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A Feeling in his Bones: The Outtakes from Glenn Gould's 1955 Goldberg Recording Sessions

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Abstract

Glenn Gould's debut studio album – Bach: The Goldberg Variations – launched him to international fame. The outtakes from those sessions feature a concert pianist's fixed approach to most movements, nevertheless they show why Gould objected to concert performance. Moreover, the 1955 Goldberg outtakes show that Gould thought his best playing lay outside his comfort zone. The greater experimentation in his later recordings may have been an outgrowth of this preference. If so, some of Gould's unconventional interpretations might be read as a dialogue between his philosophical positions and his embodied sense of playing music at the keyboard.

Keywords

Glenn Gould, Bach, Goldberg Variations, recording studio practice

> In an unguarded moment some months ago, I predicted that the public concert as we know it today would no longer exist a century hence, that its functions would have been entirely taken over by electronic media.[1]
>
> Glenn Gould, 'The Prospects of Recording' (1966)

Nearly sixty years after he made this comment, Gould's provocative prediction has not yet come to pass, though his prophetic vision of a future augmented by recording technology remains sharply relevant. Gould imagines how technology might facilitate a participatory culture of music making; he examines questions of authenticity and artistic value in an age when music is ubiquitous and reproducible. But Gould's desire to put an end to public concerts

[1] Glenn Gould, 'The Prospects of Recording', in *The Glenn Gould Reader*, ed. Tim Page (New York: Vintage, 1984), 331.

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– the axis around which he organizes his manifesto, rooted in a professed antipathy to competition and spectacle – remains unfulfilled. This quixotic position, distrustful of the performing body and with a distaste for the pressure and immediacy of performance, is central to Gould's public persona as expressed in writings and interviews. Yet the evidence of Gould's creative process and performances is mixed, sometimes even contradicting his stated beliefs.

Glenn Gould's debut studio album – Bach: The Goldberg Variations – launched him to international fame and success.[2] He made the album during four busy days in June 1955. In 2017 Sony Classical released the outtakes from those sessions, about five hours of rejected material documenting Gould's creative process.[3] Aside from some retakes and inserts recorded on the final day, Gould recorded the work in order, playing multiple takes of each movement before moving on to the next. As a document of the event, the outtakes are incomplete. Tape was expensive; rather than leaving it running during the sessions, producer Howard Scott stopped recording between takes. How much time did Gould spend listening to playback, chatting with the producers or practising? Only snatches of those activities are preserved, when Scott was slow to stop the tape. Gould can often be heard reacting to his own playing immediately after finishing a run-through. His most frequent comment is some version of 'Can I hear that?', indicating he believes the take might be usable in the finished recording. Occasionally he offers specific praise or criticism.

The outtakes offer a window into Gould's development as a pianist. Gould's decisions about which takes to include on the final release describe his aesthetic priorities at this early stage of his career, unmediated by the verbal theorizing of his interviews and writings. Gould's activity in the recording studio in 1955 differs greatly from his later descriptions of his process. In his writing, he denigrates the physical playing of the instrument, claiming to prefer interpretations crafted in mental practice or during playback and editing. But the early Goldberg outtakes show he often selected takes for the final recording before listening to playback. In writing he rails against virtuosity, yet the outtakes show him playing maniacally consistent interpretations at nearly inhuman speed, often ending in wrong notes. In slower movements, the details of his interpretation seem to be improvised at the piano. The takes he selected do not represent average interpretations, as might be the case if Gould had decided on an interpretation away from the piano and then tried to realize it perfectly across multiple takes. Rather, his selected takes in the slow movements tend to be the most dissimilar to his average performance. His decisions seem to be dependent on how he felt in the performing moment, rather than on some

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[2] Kevin Bazzana, *Wondrous Strange: The Life and Art of Glenn Gould* (New York: Oxford University Press, 2004), 151–57.

[3] Glenn Gould, *The Goldberg Variations: The Complete Unreleased Recording Sessions June 1955*, Sony Classical, 2017.

intellectually perfected interpretation arrived at in the practice room or recording studio. The outtakes from the 1955 Goldberg recording sessions show Gould choosing takes based on a feeling in his bones.

The Intellectual Gould

In 'The Prospects of Recording', Gould claims to be deeply suspicious of any musical decision made in the heat of the performing moment. He cites Claudio Arrau in support of his opinion that 'public auditions provoke stratagems which, having been designed to fill acoustical and psychological requirements of the concert situation, are irritating and antiarchitectural when subjected to repeated playbacks'.[4] For Gould, the recording studio could enable creativity instead of merely reproduction.[5] Producers could splice different takes to create new interpretations impossible to imagine in conventional performance. Listeners might patch together favourite passages from various recordings of the same piece to create their ideal interpretations.[6] Technology's democratizing influence would thus undermine the power Gould professed to fear: the virtuoso in performance.[7] In this model, the physical act of making music is a necessary evil. [8] Yet Gould himself was a virtuoso who never realized his stated goal of giving up piano playing altogether, despite retiring from concert performance at age 31. [9]

Gould's rhetorical positions on concert performance and recording technology valorize the intellectual act of interpretation, at the expense of the physical act of playing the piano. Even early in his career Gould made frequent reference to his desire to compose: '"The piano is a convenient way to make enough money so I can afford to compose", he says. "In ten or fifteen

[4] Gould, 'The Prospects of Recording', 338.

