can be achieved digitally. Panning or psychoacoustic processors can alter width, modifying the entire stereo field as if a listener were moving across a fixed arrangement of sound sources.[70] Figure 10 illustrates this effect by comparing two opposite width configurations of a Waves S1 Stereo Imager plugin. As Figure 10 shows, narrowing the depth makes a listener experience a more distanced clustering of sound sources, while increasing the depth has the effect of spreading them as though they were heard up close. In this way, width is closely linked to perceptual proximity, which producers can manipulate through panning.

Unsurprisingly, most HiMMP producers panned all guitars fully wide, maximizing the overall width. Although drum-overhead microphones, capturing cymbals and the entire drum kit, are sometimes panned slightly more narrowly, the producers panned them fully wide as well, possibly to reinforce the boundaries of the soundstage and maximize width.

65 While headphones, stereo speakers, and other spatial audio configurations afford different spatial perceptions, our discussion applies equally to each mode of listening. For a comparison of headphones and stereo speakers, see Herbst 2014, 79–88.

66 Herbst 2014, 86–87.

67 Herbst/Mynett 2022a, 19–21.

68 Herbst 2014, 86–88.

69 Of course, not all listeners imagine this kind of live staging while listening. Nevertheless, this thought experiment well illustrates the relationship between width and perception of distance.

70 While the perceptual effects of width, such as an enhanced sense of size from increased lateral separation, are grounded in psychoacoustic principles, some aspects of width in recorded music also stem from the working habits of producers held over from older format limitations or practices of consumption. For instance, some producers elected not to use stereo widening out of historical concerns with the mono compatibility of radio. Such retentions from older cultural practices can lead to panning decisions that are not sufficiently explained by cognitive thresholds and preferences. Regardless of the degree to which psychoacoustic principles or residual habits underlie producer decisions, reducing width makes sound feel less directional and diminishes the distinct spatial placement of instruments and vocals.

Figure 10: Close proximity with wide panning (left), far distance with narrow panning (right) (Waves S1 Stereo Imager plugin)

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio04_1.mp3

Audio Example 4.1: Reference mix of "In Solitude" widened by 200%; Lead-in and Verse

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio04_2.mp3

Audio Example 4.2: Reference mix of "In Solitude" narrowed to 25%; Lead-in and Verse

Some producers employed more advanced techniques than the panning methods discussed above to enhance width and manipulate spatial perception. For instance, Bogren (Figure 9) (Audio Example 3.5) and Getgood (not diagrammed) utilized psychoacoustic stereo processing, such as the Waves S1 Imager (shown in Figure 10), to expand the guitars beyond the maximum width permitted by the loudspeaker configuration, ensuring they do not occupy the same space as the drum-overhead microphones. In other words, the drum overheads are positioned at the edges of the regular soundstage, while the stereo-widened guitars expand the soundstage even further to enhance size and proximity. This approach to extended stereo width exemplifies how newer production techniques can create perceptual spatial dimensions that exceed physical limitations, a hallmark of hyperreal production aesthetics. Nordström (Audio Example 3.6) and Middleton widened the mix differently by slightly narrowing two of the four available rhythm guitars, stating that the brighter pair should be wider. This axiom makes sense insofar as higher or brighter sounds can be directionally located more easily than lower sound sources – a subwoofer, by counterexample, can be positioned anywhere in a room without affecting the loudspeaker system's spatialization. In Nordström and Middleton's mixes, the brighter guitars, which are more perceptually linked to location, are deliberately spread across the soundstage, while the darker guitars are only panned at 80%. The total arrangement is a V-shape mix, a production term derived from the symmetry of the resulting left and right panning settings (Figure 11). As the color highlights in Figure 11 show, this arrangement takes different frequency bandwidths and pans them increasingly as they get higher. Lower instruments like kick and bass are placed in the stereo center, while higher instruments are increasingly positioned to the side.

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio03_5.mp3

Audio Example 3.5: Chorus, Bogren's mix of "In Solitude"

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Audio Example 3.6: Chorus, Nordström's mix of "In Solitude"

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio03_7.mp3

Audio Example 3.7: Chorus, Scheps's mix of "In Solitude"

Figure 11: V-shape panning settings of Bogren's guitar signal with each increasing frequency band panned further to the sides (Waves S1 Stereo Imager and ADPTR Audio Metric AB, professional stereo imaging plugins)

Yet another strategy to increase width is to assign different timbres (e.g., guitar tones) to the left and right speakers. Perhaps surprisingly, no producers chose this strategy. However, Exeter (Audio Example 3.4) and Scheps (Audio Example 3.7) achieved a similar effect using different EQ settings for the left and right guitar channels. Interviews did not reveal whether this decision was motivated by a greater sense of width or whether it reflects an older production approach centered on live fidelity – traditional heavy metal bands typically have different guitar tones on both sides, which correspond to the preferred tone of each guitarist.[71] This dual-guitar panning approach is less common in recorded metal of the last decade as aesthetic priorities shift towards rhythmic precision.[72] The challenges of achieving tight synchronization between guitars encourage all rhythm guitar parts to be recorded by a single player, making tonal distinctions between separate guitar channels somewhat less individual and intuitive.

A visualization of the guitar sub-mix's stereo field in Figure 12 displays the effects of the chosen approaches at a singular slice of time. In the figure, frequency is indicated on the vertical axis with higher frequencies above. The horizontal axis indicates stereo position, with the guitar signal shown in two ways: a dark orange cloud indicates a range of how widely the signal is distributed across the stereo width within a temporal window of

71 Mynett 2017, 137–138.

72 Mynett 2019, 299–301.

one second; the bright orange line shows an averaging of the same signal distribution on a much shorter timescale of milliseconds. We annotated the visualization with a bright yellow line to indicate the degree to which the energy distribution of the guitar signals is skewed to one side or symmetrical. Exeter's (Audio Example 5.1) and Scheps's (Audio Example 5.2) guitars, shown at the top of Figure 12, are asymmetrical: the greater brightness on one channel shifts the balance towards the left and right speakers, respectively. This is not the case with Getgood's (Audio Example 5.3) and Middleton's (Audio Example 5.4) guitar mixes, shown at the bottom. These producers selected the same guitar tones on the left and right channels, resulting in an initially narrower spatial impression. Getgood and Middleton then overcame this limitation using psychoacoustic widening to create a wider, yet still symmetrical image. By contrast, Exeter and Scheps create a very wide studio image by assigning different EQ treatments to each guitar channel, indicating that an old-school approach can achieve an impression of width similar to the hyperreal aesthetics of new-school productions.[73]

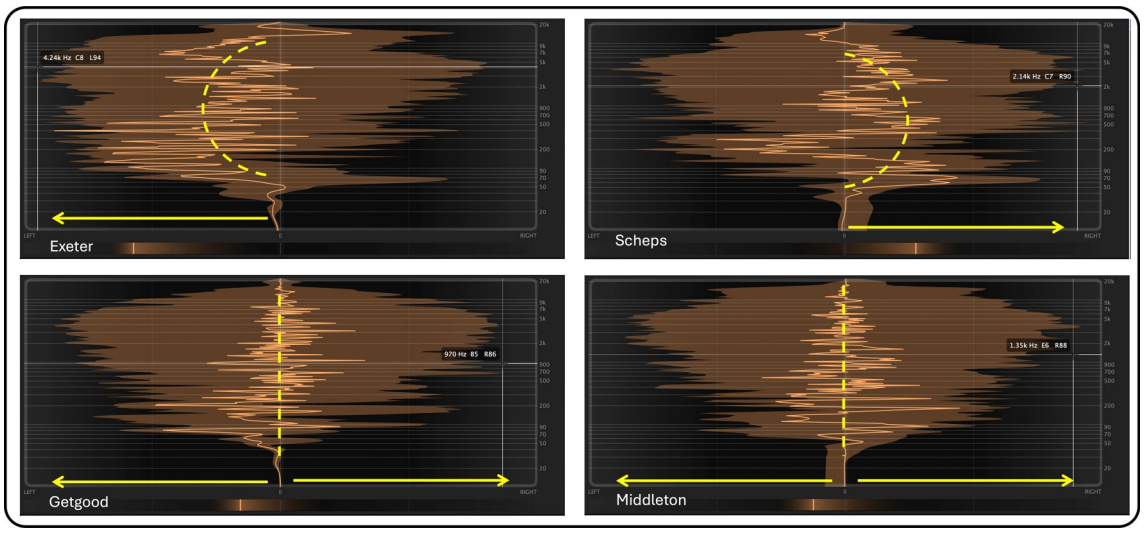

Figure 12: A comparison of panning symmetries (created with ADPTR Audio Metric AB). The dotted lines show overall trends.

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Audio Example 5.1: Chorus guitars, Exeter's mix of "In Solitude"

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Audio Example 5.2: Chorus guitars, Scheps's mix of "In Solitude"

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Audio Example 5.3: Chorus guitars, Getgood's mix of "In Solitude"

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio05_4.mp3

Audio Example 5.4: Chorus guitars, Middleton's mix of "In Solitude"

73 It is worth noting that many producers applied stereo widening on the master bus (i.e., the stereo track that sums together all other tracks for audio exportation to the speakers), affecting the entire mix. Accordingly, widening occurs not only on the guitars directly but also indirectly.

Earlier, we explained the V-shape mix arrangement (Figure 11), which typically achieves maximum width by widening the higher frequencies. For lower frequencies, many of the producers (Middleton, Exeter, Getgood, and Nordström) use purely, or mostly, mono bass signals across the frequency spectrum. Middleton's bass guitar, for instance, is entirely mono (Audio Example 6.1). To see this, compare the images of Figures 13 and 14, which show the bass guitar signal using blue clouds overlayed on the orange guitar clouds. Unlike the productions in Figure 14, which generally involve visible, blue bass-clouds, Middleton's bass signal in Figure 13 is virtually a straight blue line in the very center. In Figure 14, Odeholm (Audio Example 6.2) and Bogren (Audio Example 6.3) show the greatest bass width, followed by Scheps (Audio Example 6.4) and Nordström (Audio Example 6.5) (whose bass only widens at the very top). Further below, in our discussion of the height dimension, we examine these differences in greater detail, particularly with the concept of a "meta-instrument."

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio06_1.mp3

Audio Example 6.1: Chorus guitar/bass overlay, Middleton's mix of "In Solitude"

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio06_2.mp3

Audio Example 6.2: Chorus guitar/bass overlay, Odeholm's mix of "In Solitude"

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio06_3.mp3

Audio Example 6.3: Chorus guitar/bass overlay, Bogren's mix of "In Solitude"

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio06_4.mp3

Audio Example 6.4: Chorus guitar/bass overlay, Scheps's mix of "In Solitude"

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio06_5.mp3

Audio Example 6.5: Chorus guitar/bass overlay, Nordström's mix of "In Solitude"

For now, we turn to how the stereo bass signal is generated. In Odeholm's production, the bass guitar began as a mono signal that he duplicated and slightly modified. Using a stereo amplifier cabinet ordinarily meant for guitars, Odeholm added a widened bass to his mono signal, creating a stereo bass sound. Comparing Odeholm's overlayed guitar and bass signals in Figure 14 reveals that the bass has almost the same stereo image as the guitars, only less distorted and less bright – features not visible in the figure but noticeable in Audio Example 6.2. Bogren employed a similar strategy, incorporating a chorus effect parallel to his main signal, which we detail below. Unexplained still are the stereo signals in Scheps's and Nordström's bass. Neither mentioned widening the bass, suggesting that algorithms within the audio processors are most likely responsible.

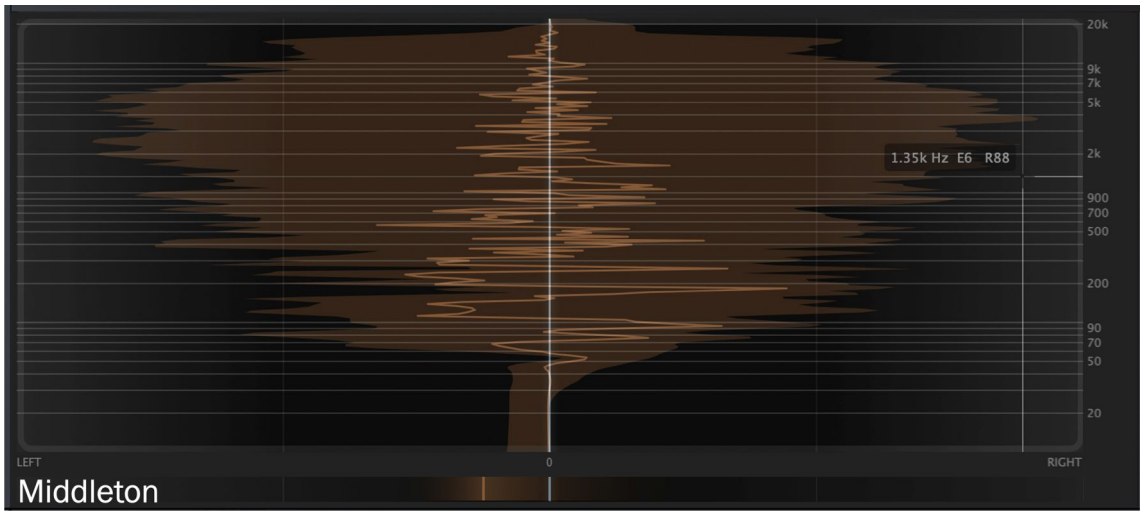

Figure 13: An overlay of guitar (orange) and bass (blue) panning symmetries, Middleton's mix of "In Solitude"

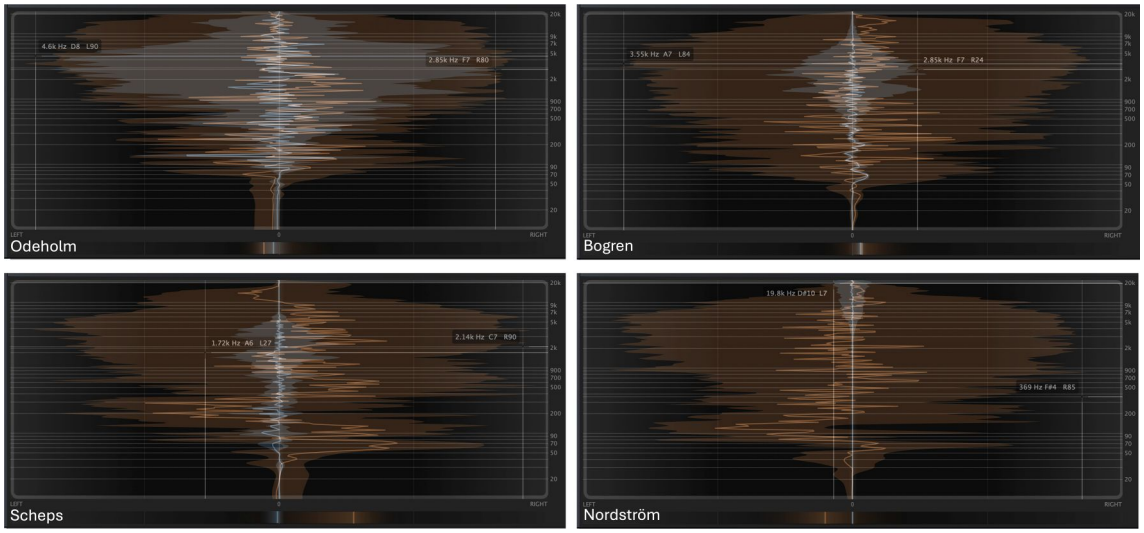

Figure 14: A comparison of guitar (orange) and bass (blue) panning symmetries

Height: High- and Low-Frequency Effects

Low-frequency components are essential for heaviness in metal, the metaphorical representation of immense sound source size and *gravitas*.[74] Since the mid-1990s, many metal bands have sought increased heaviness by downtuning their guitars or extending the low range by adding a seventh string or more. Specialized engineering treatments of the guitar sound, or kick drum, can enhance this effect. In such instances, a producer "rearranges" the expected order of frequency ranges for different instruments and sounds in a counterintuitive way, analogous to voice crossing in traditional score-based orchestration. Much like a composer might have a cello play higher than the accompanying second violins or write an alto part that crosses below the tenor, so too might a metal producer place the electric guitar lower than the bass guitar for a momentary special effect. This is especially true in subgenres like djent, which involve eight or more guitar strings extending one octave below a standard

74 Herbst/Mynett 2022a, 19–21.

electric guitar.[75] Rather than merely duplicating the bass, the extended electric guitar adds a unique timbre owing to its lighter gauge strings and different performance style.

This kind of "voice-crossing" treatment can occur in at least two ways: as described above, a songwriter could swap instruments or sound components; or an audio engineer could emphasize various frequency components in a fully written song. For instance, an engineer might emphasize the bass region of a guitar track and attenuate the lower end of an electric bass track.[76] The overall impression is akin to "voice-crossing," only now achieved through the frequency response of different audio signals from each instrument. While the first kind, relating to song arrangement, does not occur in "In Solitude," the second kind, relating to audio engineering, does.

As in other genres, metal requires clarity so listeners can detect individual instruments, but metal engineers operate in a particularly dense sound environment where many instruments overlap the same low-frequency bands,[77] resulting in significant frequency masking.[78] Frequency masking occurs when overlapping sound sources cause some frequencies to obscure others, making it difficult for each instrument to be heard distinctly. Producers cannot change a recorded performance, but they can alter the signal's frequency response in ways that shape how different elements are perceived – much like how placing a pillow, earplugs, earmuffs, or water in front of a listener's ear would selectively filter certain frequencies. In this way, producers control how the signal is mediated so that different components pass through without interference from others.

Additionally, the acoustics of an audio signal are more complex than may seem from real-time listening. Looking at loudness-normalized spectra of kick, bass, and guitar in Bogren's mix (Figure 15), the kick drum, although perceived as a single percussive sound, simultaneously combines a lower thud around 86Hz and an upper click around 3.6kHz, along with local spectral peaks and valleys in between. This affects the overall sound compared to the guitar and bass. When a pitched instrument plays a note, the composite sound contains a fundamental frequency (e.g., 440Hz, hence the designation A440) and a series of harmonic overtones that are multiples of that fundamental (880Hz, 1320Hz, 1760Hz, etc.). Producers can modify the signal by emphasizing or attenuating these different spectrum regions to customize their timbres and balance the density of different frequency regions.[79]

During the mid-2000s and earlier, the bass was often placed below the kick,[80] partly because the kick had a less pronounced low-end than would later be possible with more advanced drum triggering.[81] In this older practice, the bass provides most of the mix's

75 See Herbst/Vallejo 2023, 46–47.

76 Herbst/Mynett 2023, 11–13.

77 See Mynett 2017, 15–16.

78 Herbst/Mynett 2023, 11–14.

79 Because Figure 15 involves a single slice of time (the very beginning of the song), its appearance would change at other moments when the bass and guitars play other notes. To wit, the signal for the kick would appear the same but the fundamental frequency of the bass and guitar would change depending on their note selection at that time. Despite this variance, our overall argument about global frequency relationships between sound sources still applies.

80 Wanasek 2017.

81 Children of Bodom's *Hate Crew Deathroll* (2003) and Soilwork's *Stabbing the Drama* (2005) are examples of the lower-bass approach. Metallica's *Metallica* (1991), widely referred to as the Black Album, represents an early example of the lower-kick alternative. For a more recent instance, see Gojira's *Fortitude* (2021).

sonic weight. By contrast, Bogren's kick appears "scooped": in Figure 15, his kick has a strong component that peaks below the fundamental of the bass as well as another salient component in the high-end, 3–4kHz range.[82] Specifically, the kick drum's lower peak measures around 86Hz while the peaks of the guitars and bass overlap around 110Hz, matching their A2 pitch as notated in our transcription (Figure 16). This arrangement works well when the kick drums involve intricate rhythms with frequent rests rather than constant double-bass drumming. Otherwise, the double kick would overwhelm with unclear, booming hits. In addition to the advantage of achieving clarity within a dense sonic space, Bogren's mix (Audio Example 7.1) has more power and excitement this way, which is a likely reason why similar approaches are becoming more common in metal production.

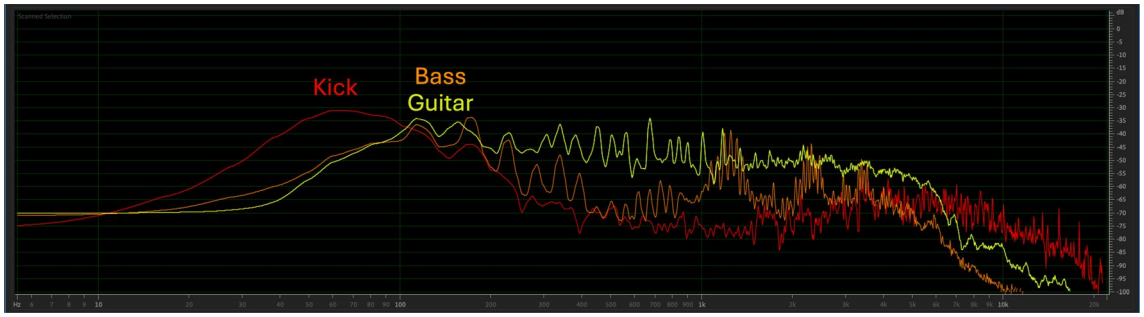

Figure 15: Kick, bass, guitar spectra, Bogren's mix of "In Solitude," loudness-normalized (created with Adobe Audition)

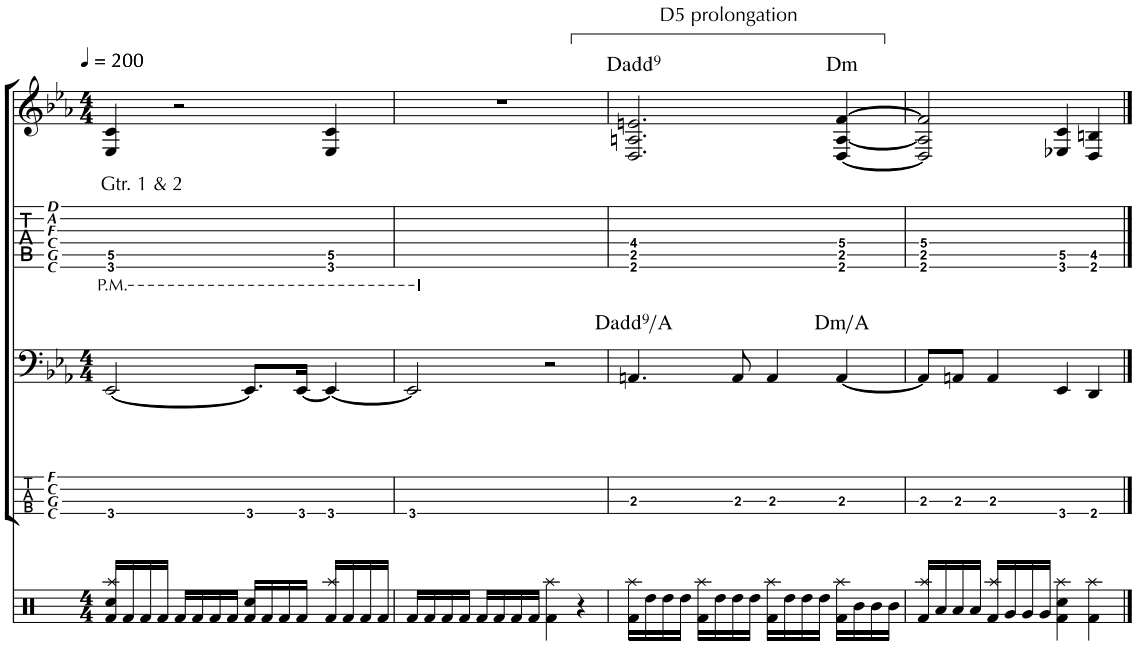

Figure 16: The first four bars of "In Solitude"

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio07_1.mp3

Audio Example 7.1: Lead-in and verse kick/bass/guitars, Bogren's mix of "In Solitude"

82 See Mynett 2017, 266.

Contrasting with Bogren, Odeholm (Audio Example 7.2) emphasized overlap between the kick and bass guitar, visible around the overlapping lowest peaks of the bass and kick in Figure 17. His primary concern was low-end impact, where the kick and bass, and to some extent guitars, reinforce each other. To maximize impact, Odeholm employed a phase interactions mixer (SoundRadix Pi), a device that automatically adjusts phase relationships between stereo signals.[83] While phase interactions mixers are usually employed to avoid unwanted signal cancelations, Odeholm used it to constantly adjust phase relationships between the low-frequency ranges of the kick, bass, and guitar. The resulting sound carries more impact than Bogren's lighter low-end, but it is less clear, with the kick and bass blurring together.

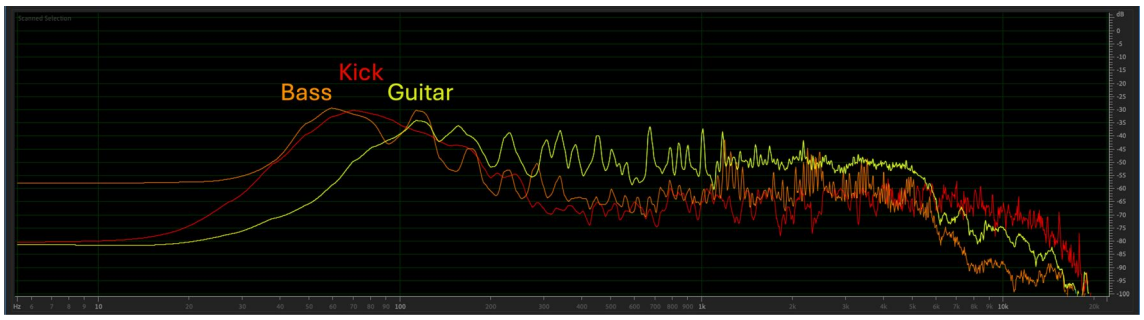

Figure 17: Kick, bass, guitar, spectra (Odeholm, loudness-normalized)

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio07_2.mp3

Audio Example 7.2: Lead-in and verse kick/bass/guitars, Odeholm's mix of "In Solitude"

Exeter adopted a third approach, bass below kick (Audio Example 7.3). In addition to using audio processors that shape frequency response (e.g., equalizers, overdrive), Exeter programmed a sub-bass synthesizer one octave below the bass and automated the track to turn it on or off in specific sections. As Figure 18 shows, the sub-bass synthesizer is active in most of the slower sections, including the breakdown, and disabled during faster sections with double-kick drums, such as parts of the chorus. Consequently, Exeter's spectrum looks different (Figure 19). Comparing the local maxima of the bass and kick (i.e., where the peak of the lowest "hill" occurs in Figure 19), the bass and kick overlap in frequency, but the local maximum of the bass is slightly below that of the kick. When listening, the effect is subtle, but low-end details differentiate subgenres and production styles within metal and are a priority for engineers.

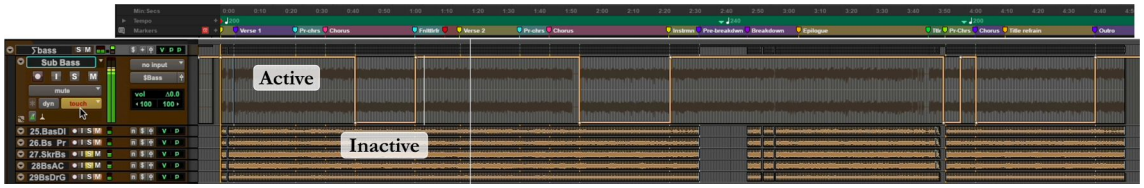

Figure 18: Automated sub-bass synthesizer in Exeter's mix of "In Solitude"

83 For an accessible explanation of phase correlation, the term for these kinds of stereo relationships, see Robjohns 2016. Phase interactions mixers are distinct from a dynamic EQ, which equalizes spectral imbalances by responding to loudness peaks or dips within defined frequency ranges.

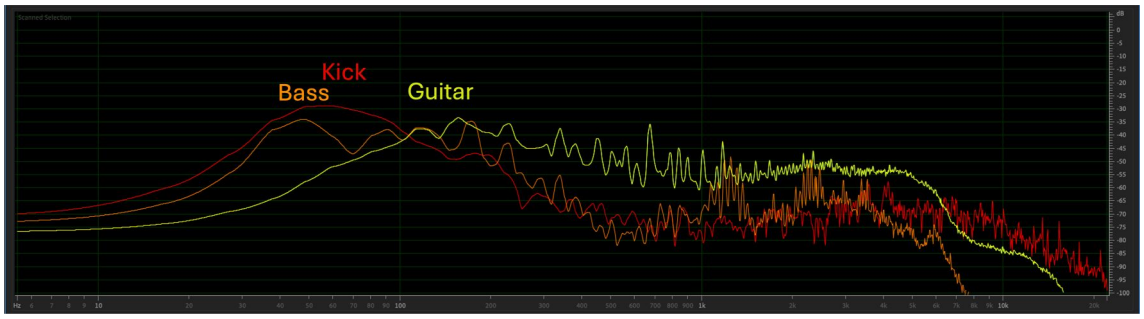

Figure 19: Kick, bass, guitar, spectra, Exeter's mix of "In Solitude," loudness-normalized

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio07_3.mp3

Audio Example 7.3: Lead-in and verse kick/bass/guitars, Exeter's mix of "In Solitude"

We can now revisit our previous discussion of stereo width in relation to guitar and bass. In the old-school, live-fidelity tradition, a clear separation between instruments is essential for individual musicians to shine through. In new-school hyperreality, however, the ideal seems to have shifted. Getgood's interview echoes Odeholm's notion of low-frequency impact:

> It's about all the things hitting at the same time and generating this oneness of the sound. So, talking about the bass, when you've got a distorted bass guitar, it really adds huge amounts of richness to that lower end. Combining with the guitars in this way makes it sound like one massive floor-to-ceiling sound, punctuated so that every attack is hit with a kick drum, and you've got this punch of the snare as well. It's like the sum of all those parts together gives me that sensation of a huge object, the heavy aspect.

Both Getgood and Odeholm allude to the idea of a "meta-instrument," where the guitar, bass, and possibly the kick and snare appear as one inhuman and larger-than-life entity with hyperreal size and impact.[84]

Odeholm exemplifies this new-school approach by blending instrumental sources in two ways: merging them in frequency space and overlapping them in stereo location, effectively dissolving traditional instrumental boundaries to create a unified sonic entity that transcends conventional band instrumentation. Comparing Figures 17 (Odeholm) and 19 (Exeter), Exeter's guitar is clearly distinct from his bass. While the guitar signal frequency contour remains relatively constant, the bass dips into a valley in the mid-frequency range before peaking around 1–2.5kHz. By contrast, Odeholm's guitar and bass are fairly uniform, neither exhibiting a pronounced dip nor peak. By overlapping in the same frequency area, Odeholm's guitar and bass signals reinforce each other and enable the impression that the two sources act as one. In fact, Odeholm's kick overlaps in much the same way, contributing to a meta-instrument effect. As interviews revealed, Odeholm's guitar and bass share the same amplifier and loudspeaker system and distortion treatment, making bass and guitars a single, coherent perceptual entity.

A shared amplifier and loudspeaker system impacts the impression of stereo separation, Odeholm's second technique for creating a meta-instrument sound. In one approach, Odeholm widens the bass to occupy the stereo extremes (Audio Example 8.1). As Bogren does currently (Audio Example 8.2), Odeholm previously used a parallel chorus

84 See Herbst/Mynett 2022b, 646.

effect in his workflow, which involves two separate signals that transform the bass from a mono to a stereo instrument. He altered his approach to exaggerate the stereo impression. As Figure 14 shows, the blue image representing the bass signal extends almost to the sides, much like the orange image of the guitar. By contrast, Bogren's bass, also shown in blue, is mostly confined to the center, not to Nordström's extent, but with much less stereo width than Odeholm's. In another approach, Odeholm's addition of a third guitar in the center reinforces the impression of a meta-instrument within the stereo space normally given to the bass. Whereas we previously discussed Odeholm's moving the bass to the outside, where guitars traditionally reside, his addition of a third guitar in the center moves the guitars to where the bass ordinarily appears. The overall result is a spatial cross-merging that makes everything one coherent entity. This seems quite deliberate – of all the producers involved, Odeholm was the only producer to choose a three-guitar setup. Not only does his bass overlap with the guitar's frequency spectrum and stereo image, but the guitars also occupy the same central (i.e., mono) space as the bass. The result is a sound we previously likened to a sonic "sledgehammer."

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio08_1.mp3

Audio Example 8.1: Pre-chorus stereo bass, Odeholm's mix of "In Solitude"

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio08_2.mp3

Audio Example 8.2: Pre-chorus stereo bass, Bogren's mix of "In Solitude"

Conversely, Scheps audibly separates his bass and guitars in terms of height and width (Audio Example 7.4). The bass is considerably less distorted, with melodies and articulations clearly perceptible, especially when transitioning into higher registers during fills. Exeter's bass and guitars are similarly distinct (Audio Example 7.3), partly because of his additional sub-bass and partly due to his loud bass volume, the center position in his stereo field, and the timbral difference between his bass and guitars. Bogren's mix (Audio Example 7.1) falls into this camp, but not Nordström's (Audio Example 7.5) – the other "in-between" producer. Nordström described the role of the bass rather enigmatically: "Bass in metal music is not an important instrument, but it is, at the same time, super important. But it's not important if it is audible." Nordström distinguishes between the bass extending the guitar's frequencies downwards to enhance its impact ("super important") and the possibility of hearing the bass as an instrument in its own right ("if it is audible"). His mix favors impactful blend, following the concept of a meta-instrument. While Nordström did not reflect on this approach to the same extent as Odeholm or Getgood, he expressed that he aims to "get the band to sound like one unit. It's just like this should be like one big tank going forward." All producers blended guitars, bass, and drums – particularly kick, snare, and toms – except Scheps and Exeter, suggesting that such a blend is integral to contemporary metal production.

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio07_4.mp3

Audio Example 7.4: Lead-in and verse kick/bass/guitars, Scheps's mix of "In Solitude"

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio07_5.mp3

Audio Example 7.5: Lead-in and verse kick/bass/guitars, Nordström's mix of "In Solitude"

One final consideration of the height domain concerns the drums and reveals how production choices can obscure or highlight genre idioms within metal. The blast beat, a staple of extreme metal drumming, exists in different variations but is typically intended to convey energy and aggression. For producers, dense and often intricate drumming makes achieving a clear separation of sounds at high speed within an equally dense arrangement both crucial and challenging. Among the drumbeats in Figure 20, the blast beat and what we call the punk beat present challenges to clear production. Readers can compare these drumbeat types in Audio Example 9.3.

Vast differences between the mixes are evident, with varying levels of tonal separation (e.g., an audible distinction between kick and snare) and methods of conveying musical expression. Scheps's drum mix (Audio Example 9.1) involves what is sometimes called "machine-gunning," a fusing of the blast beat's kick and snare into a single snare sound. Generally speaking, kick drums are more forgiving – able to withstand heavier processing without sounding unnatural – when it comes to signal processing, but snare drums require careful deliberation to resemble a human drummer. One consequence of Scheps's machine-gunning is a mechanical snare sound that audibly differs from acoustic drums, even though he did not use drum samples, typically associated with mechanical timbres. The relative uniformity between his kick and snare risks reducing the impact of the drumming during this climactic section of the song where the drums take up a blast beat (especially during 0:00–0:06 and 0:30–0:38 in Audio Example 9.1). Surprisingly, Exeter (Audio Example 9.2), whom we grouped with Scheps under the old-school paradigm, took the opposite approach. Exeter emphasized the kick (and bass guitar) while still keeping the snare audibly present. The combination of audible and distinct double kick and snare drum drives the music and captures the performance's energy. To our surprise, the new-school producers seemed to most successfully capture the feeling of a human-performed drum kit. In Otero's (Audio Example 9.3) and Bogren's mixes (Audio Example 9.4), the blast beat balances performative authenticity – a realistic depiction of live drumming that sacrifices sonic intelligibility – with maximum impact, an optimization of rhythmic accuracy and synchronization. Odeholm's mix (Audio Example 9.5) exemplifies the latter. His strategy of maximum impact goes, in his words, "beyond the sound of a band." This deliberate transcendence of reality is controversial within metal communities, which encompass a diverse range of subgenres and aesthetic ideals.

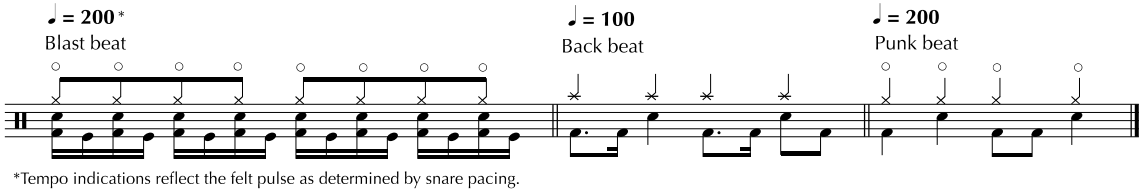

Figure 20: Drumbeat types heard throughout "In Solitude"

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio09_1.mp3

Audio Example 9.1: Final chorus blast beat, Scheps's mix of "In Solitude"

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio09_2.mp3

Audio Example 9.2: Final chorus blast beat, Exeter's mix of "In Solitude"

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio09_3.mp3

Audio Example 9.3: Final chorus blast beat, Otero's mix of "In Solitude"

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio09_4.mp3

Audio Example 9.4: Final chorus blast beat, Bogren's mix of "In Solitude"

https://storage.gmth.de/zgmth/media/1222/Herbst_MixedResults_Audio09_5.mp3

Audio Example 9.5: Final chorus blast beat, Odeholm's mix of "In Solitude"

This discussion of blending vs. separation regarding kick/bass/guitar and kick/snare combinations suggests that both strategies can be valid. One's preference may depend on particular instruments, their roles (e.g., soloist vs. rhythm section), and overall compositional context (e.g., chorus vs. intro). These findings complicate our initial framework by showing that the old-school/new-school dichotomy, while useful as an analytical tool, cannot fully capture the complexity of producer choices that often transcend simple categorization. A producer's alignment with a particular tendency may correlate with a producer's familiarity and experience in mixing certain subgenres of rock and metal. Scheps spoke about being less familiar with extreme metal styles, which, in his opinion, led to less idiomatic and potentially less effective outcomes. Conversely, Otero specializes in technical death metal, where blast beats and rhythmically dense guitar riffs are commonplace. Listening to how blast beats are engineered makes this difference salient.

5. Conclusion

We hope this case study of metal music production serves as a primer that will help popular music analysts to include audio engineering in their analyses. Such work need not radically reinvent the wheel; it can integrate production qualities into traditional observations such as harmony, melody, rhythm, and form. How that can be done is reflected in the reasons why such work is advantageous. As we argued in the second section, producers' timbral nuances reflect and inform the norms and expectations of individual subgenres as they exist on the record, the definitive text within popular music. Accordingly, analysts might ask how those norms are served or thwarted by production choices as much as songwriting elements. Exeter's rendering the sub-bass inactive during the chorus, for instance, opened space for a more energetic double kick characteristic of climactic sections.

It is for this reason that our article highlights loudness and virtual space as two major areas for inquiry. With loudness, we noted how global loudness levels do not always tell the whole story. Even with loudness normalization, producers can use distortion to sound brighter and seem louder, shedding light on the importance of high-frequency concentrations across a mix and within individual instrumental signals. With virtual space, broad comparisons between mixes can use tools like the sound-box or soundstage to communicate subjective impressions of width and depth. Such spatial representations use cognitive metaphors and embodied experiences to connect production choices to aspects of music cognition. They show how producer decisions are not arbitrary nor wholly relative but instead, tap into an intercultural need to interpret sounds according to a multidimensional environment of sound sources.

Given access to the individual recorded tracks of an instrument, analysts can use stereo-width overlays to reveal panning splits and asymmetries – sometimes with separate guitars with different tones, sometimes with one instrumental signal, split and modified. Annotated screenshots of digital audio workstations (DAWs) and audio processor plugins show professional techniques and allow empirical comparisons of audio treatments on micro and macro scales. Even without access to the tracks and stems that a producer uses, analysts can employ spectrograms, two-dimensional spectra, and waveform diagrams to draw their attention to nuances of sound that might otherwise be missed. Add to all this the possibility of ethnography and one has a powerful cross-reference between sound traces and artist statements to corroborate analytical intuitions and observations.

Because listening impressions are contingent on playback equipment, individual experience, and personal idiosyncrasies, learning about the conventions and working patterns of music production can strengthen analysts' identifications of production strategies used on a record. As Moylan states, one might not be able to hear or listen for certain aspects of sound if one does not know those exist.[85] We thus encourage analysts to ask questions about width, depth, and height in non-traditional ways. What kind of panning occurs? How is it divided among sounds, and are purposeful asymmetries present that draw out certain aspects of musical expression? Which instruments or sound effects are most salient at what times and in what combinations? In addition to global observations about harmony and texture, one can add detailed observations about timbral blending and relationships of foreground/background, particularly regarding whether a recording recreates a live experience or seeks to transcend it. Height may be familiar through metaphors of high and low pitch, but it can also direct analysts to genre-oriented metaphors such as heaviness, particularly in relation to how producers fill out the frequency regions occupied by different signals. For instance, we highlighted the similarity to voice-crossing that can sometimes occur when producers design guitar tones to sound below the bass. We also highlighted the "meta-instrument" approach of Odeholm, who sought to take over from a live band and treat its component parts as ingredients for a single, transcendent, heavy sound.

Odeholm's hyperreal meta-instrument, comprising kick, bass, and guitar, is a clear example of how the studio can be an instrument in its own right. The V-shaped panning settings are another, showing how a producer can shape not just the signal of individual instruments but also the track as a whole. Altogether, these opportunities for strategically altering and enhancing a recorded song show how much power and control a producer can assume over the final product. In his efforts to transcend the traditional rock band, Odeholm becomes akin to a spirit possessing the musicians.

Odeholm is perhaps an extreme case of agency, but Moylan has strongly argued that one should generally assume producer agency on a record:

> Given the high degree of control and scrutiny available in the production process, we should believe that what is sonically present on a record is what was intended, even if seemingly arbitrary or flawed. […] [T]he sounds of the final record are carefully crafted; *what is there was put there, or was allowed to remain*.[86]

85 Moylan 2002, 98.

86 Moylan 2020, 11, emphasis added.

Our findings offer an important qualification to this perspective, highlighting the tension between intentional design and pragmatic compromise that characterizes professional production practices. We do not believe that every aspect of the recording is intentional, and we see examples during "In Solitude" where producer differences were not necessarily deliberate or strategic but rather accidental or the consequences of production moves they made elsewhere in the song. While those differences were certainly "allowed to remain," ethnography helps nuance that agency. During interviews, producers revealed that sometimes they meant to add automation but later forgot or could not be bothered, reflecting a familiar degree of aleatoricism built into our imperfect human tendencies. At times, the relatable element of deadlines introduced imperfections. "If I had another week, I would have done…" was a common refrain. Producers have a certain quality standard, but no one was perfectionistic.

We foresee several potential directions for future work. Genre conventions seem especially fruitful. In our case study, we observed several differences between how producers treated vocal layers during the breakdown section that variously highlight relationships to different genre influences. The analytical tradition of *Formenlehre* is another. Music analysts concerned with how listeners experience sectional boundaries and formal archetypes can investigate how the different instrumental layers within a track influence the perception of beginning, continuing, or ending. Finally, we see the nuances involved in production comparable to the artistic decisions involved in orchestration. Future research might build on the cognition-oriented taxonomy of orchestral grouping effects by Stephen McAdams and colleagues.[87] Following their work, it may investigate how producers blend or separate audio signals to achieve special effects, play with subgenre codes, or achieve other aesthetic ideals. It could consider timbral modifications by audio engineers as well as compositional and arrangement factors involving instrument choice, tuning, voice-leading, rhythm, and synchronicity. Because music production is such a common contributor to popular music recordings, an amalgamation of production strategies and traditional components of analysis carries a broadly versatile utility across popular music as a whole.

Acknowledgment

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Data Availability Statement

The data from the entire HiMMP research project, including the multi-track of the song "In Solitude" and the producer versions (full bounces and vocal/instrument stems), is available in a publicly accessible dataset: https://doi.org/10.34696/9s05-wv03.

87 McAdams et al. 2022.

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© 2025 Jan-Peter Herbst (j.herbst@hud.ac.uk, ORCID iD: 0000-0001-7453-0141), Eric Smialek (E.Smialek@hud.ac.uk, ORCID iD: 0000-0002-2111-2322)

University of Huddersfield

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Saints, Sinners, and Schemers in Anglophone Popular Music

Christopher Doll

In this article, I explore the relationship between two structures recently defined in the scholarship of Anglophone popular music: Nicholas Stoia's "'Sweet Thing' scheme" and my own harmonic "saint schema." My discussion focuses first on each structure in its own right, and then in combination – the "saint-sweetie combo" – which serves as an effective template for hearing and analyzing a large swath of popular song. The saint-sweetie combo not only describes common features of lyrics and music taken together; it can also address the effect lyrical structure can have on our hearing of musical structure, and vice versa. This exploration eventually leads me to name two additional structures: the "twining schema" and the "ain't-a-saint scheme."

In diesem Artikel untersuche ich die Beziehung zwischen zwei Strukturen, die kürzlich in der Forschung anglophoner Popularmusik beschrieben worden sind: Nicholas Stoias »›Sweet Thing‹ scheme« sowie das von mir definierte harmonische »saint schema«. Meine Erörterung konzentriert sich zunächst auf jede Struktur für sich und dann auf ihre Kombination – die »saint-sweetie combo« –, die als wirksames Modell für das Hören und Analysieren einer Vielzahl an *popular songs* gelten kann. Die »saint-sweetie combo« beschreibt nicht nur gemeinsame Merkmale von Text und Musik, sondern kann auch die Auswirkungen der Textstruktur auf unser Hören der musikalischen Struktur und umgekehrt untersuchen. Diese Überlegungen führen schließlich zur Beschreibung zwei weiterer Strukturen: des »twining schema« und des »ain't-a-saint scheme«.

SCHLAGWORTE/KEYWORDS: Form; Harmonik; harmony; musical form; popular music; populäre Musik; song; text-music relationship; topic theory; Toposforschung; Wort-Ton-Beziehungen

Text

Nicholas Stoia defines the Sweet Thing scheme, named for one particular old folk song that fits it,[1] as a "musical form"[2] in American blues, gospel, and folk that is an "intertwining of the discrete musical components of various earlier sources […] resulting in a number of hybrids and textual, rhythmic, harmonic, and melodic variants."[3] Stoia catalogs so many variants, in fact, that the scheme really seems unbounded as regards to rhythm, harmony, and melody. In my view, the Sweet Thing is not really a musical form at all; it is, more precisely, a *stanzaic* form for song lyrics. In order to clearly differentiate my own view from Stoia's, I will refer to the stanzaic form specifically as the "sweetie" scheme, a diminutive version of Stoia's grander conception.

I consider the sweetie scheme to exhibit three defining features:

1. a stanza of four textual lines, which, when delivered, have equally spaced beginnings, i. e., a quatrain
2. textual repetition within and/or between stanzas, i. e., a refrain
3. an internal rhyme in the third line, i. e., a third-line couplet

1 Sheet music for the song "Sweet Thing" appears in Lomax/Lomax 1947, 106–107.

2 Stoia 2021, 22.

3 Ibid., 26.

An example is the first verse of Ray Charles's 1954 R&B single "I've Got a Woman"[4] (modeled on the 1954 gospel recording "It Must Be Jesus" by The Southern Tones,[5] itself a modernized rendition of the African American spiritual "There's a Man Going 'Round Taking Names"). Table 1 displays the lyrics as a quatrain that presents the titular refrain three times ("*I got a woman way over town that's good to me, oh, yeah*") interrupted by a distinct third-line couplet that rhymes "*need*" with "*indeed*."

text accents:	1	2	3	4	5	6	7	8
R or a	*I got a woman* **[Iadd6]**		*way over town* **[V7]**		*that's good to me,* **[Iadd6]**	*oh,* **[IV♭7]**	*yeah,* **[Iadd6]**	*Say I got a* **[I♭7]**
R or a	*woman* **[IV♭7]**		*way over town,*		*good to me,* **[V7]**		*oh, yeah,*	*She give me*
AB or bc	*money* **[I♭7]**		*when I'm in need,*	*yeah, she's a kind of* **[IV♭7]**			*friend indeed*	*I got a*
R or a	*woman* **[Iadd6]**		*way over town* **[V7]**		*that's good to me,* **[Iadd6]**	*oh,* **[IV♭7]**	*yeah* **[Iadd6]**	**[V7]**

Table 1: Ray Charles, "I've Got a Woman," first stanza

Stoia specifies Charles's quatrain as instantiating a word-choice pattern of R/R/AB/R,[6] with the forward slashes separating the four lines, the R indicating a full line of refrain, and the A and B representing the two halves of a rhyming couplet. This is one of the word-choice patterns Stoia identifies as standard in the prewar era; the other two are Ar/Ar/AB/R (the lower-case r indicating a short refrain) and R(A/B)/CD/R(A). Notwithstanding the seeming straightforwardness of these standard labels, Stoia's method for naming patterns is only partially explicit, and the results can become very complex depending on how consistent the stanzas are within a given song. Therefore, for present purposes, I propose a simplified system that deemphasizes inter-stanzaic refrains in favor of conveying intra-stanzaic sameness and difference. To distinguish my labels from Stoia's, I will use lowercase letters, as well as underlining. (Using lowercase letters for lyrics also has the advantage of freeing up capitals for larger patterns of multiple stanzas, such as AABA form.) If a line in a stanza is identical (or nearly) to another, I will label them with the same letter; and if there is an in-line rhyme, I will assign a letter for each half. Refrains will be acknowledged only in prose. So, in "I've Got a Woman," the R/R/AB/R pattern will be rendered here as a/a/bc/a, with an a-refrain.

Moving beyond word-choice patterns, Stoia also has much to say about textual rhythm, specifically the hypermetric positions of textual accents. His procedure involves placing each textual line of the quatrain on a number line with eight evenly spaced positions. In Table 1, these positions are equivalent to bars, but I will refer to them as "ending-accent positions," because Stoia's primary concern is the placement of the last lyrical accent, and these positions are not always equivalent to bars. (In many other songs, they are equivalent to half a bar.) In the first, second and fourth lines, Charles's last accent is on the word "*yeah*," so each of these lines receives a score of 7 based on that word's position each time. (An anacrusis for an ensuing line does not count here.) In the third

4 https://www.youtube.com/watch?v=alQqMveYv0I (17 May 2025)

5 https://www.youtube.com/watch?v=AvCbVLZW4EY (17 May 2025)

6 The term "word-choice pattern" is mine, not Stoia's. This example is based on Stoia's Example 7.7 (2021, 244) but rendered here as a 32-bar stanza rather than his 16-bar stanza.

line, the last accent is on the second half of the word "*indeed*," which also receives a score of 7. The overall ending-accent pattern for the stanza, therefore, is 7777.[7] According to Stoia, there are three standard prewar patterns, 5575, 5585, and 7787, each with a contour of short-short-long-short.

Although Stoia identifies three standard word-choice patterns and three standard ending-accent patterns, he also offers numerous variants of each, to the extent that it can be difficult to know exactly where one has gone too far in applying the term "sweetie" to a stanza. Nevertheless, the three defining features I listed above – a quatrain, a refrain, and a third-line couplet – together will serve as my own model of the sweetie scheme. Determining exactly how far one can stray from these three features will be a topic for later discussion.

Harmony

Turning now to harmony, we can hear in Charles's "I've Got a Woman" (see Table 1) that the verse divides in half, with a large V7 at the end of the second line, creating a medial half cadence that is balanced in the fourth line by a whole (authentic)[8] cadence in the form of Iadd6-V7-Iadd6 (elaborated by a plagal IV7-Iadd6, and followed by a turnaround V7 propelling us into the next iteration).[9] Stoia refers to this kind of structure as "periodic," after the classical antecedent/consequent period phrasal form.[10] The bassline of the chords can also be understood as a variant of the "passamezzo moderno," otherwise known as the "Gregory Walker," which normally features $\hat{1}$-$\hat{4}$-$\hat{1}$-$\hat{5}$ for its first half, and $\hat{1}$-$\hat{4}$-$\hat{1}$-$\hat{5}$-$\hat{1}$ for its second.[11]

In my book *Hearing Harmony*, I cast the harmonic structure of "I've Got a Woman" as an elaborated example of my "saint" schema, which requires only I-V for its first half: i. e., I-V || I-IV-I-V-I.[12] (I use the word "schema" in a harmonic context, and Stoia uses the word "scheme" in a formal context; I maintain this linguistic distinction in this article.) The saint schema can be understood as a simple prototype underlying the periodic structures for which Stoia says there was a "growing preference"[13] over the course of the twentieth century. As happens in "I've Got a Woman," the typical combination of a sweetie text with a saint chord progression splits the stanza in two: the antecedent's half-cadential V arrives at some point during (usually halfway through) the second line of text, while the consequent's I-IV portion supports the third-line couplet and its I-V-I whole cadence undergirds the fourth lyrical line; see Table 2.

7 Stoia inserts commas between all his numbers, so 7777 is 7,7,7,7. I omit these commas.

8 I prefer *whole* cadence in place of "authentic" cadence (Doll 2017, 90–91).

9 I identify secondary dominants according to the primary tonal center rather than to the secondary center; e. g., "I♭7" rather than "V7/IV" at the word "*money*." This notation allows us to consistently distinguish between the functional identity and numerical identity of chords.

10 Stoia 2021, 178–183.

11 Ibid., 2, 178, 180, 183–184. The passamezzo moderno is sometimes referred to as a ground bass or bassline (i. e., a melody), and sometimes as a chord progression; Stoia floats between these two conceptions. See also Gombosi 1944, 145; Ward 1994, 313, and 322–23; Van der Merwe 1989, 198–202; Middleton 1990, 117; Stoia 2013, and von Appen/Frei-Hauenschild 2015, 37–38.

12 Doll 2017, 181.

13 Stoia 2021, 245.

	antecedent
first line	I | I | I | I
second line	I | I | V | V
	consequent
third-line couplet	I | I | IV | IV
fourth line	I | V | I | I

Table 2: Typical saint setting of a sweetie stanza (saint-sweetie combo)

The name "saint" refers to the structure's revered status among musicians, and more specifically to the famous tune "When the Saints Go Marching In," which is an exemplar of the schema. See Table 3, which offers the opening verse of the up-tempo rock-and-roll recording of "When the Saints Go Marching In" by Fats Domino from 1959.[14] (Hereafter, ending-accent patterns will be summarized at the end of each line with a parenthetical number. Readers are encouraged to count to 8 in their heads.) Notice here the textual repetition of the refrain in the first, second, and fourth lines, which we often (though not necessarily) have in sweetie stanzas, and which we saw in "I've Got a Woman" (albeit in 4-bar lines here, totaling 16, instead of Charles's 8-bar lines, totaling 32). However, crucially, Domino's lyrics lack a third-line couplet, so it is not a fully realized instance of the sweetie scheme. (It also has a non-standard ending-accent pattern of 5555, similar to 5575 and 5585 but missing the short-short-long-short contour that occurs in many of Stoia's examples.)

