Flow state during vocal performance

In search of a deeper understanding of flow state during classical singing performances



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Abstract

This research explores the experience of flow state in classical vocal performance through a practice-based, autoethnographic study. The central research question is: Do I, as a classical singer, experience and harness flow state during performances, and does the level of flow state influence the quality of my performances?

Four live performances were documented using structured diary entries, video recordings and the 13-item Flow Short Scale (FSS). While the FSS enabled consistent measurement across performances, the most valuable insights emerged from reflective journal entries. Flow appeared to be influenced by emotional framing (affirmation and visualisation), mental preparation, physical awareness and contextual pressure. Higher flow scores often coincided with greater focus, enjoyment and a sense of artistic presence.

Findings show that flow is not a binary state but fluctuates during performance. Disruptions were linked to worry, distraction or technical stress, while moments of flow followed clarity of intention and readiness. Although the study does not offer generalizable conclusions, it suggests that increased flow may enhance perceived performance quality.

Ultimately, this research affirms that flow is real and attainable in classical singing. With deliberate reflection and preparation, performers can better understand and support the mental conditions that allow flow to emerge.

Keywords: flow state, classical voice, performance, artistic research

Introduction

Have you ever felt your thoughts and actions are seamlessly aligned? Do you know the feeling of operating at the peak of your ability with an ease and clarity of mind, a feeling of being 'in the zone'? Perhaps, if you can relate to these descriptions, you have experienced the psychological phenomenon known as 'flow state'.

In my own experience I have noticed how I sometimes struggle to focus my mind on music making rather than on self doubt during performances. This is especially the case when I sing as a soloist during moments I feel 'judged', such as auditions, exams, concerts with specific guests. Afterwards I would feel sorry about the fact I let self doubt take the best of me, even if the audience would not have noticed. Therefore I feel urgency to investigate and research whether accumulating tools that are supposed to help get in flow state would benefit me.

Over the last years I've built my practice up to a point where I feel it has been serving me well, though I believe I need an upgrade. I think the most urgent question I face in my practice is around the topic of getting in the moment, especially during performance.

I've noticed that during classes I feel confident or at least I'm not so much bothered by feelings of doubts. However, when I give concerts all of a sudden I can feel very insecure, unsure about my qualities and I can get plagued by dark thoughts. This is mostly when I feel I'm being judged, when I sing for the first time for fellow students, during auditions or exams.

I've noticed that when I'm really 'in the moment' I deliver honest, relatable and true performances. During these performances I'm not busy with doubting myself, with thoughts about what others might think. I'm focused on the music, the message, the ideas of the character.

Sometimes, especially when I feel judged, for example during auditions, I'm less able to get into that feeling of being in the moment. That's a pity, because I feel I'm not able to present my true self and that creates feelings of self-abandonment.

There have been studies around the phenomenon 'flow state' and certain "findings suggest that optimal performance can involve dynamic interplay between subjective states and present data on how such underlying processes appear to occur" (Swann et al. 2017).

Often we hear that flow state improves performance; "flow state significantly affects performance, enabling athletes and musicians to achieve psychological and behavioral excellence during peak activities" (Rhodes 2025). If that is the case, then it would make sense to make an effort to get into flow state, especially for a performance. Thus, to benefit artistically while conducting research, the following question is formulated:

Do I, as a classical singer, experience and harness flow state during performances, and does the level of flow state influence the quality of my performances?

To formulate this question in the research plan format which consists of (A) subject of research, (B) formulation of problem/question, (C) relevance and (D) practical application, the following statement is formed:

I am working on flow state, because I want to figure out how to get into flow state, so

you and I will gain more insight into whether and how flow state influences performance, so I will be able to perform with greater artistry.

This feeling of being in a flow is a phenomenon called 'flow state'. It was first theorized under this name by Mihaly Csikszentmihalyi in 1975. Flow is the feeling and/or experience of being completely absorbed in a certain task or activity (Csikszentmihalyi, 1988). Csikszentmihalyi theorized the flow experience in his article Journal of Humanistic Psychology and in his book Beyond Boredom and Anxiety both from 1975 (Csikszentmihalyi, 1988). Many studies in various disciplines followed his article and book. It is said that flow is the most pleasant state of mind in which there is a perfect balance between challenge and skill (Csikszentmihalyi, 1988).

Method

This research was conducted through a practice-based, autoethnographic approach in which I explored my own experience of flow state during classical singing performances. To investigate whether and how I enter flow, and whether the level of flow influences my performance quality, I systematically documented my preparation, mental state, and post-performance reflections using a structured diary format.

Each diary entry included details such as the date, time, location of the performance, the piece performed and a video recording link. Before each performance, I noted my affirmations, mindfulness or visualisation exercises, body preparation, breath work and immediate thoughts in a journal-style reflection. After the performance, I rated the overall quality of my performance and analyzed the video recording, focusing on specific moments where I felt flow was present, disrupted, or absent. These annotations were aligned with both my subjective impressions and observable actions such timing, gesture, vocal delivery.

To measure the flow state systematically and consistently, I used a 13-item flow scale designed to quantify the degree of flow experienced during each performance. I chose this tool over the more extensive DFS-2 (Dispositional Flow Scale–2) due to its brevity and ease of use; I wanted to avoid mental fatigue before and after performance while still gaining a consistent self-report measure. This allowed me to track changes in flow over time and correlate those levels with perceived performance quality. The 13-item flow scale used was in the form of a short questionnaire developed by Rheinberg, Vollmeyer, Engster, Sreeramoju published in 2023 called FSS - Flow Short Scale. This 13 item 7 point scale is a constant in my measurements of flow which I filled in before and after a performance.

The research was carried out entirely within my musical practice: all insights were generated in and through live classical performances in a soloistic setting. This practical context was essential, as it allowed for authentic experiences of performance pressure, preparation, and expression, all necessary conditions for the potential emergence of flow.

While this self-report method provides useful insight, it also presents limitations. Retrospective evaluation of subjective states may be influenced by memory bias, emotional state, or expectations. Furthermore, the use of a single participant (myself) in an autoethnographic design limits the generalisability of the findings. This will be discussed more thoroughly in the conclusion. That being said, the insights made possible by this

method align with its purpose: to investigate lived experience from within the practice, rather than to produce universal claims.

In terms of theoretical grounding, my research is informed by literature on flow theory, particularly the work of Mihaly Csikszentmihalyi, as well as scholarship in performance psychology and music education. Sources include academic articles and books on flow as well as flow in music.

This blend of first-person observation, structured reflection, video analysis and theoretical grounding provides a view on how flow state may manifest in classical singing performance, and how it can be understood not just intellectually, but also intuitively, through the lived experience of the singer.

So to finalize the introduction chapter, this research investigates the relationship between flow state and classical singing performance through a practice-based, autoethnographic lens. Centered on the question: Do I, as a classical singer, experience and harness flow state during performances, and does the level of flow state influence the quality of my performances?, the project aims to deepen understanding of how mental states affect artistic output. Drawing on the theoretical foundation of Mihaly Csikszentmihalyi's concept of flow, the research explores the experience of performing.

Using a combination of structured diary entries, video analysis and the Flow Short Scale (FSS), four live performances are documented. Each diary entry captured pre-performance preparation, subjective mental states, reflections in the form of a journal and measurable indicators of flow by means of the Flow Short Scale (FSS). These data points were cross-referenced to identify patterns between the experience of flow and the perceived quality of performance.

The following chapters present this inquiry in detail. The chapter *Literature review* provides an overview of flow theory and its application in music performance contexts. *Findings* views the research methodology and explains how the study was conducted within and through artistic practice. Additionally, it presents the findings, drawing on diary entry excerpts, FSS scores and performance analysis to illustrate how flow was experienced and interpreted. Finally, the conclusion reflects critically on the outcomes, addressing both the potential and limitations of the study, and offering implications for performers, educators, and future research.

