



## ESSAY

# Mozart and/as AI

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After its launch on 30 November 2022 ChatGPT (or Chat Generative Pre-Trained Transformer) quickly became the fastest-growing app in history, gaining one hundred million users in just two months. Developed by the US-based artificial-intelligence firm OpenAI, ChatGPT is a free, text-based AI system designed to interact with the user in a conversational way. Capable of answering complex questions with sophistication and of conversing in a breezy and impressively human style, ChatGPT can also generate outputs in a seemingly endless variety of formats, from professional memos to Bob Dylan lyrics, HTML code to screenplays and five-alarm chilli recipes to five-paragraph essays. Its remarkable capability relative to earlier chatbots gave rise to both astonishment and concern in the tech sector. On 22 March 2023 a group of more than one thousand scientists and entrepreneurs published an open letter calling for a six-month moratorium on further human-competitive AI development – a moratorium that was not observed.<sup>1</sup>

Perhaps like other readers of this journal, I signed up for ChatGPT in 2023 and have since used it for both diversion and assistance with some of the more mundane tasks my job requires. But it wasn't until December of that year that I realized how pervasive – and pernicious – ChatGPT had become. While marking final projects for my Introduction to Western Music course, I came across the submission shown in [Figure 1](#). Without even reading the annotations, I could smell a rat. Robert Levin, fine pianist and scholar though he is, never wrote a book entitled *Mozart's Musical Style*. And the monograph *Mozart and the Masons* was written by H. C. Robbins Landon, not William J. Palmer; it was published in 1982 by Thames and Hudson, not 1997 by Schirmer. On closer inspection, I noticed that the first two annotations were structurally identical. Each one contains four sentences: the first describes the book's contents in general, the second begins with 'The author' and goes into greater detail, the third identifies the book's appeal, and the fourth begins with 'Anyone' and refers to the book's ideal audience. It didn't take long to figure out that this was machine-generated prose, pitch-perfect in terms of genre, grammar and syntax, but peppered with plausible falsehoods (known as 'hallucinations') and stilted verbiage.<sup>2</sup> The worst part: the bibliography wasn't even in alphabetical order!

Let's call that Exhibit A. Now consider Exhibit B, a minuet in C major (see [Example 1](#)). This is not a very good minuet. The melody is bland, and it shifts unpredictably from one voice to two. It also lacks smoothness: the F# in bars 5 and 13, for instance, does not resolve up to G, but rather skips down a major third to D. In the left hand, the semiquaver pattern established in bar 1 is

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<sup>1</sup> See <https://futureoflife.org/open-letter/pause-giant-ai-experiments> (14 March 2024) and <https://www.axios.com/2023/09/22/ai-letter-six-month-pause> (14 March 2024).

<sup>2</sup> On hallucinations see [www.nytimes.com/2023/11/06/technology/chatbots-hallucination-rates.html](https://www.nytimes.com/2023/11/06/technology/chatbots-hallucination-rates.html) (15 March 2024).

## Music 5



1 December 2023

**Mozart Annotated Bibliography**

Solomon, Maynard. *Mozart: A Life*. New York: HarperCollins, 1995.

This biography gives a thorough overview of Mozart's life, covering his early years, training as a musician, and professional career. The author also delves into the disputes pertaining to Mozart's life, including his father-son connection and his untimely demise. Both academics and general readers will find the book's writing style to be readable and intriguing. Anyone who wants to learn more about Mozart's life and legacy can consult Solomon's work.

Levin, Robert. *Mozart's Musical Style*. New York: Oxford University Press, 1996.

This book examines Mozart's musical style in detail, including his use of melody, harmony, and form. The author also explores Mozart's music's historical setting and its influence on succeeding composers. The book is thoroughly researched and offers a thorough grasp of Mozart's music. Anyone interested in studying Mozart's music in depth should look into Levin's work.

Palmer, William J. *Mozart and the Masons: New Light on the Lodge "Crowned Hope"*. New York: Schirmer Books, 1997.

**Figure 1.** A suspicious annotated bibliography (excerpt)

quickly dropped; however, this accompaniment comes back willy-nilly in bars 22 and 30. No one would disagree that this is a minuet – the figurations are idiomatic, the harmony and syntax correct – but it is undeniably an awkward one, both to hear and to play.

As the reader might have guessed, this minuet was randomly generated using the well-known *Musikalisches Würfelspiel* (musical dice game) spuriously attributed to Mozart and published under his name in the early 1790s (see [Figure 2](#)). The gameplay involves rolling two dice a total of sixteen times and matching each roll with one of the 176 bars of music in the 'Table de Musique'. Each numbered bar must be coordinated with the 'Table de Chiffres' to ensure that the musical

The image displays a musical score for a minuet in C major, consisting of five systems of two staves each (treble and bass clef). The key signature has one sharp (F#), and the time signature is 3/8. The score is divided into measures, with measure numbers 8, 16, 23, and 28 indicated at the start of their respective systems. The notation includes various musical symbols such as notes, rests, accidentals, and dynamic markings like 'z' (pizzicato) and '2' (second ending). The piece concludes with a double bar line at the end of the fifth system.

**Example 1.** A minuet in C major

fragment corresponds with the correct part of the phrase. For example, for the opening bar ('A' in the upper grid), a roll of eleven corresponds to musical fragment 3, a triadic gesture in C major.

What do these two 'artificially' generated examples have in common? First, both are reasonably convincing emulations of specific genres (annotated bibliography and minuet). Second, both adhere not only to large-scale stylistic conventions relating to form, proportions and linguistic register but also to lower-level rules such as those pertaining to grammar, syntax and punctuation. Third, both contain incongruities resulting from the juxtaposition of verbal or musical units that do not belong together (the attribution of Landon's book to Palmer or the resolution of an F# to a D). Fourth, and

2.

ZAHLENTAFEL.  
TABLE de CHIFFRES.

Erster Theil.  
Premiere Partie.

	A	B	C	D	E	F	G	H
2	96	22	141	41	106	122	11	30
3	32	6	128	63	146	46	134	81
4	69	95	158	13	153	55	110	24
5	40	17	113	85	161	2	159	100
6	148	74	163	45	80	97	36	107
7	104	157	27	167	154	68	118	91
8	152	60	171	53	99	133	21	127
9	119	54	114	50	140	86	169	94
10	98	142	42	156	75	129	62	123
11	3	87	165	61	135	47	147	33
12	54	130	10	103	28	37	106	5

Zweiter Theil.  
Seconde Partie.

