

## Why is Music Declining ? Early Production is the Root of all Evils

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*Abstract.* — There are many signs that the quality of composition for mainstream music has been declining in the last decades, as compared to music made in the 60s to 90s. These signs range from observation of music critics to studies of the music signals, aiming, e.g. at measuring music complexity.

In this paper we argue that the main reason for the decline of music quality stems from a change in the music composition paradigm, which has progressively shifted from a serial composition/production scheme to a parallel production/composition one. This shift has been largely supported if not promoted by the nature of the now ubiquitous DAWs (Digital Audio Workstations).

As a consequence, the very act of music composition has been severely hampered by the complexity of editing (many) audio tracks, as opposed to the simplicity of editing MIDI<sup>1</sup>.

First, we review various signs that aim at measuring the decline in music composition quality, including by looking at the number of covers of tops songs. Then, we stress a correlation between the availability and development of audio features in DAWs. By analogy with a famous saying of Donald Knuth, we propose the hypothesis that early production, i.e. the consideration of instrumentation, sound effects, etc. early on in the composition stage affects negatively the quality of composition by making backtracks almost impossible as the creation process progresses.

*Keywords:* music, music production, music composition, decline, creation process

*Résumé.* — De nombreux signes indiquent que la qualité de la composition de la musique grand public a diminué au cours des dernières décennies, par rapport à la musique produite dans les années 60 à 90. Ces signes vont de l'observation des critiques musicaux aux études des signaux musicaux, visant par exemple à mesurer la complexité de la musique.

Dans cet article, nous soutenons que la principale raison du déclin de la qualité de la musique provient d'un changement dans le paradigme de la composition musicale, qui est progressivement passé d'un schéma de composition/production en série à un schéma de production/composition en parallèle. Ce changement a été largement soutenu, voire encouragé, par la nature des stations de travail audio numériques (DAW), désormais omniprésentes.

En conséquence, l'acte même de composition musicale a été sévèrement entravé par la complexité de l'édition de (nombreuses) pistes audio, par opposition à la simplicité de l'édition MIDI. Tout d'abord, nous passons en revue divers signes visant à mesurer le déclin de la qualité de la composition musicale, notamment en examinant le nombre de reprises de chansons phares. Ensuite, nous soulignons la corrélation entre la disponibilité et le développement des fonctions audio dans les logiciels de création audio. Par analogie avec une célèbre phrase de Donald Knuth, nous proposons l'hypothèse que la production précoce, c'est-à-dire la prise en compte de l'instrumentation, des effets sonores, etc. dès le début de la phase de composition, affecte négativement la qualité de la composition en rendant les retours en arrière presque impossibles au fur et à mesure que le processus de création progresse.

*Mots-clés :* musique, production musicale, composition musicale, déclin, processus de création.

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<sup>1</sup> The MIDI norm, established in 1982, enables electronic instruments to communicate with computers at the gesture level (i.e. which notes are played, when) as opposed to actual sounds. As opposed to audio, MIDI can be considered a form of symbolic representation.

## **Observing The Decline**

Unlike most arts, music, in particular songwriting, is inherently bi-dimensional. It is common practice to differentiate between a song in its essence (whose copyright belongs usually to publishing labels) from its audio realization (which belong usually to recording labels). The song is usually represented by a score or leadsheet consisting in the melody, chords, rhythm and possibly lyrics. The recording of the song can be seen as a specific interpretation of the song.

For instance, Paul McCartney says he composed the song Yesterday in his head when he woke up: that was the song in its essence, that he probably played on a guitar. He then recorded it, with a quartet accompaniment, and it became the recording we know. Similarly, Ennio Morricone used to compose mostly with a pen in his studio, without the help of any instrument. For instance Once Upon a Time in the West was composed by trying to fit in as many fourth intervals as possible in a dramatic melody. He then recorded it with an orchestra adding all sorts of sounds and extra musical elements (the recording we know) (Morricone, 2015).

In this paper we concentrate on songs from a songwriting (or publishing) viewpoint, as they capture its essential musical components as given by a melody, harmony and basic rhythms.