4 bars per line (16 total)
ANTECEDENT
a: *Oh, when the* **[I]** *saints go marching in* (5)
a: *Oh, when the saints go marching* **[V]** *in* (5)
CONSEQUENT
b: *I wants to* **[I]** *be in that* **[IV]** *number* (5)
a: *When the* **[I]** *saints go* **[V]** *marching* **[I]** *in* (5)

Table 3: Fats Domino, "When the Saints Go Marching In," first stanza

Now compare Domino's stanza to the first verse of the Beatles' "I Saw Her Standing There"[15] in Table 4, which can be analyzed as a sweetie stanza but with the third-line couplet relocated to the first line. There are multiple features of the Beatles' song that are highly suggestive of a direct connection to "When the Saints Go Marching In."[16] Their fourth-line refrain sounds like mere word-swapping – "*When the saints go marching in*" becomes "*When I saw her standing there*") – as does the end of their third line – "*with that number*" becomes "*with another,*" a near-rhyme in itself, across songs! Their ending-accent pattern is 7575, but their third line is really a 5 (like "When the Saints Go Marching In") with an added falsetto "*oooh!,*" as part of 7555 – a reordered 5575 (standard for the sweetie). Similar textual additions were heard in the form of the "*oh yeah*" exclamations in "I've Got a Woman," and are probably related to the call-and-responses that have

14 https://youtu.be/3TiYzhs8CCQ?si=vBCygw92XZMMu975 (17 May 2025)

15 https://youtu.be/oxwAB3SECtc?si=eVI0ufBjxUv7sn3F&t=6 (17 May 2025)

16 See also Everett 2001, 384n131, and Doll 2007, 123.

peppered performances of "When the Saints Go Marching In" since its earliest known recording in 1923 by the Paramount Jubilee Singers. These responding shouts can likewise be heard in the hit 1938 version by Louis Armstrong (see Table 5),[17] who additionally elongates his delivery of the third line past ending-accent position 5 and holds the note with vibrato, hinting at 6 (or even 7), a stanzaic contour more typical of the sweetie's third line.

4 bars per line (16 total)
ANTECEDENT
ab: *Well, she was* **[I♭7]** *just seventeen, and you* **[IV♭7]** *know what I* **[I♭7]** *mean* (7)
c: *And the way she looked was way beyond com-* **[V7]** *-pare* (5)
CONSEQUENT
d: *So* **[^{1} I♭7]** *how could I* **[$^{♭7}$ I♭7 / 3]** *dance with a-* **[^{6} IV♭7]** *-nother?* **[$^{♭6}$ ♭VI]** *Oooh!* (5/7)
e: *When I* **[^{5} I♭7]** *saw her* **[V7]** *standing* **[I♭7]** *there?* (5)

Table 4: The Beatles, "I Saw Her Standing There," first stanza

4 bars per line (16 total)
ANTECEDENT
a: *Oh, when the* **[I]** *saints—when the saints—go marching in—marching in* (5/7)
a: *Now, when the saints go marching* **[V]** *in—marching in* (5/7)
CONSEQUENT
b: *Yes, I* **[I]** *want to be in that* **[IVadd6]** *number* (5/6)
a: *When the* **[I / 5]** *saints go* **[V9]** *marching* **[I]** *in* (5)

Table 5: Louis Armstrong, "When the Saints Go Marching In," first stanza

A tighter connection still between "When the Saints Go Marching In" and the sweetie scheme is realized in the duet performance of the song from the 1959 film *The Five Pennies*, sung by Danny Kaye (portraying jazz musician Red Nichols) and Louis Armstrong (playing himself).[18] See Table 6, which adds several new stanzas talking about which musicians would be most worthy of accompanying the heavenly saints in their march (Rachmaninoff, Rimsky-Korsakov, Ravel, Mahler, Fats Waller, and Liszt, among others), new stanzas with lots of new internal rhymes, including a rhyming third-line couplet that is now longer than any of the others, ending at position 8 (or at least close to 8). So, now, we have a version of "When the Saints Go Marching In" wherein the verse is a quatrain with a third-line couplet and a refrain in the last line – what Jay Summach calls a "tail refrain" and what Michael Callahan calls a "reveal" (when it appears *only* in the last line).[19] I believe this rendition – with its underlying 7785 ending-accent pattern, recog-

17 https://youtu.be/USpYJB6rdRs?si=Fum5kMctdPKPr_Xy&t=39 (17 May 2025)

18 https://youtu.be/Fsx6mUoTHUM?si=pCov5Q-ct5o5Ref9&t=58 (17 May 2025)

19 Summach 2011, 20, § 7 and Callahan 2013, § 1.3.

nized by Stoia as a possible variant[20] – is a sweetie example, even though Stoia does not identify anything like its ab/cd/ef/g structure as a word-choice option.

4 bars per line (16 total)

ANTECEDENT

ab: *Do you* **[I]** *dig Rachmaninoff? On and off. Rimsky? Mmm, of course-akov* (7)

cd: *Ravel, and Gustav* **[vi]** *Mahler? Yeah, but* **[V7]** *don't forget Fats Waller (I wouldn't do that)* (7)

CONSEQUENT

ef: **[I]** *Liszt has a twist that you can't resist. Yeah,* **[IV]** *yeah, put Liszt on that* **[ii half-dim7]** *list* (7/8)

g: *When the* **[I]** *saints* **[vi]** *go* **[ii]** *march-* **[V]** *-ing* **[I]** *in* (5)

Table 6: Danny Kaye and Louis Armstrong, "When the Saints Go Marching In," fourth stanza

Text and Harmony Intertwined

A recognition that the sweetie and the saint are commonly combined can potentially help to stabilize any particular interpretative case in which either does not wholly conform to its model (although I will complicate this claim later on). I have already argued that "I Saw Her Standing There" manifests the sweetie scheme despite its couplet arriving in the first line; its saint chord progression reinforces this sweetie interpretation by providing more context, more reason to suspect a sweetie in the first place. Permutations such as this textual relocation represent one type of case that benefits from the recognition of the generic, stylistic normativity of the sweetie and the saint in combination. Another benefiting type is addition, although additions seem even easier to accept on their face, probably because we can still see/hear the intact whole, underneath (as it were). Additional in-line couplets arrived in the Kaye and Armstrong performance (Table 6); the saint-based chords help curb any potential undermining of a sweetie interpretation brought about by these extra rhymes. The same goes for the addition of chords, which were heard in "I've Got a Woman"; there, the first lyrical line presents not a lone tonic I (as in Table 2), but rather Iadd6-V7-Iadd6-IV♭7-Iadd6-I♭7 (see Table 1), a fact kept in check by the presence of the sweetie scheme.

Subtractions are trickier. It is one thing to spot a structure that is rearranged or embellished. It is another to recognize a structure if part of it is outright missing. In Fats Domino's recording (see Table 3), there is no in-line couplet anywhere. Personally, I find the textual quatrain, patterned as a/a/b/a with a-refrain (close to Charles's a/a/bc/a with a-refrain in Table 1) and 5555 (close to 5575 and 5585) to be enough to justify a reading of this stanza as an incomplete sweetie, but only because we additionally get a saint progression. The reverse can happen, too. Both Stoia and I recognize Little Walter's bluesy "My Babe" (1959)[21] as withholding the V in its consequent half.[22] Walter's incomplete

20 Stoia 2021, 159, 161, and 165–166.

21 https://youtu.be/dkbfvLYxgXc?si=iX_5Z2JQKKCFTfra&t=8 (17 May 2025)

22 Stoia 2021, 236–237 and Doll 2017, 181. My previous assertation about Walter's missing V was made without recourse to the lyrics, but the sweetie elements make the claim even stronger.

saint schema of I-V || I-IV-I is offset – crucially – by a sweetie quatrain with refrain and third-line couplet (see Table 7).

4 bars per line (16 total)

ANTECEDENT

a: **[I]** *My baby don't stand no cheating, my baby* (5)

a: *Oh yeah, she don't stand no cheating,* **[V]** *my babe* (5)

CONSEQUENT

ab: **[I]** *Oh yeah, she don't stand no cheating,* **[IV]** *she don't stand none of that midnight creeping* (8)

a: **[I]** *My babe, true little baby, my babe* (5)

Table 7: Little Walter, "My Babe," first stanza

Invocation of the normative, abstract combination of the sweetie and the saint is almost obligatory in analyzing more complicated cases like the gospel song "This Train," as recorded in 1939 by Sister Rosetta Tharpe (see Table 8).[23] "This Train" was likely a source of divine inspiration for the sinful "My Babe"; both bookend their opening stanzas (each one a/a/ab/a and 5585) with a two-syllable titular refrain, and both present chords that only approximate the saint schema.[24] But "This Train" goes even further in its harmonic exploration. In this opening stanza, Tharpe sits on a stubborn I♭7 chord for two and a half lines of text, after which she plays IV-iv-I, forming a scale-degree descent of $\hat{6}$-$^{\flat}\hat{6}$-$\hat{5}$.[25]

4 bars per line (16 total)

ANTECEDENT

a: **[I]** *This train is a clean train, this train* (5)

a: **[I♭7]** *This train is a clean train, this train* (5)

CONSEQUENT

ab: [$^{1\,/\,\flat7}$ **I♭7**] *This train is a clean train,* [$^{\flat6}$ **IV**] *everybody ride it in* [$^{\flat6}$ **iv**] *Jesus' name* (8)

a: [^{5} **I**] *This train is a clean* **[V]** *train,* **[I]** *this train* (5)

Table 8: Sister Rosetta Tharpe, "This Train," first stanza

I call this descent the "shrinking schema," a type of "harmonic meta-schema" defined by a scale-degree series that is not limited to realizations as chordal roots.[26] (A shrinking progression was previously heard in Kaye and Armstrong's "When the Saints Go Marching In" (see Table 6), where the chord offering scale-degree $^{\flat}\hat{6}$ sounds to me like a ii half-dim7.) The only V arrives late and lasts for just half a bar, at the fourth line's second "*train*," barely creating a semblance of a whole cadence. (Normally, the V would last the

23 https://youtu.be/AoBdCs-_aRc?si=D3QTJ_XIpnjiBYRa&t=8 (17 May 2025)

24 In the sweetie song "Diamonds at Your Feet" by Muddy Waters from 1956 (after "This Train" but before "My Babe"; see https://www.youtube.com/watch?v=ENJVhDDSZe4 [17 May 2025]), the saint's consequent half is similarly missing its V (Doll 2007, 124–125).

25 In the tables, individual scale degrees in lines like $\hat{6}$-$^{\flat}\hat{6}$-$\hat{5}$ are given in superscript before the chords.

26 Doll 2017, 137–143.

whole bar.) Yet in a startling move, Tharpe adds V chords in the next two stanzas, eventually resulting in a third stanza that is a full saint progression plus the shrinking descent (see Table 9). These later dominant additions seem to confirm the earlier interpretation of the first stanza as a complete sweetie with an incomplete saint. Stoia appropriately dubs the first stanza a "fragmented" periodic progression.

ANTECEDENT

a: **[I]** *She travels straight to the uppermost, this train* (5)

a: *She travels straight to the uppermost,* **[V]** *this train* (5)

CONSEQUENT

ab: *She* **[$^{1\,/\,\flat7}$ I♭7]** *travels straight to the uppermost,* **[^{6} IV]** *nothing can ride her but the* **[$^{\flat6}$ iv]** *blood-washed host* (8)

c: *Because* **[^{5} I]** *this train is a* **[V]** *clean train,* **[I]** *this train* (5)

Table 9: Sister Rosetta Tharpe, "This Train," third stanza

Yet there is even more to this story, more context for this analysis. Tharpe's shrinking schema, $\hat{6}$-$^{\flat}\hat{6}$-$\hat{5}$ within IV-iv-I, is actually a portion of a longer descent that I call the "dropping" harmonic meta-schema, or the "drop": $\hat{1}$-$^{\flat}\hat{7}$-$\hat{6}$-$^{\flat}\hat{6}$-$\hat{5}$, a chromatic lamento without the leading tone.[27] Although dropping progressions can appear anywhere in a song, one common role they perform is complexifying the consequent half of a saint schema, and supporting the entire third textual line of a sweetie stanza (see Table 10).

	possible chords	drop
third-line couplet	I | I♭7 | IV | iv	$\hat{1}$ | $^{\flat}\hat{7}$ | $\hat{6}$ | $^{\flat}\hat{6}$
fourth line	I | V | I | I	$\hat{5}$

Table 10: Sweetie plus saint-with-drop, consequent phrase

Stoia offers multiple examples of this descent, with the first two notes ($\hat{1}$-$^{\flat}\hat{7}$) and last note ($\hat{5}$) harmonized by a I, and the remaining middle two notes ($\hat{6}$-$^{\flat}\hat{6}$) usually harmonized by IV-iv.[28] In "This Train," the $\hat{1}$ and $^{\flat}\hat{7}$ are heard simultaneously in I$^{\flat}$7;[29] a similar temporal conflation of the first two scale-degrees of the drop was heard in "I Saw Her Standing There" (Table 4), although Paul McCartney changes the bass note from scale-degree $\hat{1}$ to $\hat{3}$ (at "*dance*"), which helps delineate where $^{\flat}\hat{7}$ might hypothetically supplant $\hat{1}$ hypothetically. (The Beatles also deploy $^{\flat}$VI for the shrink's $^{\flat}\hat{6}$ – on "*Oooh!*" – instead of iv.)[30] So, even with the dearth of dominant function at the beginning of "This Train," the normative combination of a sweetie text with – not just a saint schema, but a saint-with-drop schema – invites a seasoned listener to hear Tharpe's progression as partial, a hearing re-

27 Ibid., 159–162. The same descent with the leading tone (the full chromatic lamento) I call the "drooping" schema (ibid., 157–159).

28 Stoia 2021, 187–189.

29 Stoia (2021, 230, Ex. 6.4) transcribes all the I chords in the first stanza as triads, not as I$^{\flat}$7 chords. I have encountered enough examples of scale-degree $^{\flat}\hat{7}$ appearing at the start of the third lyrical line to make me suspicious that this might be considered schematic in its own right, but I am not yet ready to fully argue that case.

30 Stoia (2021, 233 and 235) gives Ma Rainey's 1927 "Blues Oh Blues" as an example with $^{\flat}$VI.

warded by the eventual arrival of the full-fledged V chords. Without this normative context, the added chords might sound *additional*, but not *completional*.

It is not self-evident how to deal with situations wherein a defining component of the stanzaic form or harmonic schema is omitted. Whether such omission precludes any reasonable analytical invocation of the sweetie or saint at all, or instead provides an opportunity to invoke incompleteness as an analytical description, ultimately rests in the hands of the individual analyst. Elsewhere, I have argued against the idea that all V-less popular songs are somehow – on principle – inherently incomplete,[31] but I do leave open the door for incompleteness in specific situations, as when, for instance, a listener hears a "transformational effect" of a particular schematic "norm" undergoing "chord subtraction."[32] It is my contention that "My Babe" and "This Train" qualify as cases in which the norm – the combination of the sweetie plus the saint, or plus the saint-with-drop – is specific enough, or stable enough, to be transformed via subtraction. But I recognize there will always be controversy around the degree to which a given norm can be transformed and still evoke a "schematic effect."[33] It should also be stated (as later examples of the twining schema will demonstrate) that such normativity can actually *destabilize* certain interpretative situations by introducing the *potential* of transformation where an analyst (in the absence of that extra context) might otherwise not have entertained one. Another open question is whether a common structure like the drop is so distinctive sounding that a "saint-sweetie combo" (as I will call it) *without* a drop – or at least without a shrink – might sound like that chromaticism is *missing*, creating some amount of pressure to revisit the definitions of the component scheme and schema themselves.[34]

A Chromatic Conundrum

Stoia characterizes dropping progressions as "chromatic inflections of the subdominant."[35] Although it is possible Stoia here intends "subdominant" to mean a IV chord, it is consistent with the rest of his arguments to read this statement as referring to subdominant harmonic function. Taken as such, I agree with this characterization at the local level; but things change as one goes deeper. The $\hat{6}$-$\flat\hat{6}$-$\hat{5}$ shrinking schema usually lands on a I chord for $\hat{5}$ in this context, and in my own harmonic function theory, I define subdominant function as the aural quality of predicting resolution to a tonic chord – i.e., it is a type of "pre-tonic" function – and it is marked primarily by scale-degree $\hat{6}$ (not $\hat{4}$). [36] Importantly, subdominant function, as a pre-tonic function, is distinct from pre-dominant

31 See Doll 2007, 168–169; Doll 2009, 36–37; Doll 2017, 197; and Doll 2022.

32 Doll 2017, 192–193, 207.

33 Ibid., 83.

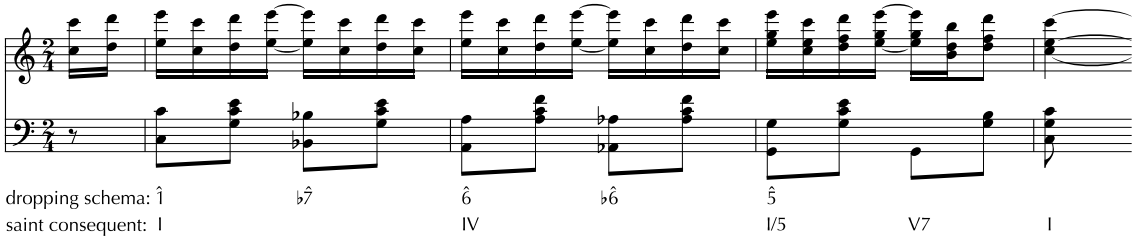
34 In "I've Got a Woman," a drop arrives later in the song, during the sax solo. Whether this affects one's hearing of the drop-less verses is debatable.

35 Stoia 2021, 187–189.

36 Doll 2007, 16–27; Doll 2017, 26–39 and 52–55. The term "subdominant" in my function theory is shorthand for the more technical "hypo pre-tonic" or "hypo beta." I further distinguish between "upper subdominants" (with the major scale-degree 6) and lower subdominants (with the minor scale-degree $\flat\hat{6}$).

function. Stoia also makes this distinction.[37] However, once we descend to deeper harmonic levels, I hear the dropping schema's initiating scale-degree $\hat{1}$ and concluding $\hat{5}$ as the most structural points, and the $\flat\hat{7}$, $\hat{6}$, and $\flat\hat{6}$ as embellishments. At the very deepest level, the $\hat{1}$ and $\hat{5}$ operate as a root-fifth arpeggiation of I, but in between this level and the surface, I hear $\hat{1}$ and $\hat{5}$ as the structural points of a linear progression projecting the roots of I and V, even though the $\hat{5}$ in such progressions is typically harmonized by another I and *not* a V – or more precisely, by another I and *then* a V. The chromatically inflected IV, as it were, still operates at that level, but as a subordinate predictor of V, not of I.

Example 1 notates the saint-with-drop progression in Scott Joplin's 1902 instrumental *The Entertainer*,[38] an unusual example in two respects: 1) the drop occupies only the second half of the consequent phrase, rather than running throughout it from the start;[39] 2) the dropping line appears in the bass. This second idiosyncrasy drives home my point about the harmonic functions: the I chord that arrives with scale-degree $\hat{5}$ is a tonic only in a very local sense; at a deeper level, it functions as a cadential 6/4, or a kind of pre-dominant (or, if one prefers, a dominant with displaced notes). The deeper function of the IV, then, is as a pre-dominant to V, not a subdominant to I.



Example 1: Scott Joplin, *The Entertainer*, Dropping Progression in mm. 33–36

Cadential 6/4 chords do not reliably appear at the ends of dropping schemas because the drop is not restricted to the bass. More typically, the I that harmonizes scale-degree $\hat{5}$ is in root position, which bolsters a bit its function as a local tonic. Yet even in these situations – as in "I Saw Her Standing" and the third stanza of "This Train" – it is possible to hear

37 "In early blues, country, and gospel music, IV functions much less often as a pre-dominant harmony than as a true subdominant, resolving to I and defining the tonic as its lower dominant a fifth below." (Stoia 2021, 176)

38 Lyrics have been added to *The Entertainer*. One such stanza, spoken by Milton Berle and accompanied on piano by Rowlf the Dog during a 1977 episode (season 2, episode 9, or #33; see https://youtu.be/p9gSvM4uR3s?si=zV5azMCvY2HhHR0w&t=50 [17 May 2025]) of the television show *Muppets* (and revived by Miss Piggy later in the same episode; see https://youtu.be/a8SaXp30nSg?si=gnJBiJEqknAZutkq&t=7 [17 May 2025]), conforms to a multi-couplet version of the sweetie scheme. However, the fourth line, where the drop happens, features a shorter internal rhyme that leaves room at the end for a separate refrain:

ab: Now the curtain is going up, the Entertainer is taking a bow (~7)

cd: He does his dance step and sings his song, even gets the audience to sing along (~7)

ef: Yes, he knows just what to do, he knows how to bring down the house when he's through (~7)

ge: Snappy patter and jokes, he knows what pleases the folks, the Entertainer, the star of the show (~7)

39 Although drops often appear (when not part of a saint schema) at the ends of sections, Joplin's ending drop is different, in that it prepares the whole cadence, as it normally does in the saint schema. By contrast, ending-role drops like the classic blues turnaround typically prepare the turnaround V *after* a larger whole cadence.

this chord as a "cadential [root-position] I."[40] Moreover, I would argue that *every* saint progression – even without a drop or a shrink – entails a cadential, non-tonic function for this I chord at a deep level.[41] Consider that in Armstrong's "When the Saints Go Marching In" (see Table 5), which includes neither a drop or shrink, the chord in question is a true cadential 6/4 (I/5). (The bass is faint at this point, but it is clearer in Armstrong's instrumental introduction.) The farther back in time one goes, the more drop-less and shrink-less saint progressions you will find with actual cadential 6/4 chords; over time, the chord's cadential role became less explicit, but it was not erased entirely, in my view.

I know from personal experience not everyone agrees with my interpretation of this deep-level non-tonic I chord, and I assume Stoia is among these challengers, given his passing interpretation of the progressions in Blind Willie McTell's "Come on Around to My House Mama" and "Kind Mama," both from 1929.[42] I have transcribed the latter's first stanza in Table 11.[43]

4 bars per line (20 total)

ANTECEDENT

a: **[V]** *She's a* **[I]** *real* **[Vadd9]** *kind* **[I]** *mama* **[II7]** *looking for ano-* **[V]** *-ther* **[I]** *man* (7)

b: **[I]** *She ain't* **[Vadd9]** *got no-* **[I]** *-body to* **[vi]** *hold her* **[V7]** *hand* (7)

CONSEQUENT

cd: [^{1} **I]** *Way down yonder on* [$^{\flat7}$ **I♭7]** *Cripple Creek,* [^{6} **IV]** *men don't grow but* [$^{\flat6}$ **♭VIadd♯11]** *sixteen feet* [^{5} **V]** (8)

ef: [^{1} **I]** *Would go to bed but it* [$^{\flat7}$ **I♭7]** *ain't no use, they* [$^{6\,/\,\sharp4}$ **IV]** *pile up on the bed like* [$^{6\,/\,\sharp4}$ **♯ivo7 or CTo7 / ♯4]** *chickens on a roost* (8)

a: [^{5} **V]** *She's a* [^{5} **I / 5]** *real* **[Vadd9]** *kind* **[I]** *mama* **[II7]** *looking for ano-* **[V7]** *-ther* **[I]** *man* (7)

Table 11: Blind Willie McTell, "Kind Mama," first stanza

The relevant portion is McTell's second pass at the dropping schema, a fourth lyrical line that is actually an extra third line.[44] The first time (cd), he plays scale-degree ♭$\hat{6}$ with a kind of ♭VIadd♯11 (approximating a French/German augmented-sixth chord: scale-degrees ♭$\hat{6}$, $\hat{1}$, $\hat{2}$, and ♭$\hat{3}$), but in the second pass (ef), on the word "*chickens*," McTell replaces the iv (harmonizing scale-degree ♭$\hat{6}$) with, in Stoia's words, a "common-tone diminished

40 Nobile 2012, §3.1–3.4. See also Cutler 2009, 196–202; Doll 2007, 117–126; Doll 2013, 103; Doll 2017, 259; Everett 2001, 147; Kresky 2007; and Rothstein 2006, 268–277. Special attention has been given to the middle I in the progression I-IV-I-V-for at least a century and a half: e. g., Hauptmann 1991 [1853], 9 and Riemann 2000 [1872]. See also Drabkin 1996, 149–155 and Schachter 1999. Cadential I chords—root position or otherwise—represent a specific version of a "delaying" function (Doll 2017, 74–75), an effect that evaporates once we move to deeper harmonic levels (where the predicted dominant V arrives in the cadential I's position).

41 Walter Everett (2000, 322) makes essentially the same point about the cadential nature of the last line's initial root-position I in Bob Dylan's 1983 "License to Kill," (see https://youtu.be/PBxBReHOFfg?si=1j8ZDDr0LXP4ygb1 [17 May 2025]) a saint-without-drop progression and sweetie text. In Chuck Berry's 1955 "Thirty Days (To Come Back Home)" (see https://youtu.be/yMuYCVZ7KK0?si=9Bot2LwdLwBewd1v [17 May 2025]) another Stoia periodic example (2021, 241–424), we hear a pre-dominant IV move straight to V7 in the fourth lyrical line, suggesting that the normally intervening I does not play a deep-level role.

42 Stoia 2021, 189n6.

43 https://youtu.be/rU0TBxJuwTU?si=iBheFvrvzd257xT6&t=4 (17 May 2025)

44 Compensating for the additional third line, McTell overlaps the stanzas, using the fourth line of the first stanza as the first line of the second stanza.

chord resolving to I." To my ear, though, McTell's chord is a ♯ivo7 functioning as a secondary leading-tone diminished seventh of the dominant (i. e., as viio7/V). This is true even though, with this ♯ivo7, the drop stalls at scale-degree $\hat{6}$ – we do not get $\flat\hat{6}$ at all before resolving to $\hat{5}$. What we get instead is an *ascent* to $\hat{5}$: $\hat{4}$-$\sharp\hat{4}$-$\hat{5}$, or what I call a "swelling" schema.[45] Of special interest in both passes is the quick turnaround V that McTell strums before beginning the next line, providing $\hat{5}$ prematurely; this might be heard either as (in Stoia's view, presumably) a simplification of the preceding pre-tonic, or as (in my view) a surface-level resolution of the preceding pre-dominant – a resolution even closer to the surface than the tonic-ness of the final line's first root-position I at "*real kind mama*." In truth, McTell's second attempt at the drop – not to mention the II7 near the end – complicates the harmonic levels here, even within my own hearing. But for present purposes, it suffices to say that I still hear the final refrain's initial I as resolving to the quick V7 (via II7) before the arrival of deeper tonic resolution at the very end of the stanza.

A New Harmonic Schema

McTell's interrupted drop motion, with the swelling ascent $\hat{4}$-$\sharp\hat{4}$-$\hat{5}$ in place of the shrinking descent $\hat{6}$-$\flat\hat{6}$-$\hat{5}$, is not a unique oddity of "Kind Mama." It appears also, for instance, in McTell's "Come on Around to My House Mama," as well as in Bob Dylan's 1963 "Honey, Just Allow Me One More Chance,"[46] a significantly reworked version of Henry Thomas's 1927 recording.[47] See Table 12, where the $\sharp\hat{4}$ is harmonized by II7 (cd, at "*worried man*"). In my earlier published work, I acknowledge $\hat{1}$-$\flat\hat{7}$-$\hat{6}$/$\hat{4}$-$\sharp\hat{4}$-$\hat{5}$ as a saint-consequent alternative to the more common dropping descent $\hat{1}$-$\flat\hat{7}$-$\hat{6}$-$\flat\hat{6}$-$\hat{5}$, but I have not yet recognized it as a harmonic meta-schema in its own right. Considering we now have two different root-harmonizations of this partial-dropping/swelling progression within a saint-sweetie combo, I am motivated to define $\hat{1}$-$\flat\hat{7}$-$\hat{6}$/$\hat{4}$-$\sharp\hat{4}$-$\hat{5}$ formally as the *twining schema*, in honor of the "intertwining" of text and pitch that Stoia frequently notes within the Sweet Thing scheme.[48]

4 bars per line (16 total)

ANTECEDENT

a: **[I]** *Honey, just allow me one more chance to* **[IV]** *get along with* **[I]** *you* (7)

b: *Honey, just allow me one more chance, I'll* **[II]** *do anything for* **[V]** *you* (7)

CONSEQUENT

cd: *Well, I'm a-* **[^{1} I]** *walking down the road with my* **[$^{\flat7}$ I♭7]** *head in my hand, I'm* **[$^{6/4}$ IV]** *looking for a woman needs a* **[$^{6/\sharp4}$ II7]** *worried man* (8)

e: *Just a-* **[^{5} I]** *one kind* **[V]** *favor I* **[I]** *ask of* **[IV]** *you, al-* **[I]** *-low me just a* **[V]** *one more* **[I]** *chance* (7)

Table 12: Bob Dylan's "Honey, Just Allow Me One More Chance," first stanza

Other songs with sweetie texts set to saint-with-twine progressions include Bobby Darin's 1958 "Splish Splash" (in the verses), Ray Charles's 1958 "Talkin' 'Bout You" (another of

45 Doll 2017, 144–147.

46 https://youtu.be/l9uBYOWD_fo?si=Nlb4mf51UpSQBfzv&t=4 (17 May 2025) See also Stoia's (2021, 237–239) analysis of the song.

47 https://youtu.be/y0Swc5mY3zA?si=vkv1RZ5asm1ch6Dh&t=36 (17 May 2025)

48 Stoia 2021, 2.

Stoia's examples),[49] and an up-tempo, jump-blues-styled re-recording of "This Train" by Sister Rosetta Tharpe and the Sam Price Trio from 1947.[50] Table 13 lists some songs that feature either a dropping-saint or twining-saint progression.

saint-with-drop (1̂–♭7̂–6̂–♭6̂–5̂)
Memphis Jug Band, "Got a Letter from My Darlin'" (1930)
Memphis Minnie, "Ain't No Use Trying to Tell On Me" (1933)
Memphis Minnie, "Selling My Porkchops" (1935)
Lil Johnson, "Honey, You're So Good to Me" (1936)
Robert Johnson, "They're Red Hot" (1937)
Barrel House Annie, "If It Don't Fit (Don't Force It)" (1937)*
Blind Boy Fuller, "What's That Smells Like Fish" (1938)
Sister Rosetta Tharpe, "This Train" (1939)
Dumbo, "When I See a Elephant Fly," (1941)*
Big Bill Broonzy, "Keep Your Hands Off Her" (1949)
The Beatles, "I Saw Her Standing There" (1963)
The Mothers of Invention, "Brown Shoes Don't Make It" (1967)
saint-with-twine (1̂–♭7̂–6̂/4̂–♯4̂–5̂)
Blind Willie McTell, "Come on Around to My House Mama" (1929)
Blind Willie McTell, "Kind Mama" (1929)
Barrel House Annie, "If It Don't Fit (Don't Force It)" (1937)*
Oscar "Buddy" Woods, "Come on Over to My House Baby" (1938)
Dumbo, "When I See a Elephant Fly," (1941)*
Sister Rosetta Tharpe, "This Train" (1947, with Sam Price Trio)
Ray Charles, "Talkin' 'Bout You" (1958)
Bobby Darin, "Splish Splash" (1958)
Bob Dylan, "Honey, Just Allow Me One More Chance" (1963)
Arlo Guthrie, "Alice's Restaurant Massacree" (1967)
*Features drop, twine, twirl (5̂–♯5̂–6̂/4̂–♯4̂–5̂), and tease (5̂–♯5̂–6̂–♭6̂–5̂)

Table 13: Sweetie plus saint-with-drop or saint-with-twine (for links to the recordings on YouTube, see the Appendix below)

The silly names of my meta-schemas all contain a mnemonic device: "s" names, such as "shrink" and "swell" are *short* schemas (three notes each); "d" names, such as "drop" *descend* from scale-degree 1̂; "t" names, such as "twine" *travel* up and down. The "twining" schema is very close to the "twirling" schema, 5̂-♯5̂-6̂/4̂-♯4̂-5̂, which, in some manifestations, might differ only in the second chord.[51] In the demo recordings of the Velvet Underground's "I'm Waiting for the Man" (Table 14),[52] the bottleneck-blues style features a third-line twirling progression that differs from the official version's minor-pentatonic ascent in the second and fourth chords, but it differs from the twining schema only in its III7; note the absence of V chords at the saint's defining cadential moments, with the first V repositioned

49 Ibid., 243n6 and 244n7.

50 The Darin and Charles songs exhibit some interesting harmonic idiosyncrasies. After Darin's twine ends on I, the progression hops between tonic and dominant, ending on a dominant turnaround: I-V7-I-V7. With this *two-step* progression, as I have come to call it, it is debatable whether Darin's verse ends with a half or whole cadence. Charles's saint deviates even further from the normal course after its twine, hopping between tonic and subdominant (I♭7-IV♭7-I♭7-IV♭7-I♭7) before finally offering a turnaround V7, a chord that ultimately fulfills the dominant function I hear suggested by the twine's scale-degree 5̂ but in such a delayed way as to suggest an ultimate half cadence. The Animals' 1964 cover of "Talkin' 'Bout You" (the B-side of "The House of the Rising Sun") simply gives I and V7 at the end, with no subdominants.

51 Doll 2017, 144–146.

52 https://youtu.be/GIJPA8Srac8?si=T97g5FLou0w_4-YX&t=21 (17 May 2025)

earlier at the end of the first lyrical line, and the second V saved until the end to form a turnaround, making this a questionable instance of the saint (but an obvious sweetie).[53]

4 bars per line (16 total)
? ANTECEDENT
a: **[I]** *I'm* **[IV]** *waiting for the* **[I]** *man* **[I♭7–♭VII–V]** (5)
b: **[I]** *Twenty-six* **[IV]** *dollars in my* **[I]** *hand* (5)
? CONSEQUENT
cd: [^{5} **I]** *Up to Lexington,* [$^{\sharp 5}$ **III7]** *one-two-five,* [$^{6\,/\,4}$ **IV]** *feel sick and dirty, more* [$^{\sharp 4}$ **♯ivo7]** *dead than alive* (8)
a: [^{5} **I]** *I'm* **[IV]** *waiting for the* **[I]** *man* **[I♭7–♭VII–V]** (5)

Table 14: Velvet Underground, "I'm Waiting for the Man" demo, first stanza

The drop, the twirl, and the twine are all independent of the saint and the sweetie – at least hypothetically. Drops are commonly heard elsewhere in blues turnarounds and as the basis for repeating riffs in rock songs like the Yardbird's 1965 "For Your Love,"[54] the Lovin' Spoonful's 1966 "Summer in the City,"[55] Cream's 1967 "Tales of Brave Ulysses,"[56] and the Nilsson's 1968 "One."[57] Twirls and twines, to my knowledge, are much less widespread than drops in general, and their presence outside the sweetie and the consequent half of the saint may be the exception rather than the rule. Indeed, for an independent twine I can only offer weak examples, because of the normativity of the saint-sweetie combo; this combination, which I earlier argued can potentially stabilize interpretations, now makes matters more complicated when looking for twines *outside* that context, as it pressures us to hear saints and sweeties – if only partially – every time we encounter a twine.

Ray Charles's 1956 "Hallelujah I Love Her So,"[58] another of Charles's perfect blends of the sacred and the sinfully suggestive, presents a twining progression partway through its verses (beginning at "*She kisses me*", see Table 15). The chords near the end might sound like a delayed, embellished version of the saint's whole cadence (II♭9-V11-I), but there is not a strong half cadence right before the consequent twine, just a very quick V at "*around*" (repeating a progression we just heard). Lyrically, there is an opening rhyming couplet a/b, followed by a second rhyming couplet cd during the twine, capped by a titular refrain ef (that is itself a rhyming couplet); yet the second couplet is equal to the length of the first couplet, rather than twice as fast, as it normally would be to reside entirely within the third lyrical line of a sweetie stanza. If this *is* the sweetie scheme, the spacing is irregular: two measures apiece for the first and seconds lines, but four meas-

53 See also Stoia's (2021, 5–15 and 239–240) discussion of the official release of "I'm Waiting for the Man" (see https://youtu.be/99og_g7rXnA?si=n6_6_h-hR0_X5kpG&t=15 [17 May 2025]), which also lacks both cadential V chords of the saint.

54 https://youtu.be/yKI7c9x2lbM?si=aBx_ozzYmC1ftRLr (17 May 2025)

55 https://youtu.be/5YgevxRGXIU?si=0_cMbyGqYiyuxEEo&t=6 (17 May 2025)

56 https://youtu.be/WRSbjpXZYEA?si=IhpkobLi8-YhaxZC (17 May 2025)

57 https://youtu.be/DYzY7-V5vxY?si=QzUpUxpMMrCyLHrI&t=6 (17 May 2025). See Doll 2021, 28–29; Doll 2017, 159–162; and Everett 1999, 348–349n180.

58 https://youtu.be/rMwKIqsfV8k?si=hG2YN-FkNtFTs_wn&t=65 (17 May 2025). See Doll 2017, 146.

ures apiece for the third and the fourth (assuming a steady tempo), resulting in a 7787 pattern where the 7s do not all match. This is hardly a straightforward instance of the saint-sweetie combo, but there are enough elements of it here to weaken this song's evidentiary value in establishing the twine's independent identity.

2 or 4 bars per line (12 total)

? ANTECEDENT (2 bars per line)

a: **[Iadd6]** *In the* **[I♭7 / 3]** *evening when the* **[IV]** *sun go* **[II7 / ♯4]** *down* **[V9]** (7?)

b: **[Iadd6]** *When there* **[I♭7 / 3]** *is nobody* **[IV]** *else a-* **[II7 / ♯4]** *-round* **[V9]** (7?)

? CONSEQUENT (4 bars per line)

cd: [^{1} **I♭7**] *She kisses me and she* [$^{\flat7}$ **I♭ (♯5)7 / 3**] *hold me tight,* [$^{6\,/\,4}$ **IV**] *and tells me "Daddy, every-* [$^{\sharp4}$ **♯ivo7**] *-thing's all right"* (8?)

ef: *That's why I* [^{5} **I**] *know* **[III7 / 7]** *yes,* **[vi]** *I know,* **[IV7]** *halle-* **[II ♭9]** *-lujah, I just* **[V11]** *love her* **[I]** *so* (7?)

Table 15: Ray Charles, "Hallelujah I Love Her So," third verse

More proof of the twine's independence can be mined in the Animals' 1964 rendition of the "House of the Rising Sun" (see Table 16).[59] The text is even less obviously a variant of the sweetie, with its lack of third-line couplet, lack of refrain,[60] and with just a single rhyme per stanza between the second and fourth lines – despite bearing a sweetie 5575 pattern and a clear saint-with-drop schema (with a minor-pentatonic bIII providing scale-degree ♭7). In an unusual move, the Animals' twining line is placed at the start of the antecedent rather than the consequent, with the scale-degree ♯$\hat{4}$ (enharmonically ♭$\hat{5}$) as the chordal seventh of ♭VI ♭7 (a common-tone German augmented-sixth chord resolving to i), and this initial twining progression is simultaneously an additional dropping progression (separate from the drop in the consequent).[61] All this said, despite its relocation and lack of sweetie text, the twine here is still in proximity to a saint-with-drop, so its identity, while distinct, would seem to be inextricably linked to the larger saint-sweetie combo.

2 bars per line (8 total)

ANTECEDENT

a: *My* [^{1} **i**] *mother* [$^{\flat7}$ **♭III**] *was a* [$^{6\,/\,4}$ **IV♭7**] *tailor* [$^{\flat6\,/\,\sharp4}$ **♭VI ♭7**] (5)

b: [^{5} **i**] *Sewed my* [**♭III**] *new blue* **[V7]** *jeans* (5)

CONSEQUENT

c: *My* [^{1} **i**] *father* [$^{\flat7}$ **♭III**] *was a* [^{6} **IV**] *gambling* [$^{\flat6}$ **♭VI**] *man* (7)

d: [^{5} **i**] *Down in* **[V7]** *New Or-* **[i]** *-leans* (5)

Table 16: The Animals, "House of the Rising Sun," second stanza

59 https://youtu.be/4-43lLKaqBQ?si=g-pcu9MSldiXPKNT&t=40 (17 May 2025)

60 The entire first stanza returns at the end, which may or may not qualify as a large refrain.

61 I discuss the saint progressions in "House of the Rising Sun" and Arlo Guthrie's 1967 "Alice's Restaurant Massacree" in Doll 2017, 182–185, but I mislabel their $\hat{1}$-$^{\flat}\hat{7}$-$\hat{6}$ motions as "sliding" schemas and misstate that the drop is "a combination of the slide and the shrink" (ibid., 159). The sliding schema is actually $\hat{1}$-$\hat{7}$-$\hat{6}$ (ibid., 153–155), with the leading tone rather than the subtonic. For a discussion of Bob Dylan's 1962 recording of "House of the Rising Sun" (see https://youtu.be/RP_caKDfoyU?si=bpPZPF5fo5uCR_if [17 May 2025]), as well as other Dylan songs with dropping or near-dropping progressions, see Rings 2013, §26–30.

A New Formal Scheme

A combination of the twine and the drop similar to the one in "House of the Rising Sun" can be found in Oscar "Buddy" Woods's "Come on Over to My House Baby" from 1938 (Table 17),[62] a song Stoia discusses multiple times.[63] Here, though, these schemas arrive at their expected position, the third line of a sweetie text commencing the consequent half of a saint progression. (Also different is Woods' fusion of scale-degrees ♭$\hat{6}$ and ♯$\hat{4}$, which results from what sounds to me like the guitar strumming iv7 (with a dropping ♭$\hat{6}$) and the piano playing ♯ivo7 (with a twining ♯$\hat{4}$) at the words "*shifting my gears*.")[64]

ANTECEDENT: I–V
a: **[I]** *Come right over to* **[VI9]** *my house, baby,* **[II9]** *ain't nobody* **[V7]** *home but* **[I]** *me* (7)

b: *Now, won't you* **[I]** *come on right over to* **[VI9]** *my house, baby, I'm* **[II9]** *lonesome as lonesome can* **[V7]** *be* (7)

CONSEQUENT: I–IV–I–V–I
cd: *Now I* [^{1} **I**] *may look old, I may look* [$^{\flat7}$ **I♭7**] *numbered in years, but* [$^{6\,/\,4}$ **IV**] *I can pull you here without* [$^{\flat6\,/\,\sharp4}$ **iv7/♯ivo7**] *shifting my gears* (8)

a: **[I]** *Come right on over to* **[VI9]** *my house, baby,* **[II9]** *ain't nobody* **[V7]** *home but* **[I]** *me* (7)

a: *That I* **[VI9]** *say,* **[II9]** *ain't nobody* **[V7]** *home but* **[I]** *me*

Table 17: Oscar "Buddy" Woods, "Come on Over to My House Baby," first stanza

But what I want to highlight is not the twine/drop but rather the harmony in the other lines, the quick chromatic circle-of-fifths progression VI9-II9-V7-I, which is stated four times (including during an extra, partial fifth lyrical line, which is a repetition of a bit of the tail refrain, something that occurs occasionally in sweetie stanzas.) Although we already encountered a similar progression in the fourth lines of "Hallelujah I Love Her So," Woods's progression saturates every lyrical line except the third. All the chordal thirds in this progression are major (often combined with minor sevenths or further extensions), forming a chain of secondary dominants that I call the "ragtime" version of the "steady" schema (the steady schema being the rotatable root series 6-2-5-1).[65] Songs like "Come on Over to My House Baby" are sometimes labeled with the stylistic term "ragtime blues."

Stoia explicitly ties this chromatic VI-II-V-I progression (the "ragtime-steady" schema) to the Sweet Thing scheme, and in particular to: the ending-accent pattern 7787, the word-choice pattern R(A/B)/CD/R(A) (or a/b/cd/a), the periodic progression with chromatically inflected subdominant (the saint-with-drop or saint-with-twine), and a melodic design that he dubs the "Pirate," which is an aa'ba(') form wherein the b ascends to a high-point before descending into a lower register.[66] This combination identified by Stoia, to which I have only really added the possibility of a twining schema instead of a drop, is something I myself can recognize as a proper *song scheme* – a "scheme [that] has gener-

62 https://youtu.be/bbm8ex8e9Dc?si=saf34Lphsh9CfXhr&t=6 (17 May 2025)

63 See Stoia 2021, 147–148, 171–172, 187–188, 224, and 226. The text in my Table 17 is taken from Stoia; as with many old blues lyrics, it is difficult to make them out. Stoia's guess is as good as mine.

64 Stoia (2021, 188 and 226) transcribes this moment as "iv."

65 Doll 2017, 111–113. When minor sevenths are present in the ragtime steady progression, they often yield prominent descents of $\hat{5}$-♯$\hat{4}$-$\hat{4}$-$\hat{3}$ and ♯$\hat{1}$-$\hat{1}$-$\hat{7}$. I do not recognize ♯$\hat{1}$-$\hat{1}$-$\hat{7}$ as a schema, but I dub $\hat{5}$-♯$\hat{4}$-$\hat{4}$ the "slouch" (ibid., 146–149).

66 Stoia 2021, 224–227. Stoia calls the Pirate a "small aba form," with the first "a" covering the first two lyrical lines, each with similar melodic starts.

ated a large group of songs."[67] Stoia considers the Sweet Thing scheme itself to be a song scheme, but I find it too nebulous as theorized. By contrast, this more specific combination of textual and musical elements (although still subject to significant variation) is more commensurate with song schemes like the 12-bar blues and others Stoia himself describes elsewhere (such as the "Trouble in Mind," or the "Key to the Highway").[68] This more specific combination still cannot quite generate an entire song, merely a stanza's worth of material; but set strophically, or as a section within an AABA or verse/chorus form, it is no different from something like the 12-bar blues, which likewise does not prescribe the form of a whole song. The saint-sweetie combo itself might already warrant formal acknowledgement as a song scheme, but this more specific combination of elements definitely does, and so I will call it the *ain't-a-saint* scheme, in honor of the salacious imagery typical of its lyrics. Table 18 provides a brief inventory of examples, largely culled from Stoia's monograph. By definition, a song that features the ain't-a-saint will simultaneously involve the saint, a nominal paradox I find appropriate given the sacred and profane lineages that Stoia argues funneled into the Sweet Thing.

Blind Willie McTell, "Come on Around to My House Mama" (1929)*
Memphis Jug Band, "Got a Letter from My Darlin'" (1930)**
Memphis Minnie, "Ain't No Use Trying to Tell On Me" (1933)
Memphis Minnie, "Selling My Porkchops" (1935)
Lil Johnson, "Honey, You're So Good to Me" (1936)
Robert Johnson, "They're Red Hot" (1937)
Barrel House Annie, "If It Don't Fit (Don't Force It)" (1937)***
Oscar "Buddy" Woods, "Come on Over to My House Baby" (1938)
Blind Boy Fuller, "What's That Smells Like Fish" (1938)
Dumbo, "When I See a Elephant Fly," (1941)****
Big Bill Broonzy, "Keep Your Hands Off Her" (1949)
The Mothers of Invention, "Brown Shoes Don't Make It" (1967)
Arlo Guthrie, "Alice's Restaurant Massacree" (1967)
"Weird Al" Yankovic, "Mr. Frump in the Iron Lung" (1983)*****
NOFX, "Buggley Eyes" (1992)*****

*Doesn't consistently play the VI ♭7
**Some of the chords are hard to hear
***Sometimes plays ii instead of II
****Only one ragtime-steady
*****Multiple divergences

Table 18: Ain't-a-saint examples (for links to the recordings on YouTube, see the Appendix below)

Even within these ain't-a-saint examples, we see variation, as would be expected of any song scheme. The most common are melodic. Indeed, the Pirate design is itself rather vague (and thus I have mostly ignored it in this article), and songs do not always comport with the b's (third line) ascending-then-descending plan.[69] Other variations are harmonic. Woods' song, as mentioned, offers both the drop and the twine at the same time. In Barrel House Annie's 1937 "If It Don't Fit (Don't Force It)"[70] (not a Stoia example), the chords display variations across stanzas, although they do consistently offer two – or nearly two –

67 Ibid., 2.

68 Stoia 2013.

69 Stoia (2021, 223n10, 225–226, and 238) briefly mentions the possibility of a "break" in the accompaniment, where chords are articulated mostly on the downbeats, as a kind of substitute for the Pirate's ascent-then-descent in the third lyrical line. He does not elaborate much on this point. Such breaks appeared in my Tables 7, 11, 15, 17, and 19.

70 https://youtu.be/omisgWq0rWY?si=c3o4xvRx-T_f2GZe&t=5 (17 May 2025)

iterations of the ragtime-steady schema for every relevant lyrical line, each time rotating the schema to start on an extended II or ii (although with the diatonic minor ii, the progression is technically no longer the "ragtime" version of the schema; see Table 19). More significantly, Annie's third lyrical line employs a dropping $\hat{1}$-$\hat{7}$-$\hat{6}$-$^{\flat}\hat{6}$-$\hat{5}$ combined not only with a twining $\hat{1}$-$^{\flat}\hat{7}$-$\hat{6}$/$\hat{4}$-$^{\sharp}\hat{4}$-$\hat{5}$ but also with a twirling $\hat{5}$-$^{\sharp}\hat{5}$-$\hat{6}$/$\hat{4}$-$^{\sharp}\hat{4}$-$\hat{5}$ as well as a "teasing" $\hat{5}$-$^{\sharp}\hat{6}$-$\hat{6}$-$^{\flat}\hat{6}$-$\hat{5}$ (yet another meta-schema), which is occasionally used to color the consequent half of the saint.[71] All these scale-degree motions arrive early at their shared destination, $\hat{5}$, at the end of the third lyrical line, with a quick turnaround V11. When long meta-schemas are combined like this, their audibility often diminishes (as does the probability that any one transcription will be entirely accurate – mine included). But regardless of how well we can hear any given one, it should be clear that the chromaticism in this space is susceptible to variation.

4 bars per line (16 total)

ANTECEDENT

a: **[II9]** *If it don't* **[V11]** *fit don't* **[I(i)]** *force* **[VI ♭7]** *it* **[ii7]** *'cause you'll make* **[V7]** *your mama* **[I]** *mad* **[VIadd6 / 5]** (7)

b: **[ii7]** *If it don't* **[V11]** *fit don't* **[I / 3]** *force* **[VI(♭9)]** *it* **[V / 2]** *'cause you'll only* **[II9]** *get in* **[V(♭9)♭11]** *bad*

CONSEQUENT

cd: [$^{1\,/\,5}$ **I]** *Changed the lock 'cause you* [$^{\flat7\,/\,\sharp5}$ **III(♭5)7]** *stayed out till four, your* [$^{6\,/\,4}$ **IV♭7]** *key didn't fit you tried to* [$^{\flat6\,/\,\sharp4}$ **♭VI(♭7)♭9]** *break down the door* [^{5} **V11]** (8)

a: **[II9]** *If it don't* **[V(♭9)♭11]** *fit don't* **[Iadd6 / 3]** *force* **[VI(7)add6]** *it* **[ii7]** *'cause you'll make* **[V7]** *your mama* **[I]** *mad* (7)

Table 19: Barrel House Annie, "If It Don't Fit (Don't Force It)," first stanza

Unlike the saint, the ain't-a-saint seems not to have lasted much beyond the 1930s, with later sightings tending to be nostalgic or otherwise steeped in retro-referential irony. This is to say, at some point in history, the ain't-a-saint became a cliché, and moved into the realm of the topos, something distinct and recognizable and available to be evoked for expressive purposes in other contexts.[72] This explains its appearance in the minstrel number "When I See a Elephant Fly [*sic*]" from the crows' scene in Disney's *Dumbo* (1941),[73] in Arlo Guthrie's absurdist protest anthem "Alice's Restaurant Massacree [*sic*]" (1967), in the satirical "Brown Shoes Don't Make It" (also 1967) by the Mothers of Invention (during the "*smother my daughter in chocolate syrup*" portion),[74] in the NOFX's prosaically sexist "Buggley Eyes" (1992),[75] and in "Weird Al" Yankovic's darkly comedic "Mr. Frump in the

71 Doll 2017, 143–145 and 183. For a simple saint-with-tease example (without the complication of the drop, twine, and twirl), see the third lyrical line of the Dave Clark Five's 1964 "Because" (see https://youtu.be/nuKdJmOZLN4?si=JGMBC9BiKqluiWO5&t=6 [17 May 2025]) "*It's* [^{5} I] *right, it's* [$^{\sharp5}$ Iaug] *right, to* [^{6} IV] *feel the way I* [$^{\flat6}$ iv] *do, be-* [^{5} I] *-cause…*" This is not a sweetie text, however.

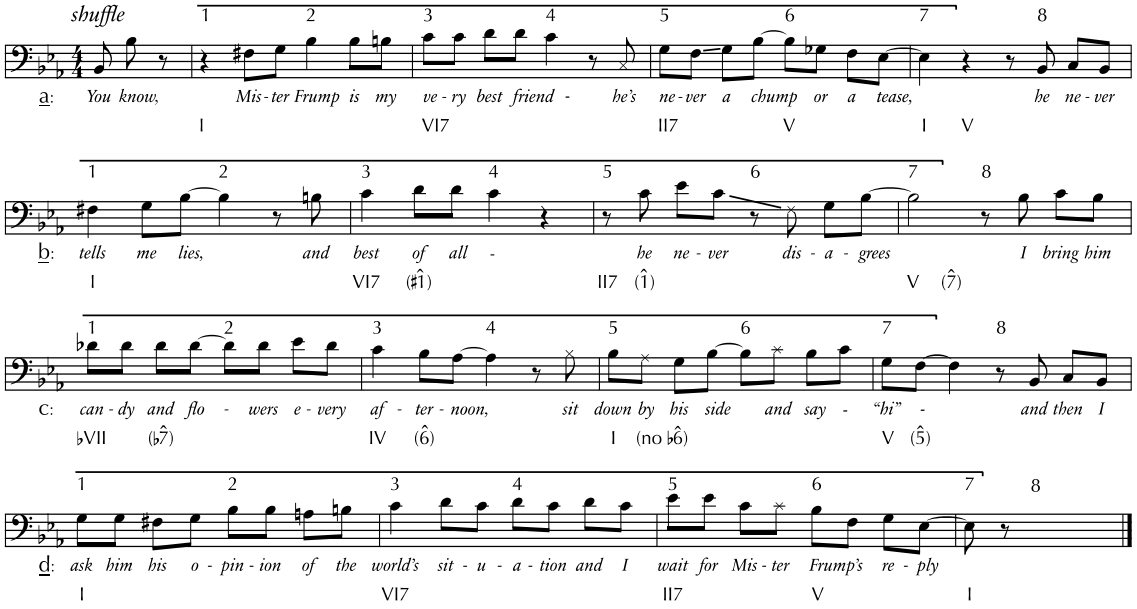
72 On topoi, see Mirka 2014. Although Stoia does not say it explicitly, my sense is that he interprets the Sweet Thing's patterns ("musical currency," Stoia 2021, 227) as accruing associations over time, and that these associations might be subconsciously played upon by musicians and recognized by audiences.

73 White performer Cliff Edwards—most famous as the voice of Jiminy Cricket in 1940's Pinocchio—sings the lead vocal line in "When I See a Elephant Fly," accompanied by Black singers Hall Johnson, James Baskett, Nick Stewart, and Jim Carmichael.

74 Frank Zappa (1989, 166), leader of the Mothers of Invention, is explicit about his use of "stock modules" comprising "Archetypal American Musical Icons" that should directly affect one's interpretation of proximate lyrics. See also Doll 2011 and Smith 1995.

75 Thanks to John Warren for this example.

Iron Lung" (1983). Yankovic's idiosyncratic second verse is shown in Example 2,[76] with its normative saint, its three ragtime-steady progressions, and its Pirate melodic design (the first two lines start the same, the third line descends from a high point E♭, and the fourth returns to a version of the opening). These are juxtaposed with an unexpected 7777 ending-accent pattern, a meandering a/b/c/d word-choice pattern whose third-line couplet does not rhyme ("*afternoon*" and "*hi*") and which is harmonized in falling fourths (♭VII-IV-I-V), and only a hint of a consequent dropping schema ♭7 (D♭, "*candy*") to $\hat{6}$ (C, "*afternoon*") that is actually part of a larger fully chromatic harmonic descent initiated in the second line's VI7 and ending on IV (♯$\hat{1}$-$\hat{1}$-$\hat{7}$-♭$\hat{7}$-$\hat{6}$). Moreover, Yankovic's other stanzas are half the size of this second stanza, and do not come close to offering a fully realized saint or sweetie; it is as though there are large quotation marks around this '80s ain't-a-saint stanza.