	A	B	C	D	E	F	G	H
2	70	121	26	9	112	49	109	14
3	117	39	126	56	174	18	116	85
4	66	139	15	132	73	58	145	79
5	90	176	7	54	67	160	52	170
6	25	143	64	125	76	136	1	93
7	138	71	150	29	101	162	23	161
8	16	155	47	175	43	168	89	172
9	120	58	45	166	51	115	72	111
10	65	77	19	82	137	38	149	8
11	102	4	31	164	144	59	173	78
12	35	20	108	92	12	124	44	131

Figure 2. Mozart (attrib.), *Musikalisches Würfelspiel* (Bonn: Simrock, 1793)], 2–3

most significantly, both are ‘synthetic’ works, composed entirely of pre-existing material configured in a new way.

The *Musikalisches Würfelspiel* was by no means unique in the eighteenth century. As Roger Moseley has explored, not only were aleatoric games popular, but their mathematical underpinnings were also ‘continuously embedded in pedagogical techniques and devices aimed at aspiring professional musicians as well as amateurs’.<sup>3</sup> Moseley’s wide-ranging analysis of the relationship among algorithmic, compositional and improvisatory approaches to music demonstrates that the mechanical processes of aleatoric games and the free flights of improvisers were not as different as they

<sup>3</sup> Roger Moseley, *Keys to Play: Music as a Ludic Medium from Apollo to Nintendo* (Oakland: University of California Press, 2016), 130.

TABLE de MUSIQUE. 5.

The musical score consists of 48 measures, numbered 1 through 48. The measures are arranged in six systems, each with a treble and bass staff. The music is in 3/4 time. The first system contains measures 1-8, the second 9-16, the third 17-24, the fourth 25-32, the fifth 33-40, and the sixth 41-48. Some measures have first and second endings indicated by '1.' and '2.'.

Figure 2. continued

might seem. As he notes, ‘Performing and improvising musicians constantly negotiate between codified forms of knowledge, whether retrieved from physical media or stored as habit and memory, and the ever-changing exigencies of the present moment’.<sup>4</sup> As Robert Gjerdingen has shown, the stock-in-trade of these musicians were the melodic prototypes and harmonic formulas derived from partimenti (figured and unfigured basses) and solfeggi (melodies paired with unfigured basses), and often collected in *zibaldoni* (customized music notebooks).<sup>5</sup> In this respect, as

<sup>4</sup> Moseley, *Keys to Play*, 142.

<sup>5</sup> Robert Gjerdingen, *Music in the Galant Style* (New York: Oxford University Press, 2007), 10.



Moseley emphasizes, eighteenth-century performers and composers had much in common with the ‘paper machines’ they engineered.<sup>6</sup>

While the flurry of recent studies devoted to schemata, partimenti and solfeggi has illuminated this quasi-mechanical aspect of musical creation, it also exposes underlying philosophical problems that remain largely unexplored. As I will argue here, the galant style’s ‘*Würfelspiel*-like’ nature, its quintessence as a repository of stock progressions, generic prototypes, familiar-sounding melodies and conventionalized idioms, came into conflict with developing notions of authorship, original genius and the musical work. This collision of practices and ideals led musicians and listeners to pose new questions about the status of musical artworks and their creators, questions that resonate with the current moment as we attempt to make sense of the creative output of generative AI. Among the most pressing of these: first, under what conditions is it acceptable to use pre-existing material as the basis for a new artwork? Second, if an artwork contains pre-existing material, to whom does it (legally) belong? Third, what distinguishes the work of one creator from another, or the work of a human from that of a machine?

These questions have particular relevance for Mozart, whose ability to imitate a wide variety of styles and penchant for borrowing others’ ideas have been viewed both as evidence of his genius and as a musicological embarrassment.<sup>7</sup> My aim is to reconsider Mozart’s use of pre-existing music in light of changing eighteenth-century attitudes towards the creative appropriation of musical ideas, whether they be the formulas of the galant style or the work of other composers. By approaching this topic trans-historically – with an eye on the current generation of AI tools – I hope to demonstrate how eighteenth-century debates about the nature of creativity presage, and even elucidate, present-day concerns about artificial intelligence. This essay unfolds in three sections: the first examines Mozart’s tendency to ‘synthesize’ pre-existing musical ideas and the reception of that tendency, the second places Mozart’s approach in the context of eighteenth-century debates about parody and plagiarism, and the third links these issues to the philosophical and legal quandaries posed by generative AI.

### Mozart’s Synthesizing Genius

Drawing on Peter Burkholder’s typology of musical borrowings, Neal Zaslaw has observed that Mozart’s uses of pre-existing music ranged from compositional modelling and pastiche, to medley and quodlibet, to quotation, variation, arrangement and extended paraphrase.<sup>8</sup> While this range of procedures reflects eighteenth-century practice writ large, Mozart’s borrowings have stood out both for their quantity and for his apparently liberal attitude toward the practice. Indeed, some critics have suspected that Mozart’s borrowings are far more numerous than the sources imply. In 1913 Théodor de Wyzewa maintained that ‘the score of *Die Zauberflöte* practically presents us with a “pot-pourri”, calling for the creation of ‘an inventory of those “sources” from which [Mozart] drew the varied materials for his last opera’.<sup>9</sup> Four decades later, A. Hyatt King took up Wyzewa’s call, identifying roughly one hundred possible precursors for the opera’s themes.<sup>10</sup>

<sup>6</sup> Moseley, *Keys to Play*, 124–125. While the *Musikalisches Würfelspiel* is considered spurious, a sketch leaf documents Mozart’s attempts at creating a different ‘minuet machine’; see Neal Zaslaw, ‘Mozart’s Modular Minuet Machine’, in *Essays in Honor of László Somfai on His 70th Birthday: Studies in the Sources and the Interpretation of Music*, ed. László Vikárius and Vera Lampert (Lanham: Scarecrow, 2005), 219–235.

<sup>7</sup> See Neal Zaslaw, ‘Mozart the Borrower’, in *Der junge Mozart, 1756–1780: Philologie–Analyse–Rezeption*, ed. Henning Bey and Johanna Senigl (Kassel: Bärenreiter, 2008), 355–366, especially 365.

<sup>8</sup> See Zaslaw, ‘Mozart the Borrower’, 365, note 4 for sources. The literature on musical borrowing is extensive; see Burkholder’s web-based bibliography *Musical Borrowing and Reworking*, <https://chmtl.indiana.edu/borrowing> (2 April 2024).

<sup>9</sup> Quoted in A. Hyatt King, *Mozart in Retrospect: Studies in Criticism and Bibliography* (London: Oxford University Press, 1955), 141–142.

<sup>10</sup> These references are tabulated in Mark Ferraguto, ‘Musical Topics, Quotations, and References’, in *The Cambridge Companion to “The Magic Flute”*, ed. Jessica Waldoff (Cambridge: Cambridge University Press, 2023), 135–138.