The idea that contemporary mainstream songwriting is declining has been observed both by music critics and by researchers. Rick Beatto, author of a popular video channel about music, and known for his professional yet accessible videos about technical aspects of music, has published videos where he comments on the fact that music has become very boring (Beatto, 2022). His explanations for this phenomenon are based on the increased easiness of creation and consumption (Beatto, 2024).

In the same vain, Etienne Guéreau, a recognized jazz pianist with a popular music channel has focused on the music of James Bond across the years, and shows without ambiguity a decline in many dimensions such as harmonic richness and audaciousness (Guereau, 2023). His study is interesting because all these songs share a common imposed (James Bond) theme thereby limiting genre variability.

Mainstream newspapers also report periodically about the decline of music quality (TheArtOfMusic, 2022). Some of them are based on actual scientific studies. For instance, the phenomenon is addressed by researchers in social dynamics (Percino et al., 2014) with an explanation based on a so-called quest for simplicity. However, such a quest does not withstand scrutiny as the evolution of music has not always been towards more simplicity. In the field of Music Information Retrieval (MIR), the same observation is made again (Serrà et al. 2012) by measuring concrete audio features of music during a period of time, and observing a general decline of the complexity of the traditional dimensions of songwriting. Similarly, (Mauch et al., 2015; Hamilton and Pearce, 2024) observes trends in the evaluation of features of popular music and notices several clear bumps in complexity all focused in the period 1960 to 1990 (approximately). Lastly, it has been claimed that the economy of streaming (as opposed to

physical albums) has had repercussions on the complexity of songs (TheEconomistGroupLimited, 2019; Oliver, 2022).

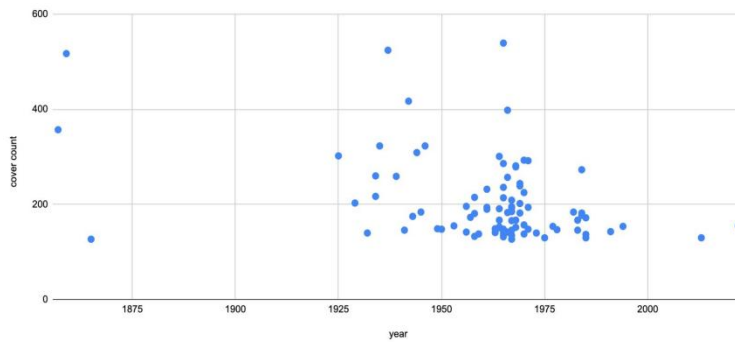
While streaming may indeed significantly impact song structures, it does not explain the decline, which started way before streaming was commonplace. Furthermore, the reasons proposed do not explain the decline from the viewpoint of creators: one can reasonably conceive that music creators always aim at creating the best songs possible, whatever the distribution channel will be. How come the compositions are less and less complex, and are perceived as less interesting?

### **Covers as a sign of Music Composition Quality**

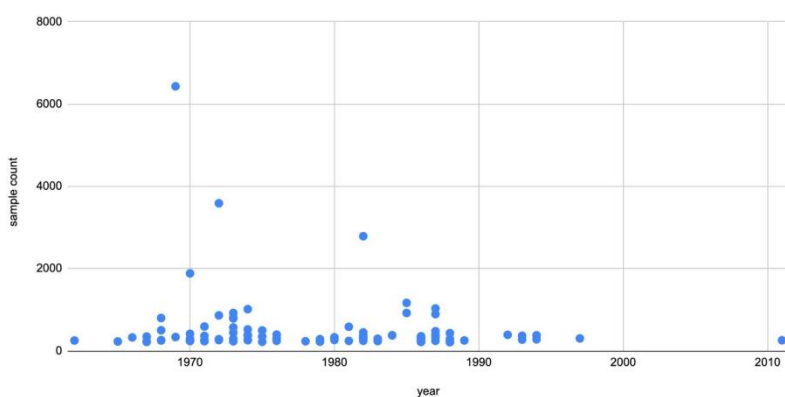
Focusing on the quality of compositions is difficult because most of these studies are based on audio recordings (with the notable exception of (Hamilton and Pearce, 2024)). A way to focus at songwriting quality is to look at cover songs. Cover songs can be seen as an indicators of the quality of music composition: to make a cover, the song has to be strong, liable to differences in interpretation, style, arrangement, etc. (Cusic, 2005). The study described in (Ortega, 2021) shows that there is a general decline in the production of cover songs after the 50s.