[5] Gould, 'The Prospects of Recording', 339.

[6] Gould, 'The Prospects of Recording', 347.

[7] For his most absurd formulation of this, see Glenn Gould, 'Let's Ban Applause', in *The Glenn Gould Reader*, ed. Tim Page (New York: Vintage, 1984), 245–50.

[8] See, e.g., Gould's comments on Sviatoslav Richter, a musician who tried 'to bypass the whole question of the performing mechanism, to create the illusion, at any rate, of a direct link between themselves and a particular musical score'. Glenn Gould, 'Sviatoslav Richter' in *The Art of Glenn Gould*, ed. John P. L. Roberts (Toronto: Malcolm Lester Books, 1999), 52.

[9] Kazdin relates Gould's privately expressed desire to cease making piano recordings at age 50; see Andrew Kazdin, *Glenn Gould at Work : Creative Lying* (New York: Dutton, 1989), 156. Gould made public his desire to be known primarily as a composer as early as 1956; Gladys Shenner, 'The Genius Who Doesn't Want to Play', *MacLean's Magazine*, 28 April 1956. https://archive.macleans.ca/article/1956/4/28/the-genius-who-doesnt-want-to-play

years I want to be known primarily as a composer, not a pianist"'.[10] His view of performance as inferior to composition reflects the conservatory culture of the time. In his youth Gould idolized Artur Schnabel, who positioned himself as a servant of certain canonical composers and famously believed that 'great music is always better than it can be played'.[11] His biographer Kevin Bazzana argues that Gould's interpretations often strive to interrogate scores on a compositional level, rather than merely realizing or characterizing the musical text like a conventional performer.[12]

Throughout his career, Gould described his piano playing as a primarily intellectual act, distancing his art from the physical necessity of touching an instrument. He 'believed the piano had to be played with the mind' and prided himself on how little he practised at the piano.[13] As music historian Paul Sanden argues, 'physicality was important to Gould only insofar as it allowed him to realize a piece on the piano, which was secondary to understanding the piece in its own abstract and disembodied state'.[14] He denigrated nineteenth-century repertoire that emphasized virtuosity.[15] He viewed the tape splice as a singularly beneficial way to 'transcend the physical anxieties' of performing music.[16]

Gould described his distaste for the public spectacle and competition inherent in live performance during interviews in the 1950s; his futuristic and technophilic attitude towards recording reached its full development following his retirement from live performance in 1964. In 1968 Gould claimed to enter the recording 'studio without the least notion of how I was going to approach the work that we were to play that day', implying that he merely had to think

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[10] Shenner, 'The Genius who Doesn't Want to Play'.

[11] Bazzana, *Wondrous Strange*, 96–98. For Schnabel's ideology, see Claude Frank, 'Great Music is Always Better than It Can Be Played' (preface), in *Artur Schnabel: Musiker / Musician, 1882–1951*, ed. Werner Grünzweig (Hofheim: Wolke, 2001), 7–8; and César Saerchinger, *Artur Schnabel, a Biography* (New York: Dodd, Mead and Co., 1958), 96. For the impact of Schnabel's ideas on conservatory culture, see Leon Botstein, 'Artur Schnabel and the Ideology of Interpretation', *The Musical Quarterly* 85/4 (2001), 587–94.

[12] Kevin Bazzana, *Glenn Gould: The Performer in the Work* (New York: Oxford University Press, 1997), 87–97.

[13] John P. L. Roberts, 'Introduction', in *The Art of Glenn Gould*, 26.

[14] Paul Sanden, 'Hearing Glenn Gould's Body: Corporeal Liveness in Recorded Music', *Current Musicology* 88 (2009), 14.

[15] Gould, 'Should We Dig Up the Rare Romantics? … No, They're Only a Fad' in *The Glenn Gould Reader*, 72–76.

[16] Gould, 'Music and Technology', in *The Glenn Gould Reader*, 256.

of an interpretation, rather than physically practise one, in order to make a recording.[17] In *The Prospects of Recording*, Gould describes a splice between two takes – different in character, but unified in tempo – of Bach's A-minor fugue (WTC I) that enabled a new interpretation not possible in live performance.[18] Thus an interpretation could be constructed in the recording booth, the mere materials having been provided by the physical act of playing the instrument. In 1964 he argued that 'recording by its definition is something that aims at a certain kind of perfectionism, I think – perfectionism of sound, it aims at expressing a certain series of ideals about what sound is in relation to an instrument and the role that a microphone has to play, and this you cannot get … recording a concert'.[19] Gould posits the perfect, ideal sound world of recording in opposition to the embodied act of piano playing.