King attributes *The Magic Flute*'s pastiche-like quality to Mozart's astonishing memory and his haste in composing the opera. '*Die Zauberflöte*', he maintains, 'presents a paradox virtually without parallel in music history – an opera universally admitted to be a work of genius, and seemingly one of striking originality, which is in part a synthesis of material drawn from a variety of sources'.<sup>11</sup> It seems likely that some, perhaps many, of King's alleged references result from 'family resemblance' rather than actual reminiscence.<sup>12</sup> None the less, King's image of the overworked Mozart grasping for all available scraps of musical material and stitching them into a convincing whole does not seem entirely inappropriate; it recalls descriptions of the young Mozart's 'uncanny, perhaps unconscious, ability to synthesize ideas and to make music' at the keyboard, a form of 'automatic genius' that, as Annette Richards has explored, both captivated and unsettled listeners.<sup>13</sup>

From this perspective, Mozart's prolific use of borrowed material went hand in hand with the quasi-automated processes upon which he relied as an improviser. While scholars such as King have viewed this 'synthetic' approach to composition in a positive light, others have seen it as evidence of Mozart's laziness or indifference. In a televised segment for *Public Broadcast Laboratory* in 1968, the pianist Glenn Gould famously took the mature Mozart to task for his tendency to curate existing musical ideas instead of inventing new ones:

Well, I think that in many respects his decline can be blamed on what should have been his greatest natural asset, a fantastic facility for improvisation. All composers of Mozart's day had that facility to some degree. They had to have it if they were to fulfil the unrealistic production quotas expected of eighteenth-century Kapellmeisters. And a lot of them, like Mozart, were not easily persuaded of the value of an editor's blue pencil [plays Mozart's Fantasia in C major, K394, bars 23–28]. As Victor Borge once remarked when he pretended to be catching Bach out at a similar game, I bet he had his mind on something else when he wrote that one [plays bars 28–30]. . . . And as Mozart grew older, and abused this facility for improvising, his best ideas were necessarily aborted by those clichés. Because in fact a computer could produce them really, with a minimum of programming. And so could a five-year-old after a few weeks of theory lessons. So one begins to wonder whether, in circumstances like that, the composer is in fact really necessary.<sup>14</sup>

For Gould, the issue is not so much Mozart's reliance on others' works but rather his tendency to fall back on 'cliché'. Indeed, although the term 'schema' in its current sense was not yet in use, Gould clearly had this concept in mind when criticizing the C major Fantasia. The first passage he plays is an elaborated Monte, an ascending chromatic sequence that had been raising listeners' heart rates since the age of Vivaldi and Corelli (see [Figure 3](#)).

Gould's larger point, a damning one to be sure, is that Mozart's computer-like ability to store, retrieve and output large quantities of musical data served him well as an improviser but poorly as a composer. Later in the segment, Gould maintains that Mozart in his late works tries to 'cover up the conflict' between his roles as an 'inventor' and a 'museum curator', joking that 'all those wispy little ditties of the *style galant*' had 'taken their toll on him', ultimately masking the 'humanity' of his work. He wishes, at the very least, that Mozart would 'feel guilty' for his unabashed reliance on pre-existing material.

In fact, there is evidence that Mozart's astonishing recall did cause him some anxiety, if not outright guilt. In a letter of February 1778 Mozart told his father that

<sup>11</sup> King, *Mozart in Retrospect*, 158.

<sup>12</sup> Jan LaRue, 'Significant and Coincidental Resemblance between Classical Themes', *Journal of the American Musicological Society* 14/2 (1961), 224–234.

<sup>13</sup> Annette Richards, 'Mozart and the Mechanical Sublime', *Music & Letters* 80/3 (1999), 382.

<sup>14</sup> Glenn Gould, 'How Mozart Became A Bad Composer', *Public Broadcast Laboratory* (National Educational Television, 28 April 1968) [www.youtube.com/watch?v=1wLMdi8R4qg](https://www.youtube.com/watch?v=1wLMdi8R4qg) (2 April 2024), 11'58"–13'02", 13'57"–14'19".

**Figure 3.** Mozart, Prelude (Fantasia) in C major, K394 (1782), bars 22–29 (*Neue Mozart Ausgabe*, series 9, group 27, volume 2, ed. Wolfgang Plath (Kassel: Bärenreiter, 1982; digital version, Internationale Stiftung Mozarteum, 2006)), showing elaborated Monte schema

ich habe auch zu einer übung, die *aria*, *non sò d'onde viene etc.*: die so schön vom *Bach componirt* ist, gemacht, aus der ursach, weil ich die vom *Bach* so gut kenne, weil sie mir so gefällt, und immer in ohren ist; den ich hab versuchen wollen, ob ich nicht ungeacht diesen allen im stande bin, eine *Aria* zu machen, die derselben vom *Bach* gar nicht gleicht? – – sie sieht ihr auch gar nicht, gar nicht gleich.

For practice I have also set to music the aria ‘Non so d’onde viene’ etc., which has been so beautifully composed by [J. C.] Bach. Just because I know Bach’s setting so well and like it so much, and



because it is always ringing in my ears, I wished to try and see whether in spite of all this I could not write an aria totally unlike his. And, indeed, mine does not resemble his in the very least.<sup>15</sup>

In this case, Mozart sought to break free of his model, using it as a source of inspiration but attempting to distance himself from it as much as possible. Zaslaw refers to this practice as ‘negative modeling’, and it can be viewed as one strategy for coping with the anxiety of influence, a feeling that Mozart, precisely because of his remarkable memory, may have felt more acutely than his contemporaries.<sup>16</sup>

### Fair Use

In many ways, then, Mozart’s reliance on pre-existing material (whether borrowed melodies or galant formulas) represents an extreme – if also especially well-documented – example of eighteenth-century practice. Indeed, the conflict between workaday craftsman and original genius in Mozart’s reception is emblematic of a tension that characterizes the period in general, a period in which the long-cherished method of invention through the imitation of models increasingly came into conflict with music’s status as a commodity. Johann Mattheson identified this problem as early as 1739 in his treatise *Der vollkommene Capellmeister*. In describing the *locus exemplorum* – the rhetorical strategy of invention through imitation – he sought to distinguish acceptable from unacceptable forms of creative appropriation:

Der *locus exemplorum* könnte wol in diesem Fall auf eine Nachahmung andrer Componisten gedeutet werden, wenn nur feine Muster dazu erwehlet, und die Erfindungen bloß imitiret, nicht aber nachgeschrieben und entwendet würden. . . Entleihen ist eine erlaubte Sache; man muß aber das Entlehnte mit Zinsen erstatten, d[as] i[st] man muß die Nachahmungen so einrichten und ausarbeiten, daß sie ein schöneres und besseres Ansehen gewinnen, als die Sätze, aus welchen sie entlehnet sind.