Example 2: "Weird Al" Yankovic, "Mr. Frump in the Iron Lung," second stanza

Outro

Given the close connection between the sweetie scheme and saint schema, and especially their fusion in the saint-and-sweetie combo and the ain't-a-saint scheme, it is worth reiterating that they are distinct structures. Neither one *necessarily* entails the other; in some cases, one version of a song might use just one structure while another version uses both. This modular relationship might seem strange to readers more familiar with vocal music in the Western classical tradition, where there is so much emphasis placed on text-music correspondence. With that mindset, we might consider the swapping out of one of these components to be borderline blasphemy, even if that attitude is not wholly compatible with the classical repertory given prominent counterexamples like Handel's religious English substitutions for originally secular Italian texts. At any rate, in the popular sphere, text-music correspondence cannot be taken for granted, or at the very least, often operates at a more generic level.

76 https://www.youtube.com/watch?v=l2C-Hwr3ozk&t=32s (17 May 2025)

Song schemes like the ain't-a-saint, which closely consider music and text in tandem, are powerful analytical templates through which to view the popular repertory. Defining and applying normative structures requires care, of course, but it is a challenge that I believe we as analysts are collectively up for. The theorization of more such song schemes will only enhance our understanding of all the types of music we value, whether they are – in Stoia's words – "devout Protestant songs" or, at the other extreme, "songs about fornicating 'rascals.'"[77] Our musical culture is replete with saints and sinners; the profession of music theory would do well with more schemers.

Appendix

Blind Willie McTell, "Come on Around to My House Mama" (1929). https://youtu.be/R8xGFoTCFBU?si=MfOVEUOcw8xhVHH0&t=7 (17 May 2025)

Blind Willie McTell, "Kind Mama" (1929). https://youtu.be/rU0TBxJuwTU?si=iBheFvrvzd257xT6&t=4 (17 May 2025)

Memphis Jug Band, "Got a Letter from My Darlin'" (1930). https://youtu.be/kWyOAA5lxPE?si=2QbpmSVTYfJUZXc0&t=21 (17 May 2025)

Memphis Minnie, "Ain't No Use Trying to Tell On Me" (1933). https://youtu.be/4yJjb7eNBxk?si=1WC2jXjEggHIW55j&t=10 (17 May 2025)

Memphis Minnie, "Selling My Porkchops" (1935). https://youtu.be/EqynI1s-WoM?si=10bFLF3TuacLiWI6&t=7 (17 May 2025)

Lil Johnson, "Honey, You're So Good to Me" (1936). https://youtu.be/86lmN7jsrv8?si=RrzzZvq1gcfIr_Qb&t=5 (17 May 2025)

Barrel House Annie, "If It Don't Fit (Don't Force It)" (1937). https://youtu.be/omisgWq0rWY?si=c3o4xvRx-T_f2GZe&t=5 (17 May 2025)

Robert Johnson, "They're Red Hot" (1937). https://youtu.be/G-83fZi-JB8?si=EXgS4Heu4h0vp13O&t=4 (17 May 2025)

Blind Boy Fuller, "What's That Smells Like Fish" (1938). https://youtu.be/WY7PSvJ1430?si=xPp2DLbv6iRzAQ5g&t=23 (17 May 2025)

Oscar "Buddy" Woods, "Come on Over to My House Baby" (1938). https://youtu.be/bbm8ex8e9Dc?si=saf34Lphsh9CfXhr&t=6 (17 May 2025)

Sister Rosetta Tharpe, "This Train" (1939). https://youtu.be/AoBdCs-_aRc?si=D3QTJ_XIpnjiBYRa&t=8 (17 May 2025)

Dumbo, "When I See a Elephant Fly" (1941). https://youtu.be/_v2exWrsGOc?si=xHhBMP6c6EkA7k7W&t=17 (17 May 2025)

Sister Rosetta Tharpe, "This Train" (1947, with Sam Price Trio). https://youtu.be/FDpuKZwM83Y?si=7BXkB1pIdDKvsDQ2&t=5 (17 May 2025)

Big Bill Broonzy, "Keep Your Hands Off Her" (1949). https://youtu.be/wkJhF3LieXU?si=xGpJjepcgCkp7AEW&t=8 (17 May 2025)

Bobby Darin, "Splish Splash" (1958). https://www.youtube.com/watch?v=4R53SaiFW9c (17 May 2025)

77 Stoia 2021, 209.

Ray Charles, "Talkin' 'Bout You" (1958). https://www.youtube.com/watch?v=QqsgCNnbs2k (17 May 2025)

The Beatles, "I Saw Her Standing There" (1963). https://youtu.be/oxwAB3SECtc?si=eVI0ufBjxUv7sn3F&t=6 (17 May 2025)

Bob Dylan, "Honey, Just Allow Me One More Chance" (1963). https://youtu.be/l9uBYOWD_fo?si=Nlb4mf51UpSQBfzv&t=4 (17 May 2025)

Arlo Guthrie, "Alice's Restaurant Massacree" (1967). https://youtu.be/WaKIX6oaSLs?si=FPKH7kAIijnDHzVj&t=973 (17 May 2025)

The Mothers of Invention, "Brown Shoes Don't Make It" (1967). https://youtu.be/oNULHGsy3SE?si=btOmF83faYpjPttE&t=332 (17 May 2025)

"Weird Al" Yankovic, "Mr. Frump in the Iron Lung" (1983). https://youtu.be/l2C-Hwr3ozk?si=Y1g15K0TF1Ct86bQ&t=32 (17 May 2025)

NOFX, "Buggley Eyes" (1992). https://www.youtube.com/watch?v=LWt5Al-Xphg (17 May 2025)

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© 2025 Christopher Doll (cdoll@mgsa.rutgers.edu)

Rutgers, The State University of New Jersey

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Microtiming in Early Funk

A Microrhythmic Analysis of Fourteen Influential Funk Grooves

Patrick Ainsworth

Beginning with "Cold Sweat" by James Brown, which is arguably the first funk track, this article focuses on the microrhythmic analyses of fourteen influential early funk grooves from the period 1967–1974. All the tracks under scrutiny were created without the use of click tracks, and many were recorded live in the studio, meaning that the determination of microtiming deviations was not straightforward. For this reason, methodologies used for note onset detection, the creation of rhythmic reference grids, and the calculation of microtiming deviations are summarised. These analyses have resulted in an empirical database of over one thousand microtiming deviations. Clear, systematic patterns of microtiming were observed, original and quantifiable data that justified many of the theories previously suggested and discussed in the literature was found, and new information regarding microtiming deviations and patterns was revealed. Sixteenth note swing rhythms were found to be an element of every track investigated (bar one, which was recorded with a drum machine with a straight feel). The degrees of swing varied from imperceptible thorough to overt funk shuffles. Evidence of backbeat delay (the slightly late articulation of beats two and four) was found to be limited. Unless specific musical instructions were being provided by lead vocalists, rhythmic elements of the tracks investigated were not perturbed by vocals. Novel findings were made demonstrating that structural aspects of musical arrangements may be highlighted microrhythmically.

Dieser Artikel untersucht mikrorhythmische Phänomene in vierzehn einflussreichen frühen Funk-Grooves aus dem Zeitraum 1967–1974, beginnend mit »Cold Sweat« von James Brown, dem wohl ersten Funk-Track. Alle untersuchten Tracks wurden ohne die Verwendung von Click-Tracks erstellt, und viele wurden live im Studio aufgenommen, was die Bestimmung von Microtiming-Varianzen nicht einfach macht. Aus diesem Grund werden bisherige Methoden zur Erkennung von Notenanfängen, zur Erstellung von rhythmischen Referenzrastern und zur Berechnung von Microtiming zusammengefasst. Die Analysen haben zu einer Datenbank mit über tausend Microtiming-Varianzen geführt. Es wurden systematische Muster erkannt und quantitative Daten erhoben, die viele der in der bisherigen Literatur vorgeschlagenen und diskutierten Theorien bestätigen; aufgedeckt wurden aber auch neue Erkenntnisse. Swing auf der Ebene der Sechzehntel wurde bis auf eine Ausnahme in allen untersuchten Stücken gefunden; der Grad des Swings variiert von kaum merklichen bis zu offenkundigen Funk-Shuffles. *Back beat delay* wurde nur in geringem Maße festgestellt. Ein Einfluss der Gesangparts auf die *rhythm section* ist in der Regel nicht vorhanden. Die neu gewonnenen Erkenntnisse zeigen zudem die Funktion von Microtiming zur Hervorhebung struktureller Aspekte der Arrangements.

SCHLAGWORTE/KEYWORDS: funk; groove; microrhythm; microtiming; Mikrotiming

Introduction

The importance of early funk and its influence on subsequent genres cannot be over emphasised; it is much discussed by both musicians and academics.[1] In recent decades, extensive sampling has highlighted the infectious nature of this music with many of the

1 See Iyer 1998; Freeman/Lacey 2002; Hughes 2003; McGuiness 2005; Danielsen 2006; Oliver 2015; Câmara 2016; Frane 2017; Hosken 2021.

sections (or *breaks*) featuring solo drums and/or percussion extracted from these pieces now forming what has become known as the *breakbeat canon*.[2]

Close listening, and analysis of discrete musical extracts from funk, and its associated styles, using digitally created waveforms show that performances often demonstrate micro-deviations from a superimposed isochronous rhythmic grid. This so-called "microtiming" or "microrhythm" is considered by many as an essential element of *groove* in music.[3] According to influential musicians and researchers such as Charles Keil and Vijay Iyer, this concept of groove is central to music genres such as jazz, Latin and funk.[4] In addition to this, Anne Danielsen notes: "the importance of microtiming is almost a given in the field of rhythm research."[5] Beginning in 1967 with "Cold Sweat" by James Brown, which is arguably the first funk track,[6] this essay will focus on the microrhythmic analyses of influential early funk grooves from the period 1967–1974.

Compared to many musics, funk is often relatively harmonically static, the attention of the listener is held more through the combinations of rhythm than other elements of music. When analysing James Brown's "Cold Sweat," Danielsen points out that all the instruments, including the vocals work in a rhythmic manner.[7] Michael Thaut hypothesised: "it seems that in the development of different musical systems, what is given up in complexity on one level enables the attainment of a different complexity on another level, and vice versa."[8] As funk is often relatively melodically and harmonically simple, the implication is that it should prioritise rhythmical complexity. So, to begin to understand funk, is to begin to understand groove, and to understand groove it is necessary to understand the *feel* created by the rhythmic features and complexities it contains at both macro and micro levels.

In recent years the amount of qualitative and empirical information regarding microtiming in funk has expanded. However, as highlighted by Richard Ashley and Guilherme Câmara, more data is required in order to increase understanding of groove-based music.[9] To further this process, in this study, fourteen tracks are analysed with reference to microtiming, enabling existing and new qualitative and quantitative findings to be brought together to provide fresh insights in the area.

Background

The beginnings of the analysis of popular music with particular focus on rhythm and microtiming occur in 1966 with the work of Charles Keil and his discussions regarding rhythm in jazz.[10] Keil suggested new approaches for the analysis of music, claiming that traditional methodologies designed for the study of Western Art Music were not appropri-

2 Oliver 2015, 49.

3 See Madison et al. 2011, 11; Janata/Tomic/Haberman 2011, 57.

4 See Keil 1966 and Iyer 1998.

5 Danielsen 2010, 9.

6 Danielsen 2006, 40.

7 Ibid., 4.

8 Thaut 2008, 14.

9 See Ashley 2014, 161; Câmara 2016, 50.

10 Keil 1966.

ate for understanding jazz. Since then, many musicians and academics have discussed the analysis of jazz and popular music focusing on what Keil named "participatory discrepancies," which he described as some or all of the following: "inflection, articulation, creative tensions, relaxed dynamisms and semiconscious or unconscious slightly out of syncnesses."[11] Many of these discussions have an emphasis on microtiming to the extent that Keil's "participatory discrepancies" are now generally thought of as microtiming deviations.[12]

The earliest empirical measurements of microtiming deviations in jazz were implemented in the late 1980s and early 1990s.[13] Many of these early studies focused on the varying degrees of swing employed by jazz musicians.[14] In 1995, Josef Prögler expanded on Keil's theories through the analysis of recordings and concluded: "participatory discrepancies are observable at the subsyntax level and they can be precisely measured."[15]

Alongside the above analyses of microtiming in Jazz, Jeff Bilmes[16] and Olavo Alén[17] studied timing deviations in Cuban music. From timing deviation information gained from performances given by the Cuban percussion group *Los Munequitos de Matanzas,* Bilmes was able to demonstrate systematic patterns of microtiming.[18] In his analysis of the Cuban genre *Tumba Francesa*, Alén also observed microtiming patterns that deviated from a superimposed metronomic grid.

Although limited in empirical research, Vijay Iyer's 1998 doctoral dissertation coalesced much of the previous research into microtiming from the late 1960s to the mid 1990s. He extended the work of theorists such as Keil to provide a robust foundation for the understanding and analysis of genres other than Western Art Music with a particular focus on rhythm and groove-based African and African American musics. In addition to discussions regarding degrees of swing, Iyer also focused on backbeat delay (the late articulation of attacks on beats two and four in a four-four meter).

Central to Iyer's thesis is the theory of embodied cognition in Western African and African American musics, suggesting that rhythm perception and production involves a whole-body experience and that the structure of rhythm-based music incorporates this embodiment. Furthermore, he explained that, as rhythm perception is an embodied activity, listening to music is an active process rather than a straightforward passive transfer from performer to listener.[19]

11 Keil 1987, 275.

12 Kilchenmann/Senn 2015, 2.

13 Pressing 1987; Reinholdsson 1987; Rose 1989; Ellis 1991.

14 See Collier/Collier 1996 for an overview.

15 Prögler 1995, 21.

16 Bilmes 1993.

17 Alén 1995.

18 Using quantitative data performances by *Los Munequitos de Matanzas*, Bilmes (1993, 75–76) concluded: "I have demonstrated that the [microtiming] deviations extracted from a performance are indeed meaningful […] the timing data is not random noise" and "deviations play a vital role in expressive timing." For this percussion group, Bilmes was able to quantify certain aspects of microtiming within the performances, one example is as follows: "the quinto [high pitched drum] player is, on average, playing slightly in front of the beat" (Bilmes 1993, 80).

19 Iyer 1998, 9.

Peter Freeman and Lachlan Lacey[20] examined the microtiming deviations contained within the drum break from James Brown's "Funky Drummer." Systematic patterns of microtiming were found throughout the eight bar break. In her highly detailed book, Anne Danielsen[21] provided a great deal of insightful information regarding funk rhythms generally on the macro level, but also on the micro level, though did not analyse microtiming deviations empirically. In addition to identifying note onsets that are played early, or late with reference to a superimposed, quantised grid, Danielsen suggested that these microtiming deviations might contribute to the overall funk groove. Danielsen also identified that funk sixteenth notes can contain degrees of swing. Evidence of degrees of sixteenth note swing in funk was also found by Timothy Hughes[22] in his study of Stevie Wonder's "Superstition" and by Esa Räsänen et al. in Michael McDonald's "I Keep Forgettin'."[23] Sixteenth note swing was the focus of studies by Guilherme Câmara[24] and Andrew Frane.[25] Both studies showed that varying degrees of sixteenth note swing are frequently present in funk.

As shown above, there is a growing body of both qualitative and quantitative research into microtiming/microrhythm in jazz, Latin music and funk, much of which appears to contain the assumption that microtiming enhances the quality of groove for the listener. Despite this, only a relatively small, but growing number of studies (eighteen in total) have been implemented that attempt to analyse and evaluate listener reactions to music containing microtiming deviations.[26] Of these, nine show some evidence that microtiming might enhance groove (albeit limited in most cases)[27] and nine show that it does not.[28] Of the studies that do show that microtiming may enhance groove, only four have a particular focus on funk or related styles.[29]

The mixed results summarised above could be caused by the fact that investigating the effects of music on listeners (including possible enhancement of groove created by microtiming) is fraught with issues including the following:

20 Freeman/Lacey 2002.

21 Danielsen 2006.

22 Hughes 2003.

23 Räsänen et al. 2015.

24 Câmara 2016.

25 Frane 2017.

26 Busse 2002; Madison et al. 2011 (the same study is also published in Madison/Gouyon/Ullén 2009]; Hennig et al. 2011; Davies et al. 2013; Frühauf/Kopiez/Platz 2013; Madison/Sioros 2014; Danielsen/Haugen/Jensenius 2015; Kilchenmann/Senn 2015; Senn et al. 2016; Senn et al. 2017; Matsushita/Nomura 2016**;** Senn et al. 2018; Skaansar/Lang/Danielsen 2019; Datseris et al. 2019; Jakubowski et al. 2022; Ainsworth 2024 (two studies); Winquist 2024.

27 Madison et al. 2011; Davies et al. 2013; Frühauf/Kopiez/Platz 2013; Madison/Sioros 2014; Matsushita/Nomura 2016; Senn et al. 2018; Skaansar/Lang/Danielsen 2019; Datseris et al. 2019; Ainsworth 2024 (the first of two experiments).

28 Busse 2002; Hennig et al. 2011; Danielsen/Haugen/Jensenius 2015; Kilchenmann/Senn 2015; Senn et al. 2016; Hofmann/Wesolowski/Goebl 2017; Jakubowski et al. 2022; Ainsworth 2024 (the second of two experiments); Winquist 2024.

29 Kilchenmann/Senn 2015; Senn et al. 2016; Ainsworth 2024 (focusing on barely perceptible or imperceptible swung vs straight sixteenths); Winquist 2024.

1. Stimuli (particularly when created using synthesised, MIDI or sampled sounds) may sound artificial.
2. Listening environments are difficult to control, particularly when conducting online studies.
3. Listening tasks can become fatiguing.
4. The experience of groove maybe multifaceted and not just based on rhythm and duration.
5. It may be impossible to recreate the audio nuances of original recordings.
6. Measurement of the responses of subjects to musical stimuli is challenging.

For many of the above studies, listeners are asked to rate the quality of grooves,[30] however, a few researchers have employed the measurement of physical reactions to music such as body movement[31] or pupil dilation.[32] It is worthy of note that the two studies that employed the measurement of body movement both produced some evidence that microtiming might enhance listeners' experience of groove. Although not a part of this study, further listening experiments utilising innovative methodologies are indicated to shed greater light on the possible effects of microtiming on groove quality. This study is not designed to investigate whether microtiming enhances funk grooves, but to simply observe whether patterns are present, relate them to the findings of previous research and to propose possible new theories for their existence.

Selection of Materials

Various criteria for selection of material to be examined were employed. It was necessary to ensure that all tracks chosen conformed to the funk genre, or its associated styles. Guilherme Câmara identified that funk rhythms often contain a sixteenth note density referent and have a tendency towards alternative pulses within the main 4/4 rhythm (syncopation and/or counter rhythm).[33] All the tracks analysed include these features. It seemed logical to select tracks which had already been discussed by researchers in the field, particularly when qualitative information provided by these academics could be enriched by quantitative microtiming data from this study. It was imperative to select tracks from which microtiming data could be easily extracted. For this reason, many of the excerpts analysed were drawn from the breakbeat canon[34] as these tracks contain drum solos with limited simultaneous onsets. Original recordings rather than breakbeat libraries were used as the source material to guarantee that the excerpts had not been subject to any editing/sonic manipulation post initial release. Other songs involving drum/percussion breaks, or clearly discernible note onsets (generally on drums, but across ensembles if possible) were also analysed. Alexander Stewart empha-

30 Busse 2002; Hennig et al. 2011; Madison et al. 2011; Davies et al. 2013; Frühauf/Kopiez/Platz 2013; Madison/Sioros 2014; Matsushita/Nomura 2016; Senn et al. 2016; Hofmann/Wesolowski/Goebl 2017; Senn et al. 2018; Skaansar/Lang/Danielsen 2019; Datseris et al. 2019; Jakubowski et al. 2022; Ainsworth 2024; Winquist 2024.

31 Danielsen/Haugen/Jensenius 2015; Kilchenmann/Senn 2015.

32 Skaansar/Lang/Danielsen 2019.

33 Câmara 2016, 10.

34 Oliver 2015, 49.

sised the importance of the impact of music from New Orleans on the development of funk, and in particular, the music of James Brown,[35] this influence was taken into consideration when selecting the sample of songs to be analysed. In a similar manner to Andrew Frane and Mitchell Ohriner,[36] it was possible to use external ratings of the influence and widespread appeal of some of the tracks to be analysed using information from whosampled.com. This is an online database of music sampling information and contains a popularity chart of the most sampled beats (many from the breakbeat canon). This chart could be cross-referenced with the other selection criteria to ensure that the tracks conformed to funk stylistic characteristics. The focus of the analyses was on the period 1967 to 1974. 1967 was chosen as the start date as this was the release year of "Cold Sweat" by James Brown. The end date 1974 was chosen simply to limit the already large pool of choice and to focus on relatively early funk.

There are obvious limitations to the information that can be derived from the selection of tracks and the corresponding analyses. Although it took many months to complete the analyses and a great deal of data was extracted, the sample is still relatively small and so cannot be seen as fully representative of funk from 1967–1974. Choice was often restricted by the availability of tracks with clearly discernible note onsets. Despite the use of the above criteria, a human element was still involved in the selection process. Some songs contained long sections with discernible onsets and some songs contained much shorter sections from which microtiming information could be extracted, so the number of usable bars in each piece varied significantly. In addition to this, for some tracks, onsets were perceptible across complete ensembles, in others, it was only possible to analyse information from drums and/or percussion. Many of these limitations are inevitable when working with live and multi-track recordings from this period and simply have to be accepted, but also noted. The focus of the analyses was on sections of songs containing as few instruments as possible (often drum breaks), as note onsets in excerpts containing larger numbers of instruments were difficult to discern from waveforms and spectrograms. Table 1 provides an overview of the selected songs.

35 Stewart 2000, 299.

36 See Frane 2017, 295; Ohriner 2019, 38.

Track/Artist/Label	Year	Previously analysed	whosampled.com chart position: 1966–1973	New Orleans influence	Section/Length	Time analysis begins/ Excerpt size for tempo calculation
"Cold Sweat" *pts. 1 and 2* James Brown King	1967	Danielsen (2006) Câmara (2016)	–	Yes	Drum/bass break 34 bars	4′ 21″ 2 bars
"Sing a Simple Song" Sly and the Family Stone Epic	1968	Frane (2017)	11		Drum break 6 bars	2′ 11″ 1 bar
"Amen Brother" The Winstons Metromedia	1969	Oliver (2015) Frane (2017)	1		Drum break 4 bars	1′ 25″ 1 bar
"Cissy Strut" The Meters Josie	1969		–	Yes	Bars 3–8 6 bars	0′ 08″
"Handclapping Song" The Meters Josie	1970		–	Yes	Both drum breaks 6 bars	0′ 32″ 1′ 04″ 2 bars
"Funky Drummer pts. 1 and 2" James Brown King	1970	Freeman and Lacey (2002) McGuiness (2005) Oliver (2015) Frane (2017)	3	Yes	Drum break 8 bars	5′ 22″ 1 bar
"Get Up (I Feel Like Being a) Sex Machine" James Brown King	1970	Danielsen (2006) Câmara (2016)	28	Yes	Bars 3–10 8 bars	0′ 18″ 1 bar
"Super Bad" James Brown King	1970	Câmara (2016)	–	Yes	Bars 4–7 4 bars	0′ 6″ 1 bar
"Think (About It)" Lyn Collins People	1972	Oliver (2015)	2	Yes	Bars 23, 29, 42, 48 4 bars	1′ 23″ 1″ 36″ 2′ 03″ 2′ 16″ 1 bar
"Impeach the President" The Honey Drippers Alaga	1973	Oliver (2015) Frane (2017)	6		Drum break 5 bars	0′ 00″ 1 bar
"Apache" The Incredible Bongo Band MGM	1973	Frane (2017)	8		Drum break 7 bars	2′ 22″ 1 bar
"In Time" Sly and the Family Stone Epic	1973		–		Drum break 4 bars	3′ 35″ 2 bars
"It's a New Day" The Skull Snaps GSF	1973	Frane (2017)	10		Drum break 2 bars	0′ 00″ 1 bar
"Funky President (People it's Bad)" James Brown Polydor	1974	Danielsen (2006)	4		Drum break 5 bars	0′ 01″ 1 bar

Table 1: Overview of track excerpts selected for analysis

https://storage.gmth.de/zgmth/media/1224/Ainsworth_Microtiming_Audio01_Cold_Sweat_Excerpt.wav
Audio Example 1: "Cold Sweat," drum/bass break

https://storage.gmth.de/zgmth/media/1224/Ainsworth_Microtiming_Audio02_Sing_a_Simple_Song_Excerpt.wav
Audio Example 2: "Sing a Simple Song," drum break

https://storage.gmth.de/zgmth/media/1224/Ainsworth_Microtiming_Audio03_Amen Brother Excerpt.wav
Audio Example 3: "Amen Brother," drum break

https://storage.gmth.de/zgmth/media/1224/Ainsworth_Microtiming_Audio04_Cissy Strut Excerpt.wav
Audio Example 4: "Cissy Strut," bars 3–8

https://storage.gmth.de/zgmth/media/1224/Ainsworth_Microtiming_Audio05a_Handclapping_bars_13_to_15.wav
Audio Example 5a: "Handclapping Song," bars 13–15

https://storage.gmth.de/zgmth/media/1224/Ainsworth_Microtiming_Audio05b_Handclapping_bars_25_to_27.wav
Audio Example 5b: "Handclapping Song," bars 25–27

https://storage.gmth.de/zgmth/media/1224/Ainsworth_Microtiming_Audio06_Funky Drummer Excerpt.wav
Audio Example 6: "Funky Drummer," drum break

https://storage.gmth.de/zgmth/media/1224/Ainsworth_Microtiming_Audio07a_Sex_Machine_Drum_Excerpt.wav
Audio Example 7a: "Sex Machine," bars 3–8, drum

https://storage.gmth.de/zgmth/media/1224/Ainsworth_Microtiming_Audio07b_Sex_Machine_Bass_Excerpt.wav
Audio Example 7b: "Sex Machine," bars 3–8, bass

https://storage.gmth.de/zgmth/media/1224/Ainsworth_Microtiming_Audio07c_Sex_Machine_Guitar_Excerpt.wav
Audio Example 7c: "Sex Machine," bars 3–8, guitar

https://storage.gmth.de/zgmth/media/1224/Ainsworth_Microtiming_Audio07d_Sex_Machine_Vocal_Excerpt.wav
Audio Example 7d: "Sex Machine," bars 3–8, vocal

https://storage.gmth.de/zgmth/media/1224/Ainsworth_Microtiming_Audio08a_Super_Bad_Drum_Excerpt.wav
Audio Example 8a: "Super Bad," bars 4–7, drum

https://storage.gmth.de/zgmth/media/1224/Ainsworth_Microtiming_Audio08b_Super_Bad_Bass_Excerpt.wav
Audio Example 8b: "Super Bad," bars 4–7, bass

https://storage.gmth.de/zgmth/media/1224/Ainsworth_Microtiming_Audio08c_Super_Bad_Vocal_Excerpt.wav
Audio Example 8c: "Super Bad," bars 4–7, vocal

https://storage.gmth.de/zgmth/media/1224/Ainsworth_Microtiming_Audio09a_Think_bar_23.wav
Audio Example 9a: "Think (About It)," bar 23

https://storage.gmth.de/zgmth/media/1224/Ainsworth_Microtiming_Audio09b_Think_bar_29.wav
Audio Example 9b: "Think (About It)," bar 29

https://storage.gmth.de/zgmth/media/1224/Ainsworth_Microtiming_Audio09c_Think_bar_42.wav
Audio Example 9c: "Think (About It)," bar 42

https://storage.gmth.de/zgmth/media/1224/Ainsworth_Microtiming_Audio09d_Think_bar 48.wav
Audio Example 9d: "Think (About It)," bar 48

https://storage.gmth.de/zgmth/media/1224/Ainsworth_Microtiming_Audio10_Impeach The President Excerpt.wav
Audio Example 10: "Impeach the President," drum break

https://storage.gmth.de/zgmth/media/1224/Ainsworth_Microtiming_Audio11_Apache Excerpt.wav
Audio Example 11: "Apache," drum break

https://storage.gmth.de/zgmth/media/1224/Ainsworth_Microtiming_Audio12_In Time Excerpt.wav
Audio Example 12: "In Time," drum break

https://storage.gmth.de/zgmth/media/1224/Ainsworth_Microtiming_Audio13_Its_a_New_Day_Excerpt.wav
Audio Example 13: "It's a New Day," drum break

https://storage.gmth.de/zgmth/media/1224/Ainsworth_Microtiming_Audio14_Funky President Excerpt.wav
Audio Example 14: "Funky President," drum break

Methodology

Accuracy of Digitally Produced Waveforms and Spectrograms

In order to measure and analyse the microtiming deviations contained within the excerpts of music, waveforms and spectrograms created in Avid Pro Tools and Sonic Visualiser[37] were utilised. The accuracy of visual information created by these software packages and the temporal sensitivity of listeners needs to be considered to justify findings.

The default view for waveforms created by Avid Pro Tools is "peak mode" which was employed in all the analyses. In peak mode waveforms are calculated to the temporal accuracy of one sample. The sample rate used in this study was 44.1 kHz giving a sample length of 0.0227 milliseconds (ms). Deviations of 20–30 ms are likely to be detected by listeners[38] and deviations of 0–10 ms can be detected by experienced musicians,[39] but rhythmic acuity for deviations lower than this can only be demonstrated in the lab.[40] For this reason, all microtiming intervals considered in this study were greater than or equal to 1 ms, so waveforms created by Pro Tools are sufficiently finely sliced for temporal analysis. In order to create a spectrogram, Sonic Visualiser cuts a sound into temporal blocks or windows. To gain clear information regarding frequencies, the default window length (1024 samples) and shape[41] were employed leading to windows with lengths of approximately 23 ms at sample the rate of 44.1 kHz. Since microtiming deviations of less than 20 ms were considered in this study, waveforms rather than spectrograms were used primarily to determine note onsets. Despite its limited accuracy, the information derived from spectrograms was still valuable since the frequency content of sounds could be used to help verify which timbres, and therefore instruments, were contributing to the whole. This data was particularly helpful when the time intervals between adjacent note onsets were very small (for example, a kick drum and a hi-hat occurring almost simultaneously) as the first attack often obscured the next. The spectral content could help determine the order of note onsets.

Note Onset Determination

In order to obtain useful information from musical recordings, and calculate and analyse microtiming deviations, it is imperative to determine where listeners actually perceive note onsets in relation to their physical onsets (the first positive or negative rise of a sound from 0 dB on the waveform). This is defined as the "perceptual attack time" (PAT). Many studies have

37 Cannam/Landone/Sandler 2010.

38 See Hirsh 1959, 767; Clarke 1989, 5; Friberg/Sundberg 1993, 54.

39 See Polfreman 2013, 3–6; Danielsen et al. 2019, 29.

40 Leshowitz 1971, 462.

41 In order to create a spectrogram, Sonic Visualiser software cuts a sound into temporal blocks or windows. When establishing the length of these windows, there is a trade-off between pitch accuracy and temporal accuracy. If the windows are relatively long the frequency resolution of the spectrogram is high, but the temporal accuracy is not. If the windows are shorter, the frequency resolution is limited (Schnupp/Nelken/King 2011, 23), but the temporal accuracy improves. Cutting sound into these notional chunks can also create "spectral splatter" or "cutting artefacts" which can "make the sound appear a lot more broadband than it actually is" (ibid., 22). To reduce spectral splatter, windows that open and close gently are used rather than rectangular windows. The default shape used by Sonic Visualiser is known as a Hanning window and the default length is 1024 samples (Cannam/Landone/Sandler 2010), so windows are approximately 23 ms long at the sample rate of 44.1 kHz.

shown that the position of a sound's PAT is not exact, but based on probability.[42] The most relevant findings to this study are those related to sounds with short onsets as most sounds in funk grooves have rapid rise times (cymbals, drums and percussive guitar attacks), for sounds such as these, subjects often experienced PATs within a few milliseconds of the physical onsets.[43] The only sounds with slightly longer rise times involved in this study are those generated by the electric bass guitar (up to 5 ms). For this reason, a small-scale study involving the synchronisation of repeating loops of pairs of different sounds by expert listeners was implemented. Similar paradigms have been employed in previous PAT studies.[44] The rise times of the sounds involved varied from 0.02 ms (hi-hat) to 4 ms (electric bass). Findings from this small-scale study showed that highly skilled musicians/producers could synchronise notes with small, but different attack times often perfectly, and frequently within less than six milliseconds of each other. This synchronisation ability was irrespective of the spectral content of the sounds. The combination of previous investigations and the findings from the small-scale study justify the use of physical onsets as referent points. This methodology was also employed by Guilherme Câmara[45] and is justified by Mark Doffman.[46]

As stated above, waveforms derived from Pro Tools were used to determine physical onsets. This was a straightforward process provided that individual onsets were visually discernible. For onsets occurring almost simultaneously, the process was not so simple. In some cases, individual onsets could also be identified using a combination of waveforms and spectrograms. An example of this issue was found with "Handclapping Song." Beginning at bar 13 (approx. 32″), there is a four bar drum break. For the cleanest note onsets (avoiding all but percussion instruments) bars 14 and 15 were examined. Figure 1 shows an excerpt of a waveform from the first beat of bar 14 extracted from this track. The first kick of each bar is accompanied by a handclap making determination of beat one difficult due to the closeness of the kick drum and clap onsets. The red arrow shows the possible error (approximately 13 ms) in defining the exact position of the kick onset.

Further examination using Sonic Visualiser to display the spectrogram and waveform in the same timescale (see Figure 2) showed that the low amplitude signal was due to the handclap and the kick drum onset occurred approximately 13 ms later. The intense frequency groupings (shown in red) between 600 Hz and 2500 Hz show the clap (the blue shaded area of the waveform). The kick onset begins at about 13 ms shown by the intense frequencies between 50 Hz and 300 Hz.

Combining the frequency content from the spectrogram and the accuracy of waveforms enabled precise determination of the kick onset.

42 Gordon 1987, Collins 2006, Wright 2008, Polfreman 2013, Bechtold/Senn 2018, Danielsen et al. 2019, London et al. 2019, Danielsen et al. 2021.

43 Polfreman 2013, 2; Danielsen et al. 2019, 16.

44 The simultaneity paradigm, as employed by Gordon 1984, Wright 2008, Polfreman 2013, Bechtold/Senn 2018, Danielsen et al. 2019. This involves the alignment of the sound under investigation (test sound) with a reference sound (normally a click or other percussive sound with an extremely short attack time). Separate isochronous loops are created, one with the repeating reference sound and one with the repeating test sound. The time intervals between physical onsets in both loops are identical. One loop is fixed; the other can be moved in tiny increments using a slider or nudge keys on a computer keypad. Both loops are played simultaneously to subjects who then attempt to synchronise the PATs of each onset by nudging the moveable loop relative to the fixed loop. The relative time difference between the PATs of each sound can then be measured by calculating the time difference between the physical onsets of each sound.

45 Câmara 2016, 21.

46 Doffman 2009, 128.

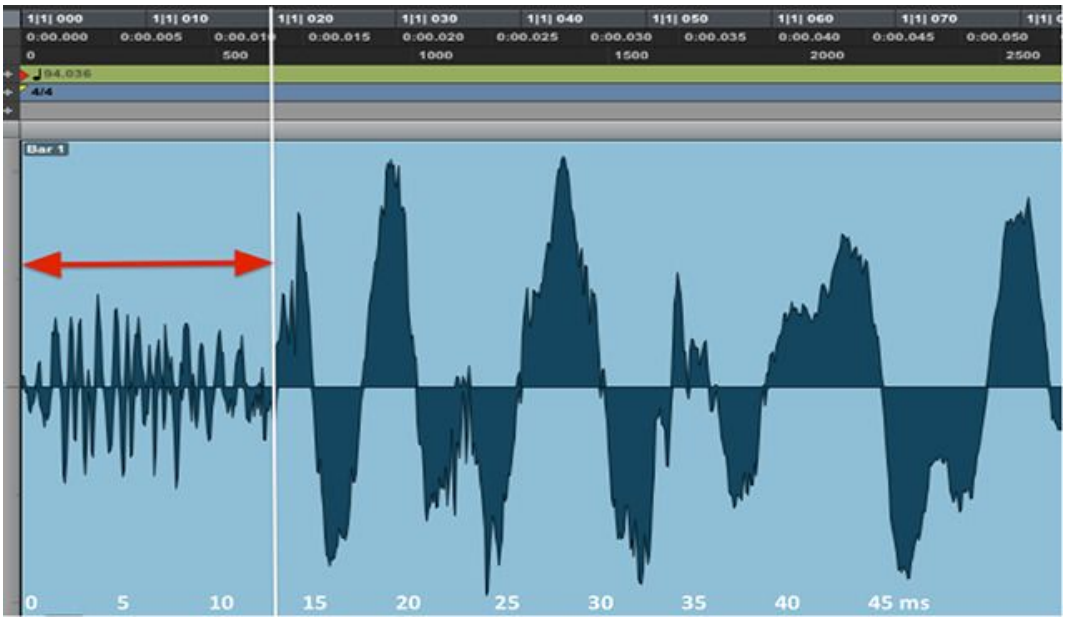

Figure 1: Waveform (from Pro Tools) of the first beat of bar 14 extracted from "Handclapping Song"

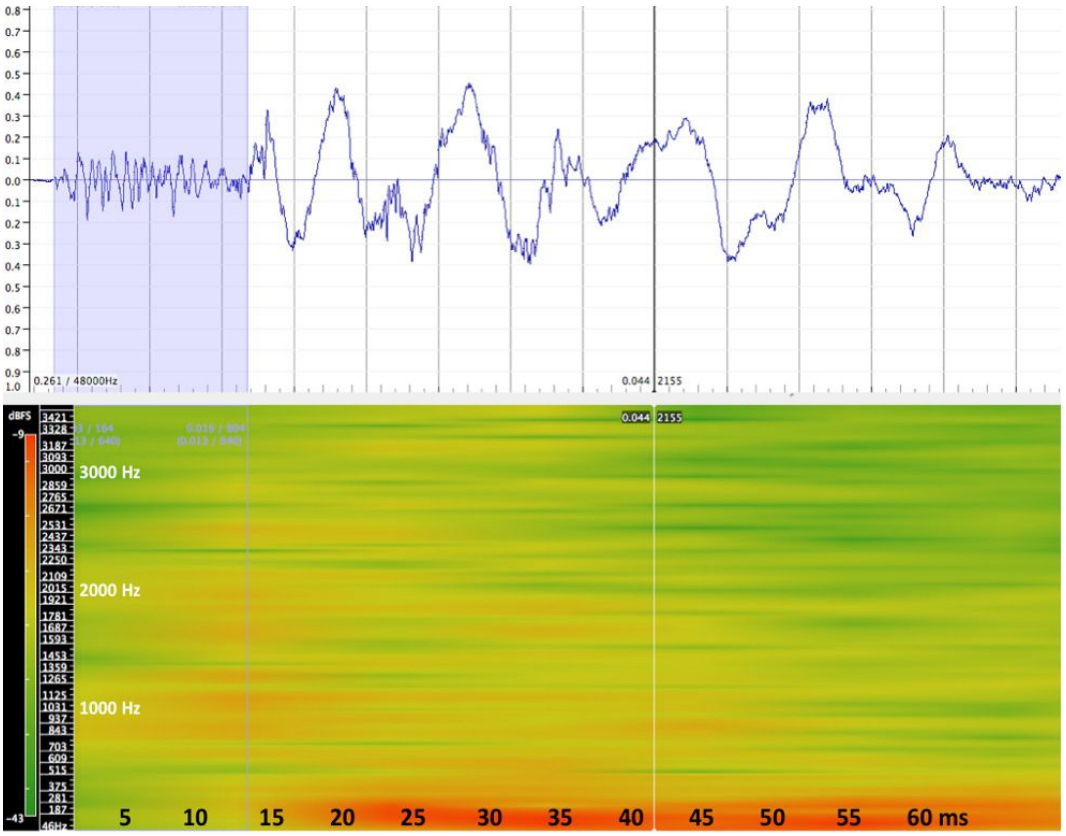

Figure 2: Waveform with spectrogram below from the first beat of bar 14 extracted from "Handclapping Song"

In cases where note onset determination proved difficult using the above methods, clean onsets were extracted and aligned with areas of the waveform containing audible evidence of similar onsets. This method was particularly helpful when locating the onsets of instruments containing predominantly lower frequencies in excerpts containing larger numbers of instruments. Figure 3 shows an area of a waveform from "Cissy Strut" containing a kick drum hit; this onset is partially obscured by notes played on the guitar, bass, and organ. Figure 4 shows the same excerpt (coloured pink) with a clean kick onset (coloured green) extracted from elsewhere in the piece and aligned with the obscured onset enabling determination of the point of attack of the obscured kick drum.

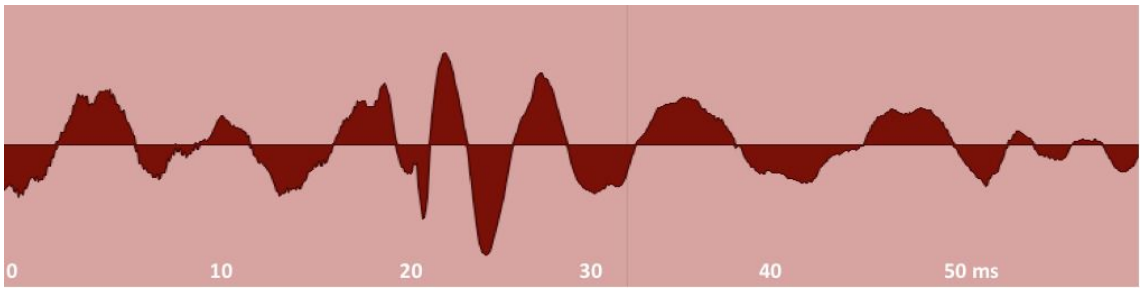

Figure 3: Waveform extracted from "Cissy Strut" showing an obscured kick drum onset

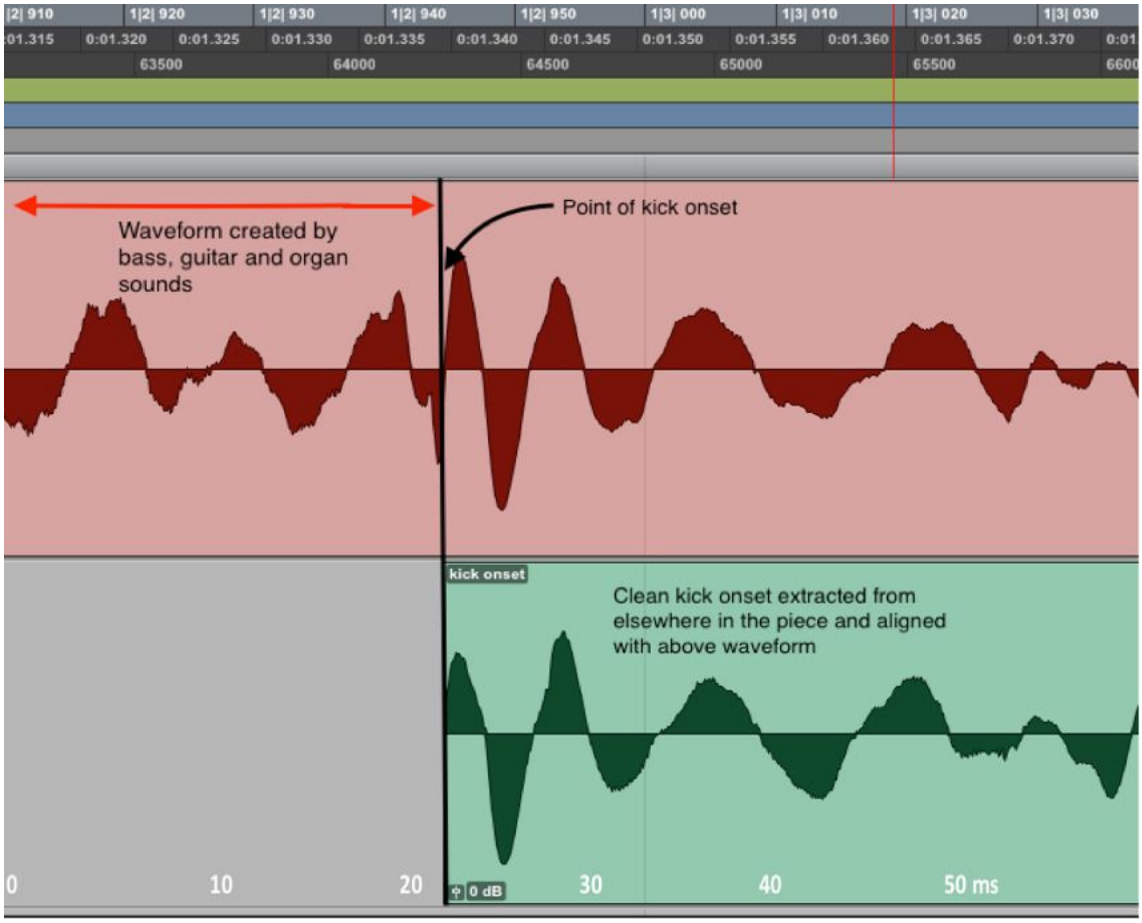

Figure 4: Waveform from Figure 3 showing a clean kick onset (green) from elsewhere in the piece, aligned with the obscured kick drum onset (pink)

For attacks of brighter instruments such as hi-hats/cymbals occurring after sounds comprising lower frequencies, the method used by Matthew Butterfield[47] was implemented. A sound containing predominantly lower frequencies often has a smooth, high amplitude waveform with long periods; the brighter instrument has a more spikey, low amplitude waveform with much shorter periods. The attack of the brighter instrument causes the waveform to become "fuzzy" making the onset clearly discernible. This can be seen in Figure 5, which shows kick onset followed by a hi-hat (extracted from "Funky Drummer").

47 Butterfield 2010, 163.

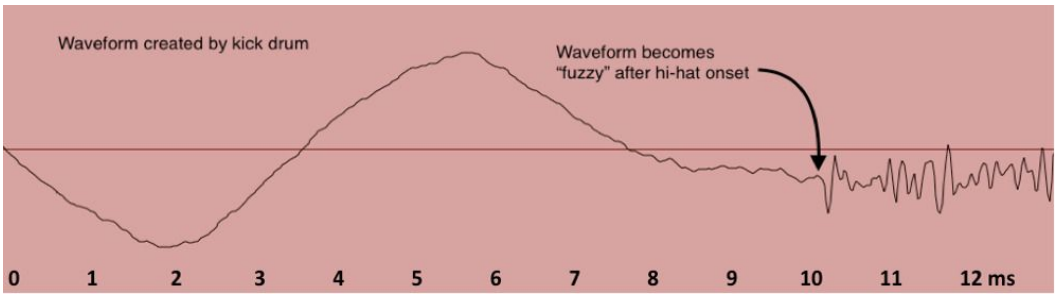

Figure 5: Waveform from "Funky Drummer" showing a hi-hat onset occurring after a kick drum onset

Unfortunately, in many cases, separating onsets proved impossible: Figure 6 shows a combined onset of a snare drum and hi-hat. Although these two parts of the kit are clearly audible, the snare contains such a broad range of frequencies that the hi-hat onset is completely obscured. This made measurement of any microtiming deviations between the two attacks impossible.

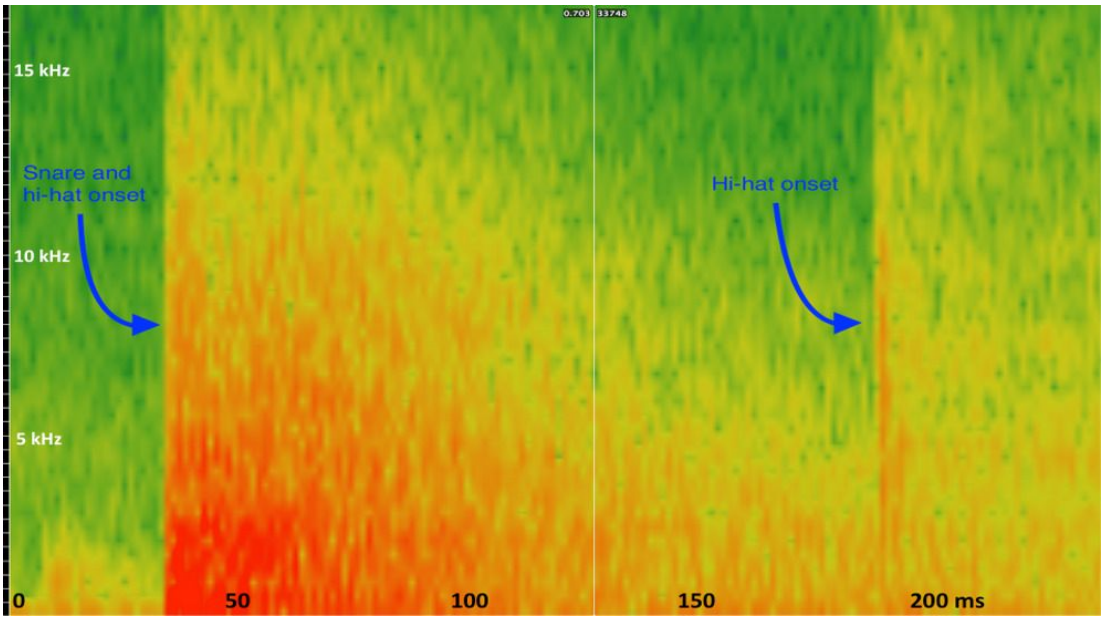

Figure 6: Spectrogram extracted from the second bar of James Brown's "Funky Drummer", showing a sixteenth note onset comprising the snare drum and hi-hat where the hi-hat is visually obscured by the snare. The adjacent hi-hat onset is also shown.

Determination of the "Grid" and Calculation of Microtiming Deviations

Entire pieces were imported into Pro Tools and were auditioned closely to find the sections containing the cleanest note onsets; these sections were then clipped by eye from the waveforms using Pro Tools editing functions. The precise points at which bars began and ended could be easily determined if just one onset or simultaneous onsets occurred on the first beat. Where close onsets occurred such as in "Handclapping Song," human judgement could not be avoided: one of the onsets had to be chosen as the referent point. For consistency, the same instrument was used to define beginnings and ends of bars throughout the extract in question. For "Handclapping Song," it appears that the clap is played early relative to the kick drum. For this reason, in order to analyse the microtiming deviations, a two-bar excerpt was created with the kick onset as the beginning of bar 14, beat 1 and the end of bar 15, beat 4. Thus, the early clap appears at the end of the clip

(see Figure 7). Once extracted, the exact tempo of each excerpt was determined using the "beat detective" function in Pro Tools, leading to the automatic superimposition of an isochronous sixteenth note grid over the waveform (see again Figure 7).[48]

Figure 7: Waveform showing bars 14 and 15 of "Handclapping Song" with isochronous sixteenth note gridlines. The clap is clearly visible at the end of the clip. The gap between the two red arrowheads shows a microtiming deviation.

Following this, the microtiming deviations of these note onsets from the grid were calculated by eye to the nearest millisecond by zooming in and using the Pro Tools ruler. Individual bar lengths were examined to determine whether tempo changes were present. If tempo variations were not found, bars could be examined in groups, if tempo changes were present, individual bars were analysed separately. The maximum length of sections analysed was just two bars in order to minimise the effect of tempo variations (for more details see Table 1). Unless otherwise stated, the kick drum onset was used as the referent point for the beginning of each bar and drum rather than cymbal onsets were prioritised as drum hits often obscured cymbals (including hi-hats). At this point it is worth noting that the human choice of the use of beat 1 as the start and end point of each one or two bar excerpts is potentially flawed. Beat detective simply creates a time ruler, dividing each clip into sixteenth note portions and does not allow for tempo changes within each excerpt. In addition to this, the findings of Andrew Frane[49] suggest that beat one in funk, may often occur relatively early, or as described by Anne Danielsen: "the One should be played on top [of the beat]."[50] If beat one is articulated early, using it as the start point of each excerpt will skew the following microtiming deviations, making them appear later in transcription than might be perceived by the listener. Despite these issues, the findings resulting from the above processes do show the relative positions of note attacks and from these patterns of microtiming deviations can be discerned.

To present as much detailed information as possible, note onsets and microtiming deviations were presented using the "time unit box system" (TUBS), rather than staff notation, as recommended by Rowan Oliver.[51] TUBS is particularly effective for analysis of rhythm as every sixteenth note subdivision is graphically represented and it enables the

48 To ensure the beat detective function did not process the excerpts in any way (such as time-stretching audio) other than to calculate tempos and create gridlines, the phase of an excerpt prior to the application of beat detective was inverted and played simultaneously with the same excerpt post application of beat detective. The result was zero audio output, proving that beat detective did nothing other than calculate tempos and create gridlines. The positions of as many note onsets as possible in each bar were determined using the methods described above.

49 Frane 2017, 299.

50 Danielsen 2006, 73.

51 Oliver 2015, 54.

reader to easily view timing asynchronies between onsets that would appear simultaneous when viewed using standard drum notation. In addition, it allows the reader to discern patterns in each repeating groove iteration (see Table 2 for an example; all remaining transcriptions are shown in the Appendix).

	Instrument	1	e	&	a	2	e	&	a	3	e	&	a	4	e	&	a
1 136.834 3 bpm	Ride	x ?		x ?		x ?		x 12>		x 10>		x <4		x <12		x ^	
	Snare					X 4>			g 17>		g 5>			X <5			g ^
	Kick	X ^		X <4					X ?			X 1>	X 11>				
2 137.713 9 bpm	Ride	x ?		x <5		x ^		x 13>		x 12>		x ?		x <5		x 4>	
	Snare					X 2>			g 15>		g <3			X 1>			g 5>
	Kick	X ^		X <2					X ?			X <1	X 16>				
3 138.354 8 bpm	Ride	x ?		x 1>		x ^		x 4>		x 9>		x <9		x 1>		x <12	
	Snare					X 7>			g 9>		g 2>					X <3	
	Kick	X ^		X 5>								X <1					
4 139.977 8 bpm	Ride	x ^		x <6		x ?		x 3>		x 7>		cr ?		x 12>		x <7	
	Snare		g 4>			X <9			g 7>		g <2					g <2	
	Kick			X <2	X 2>							X <9					

Key
- Ride = x, Crash = cr
- Snare drum: X = normal stroke, g = ghost note
- Kick drum: X = normal or rest stroke
Deviations in milliseconds: < early, ^ on time, > late, ? masked

Table 2: The Winstons, "Amen Brother," drum break: Rowan Oliver's TUBS transcription[52] with microtiming deviations added

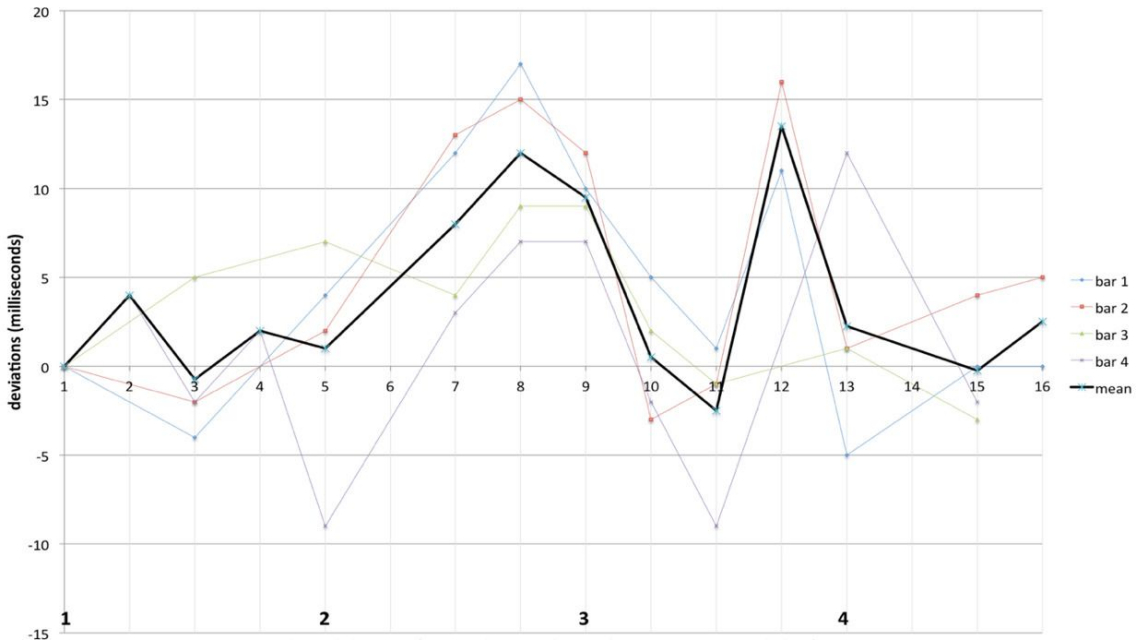

Figure 8: The Winstons, "Amen Brother," drum break: straight lined scatter graph showing microtiming deviations occurring on the drum kit (data points are shown on each line)

52 Oliver 2015, 87.

The deviations were also transferred to Microsoft Excel in order to create straight lined scatter graphs to examine the excerpts for patterns of microtiming as presented by Andrew McGuiness[53] in his analysis of "Funky Drummer." Coloured lines on these scatter graphs show the patterns of deviations for each groove iteration with a heavier black line showing the mean deviation for all iterations (see Figure 8 for an example).