Yet for all his mind-over-body philosophizing, Gould developed and maintained an uncompromisingly brilliant piano technique. And his attempts to position himself as an intellectual sometimes betray pretension. His liner notes to the 1955 Goldberg Variations show the value he placed on the appearance of intellectual profundity. For example, he uses the following sentence to introduce his discussion of the Aria's relationship to the subsequent variations: 'Indeed, one hears so frequently of the bewilderment which the formal outline of this piece engenders among the uninitiated who become entangled in the luxuriant vegetation of the Aria's family tree that it might be expedient to examine more closely the generative root in order to determine, with all delicacy, of course, its aptitude for parental responsibility'.[20] Some listeners may be confused by the fact that the bass, rather than the melody, of the Aria structures the variations, but the metaphor seeks to assert Gould's wit rather than clarify the idea.[21] The tension between Gould's intellectual aspirations and his embodied genius at the keyboard is most apparent in his later output, yet his later style germinated from seeds planted in his first studio recording.

Gould's rhetoric on technology and his intellectualized model of musical decision-making is sometimes at odds with his actual practice at the piano and in the recording studio. Recent research has some specific examples. Broesche investigated Gould's use of the tape splice in

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[17] Glenn Gould and John McClure, *Glenn Gould: Concert Dropout, In Conversation With John McClure*, recording, Columbia, 1968, available at https://glenngould.com/music/glenn-gould-concert-dropouts-in-conversation-with-john-mcclure/.

[18] Gould, 'The Prospects of Recording', 338–39.

[19] Gould, 'Immortality and Recordings', in *The Art of Glenn Gould*, 202.

[20] Glenn Gould, liner notes to *The Goldberg Variations*, Columbia ML 5060, 1955.

[21] For a fuller criticism of Gould's writing style and intellectual aspirations, see Bazzana, *Wondrous Strange*, 271–75.

his late recording of Brahms's Ballades; the famous splice in the A-minor fugue seems to have been a somewhat exaggerated outlier.[22] In an earlier article, I showed how Gould's verbal description of a proportional tempo plan for the 1981 recording of the Goldberg Variations differs from his actual practice.[23] Gould's basic tempo tends to modulate across each variation. Gould's tempo continuity was based on embodied knowledge rather than an abstract tempo plan, as Gould set the tempo for each variation by playing along with the end of the previous variation. In his scripted interview with Tim Page about the 1981 Goldberg recording, Gould argues that his proportional tempo plan is only meaningful if listeners can 'feel it in their bones'.[24] Despite his intellectual aspirations, Gould remained uncompromising about making music that listeners might find convincing at a 'subliminal' level.[25] The 1981 Goldbergs were the last album released in Gould's lifetime; Gould's first album is also rooted in the pianist's immediate experience of playing the instrument.

The Conventional Gould

The 1955 Goldberg outtakes display a touring concert pianist's fixed approach to most movements; at the same time, they clearly show why Gould objected to concert performance. Gould favoured extreme interpretations. He sought virtuosity, the fantastic clarity of his touch in impossibly quick tempi, but also a kind of freshness or novelty of phrasing in variations with slow or moderate tempi. He treats the recording session like a performance, almost always attempting a complete movement during each take. He often expresses approval of the take that will be included on the record immediately after finishing playing. He seems to judge the creativity of his slow movements during the performance rather than during playback.

Reviews of the previously unreleased material comment on how little difference is audible among many of the takes. In the *New York Times*, Anthony Tommasini states: 'Hearing the intense young Gould at work during these arduous recording sessions, playing through a variation at a breakneck tempo with prickly sound, then playing it again, and again, and again,

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[22] Garreth Broesche, 'Glenn Gould, Spliced: Investigating the Filmmaking Analogy', *Music Theory Online*, 22/4 (2016). https://doi.org/10.30535/mto.22.4.1 For Gould's account of the splice, see Glenn Gould, 'The Prospects of Recording', 338–39.

[23] Michael Rector, 'Performing Structure: Tempo in Glenn Gould's *Goldberg Variations*', *Zeitschrift der Gesellschaft für Musiktheorie*, 18/Sonderausgabe (2021), 79–112.

[24] Tim Page, 'Glenn Gould Discusses his Performance of the *Goldberg Variations* with Tim Page', in *Glenn Gould: The Goldberg Variations: The Complete Unreleased Recording Sessions June 1955*, reissue of CBS LP M3X38610, 1982, Sony Masterworks, 2015, track 6, 0:59–1:07.