The *locus exemplorum* could mean here the imitation of other composers, if only fine models are chosen and the inventions were simply imitated, not however copied and stolen. . . Borrowing is permissible; but one must return the thing borrowed with interest, i. e. one must so construct and develop imitations that they are prettier and better than the pieces from which they are derived.<sup>17</sup>

Mattheson’s economic metaphor implies that musical ideas are a form of currency, and, just like currency, they have value, can be borrowed or stolen, and can accrue interest. Imitating an existing artwork, he suggests, is permissible only in so far as the new work is more ‘valuable’ than the old one. Such an approach is by no means restricted to the creatively impoverished: ‘maassen auch die grössesten Capitalisten wol Gelder aufzunehmen pflegen, wenn sie ihre besondere Vortheile oder Bequemlichkeit dabey ersehen’ (even the greatest capitalists are given to borrowing money, if they see special advantages or benefit in this).<sup>18</sup>

That the imitation of other artists was crucial to mastering one’s craft was, of course, a prevailing attitude in the seventeenth and eighteenth centuries. It can be traced back to Renaissance texts like Vasari’s *Le vite de’ più eccellenti pittori, scultori, e architettori* (Lives of the Most Excellent Painters,

<sup>15</sup> Wolfgang Amadeus Mozart, letter of 28 February 1778, in *Digitale Mozart-Edition [DME] Briefe und Dokumente*, <https://dme.mozarteum.at/DME/briefe/> (11 September 2024); Emily Anderson, trans. and ed., *The Letters of Mozart & His Family*, three volumes (London: Macmillan, 1938), volume 2, 736.

<sup>16</sup> Zaslaw, ‘Mozart the Borrower’, 357.

<sup>17</sup> Johann Mattheson, *Der vollkommene Capellmeister* (Hamburg: Herold, 1739), 131; Ernest C. Harriss, *Johann Mattheson’s ‘Der vollkommene Capellmeister’: A Revised Translation with Critical Commentary*, two parts (Ann Arbor: UMI, 1981), part 2, 298.

<sup>18</sup> Mattheson, *Der vollkommene Capellmeister*, 132; Harriss, *Johann Mattheson’s ‘Der vollkommene Capellmeister’*, 298.

Sculptors and Architects; 1550). For Vasari, the imitation of nature, of the work of other masters and of one's own work were equally important to an artist's cultivation.<sup>19</sup> In extolling Raphael, Vasari remarks that he 'studied what had been achieved by both the ancient and the modern masters, selected the best qualities from all their works, and by this means . . . enhanced the art of painting'.<sup>20</sup> The eighteenth-century violinist Francesco Trani used similar language in his advice to the young Dittersdorf: 'Suchen Sie . . . bey jedem großen Virtuosen, es sey in der Violine, Singstimme oder andern Instrumenten mit aller Sorgfalt auszuspähen, was seine Eigenthümlichkeiten sind, worin er vorzüglich exzellirt, und dann bestreben Sie sich, die seltenen und ächten Schönheiten, nicht sklavisch, sondern auf eine *liberale* Art nachzuahmen' (Study minutely the individual points of every artist, be he violinist, singer, or instrumental player, and when you have ascertained their various points of excellence, make them your own, not by slavish, but by *free* imitation).<sup>21</sup> In his *Allgemeine Theorie der schönen Künste* Johann Georg Sulzer likewise observed that 'Eben so leicht kann man auf neue Erfindungen kommen, wenn man bey schon vorhandenen Werken einige Hauptumstände wegläßt, oder andre Hauptumstände hinzuthut, oder wenn man mit Beybehaltung des Hauptinhalts und des Geistes der Vortstellung einen andern Stoff wählet' (One can just as easily arrive at new inventions by taking a few principal ingredients away from some pre-existing work, or adding others, or even leaving the basic content of some work alone, but appropriating the spirit of its presentation).<sup>22</sup>

Given the galant style's very nature, the line between imitation and theft could be perilously thin. In 1780 the French civil servant and traveller Jean-Marie Roland reflected on the fact that so many galant arias sounded alike, attempting to distinguish parody from plagiarism:

L'on permet quelquefois, ce me semble, à un compositeur, d'imiter (même *mesure* pour *mesure*) un *air* qui aura eu un succès décidé.

C'est apparemment par cette raison que PES CETTI a donné l'air, *Se del caro mio germano*, semblable au *Pupille amabili*, – *Se voi piangete* . . . de GIOMELLI; & que PAGANELLI (si je ne me trompe) en a fait un si ressemblant à cet autre de PES CETTI: *Mi dona, mi rende – Quell'alma pietosa* . . . Par la même raison, peut-être, CIAMPI aura-t-il fait son air; *Ninfe, se liete – Vive bramate*, qui rappelle si fréquemment, si agréablement en même-temps, l'air, *Se mai perdetete – L'idol che amate* . . . de RINALDO.

Le premier de ces airs ressemble tellement au second, & le troisième au quatrième, qu'il n'est pas possible de deviner lequel a servi de modèle à l'autre, de distinguer l'original de la copie: vous jureriez que ce sont, de part & d'autre, deux frères jumeaux; mais vous n'oseriez assurer quels sont les aînés. Or, de ces deux manières de s'approprier les idées d'autrui, pour-quoi rejette-t-on la première, tandis qu'on applaudit à la seconde?<sup>23</sup>

It seems to me that we sometimes allow a composer to imitate (even bar for bar) an air that has had a decided success.

It is apparently for this reason that PES CETTI presented the air *Se del caro mio germano*, similar to *Pupille amabili – Se voi piangete* . . . by GIOMELLI; & that PAGANELLI (if I am not mistaken) created one so resembling this other one by PES CETTI: *Mi dona, mi rende – Quell'alma pietosa* . . .

<sup>19</sup> Liana De Girolami Cheney, 'Giorgio Vasari's Fine Arts from the *Vite* of 1550: The Splendor of Creativity and Design', *Journal of Literature and Art Studies* 7/2 (2017), 165.

<sup>20</sup> Cited in translation in Cheney, 'Giorgio Vasari's Fine Arts', 166.

<sup>21</sup> Karl Ditters von Dittersdorf, *Karl von Dittersdorfs Lebensbeschreibung: Seinem Sohne in die Feder diktirt* (Leipzig: Breitkopf und Härtel, 1801), 46; *The Autobiography of Karl von Dittersdorf*, trans. A. D. Coleridge (London: Richard Bentley and Son, 1896), 43.

<sup>22</sup> Johann Georg Sulzer, 'Erfindung', *Allgemeine Theorie der Schönen Künste*, two volumes, volume 1 (Leipzig: Weidmann und Reich, 1771), 339; trans. in Nancy Kovaleff Baker and Thomas Christensen, eds, *Aesthetics and the Art of Musical Composition in the German Enlightenment* (Cambridge: Cambridge University Press, 1995), 62.

<sup>23</sup> Jean-Marie Roland de La Platière, *Lettres écrites de Suisse, d'Italie, de Sicile et de Malthe*, six volumes (Amsterdam, 1780), volume 5, 143–145. Translations are mine unless otherwise indicated.