Findings and Discussion

Elements of systematic microtiming were revealed in all the songs analysed except for "In Time" by Sly and the Family Stone, in which the drummer's stated aim was to play as closely as possible to the sixteenth note grid created by the drum machine that underpinned rhythmic aspects of the track.[54] Many of the findings that emerged during the process of analyses were related to sixteenth note swing, backbeat delay or perturbation by vocals. These aspects of microrhythm have already been examined in some depth by researchers.[55] Apart from some findings regarding backbeat delay, in general, the results of this study aligned with, and reinforced, previous findings in the field. In addition, new observations focused on the relationship between microtiming and structural aspects of music were made. Findings are discussed below in relation to existing theories, and new information regarding microtiming deviations and patterns is highlighted.

Sixteenth Note Swing

Sixteenth note swing is often a feature of popular music; perceptible, barely perceptible, and imperceptible levels of swing have been observed in funk and have been studied in depth by Stewart, Câmara and Frane.[56] There is a great deal of crossover between this study and the studies by Câmara and Frane (see Tables 1 and 3). Degrees of sixteenth note swing are discussed in the analyses below using ratios where 1:1 represents zero swing and 2:1 represents triplet swing. Swing ratios were calculated in a similar manner to Frane[57] by comparing the inter-onset interval (IOI) between an on beat sixteenth note and the following off beat sixteenth and the next IOI between the off beat sixteenth and the following on beat. On the few occasions where off beat sixteenths occurred without a following on beat attack, the position of the subdivision on the superimposed isochronous grid was used as the on beat (the same methodology was used by Câmara[58]). Swing ratios can be calculable at up to eight positions in each bar, leading to large datasets. For this reason, in general, mean swing ratios are discussed. The perception of swing can also be affected by tempo and the number of off beat onsets in the bar (swing density), so both

53 McGuiness 2005, 65.

54 In a personal communication, Andy Newmark, the drummer on "In Time," explained that his intention was to stay perfectly in time with the drum machine and not intentionally add any feel by displacing drum hits microrhythmically.

55 Swing: Stewart 2000, Câmara 2016, Frane 2017; backbeat delay: Iyer 1998, Butterfield 2010; perturbation by vocals: Danielsen 2006.

56 See Stewart 2000, 299; Câmara 2016, 33; Frane 2017, 297.

57 Frane 2017, 295.

58 Câmara 2016, 31.

tempo and swing density were considered. For sixteenth notes in a 4/4 metre, swing densities were calculated as percentages in a similar manner to Frane as follows:

$$\frac{\text{off beat sixteenth onsets per bar} \times 100}{8}$$

Câmara and Frane suggested that swing becomes discernible at ratios somewhere between 1.1:1 and 1.2:1.[59] In a later study, Frane and Ladan Shams' findings from an experiment considering tempo, swing ratio, and musical experience confirmed this result for drummers at high swing densities (87.5 %) but showed that at lower swing densities (37.5 %) and higher tempos, swing was less perceptible. Non-drummers were even less able to detect swing particularly at high tempos and low densities. Frane and Shams' findings were used to determine swing salience in the song analyses.[60]

From the findings of Stewart, Câmara and Frane,[61] varying degrees of swing were expected: according to Câmara, swing is a universal feature of funk.[62] This aligns with the findings of all the analyses: evidence of swing was detected in every track analysed except "In Time," in which the drummer was playing to a drum machine and, by his own admission, wished to perform perfectly with the machine, so was forced to play straight sixteenths (see above). The straight line scatter graphs created for every track (except "In Time") show the characteristic zig zags of swing, demonstrating that the off beat sixteenth notes occurred relatively late compared to those on the beat or on eighth note subdivisions. For some tracks such as "Cold Sweat" and "Funky Drummer," swing was found to be imperceptible or barely perceptible, for others with more pronounced zig zags, swing was clearly discernible. Figure 9 shows a comparison of scatter graphs for three tracks with different degrees of swing ("Funky Drummer", "Cissy Strut" and "Funky President"). At this point, it is worth noting that the majority of the deviations for "Funky Drummer" are positive (or late). This may be because beat one was used as the reference point for the beginning of each groove iteration (see above), but the drummer was actually performing this beat early causing following attacks to appear relatively late. This potential methodological limitation is discussed below.

Table 3 is a summary of the swing densities and the mean swing ratios calculated from the drums in each track; possible swing salience based on the findings of Frane and Shams is also included.[63] In addition to this, the findings of Câmara and Frane are also shown for comparison. In general, all findings align closely; however, there are minor discrepancies as Câmara's calculations were based on all instruments (whereas the findings here are focused on drums) and Frane generally analysed fewer bars.

59 See Câmara 2016, 24; Frane 2017, 294.

60 Frane/Shams 2017, 4205.

61 See Stewart 2000; Câmara 2016; Frane 2017.

62 Câmara 2016, 11.

63 Frane/Shams 2017, 4205.

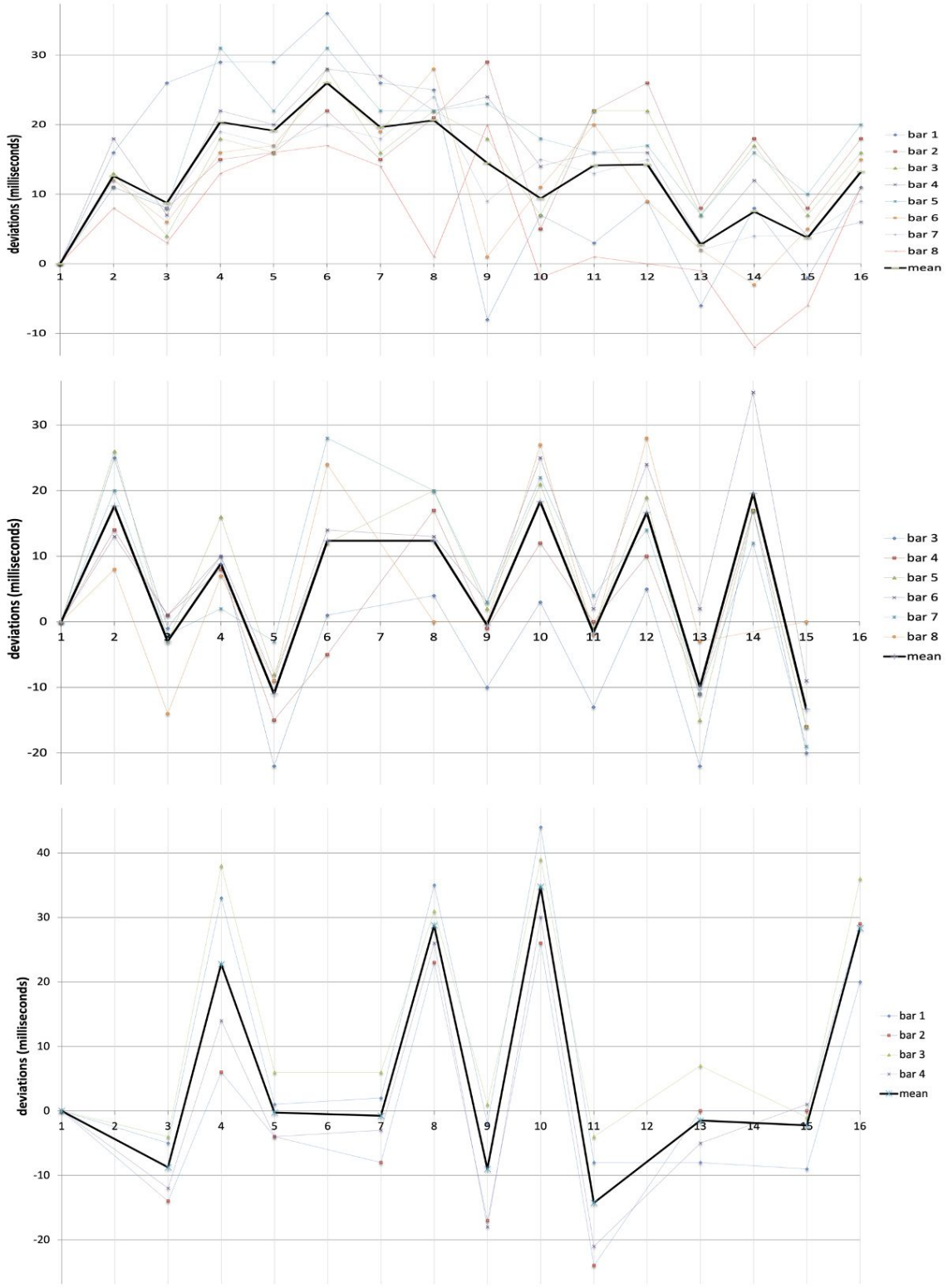

Figure 9: Straight lined scatter graphs showing different degrees of swing in "Funky Drummer" (swing ratio 1.07:1, barely perceptible or imperceptible),[64] "Cissy Strut" (swing ratio 1.3:1, just perceptible)[65] and "Funky President" (swing ratio 1.6:1, clearly perceptible)[66]

64 For TUBS transcription including microtiming deviations, see Figure 24 in the Appendix.

65 For TUBS transcription including microtiming deviations, see Figure 28 in the Appendix.

Track	Mean tempo (BPM)	Number of bars analysed	Swing density			Mean swing ratio	Swing salience (Frane and Shams 2017)		Mean swing ratio previous findings (Câmara 2016, Frane 2017)
			swung attacks per bar	density %	density rating		Drummers	Non-drummers	
"Cold Sweat"	113.3	32	2	12.5	low	1.07:1	no	no	1.07:1 (Câmara)
"Funky Drummer"	100.9	8	8	100	high	1.07:1	no	no	1.1: 1 (Frane) fewer bars analysed by Frane
"Sex Machine"	108.3	8	3	37.5	low	1.5:1	yes	no	1.6:1 (Câmara) all instruments considered, only drums analysed in this study
"Super Bad"	125.6	4	1	12.5	low	1.1:1	no	no	1.13:1 (Câmara) more bars analysed by Câmara
"Think (About It)"	113.9	4	1	12.5	low	>1.1:1	yes	Yes	–
"Amen Brother"	138.2	4	4	50	medium	1.1:1	no	no	1.2:1 (Frane) more focus on cymbal attacks; greater focus on drums in this study
"Cissy Strut"	89.5	6	7	87.5	high	1.3:1	yes	yes	–
"Handclapping Song"	93.7	6	3	37.5	low	1.3:1	yes	no	–
"Impeach the President"	95.1	5	1	12.5	low	1.56:1	yes	yes	1.4:1 (Frane) fewer bars analysed by Frane
"Apache"	118.3	7	2	25	low	1.16:1	no	no	1.1:1. (Frane) fewer bars analysed by Frane
"Sing a Simple Song"	101.2	6	1	12.5	low	1.7:1	yes	yes	2:1 (Frane) fewer bars analysed by Frane
"In Time"	95.8	4	5	62.5	high	1:1	no	no	–
"It's a New Day"	95.9	2	2	25	low	1.5:1	yes	yes	1.7:1 (Frane) fewer bars analysed by Frane
"Funky President"	98.8	4	4	50	medium	1.6:1	yes	yes	–

Table 3: Swing ratios, calculated from the drums, of the tracks analysed (note: bold lines group tracks with the same drummer together)

Digging deeper into the findings from the analyses reveals a great deal more about swing in funk. Some of the detail regarding degrees of swing echoes research focused on jazz. As shown by Mark Ellis for jazz,[67] the swing ratios in funk differ from song to song. The ratios in this study vary from 1.07:1 ("Cold Sweat" and "Funky Drummer") to 1.8:1 ("Papa Was Too"). However, unlike jazz, none of the ratios are equal to, or greater than triplet swing (2:1) as measured by Richard Rose.[68] It seems that funk drummers like to play time somewhere between regular sixteenth notes and sixteenth triplets as noted by Jim Payne when describing John Jabo Starks' (one of James Brown's drummers) playing.[69] Freeman and Lacey were able to identify jazz drummers (Gene Krupa and Buddy Rich) through their swing ratios.[70] This may also be the case for funk: the ratios for "Cold Sweat" and "Funky Drummer," both played by Clyde Stubblefield, are identical (1.07:1); the same applies for Zigaboo Modeliste's drumming in "Cissy Strut" and "Handclapping Song" where both ratios are 1.3:1. It is possible that funk drummers might display a swing ratio *fingerprint* in a similar manner to jazz musicians.

66 For TUBS transcription including microtiming deviations, see Figure 34 in the Appendix.

67 Ellis 1991, 713.

68 Collier/Collier 1996, 124.

69 Payne 2010, 144.

70 Freeman/Lacey 2002, 549.

Unlike jazz, imperceptible or barely discernible swing was found to be a feature of five of the fourteen songs analysed ("Cold Sweat," "Funky Drummer," "Super Bad," "Amen Brother," "Apache"). It could be possible that, even though not overt, these outwardly undetectable degrees of swing do have some effect on the listener and might enhance groove quality; this theory is supported by Roger Linn.[71] Swing, whether easily detectable, or barely discernible, appears to be an important feature of many funk grooves, however, as shown by some of the lower swing densities found (see Table 3), swing in funk is not always produced by continuous *long-short* pairs of notes as is often the case in jazz, but can created through timing differences in individual note pairs.

Backbeat Delay

One of the main expectations in the findings of these analyses was quantifiable evidence of backbeat delay (the slightly late articulation of beats two and four, usually on the snare drum). Backbeat delay appears to be an almost universally accepted feature of African American music such as jazz and funk; Iyer dedicated a whole section of his 1998 thesis to the subject and also suggested that backbeat delay might be in built into the human organism: a result of the motor system.[72] To date, some empirical evidence of backbeat delay in funk and its related styles has been found, but not a significant amount. Ives Chor found some evidence in the piano parts of Afro-Cuban styles.[73] In his analyses of The Loop Loft (a commercially available collection of loops created by world class musicians), Fred Hosken provided some evidence of late snare drum onsets on beats 2 and 4 of the bar.[74] However, Matthew Butterfield countered Vijay Iyer's argument regarding the motor system, concluding that backbeat delay is actually a chosen expressive rhythmic feature.[75] Based on the songs analysed in this chapter, it appears that Butterfield's conclusions may be a more accurate representation: backbeat delay does not appear to be a significant feature, and perhaps, contrary to expectation, should not be considered as part of the codification of funk music.

Of the fourteen songs analysed, seven contain elements of backbeat delay ("Funky Drummer," "Sex Machine," "Super Bad," "Think (About It)," "Handclapping Song," "Impeach the President," "It's a New Day"). However, the backbeat delay for these songs is at low levels that might only just be noticeable if Anders Friberg and Johan Sundberg's findings focusing on just noticeable differences (JNDs) in IOIs are applied.[76] Five songs contain levels that are imperceptible ("Cold Sweat," "Amen Brother," "Papa Was Too," "Apache," "Sing a Simple Song"). Two contain none ("In Time," "Funky President") and

71 Scarth/Linn 2013, 1.

72 Iyer 1998, 64–65.

73 Chor 2010, 50.

74 Hosken 2021, 108.

75 Butterfield 2006, 12.

76 Friberg and Sundberg (1993, 1995) showed that the JND for interonset durations less than 250 ms is approximately 10 ms and "about 5% of the interonset duration for longer durations" (1993, 54). It should be noted that Friberg and Sundberg published findings from the same (or very similar) experiment in 1995. Here they stated: "JND was found to be approximately constant at 6 ms for tone interonset intervals shorter than about 240 ms and the relative JND constant at 2.5% of the tone interonsets above 240 ms" (1995, 2524).

four contain the opposite of backbeat delay ("Cold Sweat," "Funky Drummer," "Think (About It)," "Cissy Strut"). It is also noteworthy, that three of the songs analysed ("Amen Brother," "Think (About It)," "Funky Drummer") contain relatively early, and "snappy" sounding snare hits on the fourth beat of each bar. In their analysis of "Funky Drummer," Freeman and Lacey showed that the mean deviation on beat two is relatively late, however, based on the analysis in this study, this may not be an indication of backbeat delay.[77]

Based on these findings, it appears that Butterfield's argument may be closer to the truth: backbeat delay can be present, but it appears to be a choice. Table 4 is a summary of backbeat delay for each track analysed.

Track	**Backbeat delay: beat 2**	**Backbeat delay: beat 4**	**Backbeat delay salience (Friberg and Sundberg 1993 and 1995)**
"Cold Sweat" (two bar pattern)	1:1 1:1	1:1 0.98:1	no
"Funky Drummer"	1.04:1	0.98:1	yes
"Sex Machine"	1.08:1	1.05:1	yes
"Super Bad"	1.05:1	1.03:1	yes
"Think (About It)"	1.04:1	?	yes
"Amen Brother"	0.99:1	0.99:1	no
"Papa Was Too"	1.1:1	1.02:1	no
"Cissy Strut"	0.97:1	0.97:1	no
"Handclapping Song"	1.03:1	1.03:1	yes
"Impeach the President"	1.02:1	1.04:1	yes
"Apache"	1.01:1	1:1	no
"Sing a Simple Song"	0.95:1	1:1	no
"In Time"	1:1	1:1	no
"It's a New Day"	0.99:1	1.03:1	yes
"Funky President"	1:1	1:1	no

Table 4: Backbeat delay of the tracks analysed (note: bold lines group tracks with the same drummer together)

77 In their analysis of the microtiming deviations in "Funky Drummer," Freeman and Lacey observed that "beat two is played consistently after the expected beat. Beat two lags the expected beat by an average of 2.8 % of the beat time […] with a 4.8 % maximum lag" (Freeman/Lacey 2002, 550). Beat two certainly is late as shown in Figure 9 (subdivision 5), however, this does not appear to be an indication of backbeat delay, as the deviation on the following subdivision is even larger. The opposite of backbeat delay is found on beat four (subdivision 13). Here the mean deviations are at their lowest, as corroborated by Freeman and Lacey: "beat four is the most accurate beat" (2002, 550). These visual findings can be quantifiably verified based on the IOIs of quarter notes. The mean backbeat delay ratio on beat two is 1.04:1, showing minimal delay, and the ratio on beat four is 0.98:1, demonstrating inverse backbeat delay. If Friberg and Sundberg's (1993, 1995) findings are applied, these levels of delay and inverse delay might just be noticeable. So, there is some, but minimal evidence of backbeat delay in "Funky Drummer," and some evidence of the opposite.

Perturbations by Vocals

Three of the tracks analysed show some element of microrhythmic influence created by the performance of the vocalist: "Cold Sweat," "Funky Drummer," and "Think (About It)." This is partly due to the fact that many of the excerpts contain minimal or no vocals. As shown below, despite expectations (especially involving James Brown's music), vocalists have limited rhythmic influence in these tracks.

Anybody who has witnessed the vocal energy and physicality of a James Brown performance would assume that his verbalisations and movements would be likely to perturb the rhythm section. Brown was a fearsome bandleader who allegedly fined musicians for errors.[78] However, based on the analyses of the James Brown songs, it appears that, when performing over grooves with the band, he acts as part of the band rather than the leader. In "Cold Sweat," "Funky Drummer," "Sex Machine" and "Super Bad," Brown's vocal interjections do not appear to perturb the rhythm of the drums in any significant manner. In "Funky Drummer," Brown clearly praises the rhythmic quality of the groove created by Clyde Stubblefield on drums. Perhaps, despite his appearance as a martinet, he, and all the musicians involved, prioritised the communal rhythm of the groove above any band hierarchy; Brown's vocals are simply another part of the band. There are occasional exceptions to this in "Cold Sweat" and "Funky Drummer," but only when Brown is providing musical instructions such as count offs.

In "Think (About It)," the drums appear to be influenced by a guitar and bass figure that lands with an accent on beat four; this is followed by a catchy vocal hook which ends on the fourth beat of the next bar. Both of these fourth beats are timed relatively early by the drummer (Jon Jabo Starks) and feature an accented, *snappy* snare hit. So here, riffs create the perturbation: the first instrumental, and the second vocal. So, like Brown's music, the vocalist is acting as an equal part of the band, rather than a leader (see Figures 14 and 15).

This equal division of musical responsibility in funk is summarised in Anne Danielsen's comparison of James Brown's earlier proto-funk song, "Papa's Got a Brand New Bag" with his first funk tune, "Cold Sweat." "Papa's Got a Brand New Bag" has a clear division of labour with the vocals on top whereas "Cold Sweat" has all of the instruments, including the vocals, working in the same way.[79] Despite the possible theatrical performance of the funk bandleader, perhaps he or she has no more rhythmic influence on funk grooves than the other band members.

Structural Aspects

David Wessel and Matthew Wright observed that drummers have extremely precise control of the temporal accuracy of flams (close to 1 ms),[80] and the rhythmic precision of jazz drummers was observed by Henkjan Honing and W. Bas De Haas.[81] It was anticipated that rhythmic accuracy would be a feature of the findings. This expectation was fulfilled in many of the

78 Greene 2015, 1.

79 Danielsen 2006, 40.

80 Wessel/Wright 2002, 22.

81 Honing/De Haas 2008, 475.

analyses in this chapter, however, one of the most striking findings is that drummers frequently repeat patterns of deviations within just a few milliseconds of each other. Not only was a high level of rhythmic acuity observed, but also an impressive level of rhythmic memory. A particularly good example of this is shown in two adjacent bars of the four bars analysed from "Amen Brother" by the Winstons (see Figure 10). The first two bars of this break are shown as they are identical; the pattern changes in the following two bars (see Table 2 and Figure 8).

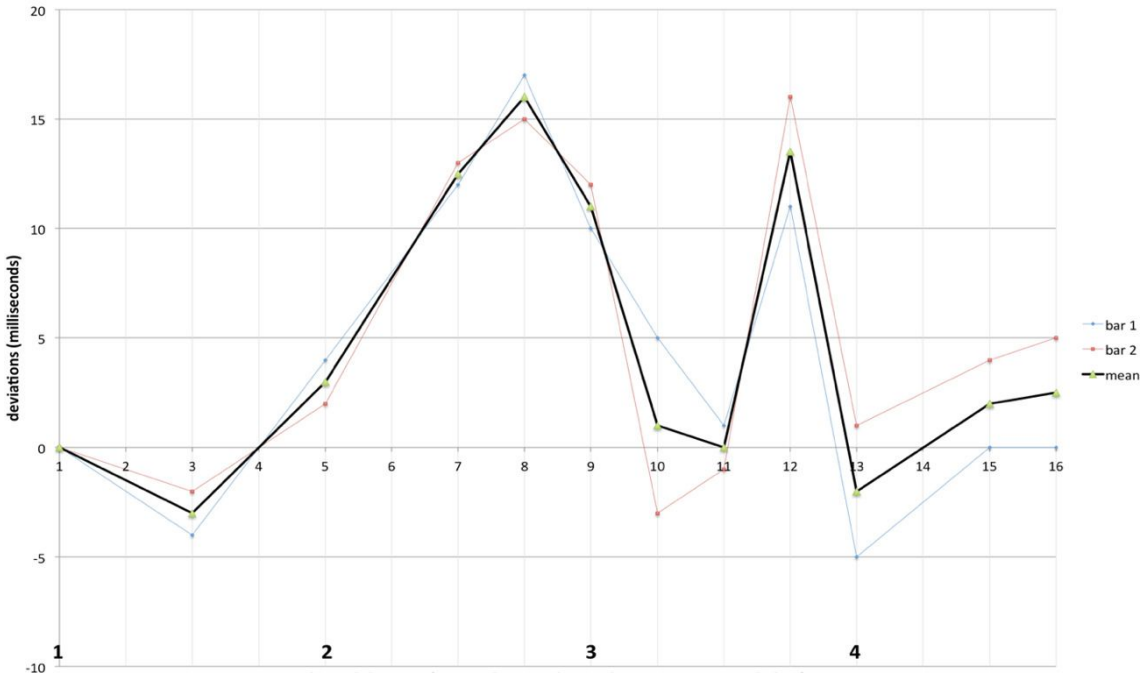

Figure 10: The Winstons, "Amen Brother," drum break: straight lined scatter graph showing microtiming deviations occurring on the drums in the first two bars. (For TUBS transcription including microtiming deviations, see Table 2.)

Following on from this, perhaps the most profound finding is that the repeating patterns of deviations described above often appear to reflect aspects of the structure and/or arrangement of the pieces from which they are derived, even when these patterns are a feature of a solo drum break.

Vijay Iyer suggested that microtiming deviations might highlight structural aspects of musical material.[82] This theory is supported by Kahl Hellmer and Guy Madison who found that percussionists varied patterns microrhythmically for different song sections.[83] For jazz, Richard Ashley showed that musicians displaced note onsets to highlight motivic structure.[84] Many of the microtiming patterns found in the analyses in this chapter add further weight to these theories and show that drummers vary their performances microrhythmically to enhance arrangements not just from section to section, but even within one and two bar grooves: significant features in arrangements can be highlighted by microtiming deviations. In a qualitative study, Rowan Oliver postulated that drummers appear to respond to, or even *jam* with, the band in solo drum breaks when the band is not playing.[85] Findings from the

82 Iyer 1998, 61.

83 Hellmer/Madison 2015, 158.

84 Ashley 2002, 317.

85 Oliver 2015, 58.

song analyses add quantitative weight to Oliver's study, showing that drummers not only create microtiming patterns that respond to previously heard sections of music, but possibly also predict aspects of musical structures.

This highlights the importance of the drummer in funk grooves: her/his function may not simply be to create a rhythmic structure that the band can use as a musical scaffold or framework; it can be to create rhythmic patterns that are inexorably linked to the musical arrangement. Perhaps this theory can be extrapolated to propose that the drummer (one person) can create the feeling of communal music making by incorporating the musical influence of an entire band into her/his performance. Below are details of the (often novel) findings related to musical structure; these findings are summarised in Table 6.

The One (And Secondary Ones)

Many academics and practitioners have expounded upon the power of the beat one of each bar or riff in funk grooves. This is known as "the One."[86] A dynamically accented One featuring the simultaneous attacks of many instruments is found in many funk grooves. The songs analysed in this study show that the One can also be expressed microrhythmically: this is evident in at least eight of the above tracks ("Cold Sweat," "Funky Drummer," "Sex Machine," "Super Bad," "Think (About It)," "Amen Brother," "Impeach the President," "Apache") and is a feature of almost all the James Brown grooves analysed. Microtiming deviations expand from the One and contract back as the One approaches again. If quarter note subdivisions are considered alone, this effect can be observed very clearly in the two bar riff in James Brown's "Cold Sweat;" see Figure 11. (For table showing microtiming deviations, see Figure 23 in the Appendix).

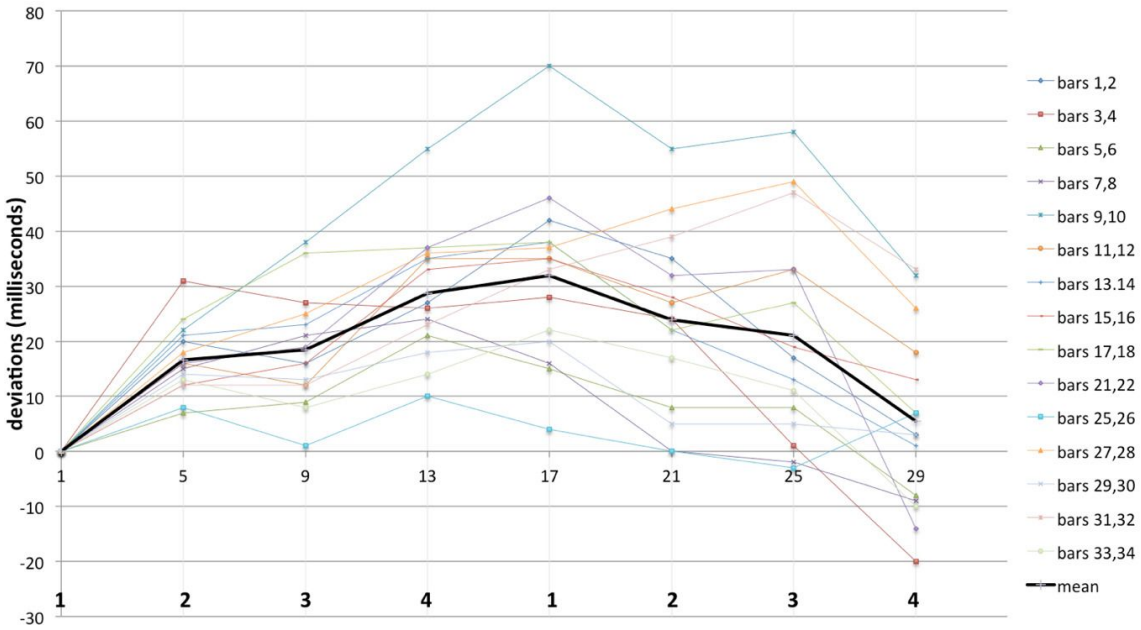

Figure 11: James Brown, "Cold Sweat pts 1 & 2," straight lined scatter graph showing drum microtiming deviations on quarter notes only. Deviations expand from beat one of the first bar, reach a maximum at the beginning of the second bar, then contract towards the end of the riff. (For table showing microtiming deviations, see Figure 23 in the Appendix.)

86 See Brown 1991, 1; Vincent 1995, front cover; Clinton in Stewart 2000, 311; Danielsen 2006, 61.

When discussing jazz, Ashley noted that musicians might play late notes, then play the following notes relatively early in order to catch up; he described this as a "delay-accelerate strategy."[87] This is clearly happening in the funk grooves listed above; in places the delay-accelerate strategy is repeated in different iterations of the same groove with frightening accuracy and shows that the rhythmic precision of jazz drummers observed by Honing and De Haas[88] is also demonstrated by funk drummers. Acceleration in order to catch up and land back on the One can be observed most clearly in bars 31 and 32 of the breakdown in James Brown's "Funky Drummer" (performed by Clyde Stubblefield) where the deviations reduce from 56 ms to 4 ms in a drum fill that takes place during the last seven sixteenth notes of bar 32, apart from just one very minor aberration: the ghost note on the "and" of beat four (see Table 5). Stubblefield creates remarkably similar patterns in the fills at the ends of bars 10 and 28 (see Figure 24 in the Appendix).

Bar	Instrument	1	e	&	a	2	e	&	a	3	e	&	a	4	e	&	a
31 115.300 9 bpm	JB vocal	three										aah					
	Bass gtr	D				D		D 8va				A				D 8va	
	Ride	x ?		x 6>								x ?					
	Hi-hat					x ?		x 20>		x 13>				x 23>			
	Snare					X 12>			g 26>							X 21>	
	Kick	X ^								X 12>		X 17>					
Bar	Instrument	1	e	&	a	2	e	&	a	3	e	&	a	4	e	&	a
32 115.300 9 bpm	JB vocal			ah													
	Bass gtr	D		F#				F#		G		G#		A		C#	
	Ride																
	Hi-hat	x 33>		x ?		x ?		x 48>		x 47>							
	Tom													X 33>	X 24>	X 29>	X 4>
	Snare		g 19>			X 39>			g 61>		g 56>	g 37>	g 37>				
	Kick			X 15>													

Key
- Ride and hi-hat: x (beat 1 of each two bar pattern has an accent on the ride, or a crash cymbal is hit)
- Snare drum: X = normal stroke, g = ghost note, p = press roll
- Kick drum: X = normal or rest stroke
- Bass guitar pitches shown

Deviations in milliseconds: < early, ^ on time, > late, ? masked

Table 5: James Brown, "Cold Sweat pts 1 & 2," bars 31 and 32 of the breakdown with the deviations of the drum fill on the last seven sixteenth notes highlighted in blue and the One highlighted in red

Timothy Hughes suggested that microrhythmically expressed nodes other than the One might exist in grooves naming them "points of rhythmic unity."[89] An example of this can be found in Clyde Stubblefield's drumming in "Cold Sweat." On the "and" of beat one of the second bar of the riff, almost every two bar chunk has a much shorter deviation than the previous attack leading to a sharp dip in the scatter graph (see Figure 12). The mean deviation at this point is just over 7 ms in contrast to adjacent means that are over 20 ms. The deviations stretch from the beginning of the figure, fall back sharply at this point,

87 Ashley 2002, 319.

88 Honing and De Haas 2008, 475.

89 Hughes 2003, 118.

then stretch again until the "and" of beat two of the second bar, and finally reduce to land on the One of the following figure. It appears the "and" of beat one of the second bar could be some kind of node, or a "secondary One." The likelihood of this hypothesis is strengthened if the bass line played by Bernard Odum is examined in detail. Although the bass riff varies slightly on some iterations of the two bar figure (the most frequently occurring pattern is shown in Figure 12), Odum always leans on the low F♯ at the "and" of beat one of the second bar creating a longer and heavier note than all others in the riff. This F♯ always coincides with a kick drum. When discussing Brown's 1965 track "I Got You (I Feel Good)," Danielsen points out that the One "is clearly audible in positions other than the first beat of the bar."[90] It appears that this may also be the case with "Cold Sweat," a track that was created only two years later. Expanding on his point (above) that "'staying on the one' is more suggestive than explicit," Hughes states "that there has to be clear points of metric unity and […] independent, heavily syncopated rhythms in between those points."[91] It seems that, for the drums, the "and" of beat one of the second bar is a point of metric unity (or a "secondary One") and that increased microtiming takes place either side of this point, in addition to the increased deviations either side of the actual One on the first beat of each figure. Discernment of the microtiming deviation of the bass at this point is impossible as it is always articulated after the kick drum hence its attack is obscured. In fact, the majority of bass onsets in the entire 32 bar breakdown are late, so Stubblefield is clearly not being led or perturbed by the timing of the bass line but appears to be establishing a microrhythmic shape for the overall two bar figure.

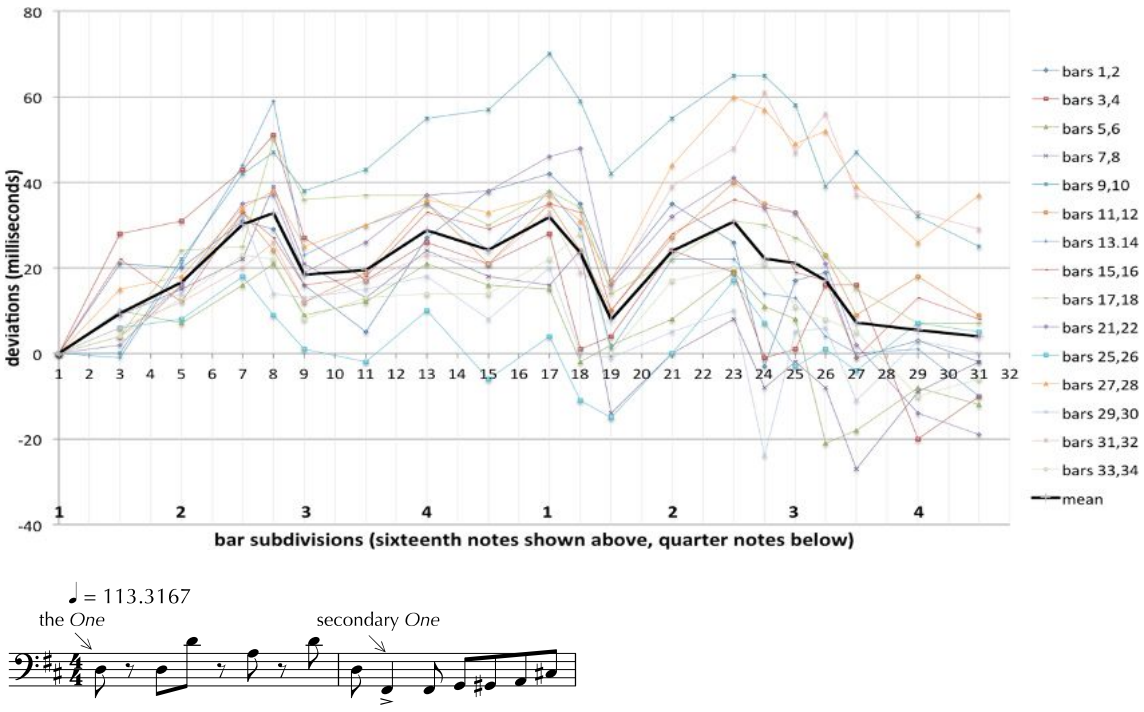

Figure 12: James Brown, "Cold Sweat pts 1 & 2," straight lined scatter graph showing drum microtiming deviations accompanied by notated bass line. The secondary One is shown dip in the mean line on the "and" of beat one of the second bar (subdivision 19) which coincides with the accented low F♯ on the bass guitar.

90 Danielsen 2006, 74.

91 Hughes 2003, 118.

In James Brown's "Super Bad" featuring Clyde Stubblefield on drums (for TUBS transcription including microtiming deviations, see Figure 26 in the Appendix), a similar secondary One can be seen which coincides with a bass run beginning on an F♯ on the "and" of three which takes the groove back to the One (see Figure 13).

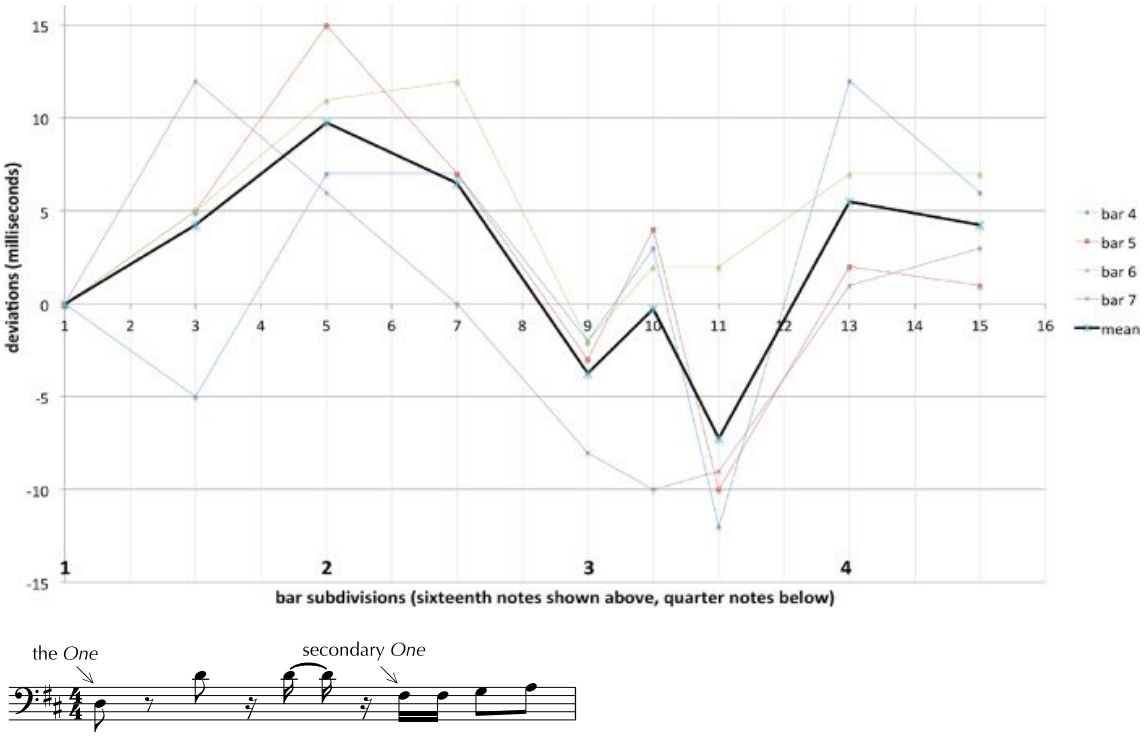

Figure 13: James Brown, "Super Bad," bars 4–7, straight lined scatter graph showing microtiming deviations occurring on the drums accompanied by notated bass line

Another example of a secondary One can be found in the drum break in "Think (About It)" by Lyn Collins (for TUBS transcription including microtiming deviations, see Figure 27 in the Appendix), which features one of James Brown's drummers (John Jabo Starks). In addition to its relatively early onset (see Figure 14) the snare on beat four in every bar sounds louder and much more snappy than that on beat two. It appears that Starks is creating a secondary One on beat four. In fact, he is actually shaping the groove timbrally and microrhythmically around the subsequent bars. After the first break, the following bar (bar 24) features a guitar and bass figure starting on beat three, that leads to the root chord (G major) on beat four (see Figure 15). Bar 25 features just drums, tambourine, and a vocal hook "*it takes two to make a thing go right*," with the final word "right" landing on beat four (see Figure 15). Bars 26 and 27 repeat this with a new hook "*it takes two to make it outta sight*" with "sight" landing on beat four. So, following the first break there are four bars with performers aiming for, and creating a strong emphasis on the fourth beat. Beat four becomes a secondary One and Starks predicts this with a relatively early, loud, and snappy snare on beat four of the first break and repeats this in all subsequent breaks (see Figure 14).

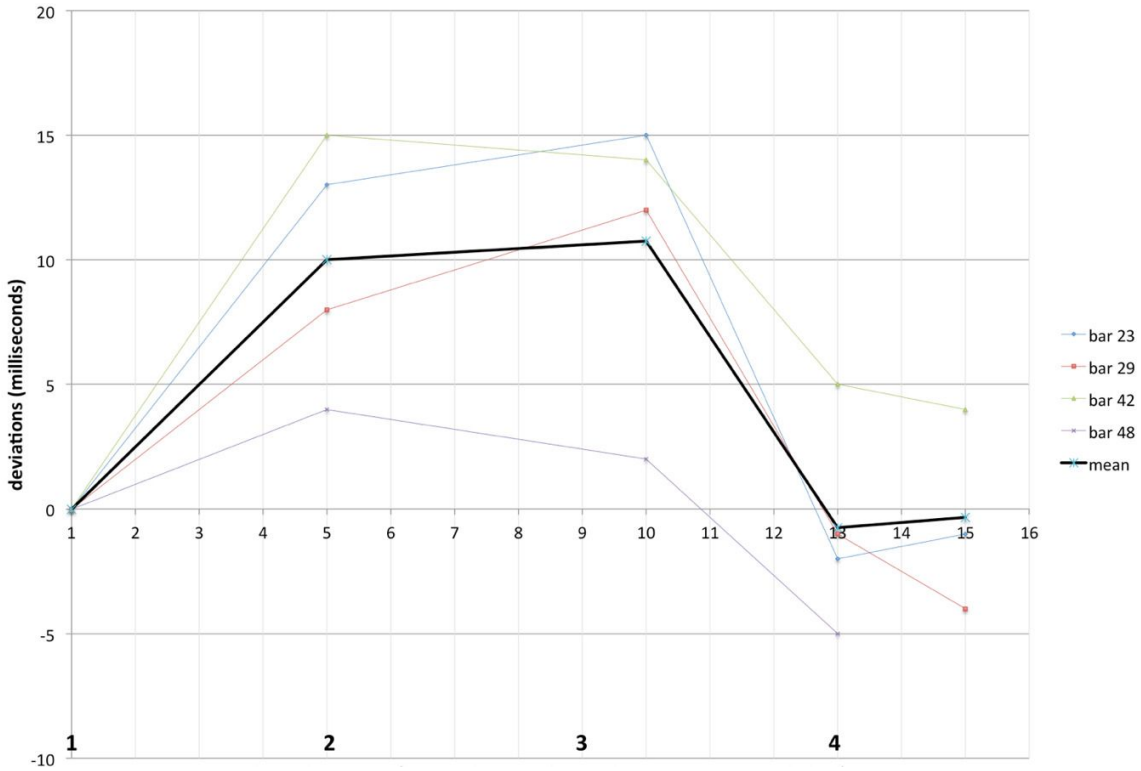

Figure 14: Lyn Collins, "Think (About It)," drum breaks, straight lined scatter graph showing microtiming deviations occurring on the drums

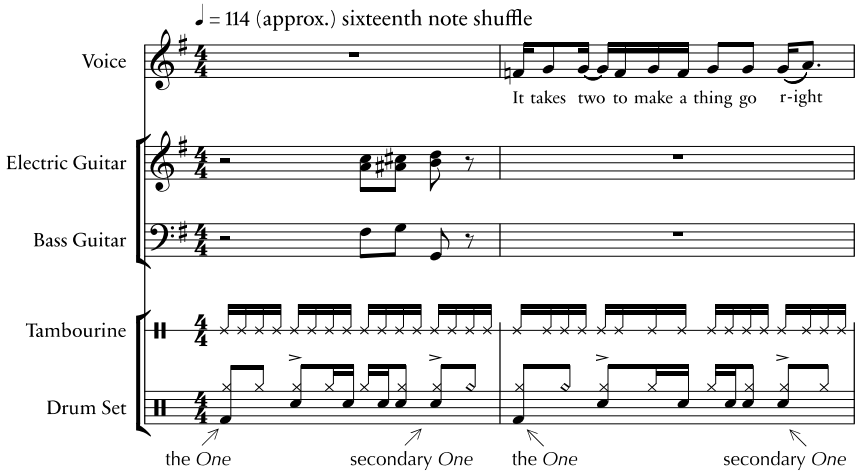

Figure 15: Lyn Collins, "Think (About It)," transcription of bars 24 and 25 (bass and guitar are octave transposed)

The instrumental funk track "Amen Brother" by The Winstons contains a four bar drum break performed by Gregory Coleman. This break has been transcribed in detail by Rowan Oliver (see Table 2 for TUBS transcription with accompanying microtiming deviations). The first two bars are almost identical; then Coleman varies the pattern in the third and fourth bars.

Figure 8 shows the deviations presented as a straight lined scatter graph. Despite the considerable variation in the second half of the break, including some beat displacement, all four iterations have a reasonably similar contour. However, as highlighted above, the ability of Coleman to repeat microtiming patterns accurately becomes strikingly conspicuous if the

first two, almost identical bars, are considered in isolation (see Figure 10). When investigating links between the drum groove and the arrangement, it makes sense to focus on the first two bars as these are similar to the drum pattern in the main instrumental groove.

As with "Think (About It)," beat four is performed relatively early. If the groove preceding the break is considered, there is an explanation for this. The horn figures, which contain frequent sustained notes and begin or end on the One, are underpinned by a strong, regular rhythmic pattern on the organ (see Figure 16).

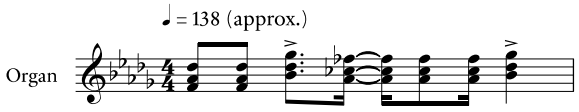

Figure 16: The Winstons, "Amen Brother," transcription of the repeating organ figure in bars preceding the break

Apart from the horns and the drums, the organ is the most prominent instrument in the mix. The rhythmic pattern created by Coleman in the first two bars of the break clearly mirrors the rhythm and dynamics of the organ part. Like the bass/guitar combination and the vocal hook in "Think (About It)," the organ figure ends on beat four with an accented chord that creates a secondary One (see Figure 17 for a transcription of the first bar of the break – the second bar is identical).

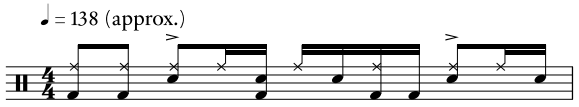

Figure 17: The Winstons, "Amen Brother," transcription of the drums in the first bar of the break

The patterning of the first bar of the drum break based on the organ rhythm in the preceding bars becomes more obvious if the rhythm of the organ is compared with the rhythm created in the break by the kick drum, snare hits and ghost notes on the snare (see Figure 18). To emphasise the secondary One, Coleman accents the snare on beat four (subdivision 13) and performs it relatively early. The analysis of the "*Amen*" break shows that the micro-rhythmic shape of the first two bars is based on aspects of the arrangement, mainly the organ part.

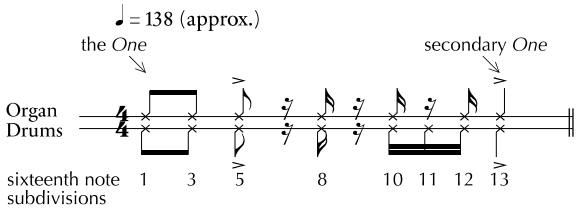

Figure 18: The Winstons, "Amen Brother," comparison of the rhythm of the organ prior to the break and the rhythm created in the break by kick drum, snare hits and snare ghosts

"Impeach The President" by the Honey Drippers begins with two bars of solo drums before a compere introduces the band. There are a total of five bars before the band enters. As with "Amen Brother," the straight line scatter graph derived from the microtiming deviations (see Figure 19) demonstrates the ability of drummers to repeat patterns of deviations within just a few milliseconds of each other.

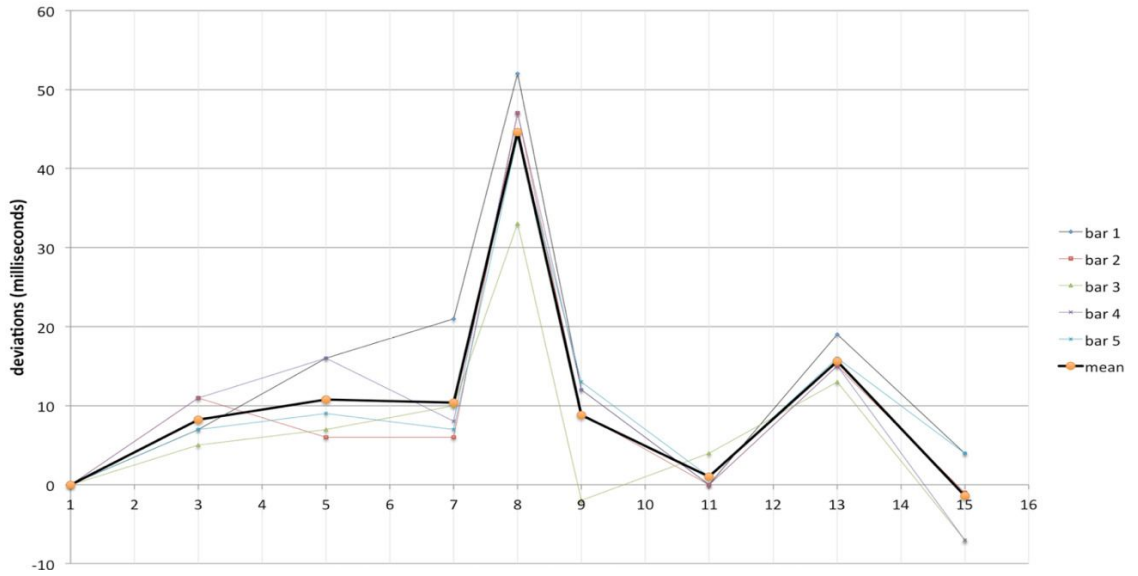

Figure 19: The Honey Drippers, "Impeach The President," drum break, straight lined scatter graph showing microtiming deviations (For TUBS transcription including microtiming deviations, see Figure 30 in the Appendix.)

If the deviations on eighth notes only are considered (in order to remove the large spike on the last sixteenth of beat two created by a single swung sixteenth note), the underlying microtiming patterns can be observed more clearly (see Figure 20).

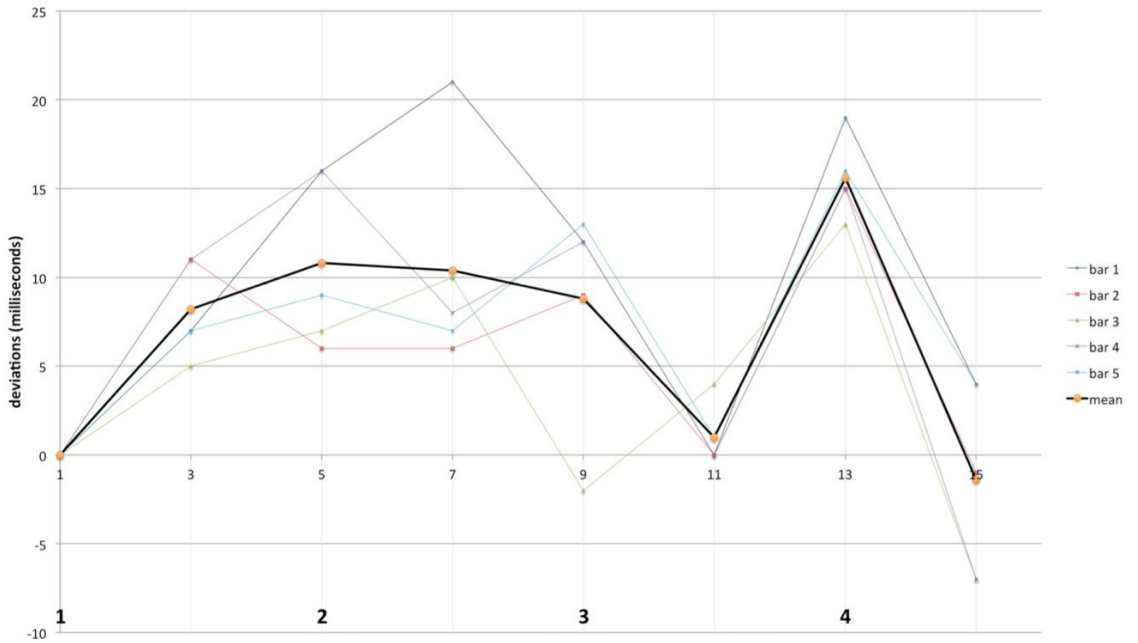

Figure 20: The Honey Drippers, "Impeach The President," drum break, straight lined scatter graph showing microtiming deviations occurring on the drums on eighth notes only

In addition to the microrhythmic pull of the One, as with many of pieces, there is a reduction in deviations at some point between the beginning and end of each bar: here it is on the "and" of beat three (subdivision 11 on Figure 20).

Once the guitar and bass enter in bar six, the rationale for the timing and articulation of the drum part during the break becomes apparent (see Figure 21). The bass guitar enters with a firmly articulated root note (E) on beat one, creating a powerful One with the

kick and hi-hat. Following this, microtiming deviations on the drums expand. A sixteenth note run on bass takes the listener to the subdivision on the last sixteenth of beat two; this is highlighted by the kick, hi-hat and accented bass and is also swung. The bass then drops out for the rest of the bar leaving space for a heavily accented guitar chord which is articulated on the "and" of three coinciding with the relatively short deviation on the heavily accented open hi-hat and kick creating a secondary One. This guitar chord is sustained with the open hat drawing the listener to the delayed backbeat on four. The sustained chord on the guitar is finally closed with a snappy scrape on the "and" of four accompanied by a relatively early kick and hi-hat, which takes the listener back to the One at the beginning of the next bar. The musical shape of the drum, bass and guitar groove is established timbrally, dynamically, rhythmically, and micro-rhythmically by the drums alone, before the bass and guitar enter. This further strengthens the argument that patterns of microtiming deviations frequently relate to aspects of the piece from which they are derived rather than existing as stand-alone microrhythmic patterns.