Literature review

This chapter focuses on giving insight into the literature used in this research and aims to create common ground on the psychological phenomenon called 'flow state'. In order to do so, this chapter is divided into 6 subchapters, focusing first on the theorization of flow state by establishing a definition, the key components, conditions and the process of it. Subsequently, it entertains current literature focused on music and performance, delving into the practical side of flow state.

Theorization of flow state: definition

Flow state is defined as an intense experiential engagement, in the present moment, with an

activity which can be physical or mental. One's attention is fully invested in performing the activity, and the person performs at their highest capacity (Nakamura, Csikszentmihályi 2014). In sports it is often described as "being in the zone" (Kennedy et al. 2014). "The state in which people are so involved in an activity that nothing else seems to matter. The experience itself is so enjoyable that people will do it even at great cost." (Csikszentmihályi 1990). To gain a better understanding of flow state, below further theorization continues, diving into the aspects, key components and conditions for flow state.

Theorization of flow state: aspects, key components & conditions

When in flow, a person is so drawn into an activity that they lose track of time and feel fully in line with the activity. Flow state happens when there is a perfect balance between skills and challenge (Csikszentmihalyi 1997). Therefore, if the task within the activity is too challenging and too difficult, one will find themselves feeling anxious and unable to enter into flow state (Csikszentmihalyi 1997). In contrast, if one's skills are higher than the challenge, one will feel bored by the task and activity (Csikszentmihalyi 1997).

Besides the balance of skills and challenge there are two other aspects needed in order to achieve flow state, namely realistic goals and complete focus is on the activity (Csikszentmihalyi 1997).

Key components of flow state are attention, performance and a particular task or activity. Flow is therefore action and performance-orientated and requires a level of skill (Csikszentmihalyi 2014). Research indicates that any activity has the potential to lead to flow state, however it was found to be more frequent in play and at work, especially in rather complex tasks, such as music playing, composing, writing, dancing, painting, playing chess and a range of sports (Csikszentmihalyi 2014).

The conditions for flow are:

- Clear goals and rules for action: flow is more likely to occur when goals and rules are clearly formulated. (Csikszentmihalyi 2014)
- Clear and immediate feedback on progress made: activities that induce flow usually hold "ordered rules which make action and the evaluation of action automatic" (Csikszentmihalyi 2014).
- Balance between the person's level of skill and the level of challenge that the task presents: it is only when people participate in activities that are within their capacity that flow seems to happen (Csikszentmihalyi 2014)

When these elements align, individuals may experience key characteristics of flow, including loss of self-consciousness, focused concentration, a sense of control, and an altered sense of time (Nakamura and Csikszentmihalyi 2005).

Besides the aspects, key components and conditions for flow, Nakamura and Csíkszentmihályi describe six facets as part of an experience of flow listed below (Nakamura and Csikszentmihályi 2005):

- 1. Intense and focused concentration on the present moment
- 2. Merging of action and awareness
- 3. A loss of reflective self-consciousness
- 4. A sense of personal control or agency over the situation or activity
- 5. A distortion of temporal experience, as one's subjective experience of time is altered

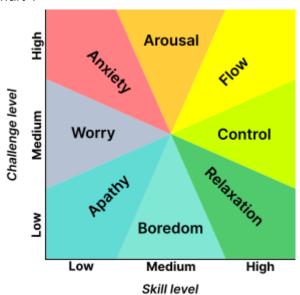
6. Experience of the activity as intrinsically rewarding, also referred to as autotelic experience

The latter, experiencing an activity as intrinsically rewarding, is for example present in an article on the underlying states in excelling athletes by Swann et al. (2017). In their study "participants reported intrinsic rewards such as enjoyment after the performance, as well as pride, and satisfaction" (Swann et al. 2017).

Theorization of flow state: visualization of flow state

The figure below (chart 1) gives an overview of mental states of being in relation to challenge level and skill level (Csikszentmihalyi 1997). Flow is the yellow area where challenge level medium up to high and skill level medium up to high meet. It visually maps the relationship between challenge level and skill level, and the states that can arise when these two variables interact. Flow occurs when both are high and balanced, a condition this research aimed to investigate through the lens of artistic performance. It is interesting to notice how relaxation is placed, showing it in a mix of a low challenge level together with a high skill level. This demonstrates how this state, as well as the other states, are not conceded flow states.





Theorization of flow state in creativity

Flow is often linked to creativity and intrinsic motivation. Csikszentmihalyi (1996) found that highly creative individuals frequently reported being in flow while engaged in their work. Within creative domains, flow is regarded to induce performances to feeling effortless and enjoyable (Csikszentmihalyi and Lefevre 1989). However, the degree to which flow state and enhanced performance are causal remains debated, and "more rigorous evaluation of the flow–performance relationship is needed" (Harris et al. 2023, 694).

In addition to his famous and elaborate oeuvre of books and articles,

Csikszentmihalyi wrote a book with a focus on flow state in creativity. Csikszentmihalyi (1996) listed nine building blocks that occur during flow state:

- 1. There are clear goals every step of the way
- 2. There is immediate feedback to one's actions
- 3. There is a balance between challenges and skills
- 4. Action and awareness are merged
- 5. Distractions are excluded from consciousness
- 6. There is no worry of failure
- 7. Self-consciousness disappears
- 8. The sense of time becomes distorted
- 9. The activity becomes autotelic

Literature focused on music and performance

Besides Csikszentmihalyi's book 'Creativity: Flow and the Psychology of Discovery and Invention' from 1996, there is an aura of literature on flow in music making and performing. Also, it doesn't go unnoticed that much of the literature on flow state is focused on sport.

Three researchers from Dublin felt that "little is known about the applicability of flow scales to the experiences of performers in other domains such as music" (Sinnamon, Moran, O'Connell 2012, 8) and therefore they conducted a study to measure the psychometric adequacy of the Dispositional Flow Scale–2 (DFS-2) in a large sample of 205 musicians. Besides, they also investigated the experience of flow among amateur and elite music students, concluding that there is ground to indicate that the DFS-2 is principally a reliable measure of flow and that flow states are experienced quite frequently by music students (Sinnamon et al. 2012, 11-15).

An earlier study, done by Arnold B. Bakker discusses flow between music teachers and students (Bakker 2003). In this study, flow is measured among teachers, and the emotional contagion theory of Hatfield et al. (1994), which states that emotions are contagious, is cited to see whether flow among music teachers has an influence on their students. This hypothesis is proven in the article, where analysis shows that especially the intrinsic work motivation of teachers correlates most strongly with the flow that their students experience (Bakker 2003). Bakker (2003) also states that not only the intrinsic work motivation of teachers led to a stronger intrinsic motivation among their students, it is also related to the absorption and enjoyment of students during the music lesson.

Much of the research around flow state and music focuses on music education (Bakker 2003; MacDonald, Byrne, Carlton 2002; Nijs 2007) and on health and well-being (Fritz and Avsec 2007). A recent study was conducted to investigate the experience of flow from a music performance perspective and introduces a method of measuring flow in real time (Zielke et al. 2023). Participants were brought into a lab, were recorded while performing a piece they chose themselves, after which the participants were asked to estimate the duration of their performance, and to rewatch their recordings having to mark those places in which they recalled "losing themselves in the moment", referring to flow state (Zielke et al. 2023). It was found that "the proportion of performance time spent in flow significantly correlated with self-reported flow intensity, providing an intrinsic measure of flow and confirming the validity of our method to capture flow states in music performance."

(Zielke et al. 2023). Also, the music scores and participants' performed melodies were analysed. The method of this last study resembles partly the method used in the artistic research of this thesis.