However, we can focus more precisely on the quantity of covers from the 60s to now by looking at the most covered songs. Intuitively, it seems that songs are less and less covered as compared to the 60s. For instance, the song Yesterday by the Beatles is the most covered song in history (539 covers, according to [www.whosampled.com](http://www.whosampled.com)). By comparison, the mega hit Cruel Summer by Taylor Swift (2019) has only 8 covers (same source), and this difference cannot be explained solely by age.

We considered the top 100 most covered songs using the site [www.whosampled.com](http://www.whosampled.com) as well as the top 100 most sampled songs. The plots Figure 1 and Figure 2 show clearly a large bump around the years 1960 to 1990. Of course this data is not a proof of the decline of quality, but it shows that songs composed in this period have been much more covered than songs composed afterwards.



### The Evolution of DAWs and the Encouragement for Early Production



The main hypothesis of this paper is that there is a relation between decline in composition quality and the apparition of audio features in DAWs, which started precisely in the 90s, when song writing quality started to decline.

The evolution of audio editing features in Digital Audio Workstations (DAWs) reflects a remarkable journey from primitive beginnings to sophisticated tools that have revolutionized music production.

The concept of a DAW began in the late 1970s with Soundstream's Digital Editing System, which laid the groundwork for digital audio recording by using computers for editing purposes. However, it was not until the 1980s that personal computers such as the Apple II, Commodore Amiga, and Atari ST gained the processing power necessary to handle digital audio editing, leading to the creation of more sophisticated software.

Steinberg's release of Pro-16 in 1985 for the Commodore 64, followed by Cubase for the Atari ST in 1989, marked significant milestones. Cubase introduced MIDI sequencing, which allowed for more intricate and detailed music production. The 1989 release of Digidesign's Sound Tools, which later evolved into Pro Tools, was another pivotal moment, introducing non-destructive editing—a major leap forward from the physical splicing of analog tape.

Throughout the 1990s, DAWs continued to evolve with increasing track counts and the introduction of plugins. Steinberg's Cubase VST in 1996, for instance, enabled the integration of virtual instruments and effects, revolutionizing in-the-box music production. This era also saw the rise of Logic by Emagic (later acquired by Apple), which became known for its powerful sequencing and audio editing capabilities.

Today, DAWs like Pro Tools, Logic Pro, Cubase, and Ableton Live continue to dominate the market, offering advanced features such as high-resolution audio editing, sophisticated MIDI capabilities, extensive plugin support, and seamless integration with other digital tools. The evolution of DAWs has not only enhanced the capabilities of professional studios but also empowered home producers and musicians to create high-quality music independently.

The impact of this revolution on the music industry has been huge and is highly acknowledged. Notably, the sound quality of mainstream music, as well as its complexity in terms of production has sky rocketted. Departing from the 4 tracks of early Beatles albums such as *Sergeant Pepper*, current mainstream music titles are mixed from a hundred tracks or more, mostly audio.

### **Why Editing Audio Hampers Composition**

However, this emphasis on audio, coupled with the increasing ease with which users can record and edit audio has also an unfortunate consequence. In fact we argue here that audio production is the root of the decline in music quality.

Indeed, premature production is highly encouraged by virtually all DAWs. Most of the time spent in these DAWs is for audio editing. This is on one hand understandable, because there is a huge gap in audio quality between a MIDI-based demo and a fully mastered music project. Also the satisfaction of being able to easily produce a good-sounding demo is probably playing a great role in this shift, as the process of audio recording and editing can be highly enjoyable, possibly creating flow states (Van Dyk, 2024).

An interesting example is given by the online course of hit maker Ryan Tedder (Tedder, 2020). In this 30 day course, Tedder shows step by step how he composes and produces a song from scratch. For the first song of the course, the first action of Tedder is to record an audio track of a guitar accompaniment, playing on a simple chord progression. The next steps are all dedicated to the editing of this audio guitar: cropping, moving audio segments around to better match the beat, then adding a few audio effects like compression and others to make it sound good. Indeed, since the whole song is based on the guitar track, it is claimed, rightfully, that that track should be flawless. The next steps are all about adding more tracks to the guitar one, including voice, all audio.