[25] Page, 'Glenn Gould Discusses his Performance', track 6, 1:07–1:15.

is not just exhausting; it's stupefying'.[26] In *Diapason*, Gaetan Naulleau complains that the outtakes do not reveal more about Gould's creative process; comparisons among them 'tell us nothing, or almost nothing. In four takes most often, but sixteen in Variation VI (which is however not the most perilous), a perfectly clear vision takes shape from the start without any noticeable evolution. We are not witnessing a process but the mechanical work of a young man, whose concentration never wavers.'[27] Though this analysis is somewhat overstated, Gould does play many of the takes for purely technical reasons. The slower movements feature varying levels of experimentation in phrasing and character.

The outtakes show that Gould knew immediately – during the performance, or just after finishing – which take he wanted to include on the final recording for almost every movement. In 21 movements, Gould's approved take is the last version that he recorded. In four movements, the last take is a breakdown and the take used is the one immediately preceding.[28] In two other movements, Gould can be heard saying 'I'll stick with 3' or 'I'll stick with 1' immediately after the final take. Though most of the studio chatter has been cut to save tape, Gould can often be heard to approve takes immediately after he finishes playing; he never expresses uncertainty after finishing a take that will eventually be approved for the record. His judgment of the quality of these final takes is based not on later re-listening, but on a feeling he had during the act of playing. 27 out of 31 movements show this evidence of immediate approval.

In most of the fast movements, Gould tries to play at the absolute limit of technical possibility. For example, in Variation 12, Gould executes 18 takes of an unvarying interpretation in an extreme tempo; half of these takes end in a breakdown following wrong notes. The mature Gould vociferously objected to virtuosic display; here it clearly motivated his practice.[29] Audio Example 1, containing takes 3 through 5, shows Gould at work.

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[26] Anthony Tommasini, '5 Hours of Glenn Gould Outtakes. Why? Listen and Find Out', *New York Times*, 2 February 2018, www.nytimes.com/2018/02/02/arts/music/glenn-gould-bach-goldberg-variations.html.

[27] Gaetan Naulleau, 'Goldberg trash', *Diapason* 662/80–81 (2017): '[N]e nous apprennent rien, ou quasi. En quatre prises le plus souvent, mais seize dans la Variation VI (qui n'est pourtant pas la plus périlleuse), une vision parfaitement claire dès le départ se précise sans évolution notable. Nous n'assistons pas à un processus mais au travail mécanique d'un jeune homme, dont la concentration ne flanche jamais'.

[28] Howard Scott used the term 'breakdown', abbreviated as 'B', on his take sheet for all the takes in which Gould did not play to the end of the movement. I do not intend the term as a pejorative; it is a relic of an earlier recording practice that preferred complete takes.

[29] See, e.g., 'Glenn Gould in Conversation with Tim Page' in *The Glenn Gould Reader*, 452.

Audio 1 Variation 12, Takes 3–5.[30]

The four takes of Variation 28 show Gould making decisions immediately, at the piano (Audio 2). He records a beautiful first take. For the next take he tries a slightly faster tempo, but immediately after finishing says 'no, I'll stick with 1'. To my ears, take 2 was worthy of including on the record. Gould is so certain that take 1 was superior that he dismisses take 2 without requesting to hear it. Takes 3 and 4 show him trying to play even faster and with shorter articulations in the semiquavers (see Figure 1, bars 9–12), but both end with him stopping mid-variation to complain about the piano. Take 3 ends after a wrong note. Take 4 is clean, but Gould stops a few measures before the end to say 'it's impossible on this piano, you cannot do it this way. I'll stick with take 1'. Gould stops playing not because the material is unusable, but because he is entirely sure as he plays that take 1 is superior. Admittedly, take 1 is breathtakingly beautiful. But Gould's confidence in his judgment about his performance without listening to playback is striking.

Figures 1 J.S. Bach, Goldberg Variations, Variation 28 (bars 7–12).

Audio 2 Variation 28, Take 2 (first half).

Audio 3 Variation 28, Take 4 (first half).

In Variations 1, 7, 23 and the Aria, Gould did not use the last takes he recorded and did not immediately verbally approve his preferred take. In Variation 23, Gould struggles with wrong

[30] All audio examples are used with permission from Sony Music Entertainment.

notes, necessitating many takes and a splice of the second half. The Aria and Variation 7 are discussed in the next section, which focuses on the slower movements. When recording Variation 1, Gould plays three takes on the first day. All three feature a significantly out-of-tune B3; he would eventually approve the third of these. During the remake sessions on the final day of recording, Gould plays thirteen more takes of Variation 1. In general, the remakes are slightly faster than the original three takes. The remake session starts with six consecutive breakdowns, during which Gould audibly expresses frustration with his playing: ‘Gee whiz!’ (remake take 2) and ‘Still too sloppy’ (remake take 5). Of the remaining eight takes, Gould completes six. However, he is still dissatisfied: ‘It sounds like it hasn’t been played for a week’ (remake take 8), ‘Well, that was accurate, but [trails off…]’ (remake take 10) ‘No, the one thing I was trying to get [trails off…]’ (remake take 13). Gould seems preoccupied with the articulation of the opening left hand figure; he comments on it after remake take 9A and practises it after remake take 12. This motive, circled in Figure 2, does sound somewhat more articulate on the approved take, however the out-of-tune note seems a steep price to pay for such a small difference.