Applied literature focused on music and performance

Susan Williams wrote a book named 'Quality Practice - A Musician's Guide' in which she focuses on helping musicians enhance the effectiveness and efficiency of their practice routines (Williams 2017). It highlights the importance of mindful and deliberate practice over long, repetitive sessions (Williams 2017). Williams (2017) advocates for musicians to focus on quality rather than quantity, encouraging them to pay close attention to their mental and physical approaches during practice.

In her book, available through her website, Williams has a section on flow, calling it "the psychology of optimal experience" and "the ultimate goal of a performer" (Williams 2017). Williams (2017) also touches on how achieving a flow state during practice can enhance not only the quality of playing but also the joy of the musical experience. The overall goal of 'Quality Practice - A Musician's Guide' is to enable musicians to practice smarter, reduce frustration and improve their playing with greater satisfaction and progress (Williams 2017). Williams (2017) describes how practicing being in the moment can help find the 'flow-state'. Besides theory 'Quality Practice - A Musician's Guide' offers practical application in the form of practice cards and worksheets (Williams 2017). Examples of these connected to flow state are worksheets 5 and 10. Worksheet 5 employs journal-style writing whereas worksheet 10 wields visualisation as the main tool (Williams 2017). Other strategies described to enable awareness and flow are feeling the tactile experience of your instrument, becoming aware of the sound producing point and shifting focus to the resonance and the

overtones of the produced sound in the room (Williams 2017). Williams suggests that shifting focus between these three aspects helps to get into a state of awareness and the emphasis seems to lay on allowing yourself to make sound with more ease, less resistance, avoiding judgment and on exploration to induce flow state (Williams 2017).

Suggestions like improvising or 'playing around' with a difficult passage are given to help make one more familiar and secure in the hope of inducing flow (Williams 2017). Similarly, other studies suggest improvisation (Zielke et al. 2023), novelty and uncertainty (Swann et al. 2017) induce flow, supporting Williams' view (2017).

Findings

This chapter presents the core outcomes of the research project. It is structured around the data gathered through diary entries and performance videos, alongside quantitative flow self-assessments using the Flow Short Scale (FSS). The findings are used to reflect on the conditions under which flow was or was not experienced, how that related to artistic output, and what this means for understanding flow in classical vocal performance.

As pointed out in chapter *Literature focused on music and performance*, it is worth noting that much of the research on flow state in combination with music is focused on

education, health and well-being (Sinnamon et al. 2012, 8).

Content wise, the Findings-section will shine light on the collected data in the form of an introduction to the data. Next, it will be explained how to read the diary entries and what the diary entries comprise, after which the scale that is used in the diary entries, named Flow Short Scale, is discussed. Finally, this section is roundup with a subchapter about the material and outcome and the choice of repertoire.

Introduction to the data

The primary data collected consist of diary entries with writings before and after each performance. These entries are included in full in the appendices as well as a list with all recordings and sheet music of the selected repertoire. Each diary entry contains contextual notes, reflections, performance notes and the results of the Flow Short Scale. The format of the diary was continually developed as the research progressed with additions based on what information seemed most relevant in capturing flow and the nuances of each performance experience.

The diary entries were designed to give insight into both the mental and physical preparation for a performance and the subjective experience during and after the performance. They serve as an artistic and introspective log, documenting the personal process of preparing for, entering and reflecting on flow.

How to read the diary entries

The structure of the diary was inspired in part by Susan Williams' 'Quality Practice – A Musician's Guide', which promotes awareness and presence in practice by combining structured feedback with reflective writing. Williams (2017) encourages musicians to "notice with curiosity, not judgment," fostering an inner climate that supports flow.

Each entry contains the following sections:

- 1. Contextual Information: Date, time, location, repertoire.
- 2. Pre-performance notes: affirmations, mindfulness/visualisation exercise, body/movement, breath work and a journal. These were all practices used before the performance.
- 3. Post-performance reflections: Immediate thoughts after performing, focusing on what went well, what was challenging, and whether a sense of flow was present.
- 4. Flow Short Scale Scores: 13-item Likert scale in the form of a short questionnaire which I filled in before and after each performance.
- 5. Rating of the overall performance: this gave insight on how I rated the performance on a scale from 1 to 10, 1 being very poor and 10 being excellent.
- 6. Analysing the recording: this section shows written analysis made after the performance took place. It comments on moments of presence, flow disruption, technical and expressive challenges.

This combination of structured data and subjective experience allows for both qualitative and quantitative insights into the conditions surrounding flow.

Flow Short Scale

The diary entries include The Flow Short Scale (FSS) which is a 13-item questionnaire using a 7-point Likert scale with items such as "My thoughts/activities run fluidly and smoothly."

ranging from 1 for "strongly disagree" to 7 for "strongly agree". The FFS was developed by several researchers in 2023 (Rheinberg et al. 2023). The reason for the development of this relatively short scale was to measure flow state in different contexts. Rheinberg and his colleagues viewed that many flow scales were rather specific to certain activities, as well as quite long (Rheinberg et al. 2023). Originally they created this scale in German in 2003 and ever since it has been translated to several languages.

The Flow Short Scale doesn't include a description nor explanation text. Rheinberg and his colleagues intended that the questionnaire works best when it's filled in as soon as possible to the activity (Rheinberg et al. 2023). This quality made it especially suitable for this study, where the aim was to capture a short-lived psychological state without overloading the performer.

The first 10 items measure core aspects of flow, including focus, sense of control, and time distortion. Items 11–13 measure self-consciousness and worry, helping identify when a performance was disrupted by anxiety or mental interference (Rheinberg et al. 2023).

The scores of the FSS are found in the appendices together with an overview of calculations. Below is a table giving a summary of the scores (Table 1: core results of FSS) which are discussed below the table.

Entry #	Flow after	Difference flow before & after	Difference worry before & after
Entry 1	6,1	+ 1,6	0
Entry 2	5	+ 1,4	- 0,33
Entry 3	6,3	+ 1,5	- 0,12
Entry 4	6,3	+ 0,1	0

Table 1: core results of FSS

This table summarizes the scores of flow measured after the performance ('flow after'), as well as the difference between measured flow before and measured flow after the performance ('difference flow before & after'). Similarly, the difference in the score for the three worry-items measured before and after the performance ('difference worry before & after') are shown.

The element 'difference flow before & after' displays that in each diary entry flow scores were higher after the performance than before it. It is to be said that 'after' doesn't signify the flow state after the performance, rather it was the moment the FSS was taken. The 'after' measurements of the FSS aims to represent the level of flow during the performance. To come as close as possible to the represented moment, the FSS was completed right after the performance.

Material and outcome

The artistic material are videos of performances. These performances were all recorded live in front of an audience. These recordings constitute a core part of the artistic data. The video material varied in quality and format: some were filmed from a single angle with one microphone, while others were edited from multiple camera angles but in all of them a single-take audio recording is used to maintain authenticity. All videos aimed to document a live performance experience under real conditions.

The videos were not analysed with software or scored externally. The analysis is purely done by the performer (myself) highlighting specific moments of increased and interruption of flow, technical challenges and flaws. These annotations were cross-referenced with the diary and FSS scores to look for patterns.

Choice of repertoire

Two contrasting opera arias by two different Italian composers were selected to perform and use for analysis.

The first aria is 'En proie à la tristesse' by G. Rossini from the opera 'Le conte d'Ory' (1828) which is sung in French. It requires agility and control and has a variety of bel canto techniques such as coloratura, embellishments like acciaccaturas (Marchesi, 1970). This aria requires a big range (B3 flat to B5 flat with extension to F6) and room for individualized cadenzas.