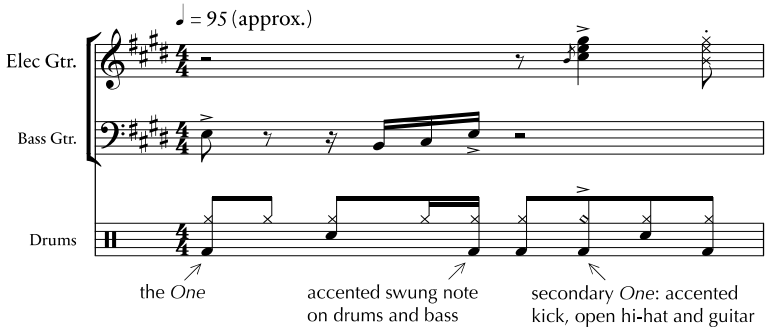

Figure 21: The Honey Drippers, "Impeach The President," transcription of bar 6 (bass and guitar are octave transposed)

In total, six of the fourteen tracks analysed contain secondary Ones as follows:

1. "Funky Drummer"
2. "Cold Sweat"
3. "Super Bad"
4. "Think (About It)"
5. "Amen Brother"
6. "Impeach the President"

These secondary Ones are timed relatively early in relation to other attacks at a micro-rhythmic level. The analyses in this chapter show that secondary Ones are often used to highlight certain aspects of arrangements. For example, in "Cold Sweat" and "Super Bad," the secondary Ones are influenced by the shape of the bass riff, in "Think (About It)," the stimuli are an instrumental riff and a vocal hook, the "Amen Brother" secondary One appears to be based on the prominent organ part and in "Impeach the President," the guitar is the influencing factor. These secondary Ones often continue to occur in drum breaks once the rest of the band has stopped playing, or even before the band has entered, demonstrating that the drummer is grooving with the band, even when the band is not playing. This novel finding demonstrates the ability of drummers to shape their performances in an extremely subtle rhythmic manner to align with the arrangements and grooves of funk songs.

The "And" of Beat Three

For funk grooves, the "and" of beat three is described by Rowan Oliver as a "significant point in the bar,"[92] so some kind of microtimed highlight of this point might be expected. In eleven of the tracks analysed, the "and" of three is emphasised by a composite hi-hat and kick attack. In eight of these eleven tracks, this composite attack is also microtimed relatively early. So, it appears that this significant point, highlighted by Oliver, is often accented, and emphasised both timbrally and rhythmically. In some tracks this feature calls attention to a significant aspect of another instrumental part, such as the bass line in "Super Bad;" in others, such as "Sex Machine," it simply enhances the rhythmic shape of the arrangement. Based on the tracks studied here, and the theories provided by Oliver, there is some evidence that the importance of this point is codified into the rhythm of many funk grooves.

Beat Four

As shown in Table 6, beat four is positioned relatively early in eight of the tracks analysed, and for three of these tracks it is the position of the secondary One. This novel finding was an unexpected discovery and was not predicted; it actually conflicts with expectations. It adds weight to the finding regarding backbeats: they are not a universal feature of these tracks, and it is possible that timing due to the arrangements/musical structures is prioritised over the backbeat at this position in the bar.

Track	The One	Secondary One/ position	Early onset on and of beat 3	Early onset on beat 4
"Cold Sweat"	✓	✓ bar 2 and of beat 1		✓
"Funky Drummer"	✓	✓ beat 4		✓
"Sex Machine"	✓		✓	✓
"Super Bad"	✓	✓ and of beat 3	✓	✓
"Think (About It)"	✓	✓ beat 4		✓
"Amen Brother"	✓	✓ beat 4	✓	✓
"Cissy Strut"				✓
"Handclapping Song"			✓	
"Impeach the President"	✓	✓ and of beat 3	✓	✓
"Apache"	✓		✓	
"Sing a Simple Song"			✓	
"In Time"				
"It's a New Day"				
"Funky President"			✓	

Table 6: Summary of findings focusing on structural aspects of the songs analysed (Bold lines group tracks with the same drummer together.)

92 Oliver 2015, 107.

The above findings associated with structure and/or arrangements were not anticipated, and the implications are significant for all developers of software and hardware music sequencing systems. Clyde Stubblefield's microrhythmic grooviness in "Funky Drummer" might contain less musical meaning if transferred out of context to another piece of music, yet it is possible to buy digital templates that recreate his deviations. Commercially available digital groove templates, a feature of many drum machines, sequencers and digital audio workstations, may be less effective than previously thought unless arrangements are built around their microrhythmic shapes.

Conclusions

Systematic microtiming is clearly evident in every song analysed bar one. Varying degrees of swing from imperceptible to clearly discernible were found to be an almost universal feature. Based on the fourteen tracks analysed, back beat delay appears to be the musicians' choice rather than a codified element of funk. Many of the tracks contained patterns of deviations related to their arrangements, possibly enhancing the experiences of listeners (although this cannot be assumed from the observations in this study). In addition to this, the one track that did not contain systematic deviations, "In Time" by Sly and the Family Stone, is still an incredibly effective funk groove which created a significant impression on Miles Davis.[93] So, although the evidence suggests that microtiming patterns are carefully sculpted by musicians and are often based on aspects of arrangements, they are not imperative in the creation of funk grooves.

Methodological Limitations

As already explained, a human element was involved in the selection of materials, and choice of songs to be analysed was sometimes dictated by the existence of discernible onsets. In addition to this, there were unavoidable weaknesses in the analyses. Calculation of deviations was reliant on a certain amount of human choice. Due to the emphasis on the importance of the One in the literature, for every track, the first beat of each iteration of each groove (or riff) was taken as zero milliseconds or the start point for the superimposition of the isochronous grid. Depending on the intentions of the composer or performers, this may, or may not have been an appropriate starting point for the grid (see the above section on the determination of the grid). As drum onsets were less likely to be obscured and tended to have greater microtiming deviations, these were often the focus rather than hi-hats or other cymbals. Onsets were often obscured by other instruments limiting the number of identifiable microtiming deviations. Many of the tracks contained tempo fluctuations, some were significant. To mitigate for this, individual, or pairs of bars were analysed separately; however, it is still possible that deviation measurements could have been affected by tempo changes occurring within each bar. To complicate things further, there may be issues surrounding the use of superimposed isochronous grids as

93 In a personal communication, Andy Newmark (the drummer for Sly and the Family Stone) confirmed that when "In Time" was released, Miles Davis was so affected by the track that he began a rehearsal by playing it on repeat to his band for over 30 minutes. One of Miles' sax players, David Liebman, telephoned Newmark to tell him this.

reference points from which to calculate microtiming deviations; these are discussed in greater depth below. To summarise, although the attention to detail was painstaking, there was still the potential for inaccuracies and inconsistencies due to the processes involved.

Finally, although over 1000 data points were generated, only fourteen songs were analysed and some of the findings and deductions were based on a limited number of groove iterations and hence, limited data, meaning that a certain amount of speculation was involved in the interpretation of potential reasons for patterns of microtiming deviations. Although the field is expanding, more analyses are certainly indicated for future developments.

Future Directions: A Flexible Grid?

The metronome, traditional staff notation, drum machines, sequencers and digital audio workstations all provide musicians and composers with isochronous grids as references around which to arrange musical events. Much of this paper is based on the assumption that the isochronous grid is the norm: all the songs analysed except "In Time" by Sly and the Family Stone, which was recorded using a drum machine to provide rhythmic foundation, were recorded without reference to a metronomic grid (with no click track), yet I have chosen to employ superimposed isochronous grids as references from which to calculate microtiming deviations. The grid provides a valuable starting point for analysing microrhythmic feel, but as Danielsen points out: "There is no guarantee that that a metric grid in a form that would measure rhythmic events – that is, an isochronometric grid of points in time – is actually at work when we listen to music."[94]

Unsurprisingly, although rhythmic asynchronies are present, findings do show that "In Time" does conform quite closely to the metronomic grid provided by the drum machine. In addition to this, some of the tracks analysed do appear to be loosely built around isochronous grids. Both "Cissy Strut" and "Funky President" feature fairly regular sixteenth note swing based around a reasonably stable metronomic framework.

However, many of the songs analysed feature microrhythmically highlighted musical nodes (Ones and secondary Ones) around which microtiming deviations expand and contract relative to the isochronous grid. Perhaps, aligning the grids to these patterns of fluctuations makes more musical sense when analysing grooves than relating everything to superimposed isochronous grids? These non-isochronous timing grids might create a superior representation of how the beat is actually experienced by performers and listeners. Danielsen supports the proposition of non-isochronous grids as follows:

> The micro-rhythmic features of the groove seem to be particularly important. Sometimes the close analysis of such subtle micro-rhythmic designs eludes traditional notation-based representations of rhythmic structure. Moreover, micro-rhythmic features have a structural impact as well. If we overlook this, we risk losing both crucial aspects of a groove's structural identity and the critical interaction between this virtual structure and the actual sounds.[95]

94 Danielsen 2019, 2.

95 Danielsen 2015, 68.

If Danielsen's "beat bin" model (see Figure 36 in the Appendix) is applied, meaning the widths of beats created by multiple closely timed onsets (as evidenced in this study, see the above section on "Note onset determination") are also considered, these non-isochronous grids should also include beat durations for each subdivision. Figure 22 is a graphic representation of the grid based on the drum break from "Funky Drummer" by James Brown. The inter-onset intervals and beat bin widths are derived from all eight iterations of the groove. Perhaps this flexible view of the grid is more appropriate for future research into microtiming and microrhythm?

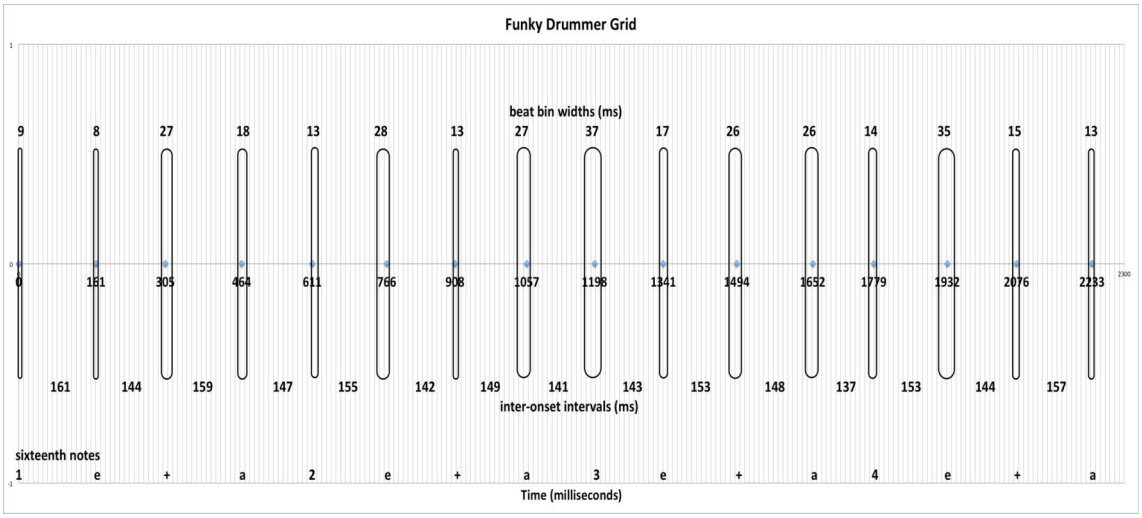

Figure 22: Graphic representation of the grid for the drum break from "Funky Drummer." The blue diamonds show the positions of the mean sixteenth note subdivisions.

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Appendix

Bar	1	e	&	a	2	e	&	a	3	e	&	a	4	e	&	a	1	e	&	a	2	e	&	a	3	e	&	a	4	e	&	a
Sub-division	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
1	0		21		20		31	29	16		5		27		38		42	35	17		35		26	-3	17	19	-1		3		-2	
3	0		28		31		43	51	27	27	17		26		21		28	1	4		24		19	-1	1	16	16		-20		-10	
5 (bass in)	0		10		7		16	21	9		12		21		16		15	-2	2		8		19	11	8	-21	-18		-8		-12	
7	0		9		15		22	39	21	49	13		24		18		16	24	-14		0		8	-8	-2	-8	-27		-9		-2	
9	0		0		22		42	47	38		43		55		57		70	59	42		55		65	65	58	39	47	37	32	19	25	3
11	0		4		16		33	24	12		19		35		21		35	24	10		27		40	35	33	23	9		18		9	
13	0		-1		21		44	59	23		30		35		24		38	29	1		22		22	14	13	4	0		1		-10	
15	0		22		12		33	27	16		18		33		29		35	33	10		28		36	34	19	17	-1		13		8	
17	0		4		24		25	50	36		37		37		30		38	34	14		22		31	30	27	23	14		7		7	
19	0		2		-3		7		16	13	-3		12		18	21	1		2		16		14		29	5	-5		4		0	
21	0		2		16		35	37	19		26		37		38		46	48	16		32		41	34	33	21	2	-9	-14	-19	-19	-24
23	0				22		40	35	26		24		33		14		35	6	-2		16		30	44	12	14	-1		2		4	
25	0		6		8		18	9	1		-2		10		-6		4	-11	-15		0		17	7	-3	1	-4		7		5	
27	0		15		18		34	38	25		30		36		33		37	31	17		44		60	57	49	52	39	35	26	19	37	15
29	0		10		14		32	14	13		15		18		8		20	0	-1		5		10	-24	5	6	-11		3		0	
31	0		6		12		20	26	12		17		23		21		33	19	15		39		48	61	47	56	37	37	33	24	29	4
33	0		4		13		23	22	8		13		14		14		22	28	0		17		20	21	11	8	5	?	-10		-6	

Figure 23: James Brown, "Cold Sweat": sixteenth note microtiming deviations (condensed from transcription); negative = early, positive = late

Bar	Instru-ment	1	e	&	a	2	e	&	a	3	e	&	a	4	e	&	a
1 100.5762 bpm	(Guitar)	X 36>															
	Hi-hat	x 9>	x 16>	x 18>	x 29>	x 29>	(o) 36>	C 26>	O 25>	C <8	x 7>	x 13>	x 9>	x <6	O 8>	C <2	x 11>
	Snare					X 29>			g 25>		g 7>		g 9>	X <6			g 11>
	Kick	C ^		O 26>								O 3>			C 5>		
2 101.1067 bpm	(JB vox)										good ?	god <14			huh <4		
	Hi-hat	x 3>	x 11>	x 8>	x 15>	x 16>	O 22>	x 15>	x 21>	x 22>	x 5>	x ?	x 14>	x 8>	O ?	x 8>	x 18>
	Snare					X 16>			g 21>		g 5>		g 26>	X 8>			g 18>
	Kick	O ^		O <1						c 29>		O 22>			C 18>		
3 100.9207 bpm	(JB vox)																hey 34>
	Hi-hat	x 9>	x 13>	x 14>	x 18>	x 16>	(o) 28>	C 16>	x 22>	x 18>	x 7>?	x 12>	x 15>	x 7>	O 24>	x 7>	x 16>
	Snare					X 16>			g 22>		g 7>		g 22>	X 7>			(g) 16>
	Kick	O ^		C 4>								O 22>			C 17>		
4 101.011 bpm	(JB vox)	hah 17>						urgh 8>								ain't <9?	it ?
	Hi-hat	x 9>?	x 18>	x 13>	x 22>	x 20>	O 28>	x 27>	x 22>	x 24>	x 14>	x 10>	x 9>	x 3>	O 8>	C 4>	x 6>
	Snare					X 20>			ppp 22>		pp 14>		g 16>	X 3>			g 6>
	Kick	C ^		C 7>						O 24>		O 16>			C 12>		
5 100.9508 bpm	(JB vox)	fun-?	ky ?								ha <11					ain't <10	it <20
	Hi-hat	x 8>	x 11>	x 11>	x 31>	x 22>	O 31>	C 22>	x 22>	x 26>	x 19>	x 14>	x 16>	x 7>	O 22>	C 10>	x 20>
	Snare					X 22>			g 22>		g 19>		g 17>	X 7>			g 20>
	Kick	C ^		O 8>						O 23>		O 16>			C 16>		
6 101.321 bpm	(JB vox)	fun-<28	ky ?													ain't 17>	It 14>
	Hi-hat	x 7>	x 12>	x 12>	x 16>	x 17>	O 26>	C 19>	O 28>	C 1>	x 11>	x 20>	x 9>	(o) 2>	O 4>	C <5	x 15>
	Snare					X 17>			g 28>		g 11>		g 9>	X 2>			g 15>
	Kick	O ^		C 6>								O 20>			C <3		
7 100.0139 bpm	(JB vox)	fun-<19	ky ?													ain't ^	it
	Hi-hat	x 5>	x 12>	x 11>	x 19>	x 17>	O 20>	C 18>	x 24>	x 20>	x 15>	x 9>	x 15>	x 2>	O 14>	C 4>	x 9>
	Snare					X 17>			g 24>		g 15>		g 15>	X 2>			9>
	Kick	O ^		O 8>						O 9>		O 13>			C 4>		
8 101.6518 bpm	(JB vox)	fun-<9	ky ?						a 59>	one ^		two 11>		thr ee ?	four ?		
	Hi-hat	x ?	x 8>	x 8>	x 13>	x 16>	O 17>	C 14>	x 1>	x ?	x ?	x 1>	x ?	(o) <3	O ?	C <6	x ?
	Snare					X 16>			ppp 1>		g <2		g ^	X <1			
	Kick	O ^		O 3>			C 3>			C 20>		O <4			C <12		O 11>

Key
- Hi-hat: x = normal stroke, O = open, C = audible closing
- Snare drum: x = normal stroke, g = ghost note, ppp = long press roll, pp = short press roll
- Kick drum: O = open stroke (beater allowed to rebound from the skin), C = closed stroke (beater left resting on the skin)

Deviations in milliseconds: < early, ^ on time, > late, ? masked

Figure 24: James Brown, "Funky Drummer pts 1 & 2," drum break: Rowan Oliver's transcription[96] with microtiming deviations added

96 Oliver 2015, 67.

Bar	Instrument	1	e	&	a	2	e	&	a	3	e	&	a	4	e	&	a
3 107.2756 bpm	Vocals		pah 28>			get 37>	on---------- 36>		up 44>				s------ 30>	tay 32>	o------ ?	n	
	Guitar	Eb9 20>		Eb 8>		Eb9 23>		Eb 22>		Eb13 ---------- 25>			Eb9 58>			x 23>	Eb 41>
	Bass	Eb 13>			Db 38>	Eb 21>	Eb 42>				Db 38>	Eb 27>		G 28>	Bb 37>	Db ---------- 16>	
	Hi-hat	x 9>		o 4>		x 20>		x 27>	x 51>	x 14>		o 20>		x 13>		x 19>	
	Snare					X 35>		g ?			g 36>			X 24>			g 46>
	Kick	X ^										X 14>					
4 108.4899 bpm	Vocals	-ene				get 23>	on---------- 36>		up 48>		a 69>	like ?	a ?	sex ?		ma 16>	chi-- ?
	Guitar	Eb9 16>		Eb 15>		Eb9 27>		Eb 23>		Eb13 ---------- 22>			Eb9 56>			x 15>	Eb 41>
	Bass	Eb <16?			Db 70>	Eb 44>					Db 42>	Eb 18>			Eb 24>		
	Hi-hat	x 8>		o 3>		x 18>		x 22>	x 39>	x 3>		o 6>		x 2>		x 6>	
	Snare					X 24>		g ?	g ?		g 27>			X 15>			g 37>
	Kick	X ^										X 1>					
5 108.6413 bpm	Vocals	-ne--- ?	-ah ?			get 9>	on---------- 14>		up ?							get 15>	up- 44>
	Guitar	Eb9 12>		Eb 10>		Eb9 26>		Eb 19>		Eb13 ---------- 26>			Eb9 36>			x 10>	Eb 31>
	Bass	Eb <25?			Db 50>	Eb 22>						Eb 19>		G 24>	Bb 30>	Db ---------- 18>	
	Hi-hat	x <2?		o 6>		x 22>		x 28>	x 35>	x 11>		o 2>		x 5>		x 10>	
	Snare					X 29>		g ?	g ?	g ?	g 30>			X 20>			g 35>
	Kick	X ^										X <7					
6 108.6321 bpm	Vocals	- p ?	pah 60>			get 3>	on---------- ?		up ?							get 6>	up 32>
	Guitar	Eb9 10>		Eb <5		Eb9 8>		Eb 5>		Eb13 ---------- 6>			Eb9 30>			X 19>	Eb 29>
	Bass	Eb <15			Db 66>	Eb 31>					Eb 47>		Eb 39>		Eb 33>		
	Hi-hat	x 3>		o 3>		x 7>		x 12>	x 39>	x 6>		o <1		x 1>		X 2>	
	Snare					X 21>		g ?	g ?	g ?	g 20>	g ?		X 14>			g 31>
	Kick	X ^										X 1>					
7 108.5083 bpm	Vocals	- p ?	pah 35>			get 15>	on---------- 18>		up 29>					stay ?	on ?	the ?	sce-- 14>
	Guitar	Eb9 13>		Eb 2>		Eb9 4>		Eb ^		Eb13 ---------- <3			Eb9 32>			X 21>	Eb 38>
	Bass	Eb <2			Db 34>	Eb 14>					Db 29>	Eb 13>		G 13>		Db ---------- 4>	
	Hi-hat	x		o 7>		x 12>		x 22>		x 11>		o 6>		x 4>		x 12>	
	Snare					X 26>		g ?	g ?	g ?	g 34>	g ?		X 18>			g 33>
	Kick	X ^										X 2>					
8 108.2768 bpm	Vocals	-ene ?		nah 27>		get 10>	on---------- 24>		up ?		a 37>	like ?	a ?	sex ?		ma ?	chi-- ?
	Guitar	Eb9 6>		Eb <5		Eb9 4>		Eb 7>		Eb13 ---------- 7>			Eb9 34>			X 7>	Eb 25>
	Bass	Eb ^?					Db 42>	Eb 33>					Eb 29			Eb 6>	
	Hi-hat	x 2>		o <5		x 12>		x 20>	x 34>	x 13>		o <3		x ^		x 14>	
	Snare					X 23>			g ?	g ?	g 28>			X 8			g 44>
	Kick	X ^										X <1					
9 108.8261 bpm	Vocals	-ine ?	nah ?			get 5>	on---------- 19>		up ?							get <7	up 19>
	Guitar	Eb9 4>		Eb <4		Eb9 11>		Eb 5>		Eb13 ---------- 12>			Eb9 45>			X 3>	Eb 24>
	Bass	Eb <10					Db 26>	Eb <6			Db 52>	Eb 7>		G 17>	Bb 38>	Db ---------- 8>	
	Hi-hat	x <3		o 7>		x 23>		x 26>	x 38>	x 9>		o 6>		x 15>?		x 6>	
	Snare					X 36			g ?	g ?	g 39>			X 17>			g 29>
	Kick	X ^										X 4>				X <2	
10 108.0189 bpm	Vocals		pah 43>			get ?	on---------- 6>		up ^				s---- 24>	-tay 12>	on ?	the ?	sc---- ?
	Guitar	Eb9 12>		Eb 2>		Eb9 11>		Eb <2		Eb13 ---------- 1>			Eb9 34>			X 9>	Eb 28>
	Bass	Eb <2					Db 37>	Eb 24>					Eb 30>		Db 37>	Eb <1	Eb <2
	Hi-hat	x <2		o 2>		x 16>		x 23>	x 35>	x 10>		o 3>		x 11>		x 13>	x <2
	Snare					X 21>		g ?	g ?	g ?	g 39>			X 16>			
	Kick	X ^										X <5					X ^

Key
- Ride and hi-hat: x (beat 1 of each two bar pattern has an accent on the ride, or a crash cymbal is hit)
- Snare drum: X = normal stroke, g = ghost note
- Kick drum: X = normal or rest stroke
- Bass guitar pitches shown
- Guitar: Eb = pitch, Eb9 = chord
- Deviations in milliseconds: < early, ^ on time, > late, ? masked

Figure 25: James Brown, “Sex Machine”: transcription of bars 3–10

Bar	Instru-ment	1	e	&	a	2	e	&	a	3	e	&	a	4	e	&	a
4 126.0339 bpm	Vocals	atch	me------ 73>													wa---------tch ?	
	Bass	D <40				D8VA <1			A <12	D ^?		A <29		D 2>?		A <14	
	Hi-hat			x <5		x 7>?		X ?		x <2		x <8		o <17		x 6>	
	Snare	X ^						X 7>			g 3>			X 12>			
	Kick											X <12					
5 124.6214 bpm	Vocals	– tch	me------ 66>													aah------- <27	
	Bass	D 3>?				D8VA 5>			D8VA <3			F# <10	F# <4	G ^?		A <16?	
	Hi-hat			o 5>		c 15>		x ?		x <3		o <9		c <12		x 1>	
	Snare	X ^						X 7>			g 4>			X 2>			
	Kick											X <10					
6 126.049 bpm	Vocals	gaa------at ?		It <12												wa---------tch ^	
	Bass	D <7				D8VA 7>			A <5	D <2?		A <9		D 2>?		A <13?	
	Hi-hat	x <6		x 5>		x 11>		x 10>		x <2		o <6		c <12		x 7>	
	Snare	X ^						X 12>			g 2>			X 7>			
	Kick											X 2>					
7 125.6366 bpm	Vocals	– tch	me------ 40>													aah------- <45	
	Bass	D <6				D8VA 8>			D8VA ^			F# <8	F# ^	G 4>?		A <23	
	Hi-hat	X <1?		O 2>		c 6>		x ?		x <8		o <19		c ?		x 3>	
	Snare	X ^						X ^			g <10			X 1>			
	Kick											X <9					

Key
- Hi-hat: x = closed, o = open, c = audible closing
- Snare drum: X = normal stroke, g = ghost note
- Kick drum: X = normal or rest stroke
- Bass guitar pitches shown

Deviations in milliseconds: < early, ^ on time, > late, ? masked

Figure 26: James Brown, "Super Bad": transcription of bars 4–7

Bar	Instru-ment	1	e	&	a	2	e	&	a	3	e	&	a	4	e	&	a
23 113.2922 bpm	Vocals							yeah!								woo!	
	Tambo	**x**	x	**x**	x	**x**	x	**x**	x	**x**	x	**x**	x	**x**	x	**x**	x
	Hi-hat	x		x		x		x		x		x		x		o <1?	
	Snare					X 15>			g		g 15>	g		X <2			
	Kick	X ^															
29 113.977 bpm	Vocals	come	on	sis-(ters)													
	Tambo	**x**	x	**x**	x	**x**	x	**x**	x	**x**	x	**x**	x	**x**	x	**x**	x
	Hi-hat	x		x		x		x		x		x		x		x <4?	
	Snare					X 8>			g		g 12>	g		X ^			g
	Kick	X ^															
42 113.5703 bpm	Vocals											she bad				heh!	
	Tambo	**x**	x	**x**	x	**x**	x	**x**	x	**x**	x	**x**	x	**x**	x	**x**	x
	Hi-hat	x		x		x		x		x		x		x		o 4>?	
	Snare					X 15>			g		g 14>	g		X 5>			
	Kick	X ^															
48 114.5949 bpm	Vocals						you're bad			sister							
	Tambo	**x**	x	**x**	x	**x**	x	**x**	x	**x**	x	**x**	x	**x**	x	**x**	x
	Hi-hat	x		x		x		x		x		o		x			
	Snare					X 4>			g		g 2>	g		X <5			
	Kick	X ^															

Key
- Hi-hat: x = normal stroke, o = open
- Snare drum: X = normal stroke, g = ghost note
- Kick drum: X = normal or rest stroke

Deviations in milliseconds: < early, ^ on time, > late

Figure 27: Lyn Collins, "Think (About It)," drum breaks: Rowan Oliver's transcription[97] with microtiming deviations added

97 Ibid., 94.

Bar	Instru-ment	1	e	&	a	2	e	&	a	3	e	&	a	4	e	&	a
3 88.843 bpm	Guitar	C 37>	Bb	G	Eb ----------			C ----------					G	A	C		A
	Bass	C	Bb	G	Eb ----------			C ----------					G	A	C		A
	Hi-hat		x 25>	x <1		x ?			x 4>		x <6	x <13		x <26		x ?	
	Snare					X <22								X <22		X <20	
	Kick	X ^			X 10>		X 1>			X <10	X 3>		X 5>		X 17>		
4 89.5592 bpm	Guitar	C								Bbma 21>	Bbma 90>		Fma 74>		Fma 71>		
	Bass	C							C	G		G					
	Hi-hat		x 14>	x 1>		x ?			x 17>		x ?	x ^		x ?		x ?	
	Snare					X <15								X <11		X <16	
	Kick	X ^			X 8>		X <5			X <1	X 12>		X 10>		X 17>		
5 90.0993 bpm	Guitar	C 44>	Bb	G	Eb ----------			C ----------					G	A	C		A
	Bass	C	Bb	G	Eb ----------			C ----------					G	A	C		A
	Hi-hat		x 26>	x <3		x ?			x 20>		x ?	x <1		x ?		x ?	
	Snare					X <8								X <15		X <16	
	Kick	X ^			X 16>		X 12>			X 2>	X 21>		X 19>		X 17>		
6 89.3661 bpm	Guitar	C								Bbma 23>	Bbma 67>		Fma 55>		Fma 39>		
	Bass	C							C	G		G					
	Hi-hat		x 13>	x 1>		x ?			x 13>		x ?	x 2>		x ?		x ?	
	Snare					X <9								X 2>		X <9	
	Kick	X ^			X 10>		X 14>			X 3>	X 25>		X 24>		X 35>		
7 89.1089 bpm	Guitar	C 11>	Bb	G	Eb ----------			C ----------					G	A	C		A
	Bass	C	Bb	G	Eb ----------			C ----------					G	A	C		A
	Hi-hat		x 20>	x <2		x ?			x 20>		x 14>	x 4>		x ?		x ?	
	Snare					X <3								X <11		X <19	
	Kick	X ^			X 2>		X 28>			X 3>	X 22>		X 14>		X 12>		
8 90.2927 bpm	Guitar	C								Bbma 40>	Bbma 91>		Fma 78>		Fma 52>		
	Bass	C							C	G		G					
	Hi-hat		x 8>	x <14		x ?			x ^		x ?	x <2		x ?		x ?	
	Snare					X <9								X <3		X ^	
	Kick	X ^			X 7>		X 24>			X ^	X 27>		X 28>				

Key
- Hi-hat: x
- Snare drum: X
- Kick drum: X
- Bass guitar pitches shown
- Guitar: Eb = pitch, Bbma = chord

Deviations in milliseconds: < early, ^ on time, > late, ? masked

Figure 28: The Meters, “Cissy Strut”: transcription of bars 3–8

Bar	Instru-ment	1	e	&	a		e	&	a	3	e	&	a	4	e	&	a
13 96.9909 bpm	Tambo					X ?								X ?			
	Clap	X ?		X ?		X ?				X 35>	X 36>			X ^			
	Snare					X 20>			X 44>					X 7>			
	Kick	X ^		X 4>								X 9>			X 17>		
14 93.5065 bpm	Tambo					X ?								X ?			
	Clap	X <14		X <5		X ?				X 21>	X 41>			X ?			
	Snare					X ^			X 23>					X 12>			
	Kick	X ^		X <1								X 5>			X 21>		
15 92.9527 bpm	Tambo					X ?								X <9			
	Clap	X <1		X ?		X ?				X 20>	X 30>			X ?			
	Snare					X 17>			X 24>					X 6>			
	Kick	X ^		X 14>								X <3			X <3		
25 92.146 bpm	Tambo					X ?								X ?			
	Clap	X ?		X 33>		X ?				X 28>	X 36>			X <1			
	Snare					X 14>			X <2			X ?				X <2	
	Kick	X ^		X <10								X <24					X 41 >
26 92.9572 bpm	Tambo					X ?								X ?			
	Clap	X <23		X ?		X ?				X <12	X 12>			X <27			
	Snare					X <10						X ?				X <5	
	Kick	X ^		X <11								X <1			X 20>		X 19 >
27 93.6494 bpm	Tambo					X 3>								X ?			
	Clap	X ?		X <23		X ?				X <2	X 14>			X ?			
	Snare					X 12>			X 34>			X ?		X 9			
	Kick	X ^		X 1>								X 18>			X 11>		X 33 >

Key
- Tambourine: X
- Clap: X
- Snare drum: X
- Kick drum: X

Deviations in milliseconds: < early, ^ on time, > late, ? masked

Figure 29: The Meters, “Handclapping Song”: transcription of bars 14, 15, 26 and 27

Bar	Instru-ment	1	e	&	a	2	e	&	a	3	e	&	a	4	e	&	a
1 93.9464 bpm	Hi-hat	x 15>		x 7>		x ?		x 21>	x 31>	x 11>		O 7>		x ?		x 12>	
	Snare					X 16>								X 19>			
	Kick	X ^							X 52>	X 12>		X ^				X 4>	
2 95.1046 bpm	Hi-hat	x 8>		x 11>		x ?		x 6>	x 21>	x 7>		O 7>		x ?		x 14>	
	Snare					X 6>								X 15>			
	Kick	X ^							X 47>	X 9>		X ^				X <1	
3 95.5269 bpm	Hi-hat	x 10>		x 5>		x 5>		x 10>	x ?	x <4		O ?		x ?		x 1>	
	Snare					X 7>								X 13>			
	Kick	X ^							X 33>	X <2		X 4>				X <7	
4 95.4494 bpm	Hi-hat	x 8>		x 11>		x ?		x 8>	x ?	x ?		O ?		x 9>		x 1>	
	Snare					X 16>								X 15>			
	Kick	X ^							X 47>	X 12>		X ^				X <7	
5 95.6642 bpm	Hi-hat	x 10>		x 7>		x ?		x 7>	x ?	x ?		O ?		x ?		x 10>	
	Snare					X 9>								X 16>			
	Kick	X ^							X 44>	X 13>		X 1>				X 4>	

Key
- Hi-hat: x = closed, O =open
- Snare drum: X
- Kick drum: X

Deviations in milliseconds: < early, ^ on time, > late, ? masked

Figure 30: "Impeach The President" by The Honey Drippers drum break: Rowan Oliver's transcription[98] with microtiming deviations added

98 Ibid., 107.

Bar	Instrument	1	e	&	a	2	e	&	a	3	e	&	a	4	e	&	a
7 118.7702 bpm	Hi-hat	x ?		x ?		x ?		x 7>		x 2>		x <4		x ?		x 7>	
	Snare					X <4					g 14>			X 4>			g 30>
	Kick	X ^		X ^								X <11					
8 118.3858 bpm	Hi-hat	x ?		x 3>		x ?		o 10>		x 16>		x 2>		x ?		x 6>	
	Snare					X 5>					g 4>			X 5>			g 23>
	Kick	X ^		X 6>				X 9>				X 1>					
9 118.3566 bpm	Hi-hat	x ?		x 7>		x ?		x 24>		x 18>		x 11>		x ?		x 14>	
	Snare					X 10>					g 25>			X 9>			g 21>
	Kick	X ^		X 6>								X 9>					
10 118.4491 bpm	Hi-hat	x ?		x 13>		x ?		o 14>		x 18>		x 4>		x ?		x 12>	
	Snare					X 12>					g 1>			X 2>			g 9>
	Kick	X ^		X 9>				X 13>									
11 117.9204 bpm	Hi-hat	x ?		x 5>		x ?		x 14>		x 8>		x 2>		x ?		x 7>	
	Snare					X 6>					g 10>			X 4>			g 21>
	Kick	X ^		X 7>								X <7					
12 118.1696 bpm	Hi-hat	x ?		x 3>		x ?		x 11>		x 1>		x ^		x ?		x 8>	
	Snare					X <2								X 3>			g 13>
	Kick	X ^		X 2.								X <7					
13 118.3663 bpm	Hi-hat	x ?		x ^		x ?		o 4>		x 12>		x <5		x ?		x 6>	
	Snare					X 2>					g 10>			X <3			g 7>
	Kick	X ^		X 2>				X ^				X <9					

Key
- Hi-hat: x = closed, o =open
- Snare drum: X, ghost: g
- Kick drum: X

Deviations in milliseconds: < early, ^ on time, > late, ? masked

Figure 31: The Incredible Bongo Band, "Apache": transcription of bars 7–13 of the drum break

Bar	Instru-ment	1	e	&	a	2	e	&	a	3	e	&	a	4	e	&	a
1 101.1485 bpm	Hi-hat	x ?		x <2		x ?		x 6>		x 11>		x ?		x ?		x 1>	
	Snare					X <1								X 2>			
	Kick	X ^										X 8>					X 38>
2 100.5341 bpm	Hi-hat	x ?		x <3		x ?		x 4>		x 6>		x ?		x ?		x 6>	
	Snare					X <6								X 3>			
	Kick	X ^										X <5					X 53>
3 100.8359 bpm	Hi-hat	x ?		x ^		x ?		x 15>		x 24>		x 21>		x ?		x 23>	
	Snare					X 4>								X 18>			
	Kick	X ^															X 37>
4 100.6685 bpm	Hi-hat	x ?		x 2>		x ?		x 3>		x 20>		x ?		x ?		x 7>	
	Snare					X <13								X ^			
	Kick	X ^										X <1					X 34>
5 101.4912 bpm	Hi-hat	x ?		x 2>		x ?		x 17>		x <3		x ?		x ?		x 8>	
	Snare					X ^								X 5>			
	Kick	X ^										X 13>					X 42>
6 102.3489 bpm	Hi-hat	x ?		x <3		x ?		x 13>		x 11>		x ?		x ?		x 8>	
	Snare					X <6								X 2>			
	Kick	X ^										X ^					X 36>

Key
- Hi-hat: x
- Snare drum: X
- Kick drum: X

Deviations in milliseconds: < early, ^ on time, > late, ? masked

Figure 32: Sly and the Family Stone, "Sing a Simple Song": transcription of bars 1–6 of the break

Bar	Instru-ment	1	e	&	a	2	e	&	a	3	e	&	a	4	e	&	a
1 95.8166 bpm	Hi-hat			x <14	o <14			x <1	x <1	x <13				x 11>		x 4>	x 1>
	Snare		X <9									X <8					
	Kick	X <26									X <1						X <3
2 95.8166 bpm	Hi-hat	x ?		x 15>		x <2		x ?		x 10>		x 7>	x <4	x <3		x	
	Snare							X <5								X <6	
	Kick	X 1>			X 3		X 11>						X ^		X ^		
3 95.808 bpm	Hi-hat	x ?			o 3>	c ^		x <10		x 2>		x <1					
	Snare	X ^	X 3>								X 7>			X <3		X 10>	
	Kick			X <16	X <6				X <11			X <9	X <6				
4 95.808 bpm	Hi-hat		x 4>	x <4	o <10			x <3	x 3>	x <13				x ?			
	Snare											X <16				X <7	X 1>
	Kick	X 1>									X <9			X <23			

Key
- Hi-hat: x = closed, o = open, c = audible closing
- Snare drum: X
- Kick drum: X

Deviations in milliseconds: < early, ^ on time, > late, ? masked

Figure 33: Sly and the Family Stone, "In Time": transcription of the drum break

Bar	Instru-ment	1	e	&	a	2	e	&	a	3	e	&	a	4	e	&	a
1 96.1097 bpm	Hi-hat	x <?		x <6		x <19		x <22		x <5		x 10>		x 1>		x 11>	
	Snare					X <14								X 13>			
	Kick	X ^		X <1								X 26>	X 44>				X 42>
2 95.6485 bpm	Bass gtr											E ----------		F ----------		G ----------	
	Hi-hat	x <?		x <2		x <6		x 7>		x 4>		x ?		x <2		x 3>	
	Snare					X 8>								X 7>			
	Kick	X ^		X 22>								X 6>	X 29>				X 25>

Key
- Hi-hat: x
- Snare drum: X
- Kick drum: X

Deviations in milliseconds: < early, ^ on time, > late, ? masked

Figure 34: The Skull Snaps, "It's a New Day": transcription of the drum break

Bar	Instru-ment	1	e	&	a	2	e	&	a	3	e	&	a	4	e	&	a
1 98.5668 bpm	Clap																x 36>
	Hi-hat			x <5		x ?		x 2>		x <2		o <14		c ?		x <8	
	Snare					X 1>								X <8			g 20>
	Kick	X ^			X 33>				X 35>		X 44 >	X <8					
2 98.8867 bpm	Vocals							fun -		-ky				tow----------n			
	Hi-hat	<2		x <14		x ?		x <8		x <17		o <19		c ?		x ^	
	Snare		g 28>			X <4								X ^			p 29>
	Kick	X ^			X 6>				X 23>		X 26 >	X <24					
3 98.9886 bpm	Clap	x 1>		x 8>		x <17		x 14>		x <23		x <23		x <23			
	Hi-hat	x 14>		x <4				x 6>		x 1>		o 4>		c ?		x <1	
	Snare	g 2>				X 6>								X 7>			g 36>
	Kick	X ^			X 38>				X 31>		X 39 >	X <4					
4 98.8388 bpm	Vocals							nas ---------- - ty						hey ----------			lis----
	Clap	x <52		x <20		x <39								X <27			
	Hi-hat	x 3>		x <12		x ?		x <3		x <16		o <11				x 1>	
	Snare					X <4								X <5			
	Kick	X ^			X 14>				X 26>		X 30 >	X <21					

Key
- Clap: x
- Hi-hat: x = closed, o = open, c = audible closing
- Snare drum: X = normal hit, g = ghost, p = press roll
- Kick drum: X = normal or rest stroke

Deviations in milliseconds: < early, ^ on time, > late, ? masked

Figure 35: James Brown, "Funky President": transcription of the drum break

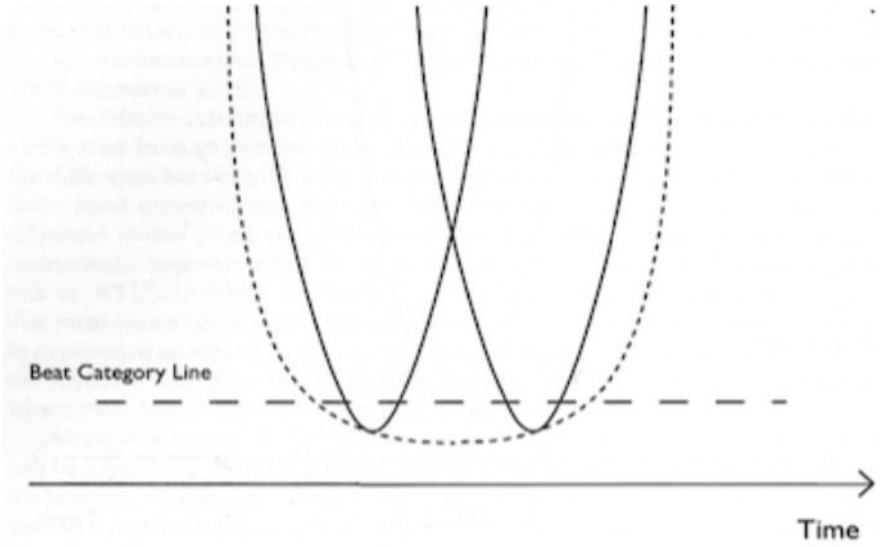

Figure 36: Danielsen's (2010, 32) beat bin model.[99] In the graphic representation, two attacks are contained within one *wide* beat.

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Southampton Solent University

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99 Danielsen 2010, 33: "each beat is thought to have a shape and duration […] differing rhythmic events may be regarded as located within the same beat."

“Punk rock can never be new again”

On the Horizons of Punk Music Scholarship

Bernhard Steinbrecher

Dieser Artikel zielt darauf ab, eine musiktheoretische Perspektive auf Punk zu entwickeln, die eng mit genretypischen Diskursen und Praktiken verknüpft ist. Musikwissenschaftlicher Ausgangspunkt ist die elementare Frage danach, wie sich analytische Beziehungen zwischen dem Klanggeschehen und den Arten und Weisen, wie es gemacht, gehört, erfahren und mit Bedeutung versehen wird, herstellen lassen. Am Beispiel von Punk wird reflektiert, inwieweit musikorientierte Interpretationen dabei helfen können, die Konstituierung und wiederholte Aushandlung von popularmusikalischen Genres besser zu verstehen. Dabei wird ein analytischer Bezugsrahmen entworfen, dessen Ankerpunkte – so die These – das Spektrum an Möglichkeiten eingrenzen, warum Punk so klingt, wie er klingt. Um die Rolle der Musik in diesen Zusammenhängen genauer zu beleuchten, werden die drei Analyseschwerpunkte Textur, Struktur und Spannungsgehalt vorgeschlagen.

This article develops a music-oriented punk theory in relation to genre-specific discourses and practices. In a step-by-step-manner, it reflects – with the example of punk – upon the fundamental question of what music analysis and interpretation can contribute to the understanding of how a popular music genre is negotiated and (re-)created, aiming to offer a new perspective on the analytical connection between the sounds and the ways in which they are made, listened to, experienced, and made sense of. The article proposes an analytical framework including different anchor points that hold together what punk tends to be like, examines the interrelations that delimit the range of possibilities for why punk sounds the way it does, and suggests three different and interwoven music-analytical focal points – texture, structure, and tensity – to illuminate the role of the music within this framework.

SCHLAGWORTE/KEYWORDS: Analyse von populärer Musik; genre discourse; Genre Diskurs; musikalischer Spannungsgehalt; popular music analysis; Punk; tensity; texture

For almost five decades, the term “punk” has been a steady particular of popular music. With its preliminaries in the garage and avant-garde rock of the late 1960s and its broad public breakthrough with the Sex Pistols in 1976, punk, whether as an idea, genre, or aesthetic, has recurrently appeared both in countercultural realms and the mainstream frames of cultural debate. In academic discourse, punk left its marks early on as an important object of study, particularly in the cultural studies’ analytical endeavours, and has, as such, been an essential building block for the establishment of popular music studies. However, while its social, cultural, and political intricacies and visual and textual meanings have been strongly illuminated in scholarly discourse, there is relatively little analysis and contextual interpretation of punk’s actual sounds and musical makeup.[1]

1 In this article, I use the terms “punk” and “punk rock” synonymously, as the musical connotation is usually the same. I therefore agree with Dirk Budde, who in his book *Take Three Chords* also refrains from making a distinction between punk rock and punk: “To paraphrase David Laing, ‘punk’ also stands for the musical expression of the phenomenon that is the focus of this work. There is no need to discuss the fact that ‘punk’ can also be understood as an extra-musical phenomenon” (Budde 1997, 192; author’s translation).

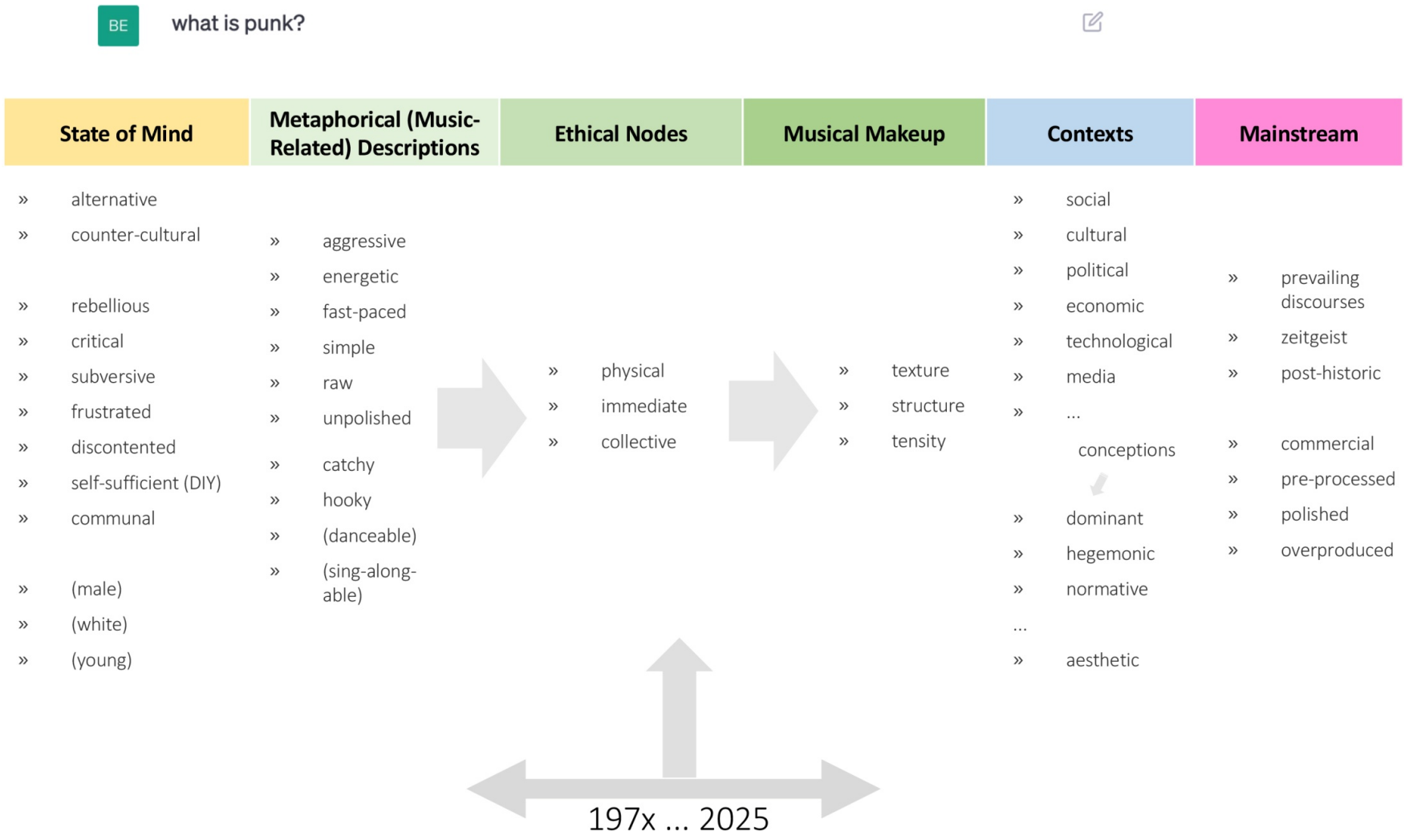

Figure 1: A punk framework

One reason for this neglect might be found in the – albeit ever weakening – musicological viewpoint that because of its (specific kind of) simplicity, a music is not worth closer musical examination (of any kind) – a fate that punk has come to share with chart-topping pop music. Nevertheless, perhaps an even more decisive claim explaining the lack of music-theoretical discussion is the general notion that punk is not necessarily a musical, or not even a music-related, phenomenon or field, but is rather, first and foremost, a specific attitude, stance, or lifestyle:

> Punk isn't punk because of the arrangement of chords, the speed of the songs, or a layer of crust in appearance, but in the way it breaks through the layers of social stagnation in everyday life and builds something else in its cracks.[2]

> This musical foundation of punk – which I consider to be fundamental for grasping punk's meaning – is avoided or undervalued by most writers, who tend to define punk instead primarily or even exclusively as an 'attitude,' a subcultural phenomenon, a youth movement or a political intervention.[3]

In this article, I approach the music of punk in a rather inverted manner, first by taking precisely the latter perspective as a starting point to theorize the genre's sonic constellations and elaborate on the horizons of a music-oriented punk scholarship.[4] In doing so, my aim is not to comprehensively or exhaustively detail *how* punk sounds, but to elaborate on the interrelations that delimit the range of possibilities for *why* punk sounds the way it does. In a step-by-step manner, I will develop a theory of music's place in the punk discourses and practices, reflecting – with the example of punk – upon the basal question of what music analysis and interpretation can contribute to the understanding of how a genre, understood as a discursive musical framework,[5] is negotiated and (re-) created. By taking this approach, I aim to offer a new perspective on a fundamental task of musicology concerning the establishment of a connection between the (analysis of the) sounds and (their interpretation in connection with) the ways in which they are made, listened to, experienced, and made sense of. The chart in Figure 1 shows a framework of the different analytical layers that I will leverage in my argument.

Punk as a State of Mind

To begin my reflections, I will begin very rudimentarily with the question of what punk actually is. Admittedly, at first glance, the question seems rather basic and unfruitful, and one might be inclined to leave definitional questions to "the consensus of users in the 1976–8 period, a consensus made up of the authors listed above together with musicians, journalists and other participants in published discourse."[6] At second glance, however, it becomes clear that in hardly any other area of popular music, this overarching (and clearly exhausted) question is as powerful and inherently constitutive. This is particularly evi-

2 Shukaitis 2012, 129.

3 Rapport 2014, 44.

4 I first presented my thoughts in this article in my keynote at the conference *Horizons of Punk: Punk-Rock Scholarship and its Methodologies* in Paris, France, 9 June 2023.

5 See Marshall 2011, 159; Steinbrecher 2021b, 408.

6 Laing 2015, 8.

dent when it comes to the suspect notion that someone or something is *not* (any longer) punk. As the seminal German punk(-related) band Die Ärzte proclaim in their song "Ist das noch Punkrock?" ("Is that still punk rock?"):

> But is that still punk rock
> How your heart beats when she kisses you?
> Is that still punk rock
> When your favourite song is on the charts?
> It's just got the coolness factor
> Of a garden tractor
> Is that still punk rock?
> I don't think so[7]

The punk band Joseph Boys, on the other hand, finds that the term is, at least today, surrounded by some measure of arbitrariness: "Isn't it outdated in 2022 to ask what punk is and what it is not? Can't a gold foil be punk too?"[8]

To obtain a supposedly more unified notion of the punk idea, I consulted the "conversational AI model" ChatGPT to see which words and language patterns are most likely to occur in those contexts in which the term is used.[9] On 25 May 2023, I asked the free-of-charge version of ChatGPT the question, "what is punk?," and in the first three paragraphs of the answer, the machine-learning algorithm provided me with the following information:

> Punk is a subculture and music genre that emerged in the 1970s. It originated primarily in the United States and the United Kingdom as a rebellious response to the prevailing social and musical norms of the time. Punk is characterised by its aggressive and energetic music, often featuring short, fast-paced songs with simple progressions, raw and unpolished production, and confrontational lyrics that express frustration, discontent, and social criticism.[10]

In a renewed request on September 23, 2024, ChatGPT replied in a similar but more list-like way, adding at the very end of its answer that "Punk isn't just about the music or fashion – it's an attitude of defiance, self-expression, and resistance to the mainstream."[11] This addition echoes the abovementioned core trope of punk, in that it is not just, if at all, about the sounds but "more than just music": a way of life, a way of thinking, a mindset, an attitude, an ideology, a set of beliefs, or, as Laura Way discusses in her study of older punk women, it is conceived as a "state of mind."[12] There are some common traits or "core values"[13] around which the state-of-mind nature of punk has been shaped, al-

7 Die Ärzte 2012; author's translation.

8 Joseph Boys 2023; author's translation.

9 This introductory step might reasonably be seen as problematic or perhaps even lazy. However, my intention was to initially approach the discourse with a relatively open perspective and with as small scholarly blinders as possible. Given my personal and academic background in the field (see also note 14), I believe I can evaluate the information gathered in a reflective manner and will frequently reference the extensive body of literature throughout this article.