Perhaps for the same reason, CIAMPI will have created his air *Ninfe, se liete – Vive bramate*, which recalls so frequently, and at the same time so agreeably, the air *Se mai perdetes – L'idol che amate* . . . of RINALDO [di Capua].

The first air resembles the second one so much, and the third one the fourth one, that it is not possible to guess which served as the model for the other, to distinguish the original from the copy: you would swear that they are, in both cases, two twin brothers; but you wouldn't dare affirm which are the elder ones. Now, of these two manners of appropriating the ideas of others [plagiarism and parody], why do we reject the first, while we applaud the second?

For Roland, parody, unlike plagiarism, involved the playful reimagining of the original material and, far from indicating a lack of ideas, demonstrated the parodist's 'fertile genius'. As he argues,

*Giomelli* nous en donne une preuve sensible, dans son *air* que je viens de citer. Sans calquer celui de *Rinaldo*, il en a pris bien exactement le début; il quitte ensuite cet air, le reprend & le quitte encore; de sorte que l'on peut dire que s'il a voulu jouer avec, du moins l'a-t-il fait en homme curieux que l'on sentit qu'il pouvoit dire en même-temps; *Son Pittor anch'io*.

Giomelli [*sic*: Ciampi? ] gives us a tangible proof of this, in his air that I have just cited. Without copying Rinaldo's, he took up the beginning exactly; he then leaves this air, takes it up again and leaves it once more; in such a way that one can say that if he wanted to play with it, at least he did so as a curious man, such that we felt that he could say at the same time: *I, too, am a painter* [a phrase attributed to Correggio, standing before a painting by Raphael].<sup>24</sup>

As a teacher, performer and composer, Mozart must have grappled with these issues on a daily basis. To give one example, when he complained to his father that his pupil the Comte de Guînes's daughter could not invent an original melody despite having a fantastic memory, Leopold replied, 'sie hat ein gut Gedächtniß. *eh bien!* lass sie stehlen – oder höflich, *applicieren*' (she has a good memory. *Eh bien!* Let her steal or – to put it more politely – apply what she has learnt).<sup>25</sup> One can perhaps excuse Leopold's flippant attitude here given the pedagogical nature of the exercise and the fact that the 'stolen' melodies were only meant as a stopgap until Mozart's pupil could invent her own ideas. But other cases are more vexing. What, for instance, to make of Mozart's own use of the opening melody from Clementi's Sonata in B flat major Op. 24 No. 2 as the main theme of the overture to *The Magic Flute* (see Figure 4)? Clementi performed this sonata during his piano duel with Mozart in December 1781, a decade before *Flute's* premiere. Is this *imitatio* or theft?

Perhaps the answer is both. As improvisers, Mozart and Clementi were accustomed to the idea of following a prompt, that is, being given a musical idea and developing it after one's own fashion. From Mozart's perspective (whether or not the borrowing was 'conscious'), Clementi did no more than supply the prompt for the overture, which, after all, is written in a different style from that of the sonata movement. In this sense, Mozart was within his rights to 'take the ball and run with it'. And yet, Clementi clearly felt differently about the matter, emphasizing that the melody was his intellectual property in the sonata's revised 1804 edition by appending the remark: 'N. B. La Seconde Sonate a été jouée par l'auteur devant S[a] M[a]j[esté] I[m]periale l'Empereur Joseph II, en 1781; Mozart étant présent' (The second sonata was played by the author in the presence of His Imperial Majesty Emperor Joseph II, Mozart being in attendance).<sup>26</sup> Making no

<sup>24</sup> Roland, *Lettres*, volume 5, 144–145.

<sup>25</sup> Leopold Mozart, letter of 28 May 1778, in *DME Briefe und Dokumente* (10 September 2024); trans. in Anderson, *Letters of Mozart*, volume 2, 800.

<sup>26</sup> First published in Stephen Storace's *Collection of Original Harpsichord Music* (1789), Clementi's Sonata in B flat major was 'corrected by the author' and reissued (with the explanatory note) as the second of his two Op. 41 sonatas (Vienna:

(a) **Allegro con brio**

(b) **Allegro**

**Figure 4.** (a) Main theme of Muzio Clementi, Sonata in B flat major Op. 24 No. 2/i (London: H. Andrews, no date); (b) Main theme of W. A. Mozart, *Die Zauberflöte*, overture (*Neue Mozart Ausgabe*, series 2, group 5, volume 19, ed. Gernot Gruber and Alfred Orel (Kassel: Bärenreiter, 1970; digital version, Internationale Stiftung Mozarteum, 2006))

mention of the piano duel, Clementi goes out of his way to point out that Mozart had heard his sonata, assuring consumers that the celebrated composer of *The Magic Flute* ‘borrowed’ his idea, and not the other way around.

Ironically, Clementi had few qualms about appropriating others’ ideas when it suited him. In 1787 he published *Musical Characteristics*, a set of twelve preludes and six cadenzas for keyboard in the style of Haydn, Kozeluch, Mozart, Sterkel, Vanhal and himself. On the one hand, *Musical Characteristics* pays homage to Clementi’s fellow pianist-composers; on the other hand, it capitalizes on their stylistic quirks and on Clementi’s own ability to mimic them. By including pieces reflecting his own manner, Clementi attempted to put himself on a par with the famous continental

Mollo, 1804). A similar note also prefaces the sonata in Breitkopf and Härtel’s *Oeuvres Completttes de Muzio Clementi*, published later in 1804 (volume 6, 20).

musicians he imitated. Thus imitation was much more than a creative tool; it was also a means of asserting one's membership in a community of like-minded professionals and of negotiating identities within this community. At the same time, it was a way of appealing to specific markets. In a 1778 letter Mozart told his father he was confident his first opera in France would succeed, 'denn ich kann so ziemlich, wie sie wissen, alle art und stýl vom *Compositions* annehmen und nachahmen' (for as you know, I can more or less adopt or imitate any kind and any style of composition).<sup>27</sup> Here Mozart emphasizes that his skill as an imitator would enable him to write music in line with Parisian audience expectations. Leopold concurred: 'ich kenne dich, du kannst alles nach ahmen' (I know your capabilities. You can imitate anything).<sup>28</sup>

Imitation was hence a double-edged sword, indispensable to musicians of all stripes but not without its risks. C. P. E. Bach maintained that studying other keyboardists' playing styles was both necessary and ethically dubious, calling the practice 'eine Art erlaubten Diebstahls' (a kind of tolerated larceny).<sup>29</sup> Mozart did not hesitate to accuse other composers of plagiarism, at least in private; he told his father that Vincenzo Righini was 'ein grosser dieb. – er giebt seine gestohlene sachen aber so mit überfluß wieder öfentlich Preis, und in so ungeheuerer menge, daß es die leute kaum verdauen können' (a monstrous thief [who offers his] stolen goods in such superfluity, in such profusion, that people can hardly digest them).<sup>30</sup> Beethoven was fearful, even paranoid, that other musicians would pilfer his best ideas. However, he modelled many works on those of Mozart, Haydn, Cherubini, Clementi and others, and he even caught himself plagiarizing on one occasion. While looking over one of his sketches, he scribbled down the remark: 'diese ganze Stelle ist gestohlen aus der Mozartschen Sinfonie in c wo das Andante in 6 8tel aus den . . .' (this entire passage is stolen from the Mozart symphony in C where the 6/8 Andante from the [it breaks off]). At the bottom of the page he added 'Beethoven ipse' (Beethoven himself), seemingly indicating that at least the semiquavers in the left hand were his own.<sup>31</sup>