The other piece used for this research is 'È strano ... sempre libera' by G. Verdi from the opera 'La Traviata' (1853), sung in Italian. It is a scene starting with a recit. This scene is also technically demanding but incorporates a higher level of emotional drama and lyrical intensity. Similarly, this aria has a variety of bel canto techniques such as coloratura, embellishments like acciaccaturas, a big range and room for individualized cadenzas (Marchesi, 1970) like the first piece. This is due to the intensity, bigger fortes, lyrical and expressive lines and dramatic pacing.

These pieces were selected not only for their technical overlap making them comparable but also because they demand different levels of emotional involvement, allowing for analysis of how affective content might relate to flow state.

Emerging Patterns and Preliminary Reflections

Across the diary entries and FSS results, several patterns began to emerge. Firstly, flow tended to occur when preparation felt complete, especially when physical warm-up, breathwork and visualisation practices were included. Entries with higher flow scores often mentioned breath, presence, and emotional connection. Although from Table 2, below, it is not necessarily clear that preparation has an effect on flow, the journals provide more insight on this matter. Taking diary entry #1 as an example to illustrate the discrepancy of the scores in the table which seems to indicate low preparation due to the score of 2 out of 5. However, if taking a closer look at diary entry #1 at the 'post-performance journal', details like "I remember being quite well prepared for this performance" and "I did a run-through of the whole show. I made a list of all things I needed to prepare and I had assistance from my partner." reveal a different picture. The preparation score of 2 for diary entry #1 is not in line with what can be read in the 'post-performance journal'.

Entry #	Flow after	Difference flow before & after	Preparation: 5 elements (score 1-5)
Entry 1	6,1	+ 1,6	2
Entry 2	5	+ 1,4	5
Entry 3	6,3	+ 1,5	5
Entry 4	6,3	+ 0,1	5

Table 2: results of FSS in combination with preparation

Secondly, disruption of flow often seems to correlate with worry or external pressure, such as time constraints or additional involvement in organisation. In several cases, items 11–13 (measuring worry) were higher when the first 10 flow items were low. Table 3 views the scores for flow after the performance, the difference in flow measured before and after as well as the score for worry before and after the performance together with the calculated difference in worry between those moments.

Entry #	Flow after	Difference flow before & after	worry before	worry after	Difference worry before & after
Entry 1	6,1	+ 1,6	4,33	4,33	0
Entry 2	5	+ 1,4	5,33	5	- 0,33
Entry 3	6,3	+ 1,5	5	4,83	- 0,12
Entry 4	6,3	+ 0,1	4,67	4,67	0

Table 3: results of flow vs worry

The items for worry were 'Something important to me is at stake here (11), I won't make any mistake here (12) and I am worried about failing (13). The scores for this last item were always scored with 4 or lower, while item 11 always had a score of 5 and higher. This raises the question whether this difference may indicate that either these three worry-items are not to be rated in the same manner or that perhaps the validity is to be questioned. None of these concerns are mentioned in the initial study, apart from the possibility to use the first 10 items solely (Rheinberg et al. 2023)

Thirdly, flow was more likely to occur when there was a focus on communication or generosity rather than perfection. When the intention was "to share" or "to enjoy the moment," flow was more accessible than when focused on technical accuracy. Taking a look at the video analysis of diary entry #1 supports this claim as the following is mentioned there: "2:54 I fiddle with the handkerchief, which I didn't plan. I remember enjoying this moment of improvisation, giving me a feeling of liveliness and being in the moment.

3:00 The joy of improvising might have given me a moment of grounding. To me it sounds like the entrance at 3:00 has an open and relaxed quality, the voice resonating quite optimally." (Diary entry #1, appendices). While performing, enjoying the moment seemed to enhance the vocal artistry and perhaps induced flow state.

These patterns align with previous research suggesting that flow is both facilitated and inhibited by cognitive framing (Nakamura and Csikszentmihalyi 2005; Williams 2017).

Conclusion of Findings

The findings of this research suggest that flow in classical vocal performance is sensitive to pre-performance mindset, emotional framing and the preparation as well as the amount of mental load on factors besides the performance itself. While the Flow Short Scale provided consistent tracking across performances, the richest insights came from the reflective diary entries, especially from the journals.

These findings will be further interpreted in the Conclusion chapter, where they will be situated in relation to the broader literature on flow, music performance and artistic self-inquiry.

Conclusion

This study set out to explore the experience of flow state in classical singing performance, driven by a personal and artistic inquiry, aiming to answer the research question: Do I, as a classical singer, experience and harness flow state during performances, and does the level of flow state influence the quality of my performances? By systematically documenting a series of performances through diary entries and the Flow Short Scale (FSS), this research sought to generate insight into the relationship between subjective performance experience and perceived artistic outcome.

Interpreting the Findings

The findings suggest that flow does occur in classical singing performance, but not consistently. Rather, flow appeared to be influenced by a constellation of internal and external factors, including preparation routines, physical awareness, emotional framing done by visualisation and affirmation and the perceived pressure of the performance context measured by item 11 to 13 by the FSS. Moments of flow were often preceded by a sense of readiness and clarity of intention. In contrast, high worry scores correlated with feelings of self-doubt or distraction, sometimes triggered by external circumstances (e.g. technical issues, organisational preparation), often linked to internal narratives.

The performances that yielded higher FSS scores also tended to coincide with diary reflections that noted enjoyment and focus. While this study did not objectively assess performance quality, the performer's own evaluations often aligned with the flow ratings. These findings lend support to previous research that suggests flow may enhance artistic presence and emotional connection (Sinnamon et al. 2012; Csikszentmihalyi 1990), even in high-pressure settings such as classical music performance.

Importantly, flow was not experienced as a binary "on or off" state, but rather as a dynamic spectrum or deviating gradient. The video analyses within the diary entries indicated the feeling of different levels of flow state, e.g. by moments of interruption or unalignment, reinforcing the idea that flow is dynamic and may fluctuate within a single performance (Swann et al. 2017).

Relevance for Music Practice and Education

The results of this study have practical implications for classical musicians, vocalists and educators. First, they reinforce the value of mental and emotional preparation as part of artistic practice. Breathing, visualisation, affirmations and awareness-based routines not only seem to enhance technical abilities but may also increase the likelihood of entering flow. Encouraging students to explore and document their own mental states could empower them to recognise and cultivate the conditions that support their best artistic practice.

Second, the research cultivates tools around performance psychology in classical music. Flow is often idealised as a rare or elusive state (Swann et al. 2017; Sinnamon et al. 2012), yet this study shows that it can be fostered through deliberate practice strategies. Framing performances around expressive intention, rather than only technical execution, may help performers shift attention away from self-consciousness and toward present-moment engagement. To draw an example from the diary entry #3, the affirmation being 'I am communicating what this character goes through' with a flow after score of 6,3 and an increase between flow before and flow after of 1,5 suggests that perhaps an intrinsic affirmation might result in higher flow induction compared to the score in diary entry #4. Both diary entry #3 and #4 have the same score for flow after. However, the increase between flow before and flow after was only + 0,1 with the affirmation being 'I want to entertain the audience and get their full attention' which has a more outward focus compared to the more intrinsic tone of the affirmation of diary entry #3.

Finally, the diary-based approach used here may serve as a useful template for performers seeking to better understand their own creative process. Journaling, combined with short self-assessment tools, can deepen reflective practice and reveal personal patterns that are not always evident in rehearsal or performance alone.

Critical Evaluation and Limitations

While this study offers valuable insights, it also faces several limitations that affect the validity and generalisability of its conclusions. The most significant limitation lies in its autoethnographic nature. As both performer and researcher, I am deeply embedded in the data, which allows for rich, insider insight, but also limits objectivity and introduces the possibility of confirmation bias. Third-party evaluation is not included, nor is audience feedback or physiological measures, which could have provided more valid insight.