10 ChatGPT, response to "what is punk?", Open AI, 25 May 2023. https://chat.openai.com/chat.

11 ChatGPT, response to "what is punk?", Open AI, 23 September 2024. https://chat.openai.com/chat.

12 Way 2021, 107.

13 Ibid., 112.

though all of them remain disputable in one way or the other.[14] Most importantly, it is closely tied to the idea that those who participate in punk are adopting a countercultural or, at least, alternative stance against prevailing norms and concepts.[15] This stance is expressed in a particular way – namely, through an openly critical, rebellious, and subversive attitude, often undergirded by frustration and discontent (rather than, for example, by peacefulness or hopeful thinking). Moreover, within this state of mind, independence and self-sufficiency are seen as central and are reflected in the do-it-yourself (DIY) narrative of punk;[16] or, as George MacKay puts it in his interrogation of this narrative, in the "DIY/punk nexus."[17] And while the notion of individual freedom is an essential pillar of the punk trope, the shared values remain particularly powerful because of punk's strong sense of community and the collective practices associated with it.[18]

Punk as a State of Mind in Context

Over the past five decades, punk's core values have remained extraordinarily persistent, especially in comparison to many other popular music currents that have come and gone. As the Bad Religion singer and songwriter Greg Graffin put it at the end of his memoir, "What remarkable resilience, this punk thing!"[19] However, the circumstances or contexts in which these values have come alive and been charged with sense and meaning, time and time again, have certainly not remained in bloom. Since the first sparks of punk were lit, the social, cultural, political, economic, technological, media, and other contexts of which one might be critical and dismissive, or which may have tended to make one subversive and self-sufficient, have been subject to constant change. The same is true of the dominant conceptions and conventions within society that a punk might oppose in their rebellion against hegemonic power structures or certain ideas of what is or should be considered "normal." This processuality entails that the abovementioned punk attitudes require constant adaptation and reshaping around their stable core.

14 I am, of course, fully aware that the list of attributes that I consider to be "common traits" here and in the rest of the article is neither complete nor comprehensively substantiated by, for example, an extensive discourse or keyword-in-context analysis. Accordingly, my reflections are based on my own experiences as a punk researcher, fan, and musician, as well as on the recurrent appearance of these attributes in dictionaries, encyclopaedias, documentaries, interviews, journalistic books, biographies, and academic works. One particular example is the 2022 documentary *Punk In Drublic*, in which many seminal punk musicians share similar perspectives when asked about what punk is/means for them (0:02:30–0:04:55). The same applies to various comments in the 1981 punk documentary *The Decline of Western Civilization*.

15 See, e.g., Hebdige 1991, Ableitinger 2004, and Laing 2015.

16 "Punk established the blueprint for many forms of contemporary DIY cultural production, notably in relation to music production, fanzine culture and fashion design" (Bennett/Guerra 2023, 4).

17 McKay 2024.

18 As indicated in the left-hand column of my framework, it might be worth considering who the main actors of these negotiations are as to matters of identity construction. This is because, traditionally, punk has been coded as male, white, and (by and for the) young: "[Y]ou must be young, White, and an underachiever to perform punk music in an exemplary fashion (Laing 1985)" (Lena/Peterson 2008, 706). Brett Gurewitz of Bad Religion and Epitaph records notes that he has still adhered his initial ideals when running his business, even though he is "not a teenager anymore and punk is music for teenagers" (as cited in Diehl 2007, 158). Way, with reference to Hebdige, remarks that "Commonly, punk was theorised as both a male-dominated subculture and one which was youth centred" (2021, 108).

19 Graffin 2022, 360.

For example, the reasons why a 16-year-old white male teenage punk in England might have been frustrated or rebellious in the late 1970s are likely to be very different from those of a 40-year-old female Black adult punk in South Korea in 2025. Nevertheless, both may share the same state of mind. Therefore, it becomes clear that there is a relationality to be considered. Laura Way argues in a similar vein when she notes the following, in relation to Mustafa Emirbayr:

> Examining punk women's past biographies as well as the present provided a deeper understanding of the relational nature of the attitudes and behaviours currently held/displayed and how (being) punk can be better understood as an unfolding, continual process (Emirbayer 1997).[20]

Following this, I would like to suggest a first grain of thought regarding the potential epistemic value of a more strongly pronounced music-oriented punk scholarship. It could be based on the following idea:

Studying punk helps us better understand the discursive and processual relationship between a community's ingrained attitudes and a society's dominant conceptions.

Within this perspective, there is much to be said for considering punk as a genre category, which would mean that it would refer to "a particular kind of music within a distinctive cultural web of production, circulation, and signification,"[21] in which "individuals and groups construct cultural boundaries."[22] It could be considered as being defined through a socially accepted set of differently weighted and interdependent rules,[23] among them, formal and technical ones. What should strongly be considered in genre studies, however, is that genres are not monolithic historical phenomena that, once classified, remain immutable and self-actingly *just there*.[24] In their sociological reflections on genre work, Raphaël Nowak and Andrew Whelan note that,

> Genre categorises and captures what we do and what we like. Genre is not, however, simply a disembodied referential point. Genre is cumbersome in verb form: 'genre-ing' describes the processes we are directing attention to as 'genre work.'[25]

The fact is that punk, in particular, is a genre that is constantly in motion, or constantly being worked through. In Nowak and Whelan's words, punk comprises "the practices which constitute both the music and the communities around it,"[26] and this becomes especially apparent when punk is viewed through the lens of the "developmental sequences" proposed by Lena and Peterson in their study of the types and trajectories of popular music genres. Punk is one of the few genres in their study (11 out of 60) to have gone through both the avant-garde, scene-based, industry-based, and traditionalist phases[27] – from its antecedents in the sixties, with its experimental, small-circle, and under-the-radar notions; through the late seventies/early eighties, when local and trans-local

20 Way 2021, 119.

21 Holt 2007, 2.

22 Lena/Peterson 2008, 698.

23 Fabbri 1982, 52–55.

24 See also Toynbee 2000, 104–107; Fabbri 1982, 59.

25 Nowak/Whelan 2022, 10.

26 Ibid., 12.

27 Lena/Peterson 2008, 708.

communities were quickly established, along with particular codes and demarcation mechanisms; to the early/mid-nineties, with what can be considered punk's most commercially lucrative phase; and to the early noughties, when heritage preservation, nostalgia, and hyper-codification began to prevail. Not only has punk gone through this entire linear process, but it has also taken a more circular course, meaning that, although the traditionalist phase was reached two decades ago, earlier genre types continue to pop up here and there, across the globe, and initiate the trajectory over and over again in parallel (actually, the historiographies of punk are riddled with "generations" and "waves").

With this circular perspective in mind, I would like to turn to the postmodern quote from the title of my article, which comes from a 2002 show preview for the band The Distillers: "Punk rock can never be new again."[28] According to Lena and Peterson's framework, punk can never be new again, because it has already completed the full course of a genre's trajectory. However, this does not mean that the development is now frozen, and the genre is carved in stone. Rather, punk is constantly being reworked or repainted from a different starting point and context.[29] In this sense, I argue the following:

Studying punk helps us better understand the discursive and circular-processual relationship between a community's ingrained attitudes and a society's dominant conceptions by analyzing how the relationship is (re-)negotiated, stabilized, and renewed.

How and on what basis could this relationship possibly be studied? By what means do the protagonists of the punk community act within the mechanisms of their cultural frame and manoeuvre between their own state of mind and the current state of affairs? I think one of the main ways to address this gap can be found in the aesthetic forms through which these protagonists express themselves, and music is certainly one of them, if not the most important one. Then, how is the music shaped according to the discursive elements that "'stick' with it"[30] and the practices of production and reception? What are "the discursive and musical structures that concatenate into genre ideals and produce symbols of inclusion and exclusion?"[31]

What Punk is Negotiated With – The Role of the Music

Although there is the common perception that the music is not the most important element within the punk framework, I argue that it still has a fundamental, distinctive tone, and that the sonic makeup does not stray arbitrarily in any one direction. The punk band Joseph Boys, for example, whom I quoted at the beginning of my article, have expressed a critical/ironic attitude towards a clear definition of punk, even though they obviously have a pretty good idea of what punk sounds like. In the same interview, they were asked the following:

28 Hoper 2002 as cited in Diehl 2007, 137.

29 In a 2025 interview with the newspaper *Süddeutsche Zeitung*, the singer of the German punk band Team Scheisse, Timo Warkus, reiterates this notion when asked about his band's current popularity: "There is no concept. The fact that we resonate so strongly with people right now is simply down to the fucking zeitgeist. The zeitgeist automatically ensures that it has to be constantly renegotiated what punk actually is and what it isn't." (Hentschel 2025; author's translation).

30 Nowak/Whelan 2022, 10.

31 Lena/Peterson 2008, 713.

> Plastic Bomb: "How would you categorise yourself? Are there any role models that are important for you?"
>
> Joseph Boys: "It's hard for me to assess this, and, to be honest, I always tell people that they should listen to it, it's guitar music, it's punk, that's just what it is."[32]

After all, "songs within a genre must share certain stable musical characteristics in order for the genre to be recognizable to consumers […]."[33] From a scholarly perspective, as indicated at my article's beginning, only a few approaches have attempted to grasp punk from a musical point of view. As David Pearson puts it:

> Scholars often assume that there is little more to say about punk music other than it is fast, loud, abrasive, and any amateur can perform it. Yet within the community of bands, fans, zine writers, concert organizers, and others constituting the punk scene, there is a robust discourse on punk musical style and the changes it has undergone throughout its now forty-year history. […] scholarship on punk has focused almost exclusively on its politics and culture without attempting substantive analysis of its music.[34]

To my knowledge, only a handful of English, German, or French monographs have an explicitly musical focus. These include Dirk Budde's multi-dimensional music-analytical checklists of sixteen seminal punk and hardcore songs from the United States and the United Kingdom;[35] David B. Easley's analysis of "style and sound" in early American hardcore punk;[36] my own work, where I use the post-hardcore band Fugazi as an example to which I apply my extended framework of popular music analysis;[37] Evan Rapport's examination of musicality and race in early American punk;[38] and Sangheon Lee's dissertation, which aimed to clarify "the music itself" of American hardcore punk and to decipher, through a musical lens, the "social dimension" of the music.[39] There have also been a number of articles on the musical aesthetics of punk, specifically on the rhythms, riffs, and timbres of 1990's extreme hardcore punk;[40] the riff schemes and form in early American hardcore;[41] punk's harmonic, melodic, and vocal-performative relationships to the blues;[42] and, with a process-oriented focus on a particular song, the gestural and textural features of the Sex Pistols' song "Sub Mission,"[43] as well as the changing shapes and func-

32 Joseph Boys 2023; author's translation.

33 Shea et al. 2024.

34 Pearson 2019, paragraph 1. See also Easley: "Despite being the focus of studies in fields such as ethnomusicology, cultural studies, philosophy, and history, punk rock – and American hardcore punk rock in particular – has yet to fall under the analytical gaze of music theorists" (2011, xviii).

35 Budde 1997.

36 Easley 2011.

37 Steinbrecher 2016.

38 Rapport 2020.

39 Lee 2022, 10.

40 Pearson 2019.

41 Easley 2015.

42 Rapport 2014.

43 Bennett 2015.

tions of riffs in Sonic Youth's "Total Trash."[44] Dave Laing also devoted a few pages to "voices" and "music" in his seminal book *One Chord Wonders*.[45]

I will incorporate some of these authors' findings into my reflections below. First, however, it should be noted that when beginning to theorize the music within the discursive framework of punk, it would be unproductive to jump straight to the "musical structures"[46] in the narrower sense (a brief overview of this kind is provided by Pearson[47]), with the intent of obtaining an overview of the formative harmonic, melodic, or rhythmic aspects. To better understand how a certain state of mind is musically negotiated, it seems necessary to first consider what aesthetic criteria are in the playing field (i.e., what aesthetic claims are being made in punk music). As Henry Rollins pointedly asserted in the introduction of Don Letts's documentary *Punk: Attitude*: "And all of a sudden, 'fuck this' has a backbeat."[48]

In other words, what is especially interesting about punk is not the fact *that* power chords, distortion, or "skank"[49] beats are used, but rather *why* these devices lend themselves to being used within this particular framework. Repeating a distorted power chord at a fast tempo does not make you rebellious or subversive per se, and drumming a hardcore punk skank beat, even long before it had its specific adherence to punk or metal music, may simply be due to boredom, as Charlie Watts demonstrated in 1968 during the recording sessions for "Sympathy for the Devil."[50] Therefore, I would like to add an intermediate level of analysis that includes more general musical descriptions that may be more directly related to the aforementioned punk attitudes.

Punk Music Metaphors

I hope I am not going out on a limb in supporting Al's notion that punk is, according to popular belief, aggressive, energetic, simple, fast-paced, raw, and unpolished music.[51] I would also add that punk is inherently catchy and hooky, as the music makes strong affordances to be danced to and sung along to (although not in a conventional manner). These attributions need to be examined more closely and differentiated. First, from the perspective of cognitive psychology, they can be seen as embodied metaphors borrowed from the non-musical domains of human experience.[52] More specifically, they refer to a

44 Cateforis 1993. Some song analyses, e.g., from "Blitzkrieg Pop" (Ramones), "The Passenger" (Iggy Pop), "London Calling" (The Clash), "Schrei nach Liebe" (Die Ärzte), "Self Esteem" (The Offspring), and "All The Small Things" (Blink 182) can also be found in the *Songlexikon* encyclopedia.

45 Laing 2015, 46–52.

46 Lena/Petersen 2008, 713.

47 Pearson 2019, paragraph 5.

48 *Punk Attitude* 2005, 0:00:12–0:00:25.

49 A "skank" beat refers to a rhythmic pattern on the drums, particularly used in hardcore punk, in which kick and snare strokes alternate rapidly, at speeds of 150 BPM upwards. The offbeat phrasing of the snare drum, in a skank upbeat, resembles the characteristic "skank" guitar strokes of ska or reggae (Lee 2022, 141–142).

50 *One + One* 1968, 0:01:40.

51 Again, these descriptions can be found in numerous (academic and non-academic) resources, which I will not list individually here. Perhaps it is worth mentioning that the aspect of aggression has also found its way into the title of an edited volume (Abbey/Helb 2014).

52 See also Pfleiderer 2006, 96.

person's experiential knowledge and impressions stored in their episodic memory, rather than to the general knowledge, including factual information, of their semantic memory.[53] Thus, while academia has often framed punk as an art form or socio-political phenomenon from the perspective of an abstract-conceptual system of references, punk music is apparently also very well describable by harking back to relative categories of a specific, near-stimulus kind that can only be assessed in terms of more-or-less[54] – there is, as far as I am concerned, no graded scale of aggressiveness, energy, or rawness.[55] The fact that we are dealing with relative categories here is also evident when we consider how the notions of aggressive or energetic, or more generally "hard" and "heavy"[56] music have changed drastically over the last fifty years.

Second, these attributions only work properly in terms of signifying punk through their interrelationships. For example, aggressive music can also be rather sluggish and slow, whereas the Hi-NRG ("high energy") disco genre has little to do with punk music. Third, they point to different dimensions of the dynamic process of punk "musicking."[57] The adjectives "raw" and "unpolished" generally refer to the working methods of those who make the music, "simple" and "fast-paced" to how they process the structural building blocks of the music, "aggressive" and "energetic" to what is to be conveyed and (physically) experienced, and "catchy" and "hooky" to how the listener is (mentally) drawn in.

Ethical-Aesthetic Criteria: Physicality, Immediacy, and Collectivity

Essentially, this bundle of metaphors not only contains translations of one's auditory impressions or the images we may conceive of the musicians creating and playing, but also indicates the ethical criteria or ideal conceptions of the right or "correct" way to make and experience punk.[58] In the following, I propose three central anchor points or ethical nodes that structurally connect the (musical-)aesthetic criteria: physicality, immediacy, and collectivity. Together, these criteria interdependently contribute to the ways in which punk music constitutes itself or, more precisely, is expected to constitute itself and sound.

Physicality

Starting with the physical component of punk, I sense a dominance of bodily forms of creating, listening to, referring to, acting upon, or experiencing punk music to the detriment of theoretical or abstract thinking.[59] One discursive context in which this becomes apparent is when punk musicians discuss their relationship to musical theory or literacy.

53 In the context of music, see, e.g., Snyder 2000; Bruhn 2005.

54 See also Thies 1982.

55 See also Steinbrecher 2016, 66–85.

56 See Herbst/Mynett 2022.

57 For the concept of "musicking," see Small 1998.

58 See Diaz-Bone 2002; Steinbrecher 2016, 154–183.

59 Many punk scholars approaching the genre from something other than a musical perspective will probably disagree with me at this point, given the plethora of philosophical, media-theoretical, political, or other readings of certain kinds of punk. In my opinion, however, these top-heavy streams of punk are not necessarily the ones that have contributed most to the genre's ongoing relevance or popularity.

As I have discussed in detail elsewhere,[60] the inability to read or understand music from a (Western-)theoretical perspective is an essential part of the cultural legitimisation of one's own creative practices in certain musical fields or genres; indeed, DIY and no-theory ethics are particularly popular in the punk context. I have argued that physical gestures (made with one's arms, hands, and fingers) and the idea of feeling an instrument, rather than consciously reflecting upon what one is doing when playing it, are essential aspects of making rock music and its alternative, more phenomenally (gesturally, tangibly, and texturally) tied version of music theory.[61] This is especially true of the "no-holds-barred style"[62] of punk, which is most commonly played on physically manipulable instruments (e.g., guitar, bass, and drums) with a lot of body movement and intuitive, episodically remembered gestures on the fretboard or drums. Vocal delivery is also often the result of strong physical effort in shouting or screaming. In the reception of the music, the physical factor of feeling the sounds, moving to them excessively, and seeing or imagining how they are or were made is also fundamental.

Immediacy

Along with this dominance of physicality go notions of immediacy or, as Sangheon Lee has discussed at length, urgency.[63] A core narrative theme here is that punk has to get straight to the point and right in your face, without much physical distance: "'Punk' meant an attitude towards musical performance which emphasised directness and repetition […] at the expense of technical virtuosity."[64] Punk has to be immediately perceptible rather than allusively thinkable; it has to be quickly created rather than conceptualized slowly on the drawing board, and it has to be played instantly without years of training and without aspiring to master an instrument or one's own singing voice. Evan Rapport points to the sociocultural importance of this aspect, given that "[s]uch immediacy opened doors to many who otherwise might not have joined bands, dismantling the notion that music was the property of a select group of trained musicians."[65] Immediacy became even more pronounced with the intensification of the genre in the form of hardcore punk, which "was and is a music of direct communication unencumbered by any musical excess."[66]

Collectivity

Of course, these notions of physicality and immediacy only come into their own when performed or experienced collectively, rather than at home listening alone with one's headphones on, noodling around on a guitar, or, these days, sitting in front of a computer screen and moving tiny blocks around in a digital audio workstation. Punk musicians

60 Steinbrecher 2024; Steinbrecher 2025.

61 Steinbrecher 2025, 18.

62 Toews 2023.

63 Lee 2022, 33–50.

64 Laing 2015, 19.

65 Rapport 2014, 48.

66 Pearson 2019, paragraph 13.

most often interact and respond directly to each other when making music and when playing together in a conspiratorial gang, such as a band. Punk concerts are, almost by definition, spaces for reducing distance and making physical contact with others, including musicians, through pogoing, stage diving, sweating, spitting, or whatever else breaks down the barriers of peoples' intimate zones.[67] The notion of collectivity is directly related to the community-oriented attitude of punk as a state of mind, which was mentioned earlier.

Taken together, these three ethical notions can be said to form a social acceptance framework for punk,[68] defining the extent to which something can be considered punk or perhaps no longer so. If a punk band, at some point in its career, no longer conveys the sense of an immediate and unadulterated artistic expression, because, for example, the use of studio technology becomes too obvious, the production time has become too long, there are too many people from the outside involved, the stages have become too big, and so on, then the band is likely to fall out of this framework of acceptance. Therefore, if we assume that the arcs between the ethical nodes of physicality, immediacy, and collectivity determine the direction of how punk should ideally be made and experienced, this may already limit or pre-determine the ways in which it actually sounds.

The musical interweaving within this complex interplay is aptly illustrated in a scene from the Danny Boyle-directed TV series about Steve Jones of the Sex Pistols,[69] in which bassist Glen Matlock tries to convince Jones (collectivity), with the help of music-theoretical vocabulary (no immediacy), of the intricacies of his harmonic idea ("C suspended 2nd"). Jones, however, accuses Matlock of being a "pensioner" rather than young, as a punk should be, and hits a loud distorted power chord ("C!") on the guitar (physicality).[70] There is indeed a palpable pressure that comes from such a fifth chord being played at high volume, and there is also a strong gestural intuitiveness in moving this chord up and down the fretboard, as there is no need to change the shape of the hand. There is also no need to worry about major- or minor-scale relationships, as there is no third, and the vocalist can therefore shift into singing along quite easily and quickly. Similarly physical and immediate is the comfortable feeling of being enveloped in a cocoon of sound when hitting the drums with full force (or more force than usual). Dave Grohl of Nirvana and the Foo Fighters has spoken of this notion when asked about what punk drumming means to him, saying that it is "all about energy," and that now, as a singer, he misses "the head in the middle of all that noise."[71]

As the links between the internal nodes of my punk framework become stronger, I would like to expand my theory by adding the following:

Studying punk helps us better understand the discursive and circular-processual relationship between a community's ingrained attitudes, its aesthetic forms of expression, and a society's dominant conceptions by analyzing how the relationship is (re-)negotiated, stabilized, and renewed with regards to ethical notions of physicality, immediacy, and collectivity.

67 Hall 1969. For an application of Hall's theory of proxemic zones to the analysis of popular music, see Moore/Schmidt/Dockwray 2011.

68 See also Abrams 2009, 305–314; Steinbrecher/Pichler 2021, 21–24.

69 *Pistol* 2022.

70 Ibid., 0:22:55-0:23:35; see also Steinbrecher 2024, 236.

71 "The drumming" 2014, 0:00:50–0:02:00.

On the basis of this theory fragment, I would now like to finally delve deeper into the question that I have just touched on regarding how these different interrelations are musically negotiated or, conversely, how they determine how the music is built up.

The Shape of Punk That Came: Texture, Structure, and Tensity

To locate the musical makeup within the "praxis formation"[72] of punk, with its specific modes of collective thought and discursive instruments that enable listeners and musicians to negotiate musical value and make sense of the sounds they hear or produce,[73] I suggest that a musical analysis of punk might focus in particular on the relationship between idiosyncratic shapings of texture, structure, and tensity. Having said that, I think it is important to emphasize once again that it is not my intention, nor is it possible, to find or define universal principles that apply to every piece of punk music. Rather, my aim in the following is to describe and contextualize the basic layout and tools that help codifying a piece of music as punk (i.e., to integrate it into the punk framework). In fact, even the poppiest of pop punk, the most post of post-punk, or the most extreme of extreme hardcore punk must have, at least, a tiptoe on some common ground and use some common methods.[74] In the absence of any audible traces, the other "genre rules," in Franco Fabbri's terms (for example, semiotic, behavioural, social, and economic),[75] would theoretically form such a powerful combination that the negotiators of the genre community (musicians, audiences, critics, organizers, etc.) still agree to problematize the respective artist's musical-aesthetic expression as punk. Or, to take up my argument from further above, that they can nevertheless interlock the sounds, somehow, between the punk framework's different nodes.[76]

72 Christofer Jost uses the term "praxis formation" in connection with the analysis of mainstream popular music (2019, 0:20:40–0:21:05). But I think it is also productive to look at punk from the perspective of a complex of doings and sayings that are regularly interlinked and operationally related to each other (Hillebrandt 2014, 59; see also Klose 2019).

73 See also Steinbrecher 2021b, 408; Marshall 2011.

74 The notion of a common ground may also be discussed with the question of repetition and difference: "[G]enre needs to be seen as a process in which the tension between repetition and difference fundamental to all symbolic forms is regulated. […] Certainly hardcore musicians keep on going back to the 'same' music, but in doing so they inflect their sound as they strive, but fail, to achieve an ideal, original aesthetic effect. […] What seems to be at stake is an exploration of the limits of repetition within a spectrum of musical parameters" (Toynbee 2000, 106).

75 Fabbri 1982, 54–59.

76 I do not deny that all sorts of musicians, from Wolfgang A. Mozart onwards, have been considered punk (as have golfers and business investors), and sometimes even the music of such unrelated figures has been classified as such, even though it may not contour any of the musical traits I am describing here. However, similar to vice-versa cases, i.e., when musicians such as former rapper Machine Gun Kelly suddenly adopt very strong musical markers of punk but without fulfilling some (or enough) other criteria, the interlockings will not snatch and remain unsustainable (as described by a Reddit user: "MGK is a tourist in the [pop punk] genre" (u/mattburkephoto 2023)). For a critique on postmodernist approaches towards punk, and the notion of musical arbitrarity that these often indicate, see Pearson 2023.

The idea of differentiating the analytical perspective into these three interrelated dimensions stems, in part, from the music-analytical framework that I have developed.[77] Their particular order here can be explained by the following questions: How does the texture feel, and what does it "look" like (texture)? What composite elements are encapsulated within it (structure)? And what effect does all of this have (tensity)? Another important aspect within these relationships, which I will not discuss further, is, of course, the lyrics of punk songs. The lyrics convey the aforementioned tropes content-wise, for example, through their typically fairly direct, unencrypted, and slogan-like speech, their call for (physical) action, and the us-against-them narratives; this conveyance is supported by how they are interwoven musically in terms of the "'orationality' of speech-like singing,"[78] the "sonorous quality" of rhymes, and the density and positioning of syllables within the verbal space.[79]

Texture

I use the idea of texture in its broadest sense, as representing the (or an) overall sound impression of a song characterized by its intensity and density caused by the formation and development of different streams and layers.[80] This approach goes beyond traditional, melody-centred notions of homophony or heterophony, as it also considers the effects of spectral and spatial distribution, articulation, and dynamics.[81] In *The Poetics Of Rock,* Albin Zak refers to texture as an inclusive quality of "composite sound images"[82] and classifies it as one of the five interdependent categories "that represent all of the sound phenomena found on records," along with musical performance, timbre, echo, and ambience (reverberation).[83] Most generally, I agree with Wallace Berry,[84] who conceptualized texture as a comprehensive analytical category and pointed to the significance of texture for distinguishing between different kinds of music.[85]

The reason I consider texture to be a particularly fruitful object of study in relation to punk[86] is that the textural makeup of punk is intimately connected to the ways in which it is, or is ethically expected to be, produced and perceived. Similar to the metaphors discussed above that are used to describe punk's musical aesthetics, texture is tied to embo-

77 The framework differentiates between three basic levels of analysis (surface, individual voices, and interrelationships) and suggests four focal points of a process-oriented analysis (grouping effects, progression tendencies, intensity curves, and movement patterns) (Steinbrecher 2016, 135–146).

78 Smith 2023, paragraph 1.8.

79 Griffiths 2003.

80 Pfleiderer 2003, 20–22.

81 Popular music scholars who have argued or worked in a similar vein are, e.g., Moore and Martin 2019, 281; Butler 2006; Bennett 2015; Peres 2016.

82 Zak 2001, 85.

83 Ibid., 49. For more about these categories see 48–96.

84 Berry 1987, 184–300.

85 Ibid., 293. However, I disagree with him regarding textural simplicity as being the distinguishing feature between "[challenging and interesting] 'art' music as opposed to […] 'popular' […] music" (293), not least because he does not (or technically cannot) consider the "structural functions of coloration (of timbral differences, of orchestration, etc.)" (20–21).

86 In his discussion about the process of excursion from, and return to, a sound schema in hardcore punk, Toynbee emphazises the importance of original compositions, or "standard tunes," because "[t]hey are a key component of generic method, a tool for producing small variations along a bed of iterated texture" (Toynbee 2000, 107).

died experience, specifically referring to "the quality of something that can be decided by touch."[87] Although we cannot have such a tactile interaction with music – an epistemological entry point for methodological reflection may be found in the concept of audiotactile musicology formulated by Vincenzo Caporaletti[88] – we still translate the (touch) impressions from our experiential knowledge to categorize and make sense of the sounds we hear, for example, as "hard," "rough," "edgy," "thick," "dense," or similar:

> Texture always denotes some overall quality, the feel of surfaces, the weave of fabrics, the look of things. Words from visual and tactile sense modalities are often appropriated for descriptions of sounds and their combination: sharp, rough, dull, smooth, biting, bright, [...].[89]

Punk is strongly characterized by its peculiar texture, which can be defined in terms of its horizontal density and vertical homogeneity. Punk songs tend to have a high density of successive sound events that create a continuous layer over time – many fairly evenly paced, equally emphasized, and rapidly attacked down- and upstrokes,[90] or just downstrokes, on guitar and bass, occurring within short periods of time, merge with many rapidly alternating kick and snare drum strokes, as well as heavily hit, "sloshy"[91] open hi-hats with a long sustain. This particular density creates a constant, or "unbroken,"[92] flow that pervades the formal architecture, as there are usually no wide textural gaps or sudden dynamic changes throughout the songs.

The horizontal density goes along with a relatively homogeneous and tight vertical texture. In punk songs, there are usually not many independent sound streams criss-crossing the texture, but rather only a few that are unified, for example, by articulation, proximity, or direction of movement. The stringed instruments often form a common layer, but the vocals are also often multiplied into a layer of so-called "gang" vocals[93] or, especially in melodic hardcore or skate punk, of multi-part harmonies. Individual musicians' contributions are usually not audible in all their detail, as the overall sound tends to be blurred and fused rather than split and defined.[94] An accompanying trope to this particular texture is that of the straightfor-

87 Cambridge Dictionary, s.v. "texture," https://dictionary.cambridge.org/dictionary/english/texture (2 Feb 2025).

88 Caporaletti 2018. "What name we can give to that specific poietic and receptive psycho-physical modality we have so far dwelt upon [e.g., regarding *continuous pulse* and *groove*], and especially its cognitive medium quality [...] characterizing with such depth the languages of rock, jazz, world music, and pop music itself? I call it audiotactile principle (ATP), in the symbolic sense of both aural and tactile perception – as distinct from the "visual" archetype – as factors identifying two specific and related modalities in which the subject's musical cognitive experience unfolds [...]" (7).

89 Erickson 1975, 139.

90 In reference to the seminal German punk band Die Toten Hosen, the term "Hosen-Hobel" (literally "Hosen slicer") has been coined, which is a term of endearment for the band's fast and distinctive style of guitar playing (exemplified, e.g., in the songs "Liebeslied" and "Warten auf Dich").

91 Toews 2023.

92 Laing 2015, 52.

93 Samantha Bennett has pointed to this effect with regards to some Sex Pistols' songs (2015, 13). Other bands using "gang" vocals extensively include, e.g., Die Toten Hosen, Rancid, Pennywise ("Bro Hymn"), Dropkick Murphys, Anti-Flag, and PUP. To illustrate my analytical thoughts in the following pages, I will reference a number of different examples rather than analyzing a single song extensively from multiple perspectives. Focusing on one song would put undue emphasis on it, potentially flagging it as a prototypical punk song – an outcome I believe would not contribute productively to the discourse I aim to initiate here.

94 For the relationship of "Spaltklang" ("split sound") and "Schmelzklang" ("melting sound") in rock music, see Herbst 2016, 75–78.

wardness – "punks rejected slick production values"[95] – of the recording and mixing processes, which is linked to punk's plug-and-play mentality or get-up-and-go immediacy. In this vein, Alan Moore has pointed to technological simplicity as a core element of punk:

> Within the popular song of the last six decades, innovation has tended to come from two alternating tendencies. The first is greater simplification ('folk' was musically simple, 'hit parade pop' is lyrically simple, 'punk' was technologically simple).[96]

The specific texture makes the music seem like a collective group effort, with a corresponding collective power, rather than an individual act of self-expression or an "ostentatious display of 'talent.'"[97] It thus represents the "collectivist enterprise" that David Easley and Steve Waksman ascribe to hardcore punk in particular:

> In his study of punk and metal, Steve Waksman describes the performance of hardcore as a 'collectivist cast' in which all of the instruments – including vocalists – produced an effect 'in which the various musical components were far less differentiated, and the players less individuated, than in other forms of rock' (2009, 265). Although Waksman's comment arises in a discussion of tempo, his observation is equally applicable to the role that riffs play […]. [R]iffs play a central role in the 'collectivist' enterprise found in hardcore.[98]

The fact that there are limits to what can be done with texture in punk is again evident when a band is denied to (still) being considered a punk band. This can happen, for example, when the horizontal density is too often interrupted by long notes and pauses or omissions of individual instruments, thus disrupting the constant flow of energy, or when the sound becomes wet and distant (so no longer punchy and urgent), due to features such as too much reverb. At the same time, the vertical texture can become too clear, widely-spaced, or thick due to too much top end, too much compression, and/or the addition of multiple accessory instruments and tracks.

There is a delicate balancing act between individualism and collectivity, as the individual musicians' sound layers may become overly defined and disconnected from those of the others. For example, if one voice stands out too much from the texture, either in the mix or structurally, this can be to the detriment of the other voices, which are reduced to accompanying layers without any original contribution. As a result of these compositional, recording, or production choices, the musicians may have to live with the accusation that their music has become overproduced, too polished, or single-person-centred and thus too commercially driven to be punk.

95 Prinz 2014, 586.

96 Moore 2012, 143. As Bennett showed, the narrative of technological simplicity can be challenged, at least when it comes to one of the blueprint punk albums, the Sex Pistols' *Never Mind The Bollocks*: According to Bennett, "the technological and processual means by which the album was recorded lend it a sonic character that does not align with punk aesthetics at all; recorded at Wessex studios, London, between late 1976 and mid-1977, the record is a product of large-scale, 1970s classic rock-album production" (2015, 466).

97 "Many punk performers are actually skilled musicians, but the prevailing ethos says: we just picked up some instruments and started playing in our basement" (Prinz 2014, 586).

98 Easley 2015, paragraph 2.1. Easley adds that "although other features such as timbre and texture play equally important roles in this music, my focus is on the more traditional, 'primary' parameters of pitch, rhythm, and form" (2015, paragraph 10).

Structure

Even though punk's dense and tight texture is usually not supposed to make every little nuance audible, it still must leave enough space for structural clarity to redeem the above-outlined claim of immediacy – after all, punk is neither death industrial nor drone doom. From a cognitive point of view, punk tends to be a quick-to-grasp and strongly goal-oriented music. As a whole, punk songs are rarely longer than pop music's standard three-and-a-half minutes (most often shorter) and typically formally adhere to the conventional verse-chorus scheme. Structurally, they are built upon short hooks or chordal riff patterns from the guitar, which, in their basic structure, often comprise just two bars, and are topped by four-bar vocal phrases. These elemental building blocks are collectively carried and strengthened by the bass guitar, which duplicates – or at least is strongly oriented towards – the guitar chords' fundamental tones and a straightforward drum rhythm emphasizing heavy accents and a backbeat.

Moreover, punk is, against popular opinion, not dissonant music per se, but mostly, as David Pearson has pointed out,

> harmonically and melodically consonant. Vocalists tended to deliberately eschew singing perfectly on pitch, though they did generally follow a melodic contour that matched the guitar chords and, as punk turned to hardcore, incorporated greater degrees of timbral distortion through yelling the lyrics. [...] Melodically, most punk riffs up until the 1990s stayed within the bounds of diatonic modality.[99]

The notion of dissonance does also not fully apply to the spectral characteristics of punk's distorted guitar sounds. Even though the vertical texture of punk songs is overall somewhat indistinct, it is structurally not completely all over the place but rather still constructed in an orderly way. This is the result of the linear and full "chordy" sound of the fifth chord/powerchord, which, often complemented by the octave, includes many consonant overtones with simple ratios.[100] However, fortified with combination tones,[101] the heavily distorted powerchord remains one of the main drivers of punk's foundational principles: energy and intensity.

Tensity

Eventually, the defining factor that bundles the textural and structural features of punk and makes them effective within the proposed framework, along with the metaphorical enclosures, ethical criteria, and core values of the state of mind, is the temporal tensity that these features create, which "works itself out aesthetically in the musical process"[102] and influences our aesthetic experience.[103] As noted above, the idea of texture inherently

99 Pearson 2019, paragraph 37.

100 Herbst 2016, 188.

101 Lilja 2015.

102 Stambaugh 1964, 278.

103 Steinbrecher 2021a; see also Lehne/Koelsch 2015, 286. Joan Stambaugh's (1964) philosophical reflections on aesthetic time in music suggest the use of the term "tensity" as a superior concept to notions of tension and resolution. She writes: "Musical tensity lies in the relation of the tones, in the peculiar continuity of transition between them, a short of tensity between tensions. [...] Tensity must necessarily find a resolution, but this resolution does not cancel it out. This tensive relation generates the temporal factor in progression, the whole moving in the moment which drives towards explicating, detensifying this whole within it. This is temporal tensity" (1964, 277–278).

involves the processes of intensification and resolution, and also for Berry, texture is an essential element that functions "in processes by which intensities develop and decline, and by which analogous feeling is induced."[104]

To interpret these processes in the specific context of punk, I adhere to the notion of an "imagined participation" with musical gestures, as proposed by Arnie Cox[105] and taken up by David Easley in relation to punk. Easley has pointed to intensity, energy, and aggression as the core tropes of hardcore punk and argues, with a focus on guitar riffs, for an "embodied understanding of these actions."[106] He quotes Cox in saying: "Musical gestures are musical acts, and our perception and understanding of gestures involves understanding the physicality involved in their production."[107] I propose that we foster such an understanding in a broader sense, with a view to punk's defining texture and structure.

The highly taut horizontal texture of punk songs is a direct result of the physical effort involved in playing the music. This is important, first, for the audience's embodied imagination of how the music is made, which distinguishes punk from similar textures found in electronically produced dance music, such as techno. The gestures embedded in this somatic "stomach-and-leg" oriented texture[108] convey punk's abrasive "powerful affect,"[109] which can be considered the main method that punk musicians use for their specific kind of cultural negotiation. Since punk's state of mind is constituted through the critical discursivization of dominant conceptions, it has to process them in some relational way in the sense of inverting its aesthetics as a negative that still remains identifiable. What punk musicians have effectively done, then, is to translate the structural immediacy of one of dominant society's main cultural evaluation surfaces – pop music – into their own musical language,[110] making it energetic and aggressive by punk's own, but already rather constricted and predetermined, means. As Pearson put it:

> Early punk was not a qualitative increase in tempo beyond previous rock, but perhaps the feeling of speed was intensified due to the relentless energy of riffs, heavy hits on the drums, and the frantic style of singing.[111]

104 Berry 1987, 4.

105 Cox 2006, 46.

106 Easley 2015, paragraph 1.2.

107 Cox 2006, 45 as cited in Easley 2015, paragraph 7.1.

108 Regarding punk's somatic perception, I see some parallels with what the musicologist Peter Wicke and the philosopher Martin Seel ascribe to techno, as "literally tactile music […] redirected to the body as a reference, to physical movement, physical experience and the symbolic mediation of this" (Wicke 1998, 8; author's translation), or a sound that is "to be understood as the attempt to make music that can be listened to somatically […] as a direct transfer of the energy of the work to the physical condition of its listener" (Seel 2003, 248; author's translation; see also Steinbrecher 2016, 82–83).

109 Rapport 2014; see also Phillipov 2006.

110 This is perhaps loosely comparable to the mechanisms of "hyper pop" that emerged in recent years. The hyper pop artists' methods are certainly different, as they use, among other tools, alienation and rhythmic displacement as a means of negotiating pop music.

111 Pearson 2019, 3. Steve Waksman, in his monograph on heavy metal and punk, addresses the interrelationship of tempo, physicality, and demarcation, noting that: "While earlier punk bands such as the Ramones and the Sex Pistols used speed to announce something of a break with earlier rock styles, hardcore placed even more emphasis on acceleration. The quickened pace of hardcore was the musical analogue of, even the precondition for, the physical intensity of slam-dancing: it was attached to the hardcore strategy to reduce rock to certain core elements, and it was a means of demonstrating the hardcore commitment to an extreme sound and style of performance" (Waksman 2009, 258–259).

This translation is well illustrated by the main rhythmic backbone of both pop and rock music, which is, or was until a few years ago, the backbeat pattern in 4/4 time, with its higher frequency accents on 2 and 4. Punk drummers were early adopters of this pattern, creating a faster and louder version of it in different shades and with increasing intensity over time. Eric Sandin, the drummer of the pioneering punk band NOFX, has explained and demonstrated this development in a video snippet, where he shows how he invented the band's trademark drum beat by learning the basic two-bar drum beat of Iron Butterflies' "In-A-Gadda-Da-Vida" in a fast tempo ("I just got that kind of fluid and sped it up").[112]

Considering the importance of these adapted drum beats as instant markers of a whole genre, it must be considered a blind spot that their peculiarities and evolution have rarely been scholarly analyzed.[113] I propose that we look at them not only as a steady rhythmic fundament or accompanying layer, but that we also analyze their role as (rhythmic) hooks, structural markers, movement generators, and tensity-regulating instances. From the very basic pattern with the kick drum on the downbeats 1 and 3, to the galloping doubled "skate punk" kick drum on 3 and 3+, and the more displaced 2+ and 3+ "d-beat," as well as the downbeat "polka" beat (technically not a backbeat) – all of these beats, albeit encapsulated within a fairly rigid framework and "anti-syncopation tendency,"[114] provide different affordances for groove synchronisation, for example, through their constant down-and-up movement pattern gesturality,[115] as well as particular emphases and spaces to which the other voices can adjust, for instance, in the handling of small-scale tension-resolution patterns.[116]

This is a crucial point insofar as, within the already high level of intensity and forward drive, the dense and evenly composed horizontal texture, and the repeated short and structurally narrow units of punk songs, there are limited possibilities to influence the listener's aesthetic experience through, as I have put it elsewhere with reference to Berry, the "dialectical balance between intensifying and resolving tendencies,"[117] or the arousal of embodied meanings through the creation of (un)certain expectations.[118] Since punk songs usually do not offer cross-phrase tension arcs, period-structure-like[119] build-ups, or massive dynamic changes (as best exemplified by 1990s grunge, with its verse-

112 Sandin published the video on Facebook. It is not longer online, but I made a screen video which can be watched here: https://drive.google.com/file/d/1LFP9RsLCRT4J8P53jzdt-n-9GAjeu53z/view?usp=sharing.

113 Sangheon Lee gives a couple of analytical examples of different punk beats throughout his dissertation (Lee 2022).

114 Laing 2015, 52.

115 In his dissertation on EDM, Hans Zeiner-Henriksen argues that the alternation of low and high frequencies, such as between bass drum and hi-hat sounds, supports specific body movements, which he calls "vertical movement patterns" (Zeiner-Henriksen 2010).

116 "Tension-resolution patterns refer to the opposite poles of tension – a state of instability or dissonance associated with feelings of hopeful (or fearful) expectation – and its counterpart, resolution, relaxation, release, or repose" (Lehne/Koelsch 2015, 286).

117 Steinbrecher 2021a, 121.

118 Meyer 1956, 35; for further readings on the idea of a process-oriented analysis, see, e.g., Narmour 1992; Hasty 1997; Fuß 2005.

119 Moore 2012, 76–89.

undistorted-quiet/chorus-distorted-loud dynamics),[120] I think it is worth looking at how intensity is punctually increased and decreased, for example, through processes of anticipation, contraction, acceleration, and deceleration.[121]

The vocal lines of punk song verses, for example, tend to be rather closural at the phrase level. The singers often mark the boundary of a phrase by returning to the root or initial note followed by a pause. To introduce some dynamics, the melodic cells within often start on the 1+ of a 4/4 beat, creating a slight sense of tension that is released when the motive is resolved with a stressed syllable on a strong downbeat.[122] Similarily, the cells sometimes also begin on the anacrustic 4+, allowing the singer to carry more energy into the subsequent 1.[123] In addition, the vocal lines tend to be rather straight and stay within a fairly small ambitus, as they interlock with the overall textural and structural linearity. As a result, tension is not created by large melodic leaps calling for stepwise resolution – such disjunctive melodic movement would also make singing/shouting along more difficult – but rather by short melodic bursts up or down[124] and/or by rhythmic and melodic nuances that create friction and ambiguity by, for instance, scooping – like when sliding down to a motive-ending note preceded by a chain of densely packed syllables –,[125] or rapid periodic "vibrato"[126] or constant "out-of-tune" pitch deviations.[127]

In punk, there are direct links between the high physical demands of playing the music, its structural-tensional culmination points, and its intonation and pitch-structure characteristics. For example, a fairly obvious reason why punk drummers regularly emphasize structural cornerstones, such as the heavy downbeat with strong cymbal shots, is to provide notable landmarks or target points within their forward-driven motion. However, the crash and ride cymbal emphases can also help the drummers take a short break while keeping the tempo up, by unobtrusively skipping a few notes on the hi-hat just before hitting the other cymbals. These short omissions may subtly increase the tension towards the anticipated downbeat, thus giving it more weight. Likewise, using the "shank-tip"

120 This "juxtaposition of radically different textures" in early 1990s alternative rock is also mentioned by Zak (2001, 93). The fact that breaking with the horizontal density or vertical tightness constitutes a certain departure from punk was also apparent some years earlier, as in the cases of the post-punk and post-hardcore currents that started to emerge in the early 1980s with their angular rhythms, high-frequency actions, or stop-and-go aesthetics.

121 See also Steinbrecher 2021a, 137–138.

122 E.g., "New Rose" (The Damned), "Still Waiting" (Sum 41).

123 E.g., "Ever Fallen In Love (With Someone You Shouldn't've)" (The Buzzcocks), "Banned in D.C." (Bad Brains).

124 E.g., "Blitzkrieg Bop" (Ramones), "Anarchy in the UK" (Sex Pistols).

125 E.g., "Turnover" (Fugazi; see Steinbrecher 2016, 184–206), "I Wanna Be Sedated" (Ramones), "Rise Above" (Black Flag), "Allegleich" (Joseph Boys), "Sweet Brown Water" (Bad Cop, Bad Cop), "Schunder Song" (Die Ärzte). I have identified a similar technique of creating tension and resolution also in contemporary rap (Steinbrecher 2021a, 133–137).

126 E.g., "Teenage Kicks" (The Undertones), "No Feelings" (Sex Pistols), "California Uber Alles" (Dead Kennedys).

127 To my knowledge, however, the notion that punk vocalists sometimes go off key has not yet been systematically investigated. Due to the peculiarities of their vocal delivery (e.g., "talk-singing," screaming), it may also be difficult to make concrete statements about this. As Nichols et al. put it: "Singing in tune, or singing accuracy, is a construct dependent on genre, key selection, singers' ranges, and listener expectations" (2022, 1414).

technique on the hi-hat may not only help relieve the joints, but also create an additional heavy-light pattern within the long chains of eighth notes.[128]

As the latter examples show, punk's musical makeup can also be considered the result of being economical in order to ensure longevity. Another example in this context concerns punk's riff schemes. On the one hand (i.e., literally the right hand of a right-handed guitarist), punk guitarists often have to execute these riffs with rapid, successive downstrokes. In a video of their first public rehearsal with their new drummer Josh Freese, the members of the Foo Fighters ironically show how exhausting this can be after performing "Everlong" ("eighth-note city, man!", "downstroke practice!"). The band's lead guitarist, Chris Shiflett, formerly of skate punk band No Use For A Name, then explains: "That's why all the 90s' punk songs go like this (plays three times a fast sequence of two palm-muted eighth-note powerchords followed by an unmuted quarter-note powerchord). It gives you a little break (laughing)."[129]

The technique described by Shiflett, which can be heard in many variations in the punk cosmos,[130] not only gives the guitarist a short break, but also adds small cracks in the horizontal texture and thus brief fluctuations in tension and rhythmic accents. A similar but opposite effect of brief textural contractions and accelerations is achieved by interspersing sixteenth-note alternate pickings into the guitar riffs,[131] sometimes corresponding to the doubled kick drum or single stroke rolls on the snare drum.

On the other hand (i.e., literally the left hand of a right-hander), the pronounced physicality of punk certainly also sets limits to what can be played, in addition to the need to provide an effective means of engaging the audience through clear, familiar, and easy-to-process musical structures.[132] It is the speed of the music combined with its timbre- (rather than harmony-) oriented chordal riffing[133] that limits the range of motion on the guitar and thus the choice of scale degrees. Music theory YouTuber Cory Arnold makes this especially clear when he notes that the hand movements of punk guitarists must be very economical, because the movement of the single locked-down powerchord posture comes from the wrist rather than the fingers, which makes it difficult to attack distant positions on the fretboard. Metal (lead) guitarists, on the contrary, tend to play single-note lines and thus have more motor flexibility in using their different fingers to play "massive, sweeping riffs running all up and down the neck, using whatever notes

128 Not being a good drummer myself, I became aware of these techniques or "tricks" by watching tutorials on playing punk beats, where they are repeatedly mentioned. See, for example, "5 Ways," 0:10:17–0:15:47; "Eugene," 0:06:20–0:07:43; "Skank," 0:05:25–0:09:57. I suppose it would be interesting to analyze how these or similar energy-saving techniques have actually been used in songs or live performances. Essentially, to consider these kinds of non-academic knowledge-transfer sources, including online discussions about playing or production techniques, is crucial for understanding how punk, according to Nowak and Whelan (2022), is being worked on as a genre.

129 "Preparing" 2022, 0:47:10–0:50:32.

130 E.g., "Soul Mate" (No Use For A Name), "Basket Case" (Green Day), "Territorial Pissings" (Nirvana), "Welcome to the Black Parade" (My Chemical Romance), "All in my Head" (The Linda Lindas). In an online tutorial about punk-rock style palm muting, the tutor points to the importance of this technique "to get a rhythm" and not sound monotonous ("Learn all," 0:03:46–0:04:49).

131 E.g., "72 Hookers" (NOFX), "Hate, Myth, Muscle, Etiquette" (Propagandhi).

132 Axel Kurth, the singer of the popular German punk band Wizo, even sees significant parallels between punk and children's songs (Kurth 2022).

133 Pearson 2019, paragraph 5.

they want." Consequently, seconds and fourths, which are close together, are natural choices for punk songs.[134]

After all, since the live performance of the music must not differ significantly from the recorded sounds, the obligatory jumping, running, floundering, head-nodding, floor-crawling, and similar tension-raising activities that take place on stage are certainly not conducive to shredding wide-ranging, difficult-to-grasp harmony progressions or stacking polymetrically-nested tuplets.

Conclusion

In this article, I have suggested different anchor points that hold together what punk tends to be. I have also elaborated on the value of a music-oriented analysis of such a framework. My main point here is that there is a reason, or many interconnected reasons, for why punk sounds the way it does, and to complete my theory building, a music-oriented horizon of punk scholarship might read as follows:

Studying punk helps us better understand the discursive and circular-processual relationship between a community's ingrained attitudes, its aesthetic forms of expression, and a society's dominant conceptions, the latter mirrored in the mainstream frame of cultural debate, by analyzing how the relationship is (re-)negotiated, stabilized, and renewed with regards to ethical notions of physicality, immediacy, and collectivity and the associated aesthetic notions of texture, structure, and tensity.

What I have added in this iteration of my theory are the aesthetic notions described above, as well as the idea of mainstream popular music as a cultural mirror to "a society's dominant conceptions."[135] For punk protagonists in particular, the idea of or the attribute of "mainstream" is not only strongly evaluative in a negative sense (as the punk term was initially as well), but also integral for punk as an opposing concept – also, and perhaps especially, in aesthetic terms, because "[w]hat is constituted (and rejected) as music is an outcome of genre negotiations and conventions."[136] In the case of punk, these negotiations are strongly bound up with (the rejection of) mainstream notions – but with brittle boundaries, as I have indicated a few times in the present work. As opposed to punk, mainstream popular music does not refer to a genre category, nor does it have a stable or enduring nature, but rather a processual one that is tied to the zeitgeist, prevailing discourses, and "fashions and trends of the day."[137] Punk has established particular ethical and aesthetic concepts to challenge mainstream notions, including the idea that it should not become pre-processed, polished, cut-and-dried, overproduced, or mass-appealing music made solely out of commercial interest and without historical foundations. Due to its strong relationship to the mainstream frame, though, it is possible that punk may sometimes slip into these traps.

134 "How To" 2022, 0:03:21–0:07:04.

135 Steinbrecher 2021b, 410.

136 Nowak/Whelan 2022, 10.

137 Steinbrecher 2021b, 409.

However, despite the importance of this relationship, it should not be forgotten that the pleasures of listening to or making punk music can certainly transcend its "political orientation" in the broadest sense. As Michelle Phillipov put it:

> By centring studies on the political orientation of punk, music is subordinated to a function of these politics, rather than something which generates pleasures and meanings in its own right. These are not merely questions of identity and social location and resistance; these are things cultural studies already has a sophisticated vocabulary for talking about. It is the 'other stuff' of music, the specific pleasures of the sounds and textures of the music itself, that we have much more difficulty finding the language to express.[138]

It is my view that a music-oriented scholarship of punk may help us find this language.

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138 Phillipov 2006, 390; see also Pearson 2019, paragraph 41.

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© 2025 Bernhard Steinbrecher (Bernhard.Steinbrecher@uibk.ac.at, ORCID iD: 0000-0003-3176-1788)

Universität Innsbruck

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Analysing Popular Music as Performance

Three Performer-Centered Approaches

Magdalena Fürnkranz

Performative Aspekte wie die Inszenierung einer Live-Performance, das Agieren auf der Bühne, die Konstruktion der Performance Persona (Auslander 2009) oder der Star Personality (Frith 1996), die Publikumsbeteiligung, aber auch soziokulturelle Entwicklungen tragen zum Gesamtkonzept einer Performance in der populären Musik bei. Gegenwärtig werden in der Popularmusikforschung neue methodische Perspektiven entwickelt, die historische, strukturalistische und phänomenologische Paradigmen mit Diskursen über Performativität verbinden. Analysieren wir eine Live-Performance oder ein Musikvideo, müssen wir berücksichtigen, dass wir in der Regel nur Facetten der Persona hinter den Musikschaffenden zu sehen bekommen, so dass die Beziehung zwischen der Performance Persona und dem Character (Auslander 2009) meist im Vordergrund steht.

Die Analyse von Performances in der populären Musik unterscheidet sich von den Transkriptionsmethoden der Musikwissenschaft, den Notationsmethoden der Tanzforschung und theaterwissenschaftlichen Analysemethoden. In diesem Beitrag untersuche ich unterschiedliche performancetheoretische und -analytische Ansätze, darunter Philip Auslanders Konzept der »Musical Persona«, Erving Goffmans »Rahmenanalyse« und Jens Eders »Uhr der Figur«, und wende die vorgestellten Theorien auf eine konkrete Fallstudie an, die sich auf Taylor Swifts »Look What You Made Me Do« (2017) konzentriert. Durch die Analyse des Musikvideoclips, der Live-Performance und der Lyrics sollen die sozialen und kulturellen Bedeutungen interpretiert werden, die sich aus diesen Inhalten ergeben. Auf Basis von aktuellen Forschungen auf dem Gebiet von populärer Musik als Performance untersuche ich die drei vorgestellten theoretischen Zugänge auf ihre Produktivität hin für die Analyse populärer Musik.

Performative aspects such as staging a live performance, acting on stage, the construction of the performance persona (Auslander 2009) or star personality (Frith 1996), audience participation, but also socio-cultural developments, contribute to the overall concept of a performance in popular music. New methodological perspectives have been developed in current popular music studies that have linked historical, structuralist or phenomenological paradigms with the discourse of performativity. By analysing a stage performance or a music video, we must consider that we normally only get to see fragments of the persona behind the artist, thus the relationship between the performance persona and the character (Auslander 2009) is usually foregrounded.

Pop performance analysis differs from transcription methods of musicologists, notation methods of dance research, and analysis methods of theatrical performance. In this paper, I examine theories of performance including Philip Auslander's theory of the "musical persona," Erving Goffman's "frame analysis" and Jens Eder's "clock of characters" and apply the introduced theories to a concrete case study concentrating on Taylor Swift's "Look What You Made Me Do" (2017). I turn a critical eye to expressive content across the music video, the live performance and the lyrics with the aim of interpreting the social and cultural meanings that arise from that content. By drawing on scholarly work dealing with popular music as performance, I examine the aforementioned theoretical approaches in terms of their productivity for the analysis of popular music.