What is striking in this example is that as the process evolves from the blank page to the finished song, it becomes clearer and clearer that all the decisions made in the beginning become exponentially harder to reconsider. Changing for instance the first guitar chord (from a D major, say to a B min7) is almost impossible, once many audio tracks and editing have been done, or at least at a cognitive cost which becomes prohibitive.

### **Analogy with Writing**

It is interesting here to compare the situation with writing. Imagine an author, say, Charles Dickens, writing his novel, "*A Tale of Two Cities*" (Dickens, 2012). However, instead of writing it with a pen (as he probably did) or even an ordinary text editor, he would write it with a typesetting system. With such a system, Dickens would have spent quite a considerable time

dealing with carriage returns, justification, character and line spacing and the many issues that typesetters have to worry about when they want to print a text properly. The beginning could look like Figure 1.

Then, for some reason, Dickens, after having written the first volume, and having reread his text would find a better starting phrase: “It was the best of times, it was the worst of times” instead of the original “It was the best and it was the worst of times”. After implementing the

It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of Light, it was the season of Darkness, it was the spring of hope, it was the winter of despair, we had everything before us, we had nothing before us, we were all going direct to Heaven, we were all going direct the other way—in short, the period was so far like the present period, that some of its noisiest authorities insisted on its being received, for good or for evil, in the superlative degree of comparison only.

change in the document, the result would look like Figure 2:

The number of typesetting changes to be done would be clearly overwhelming. Just for this paragraph only, changes would have to be done for all the lines as can be seen from these two versions of the text. The cognitive cost would be so high that the very idea of changing a decision made a long time ago with so many consequences would not even come to mind.

The situation with music creation in DAWs today is very similar to this nightmare: musicians make songs using a typesetter, not a composition tool.

### **Premature Production and Early Optimization**

The situation described above has been a subject of study in software engineering. Donald Knuth, a central figure in computer science and software analysis and programming, has introduced the concept of early optimization, and the idea that early or premature optimization was the root of all evil in a seminal paper (Knuth, 1874):

Programmers waste enormous amounts of time thinking about, or worrying about, the speed of noncritical parts of their programs, and these attempts at efficiency actually have a strong negative impact when debugging and maintenance are considered. We should forget about small efficiencies, say about 97% of the time: premature optimization is the root of all evil. Yet we should not pass up our opportunities in that critical 3%.

In this paper, Knuth argues essentially that structuring a code to make it clear and as abstract as possible is far more important than writing directly efficient code that is less readable and much harder to modify.

Similarly, Leslie Lamport, another prominent figure of computer science, and inventor of Latex (between many other things) insists in (Lamport, 1986) on the importance of separating content from form when writing a document:

To most readers, the printed page conveys a greater sense of authority than the typewritten manuscript. It must be important to be worth printing. With LaTeX, typesetting is almost as easy as typing. There is no publisher or journal editor standing between the author and the reader. LaTeX will not reject ill-formed ideas or correct bad grammar. With the power to print your own document comes the responsibility to make it worth printing.

It is striking how these observations can be applied almost directly to music creation, with the simple analogy: ideas = composition, realization = production.

The analogy between music creation and software engineering can be enriched by the history of object-oriented programming. The beginning of this development can be traced back to Alan Kay and the Smalltalk language, invented at Xerox Parc in California (Kay, 1993). The underlying idea was to build a language easily accessible to all, including children, that would favor learning by doing over traditional teaching methods. The motto was "Program first, think later", inspired by the culture of Western movies. The tremendous success of this approach (now object-oriented programming is a feature of almost all programming languages) may have had also consequences on the culture of design. While designing by doing can be advocated in some situations, it is not the only way to think creatively.

### **Preliminary Conclusion**

The main hypothesis we propose here is that the correlation between the decline of composition quality in mainstream music on one hand and the introduction and systematization of audio editing features in mainstream DAWs in the 90s are not only correlations. Of course it is difficult to prove a causal relation between the two but we give here a few examples that seem sufficiently striking to us to be a base for reflecting about the subject.