Additionally, the self-report nature of the Flow Short Scale (FSS) presents challenges. As with all subjective tools, responses may be influenced by mood, expectations or memory distortions. The absence of physiological or behavioural markers of flow means that the findings rely entirely on introspection. Future studies could strengthen validity by combining self-report with biometric data, observational analysis or post-performance

interviews. The latter would also be an extra control for self-criticism, having an external party, the interviewer, rate the performer's flow.

Time constraints also limited the scope of comparative analysis. There was no extensive control material to systematically compare performances which were and were not accompanied with diary entries. Such an approach would have added depth to the conclusions and offered a clearer picture of flow's potential impact on performance excellence.

Another limiting factor was the inability to access certain literature. There were multiple publications that might have served this research. Unfortunately it was not in the means of the researcher to get full access to these writings, being let solely with titles and abstracts.

Recommendations for Future Research

Several propositions for future research emerge from this project which can be categorized into four pillars. These are comparison, multimodal data collection, control sample and longitudinal research. Including one of these might broaden the take on flow with classical singing performance and enlarge the validity of future research.

To start off with comparison or in other words comparative studies, for future research it is plausible that comparing performances would bring more insight on flow. Performances rated high and low on flow, either through self-report or third-party scoring, might assess correlations with technical accuracy or expressive impact more clearly.

Holding into account that this research is artistically based and not academically based, employing multimodal data collection could bring deeper understanding on flow in classical singing performance. Integrating physiological data like heart rate variability, breathing patterns, eye-tracking combined with video annotation could provide more objective indicators of flow and stress.

This research did not include a control sample. For future studies it might be interesting to test whether interventions like mindfulness, visualisation, somatic practices have a measurable increase in flow likelihood in singers during performance compared to performances of singers without any interventions.

A longer-term study might track a singer over months or years to examine whether flow can be cultivated through practice or whether it remains an unpredictable phenomenon.

Final Reflection

Although this research did not produce generally applicable evidence on whether the level of flow state influences performances, the process of investigating flow significantly enriched my understanding of performance preparation, emotional presence and artistic identity. The moments where flow was interrupted offered important insights, revealing the vulnerabilities, tensions and self-talk that often occur during performance. In that sense, the research has fulfilled part of its aim: it has deepened awareness of how mental states influence artistic output and how deliberate reflection can help performers support their own expressive potential. To the question 'do I, as a classical singer, experience and harness flow state during performances, and does the level of flow state influence the quality of my performances?' this research has provided a 'yes' to the first half and a 'probably' to the second half of the question.

While flow remains dynamic and hard to truly grasp, this study affirms that with curiosity and attention, we can become more attuned to the conditions that allow flow to arise.

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Appendices

Overview of the recordings of performances

Below an overview is given of recordings of performances analysed in this study in the form of video links to YouTube. These are accompanied by the details of the performances as well as ordered in the order of the diary entries.

Entry #1

Date: 10-10-2024 Time: 11:45

Location: Muziekgebouw Eindhoven

Piece: En proie à la tristesse - G. Rossini Video: https://youtu.be/OqRHquLV 6M

Entry #2

Date: 25-10-2024 Time: 11:50

Location: TivoliVredenburg

Piece: È strano ... sempre libera - G. Verdi

Video: https://voutu.be/6Dn2gsVr7YQ?si=DvS-sniZnoeZ5qH-

Entry #3

Date: 20-12-2024 Time: 12:00

Location: TivoliVredenburg

Piece: En proie à la tristesse - G. Rossini Video: https://youtu.be/32AGAV4cFw

Entry #4

Date: 05-02-2025

Time: 12:15

Location: Willem Twee Toonzaal

Piece: En proie à la tristesse - G. Rossini Video: https://youtu.be/DIYMSt67Bqg

Diary entries

Entry #1

Date: 10-10-2024

Time: 11:45

Location: Muziekgebouw Eindhoven

Piece: En proie à la tristesse - G. Rossini Video: https://youtu.be/OqRHquLV 6M

Before Flow-Items:

1 I feel just the right amount of challenge.

2 My thoughts/activities run fluidly and smoothly.

3 I don't notice time passing.

4 I have no difficulty concentrating.

5 My mind is completely clear.

 $6\,$ I am totally absorbed in what I am doing.

7 The right thoughts/movements occur of their own accord.

8 I know what I have to do each step of the way.

9 I feel that I have everything under control.

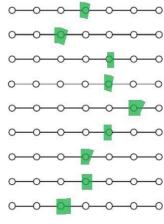
 $10\ \text{I}$ am completely lost in thought.

Worry-Items

11 Something important to me is at stake here.

12 I won't make any mistake here.

13 I am worried about failing.







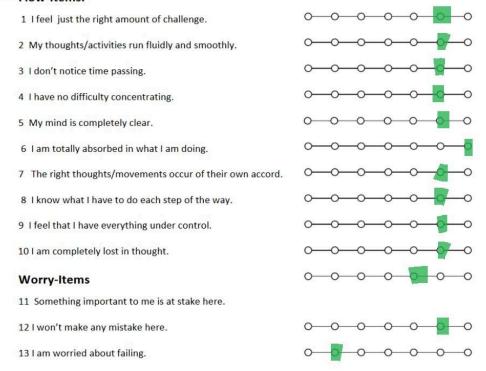
Affirmation: -

Mindfulness/visualisation exercise: -

Body/movement: plank

Breath: hissing, box breathing

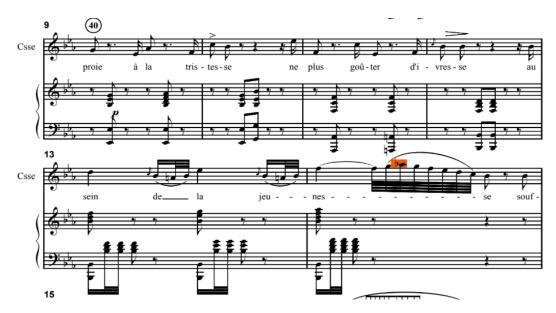
After Flow-Items:



Analysing the recording:

0:08 I realized I wasn't sure how much time I have to take off the dressing gown. What I now see is that my gaze to the audience is interrupted by my thought about the dressing gown, which to me now looks as if the gaze moment didn't reach its end yet. To me this looks like interrupted flow, and indeed I also felt an interruption in my flow on stage. I believe this is caused by not having rehearsed the very exact moments for every movement. If that would have been the case, I presume that it would have had a positive effect on inducing and staying in flow state.

0:45 I notice that I don't 'finish' the hand movement, which to me looks slightly awkward. It looks like I'm stopping my impulse, which leads me to believe that flow wasn't optimal in that moment. Musically it results in what I see as a slightly unnatural rubato/ritenuto; I would have expected the top A flat to have more length (see *image 1*, note marked orange).



score excerpt En proie à la tristesse - G.Rossini

- 0:54 I notice that a similar thing I described above is happening: I don't 'finish' the hand movement, the spreading of the arms is very short and rapid and results musically in a slightly messy and non rubato coloratura cadenza.
- 1:46 I hear that the syllable 'ri' in 'horrible' is not right away in the 'middle of the note', causing it to sound a bit off. I do believe I was in a 'flow state' and on top of that, I know I was doing/acting extra things, like the small extra cry at 1:43. I feel I caught myself off guard because of that, making this next entrance a bit shaky. Even though I deem this to be fitting, to me it would be even stronger would that entrance have been more stable.
- 1:50 I feel I pulled myself together, regaining strength and staying in flow till 2:37, where I noticed it being slightly interrupted by a thought of doubt about how to precisely do the transition to the next bit.
- 2:37 I hear that the 'moi', which is the last word of the sentence, vocally is not fully grounded, making the next sentence 'rendez-moi le bonneur' less grounded as well. I think this happened due to the interruption of flow state, caused by the thought of doubt.
- 2:54 I fiddle with the handkerchief, which I didn't plan. I remember enjoying this moment of improvisation, giving me a feeling of liveliness and being in the moment.
- 3:00 The joy of improvising might have given me a moment of grounding. To me it sounds like the entrance at 3:00 has an open and relaxed quality, the voice resonating quite optimally.