As these examples suggest, music's increasing commodification in the eighteenth century required composers and performers to negotiate, in practice if not in theory, a kind of 'fair-use principle'. Nicholas Mathew has noted that in England from about 1780 onwards 'published music was, notionally at least, to be subject to the same legal rules as printed books, as opposed to the engraving of pictures and maps'.<sup>32</sup> But eighteenth-century copyright laws, which were designed to protect publishers, did not even begin to pronounce on a work's actual musical contents, an area that even our current legal systems struggle to navigate.<sup>33</sup> Musicians were hence compelled to define

<sup>27</sup> Wolfgang Amadeus Mozart, letter of 7 February 1778, in *DME Briefe und Dokumente* (10 September 2024); trans. in Anderson, *Letters of Mozart*, volume 2, 692.

<sup>28</sup> Leopold Mozart, letter of 11 May 1778, in *DME Briefe und Dokumente* (10 September 2024); trans. in Anderson, *Letters of Mozart*, volume 2, 791.

<sup>29</sup> Carl Philipp Emanuel Bach, *Versuch über die wahre Art das Clavier zu spielen*, ed. Tobias Plebuch, three volumes (Los Altos: Packard Humanities Institute, 2011), volume 1, 4; C. P. E. Bach, *Essay on the True Art of Playing Keyboard Instruments*, trans. and ed. William J. Mitchell (New York: Norton, 1949), 28.

<sup>30</sup> Wolfgang Amadeus Mozart, letter of 29 August 1781, in *DME Briefe und Dokumente* (11 September 2024); trans. in Anderson, *Letters of Mozart*, volume 3, 1135.

<sup>31</sup> See Eytan Agmon, "'Aus Mozart gestohlen': Beethoven and *Die Entführung aus dem Serail*", *Music Theory Online* 29/2 (2023), quotation in note 5. The sketch appears in Beethoven's 'Kafka' Miscellany, housed in the British Library (Add MS 29801).

<sup>32</sup> Nicholas Mathew, *The Haydn Economy: Music, Aesthetics, and Commerce in the Late Eighteenth Century* (Chicago: University of Chicago Press, 2022), 135. On early copyright cases see Stephen Rose, 'Plagiarism at the Academy of Ancient Music: A Case Study in Authorship, Style and Judgment', in *Concepts of Creativity in Seventeenth-Century England*, ed. Rebecca Herissone and Alan Howard (Woodbridge: Boydell & Brewer, 2013), 181–198, and Ronald J. Rabin and Steven Zohn, 'Arne, Handel, Walsh, and Music as Intellectual Property: Two Eighteenth-Century Lawsuits', *Journal of the Royal Musical Association* 120/1 (1995), 112–145.

<sup>33</sup> The French *code pénal* of 1810, which prohibited the reproduction of another's work 'in whole or in part', was perhaps the earliest attempt to legislate musical borrowing. See Shaena B. Weitz, 'Plagiarism and the Napoleonic Potpourri', *Music & Letters* 103/2 (2022), 286–287.



and protect their intellectual property by whatever means possible, whether through paratexts like Clementi's inscription on Op. 24 No. 2, the strategic anticipation or withholding of publication<sup>34</sup> or – as a last resort – public accusations that could potentially prove as ruinous for the accuser as for the accused.<sup>35</sup>

That is, fair use in the eighteenth century, in so far as it existed, was socially rather than legally enforced. In the words of the Berlin composer Carl Wessely, writing in 1800, it was for the 'Republic of Composers' to judge if a musician was using 'common goods', transforming another's idea, or stealing it:

Selbst Layen in der Musik müssen die Bemerkung machen, dass es gewisse musikalische Perioden giebt, die man schlechterdings als Gemeingüter ansehen muss, deren Gebrauch jedem frey steht. . . Weniger auffallend, aber eben so wahr ist es, dass bey der äusserst beschränkten Anzahl von Kombinationen der sieben Töne unsrer Scala, die Menge der melodischen Wendungen nicht sehr gross seyn kann. Ist es also Diebstahl, einen Gedanken anzubringen, den schon mehrere vor mir gebraucht haben – nun, so besteht die Republik der Tonkünstler aus einem nicht allzuehrlichen Völkchen. Aber nein, die Künstlerehre der Komponisten steht nicht auf so schwachen Füßen. Es kömmt hier nur darauf an, zu bestimmen, was man mit Recht Plagiat nennen könne, oder nicht.<sup>36</sup>

Even lay people in music have to remark that there are certain musical periods that must simply be viewed as common goods, the use of which is free to everyone . . . It is less striking, but just as true, that given the extremely limited number of combinations of the seven notes of our scale, the number of melodic phrases cannot be very large. So if it is theft to bring up an idea that has already been used by several people before me, then the Republic of Composers consists of a not very honest little group. But no, the composers' artistic honour is not on such a weak footing. The only thing that matters here is determining what can rightly be called plagiarism or not.

And yet, as Wessely observed, these judgments were rarely clear-cut: 'Wie schwer ist es aber nicht, selbst für den Künstler, hier unpartheyisch und gerecht abzuurtheilen! Wie viel schwerer, ja beynahe, wie unmöglich ist es nicht für den blossen Liebhaber, voreilige Urtheile zu vermeiden?' (But how difficult it is, even for the artist, to judge this impartially and fairly! How much more difficult, almost impossible, is it for the mere lover to avoid hasty judgments?).<sup>37</sup> Given the difficulty of detecting plagiarism, especially since two artists may happen upon the same idea by chance, Wessely advocates restraint: 'Man traue daher in den mehrsten Fällen lieber dem Künstlergewissen eben so viel Zartheit zu, als man in der Regel überhaupt seinem Nächsten Gewissenhaftigkeit zutraut; und schmälere nicht leichtsinniger Weise den so schwer zu erlangenden guten Ruf eines Künstlers.' (Therefore in most cases it is better to trust the artist's conscience with just as much delicacy as one generally trusts one's neighbour to be conscientious; and do not carelessly diminish an artist's reputation, which is so difficult to achieve.)<sup>38</sup> Schemata present a unique problem in this regard; as mental constructs, they cannot be construed as 'intellectual property' in the same way as melodies. They are, as Wessely implies,

<sup>34</sup> See, for example, Beethoven's letter of 2 November 1793 to Eleonore von Breuning, in which he describes his intention to 'forestall' rival pianist-composers by publishing his Twelve Variations on 'Se vuol ballare' for Violin and Piano, WoO 40, before its difficulties could be mimicked in print (Emily Anderson, trans. and ed., *The Letters of Beethoven*, three volumes (New York: St Martin's, 1961), volume 1, 14–15).