Following remake take 11, Gould paused for several seconds – much longer than he usually waits to comment on his performance – and asks to hear the recording played back. Usually when he asks to hear playback, that take is used for the final recording. During the remake process, Gould was probably most satisfied with take 11, which can be compared with the approved take in audio example 4. The slower tempo of the approved take lends itself to more nuanced pronunciation; for example, compare the beautiful shaping of the descending sequence in bars 9–12. However, one can easily imagine remake take 11 being included on the finished record, not least because it lacks the obvious fault of an out-of-tune note. Gould seems to have rejected the remakes at least partly because of the negative emotions he felt while recording them; his decision about which take to use here was felt at least as much as it was reasoned.

Variatio 1. a 1 Clav.

Figures 2 J.S. Bach, Goldberg Variations, Variation 1.

Audio 4 Variation 1, Take 3 (bars 1–16) and Remake Take 11 (bars 1–16).

The Slow Movements: An Improvisatory Approach

In the slower movements, the selected takes are still usually the last ones Gould recorded. However, the large numbers of takes seem to be motivated by a desire to achieve a kind of freshness or improvisatory quality of phrasing, rather than to realize a fixed interpretation at the limit of playability. Gould's approved takes in the slower movements are usually the ones most dissimilar to the other takes.

Variation 21 provides an instructive example (Audio 5). First, Gould records three complete takes, with take 2 in a significantly slower tempo than the others. Takes 1 and 2 are cut off before Gould can be heard to comment on them. Before take 3, Gould says 'I think … I want to hear that take 2, probably'. After finishing take 3 he says 'Let me hear that one, please'. He

then records two inserts of the first half at a tempo that would match takes 1 or 3. Gould tended to continue recording takes until he was satisfied, as opposed to choosing from the clean takes upon re-listening; he was thus most likely planning to match the insert to the second half of take 3. Following the two inserts, however, he resumed recording the complete variation. The composite insert 2/take 3 must have been rejected.

On insert take 2 Gould can be heard practising the opening motive (Audio 5). First he plays a bit slower in a relatively deadpan way, a typical kind of practice frequently heard on the outtakes. Next he plays the opening in tempo, then stops and sings the same passage. The sung version features greater agogic stress at the high point and clear sense of articulation. Gould's vocal articulation is not audible in his piano playing; I believe it is a cipher for his physical approach, calling for the last two semiquavers to be played with a down stroke so they do not become too quiet or too fast. This bit of practice shows Gould's intense concern with micro-rubato at the level of the semiquaver.

Audio 5 Variation 21 Insert, take 2 (opening).

After rejecting the inserts, Gould records three more complete takes. To my ear, take 5 lacks energy, especially in the second half. All the takes show Gould trying to create a contrasting character for the inversion of the canon in the second half of the variation, but in take 5 he seems to have taken the idea too far. After this take, he can be heard saying 'no' dismissively. Then on take 6 Gould introduced a new emphasis on two-note groupings at the semiquaver level which is most obvious in the passage starting at bar 3; see video 1, a graph showing the duration of each semiquaver. Take 6 was approved for the recording.

Video 1 Variation 21, Take 6 (opening).

Comparison of large numbers of relatively similar takes is an intellectually and musically challenging task. To help make global comparisons and spot trends, I marked beat onsets in many of the variations using Sonic Visualiser in order to generate tempo charts. Though highly reductive, statistical analysis and charts of tempo data facilitate a kind of 'distant listening' that can inform even-more-productive close listening.[31] Examination of the tempo data at the semiquaver level shows Gould searching for freshness or novelty in his phrasing. Figure 3 shows the Pearson correlation (r), a statistic measure of similarity, of each take with the average of all six takes.[32] The composite insert 2/take 3 was included rather than take 3 because Gould

[31] See Nicholas Cook, *Beyond the Score: Music as Performance* (Oxford: Oxford University Press, 2013), 135–75.
[32] Principle component analysis would have been an appropriate statistical tool; I chose to compare takes to the average for simplicity and because the first factor in PCA explained 87.5% of the variance.

preferred it to take 3; including both the composite and take 3 would have caused the second half of take 3 to be over-represented in the average. Gould approved the take that is most dissimilar to his other takes of Variation 21.

Take 1	0.941
Take 2	0.938
Insert 2/ Take 3	0.962
Take 4	0.954
Take 5	0.965
Take 6	0.898

Figures 2 Table showing Pearson correlation of the average take with each take of Variation 21.