Post-performance journal:

Since I didn't include the journal-style writing to this very first diary entry, I'm writing a couple of things in retrospect. I remember being quite well prepared for this performance. Two days before the performance Martien (pianist) and I did a run-through of the whole show. I made a list of all things I needed to prepare and I had assistance from my partner. On top of that, I had my own dressing room, and the concert started with about 20 minutes of performances by other singers, giving me some time to myself.

Entry #2

Date: 25-10-2024

Time: 11:50

Location: TivoliVredenburg

Piece: È strano ... sempre libera - G. Verdi

Video: https://youtu.be/6Dn2qsVr7YQ?si=DyS-sniZnoeZ5gH-

Flow-Items: Before 1 I feel just the right amount of challenge. 2 My thoughts/activities run fluidly and smoothly. 3 I don't notice time passing. 4 I have no difficulty concentrating. 5 My mind is completely clear. 6 I am totally absorbed in what I am doing. 7 The right thoughts/movements occur of their own accord. 8 I know what I have to do each step of the way. 9 I feel that I have everything under control. 10 I am completely lost in thought. Worry-Items 11 Something important to me is at stake here. 12 I won't make any mistake here. 13 I am worried about failing.

Affirmation: I want to tell this story

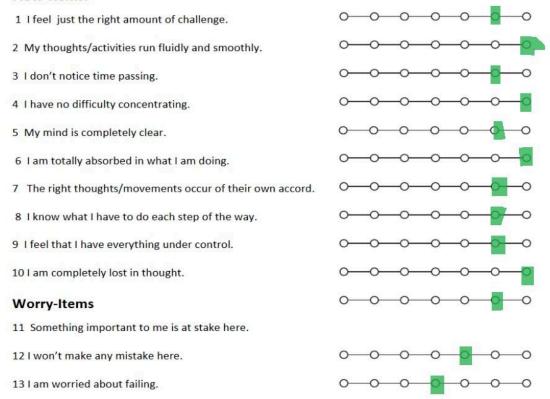
Mindfulness/visualisation exercise: I did a visualisation exercise the evening before **Body/movement**: hip circles, plank

Breath: hissing, box breathing, lax vox (semi-occluded vocal tract exercise; blowing through a tube into a bottle of water)

Journal: The morning is a bit messy. I tried to have a clear overview of who is rehearsing in the hall, but unfortunately it was not up to me and the others needed more time than expected. Which, in their defence, makes sense, since their part of the program is longer. On one hand I feel quite prepared, I have performed this aria a month ago in this very hall together with pianist Lisa, so I know I can do it. Last time it went well and I have a good feeling about today. It feels slightly odd to perform in between two totally different programs (both around 25/30 minutes), however, it's nice to not have to organize so much, for a change. For last month's concert I was quite occupied with all the organization and planning, and today I just have to show up, warm up, prepare myself, rehearse a bit and off we go. The only thing was that I am second guessing myself because I sang this aria in a masterclass two weeks ago, and the coach was having an opinion on certain musical choices I made. I will try not to think about that, and focus on the meaning of the lyrics, on the character and on the emotions.

Change in format: I now use blue for the before-scale, so it's easier to see the difference for before and after. I also added some space for journal writing. Next to that, I have added a rating I give myself after the performance on how I rate my overall performance.

After Flow-Items:



Rating of my overall performance: 8

Analysing the recording:

- 0:14 The opera of this aria is La Traviata and the character I portray is named Violetta. I was trying to imagine having just left the party for a moment, contemplating what had happened to Violetta. It was my choice to have a bit of the final chords of the previous scene to have the transition to the next scene. The music illustrates the party and I try to already get into the mood of confusion. 'È strano' means 'How strange'. I think my intention comes across and I see that my mouth is almost miming the first words before I start. That wasn't intentional, but happened due to being in the moment, in flow state.
- 1:01 I feel like I could have taken more time for this transition. The change in facial expression is sudden, which I don't mind, but I feel I could have 'lived' more in that moment and I believe that would have impacted the starting moment of the sentence 'Null uomo ancora'.
- 1:07 I think I felt a bit rushed by the fact that this recit is quite long and unaccompanied, making it feel naked so to say. Also, at that moment I felt a bit of doubt about the jump to the top B flat (marked in orange). I think because of this doubt, I shortly went out of flow state and by not being in the moment I rushed the coloratura scale down followed by the jump.



score excerpt È strano... Sempre libera - G. Verdi

5:18 My arms ended up in front due to the sentence before, I was aware slightly later already singing the following sentence and to make a smoother transition in the arms, I slowly moved my arms into a new position. In that moment I felt a mix of being in flow but also having my flow slightly disrupted by my own judgement.

greater focus, enjoyment and a sense of artistic presence.

Entry #3

Date: 20-12-2024

Time: 12:00

Location: TivoliVredenburg

Piece: En proie à la tristesse - G. Rossini Video: https://youtu.be/32AGAV4cFw

13 I am worried about failing.

Before Flow-Items:

1 Ifeel just the right amount of challenge.

2 My thoughts/activities run fluidly and smoothly.

3 I don't notice time passing.

4 I have no difficulty concentrating.

5 My mind is completely clear.

6 I am totally absorbed in what I am doing.

7 The right thoughts/movements occur of their own accord.

8 I know what I have to do each step of the way.

9 I feel that I have everything under control.

10 I am completely lost in thought.

Worry-Items

11 Something important to me is at stake here.

12 I won't make any mistake here.

(Exercise)

Affirmation: I am communicating what this character goes through

Mindfulness/visualisation exercise: In the morning I visualized how I will sing this aria.

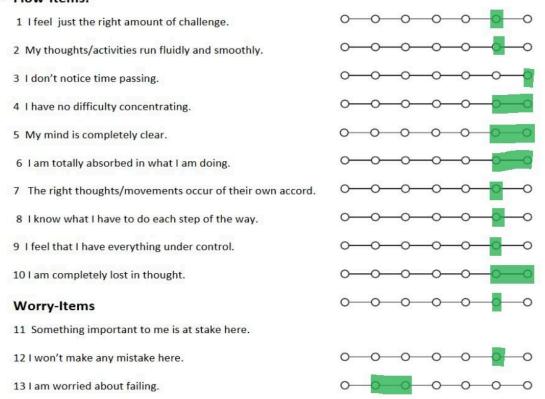
Body/movement: Hip circles, stretching, plank

Breath: hissing, deep breaths

Journal: This is a very intense concert. Next to that I'm singing several pieces, including two duets and two ensemble pieces and an a capella quartet piece, I'm basically being the head stage manager, producer and production assistant. The logistics for the concert are quite strong as this concert is with 9 singers and 10 instrumentalists. I'm doing the planning and logistics of who is rehearsing when and where. The singers only rehearsed with the pianists before and not with the other instrumentalists, so all of that comes down to this morning. Honestly, even though I really like being the brains and coordinator, I feel I need some minutes to myself, especially since many people keep asking me questions. I am glad I made it clear that I need a few minutes to myself, so finally I can get dressed, do my make up and prepare mentally for the concert.