<sup>35</sup> As Weitz, 'Plagiarism', 276–277, has documented, a more subtle tactic involved French composers' use of the potpourri to expose musical similarities between works.

<sup>36</sup> Carl Wessely, 'Ueber musikalische Plagiate', *Allgemeine musikalische Zeitung* (30 April 1800), columns 542–545.

<sup>37</sup> Wessely, 'Ueber musikalische Plagiate', column 544.

<sup>38</sup> Wessely, 'Ueber musikalische Plagiate', columns 544–545.

‘common goods’. However, the manner in which they are realized, elaborated or juxtaposed might nevertheless be mimicked.<sup>39</sup>

### Liminality

What can these eighteenth-century debates about fair use teach us about the present moment, as we attempt to come to grips with ever more sophisticated AI tools? As the sociologist and media-technology scholar Rich Ling has noted, technological innovations often move through a liminal stage during which different social groups work to interpret and shape the innovation’s trajectory. As he observes, ‘during the liminal phase between an innovation’s development and its widespread diffusion, it is difficult to understand the ultimate trajectory of the technology, as well as its consequences for the existing legitimization superstructure’.<sup>40</sup> Eighteenth-century music represents such a situation, in so far as new technologies of print culture – wide-ranging distribution networks, the introduction of punches to the engraving process (John Walsh, c1700), the refinement of movable type (Johann Gottlob Immanuel Breitkopf, c1750), the invention of lithography (Aloys Senefelder, 1796) and so on – facilitated the dissemination of music in ways that were previously unthinkable. Coupled with these advancements were cultural developments such as the rise of the middle-class consumer, the move away from patronage towards publication and the idea that musical works were objects that could be advertised, sold and collected. Taken together, these changes amounted to a new socio-cultural regime in which long-standing conventions regarding the use of pre-existing music were challenged – without, however, concomitant legal developments to mitigate the new situation in which artists now found themselves.

As with eighteenth-century print technologies, present-day AI tools have given rise to a liminal phase in which originality, authorship and the work are in flux. The rapid growth of generative AI, coupled with a mounting ambiguity about how this technology will be embedded in existing systems and structures, has created a similarly disorienting moment in which the technology’s use and development are proceeding largely independently of existing philosophical or legal paradigms. (The US legal system is already being tested in a multi-billion-dollar lawsuit over the use of millions of *New York Times* articles as training data for ChatGPT and Microsoft Copilot.)

Part of what makes generative AI so fascinating is that its creative approach is rooted in the very same processes upon which eighteenth-century musicians depended. ChatGPT is, after all, designed to continue a prompt, and it does this by stringing together words or word segments from its dataset based on the probability of their use at every step of the process. As Stephen Wolfram explains:

The basic concept of ChatGPT is at some level rather simple. Start from a huge sample of human-created text from the web, books, etc. Then train a neural net to generate text that’s ‘like this’. And in particular, make it able to start from a ‘prompt’ and then continue with text that’s ‘like what it’s been trained with’. . . The actual neural net in ChatGPT is made up of very simple elements – though billions of them. And the basic operation of the neural net is also very simple, consisting essentially of passing input derived from the text it’s generated so far ‘once through its elements’ (without any loops, etc.) for every new word (or part of a word) that it generates.<sup>41</sup>

<sup>39</sup> In this respect, a schema is akin to a chord progression in pop music, which modern US copyright law considers an ‘idea’ (that cannot be copyrighted), as opposed to the ‘realization of an idea’ (that can). See Robert Fink, ‘Blurred Lines, Ur-Lines, and Color Lines’, *Musikology Now* (15 March 2015) <https://musicologynow.org/blurred-lines-ur-lines-and-color-lines> (4 April 2024).

<sup>40</sup> Rich Ling, ‘Nascent, Liminal, and Emerging Technologies’, *Emerging Media* 1/1 (2023), 14.

<sup>41</sup> Stephen Wolfram, ‘What Is ChatGPT Doing . . . and Why Does It Work?’ (14 February 2023) <https://writings.stephenwolfram.com/2023/02/what-is-chatgpt-doing-and-why-does-it-work> (20 March 2024).

Wolfram's point about the lack of loops in ChatGPT's software is significant. Unlike typical algorithmic computation, ChatGPT does not keep recomputing its data until certain conditions are met; rather, it 'chooses' the best option for each case (similarly to auto-complete but with greater sophistication) and then moves onto the next one. Although the use of 'attention heads' allows ChatGPT to 'remember' what it has already said, the flow of data is unidirectional: 'Everything just "feeds forward" through the network'.<sup>42</sup> At the same time, ChatGPT's individual 'choices' are unpredictable by design; depending on its 'temperature' setting, ChatGPT can be more or less 'creative', choosing higher- or lower-probability words. The designers found that for the purposes of essay generation, a temperature of 0.8 strikes a medium between too boring and too original.

While presenting this topic at Cornell University, I used Microsoft's proprietary version of ChatGPT, Copilot, to generate the response below:

[Author:] Compose an aria text about the Cornell Music Department in the style of Papageno from *The Magic Flute*.

[Copilot:] Certainly! Channeling the whimsical and lighthearted spirit of Papageno, here's an aria about the Cornell Music Department:

Oh, what joyous sounds doth fill these halls,  
Where future Mozarts tread with glee.  
Cornell's Music Department stands so proud,  
A beacon of harmony, for all to see!

With flutes and strings, the air is sweet,  
The pianos sing, the drums do beat.  
In every corner, talent blooms.  
In practice rooms, art consumes.

From theory to history, our knowledge grows,  
As the maestro's baton gracefully flows.  
In Ithaca's realm, where the Cayuga lies,  
Music doth soar, up to the skies.

So here I stand, with flute in hand,  
A simple birdcatcher, in this learned land.  
But oh, how my heart sings a merry tune,  
For in these halls, music is the greatest boon!

I hope this playful aria captures the essence of the Cornell Music Department through the eyes of Papageno! [music note emoji]<sup>43</sup>

Using its 'balanced' temperature setting (likely around 0.8, although this information is undisclosed), Copilot generated this impressively creative, rhyming four-stanza text in about twenty-two seconds. Not only does the text refer to Mozart, Cornell and Ithaca (New York), but its final stanza also emphasizes that the aria is sung from the perspective of Papageno, a 'simple birdcatcher in this learned land'. The text is arguably no worse than Schikaneder, and one could easily imagine it sung,

<sup>42</sup> Wolfram, 'What Is ChatGPT Doing?' (10 September 2024).