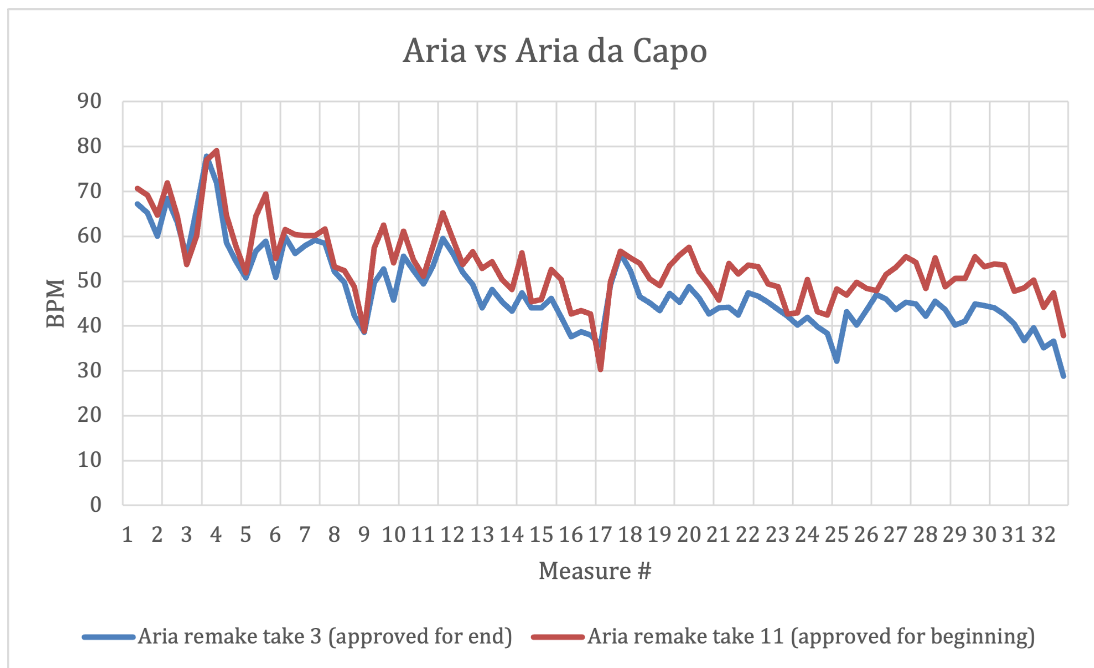
The Aria

Lucille Mok argues that Gould's mature views on recording technology – his love of 'take two-ness', and desire to use recording technology to open up avenues for creativity not possible in concert performance – informed his process of recording the Goldberg Variations in 1955.[33] She describes the experience of listening to the outtakes from the Aria (before Sony released the complete outtakes; the Aria was the only movement made available to her) as evidence of a progression in Gould's interpretation, mediated by listening to playback. The difference between Gould's first and last takes is striking (Audio 6), but no other movement on the record shows a similar sense of process. The other lyrical focal point in the Goldbergs must be Variation 25, the arioso in G minor, for which Gould only recorded one complete take. He cuts off the second take in the middle, with the comment 'This one hasn't got the mood anyway'. Furthermore, the Aria is the only movement for which two distinct versions were needed for the finished recording. Gould made no indication that his interpretations are tailored to the initial or final position on the finished recording, and Howard Scott's take sheet shows only the label 'Aria', never 'Aria da Capo'. Gould's journey towards a suitable initial Aria cannot be disentangled from his attempts to close the cycle. The variety of his interpretations may be motivated by practicality rather than philosophy.

Audio 6 Aria take 1.

[33] Lucille Mok, 'Take Twenty-One: Technological Virtuosity and Glenn Gould's *Goldberg Variations* 1954–1959', in *Glenn Gould, Oscar Peterson, and New World Virtuosities* (PhD diss., Harvard University, 2014).

Gould recorded six complete takes of the Aria on the first day of recording; he returned to it on the final day with twelve more attempts, three of which are breakdowns. The take selected for the Aria da Capo (remake take 3) has a note in Scott's take sheet: 'Good End'. Tempo curves for both the initial and final Arias can be seen in Figure 4. The main difference between the ending and opening arias is the slower tempo in the second half and overall slowing across the movement. Remake take 3 has the greatest amount of slowing (measured in terms of the slope of a linear regression) of all the remakes. Take 4 has slightly more slowing, but its first measure is too slow compared to the approved initial Aria.



Figures 4 Tempo chart for the Aria and Aria da Capo.

Based on tempo data at the crotchet level, the take that Gould chose for the beginning Aria shows the same dissimilarity to the other takes as observed in Variation 21. Figure 5 shows the correlation of each take with the average; remake take 11 correlates most weakly.[34] Remake take 3, which was used for the Aria da Capo, most resembles the average; this may reflect its more placid affect and summative role in the cycle. The Aria is one of the rare movements in which Gould did not approve the final take for the recording, but there is some evidence that he knew immediately that he had arrived at his preferred interpretation. Gould says at the end of remake take 11, which would become the approved take, 'That was close, let me try once more, just once'. In fact, he only recorded one more take, though he did not use it in the final

[34] In a PCA, the first factor here explains 93% of the variance.

recording.