Change in format:

After Flow-Items:



Rating of my overall performance: 8

Analysing the recording:

0:00 In the video you can't see it, but pianist Hanna and I enter the stage, and I realize that the ensemble of instrumentalists is going to stay on stage. There is one chair that's empty, and somehow in a split second I decide that it's a good idea and that it would look/be nice to take a seat for a moment. I believe it was due to being in flow state, that I was able to

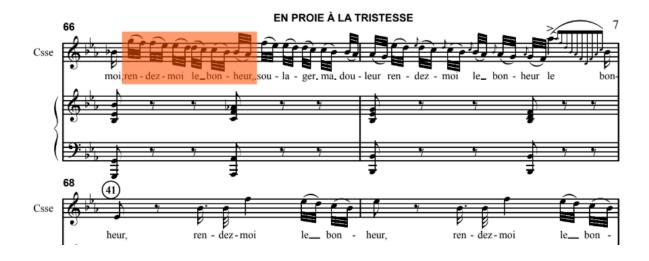
have that insight, take action and execute it right away.

- 0:16 I made the decision to stand up. Since in this rendition of 'En proie a la tristesse' I'm not wearing thus not taking off a dressing gown, I have plenty of time and the fast sequence Hanna is playing felt like a fitting moment to get into action and stand up.
- 0:55 I remember deliberately waiting to put the strands of hair back only now, as I felt it would disrupt the beginning. I felt like the flow state wasn't interrupted by the thought, and to me it seemed like a organic move to first wait and then have a hand movement transition into pull my hair back together with turning my head, making it easier to get my hair out of the way.
- 1:52 Hanna entered, starting the next musical frase without me, I very quickly join her, but I do remember for a moment feeling caught off guard and even for the tiniest moment feeling slightly angered. I let go of those feelings extremely quickly, however I do feel that it's slightly audible that the first tone is a bit shaky which makes total sense, since I reacted very quick to Hanna's abrupt entrance, leaving me no room for preparation. This moment is marked below. As seen, there isn't any written indication that there is a pause between 'horrible' and 'vous que I'on dit', however it is a tradition to make a pause between these lines, and it makes a lot of sense to do so.



score excerpt En proie à la tristesse - G.Rossini

4:34 I remember doubting for a moment how to continue, and I feel that doubt is somewhat apparent in the sentence 'rendez-moi le bonheur' (marked in orange). I think the split second thought caused me to get out of flow for a very brief moment, making that sentence less resonant than the previous and next sentence. However, this next sentence "soulager ma douleur" starting on the 3 and a half beat of bar 66, has clarity and a clear sense of readiness to it. I felt like being straight back into flow, feeling a strong focus as well as enjoyment, especially one bar later on the top A flat in the word "le" on 3 and a half beat of bar 67 where I enjoyed the fermata and the following cadenza.



Entry #4

Date: 05-02-2025 Time: 12:15

Location: Willem Twee Toonzaal

Piece: En proie à la tristesse - G. Rossini Video: https://youtu.be/DIYMSt67Bqg

Flow-Items: Before 1 I feel just the right amount of challenge. 2 My thoughts/activities run fluidly and smoothly. 3 I don't notice time passing. 4 I have no difficulty concentrating. 5 My mind is completely clear. 6 I am totally absorbed in what I am doing. 7 The right thoughts/movements occur of their own accord. 8 I know what I have to do each step of the way. 9 I feel that I have everything under control. 10 I am completely lost in thought. Worry-Items 11 Something important to me is at stake here. 12 I won't make any mistake here. 13 I am worried about failing.

Affirmation: I want to entertain the audience and get their full attention.

Mindfulness/visualisation exercise: I did a visualisation exercise the evening before

Body/movement: hip circles, plank

Breath: hissing, box breathing, lax vox (semi-occluded vocal tract exercise; blowing through a tube into a bottle of water)

Journal: The morning is a bit tough. I am traveling from Utrecht to Den Bosch with quite a lot of stuff as this show has props. I feel quite prepared, I have performed this show a couple of times and last time was only 2 weeks ago, so I know I can do it. Last time it went well and I have a good feeling about today's concert. This version of my show 'Wat ik laatst las' is a bit different from the previous one, because the length of the show had to be shortened. Therefore, even though I have recently performed it, there are a few new things I need to keep in mind. Besides, I was also occupied with making and explaining the light plan as well as putting all the props in place. I do have a pretty calm feeling about all of it; I arrived in time and I learned from the concert of two weeks ago to really take some more time for warming up my voice, especially in the higher range (E5 and up).

For this performance I want to re-reminder myself to focus on sharing the story instead of trying to sing as perfect as I can.

Post concert journal: Right before the concert I tried setting up the recording devices. The camera was cooperating but the zoom device to record the audio separately wasn't working. I had to decide to not wait for the zoom device to start working which made me feel a bit frustrated and disappointed. I knew that it would be best to let go of that feeling right away and rely on the audio of the camera. I took some extra deep breaths before going on stage.

Change in format: I added an optional addition to the journal. It's 'Post concert journal', it's for thoughts after the concert.

After Flow-Items:

1 I feel just the right amount of challenge.

2 My thoughts/activities run fluidly and smoothly.

3 I don't notice time passing.

4 I have no difficulty concentrating.

5 My mind is completely clear.

6 I am totally absorbed in what I am doing.

7 The right thoughts/movements occur of their own accord.

8 I know what I have to do each step of the way.

9 I feel that I have everything under control.

10 I am completely lost in thought.

Worry-Items

11 Something important to me is at stake here.

12 I won't make any mistake here.

Rating of my overall performance: 8,5

Analysing the recording:

- 0:07 I planned to have the moment of the chords align with taking of the dressing gown, I remember being glad I was able to time it so well.
- 0:59 I enjoyed the moment after the cadenza, after having completed one of the most difficult runs in the whole piece on the words "voila quelle est mon sorte"
- 1:14 The hand gesture, not necessarily planned, supported the sound in a helpful way. I enjoyed this full sound as well as the expression that was accompanied with it.
- 1:53 I can tell and I know I was so taken away by being in the moment and enjoying being in the character, that for a moment I forgot the next step, which was to go to Martien (pianist). There is even a small movement which looks like I'm startled, after which I move towards Martien. Concurrently, part of the sentence "que I'on dire" is slightly softer.

Results of FSS from diary entries

#1

```
Before
          Flow-Items:
                                               0 0 0 0 0 0
          1 I feel just the right amount of challenge.
                                               0-0-0-0
         2 My thoughts/activities run fluidly and smoothly.
                                               0-0-0-0-0
          3 I don't notice time passing.
          4 I have no difficulty concentrating.
                                               0-0-0-0-0
                                                 0 0 0 0 0 0
          5 My mind is completely clear.
          6 I am totally absorbed in what I am doing.
          7 The right thoughts/movements occur of their own accord.
          8 I know what I have to do each step of the way.
         9 I feel that I have everything under control.
          10 I am completely lost in thought.
         11 Something important to me is at stake here.

12 I won't make any mistake here.
                                                  0-0-0-0
          13 I am worried about failing.
```

Flow before

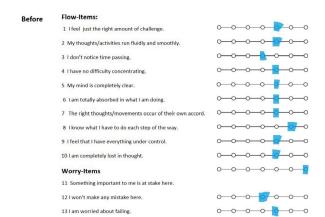
- 1 6
- 2 4
- 3 3
- 4 5
- 5 5
- 6 6
- 7 5
- 8 4
- 9
- 10 $3 = (2 \times 3) + (3 \times 4) + (3 \times 5) + (2 \times 6) = 45 / 10 = 4,5$

Worry before

- 11 6
- 12 3
- 13 4 = total / 3 = 4,33

```
flow after
1
        6
2
        6
3
        6
4
        6
5
        6
6
        7
7
        6
8
        6
9
        6 = 9 \times 6 + 1 \times 7 = 61 / 10 = 6,1
10
worry after
11
        5
12
        6
13
        2 = 13 / 3 = 4,33
```

#2



Flow before

 $5 = (1 \times 4) + (8 \times 5) + (1 \times 6) = 50 / 10 = 5$ Worry before

5 = total / 3 = 5,33

After Flow-Items:

0-0-0-0-0 1 I feel just the right amount of challenge. 0-0-0-0-0 2 My thoughts/activities run fluidly and smoothly. 0-0-0-0 3 I don't notice time passing. 0-0-0-0-0 4 I have no difficulty concentrating. 0-0-0-0 5 My mind is completely clear. 0000000 6 I am totally absorbed in what I am doing. 7 The right thoughts/movements occur of their own accord. O—O—O—O—O 8 I know what I have to do each step of the way. 0-0-0-0 9 I feel that I have everything under control. 0-0-0-0 O-O-O-O-O-O 10 I am completely lost in thought. 0 0 0 0 0 0 Worry-Items 11 Something important to me is at stake here. 0-0-0-0-0 12 I won't make any mistake here. 0-0-0-0-0 13 I am worried about failing.