SCHLAGWORTE/KEYWORDS: music video; musical persona; performance analysis; pop expression

The staging of the Eras Tour, the sixth concert tour by the American singer-songwriter Taylor Swift, consists of three separate stages: a main stage with a giant, curved widescreen, a rhombic middle stage, as well as a rectangular one that forms a T-shape at the middle of the floor featuring visuals and effects throughout the show. At the beginning of each show Taylor Swift appears out of nowhere on the middle stage, singing the first words of the evening into a glittering microphone and wearing a pink body suit. It is a musical journey through Swift's creative phases, ranging from country to folk, pop, and alternative rock genres. Designed as a tribute to the discography across her seventeen-year career, the musician dedicates a separate stage set to each "era" with forty-five songs on the setlist of a three-and-a-half-hour concert, with pyrotechnics, fireworks, and smoke machines enhancing the show. The eras are represented by distinctive outfits and personae: from the earthy Folklore singer through to the gritty edge of *Reputation* (2017), the cool of *1989* (2014) to the glamorous performance of *Midnights* (2022). Each audience member receives a wristband that flashes in colors matching the respective era. The identical setlist includes two surprise songs. With a concert film having been released in October 2023, most fans know what to expect and might have learned the dance moves and chants from *TikTok*.

Performances in popular music have their own "theatricality." The different aspects of this musical theatricality such as concepts of staging, mediality and performativity form the center of the analyses of performances in popular music and thus the question of the aesthetics as well as the social and cultural meaning of pop music as performance. Regarding these aspects, music is examined not as a reproducible work but as an unrepeatable event. Originating in literary and linguistic studies, the idea behind performativity has developed into a diverse and complex discourse over the course of the twenty-first century, extending from linguistics and anthropology to the ever-growing field of performance studies. The term "performance," which was introduced into German-speaking theater studies in the 1970s, refers to a specific theatrical genre that emerged in the 1960s/70s and initially became known as action art, happenings or performance art.[1] German-speaking researchers mainly rely on theater studies, concentrating on the concept of performativity introduced by Erika Fischer-Lichte, when more or less adapting it for popular music studies. Performance analysis and its interpretation encompasses the production of sounds, movement, gestures, technical skills, style, and the staging of the performing artists. Regarding popular music as performance implies researching what is actually embodied, in which socio-cultural processes performances are embedded, and to what extent they function not only as a medium for content-related stimuli, but also as a carrier of meaning or for the production of knowledge.

Fischer-Lichte emphasizes four aspects of theatricality: performance, staging, corporality and perception.[2] She describes performance as a process of representation through body and voice in front of a physically present audience, staging as a process in which the strategies are developed and tested according to which what, when, how long, where, and how it should appear in front of the audience. Corporality results from the factor of representation or material, while perception refers to the spectator, their observing function and perspective.[3] In the concert situation, the audience follows a particular

1 Fischer-Lichte/Roselt 2001, 241.

2 Fischer-Lichte 2007, 10.

3 Ibid., 18.

ritual, a sequence of actions that is primarily carried out by the visitors and can be defined as Milton Singer's concept of "cultural performance": "Each one [cultural performance] had a definitely limited time span, or at least a beginning and an end, an organized program of activity, a set of performers, an audience, and a place and occasion of performance."[4] Meanwhile, Philip Auslander, whose research focuses on performance, media, and cultural studies, criticizes the fact that musical performances have so far been excluded from theater and performance studies: "Theater studies leaves music out of its purview because it traditionally regards musical performance as inherently non-dramatic, and performance studies has inherited this prejudice. Even opera and musical theater are neglected areas of study in these fields despite their obvious relationship to other theatrical forms."[5] In his essay "Performance Analysis and Popular Music: A Manifesto" (2004), Auslander introduces the term "musical persona," observing the fact that the performed music forms only a part of the musician's performance. In his performer-centered stance, he seeks ways of discussing what it means to perform as a musician, how artists create meaning through their performances, while ultimately focusing on the question of what musicians do as performers.

While most of the publications of popular music production in cultural studies investigate the economic, sociological, or political contexts in which the respective music is produced, they mainly ignore the fact that music is made in and through performance. Starting on the one hand from theater and cultural studies and on the other hand from theoretical discourse on the aesthetics and practice of the performative, this article pursues two goals. Firstly, introducing, discussing, and examining theories of (popular musical) performance including Auslander's theory of the "musical persona," Erving Goffman's "frame analysis" and Jens Eder's "clock of characters." Secondly, questions and methods of a popular music performance analysis are applied to a concrete case study concentrating on Taylor Swift's "Look What You Made Me Do" (2017) with regard to addressing our understandings of the possible meanings of the audiovisual text. By turning a critical eye to the significant changes in musicology during the last decades and pinpointing the social and cultural relevance of popular music performance, I draw on scholarly work dealing with popular music as performance and examine the aforementioned theoretical approaches in terms of their productivity for the analysis of popular music.

The "Musical Persona" in Popular Music

Auslander defines performance as constructed primarily through the act of the performer's presentation and only secondarily through the presentation of the music: "What musicians perform first and foremost is not music, but their own identities as musicians, their musical personae."[6] In this way, the identity of the performer comes to the fore in the musical performance. Auslander uses David Graver's concept of "personage," in which the presence of the actor's person is separated from the portrayed role that the

4 Singer 1972, 72.

5 Auslander 2015, 529.

6 Auslander 2006, 102.

actor plays, to speak of the "musical persona."[7] Graver's concept, using movie actors as examples, shows three different facets: "the real person, the celebrity movie star (Graver's personage), and the actor portraying a character."[8] However, Auslander uses the Latin term "persona" instead of Graver's "personage," explaining: "Although I find Graver's concept of a personage congenial, I prefer the term persona, which I use to describe a performed presence that is neither an overtly fictional character nor simply equivalent to the performer's "real" identity."[9] Auslander builds on Simon Frith's model for understanding the different aspects of the voice in pop music[10] and his observation that we hear pop singers as "personally expressive,"[11] as personalities who sing from their own experience. According to Frith, popular musicians are involved in a process of "double enactment," embodying two performative dimensions at once: their "star personality" and "song personality."[12] Auslander systematizes and expands Frith's description and identifies: "the real person (the performer as human being), the performance persona (the performer as social being), and the song character (the role that performers play in accordance with the lyrics of a particular song)."[13] Auslander's broad conception of performance emphasizes that identities in popular music are constantly performed, closely linked to cultural, social, and historical discourses, constructed to reflect genre conventions and sociocultural norms,[14] and at its best, respond to them.[15] Furthermore, Auslander argues that the persona serves as identification point between pop musicians and their audiences:

> [T]he real person is the dimension of performance to which the audience has the least access, since the audience generally infers what performers are like as real people from their performance personae and the characters they portray. Public appearances off-stage do not give reliable access to the performer as a real person, since it is quite likely that interviews and even casual public appearances are manifestations of the performer's persona.[16]

However, the term "performer" causes difficulties in the cultural studies debate. Sandra Danielczyk rightly argues that the premise that image alone is what is tangible and analyzable cannot go hand in hand with a concept of "real identity."[17] "Performer" becomes a construct that is determined by social expectations and social roles, whereby the personal and own situational perspective of the researcher plays a considerable role. Stephen Lowry describes the significance of "performer" as a theoretical construct for the analysis as follows: "What is meant by the "real" person often remains unclear. The star with whom viewers and fans interact is always a construct based on the information and signs disseminated in the media. In this respect, questions about the real person can be neglected when analyzing stars or the construct "real person" can be regarded as part of

7 Ibid., 101.

8 Ibid.

9 Ibid.

10 Frith 1996, 186–187.

11 Ibid., 191–197.

12 Ibid., 212.

13 Auslander 2009, 305.

14 Auslander 2006, 101.

15 Auslander 2009, 306–307.

16 Ibid., 306.

17 Danielczyk 2017, 57.

image formation."[18] Hans-Otto Hügel points out that the joint reception of work and image carries the act of constituting a "star," whereby the image is an integral part of the work, just as, conversely, the work cannot be perceived without the image.[19] The question of what role is attributed to "the real person" in the analysis of persona on stage, in music video clips, in social media, but also in pop critique and in the study of popular music, remains unanswered. Particularly in the context of musical performances, the possibility of labelling a stage persona as "real" appears problematic, as Auslander's tripartite model suggests that the term "real person" allows some aspects associated with the musicians to be perceived as authentic, while others are considered inauthentic. In 2019, Auslander revised his distinction between persona as self-presentation and character as fiction:

> I arrived at detailed description of the musical persona as the performance of a social role. Over time, however, I came to realize two limitations to my formulation. The first is that it did not account for those instances in which musicians do perform fictional characters as their persona. […] The other limitation of my initial formulation of musical persona is closely related to the first. I found that I had placed too much emphasis on the self/other distinction in differentiating what musicians do from what actors do, resulting in a too easy contrast between actors as purveyors of fiction and musicians as representing aspects of themselves in performance.[20]

In contrast to Auslander, Allan Moore discusses the persona as manifested primarily in the recorded voice in its relation to sonic aspects, harmony, melody or lyrics. Moore examines the persona regarding the role musicians undertake when singing[21] – a role that is shaped by certain markers in music and sound. Consequently, the persona and their attributed characteristic are negotiated through the recorded voice depending on genre and style. While Moore is "less interested in musicians than […| in music,"[22] he conflates Auslander's "real person" and "performance persona" into his idea of "performer" to analyze a musician's identity outside of the recording. Moore continues with introducing the protagonist, a "figure inside the song, that has an identity only within the song."[23] By asking, "[w]hat should we expect of the persona?"[24], Moore poses three follow-up questions: Does the persona appear to be realistic or overtly fictional? He states that a realistic persona requests that the listeners interpret them as a "vocalized version of a direct address."[25] Meanwhile, a fictional persona would arise in a situation where the singer is obviously taking on a specific character compared to an actor. Moore's second question concerns the narrative of the track being realistic, something of the everyday life, "likely to be encountered by members of the imagined community addressed by the singer"[26] or fictional. The third question concerns the involvement of the protagonist in the situation

18 Lowry 1997, 16; author's translation.

19 Hügel 2004, 66.

20 Auslander 2019, 84–85.

21 Moore 2012a, 181.

22 Ibid., 180.

23 Moore 2009, 126.

24 Ibid., 127.

25 Ibid.

26 Ibid.

described, "singing from reputed experience affected by the situation,"[27] or, if the musicians is external to the situation, reporting on it. He concludes by presenting a combination of "realistic (not fictional) persona, everyday (not fantastic) situation, involved (not objectified) stance, present (not past or future) time, and, exploration of the moment as the "bedrock" position of the persona."[28] Ultimately, Moore argues that songs provide certain meanings entailing the possibility to determine a variety of probable responses to a text,[29] meaning that listeners gain flexibility in negotiating the potential meanings of a song or track.[30] By examining Moore's theory, Kai Arne Hansen asserts that Moore's exclusive focus on the importance of sounds leaves him occupied with sound recordings that downplays socio-cultural significance, identity, and gendered meanings in popular music.[31]

Philip Tagg has a similar perspective concerning the location of persona at the sound level, particularly interested in vocal performance, by introducing the "vocal persona."[32] Tagg claims that the vocal persona is to be understood as an aspect of the musician's personality perceived by others through the medium of the singing voice or prosody. Meanwhile Tom Cochrane defines persona as a concept to investigate how complex emotions in music can be analyzed and concludes that the musician's persona becomes a frame that endorses or unifies the emotional feeling.[33] Building on the idea of a frame, Giovanni Formilan and David Stark assume that the persona has an autonomous reality existing independently of the musician's identity person.[34] In the study on DJs and producers, the researchers theorize identity as a multi-sided relationship involving person, persona, and others, concerning mainly the audience. Meanwhile, Hansen argues, with a focus on today's commercial pop, that musicians work within disparate modes of expression creating intersecting spaces. He investigates the constitution of pop personae across various platforms to demonstrate that personal narrativity in pop is bound up with our experiences of sound recordings and music videos. This approach entails "a view of the persona as co-constructed at both the production and reception ends of pop music"[35] and achieves "a holistic understanding of pop personae, reflecting the multifaceted ways in which they are constructed and experienced in a contemporary pop context."[36]

Burns and Lafrance, in turn, demonstrate a reader-centered approach that addresses the indeterminacy of textual meanings by combining critical cultural studies with music and audiovisual analysis.[37] In recognizing the indeterminacy of meanings, Burns adopts a post-structuralist orientation[38] and foregrounds the multimodality of popular music texts,[39]

27 Ibid.

28 Ibid., 128.

29 Moore 2001, 6–7.

30 Moore 2012b, 6.

31 Hansen 2017, 16.

32 Tagg 2012, 344.

33 Cochrane 2011, 211.

34 Formilan/Stark 2021, 39.

35 Hansen 2019.

36 Ibid.

37 Burns/Lafrance 2002.

38 Burns 2002, 32–35.

which also supports my own research on performances in popular music.[40] Furthermore, Burns develops a framework for understanding the relationship between individual parameters and the complexity of narrative functions of music as a transmedia phenomenon, focusing on the elaboration of their specific characteristics and textual meanings, and emphasizes the importance of integrating music analysis into the study of popular music.[41] At this point, I would like to mention that my own analyses of sound recordings rarely make use of traditional notation. This decision is consistent with Walser's position that descriptive language is perhaps best suited to convey our understanding of sound, lyrics and the motion picture.[42] While Burns's primary objects of enquiry are concept albums and songs, I argue for the applicability of a similar theoretical framework to the study of the pop persona concentrating on Auslander's identification of three layers in pop singers' performances.

Analysing Taylor Swift's Performance in "Look What You Made Me Do" by Drawing on the Concept of the "Musical Persona" in Popular Music

Slipping into different narratives is portrayed particularly prominently in Taylor Swift's 2017 video "Look What You Made Me Do." The music video, which is four minutes and fifteen seconds long, shows Swift in many different situations and roles. All the scenes can be interpreted as confrontations with people with whom she has shared differences of opinion during her career. The video debuted at the 2017 MTV Video Music Awards, a show that covers a dramatic narrative in the musician's life. "Look What You Made Me Do" depicts Swift confronting her past performance personae, covering her romantic relationships as well as her feud with Kanye West including Kim Kardashian West's exposure of Swift on social media.

In the video's opening scene, the name "Nils Sjöberg" is written on a tombstone, as Swift is digging up a grave. The name is a reference to the pseudonym the musician used as a songwriting credit on the 2016 Calvin Harris/Rhianna single "This Is What You Came For."[43] Swift and Harris dated from March 2015 to June 2016.[44] The grave digging character is masked as a cadaveric version of Swift in the music video "Out of the Woods," wearing her 2014 Met Gala gown,[45] while the main tombstone from which the Swift zombie character emerges announces "Here Lies Taylor Swift's Reputation." The next sequence draws on Swift's lawsuit win, with the musician reclining in a bathtub of jewels, showing also a one-dollar bill, presumably referring to the Taylor Swift sexual assault trial in August 2017. David Mueller, a former DJ, alleged that Swift had him wrongfully terminated following an incident at a meet-and-greet in 2013; Swift countersued him for battery and sexual assault, seeking a symbolic one-dollar in damages, with

39 Burns 2019, 96.

40 See Fürnkranz 2024a; 2024b.

41 Burns 2019, 96–97.

42 Walser 2003, 22.

43 Whitehead 2017, n. pag.

44 Lee 2015, n. pag.

45 Acuna 2017, n. pag.

the jury ruling in the musician's favor and ordering the DJ to pay her one dollar.[46] Swift released a statement following the trial revealing that her reason for counter-suing was to empower other victims of sexual assault.[47]

The throne scene includes the infamous snake that was used by Swift for promoting the album *Reputation* (2017) and that was also worked into the album's merchandise.[48] The snake covers the feud between Swift and Kayne West that has its roots in 2009. As Taylor Swift was giving her acceptance speech for the Best Female Video "You Belong with Me" at the 2009 MTV Video Music Awards, West went on stage, took the microphone from Swift, and said: "Yo, Taylor, I'm really happy for you, I'mma let you finish, but Beyoncé had one of the best videos of all time! One of the best videos of all time!", indicating Beyoncé's video "Single Ladies (Put a Ring on It)."[49]After releasing the song "Famous" (2016), in which West raps, "I feel like me and Taylor might still have sex. Why? I made that bitch famous," Swift criticized West and denounced the lyric as misogynistic.[50] West claimed to have obtained her approval over the criticized lines, "I called Taylor and had an hour-long convo with her about the line and she thought it was funny and gave her blessings,"[51] while the musician denied that claim with her spokesperson confirming that Swift had instead warned West not to release a track "with such a strong misogynistic message."[52] West's then-wife Kim Kardashian released an edited video recording in which Taylor Swift appeared to grant her approval to parts of the controversial lyrics, while in March 2020,[53] a longer recording was published that shows no evidence of West mentioning the lyrics to Swift.[54] On the same day as the Kardashian video was released, she tweeted about National Snake Day, "[t]hey have holidays for everybody, I mean everything these days! 🐍," a gesture that was interpreted as being directly addressed to Swift, with the hashtag #TaylorSwiftIsASnake becoming trending.[55] The Swift snake character sits on a golden throne while being served tea by an animated snake. On the armrest and on the columns of palace, carvings of the phrase "Et tu, Brute?" can be seen, referring to William Shakespeare's drama *Julius Caesar*. The snake character wears a gown by Balmain, a brand that has championed the Kardashian family.[56]

The following sequence depicts a character who is involved into a car crash. The character drives a luxury sports car down a dead-end street. When the character opens the car door, she is surrounded by paparazzi. Swift's hairstyle, with angular bangs, as well as her style of dress – a leopard print coat – makes her resemble her longtime rival, Katy Perry. The car crash is reminiscent of the one in Perry's "Unconditionally" video (2013).

46 BBC 2017, n. pag.
47 Miller 2017, n. pag.
48 Hilterman 2017, n. pag.
49 Kreps 2009, n. pag.
50 Yoo 2016, n. pag.
51 Renner 2016, n. pag.
52 Yoo 2016, n. pag.
53 France 2017, n. pag.
54 Willman 2020, n. pag.
55 France 2017, n. pag.
56 Whitehead 2017, n. pag.

The camera zooms in on a Grammy Award the character is holding up. While Taylor Swift has won ten Grammys, Perry has, as yet, none of her own.

The various Swift's characters are supported by other characters in some sequences in the video, such as when she and her crew break and enter into a bank vault that boasts the name "Stream Co.," clearly referring to Swift's battle with streaming services in 2015.[57] After publishing a short newspaper column in *The Wall Street Journal* emphasizing the importance of albums as a creative medium for musicians in November 2014,[58] Swift removed her catalog from music streaming platforms.[59] In an open letter in June 2015, the musician threatened to withdraw her music from Apple Music due to the fact that the platform refused to offer royalties to musicians during its free three-month trial period.[60] This letter pressured Apple Inc. and the announcement that it would pay artists during the free trial period was released.[61] This narrative is depicted with Swift donning a hoodie that reads "Blind for love" and swinging a baseball bat. Simultaneously, we see that crew members' disguises are cat masks, a reminder that Swift has joked about possibly becoming a "crazy cat lady."[62]

Another sequence with a number of other characters depicts Swift as the leader of a factory of expendable robotic model types, a "Squad U." Hereby, Swift refers to Squad as a term used by the media to describe her circle of friends that includes successful models, actresses, and singers.[63] Afterward, Swift dances in another room with a group of eight men wearing "I <3 TS"-shirts, hot pants, tights, and high heels.

Next, she is standing on the wing of a plane in an airport hangar. The character saws off the wing in half and later spray-paints "reputation" in pink on the plane. At the video's climax, a Swift character stands on a T-shaped mountain while characters, including from her past stage performances, music videos, and red-carpet appearances, fight against each other while trying to reach her. When the Swift character at the peak of the mountain stretches out her arms, the other Swifts fall off the mountain. In another scene, the Swift character picks up a phone saying "I'm sorry, the old Taylor can't come to the phone right now. Why? Oh, 'cause she's dead!" Swift clearly attempts to shed her past performance personae.

The last scene depicts fifteen different Taylor Swift characters in the hangar while Swift stands on the wing of the plane. The bespectacled Swift from "You Belong With Me," the 2008 Swift wearing a "Junior Jewels"-shirt covered in the signatures of her celebrity friends, the guitar playing country music character, the top hat-wearing character from the album *Red*, the silver dress character from the 2009 VMAs to the 2017 all-black *Reputation* character. The "You Belong With Me" character is criticized by the "Into the Woods" zombie character and the other Swift characters for her "surprised face," perhaps referring to the criticism Swift has received for that expression at numerous awards shows. The *Reputation* character then calls the "Into the Woods" character "bitch," who responds with "Don't call me that!" The country lover character is accused of being fake

57 Schonfeld 2015, n. pag.

58 Weissmann 2014, n. pag.

59 Knopper 2014, n. pag.

60 Peters 2015, n. pag.

61 Halperin 2015, n. pag.

62 McRady 2017, n. pag.

63 Taylor Swift Fandom, n. pag.

by the *Red* character, reacting with tears, while the *Reputation* character states that Swift is "playing the victim […] again." Then the 2009 VMA-Swift character says "I would very much like to be excluded from this narrative," which leads the other characters to yell at her to "shut up!" in unison.[64] Ultimately, Swift uses the fifteen different personae she has created during her career and turns them into characters for her music video to voice the critiques that others have made of her. By stepping out of the role, a humorous approach to the musical persona occurs in the music video, which is by no means based on a real entity, but is rather comprised of different narratives.

The analyzed live performance of "Look What You Made Me Do" is taken from the concert film *Taylor Swift: The Eras Tour* (2023). The Eras Tour version of the song features an extended intro and an extended outro to the song. The performance begins on the middle stage, with Swift dressed in a jumpsuit that leaves one leg free. The ornaments on her costume are reminiscent of a snake and correspond to the aforementioned attribution by West and Kardashian towards the musician. Swift begins to sing and moves around the stage, imitating the zombie choreography from her music video. When the guitar kicks in, her movements become more fluid and correspond to the beat. Singing "But I got smarter / I got harder in the nick of time, honey / I rose up from the dead I do it all the time / I got a list of names and yours is in red underlined" she turns around and walks towards the main stage, while "I check it once / then I check it twice" is addressed directly to the audience. Swift turns towards the stage; for the second part of the chorus, she walks towards her backing dancers, who are dressed to match the characters in Swift's video and are standing in glass boxes. After the chorus, dancers dressed in black, reminiscent of agents, enter the stage and circle the glass boxes, visually heralding the next verse. The diversity of the dancers stands out here, with the troop consisting of white people and BiPOCs of different generations and body shapes. Swift as the performance persona is clearly distinguishable from the characters on stage. Swift sings "You asked me for a place to sleep / Locked me out and threw a feast (what?)," then she turns around and walks towards the main stage. With "I check it once / then I check it twice," she turns directly to a dancer in a glass box. Both entities knock against the panes and sing "The world moves on, another day another drama, drama / But not for me, not for me, all I think about is karma" in unison. For a moment, Swift's performance persona and the Swift character embodied by a background singer become one entity.

With the pre-chorus, Swift turns her attention to the other Swift characters in the glass boxes. She interacts with them, dances close to the boxes and sets them in motion with jolts. With "I don't trust nobody and nobody trusts me / I'll be the actress starring in your bad dreams," the performance persona turns her attention back to the audience on the middle stage. The mood in the audience is heightened by the intensity of the music. Mobile phones recording the performance are in motion, while dancing bodies are recognizable in the video. While Swift recites "I'm sorry, the old Taylor can't come to the phone right now / Why? Oh, 'cause she's dead (oh)," she imitates a telephone with her hand. With the next pre-chorus, a platform arises from the stage, lifting Swift out of the action. As the platform moves, Swift dances on her knees, then stands up. Meanwhile, the other Swift characters leave the cages and dance around the performance persona, who is standing on the platform. The song ends with a static Swift repeating "Look what you just made me do" as she is cheered by the dancers and the audience. Swift clearly centers the

64 Spanos 2017, n. pag.

live performance as performance persona, while the background dancers embody the personae from Swift's earlier career stages – which are presented in the video by the artist herself – as characters on stage.

Frame Analysis and the Framing of the "Musical Persona"

The work of the Canadian sociologist Erving Goffman (1922–1982) deals with anthropological, social-psychological and psychiatric problems of social or socially deviant behavior. The focus is on the question of how the individual can maintain their structurally vulnerable autonomy. In interactions, the individual tries to convey a certain image of themselves because they know that they are being observed. Goffman's so-called "frame analysis" is an excellent tool to analyze and make understandable the levels of everyday experience of cultures and their artistic transformations. Goffman understands "frame" to be experience schemas learned through socialization, which people use unconsciously. "Frames" define situations and enable them to be dealt with, they are the "principles of organization which govern events—at least social ones—and our subjective involvement in them."[65] The individual places each situation in a framework, in a specific experience schema. The use of the individual frames occurs unconsciously, and attention is only drawn to this through irritation, through falling out of the frame, or through a violation of the rules associated with a frame.[66]

Goffman utilizes the term "front" to signify "that part of the individual's performance which regularly functions in a general and fixed fashion to define the situation for those who observe the performance"[67] by identifying three integral components:

1. setting, encompassing "furniture, decor, physical lay-out, and other background items which supply the scenery and stage props for the space of human action played out before, within, or upon it,"[68]
2. appearance, describing "stimuli which function at the time to tell us of the performer's social statuses";[69]
3. and manner, referring to "those stimuli that function at the time to warn us of the interaction role the performer will expect to play in the on-coming situation."[70]

While Knoblauch criticizes the concept of frame analysis as "overemphasizing" the structural characteristics of interactions, but "underestimating" the subjective meanings that people associate with interactions,[71] media theorist Joshua Meyrowitz developed Goffman's model to electronic broadcasting media. Meyrowitz asserts that "it is not the physical setting itself that determines the nature of the interaction, but the patterns of information flow,"[72] arguing that the expansion of electronic broadcasting media had blurred the

65 Goffman 1986, 10–11.

66 Ibid.

67 Goffman 1956, 13.

68 Ibid.

69 Ibid., 15.

70 Ibid.

71 Knoblauch 2000, 175.

72 Meyrowitz 1985, 36.

boundary between the public and the private with information being exposed in public. The convergence of formerly distinct situations has the effect of merging and opening up previously separate worlds to each other, thereby demystifying and breaking down barriers in the social world.[73] The boundaries between front stage and backstage have developed into a new middle region that can be interpreted as a new front stage, containing "elements of both the former onstage and offstage behaviour, but lacks their extremes."[74] Ultimately, Meyrowitz's development of Goffman's model is indicative of a shift in behavioral trends.

Based on Goffman's considerations on frame analysis, Auslander approaches his concept of the persona in music videos. Goffman's conceptualization of frames as unconsciously utilized experience schemas acquired through socialization, offers a novel perspective on the dynamics of social interaction. Nevertheless, the use of these acquired frames generally occurs unconsciously until irritation occurs. The film *The Truman Show* is often cited as an example, in which the protagonist learns from a falling spotlight that he is in a television show and not in real life. In summary, it can be said that situations are classified into experience schemas and accordingly perceived within a certain framework. In his text "Framing Personae in Music Videos" (2019), Auslander develops this idea further and uses it as the basis for a threefold framing of musical performances as events:

> The innermost frame is considered to be the one that most directly defines the event; it is the frame that allows us to understand that an event is a musical performance, such as a concert, a recital or an open rehearsal. These musical events differ, for example, in different behavioral conventions. This frame sets out basic expectations of the musical event, defines social roles, and a common understanding of all those involved about which conventions prevail between performers and audience.[75]

According to Auslander, the expectations of what might happen during a performance are largely influenced by the second frame, namely that of the musical genre. In popular music in particular, genres can be defined in many different ways. Genres distinguish forms of musical experience from one another and establish boundaries between them with varying degrees of permeability.[76] Grouping songs by genre makes it easier for users to find tunes that match their musical taste. Genre, as a mediator between different elements of music and a universally understood description of music,[77] is subject to frequently changing trends[78] and social influence.[79] Fabian Holt describes genre as "a fundamental structuring force in musical life. It has implications for how, where, and with whom people make and experience music,"[80] adding in the further course of his discussion of genres in US popular music: "Discourse plays a major role in music making."[81] Holt de-

73 Ibid., 92.

74 Ibid., 78.

75 Auslander 2019, 208.

76 Ibid.

77 Marino 2015, 239–240.

78 Zangerle et al. 2019, 324.

79 Salganik et al. 2006, 854–855.

80 Holt 2007, 2.

81 Ibid.

fines the creation and experience of music as a social construct that is passed on through discourses and thus manifests the relevance of genres. Auslander illustrates that the music video is in some ways an ideal space for the staging of musical personae because it offers performers a greater degree of control over their means of expression:

> Because performers construct their musical personae in relation to musical genres, it is important to consider the connections between the music video and genre in relation to the idea of personae. For one thing, the music video arguably should be seen as a genre unto itself rather than as a subgenre of film, television, or advertisement.[82]

Ultimately, Auslander describes this framing, referred to as the second frame, as fundamental for the analysis of personae in music video clips. Nevertheless, it seems relevant to me to take a closer look at the third frame.

The third framework surrounding the performance of popular music includes the socio-cultural conventions defined by society as a whole outside the context of musical performance and genre. Performance, as a social context that differs in its design from the processes of everyday life, allows actors to engage in behavior that would not be acceptable in other social contexts. In Goffman's view, theater becomes a model for the social world.[83] At this point, Goffman refers to the "theory of symbolic interaction,"[84] which derives from the pragmatism or social behaviorism of the *Chicago School* of the first half of the twentieth century. The basic assumption of the approach is expressed in a theorem formulated by William Isaak Thomas in 1923: "Those situations that are defined as real by the people involved in them are real in their consequences."[85] The social construction of reality is shown in the perspective that defines the starting point of a situation and through its relevance to action.

At the interface between reality and staging, the frames learned by the individual serve the continuity of the socially constructed reality and create the possibility of certainty in action. Auslander cites David Bowie and Suzi Quatro as counterexamples with regard to conventional codes of conduct, musicians who did not conform to the genre conventions of rock music of the late 1960s, and further mentions Pussy Riot for their system-critical, feminist performance in a Russian Orthodox cathedral in 2012 as examples of the transgression of socio-cultural norms.[86]

Auslander indicates "a crucially important point that is central to Goffman: actors and musicians are completely alike in the sense that both groups are engaged in performing a social identity."[87] The music video for Swift's performance of "Look What You Made Me Do" provides an opportunity to examine the performance of a persona in the context of event, genre and socio-cultural frames, in this case the framing of reprocessing past narratives and empowerment in the context of a pop production.

82 Auslander 2019, 221.

83 Goffman 1973, 19.

84 Rose 1973, 266–272.

85 William Isaak Thomas quoted in Helle 1992, 57.

86 Auslander 2019, 209–210.

87 Ibid., 84–85.

Analysing Taylor Swift's Performance in "Look What You Made Me Do" by Drawing on Frame Analysis

Event

Auslander describes musical events as characterized through "different behavioral conventions."[88] In Harald Huber's and my study "Performing Diversity" that deals with performance rituals in Austrian musical life, the differences and diffusions between the stylistic fields of classical/contemporary music, jazz/improvised music, folk music/world music, dance/hip-hop/electronics, rock/pop music and Schlager/folk music were explored in the form of qualitative case studies. A particular focus was placed on the examination of crossover phenomena within the music landscape of the years 2010–2015. The selected examples represented a variety of the concert form, which were then categorized according to the performances' ritual-dimension: a characteristic feature of the devotional ritual is the immobilization of the body. This is typified by the audience's seated position in a concert hall, the option to applaud upon entering the stage, and the provision of information through a printed program. Conversely, the animation ritual is distinguished by the activation of the body, encouraging the audience to participate physically in a relaxed atmosphere, encompassing activities such as dancing, clapping, singing, conversing, and consuming beverages. Spoken contributions are facilitated through live moderation. In this form of meditation, the degree of mental or physical attention can be customized by the audience depending on the situation, ranging from complete devotion to use as background sound.[89] Swift's staging corresponds to the animation ritual. The audience is addressed multiple times during the live performance and is thus engaged in Swift's performance. Despite the prevalence of mobile phones among the audience, the movement, exclamations, and raised hands of the fans can be discerned.

Genre

"Look What You Made Me Do" was written and produced by Swift together with Jack Antonoff. Recorded at Rough Customer Studio in Brooklyn, Antonoff programmed the track and played its instruments, and Randy Merrill mastered the track at Sterling Sound in New York.[90] The song is three minutes and thirty-one seconds long, written in the key of A minor, and has a tempo of 128 beats per minute (bpm). While music critics described the track as electropop,[91] *National Public Radio*'s Lars Gotrich said that the beats and vocals evoked electroclash,[92] *Rolling Stone*'s Brittany Spanos assumed it was a dance-pop song, attributing this effect partly to the "dark techno" of Britney Spears's 2007 album *Blackout*.[93] In turn, *Swiftpedia* describes the song's genre(s) as synth-punk, dance-pop, electropop, and progressive pop.[94] Swift states in a 2010-interview "I'm inspired by

88 Ibid., 208.

89 Fürnkranz/Huber 2021, 352.

90 Battan 2017, n. pag.

91 Johnston 2017, n. pag.; Sheffield 2017, n. pag.; Kinbbs 2019, n. pag.; Gotrich/Lorusso/McKenna 2017, n. pag.

92 Gotrich/Lorusso/McKenna 2017, n. pag.

93 Spanos 2017, n. pag.

94 Taylor Swift Fandom, n. pag.

all kinds of different sounds […] I think genres are sort of unnecessary walls,"[95] affirming Auslander's stance that genres distinguish forms of musical experience from one another and establish boundaries between them with varying degrees of "permeability."[96]

The track is introduced by a slow, orchestral melody that transitions into the first verse after a short break-down. The kick changes fundamentally between the first and second part of the verse. As the pre-chorus begins, the beat and rhythmic elements disappear completely, instead, this part incorporates piano and synth-simulated brass that give pre-chorus and bridge a "melodramatic, emotional"[97] feel. Furthermore, Swift's vocals are accompanied by a dramatic sound, which alludes more and more to a drop. This focusses on the repetitive phrase "Look what you made me do" and bass-heavy drums, described as "vindictive, mocking, dismissive, even a little playful."[98] The verses and chorus consist of electronic tones, hip-hop-inspired beats, and vocal cadences. The track builds on elements of mid-1980s and 1990s industrial and electro,[99] while the opening strings and piano were described as "Hollywood"-inspired by Sarah Carson[100] and evoked a "dark, fantasy-film" atmosphere, as *The New York Times*[101] wrote.

Reprocessing Past Narratives

Given this context, the video for "Look What You Made Me Do" needed to construct Swift's musical persona in a way that would embrace the musician's performance as a reprocessing of past narratives, accusations, feuds and denunciations. The musician uses language and symbolism to establish the themes of blaming and victimhood. Already the title of the song implies that the narrator has been forced to take certain actions because of someone else's behavior. The song opens with "I don't like your little games / don't like your tilted stage / the role you made me play / of the fool, no, I don't like you." Especially, "little games" and "tilted stage" work as metaphors for strategies of power, manipulation, and control, while the "role you made me play" refers to Swift's position due to power imbalances. The tombstone in the video's opening as well as the line "I'm sorry, the old Taylor can't come to the phone right now / why? Oh, 'cause she's dead!" refers openly to the new persona Swift has created during the process of working on the album, or as a promotional tool. The death of the "old Taylor" can be seen as a metaphor for silencing people through powerful institutions, patriarchal practices, and societal norms, appropriating Robin James's stance that there are "many ways to deal with damage and trauma, and people frequently recover, survive, cope and flourish in ways that don't adequately support hegemony."[102] Accordingly, it can be interpreted as Swift's empowerment strategy by creating a new image.

95 Scaggs 2010, 7.

96 Auslander 2019, 208.

97 Coscarelli/Pareles/Caramanica/Morris/Ganz 2017, n. pag.

98 Ibid.

99 Ibid.

100 Carson 2017, n. pag.

101 Coscarelli/Pareles/Caramanica/Morris/Ganz 2017, n. pag.

102 James 2015, 168.

Empowerment[103]

The music video showcases different portrayals of Taylor Swift's personae, each reflecting a respective stage of her career. This implies that her performer's identity is continuously changing. The video's narrative comments on Swift's public persona and how she is perceived by her fans as well as the media. By showing revenge and hatred, the first character in the music video, a zombie Swift, is crawling up through her own grave that reads "Here lies Taylor Swift's reputation." The symbolic and literal return from the death after months of silence can be interpreted as an empowering act regarding Swift's career. Meanwhile, Swift clearly shows dominance and power by sitting on a golden throne decorated with snakes or standing in front of lines of plastic models and singing, "But I got smarter / I got harder in the nick of time, honey / I rose up from the dead I do it all the time / I got a list of names and your is in red underlined / I check it once then I check it twice," leading a group robbing a bank or being the head of a female biker gang and singing "The world moves on another day another drama, drama, but not for me, not for me all I think is karma." She dances in front of eight male dancers all wearing "I <3 TS"-tops and repeats "Ooh, look at what you made me do," in another sequence the dominant character stands in front of the other characters taken from her hit video clips and repeats "I don't trust nobody and nobody trust me, I'll be the actress starring in your bad dream" for four times. Especially in those sequences that define the dominant Swift character as leader, Goffman's definition of "front"[104] becomes crucial.

Another aspect that correlates to ideas of empowerment are actual acts of power in Swift's video. "Ooh, look what you made me do" is allegedly visualized when one of the Swift characters performs male-connoted acts such as the car crash scene that leads to an explosion, hitting stacks of money or lifting two big motorcycles by herself. Especially the combination of the delivered messages and the visual cues enables the video to demonstrate the musician's ideas of empowerment supported by the intensely repetitive parts.

With this song, its video and live performances, Swift celebrates empowerment, female-identifying music creation, and feminist communities. Her critique of heteronormative gender concepts, sexism and abuse of power, as well as patriarchal structures in the music business and everyday life is defined through the lens of the reality of a female pop star, or rather through her musicking as a form of empowerment, which is particularly strengthened by the sense of community. The characters in the music video represent exaggerated and utopian ideas of Swift's personae alluding to Robin James's observation that postfeminism and popular feminism are, at least in principle, aligned with the objectives of liberal (white) feminism, including the promotion of individual empowerment and self-ownership. James concludes that "because liberal feminism is incapable of addressing patriarchy as a system that works at the structural and institutional level, successfully realizing liberal feminism's goals can't and won't fix patriarchy."[105]

103 According to Norbert Herriger (2002, 14), the term refers to processes of the active appropriation of power, strength and creative capacity by those affected by powerlessness themselves.

104 Goffman 1956, 13.

105 James 2020, 7.

The Clock of Characters

The German film scholar Jens Eder deals with the approaches to character analysis from the various directions and schools of film studies – structuralist, psychoanalytical and cognitive theories – as well as the attempts to unite several approaches. In addition, he creates a differentiated, comprehensive model of analysis that incorporates and integrates the aforementioned interdisciplinary preliminary work. Eder's concept of character analysis encompasses fictional characters, i.e., characters in film, television and music videos, their characteristics, their actions, their typification, and the emotional involvement they trigger in viewers. According to Eder, the analysis of a character is incomplete if it only remains at the level of visualized representation – i.e., the performance – without including the reception by asking two key questions: "How can one systematically analyse characters and corroborate statements about them? And how can one explain in what ways viewers experience characters and react to them with perceptions, thoughts, and feelings?"[106]

In his analysis, Eder divides the film character into four levels of observation: from an aesthetic point of view as artefacts, from a diegetic point of view as fictional beings, from a thematic point of view as symbols, and from a pragmatic point of view as symptoms. Eder presents these four levels as the "clock of character":

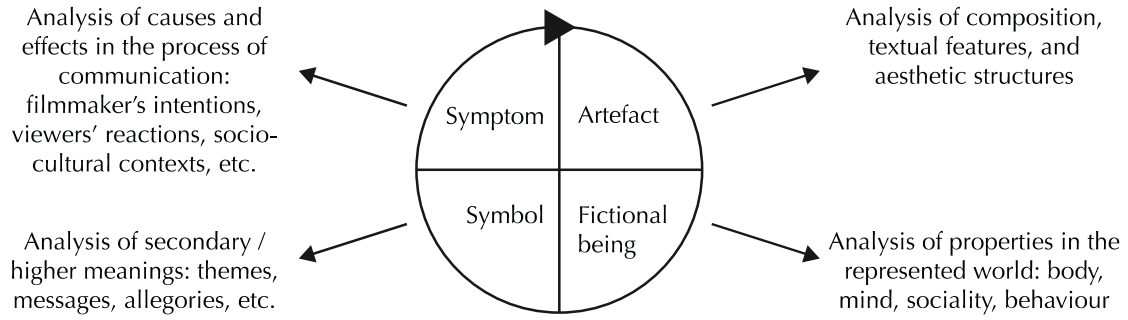

Figure 1: The "clock of character,"[107] as formulated by Jens Eder

Eder's analysis schema distinguishes four aspects: "Characters are, firstly, inhabitants of a fictitious world; secondly, artefacts of a particular mould; thirdly, symbols conveying meanings and themes; and fourthly, symptoms permitting inferences about their production and reception, causes and effects."[108]

Before the viewers identify a character, they already perceive the character on the basis of the audiovisual appearance. At the basal level of perception, the character is initially interpreted with the help of preconscious codes. The "character as artefact" refers to the sensually perceptible form of the character and their components such as body, age, gender, origin, costume, hairstyle, make-up, props, voice, and lighting, in the sense of the filmmaker's intentions. Characters are thus created as artefacts by audiovisual means – they are either portrayed by actors or artificially animated. From these impressions, view-

106 Eder 2010, 17.

107 Ibid., 21.

108 Ibid., 24.

ers create their own interpretation of the character, to which they attribute characteristic traits.[109]

"Characters as fictional beings" are characterized by physical, mental, and social features. If the characteristics of the fictional being are captured by the plot lines of scenes, viewers can understand them as signs that extend beyond the filmic fiction and create associations with overarching themes. Categories such as gender, age, bodily abilities, or form permit "a rather precise description of external appearance and body language with regard to body shape, face, gaze, mimic, gesture, proxemics, posture, touch, hairstyle, clothes, and other artifacts close to the body."[110]

"Character as symbol" examines the different meanings that can be read into characters, their symbolic content: "When we examine characters as symbols, the question to be answered is what indirect meanings they convey."[111] Additionally, the results of the previous reception allow a reading into a diagnosis of real historical-social conditions and relationships. The analysis of "character as symptom" takes up these connections and deals with the historical and political context in which the character was created and develops its effect: "When we examine them as symptoms, the question concerns the causes in the production process that lead to their specific properties, and the effects of them on the viewers during and after reception."[112] The design of the character can ultimately be reflected on each of the levels described, closing the circle to the "character as artefact."

The "clock of character" allows us to include components such as hierarchies, contrasts, communication or interaction in the analysis. Characters face their context, as main or secondary characters they act according to a certain hierarchy of attention, as a protagonist or antagonist in a field of conflict situations and in certain spaces of action. An existing value system defines the character as a good or evil fictional being. Values, desires, drives and emotions determine the motivations in the narrative. The fate of the fictional being can trigger empathy and sympathy, subsequently an emotional connection to the recipient's own identity is established. Eder's approach that focuses on four aspects characterizing a fictional character appears to be fruitful for analyzing musical performances in many respects. Musical performances also work with artefacts and fictional beings that have various symbolic and symptomatic aspects.

Analyzing Taylor Swift's Performance in "Look What You Made Me Do" by Employing the "Clock of Character"

Firstly, I decided to swiftly summarize the characteristics of Swift's song, since musical details are characterized by intertextual stylistic connections, which in turn serve to provide a framework for the interpretation of both the persona and the track by the listener. "Look What You Made Me Do" has a 4/4-time, a tempo of 128 bpm, and is written in the key of A minor. The track is introduced by a slow, orchestral melody, which, after a short break-down, leads into the first verse. Between the first and second part of the verse, the

109 Ibid., 26–29.

110 Ibid., 24.

111 Ibid., 32.

112 Ibid.

kick changes radically. Swift's voice is accompanied by a dramatic sound, which increasingly hints at a drop as her singing progresses focusing on the repeated phrase "Look what you made me do" and bass-heavy drums.

Character as Artefact

As artefact, Swift reenacts various personae she embodied through her career and in her songs, as well as ideas of her persona that were ascribed to her through the media, fans, and fellow musicians. The video begins with what were at that time current allegations against Swift, but overall the video looks back at Swift's career by featuring her personae, who were turned into characters in the music video, and ultimately confronting them with accusations.

Character as Fictional Being

As fictional being, Swift highlights her new role as a villain while embodying various stereotypical villainous characters and roles, such as acting as a bank robber, a reckless driver, a vandalizer, sitting on a throne, or standing on top of a human mountain. The dichotomy of the role of villain combines the assumption that the Swift characters are not the creators of their own villainess, but have rather been forced into it. The villain character matches the audience's expectations: Swift's staging is a mixture of being cruel, vindictive, and self-centered, coming from a place of self-defense. Additionally, Swift's clothing and style parodies other musicians such a character on a throne surrounded by snakes wearing a gown by Balmain, a brand that is associated with the Kardashian family – referring to Kim Kardashian West's exposure of Swift on social media – or the car accident character with angular bangs, wearing a leopard print coat, resembling her longtime rival, Katy Perry.

Character as Symbol

For years Swift was associated with being the "Country Lolita,"[113] a pop star with a "very pink, very perfect life."[114] As a symbol, Swift metaphorically kills the past versions of her personae, when she sings "I'm sorry, but the old Taylor can't come to the phone right now, why? Oh, because she's dead." This is illustrated visually at the beginning of the video with the zombie version of Swift climbing out of a grave and by using comparisons to burning witches to illustrate the accusations made against her when she sings "I can feel the flames on my skin, crimson red paint on my lips." Swift addresses being "killed" by the media in the past, but also highlights the fact that she has learnt from past controversies: "But I got smarter / I got harder in the nick of time, honey / I rose up from the dead I do it all the time / I got a list of names and your is in red underlined / I check it once then I check it twice." Besides the media, the character condemns celebrities who have control over the system and have used their influence in aiding them turning the public against her as she sings, "I don't like your kingdom keys / they once belonged to me / you asked me for a place to

113 Edwards 2012, n. pag.

114 Grigoriadis 2009, n. pag.

sleep / locked me out / and threw a feast" and continues with "I don't trust nobody and nobody trusts me." As a symbol, the character is highly critical of the power structures around female musicians. This criticism emphasizes the awareness of being one of those who benefit, having the "kingdom keys." By speaking against the system's operations, the character underlines the fact that female celebrities often experience backlash from the systems they are in, while taking on a contradictory role. The character as a symbol uses her celebrity position in the song, the music video and the live performance as a platform to bring attention to toxic and misogynist behavior.

Character as Symptom

"Look What You Made Me Do" contains numerous hidden meanings indicating denunciation, accusation, fake facts, and misogyny that influenced Swift's career and subsequently the creation of the song character. In the opening scene, we see two tombstones one reading "Taylor Swift's Reputation" and the other reading "Nils Sjöberg" referencing the pseudonym Swift used for a songwriting credit for her ex-boyfriend Calvin Harris's song "This Is What You Came For." This contribution was supposed to be kept a secret, but after the reveal, Harris started a tweetstorm accusing Swift of looking for "someone new to try and bury."[115] The single dollar bill that we see in the bathtub full of diamonds in which Swift bathes in is speculated to represent the symbolic dollar the musician was awarded for winning a sexual assault trial in 2017[116] as a response to media statements mocking that she "cries in a marble bathtub surrounded by pearls."[117] The golden throne with a carving of "Et tu, Brute?" on the armrest, referring to William Shakespeare's drama Julius Caesar, indicates Swift's infamous title "snake" during her rift with Kanye West and Kim Kardashian.[118] While standing on a mountain of characters wearing several notable outfits previously worn by herself, Swift reiterates that she is leaving behind her old image and embracing her newfound role as an evil "snake"-character.

Concerning Swift's position as a feminist artist, the depiction of the male dance crew wearing "I <3 TS"-shirts, hot pants, tights and high heels becomes particularly crucial. Staged as gender benders, the dancers challenge binary gender norms. According to Judith Butler, the division of people into the categories of male and female is a discursively formed construct that uses an alleged, natural-biological fact as a pretext for exercising domination and power.[119] In the video, male dancers perform alternative gender concepts in drag, thereby revealing the performative nature of gender. Butler asserts that "in imitating gender, drag implicitly reveals the imitative structure of gender itself – as well as its contingency."[120] Swift's music video provides a valuable opportunity to re-evaluate the masculinized body as a medium of expression and offers a compelling illustration of the cultural reinterpretation process that is currently taking place within feminist music circles. The concept of gender bending cannot be found within the live performance. How-

115 Nevins 2017, n. pag.

116 Whitehead 2017, n. pag.

117 Jones 2017, n. pag.

118 France 2017, n. pag.

119 Butler 1990, 45.

120 Ibid., 187.

ever, the dance crew's depiction of diverse body types and BIPoCs can be interpreted as a staging strategy to showcase Swift's idea of diversity.

As symptom, the character uses denouncing and misogynist statements, packs them into a catchy tune, and deconstructs the idea of a fixed identity in popular music while emphasizing the influence of media and public perception on celebrities' personae. The critique of heteronormative ideas and misogyny in the media is underlined with a video that critically and ironically depicts stations of Swift's career and introduces a new empowered persona.

Conclusions

In his book *Analysing Musical Multimedia* (1998), Nicholas Cook demonstrated the deep entanglement of music as the "purest" art form with media, semiotic systems as well as other art forms. In *Beyond the Score: Music as Performance*, Cook argues that music and performance should no longer be understood as two separate or merely complementary fields, but rather in terms of "music as performance."[121] The methodology employed by Cook is characterized by a comprehensive integration of three elements: firstly, a broad contextualization of the history of music and ideas is undertaken. Secondly, structural-analytical details are elaborated. Thirdly, empirical-quantitative investigations of sound recordings are conducted. A significant consequence of this concept is that the phenomenon that can be labelled as music in an analytical, listening or reading sense is deprived of the status of a clearly defined and structured (research) object.[122] In *Konzert-Szenen: Bewegung, Performance, Medien. Musik zwischen performativer Expansion und medialer Integration 1950–2000* (2013), Christa Brüstle delineates the distinguishing characteristics between the concert stage and the theater stage, highlighting the conventional allocation of roles to musicians and actors. From a methodological perspective, the book adheres to the recent paradigm shift in musicology which shifts the focus from the work to the performance,[123] emphasizing the analysis of musical practices and processes. It is exactly this paradigm shift that enables us to integrate the analysis of performances on stage and in music videos in a theory of popular music.

Reflecting Fischer-Lichte's definition of theatricality that comprises four aspects: performance, staging, corporality, and perception, I assume that pop musicians address their audiences in complex ways. Consequently, reading and analyzing performances in popular music is more than examining one particular text but an inspection of a conglomerate of texts and contexts that form the production, as well as the reception of musical and performative expressions. In his 2019 text "Framing Personae in Music Videos," Auslander claims that the music video is in some ways an ideal space for the performance of musical personae compared to live performance, because the video offers the performers a greater degree of control over their means of expression as well as an accurate context for artists to negotiate musical personalities.[124] Music videos allow musicians to construct their personae in detail without having to take into account the contingencies of live performance.

121 Cook 2013, 1.

122 Ibid., 12.

123 Brüstle 2013, 17.

124 Auslander 2019, 221.

Throughout the text I have paid close attention to the understanding of the pop persona as the center of a performance in popular music. As a starting point, I introduced three performer-centered approaches to the analysis of how contemporary pop artists mobilize themselves as intertextual objects, resulting in a broad exploration of how identities in pop are carved out through personal narrativity and visual display. Firstly, I introduced, discussed and examined theories of (popular music) performance including Auslander's theory of the "musical persona," Goffman's "frame analysis" and Eder's "clock of characters." By doing so, I turned a critical eye to the mutual relationships between notions of identity, sound, and look, and how performers negotiate their subjectivities and demonstrate their personae through visual and musical codes.

While I found Auslander's threefold model of the persona in popular music[125] as well as his conception of performance fruitful for my analyses of "Look What You Made Me Do," I agree with Danielczyk's stance that the notion of what is analyzable is incompatible with a concept of "real identity."[126] Auslander's approach offers a useful toolkit for the analysis of the performance persona and the character, furthermore it allows us to expand the scope of popular music analysis by encouraging us to consider personae and frames within the analytical framework. In turn, Auslander builds on Goffman's "frame analysis" introducing a threefold framing of musical performances as events as well as Goffman's usage of the term "front"[127] to signify "that part of the individual's performance which regularly functions in a general and fixed fashion to define the situation for those who observe the performance."[128] Concentrating on the genre and on the socio-cultural frames allowed me to include musical aspects but still focus on Swift's performance in the music video. My third approach emerged from film studies. Eder's concept of understanding characters includes their characteristics, their actions, and the involved audience. Eder's basic schema distinguishes four standpoints for the analyses of characters: from an aesthetic point of view as artefacts, from a diegetic point of view as fictional beings, from a thematic point of view as symbols, and from a pragmatic point of view as symptoms. As a trained film scholar, Eder's approach taught me much when co-writing the book *Aufführungsrituale der Musik. Zur Konstituierung kultureller Vielfalt am Beispiel Österreich* (2021), and I was therefore keen on using his approach in analyzing Swift's performance in said music video. As a film scholar, Eder offers a valuable toolkit for analyzing music videos; the four aspects enabled me to dive deeper into Swift's performance than all the other approaches I used. I learnt about her staging, performance style, as well as about the video's background and the hidden easter eggs.

In recent decades, popular music has evolved into a multifaceted, interdisciplinary field of enquiry. Methods, objects, and added value of music-centered approaches are being critically interrogated. The discourse has shifted towards the notion of contexts examined through new methodologies and connected to sound as integral parts by employing appropriate music- and performance-analytical instruments. As I hope my discussion of Swift's "Look What You Made Me Do" has made clear, reading pop performance is not an attempt to identify one true version of what meanings the song affords. The ideas, signs and symbols that comprise pop performances can present challenging articu-

125 Auslander 2009, 305.

126 Danielczyk 2017, 57.

127 Goffman 1956, 13.

128 Ibid.

lations of the persona, while the public discussions surrounding musicians are often characterized by contradictory narratives. This may result in ambiguity, making it difficult to pinpoint any single and true idea of a performance concept. The complex and various ways in which pop performances are negotiated attribute meaning to their experiences. The focus of this study is therefore the multiplicity of possible meanings in pop, with the aim of inviting the reader to reflect on their own involvement in activating these meanings. I introduced three approaches, as well as toolkits, that seem useful when concentrating on the performance of the persona in popular music. I advocate for the integration of persona-centered, performance-analytical methods as a genuine component of musicological research. Given the increasingly diverse and interdisciplinary methodological landscape, collaboration with scholars from theater, film and media studies, as well as intersectionality research – a topic I was only able to apply to a limited extent in Swift's oeuvre – is both useful and necessary. Furthermore, we must keep in mind that continuous developments in media practices and technology have led to changes in modes of performance and production that warrant academic scrutiny. However, methodological progress must be complemented by reflections on fruitful ways of interacting with new interdisciplinary approaches.

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© 2025 Magdalena Fürnkranz (fuernkranz@mdw.ac.at, ORCID iD: 0000-0002-3603-6318)

Universität für Musik und darstellende Kunst Wien [University of Music and Performing Arts Vienna]

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Die »kleineste Sexte«

Historische Perspektiven auf einen Zweiklang und seine harmonische Deutung

Jakob Bonasera

In der jüngeren musiktheoretischen Literatur wird das Simultanintervall der verminderten Sexte so gut wie gar nicht thematisiert. Während auch in verschiedenen Quellen des 18. und 19. Jahrhunderts das Intervall unerwähnt bleibt oder ausdrücklich verworfen wird, wird es in einigen Traktaten dieser Zeit durchaus beschrieben und eingeordnet. Der Artikel sichtet die Theoretisierung, die das Intervall dabei erfahren hat und stellt deren Spannweite zunächst systematisch dar. Die eingehendste theoretische Erfassung erfährt die verminderte Sexte durch Georg Andreas Sorge. Um einen Bezug zur Kompositionspraxis herzustellen, wird abschließend ein Literaturbeispiel von Johann Sebastian Bach herangezogen, das auf Basis der vorherigen Darstellungen analysiert wird.