Take 1	0.945
Take 2	0.968
Take 3	0.97
Take 4	0.961
Take 5	0.962
Take 6	0.972
Remake take 1	0.954
Remake take 2	0.959
Remake take 3 (approved for end)	0.978
Remake take 4	0.954
Remake take 6	0.951
Remake take 7	0.967
Remake take 8	0.96
Remake take 9	0.968
Remake take 10	0.957
Remake take 11 (approved for beginning)	0.889
Remake take 11A	0.963

Figures 5 Table showing Pearson correlation of the average take with each take of the Aria.

Note that the variation observed here is minimal. The difference between the highest and lowest correlation is less than 0.1. Nevertheless, Gould's feeling for freshness, understood in the moment of performance and usually expressed verbally immediately afterwards, is consistently reinforced by the mathematical measure of dissimilarity to the average take.

Variation 7

The outtakes for Variation 7 – tempo di giga (see Figure 6 for a score excerpt) – exhibit more commentary and practising than any other movement. Gould recorded seven unsatisfactory takes, including four breakdowns, during his first session; he attempted ten more takes during a remake session.

Variatio 7. a 1 ô vero 2 Clav.
al tempo di Giga

Figures 6 J.S. Bach, Goldberg Variations, Variation 7.

In bits of practice caught on tape, Gould focuses on micro-timing in the dotted rhythm. After take 3, without listening to playback, he diagnoses a problem in his interpretation, saying ‘too obvious, I overdid it with those figures’. He then practises the scales and a few beats afterwards (bars 5–6), trying to make the dotted rhythm consistent between the beats with a scale and the beats without. Audio example 7 shows first the ‘too obvious’ take 4 opening, featuring too-fast semiquavers, then Gould’s practice, aiming at mathematically even semiquavers despite a ritardando. Audio example 8 is the opening of the selected take (remake take 7) which features slightly faster than mathematical semiquavers, though not quite as fast as those in take 4. The ‘too-obvious’ semiquavers take about 10 per cent of the beat, the even ones about 16.5 per cent, and the approved ones about 12.5 per cent. In all of the remakes Gould aims for his semiquavers to be just faster than even.

To my ear as a pianist and teacher, this obsession with a dotted rhythm elucidates one of the essential qualities of Gould’s pianism. For most pianists, notes like those semiquavers would

be governed mainly by the physicality of playing piano; usually, they ricochet rather than having their own emphasis. In Gould's playing they feel controlled, as though Gould has selected exactly how short or long they are. That feeling of intentionality is expressively powerful, so too is the virtuosity of controlling at such fine levels of detail. The difference between the semiquavers taking 10 per cent and 12.5 per cent of the beat is a difference of 2–3 hundredths of a second. Furthermore, this control is exhibited not in a groove-type pattern in which every dotted-crotchet beat is equal in duration; Gould's performance features expressive timing deviations at both the dotted-crotchet level and the semiquaver level. Scott's failure to stop the tape running after take 4 was probably an accident. We learn that Gould made a significant interpretive decision without listening to playback, leaving us to wonder how many more moments like this occurred after the tape was stopped.

Audio 7 Variation 7, take 4 etc.

Audio 8 Variation 7, remake take 7 (opening).

The approved take is much faster than take 4. Gould started recording Variation 7 in a very slow tempo; all the retakes are in significantly quicker tempi. For the final recording Gould eventually approved a composite of remake takes 7 and 5; this is almost the only place on the record where Gould relies on re-listening to his recordings more than his feelings while playing. Measuring the uniqueness of the approved composite's phrasing here is more complicated than in the Aria or Variation 21.[35] The first group of takes represent a different interpretation from the remakes. Besides their slower tempo, they feature a more even subdivision of the dotted-crotchet pulse (i.e. the remakes show consistently shorter upbeat eighth notes) and large-scale slowing across the entire variation (about 15 per cent difference between initial and final tempi as predicted by a linear regression). Because of these categorical differences between the original takes and the remakes, take 4 rather than the approved composite is the take most dissimilar to the average. Compared to the average of the remakes, however, the approved composite does show the same dissimilarity observed in the Aria and Variation 21 (see Figure 7). Tempo was measured at the quaver level; the r-values are unusually high because the second quaver of each beat was usually measured by dividing the inter-onset interval between the first and third quaver by two in lieu of a measurable attack.

Remake take 1	0.96

[35] In a PCA, the first factor explains 85% of the variance, the second factor explains 6.3%. The second factor correlates positively with the takes from Gould's first session ($r > .29$ in all cases) and negatively with the remakes ($r < -.09$ in all cases).