### **Relations to the History of Music Thinking**

The distinction between composition and production in music creation is not new, and it is interesting to trace it back to its roots in Western thinking. Plato, in his theory of forms, posits that the true essence of any object lies in its ideal form, which is only imperfectly represented in the physical world. In this context, composition can be seen as the realm of ideal forms — the pure, abstract conception of melody, harmony, and lyrics that exists in the composer's mind. Production, on the other hand, is the manifestation of these ideal forms in the sensory world, akin to the way an artist translates a mental image into a physical painting. This distinction emphasizes the metaphysical separation between the conceptual and the tangible, suggesting that

while composition deals with the realm of ideas, production engages with the physical realization of these ideas.

Kant's distinction between the "thing-in-itself" (noumenon) and the "phenomenon" offers another angle to understand this dichotomy. Composition can be viewed as the noumenon, the essence of musical creation that exists independently of sensory experience. It is the underlying structure and intent behind the music, which can be appreciated intellectually. Production, however, is the phenomenon — the music as it is experienced by the senses, shaped by the nuances of instrumentation, arrangement, and mixing. Kant's philosophy underscores the idea that while the composition (noumenon) provides the foundational blueprint of a piece, it is through production (phenomenon) that the music attains its full experiential and aesthetic value. This perspective highlights the interplay between the conceptual purity of composition and the sensory richness of production, illustrating how both elements are essential to the complete realization of a musical work.

More recently, Theodor Adorno, a prominent figure in the Frankfurt School, carried a critical view of the culture industry and its impact on art, including music. Adorno believed that in the age of mass production and commodification, the true essence of art, which he associated with genuine composition, often gets overshadowed by the processes of production and distribution aimed at mass consumption. For Adorno, composition represents the intellectual and autonomous aspect of music, where the artist's true creative spirit is manifested. Production, on the other hand, might be seen as a process that can dilute this essence, conforming to the demands of the market and the preferences of the masses. Adorno would argue that the production process risks transforming music into a product designed for passive consumption rather than active, critical engagement. This perspective underscores a tension between the purity of artistic intent in composition and the potentially commodifying influence of production.

Pierre Schaeffer, known for his pioneering work in *musique concrète*, introduced concepts that blur the lines between composition and production. Schaeffer's approach involved the manipulation of recorded sounds, suggesting that the act of composition itself could involve purely production techniques. From Schaeffer's perspective, the traditional distinction between composing a melody and arranging it with instruments is less clear-cut. In his view, the use of technology in capturing, modifying, and assembling sounds becomes an integral part of the creative process. Schaeffer's philosophy challenges the conventional dichotomy by emphasizing that production techniques can themselves be compositional tools. This idea expands the notion of composition to include the creative possibilities inherent in the production process, suggesting that the two aspects are interdependent and mutually enriching.

These philosophical stances show that there has been a shift in the conceptualization of music since Schaeffer. Early production as described here can be seen as a consequence of *musique concrète* for mainstream songwriting.

## **Conclusion**

We propose the idea that the decline in quality in contemporary songwriting is not an effect of chance, nor can be totally explained by considerations of the social dynamics of cultural markets, or the various kinds of pressure exerted by streaming platforms on the nature of songs.



We hypothesize that it is deeply rooted in the technology used routinely to create music, which intentionally mixes compositional and production tools. As a consequence, it is clear that early production seriously limits the possibility to think musically as the modification of decisions taken early on in the process become more and more costly.

Strangely enough, the current applications of AI in music creation are also based on a production-oriented vision of music. Several approaches have been proposed to generate fully-fledged music titles from text prompts (Udio or Suno as of 2024), sometimes with spectacular results. However, it is still unclear how these tools can be used for genuine songwriting invention, as, precisely, the composition level is absent from the whole chain. Generative AI is today able to generate complete and complex audio signals, without any notion of what they represent.

We argue that in order to build more useful AI assistant to music creation we need to build systems able to think both at the composition level and the production one, and this is still not realized today. Most importantly, we should not forget that our brain is the best editor for crafting ideas, concepts and music, precisely because unlike any tool, the cost of revising one's decisions is almost zero.

#### *Acknowledgements*

We thank Leslie Lamport for providing the exact reference of his wonderful citation ("With the power to print your own document comes the responsibility to make it worth printing").

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