In more recent music theory literature, the interval of the diminished sixth is hardly ever discussed. While the interval remains unmentioned or is explicitly rejected in various sources from the 18th and 19th centuries, it is described and categorized in some treatises from this period. The article examines the theorization that the interval underwent and first presents its range systematically. The diminished sixth is most thoroughly theorized by Georg Andreas Sorge. In order to establish a link to compositional practice, the article concludes with a literary example by Johann Sebastian Bach, which is analyzed on the basis of the previous descriptions.

SCHLAGWORTE/KEYWORDS: diminished sixth; Georg Andreas Sorge; Geschichte der Musiktheorie; history of music theory; Johann Sebastian Bach; verminderte Sexte

Während das Intervall der übermäßigen Sexte ein vertrautes Phänomen ist, dessen Verwendung in Kompositionen sowie dessen musiktheoretische Begründungen und Deutungen eingehend erforscht worden sind,[1] ist dies für die verminderte Sexte nicht der Fall.[2] Im Gegenteil: In Nachschlagewerken wie *Grove Music Online* oder *MGG Online* kommt der Begriff ›verminderte Sexte‹ bzw. ›diminished sixth‹ überhaupt nicht vor und auch in umfangreichen musiktheoretischen Materialsammlungen wie Hubert Moßburgers *Ästhetischer Harmonielehre* oder Reinhard Amons *Lexikon der Harmonielehre* wird das Intervall nicht thematisiert.[3]

Obwohl die verminderte Sexte im heutigen Diskurs keine Rolle zu spielen scheint, wurde sie dennoch über Jahrhunderte in verschiedenen Traktaten und Lehrwerken diskutiert. Bemerkenswert ist zudem die Tatsache, dass sich – anders als man dies vielleicht erwarten würde – in den musiktheoretischen Quellen aus verschiedenen Jahrhunderten keine lineare Entwicklung bezüglich der Deutung und Erklärung der verminderten Sexte feststellen lässt. Aus diesem Grund erscheint mir bei der theoretischen Aufarbeitung der verminderten Sexte ein systematischer Ansatz zielführender. Ich möchte in diesem Aufsatz einige Theoretiker zu Wort kommen lassen, um verschiedene Perspektiven auf dieses

1 Vgl. Ellis 2010.

2 Dieser Beitrag wurde beim 14. Aufsatzwettbewerb der *Gesellschaft für Musiktheorie* mit dem ersten Preis ausgezeichnet.

3 Vgl. Moßburger 2012 und Amon 2005.

Intervall sowie Positionen zu seiner harmonischen Deutung aufzuzeigen, erhebe jedoch keinen Anspruch auf Vollständigkeit. Ich beginne mit der Feststellung, dass das (Simultan-) Intervall häufig schlichtweg abgelehnt worden ist und komme schließlich zu seiner ausgereiften harmonischen Kontextualisierung, bevor ein Beispiel aus der kompositorischen Praxis diesen Aufsatz beschließt.

Traktate, in denen das kompositorische Vorkommen einer verminderten Sexte als Intervall ausgeschlossen wird, finden sich viele. Eine insofern recht weit verbreitete Meinung zu diesem Intervall vertritt Ernst Friedrich Richter in seinem *Lehrbuch der Harmonie* (1860): »Verminderte Primen, Sekunden, Sexten, Nonen, sind harmonisch undenkbar, wenn sie auch in melodischen Verhältnissen, d. h. in Bezug auf fortschreitende Intervalle, nicht auf gleichzeitig erklingende, gedacht werden können«.[4] Richters »Uebersicht und Zusammenstellung der gebräuchlichsten Intervalle« (Abb. 1) enthält dementsprechend die große, kleine und übermäßige Sexte, während die verminderte Sexte fehlt.

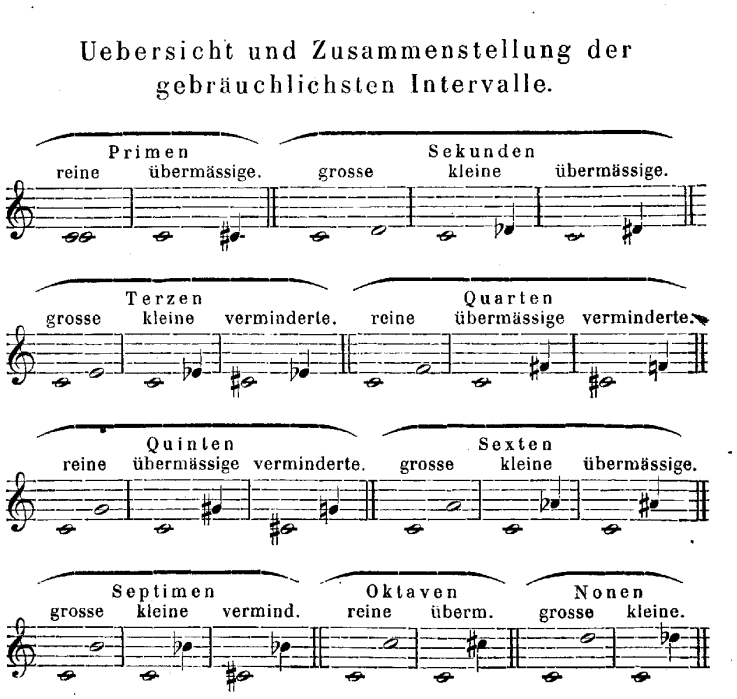


Abbildung 1: Die »gebräuchlichsten Intervalle« nach Ernst Friedrich Richter[5]

Etwas mehr Recht als Richter räumt dem Intervall u. a. Heinrich Christoph Koch ein. Er nennt die verminderte Sexte, die Angabe des Intervalls beschränkt sich jedoch auf eine bezüglich der übergeordneten Tonalität unkonkrete Ebene, wie beispielsweise die Beschreibung aus dem ersten Band seines *Versuchs einer Anleitung zur Composition* (1782) zeigt:

> In der chromatisch-enharmonischen Tonleiter entwickeln sich, außer den schon angezeigten Intervallen, noch folgende […]. Noch zweyerley Sexten, als a) die verminderte Sexte, ein Intervall von sechs Stufen, zwischen welchen sich sechs halbe Töne befinden; zum Beispiel *cis d dis e f fis g as* […].[6]

4 Richter 1860, 4.

5 Ebd.

6 Koch 2007, 50 f. In Kochs *Musicalischem Lexikon* (1802) wird die verminderte Sexte hingegen gar nicht erwähnt.

Die von Koch genannte »chromatisch-enharmonische Tonleiter«, in der die verminderte Sexte entsteht, kann nicht als Ganzes in eine bestimmte (Dur-Moll-)Tonalität integriert werden. Die einfache Aussage, eine verminderte Sexte entstehe zwischen den Tönen *cis* und *as*, reicht demnach nicht aus, um das Intervall praktisch nutzbar zu machen.[7] Das Intervall kann zwar theoretisch gebildet werden, spielt aber in der tatsächlichen Musik offenbar keine Rolle.

COMMUNIS OPINIO ZUR TONALEN VERORTUNG

Im zweiten Teil von Carl Philipp Emanuel Bachs *Versuch über die wahre Art das Clavier zu spielen* (1762) findet sich ähnlich wie bei Richter eine Übersicht der »brauchbarsten Intervalle im Generalbass« (Abb. 2).[8] Im Gegensatz zu jener von Richter wird bei Bach jedoch neben der kleinen, großen und übermäßigen Sexte auch die verminderte Sexte angegeben. Ihr Komplementärintervall, die übermäßige Terz, schließt Bach dagegen aus dieser Übersicht aus.

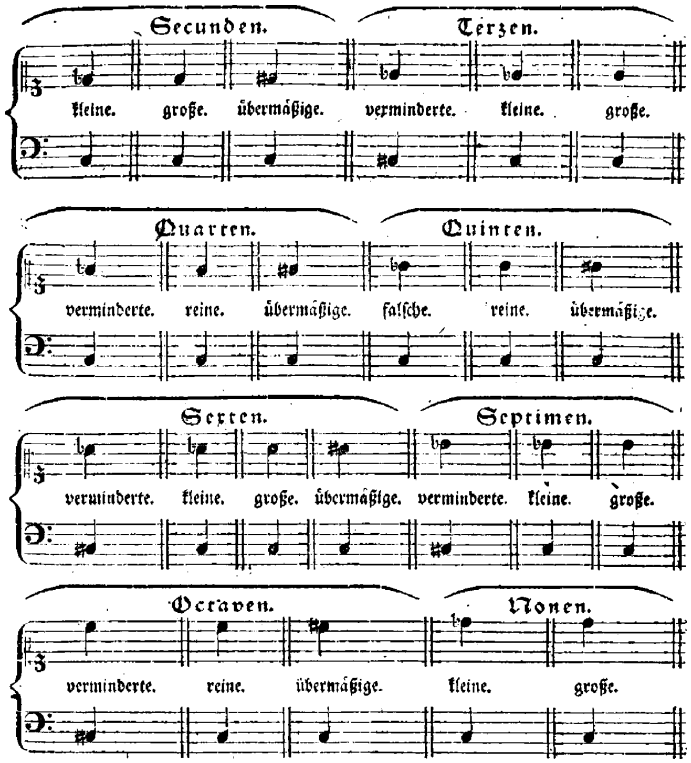


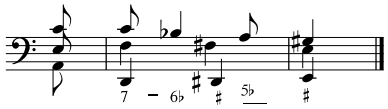
Abbildung 2: Die »brauchbarsten Intervalle« nach Carl Philipp Emanuel Bach

7 Zu jenen Theoretikern, welche die verminderte Sexte auf ähnlich abstrakte Weise beschreiben, zählen u. a. auch Johann Adolph Scheibe (vgl. Scheibe 1739, 21), Gottfried Weber (vgl. Weber 1817, 64) oder Emanuel Aloys Förster (vgl. Förster 1805, 7). Hugo Riemann erwähnt in seinem *Musiklexikon* im Artikel »Intervall« (Riemann 1916, 501 f.) die verminderte Sexte nicht, gibt aber im Artikel »Terz« ein Notenbeispiel zur übermäßigen Terz, dem Komplementärintervall der verminderten Sexte, an (vgl. ebd, 1115).

8 Bach 1762, 13 f.

Im Kapitel über Sextakkorde schreibt Bach über die verminderte Sexte:

> Die verminderte dissonirende Sexte kommt selten vor. Sie erfordert einen besonderen Liebhaber. Wer sie braucht, der vorbereitet sie und löst sie im Heruntergehen auf. Am leidlichsten klingt sie, wenn sie die große [recte: kleine] Terz allein bey sich hat.[9]



Beispiel 1: Carl Philipp Emanuel Bachs Beispiel zur verminderten Sexte[10]

Beispiel 1 zeigt Bachs Exempel an dieser Stelle: eine Progression, bei der auf einen neapolitanischen Sextakkord ein verminderter Dreiklang über der erhöhten 4. Bassstufe folgt. Die neapolitanische Sexte *b* wird prolongiert, wodurch eine verminderte Sexte als Vorhalt zum verminderten Dreiklang über *dis* entsteht. Die Quinte des Dreiklangs wird demnach auf schwerer Zeit zurückgehalten und erscheint erst auf leichter Zeit.

Auch Johann Georg Albrechtsberger zählt die verminderte Sexte zu Beginn seiner *Gründlichen Anweisung zur Composition* (1790) nicht zu den »möglichen und brauchbare[n] Intervallen« (Abb. 3).

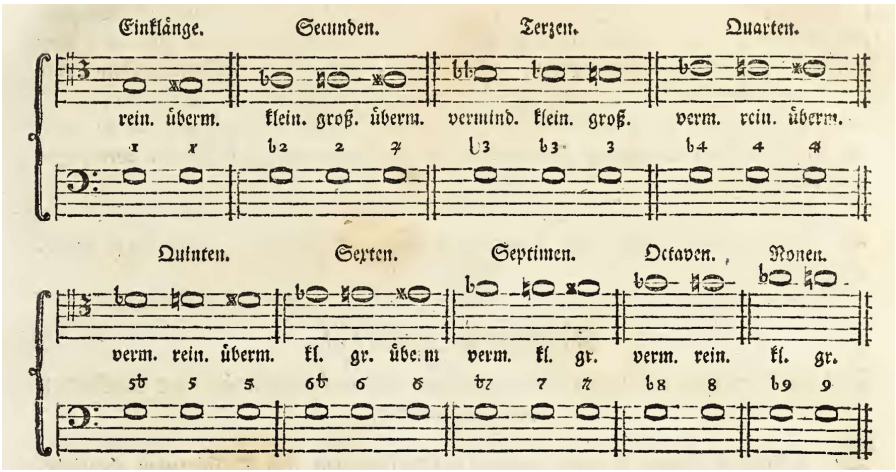


Abbildung 3: »Mögliche und brauchbare Intervalle« nach Johann Georg Albrechtsberger[11]

Im darauffolgenden Kapitel über Kon- und Dissonanz ergänzt er jedoch in einer Fußnote: »Man macht auch jetzt eine verminderte [Sexte]; doch wer diese zuläßt, muß auch im doppelten Kontrapunkte der Octave eine übermäßige Terz zulassen; ich habe sie beyde also gemacht«.[12]

9 Ebd., 53.

10 Ebd., 54.

11 Albrechtsberger 1790, 3.

12 Ebd., 4.

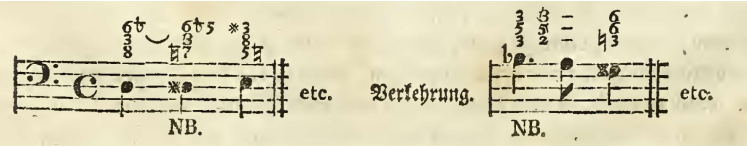
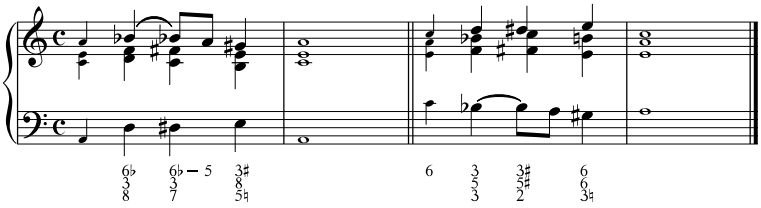


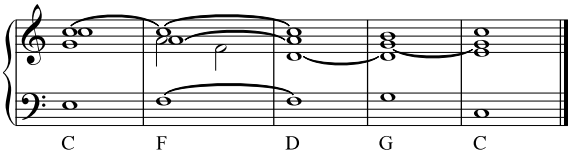
Abbildung 4: Johann Georg Albrechtsbergers Beispiel zur verminderten Sexte und übermäßigen Terz[13]

Eine Realisierung der bezifferten Bässe, die Albrechtsberger hierzu als Beispiel gibt (Abb. 4), unter Beachtung des doppelten Kontrapunktes der Außenstimmen könnte aussehen wie in Beispiel 2.



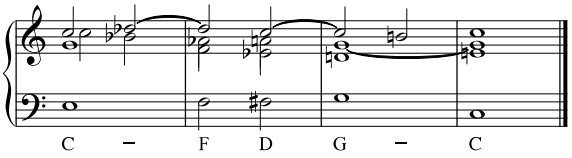
Beispiel 2: Realisierung (d. Verf.) von Albrechtsbergers Notenbeispiel

Simon Sechter erwähnt in seinen *Grundsätzen der musikalischen Komposition* (1853) die verminderte Sexte in der Aufzählung und Erklärung der Intervalle ebenfalls nicht. Weiter hinten im ersten Band platziert er schließlich allerdings doch ein Notenbeispiel zur Einführung des Intervalls. Er gibt zunächst – entsprechend seines Grundsatzes, jegliche Musik sei auf einen diatonischen Hintergrund zurückführbar[14] – eine Art Urform einer Kadenz an, die er nach und nach mittels Chromatik variiert, und schreibt dazu: »Da die noch zu erklärenden chromatischen Schritte sehr verwickelt sind, so können sie nur dadurch klar werden, dass gezeigt wird, wie die Verwickelung nach und nach entstanden ist«.[15] Beispiel 3 zeigt Sechters diatonische ›Urprogression‹.



Beispiel 3: Diatonische ›Urprogression‹ bei Sechter[16]

Nach einigen chromatischen Veränderungen gibt Sechter dann das Beispiel 4 an, bei dem im zweiten Takt auf einen neapolitanischen Sextakkord ein verminderter Septakkord über der erhöhten 4. Stufe folgt:



Beispiel 4: Chromatische Erweiterung der Progression aus Beispiel 3[17]

13 Ebd.

14 Vgl. Sechter 1853, 128.

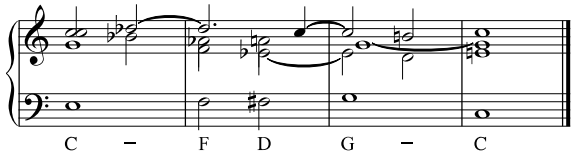
15 Ebd., 155.

16 Ebd.

Dieses Beispiel erweitert er noch einmal:

> Nun können aber sogar die andern Stimmen zur Harmonie des Fundamentes D, als Dominant von G, übergehen, bevor noch die Tredez[ime] von F sich auflöset, und es kommen damit zu gleicher Zeit Töne vor, die aus zwei sich widersprechenden Tonleitern entlehnt sind.[18]

Wie schon in den Beispielen von Bach und Albrechtsberger bleibt in dieser Progression (Bsp. 5) die Sexte *b* aus dem neapolitanischen Sextakkord liegen, während in der zweiten Takthälfte ein verminderter Septakkord über *fis* angesteuert wird. Der Ton *des* stellt somit einen chromatischen Vorhalt zur Quinte *c* des verminderten Septakkordes dar.



Beispiel 5: Zusätzliche chromatische Erweiterung der Progression mit verminderter Sexte[19]

Diese Wendung ist dieselbe wie schon bei Carl Philipp Emanuel Bach und Albrechtsberger, hier im Kontext von (C-)Dur. Sechter bemerkt anschließend dazu:

> Die zugleich gehörten Töne *fis* und *des* machen ein bisher noch nicht erwähntes Intervall. Steht das *fis* unten und das *des* oben, so ist es eine verminderte Sext (weil *d* zu *fis* schon eine kleine Sext macht); steht das *des* unten und das *fis* oben, so ist es eine übermässige Terz (weil *f* zu *des* schon eine grosse Terz macht).[20]

Sechter behandelt die erhöhte 4. und erniedrigte 2. Bassstufe hier somit explizit als angeliehene Töne der chromatisch-enharmonischen Tonleiter, ohne diese in das zugrundeliegende Moll-Tonsystem einzubinden.[21]

Kistlers »übergreifendes Moll-System«

Einen Schritt weiter als Sechter geht Cyrill Kistler, wenn er in seiner *Harmonielehre* (1898) versucht, die erniedrigte 2. und erhöhte 4. Stufe in sein harmonisches System einzugliedern. Kistler schreibt über diese beiden Stufen:

> Wir stossen in unserem praktischen Musikwesen auf harmonische Erscheinungen, die uns bisher theoretisch unerklärbar erschienen. Man nannte solche Erscheinungen einfach Durchgänge, zufällige Accordbildungen, freie Verbindungen der Harmonien usw.[22]

Damit vertritt Kistler eine Auffassung, die auch bei Carl Philipp Emanuel Bach, Albrechtsberger und Sechter gegolten haben muss. Kistler führt eine »kurze Harmoniegruppe, die

17 Ebd.

18 Ebd., 156.

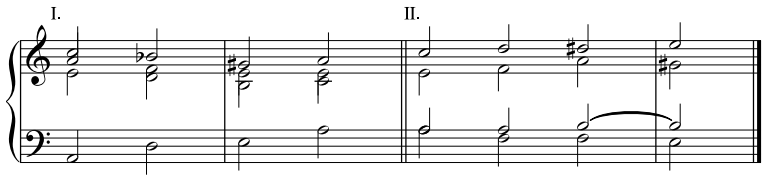
19 Ebd.

20 Ebd.

21 Im Schluss von Richard Wagners *Götterdämmerung* findet sich exakt jene von Bach, Albrechtsberger und Sechter angegebene Progression zweimal nacheinander. Die verminderte Sexte ist hierbei zuerst als Quinte und anschließend als ›echte‹ verminderte Sexte notiert (vgl. Wagner o. J., 363, T. 5 f.).

22 Kistler 1898, 74.

wir in A moll sehr häufig antreffen […]« an,[23] mithilfe derer die erniedrigte 2. und erhöhte 4. Stufe Einzug in das Moll-System finden (Bsp. 6).



Beispiel 6: Cyrill Kistler, *Harmonielehre* (1898), 74

Die erniedrigte 2. Stufe entstammt demnach dem neapolitanischen Sextakkord, die erhöhte 4. Stufe ist als Leitton zur 5. Stufe in doppeldominantischen Verbindungen zu finden, hier beispielsweise mit einem übermäßigen Terzquartakkord.

Eine Besonderheit von Kistlers Lehre liegt in seiner Auffassung von Tonleitern: Sie werden nicht als lineare Skalen, sondern gleichsam als Ketten verstanden, die durch die Aneinanderreihung der Hauptdreiklänge einer Tonart entstehen. Für a-Moll hieße das: Der tonikale Dreiklang *a-c-e*, der subdominantische Dreiklang *d-f-a* und der dominantische Dreiklang *e-gis-h* werden aneinander gekettet, wodurch die Abfolge *D-f-A-c-E-gis-h* entsteht.[24] Zu den Tönen *b* als erniedrigte 2. und *dis* als erhöhte 4. Stufe gelangt Kistler nun durch die Erweiterung dieser Kette in Richtung der Sub- bzw. Unterdominante sowie der Dominante bzw. Oberdominante.

Kistler vollzieht zunächst die Erweiterung in Richtung der Unterdominante, indem er über seine zwei Beispiele (Bsp. 6) schreibt:

> Bei I begegnet uns ein B. In der einfachen A moll-Tonleiter liegt aber kein B, und dennoch ist diese Harmonie in A moll gerechtfertigt.
> Wir finden, dass die Untermediantharmonien der Dominante und Tonika in Moll eine grosse Terz tiefer stehen als die Harmonien der Dominante und Tonika selbst. Warum suchte man nicht auch die Untermediantharmonie der Unterdominante in Moll eine große Terz tiefer? Durch diese allein richtige Logik erhalten wir in A moll ein Be. Die Praxis hat der Theorie den Weg gezeigt.[25]

Zur Erweiterung in Oberdominant-Richtung schreibt Kistler:

> Bei II begegnet uns ein Dis in A moll. Dieser neu eingeführte Ton wurde von der Theorie bisher als Durchgangston angesehen und hat diese Anschauung ihren Grund darin, dass die mit einem Dis auftretenden Harmonien in A moll nie selbstständig wirken.[26]

Durch diese Erweiterung der Ketten in beide Richtungen gelingt es Kistler, die ehemals leiterfremden Töne *b* und *dis* durch eine kombinatorisch-spekulative Herangehensweise in sein System zu integrieren (Abb. 5).

Im Vergleich zu Carl Philipp Emanuel Bach, Albrechtsberger und Sechter werden die erniedrigte 2. und erhöhte 4. Stufe von Kistler also in das Tonsystem inkorporiert, jedoch nicht miteinander verbunden. Der Neapolitaner und der verminderte Sextakkord über der

23 Ebd.

24 Die Großbuchstaben stellen jeweils die Grundtöne der drei Dreiklänge dar.

25 Ebd., 74 f.

26 Ebd., 75.

erhöhten 4. Bassstufe bleiben voneinander separierte Phänomene, sodass das Intervall der verminderten Sexte nicht entsteht.

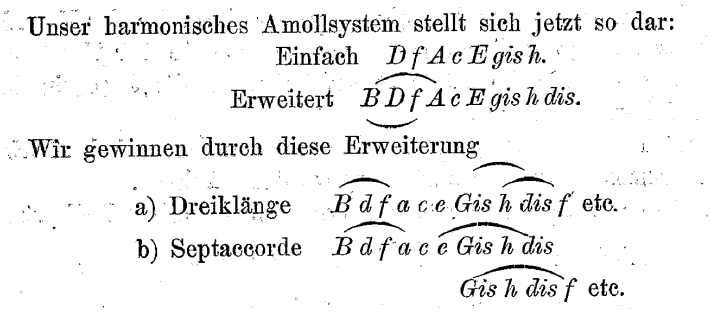

Unser harmonisches Amollsystem stellt sich jetzt so dar:
Einfach *D f A c E gis h.*
Erweitert *B D f A c E gis h dis.*
Wir gewinnen durch diese Erweiterung
a) Dreiklänge *B d f a c e Gis h dis f* etc.
b) Septaccorde *B d f a c e Gis h dis*
Gis h dis f etc.

Abbildung 5: Cyrill Kistler, *Harmonielehre* (1898), 76

Sorges verminderter Sextakkord

Der letzte Theoretiker, den ich hier zu Wort kommen lassen möchte, ist Georg Andreas Sorge. Obwohl sein *Vorgemach der musicalischen Composition* (1745–47) fast 150 Jahre vor Kistlers *Harmonielehre* erschienen ist, findet sich in Sorges Traktat eine sehr besondere und ausgereifte Akkordlehre, in der auch die verminderte Sexte vorkommt. Sorge geht bezüglich der erniedrigten 2. und erhöhten 4. Stufe einen bedeutenden Schritt weiter: Beide Töne werden in das Tonsystem aufgenommen und darüber hinaus in einem eigenen Akkord miteinander verbunden; das Intervall der verminderten Sexte entsteht hierbei als Produkt der Fusion und Synchronisation beider Stufen.

Bereits im ersten Teil des *Vorgemachs* hatte Sorge im Zuge der Einführung der *trias manca*, welche ihm zur Herleitung der Akkorde mit übermäßiger Sexte dient, einen Vorgeschmack auf weitere *triades* gegeben, die nicht die ›üblichen‹ Terzen oder Quinten aufweisen:

> Wir könten noch zwey andere Triades anführen, davon die erste aus einer kleinen Terz und übermäßigen Quint bestünde. Z. E. c es gis, die andere aber aus einer reinen Quint und übermäßigen Terz, z. E. c eis g, allein wir würden damit in überflüßige Speculationes gerathen. Wenn wir aber Sextam deficientem dis b statuieren wollen […], so werden wir die letztere nöthig haben; jetzo mag nur zur Curiositè was davon gedacht seyn.[27]

Das entsprechende Beispiel zeigt nahezu dieselbe Progression wie jene, die schon Bach, Albrechtsberger und Sechter angegeben hatten, in der Zweistimmigkeit (Abb. 6).

Abbildung 6: Georg Andreas Sorges Beispiel zur verminderten Sexte[28]

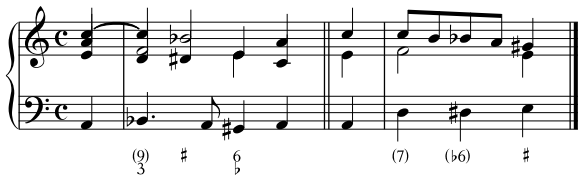
27 Sorge 1745–47, 21 f.

28 Ebd., Tab. II, Fig. 3.

Im zweiten Teil des *Vorgemachs* werden die zuvor behandelten Intervalle nun in Akkorde und damit in harmonische Progressionen eingebunden. Die verminderte Sexte wird genauso wie die großen, kleinen und übermäßigen Sexten harmonisch verortet und erhält ihren ›Sitz‹ innerhalb der Skala. Da in Sorges Denken jeder Sextakkord eine Umkehrung ist, muss sich auch der verminderte Sextakkord auf einen Fundament-Dreiklang zurückführen lassen:

> Damit wir nun die kleineste Sext auch kennen lernen, so lasset uns erstlich ihre Fundamental-Triadem anzeigen. Im A moll kommen die Klänge b und dis vor; setzen wir nun b zum Grunde, dis als die grösseste Terz (Tertiam superfluam) in die Mitte, und f als die Quint oben, so haben wir ihr Fundament, und können hernach leichte einen Sexten-Accord draus ziehen.[29]

Beispiel 7 zeigt links das von Sorge erwähnte »Fundament« (5/3-Klang) auf *b* und daneben die erste Versetzung (Sextakkord) an.



Beispiel 7: Georg Andreas Sorge, *Vorgemach der musicalischen Composition*, Teil 2 (1746), Tab. II, Fig. 1. Die Halsung und Stimmverteilung im linken Beispiel entsprechen dem Original. Von Sorge nicht angegebene Generalbassziffern stehen in Klammern.

Die Art und Weise, wie Sorge hier gleichsam beiläufig *b* und *dis* in den Tonvorrat von a-Moll integriert, ist bemerkenswert und bedarf weiterer Erklärung. Offensichtlich nimmt er – wie später Kistler – die häufige Verwendung der erhöhten 4. Stufe (modern gesprochen als doppeldominantische Funktion) sowie der erniedrigten 2. Stufe im neapolitanischen Sextakkord in der Kompositionspraxis wahr. Die erhöhte 4. Stufe als Leitton zur 5. Stufe findet sich in Sorges *genus chromaticum*,[30] die erniedrigte 2. Stufe im *genus enharmonicum*. Sechter weist wie gesagt ebenfalls auf diesen Umstand hin und spricht von »sich widersprechenden Tonleitern«.[31] Auch Koch hatte auf den Umstand aufmerksam gemacht, dass sich die verminderte Sexte in der chromatisch-enharmonischen Tonleiter bilden kann. Sorges Fundierung des Akkordmaterials hat jedoch sowohl der von Sechter als auch der von Koch etwas voraus: Das Skalenmaterial für den Akkord *b-dis-f* ist zwar die vermischte *diatonisch-chromatisch-enharmonische* Tonfolge, welche alle drei Tongeschlechter enthält. Anders als Koch ›leiht‹ sich Sorge allerdings nicht willkürliche, sondern bestimmte Töne aus dem *chromatisch-enharmonischen* Geschlecht, sodass in der Konsequenz nicht alle 17 möglichen Töne des *diatonisch-chromatisch-enharmonischen* Geschlechts vorkommen. So bewahrt Sorge im Gegensatz zu Koch die grundsätzliche (Moll-)Tonalität und kann seinem Akkord einen ›Sitz‹ geben. Es soll hier zwar nicht im Detail um Sorges Akkordlehre gehen, doch die Anerkennung eines Akkordes mit übermäßiger Terz und reiner Quinte ist erwähnens- und bemerkenswert. Ludwig Holtmeier

29 Ebd., 77.

30 Genau genommen kommt das *genus chromaticum* in a-Moll zu Teilen automatisch zum Tragen, da sich im *genus diatonicum* kein Leitton *gis* befindet und die erhöhte 6. und 7. Stufe für das melodische Moll benötigt werden. Vgl. dazu ebd., 353 f.

31 Sechter 1853, 156.

hat bereits darauf hingewiesen, dass Sorges Akkordlehre in der Tradition Gottfried Heinrich Stölzels steht:[32]

> Besonders bedeutsam ist hier aber Stölzels Gedanke, die perfekten Konsonanzen der *trias harmonica* hätten einen solchen Eindruck auf das menschliche Gehör gemacht, dass »fast alles was nur den Namen von der 5ta und 3tia führet ihre Stelle in concentu vertreten« könne. Wenn man »Name« nun für Stufe setzt, dann formuliert Stölzel hier genau das, was in Sorges Musiktheorie durch die Übernahme des Telemann/Scheibeschen Intervall-Systems zum Prinzip erhoben worden ist: Ein dreistimmiger Akkord (*trias*) entsteht durch das Zusammentreffen von Terz und Quinte, egal welcher Gattung diese Terz und Quinte auch sein mag. Und so sehr diese Klänge auch von der Perfektion der *trias harmonica* abweichen mögen, so handelt es sich doch nicht um *triades anarmonicae*.[33]

Interessant ist zudem, dass Kistlers und Sorges jeweilige Herangehensweisen unterschiedliche Konsequenzen für die Harmonik implizieren: Wenn *b* und *dis* von Kistler als Erweiterung des terzgeschichteten Tonsystems aufgefasst werden, dann lassen sich auf ihnen neue fundamentale Dreiklänge bilden, die theoretisch ebenfalls zu a-Moll gehören. Beispiele hierfür sind der Klang *gis-h-dis*, den Kistler als »weichen Dreiklang der 7. Stufe in Moll« bezeichnet, sowie der doppeltverminderte (*dis-f-a-c*) und hartverminderte (*h-dis-f-a*) Septakkord.[34] Hier offenbart sich der Unterschied zwischen Sorge und Kistler: Sorges Theorie ist zu Teilen spekulativ, doch nicht gänzlich losgelöst von der kompositorischen Wirklichkeit. Kistler hingegen dekliniert die potenziell möglichen Klänge systematisch durch und gelangt schließlich zu Akkorden, die in der Literatur (selbst noch seiner Zeit) selten vorkommen.[35] Somit scheint Kistlers *Harmonielehre* sich jener Aufgabe zu verschreiben, die bereits Friedrich Dionys Weber in seinem *Theoretisch-praktischem Lehrbuch der Harmonie und des Generalbasses* (1830) formuliert hatte: Die Harmonielehre habe sämtliche »in der Musik nicht nur üblichen, sondern auch möglichen Accorde« zu lehren.[36]

Der von Sorge angegebene Akkord *b-dis-f* findet sich in Kistlers Beispielen jedoch nicht, da nur Sorge durch sein besonderes Verständnis von ›Akkord‹ die Möglichkeit hat, Klänge ohne reine Quinte oder mit übermäßiger Terz ebenso als gültige, fundamentale Entitäten anzuerkennen, aus denen Umkehrungen gebildet werden können. Ein großer Vorteil von Sorges Intervalllehre gegenüber jener der übrigen genannten Theoretiker liegt darin, dass kein Intervall losgelöst von seiner Bezugsskala bzw. von dem Akkord, mit dem es verbunden ist, angegeben wird. Dadurch bekommen die von Sorge angegebenen Harmonien und harmonischen Verbindungen trotz aller Spekulation eine gewisse Praktikabilität und Nutzbarkeit. Somit ist Sorge im Reigen der hier genannten Theoretiker der Einzige, der etwas wirklich ›Nützliches‹ zum Diskurs über die verminderte Sexte beitragen kann.

32 Vgl. hierzu Holtmeier 2017, 194–205.

33 Ebd., 197. Für genaue Erläuterungen des Intervall-Systems nach Telemann bzw. Scheibe vgl. ebd., 185–188.

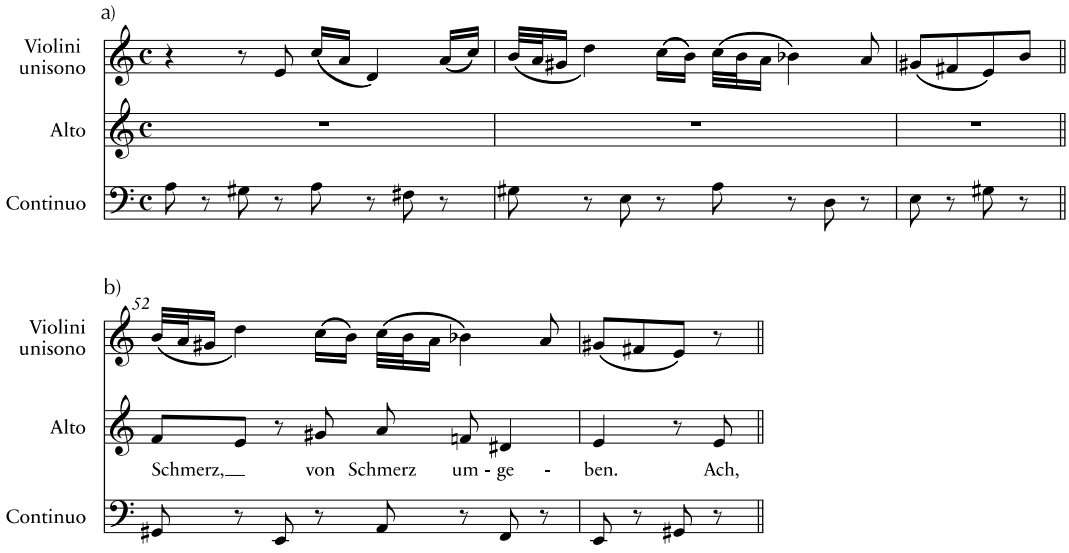
34 Vgl. Kistler 1898, 79–89.

35 Auf diesen kombinatorisch-systematischen Zugang der Harmonielehre des 19. Jahrhunderts als Hauptunterschied zu jener des 18. Jahrhunderts hat Ludwig Holtmeier bereits aufmerksam gemacht. Vgl. hierzu Holtmeier 2012, dort insbesondere Anmerkung 31.

36 Weber 1830, 5.

Ein Literaturbeispiel

Nachdem nun einige musiktheoretische Positionen zur verminderten Sexte aufgezeigt wurden, möchte ich diesen Beitrag mit einem Beispiel aus der Kompositionspraxis beschließen. In der Mitte der Alt-Arie »Ach bleibe doch« aus Johann Sebastian Bachs *Himmelfahrtsoratorium* BWV 11 (1738) findet sich eine Stelle, die eine verminderte Sexte als Simultanintervall enthält. Beispiel 8 zeigt zunächst die Anfangstakte der Arie, dann die betreffende Stelle mit der verminderten Sexte.

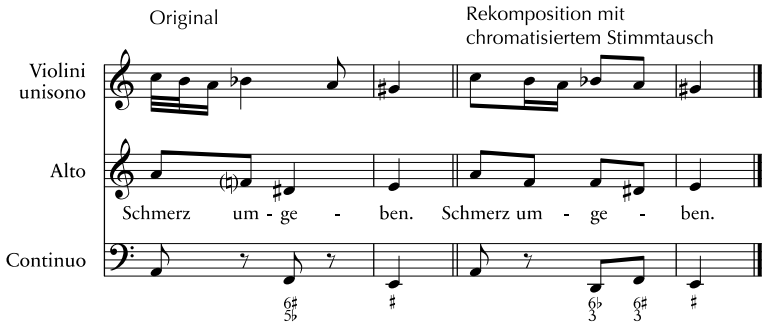


Beispiel 8: Johann Sebastian Bach, *Himmelfahrtsoratorium* BWV 11 (1738), »Ach, bleibe doch«, a) Anfang, b) T. 52 f.

Im Vergleich zum Beginn des Satzes tritt in Takt 52 die Solo-Altstimme zu den Unisono-Violinen und dem Basso Continuo hinzu. Die Altstimme verkompliziert eine Analyse des Taktes im Vergleich zu den Außenstimmen des Anfangs deutlich: Die Beschreibung der Stelle als ausschließlich neapolitanisch, wie sie für Takt 2 in Beispiel 4a zutrifft, greift für Takt 52 zu kurz. Das *d* in der Bassstimme in Takt 2 wird von Bach in Takt 52 zum *f* verändert, vermutlich um den Querstand *d-dis* zwischen Cello und Altstimme zu vermeiden. Das *b* kann aber auch ohne *d* im Bass seine Funktion als neapolitanische Sexte behalten. Es tritt jedoch eine doppeldominantische Komponente hinzu: Auf der einen Seite ist in Takt 52 die simultane übermäßige Sexte *f-dis* zwischen Bass und Altstimme auffällig, auf der anderen Seite kann die sukzessive verminderte Terz *f-dis* in der Melodie der Altstimme eine doppeldominantische Wirkung erzeugen (durch beidseitige Leittönigkeit zur Quinte *e*).

Eine rein vertikale, akkordisch gedachte Analyse erweist sich mitunter als umständlich, wenn sich mehrere primär lineare Prozesse in einzelnen Stimmen überlagern. Der Klang *f-b-dis* (eine Art ›alterierter Quartsextakkord‹) ist nicht im ›Standard‹-Akkordrepertoire zu finden. Den Beispielen von Carl Philipp Emanuel Bach, Albrechtsberger und Sechter ähnelt diese Stelle ebenfalls nicht, da sich die erhöhte 4. Stufe in Takt 52 nicht im Bass, sondern in der Mittelstimme befindet. Möchte man diese Progression trotzdem akkordisch interpretieren, so könnte man den ›alterierten Quartsextakkord‹ als zweite Umkehrung des von Sorge über der erniedrigten 2. Stufe errichteten Akkordes *b-dis-f* (vgl. Bsp. 7, links) auffassen.

Aus einer kontrapunktischen Perspektive ließe sich der verminderte Sextakkord bei Bach hingegen durch eine Antizipation und Aufhaltung der neapolitanischen Sexte erklären, kombiniert mit einem chromatisierten Stimmtausch zwischen Bass und Mittelstimme, dessen zweiter Klang ebenfalls antizipiert wird. Eine Rekomposition der betreffenden Stelle in Beispiel 9 möge dies abschließend verdeutlichen:



Beispiel 9: Johann Sebastian Bach, *Himmelfahrtsoratorium* BWV 11 (1738), »Ach, bleibe doch«, T. 52 f., Original und Rekomposition

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Jacob Obrecht, *Missa Scaramella*, herausgegeben und rekonstruiert von Fabrice Fitch mit Philip Weller und Paul Kolb, Utrecht: Koninklijke Vereniging voor Nederlandse Muziekgeschiedenis 2024

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Die Rekonstruktion fragmentarisch überlieferter Werke insbesondere der Vokalpolyphonie des 15. und 16. Jahrhunderts stellt immer noch ein herausforderndes wie inspirierendes Betätigungsfeld an der Schnittstelle von Wissenschaft und Komposition dar. Als Frucht einer jahrelangen, nicht zuletzt durch bestimmte biografische Konstellationen ausgelösten Arbeit hat der Komponist und Musikwissenschaftler Fabrice Fitch jüngst eine vollständige Wiederherstellung der *Missa Scaramella* von Jacob Obrecht vorgelegt; ebenso liegt eine CD-Produktion der von ihm herausgegebenen Fassung durch das *Binchois Consort* vor.[1] Fitchs Rekonstruktion der *Scaramella*-Messe kann als seltener Glücksfall bezeichnet werden, da sie zur Ergänzung und Aufwertung eines vernachlässigten Repertoires beiträgt und darüber hinaus unser Wissen um Kompositionsprozesse und -techniken um 1500 um wesentliche und originelle Erkenntnisse bereichert.

Von Obrechts Messe existieren in der Biblioteka Jagiellońska in Kraków vollständige Stimmbücher von Altus und Bassus; Tenor und Cantus sind verloren. Der komplette Verlust einer Tenorstimme ist im Repertoire des späten 15. Jahrhunderts im Allgemeinen kaum zu kompensieren. Im Falle der *Missa Scaramella* liegen die Dinge insofern anders, da Obrecht offenbar zahlreiche Abschnitte auf der Grundlage vollständiger und zudem untransponierter Zitate der zugrundeliegenden Chanson-Melodie organisierte, ohne wie in anderen Werken auf komplexe Techniken der Segmentierung und Neuordnung von Tonhöhen zurückzugreifen. Diese Auffassung wurde in der Obrecht-Forschung erstmals in einer Fußnote in Rob Wegmans legendärer Monografie *Born for the Muses* von 1994 formuliert, verbunden mit dem Hinweis auf einige offenkundige Tenor-Statements in einzelnen Abschnitten der Messe.[2] Man kann Fitchs Scaramella-Projekt, das ihn (mit Hilfe einiger Weggefährten) über Jahre beschäftigte, als Versuch der Ausarbeitung dieser Fußnote begreifen – gleichsam als ›Beweisführung‹ mit kompositorischen Mitteln, zu der selbstverständlich die sorgsame Dokumentation der getroffenen Entscheidungen und ihre kritische Reflexion im Vorwort und separat veröffentlichten Texten gehört.[3]

Die rekonstruierte Messe basiert auf dem weltlichen Cantus firmus *Scaramella va alla guerra* im transponierten 1. Ton. Fitch ordnet sie aus verschiedenen Gründen Obrechts späten Lebensjahren zu, in philologischer Hinsicht aufgrund der Entstehung der überlieferten, nach dem Tode des Komponisten (Ferrara, 1505) entstandenen Abschrift im Tiroler Raum, aber auch aus allgemeinen Erwägungen mit Blick auf die das Werk auszeichnende kompositorische Souveränität: »My experience of the work ›from the inside‹ is of highly directed, tight-knit, self-consistent counterpoint and a remarkably legible formal and structural design.«[4] Diese späte Datierung ist keinesfalls abwegig, aber nicht alternativlos. Für eine späte Messe ist die *Missa Scaramella* – insbesondere verglichen mit den Dimensionen der *Missa Maria zart* – relativ kom-

1 Obrecht: *Missa Scaramella & other works*. The Binchois Consort/Andrew Kirkman, Hyperion CDA68460 (2024).

2 Wegman 1994, 280 (Fußnote 57).

3 Fitch 2023 sowie 2024, XI–XXV.

4 Fitch 2024, XVIII.

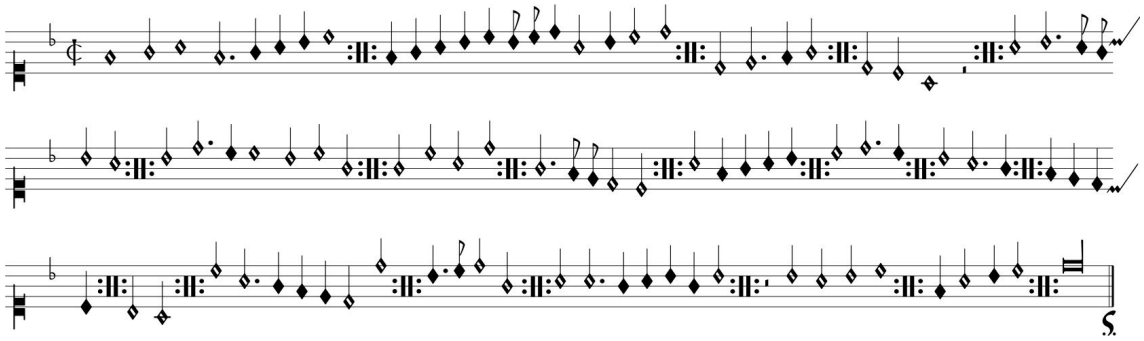


Abbildung 1: Jacob Obrecht, *Missa Scaramella*, Agnus Dei I: Rekonstruktion der originalen Notation des Discantus von Fabrice Fitch[6]

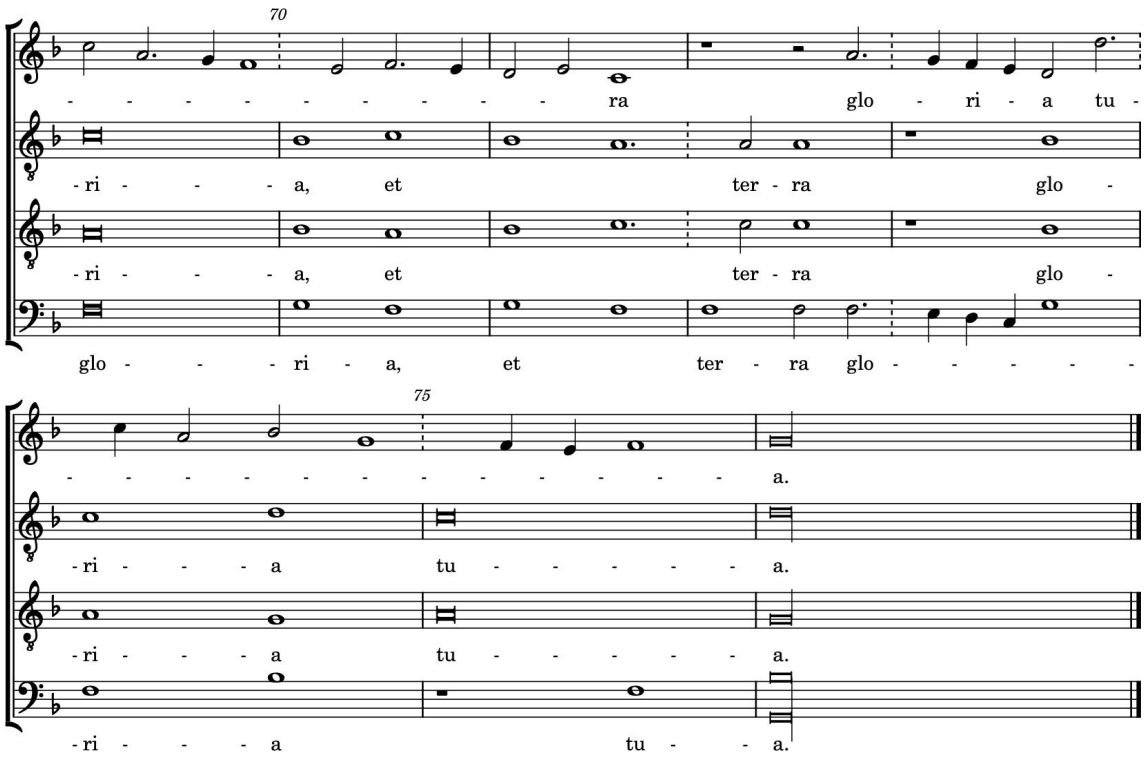
pakt und dauert in der Aufnahme des *Binchois Consort* schlanke 34 Minuten. In seinen begleitenden Kommentaren charakterisiert Fitch Obrechts grundlegende Arbeitsweise als »Spiel mit Konsequenzen« (»the idea of composition as a game of consequences«), das auf einem ebenso kreativen wie systematischem Denken auf der Grundlage weniger grundsätzlicher satztechnischer Prämissen beruhe.[5] Vor diesem Hintergrund, so führt Fitch aus, mag bereits die Entdeckung einer möglichen, auf einen längeren Abschnitt anzuwendenden kontrapunktischen Prozedur in den fehlenden *Scaramella*-Stimmen ein hinreichendes Indiz für eine ›richtige Spur‹ sein, zumal die rund 30 überlieferten Obrecht-Messen weitgehend gesicherter Provenienz einen ausreichend umfangreichen Repertoire-Korpus darstellen, um in strittigen Detailfragen als stilistisches Korrektiv zu dienen. Im vergleichsweisen einfachen Fall des Kyrie II besteht beispielsweise die Möglichkeit zu einem den gesamten Satz überspannenden Unterquintkanon im Semibrevis-Abstand zwischen dem überlieferten Altus und dem zu rekonstruierenden Tenor; als Aufgabe für den Restaurator bleibt hier einzig die Ausarbeitung der Cantus-Stimme auf der Grundlage allgemeiner melodischer Erwägungen und Obrecht-typischer Satzmodelle, wie sie in vergleichbaren Sätzen und kontrapunktischen Konstellationen zu beobachten sind.

Gegenüber der schlüssigen Rekonstruktion vergleichbarer kurzer Abschnitte, die im Ansatz auch eine KI leisten könnte, erfordert die Wiederherstellung einer gesamten Messe Erwägungen (und zwangsläufig intuitive Entscheidungen) zu Aspekten zyklischer Korrespondenz, übergreifender motivischer Bezugnahme – und die glückliche Lösung mancher verzwickter Rätsel. In der vorliegenden Edition ragt insbesondere die Entdeckung zweier Tenor-Kanons heraus, in denen die *Scaramella*-Melodie auf höchst artifiziell-originelle Weise ›gelesen‹ wird: Im »Patrem« als Folge von weißen und kolorierten Notenwerten im *tempus perfectum cum prolatione perfecta*, im »Et una sanctam« als ›Verkehrung‹ von weißen und kolorierten Notenwerten im Kontext einer Wiederholungsstruktur, verbunden mit einem Wechsel in einen Triplum-Takt. Für beide Verfahrensweisen sind im Werk Obrechts keine Parallelstellen zu finden – es handelt sich demnach um individuelle, für eine einmalige Verwendung erfundene ›konzeptuelle Ideen‹. Fitchs Versenkung in Obrechts Gedankenwelt geht so weit, dass er diese Kanon-Rätsel mit Sinnsprüchen aus der Heiligen Schrift kommentiert, im letzteren Falle mit einer wunderbaren Anspielung auf Jesaja 9.2: »Qui ambulat in tenebris videt lux«. Man mag an diesem verspielten Detail ermessen, dass es dem Renaissance-Spezialisten Fitch bei seinem Projekt nicht allein um die Rekonstruktion der von Obrecht vermutlich intendierten kontrapunktischen Struktur, sondern darüber hinaus auch – in Kontexten historisch informierter Theorie und Aufführungspraxis – um die Wiederherstellung der *originalen Notation* ging. Dies betrifft auch die Lösung für den Cantus im Agnus Dei I, den Fitch in überzeugender Weise auf der Grundlage wiederholter melodischer Patterns organisiert und folgende Notation vorschlägt (siehe Abb. 1).

In der den Sanctus-Abschnitt »Pleni sunt« beschließenden Kadenz entscheidet sich Fitch hingegen für folgende Lösung, die einen in die-

5 Fitch 2023, 569.

6 Fitch 2024, XXII.



Beispiel 2: Jacob Obrecht, *Missa Scaramella*, Sanctus, Mensur 69–76 (Rekonstruktion von Fabrice Fitch)[8]

ser speziellen Form ungewöhnlichen ›clash‹ zwischen natürlicher und erhöhter Tonstufe in Bassus und Cantus nicht abwegig erscheinen lässt. In Fitchs Rekonstruktion wird die aktuelle Forschung zum Themenkreis *musica ficta* gleichsam mit verhandelt.[7] Der Verzicht auf redaktionelle Akzidentien über den Noten entspringt dem Wunsch, der ursprünglichen Notation so nahe wie möglich zu kommen.

Der deutsche Sprachgebrauch, in dem Fitchs kühne und aufwändige Unternehmung als »Rekonstruktionsversuch« wohl angemessen beschrieben wäre, scheint skeptischer als der englische: In der Vokabel »restoration« schwingt ungleich deutlicher der tatsächliche Glaube an die mögliche Wiederherstellung eines verlorenen Zusammenhangs, in kompositorischen Bezügen die Suche nach den einzigen ›richtigen Noten‹ mit. Man mag diese Vorstellung mit dem Hinweis relativieren, dass in einem stark von Kombinatorik geprägten Kontrapunkt nicht selten *mehrere* gleichwertige Lösungen offenstehen; die Re-Konstruktion möglicher Verfahrensweisen und ihrer Konsequenzen schließt ebenso ein Spiel mit Kontingenzen ein. Je intensiver man sich gleichwohl in den von Fitch ausgearbeiteten Satz versenkt, umso mehr kann man den Eindruck gewinnen, dass er an vielen Stellen dem verlorenen Ganzen sehr nahegekommen ist. ›Fitchs *Missa Scaramella*‹ ist ein originelles, klangtechnisch abwechslungsreiches Werk mit einigen Passagen von erlesener kompositorischer Raffinesse; die nun veröffentlichte Fassung bietet kongeniale und elegante Lösungen für eigentlich alle problematischen Abschnitte. Die Partitur ist editorisch makellos und optisch großzügig in den originalen Notenwerten (einschließlich der kolorierten Werte) gesetzt. Es sei bemerkt, dass sich das vorliegende Material vorzüglich für eine didaktische Aufarbeitung eignet, obgleich die Beschäftigung mit den speziellen kompositorischen ›Schrullen‹ und Extravaganzen der Generation um Jacob Obrecht und Alexander Agricola, auf die sich Fitch vielfach auch in seinem eigenen kompositorischen Werk bezieht, für den modernen Kontrapunktunterricht vermutlich nur eine Randerscheinung bedeutet.

7 Zum Problemfeld siehe ausführlich Urquhart 2021. 8 Fitch 2024, 36 f.

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Markus Roth

© 2025 Markus Roth (markus.roth@folkwang-uni.de)

Folkwang Universität der Künste [Folkwang University of the Arts]

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