Remake take 2	0.966
Remake take 4	0.961
Remake take 5	0.972
Remake take 7	0.974
Remake take 8	0.966
Composite 7/ 5	0.955

Figures 7 Table showing Pearson correlation of the average take (remakes only) with each take of Variation 7.

In the approved takes for these three movements – the Aria, Variations 7 and 21 – Gould tries to capture an improvisatory feeling in his phrasing. Though the differences between takes here are tiny compared to those Gould later describes in his writings, they nevertheless illuminate his priorities. One might expect that the outtakes from a touring concert pianist's recording session would cluster around an average representing his ideal interpretation. Bruno Repp showed experimentally that listeners prefer a quantitatively average performance; the act of listening back to a series of recorded takes of the same movement is similar to his experimental condition.[36] More recently, Amy Blier-Carruthers described how contemporary musicians dislike making recordings because of the perceived emphasis on perfection at the expense of spontaneity.[37] Even at this early stage of his career Gould seems to be striving for freshness or difference. The ideal performance, at the moment of recording, was the one that felt unique, rather than the midpoint among a group of possibilities. This preference must have contributed to Gould's decision to retire from playing concerts; his preferred interpretation always involved a strong element of risk.

Conclusion

Gould posited recording in opposition to live performance, but the 1955 recording shows his later, studio-centred style might be a natural outgrowth of his experience as a performer. His preferred takes involve an element of chance, or perhaps an 'improvisatory mindset'.[38] The

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[36] Bruno Repp, 'The Aesthetic Quality of a Quantitatively Average Music Performance: Two Preliminary Experiments', *Music Perception* 14/4 (1997), 419–44.

[37] Amy Blier-Carruthers, 'The Problem of Perfection in Classical Recording: The Performer's Perspective', *The Musical Quarterly* 103/1–2 (2020), 184–236.

[38] David Dolan, John Sloboda, Henrik J. Jensen, Björn Crüts, and Eugene Feygelson. 'The Improvisatory Approach to Classical Music Performance: An Empirical Investigation into its Characteristics and

recording process facilitates this safety-last approach to performance. Still, the 1955 Goldberg outtakes do not suggest that the recording studio affords the possibility of intellectual work taking primacy over the physical act of playing the instrument. Gould's decisions were made at the keyboard, most often during the act of playing.

The outtakes from his 1955 Goldberg recording sessions show that Gould thought he played his best outside his comfort zone – when he was testing the limits of pianistic possibility in tempo and clarity of articulation, or feeling an improvisatory freshness in his phrasing during the act of performing. Experimentation in his later recordings may have been an outgrowth of this preference. If true, some of Gould's unconventional interpretations might be read as a dialogue between his embodied, immediate sense of playing music at the piano and his philosophical positions. Gould's actual process is more conventional than his utopian, technological rhetoric suggests, but this finding should come with little surprise. If Gould could have divorced his intellectual work from his practice at the keyboard, I believe he would have done so.

Gould's later recordings have provided fertile ground for performance analysis.[39] The goal of these studies is a mapping of performance details onto the structural features of the work as determined by score-based analysis. Gould's process in the 1955 Goldbergs shows that the specific performance details – this or that slur, or accent, or bringing out a particular voice – mattered less because of their relationship to the score, and more because of their relationship to Gould's personal concept of the piece, as expressed in the various takes of each movement. The narrative in these studies implies that Gould had a well-reasoned analysis which he applied to the task of musical interpretation. If his process in the 1955 Goldberg recording is a guide, the outtakes from the recordings used for these performance analyses probably imply equally valid, but different, analytical points of view. Gould's analyses were likely felt as much as they were reasoned.

Gould later claimed to be 'irritated' by the 'performance-oriented' approach of his early recordings, but a common thread binds the 1955 Goldbergs to Gould's later style.[40] Gould highly prized an individual take's freshness, the sense that it is not re-creative of a previously

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Impact.' *Music Performance Research* 6 (2013): 1–38. And David Dolan, Henrik J. Jensen, Pedro AM Mediano, Miguel Molina-Solana, Hardik Rajpal, Fernando Rosas, and John Sloboda. 'The Improvisational State of Mind: A Multidisciplinary Study of an Improvisatory Approach to Classical Music Repertoire Performance.' *Frontiers in Psychology* 9 (2018), 1341.

[39] See Bazzana, *The Performer in the Work.* And Peters Martens and Daniel Barolsky. 'Rendering the Prosaic Persuasive: Gould and the Performance of Bach's C-Minor Prelude (WTC I)', *Music Theory Online* 18/1 (2012), www.mtosmt.org/issues/mto.12.18.1/mto.12.18.1.barolsky_martens.php.

[40] Bazzana, *Wondrous Strange*, 218.

worked-out interpretation, but created at the moment of performance. The intellectual justifications for Gould's interpretation attract attention, but the genius of his playing is nevertheless felt in the bones.