Flow after

- 1 6
- 2 7
- 3 6
- 4 7
- 5 6
- 6 7
- 7 6
- 8 6
- 0 0
- 9 6
- 10 $7 = (6 \times 6) + (4 \times 7) = 64 / 10 = 6,4$

Worry after

- 11 6
- 12 5
- 13 4 = 15 / 3 = **5**

#3

Before Flow-Items:

0-0-0-0-0 1 I feel just the right amount of challenge. 0-0-0-0-0 2 My thoughts/activities run fluidly and smoothly. 0-0-0-0-0 3 I don't notice time passing. 4 I have no difficulty concentrating. 0-0-0-0 5 My mind is completely clear. 0-0-0-0 6 I am totally absorbed in what I am doing. 7 The right thoughts/movements occur of their own accord. 0-0-0-0 8 | know what | have to do each step of the way. 9 | feel that | have everything under control. 10 I am completely lost in thought. 0-0-0-0-0 0 0 0 0 0 0 Worry-Items 11 Something important to me is at stake here. 0-0-0-0-0 12 I won't make any mistake here. 0-0-0-0 13 I am worried about failing.

Flow before

- 1 5
- 2 5
- 3 5
- 4 5
- 5 4
- 6 5
- 7 5
- 8 4
- 9 5
- 10 $5 = (2 \times 4) + (8 \times 5) = 48 / 10 = 4,8$

Worry before

- 11 6
- 12 5
- 13 4 = total / 3 = **5**

After Flow-Items:

- 1 I feel just the right amount of challenge.
- 0-0-0-0
- My thoughts/activities run fluidly and smoothly.

 I don't notice time passing.
- ----

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0-0-0-0-0

0-0-0-0-0

- 4 I have no difficulty concentrating.
- 5 My mind is completely clear.
- 6 I am totally absorbed in what I am doing.
- 7 The right thoughts/movements occur of their own accord.
- 8 I know what I have to do each step of the way.
- 9 I feel that I have everything under control.
- 10 I am completely lost in thought.

Worry-Items

- 11 Something important to me is at stake here.
- 12 I won't make any mistake here.
- 13 I am worried about failing.

0-0-0-0

Flow after

- 1 6
- 2 6
- 3 7
- 4 6,5
- 5 6,5
- 6 6,5
- 7 6
- 8 6
- 9 6

10
$$6.5 = (5 \times 6) + (4 \times 6.5) + (1 \times 7) = 63 / 10 = 6.3$$

Worry after

- 11 6
- 12 6
- 13 2,5 = 14,5 / 3 = **4,83**

#4

Flow-Items: Before

0 0 0 0 0 0 1 I feel just the right amount of challenge. 0-0-0-0-0 2 My thoughts/activities run fluidly and smoothly. 3 I don't notice time passing. 4 I have no difficulty concentrating. 0 0 0 0 0 0 5 My mind is completely clear. 6 I am totally absorbed in what I am doing. 7 The right thoughts/movements occur of their own accord. 8 I know what I have to do each step of the way. 9 I feel that I have everything under control. 0-0-0-0-0 10 I am completely lost in thought. Worry-Items

11 Something important to me is at stake here.

0 0 0 0 0 0 12 I won't make any mistake here. 0 0 0 0 0 13 I am worried about failing.

Flow before

6 2 6

3 6

4 5

5 5 6 6

7 6

8 5

9

10 $5 = (4 \times 5) + (7 \times 6) = 62/10 = 6,2$

Worry before

5,5 11

12 6

13 2,5 = 14 / 3 = **4,67**

After Flow-Items:

1 I feel just the right amount of challenge. 0-0-0-0-0 2 My thoughts/activities run fluidly and smoothly. 0-0-0-0-0 3 I don't notice time passing. 4 I have no difficulty concentrating. 0 0 0 0 0 0 5 My mind is completely clear. 0-0-0-0-0 6 I am totally absorbed in what I am doing. 7 The right thoughts/movements occur of their own accord. 0-0-0-0-0-8 I know what I have to do each step of the way. 9 I feel that I have everything under control. 10 I am completely lost in thought. 0-0-0-0

0-0-0-0-0

0 0 0 0 0

0 0 0 0 0 0

0 0 0 0 0 0

Worry-Items

11 Something important to me is at stake here.

12 I won't make any mistake here.

13 I am worried about failing.

Flow after

1 6

2 6

3 6

4 7

```
5
        7
6
        7
7
        6,5
8
        6,5
9
        6,5
        6 = (4 \times 6) + (3 \times 6,5) + (3 \times 7) = 63 / 10 = 6,3
10
Worry after
11
        6
12
        6
13
        2 = 14 / 3 = 4,67
```

Results compiled

#1

Flow before 4,5 Worry before 4,33 flow after 6,1 worry after 4,33

Difference flow before & after + 1,6
Difference worry before & after 0
Rating of my overall performance: -

Affirmation -

#2

Flow before 5 Worry before 5,33 Flow after 6,4 Worry after 5

Difference flow before & after + 1,4
Difference worry before & after - 0,33
Rating of my overall performance: 8
Affirmation I want to tell this story

#3

Flow before 4,8 Worry before 5 Flow after 6,3 Worry after 4,83

Difference flow before & after + 1,5
Difference worry before & after - 0,12
Rating of my overall performance: 8,3

Affirmation I am communicating what this character goes through

#4

Flow before 6,2 Worry before 4,67 Flow after 6,3 Worry after 4,67 Difference flow before & after + 0,1
Difference worry before & after - 0,21
Rating of my overall performance: 8,5

Affirmation I want to entertain the audience and get their full attention.

Tables

Entry #	Flow after	Difference flow before & after	Difference worry before & after
Entry 1	6,1	+ 1,6	0
Entry 2	5	+ 1,4	- 0,33
Entry 3	6,3	+ 1,5	- 0,12
Entry 4	6,3	+ 0,1	0

Table 1: core results of FSS

Entry #	Flow after	Difference flow before & after	Preparation: 5 elements (score 1-5)
Entry 1	6,1	+ 1,6	2
Entry 2	5	+ 1,4	5
Entry 3	6,3	+ 1,5	5
Entry 4	6,3	+ 0,1	5

Table 2: results of FSS in combination with preparation

Entry #	Flow after	Difference flow before & after	worry before	worry after	Difference worry before & after
Entry 1	6,1	+ 1,6	4,33	4,33	0
Entry 2	5	+ 1,4	5,33	5	- 0,33
Entry 3	6,3	+ 1,5	5	4,83	- 0,12
Entry 4	6,3	+ 0,1	4,67	4,67	0

Table 3: results of flow vs worry