<sup>43</sup> [www.bing.com/chat](https://www.bing.com/chat) (3 April 2024).

Oh, what joy - ous sounds doth fill these halls, Where fu - ture Mo - zarts

5  
tread with glee. Cor - nell's Mu - sic Dep - art - ment

7  
stands so proud, A bea - con of har - mo - ny for all to see!

Example 2. 'Der Vogelfänger bin ich ja' with AI-generated text

with a few modifications, to the tune of 'Der Vogelfänger bin ich ja' (see [Example 2](#)). The reason it so strongly recalls Schikaneder, of course, is that Copilot has been trained on Schikaneder.

In sum (and I'm aware I'm simplifying a great deal):

- 1 ChatGPT (and its branded offshoots) draws from a huge store of linguistic examples in different styles and genres;
- 2 It continues a prompt by imitating these examples, choosing each successive word or word segment based on the probability of its use;
- 3 It invents in the moment, 'remembering' what it has just generated but being unable to reflect on the larger whole;
- 4 It follows the rules implicitly learned from its training data but is also designed to be somewhat random.

There's no getting around it: ChatGPT is an improviser.

From this perspective, one reason why generative AI can seem so uncannily human is that its logic is arguably more musical than linguistic. Like an eighteenth-century keyboard player stringing together galant schemata and snatches of familiar tunes, ChatGPT continues a prompt by synthesizing existing patterns and ideas, following a genre's implicit constraints, being unpredictable from time to time, making mistakes and creating in real time without being able to review or edit the result.

Because ChatGPT behaves like an improviser, the issues it raises are not so far from those that Mozart and his contemporaries faced. If a student produces an essay using ChatGPT, who is the author? Is it the student, who like Clementi in the case of the *Magic Flute* overture, engineered the prompt? Is it the countless uncredited authors of webpages, books and articles, who – like the dozens of uncredited sources from which Mozart allegedly borrowed in *Magic Flute* (or the partimento practitioners upon which his style was founded) – provided the essay's raw material? Or is it the software itself, which, like Mozart the 'synthesizing genius', composed the essay?

These are not questions to which I have answers. They are, however, questions that concern me as I evaluate students' essays, peer-review colleagues' research articles and read the news. In this liminal period, many existing assumptions and truths have already been challenged, and the intensity and pace of this process will only increase. As with Wessely's 'Republic of Composers', it will fall not to the law but to the 'Republic of Scholars' to establish a sense of order in the academic context, even as the sands shift beneath our feet. The Modern Language Association has made a start in this

direction, issuing a fifteen-page working paper on the implications of AI for research and teaching.<sup>44</sup> Other scholars have called for overhauls of student evaluation and institutional assessment practices.<sup>45</sup> What we're seeing now, of course, is just the tip of the iceberg.



Throughout this essay, I've drawn a parallel between Mozart's 'synthesizing genius' and generative AI. In so doing, I've greatly undersold Mozart's gifts, and it is important to acknowledge that as of early 2025, even the most impressive AI-generated work (whether text, image or music) does not measure up to what an exceptional human creator – let alone a Mozart – can accomplish. In this regard, I'd like to close by reflecting on two aspects of human creativity at its highest levels that seem to distinguish it from algorithmic content generation. In other words, what separates an authentic Mozart minuet from a dice minuet, or a compellingly written essay from an artificially generated one?

The first aspect is what might be termed mindful or judicious experimentalism. However much Mozart – or any number of other first-rate creators, for that matter – relied on formulas, his work is far from predictable. His music reinterprets conventions (including schemata) in surprising ways, challenges formal and generic expectations, shifts prismatically from topic to topic, astonishes the ear with unexpected turns of phrase and, in cases like the 'Dissonance' Quartet, the 'Jupiter' Symphony finale and more modest works like the Minuet in D major K355, even stretches the limits of counterpoint. And yet his departures from musical orthodoxy do not equate to merely turning up ChatGPT's 'temperature' setting; rather, they are carefully calibrated disruptions, exercised knowledgeably in interaction with a sociocultural context. It is difficult to imagine an algorithm capable of approximating Mozart's combination of audacity and razor-sharp judgment without simply replicating his work.

The second aspect is what we might call creativity's destructive or transformative element. In his book *Bach and the Patterns of Invention* Laurence Dreyfus observes that

Bach's music often embodies a destructive moment, in that it frequently displays a high-handed disregard and critique of exemplary models. . . one of the hallmarks of Bach's music is its strange distortion of models that were presumably chosen, after all, for their exemplary qualities.<sup>46</sup>

Bach's music could hardly have come into being if not for Böhm's chorale partitas, Vivaldi's concertos or Couperin's keyboard suites. However, as Dreyfus argues, Bach's achievement was not merely to imitate his models but in some sense to surpass, and in so doing negate, them. Mark Evan Bonds has made a similar argument about Mozart's 'Haydn' Quartets, noting how they both pay homage to and forcefully diverge from their models in Haydn's Op. 33.<sup>47</sup> Such approaches ultimately presuppose a powerful sense of 'constructedness' in the music itself (to borrow Dean Sutcliffe's term), a detached or ironic foregrounding of the language's very artificiality.<sup>48</sup> It remains unclear whether AI is capable of possessing the reflective capacity to emulate this.

<sup>44</sup> <https://hcommons.org/app/uploads/sites/1003160/2023/07/MLA-CCCC-Joint-Task-Force-on-Writing-and-AI-Working-Paper-1.pdf> (20 March 2024).

<sup>45</sup> See, for example, [www.insidehighered.com/opinion/views/2024/03/28/assessment-student-learning-broken-opinion](https://www.insidehighered.com/opinion/views/2024/03/28/assessment-student-learning-broken-opinion) (10 September 2024). On AI's implications for musicology see Emilio Ros-Fàbregas, 'Musicología en la era de la inteligencia artificial (IA)', *Anuario Musical* 78 (2023), 7–12.

<sup>46</sup> Laurence Dreyfus, *Bach and the Patterns of Invention* (Cambridge, MA: Harvard University Press, 1996), 36.

<sup>47</sup> Mark Evan Bonds, 'The Sincerest Form of Flattery? Mozart's "Haydn" Quartets and the Question of Influence', *Studi Musicali* 22/2 (1993), 365–409, especially 378.

<sup>48</sup> W. Dean Sutcliffe, *Instrumental Music in an Age of Sociability: Haydn, Mozart and Friends* (Cambridge: Cambridge University Press, 2020), 368.



Whether or not generative AI ever reaches these benchmarks, it will pose significant challenges to established notions of creativity, originality and fair use in the coming years. While engaging with the past cannot solve these challenges, it can help us formulate salient questions about the changing nature of authorship, the appropriate use of pre-existing material and the value of art – both aesthetic and economic – in this liminal era.

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