

**Errata for Outward  
Threads**

Intuitive Computers / Rational Composers *Refleksjonsdelen*

**Juan S. Vassallo**



Philosophiae doctor (ph.d.) i kunstnerisk utviklingsarbeid  
ved Universitetet i Bergen

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# Errata

Formal errors include errors in punctuation, orthographic or grammatical errors, errors in references, formatting errors, or minor changes in layout. Sentence content may not be changed or clarified. A complete overview of the formal errors to be corrected must be attached to the application. The corrections will not be forwarded to the assessment committee, which will assess the artistic reflection as submitted.

## Abstract

Doctor of Philisophy (Ph.D.) - **corrected:** Doctor of Philosophy (Ph.D.)

## Acknowledgements

Eiving Bjørsvik - **corrected:** Eivind Bjørsvik

## Introduction (page 1)

‘Outward Threads’ - **corrected:** *Outward Threads*

The Creative Mind: Myths and Mechanisms, - **corrected:** *The Creative Mind: Myths and Mechanisms*,

The notion of exploration (...) - **corrected:** The notion of *exploration* (...)

The labyrinth metaphor - **corrected:** The metaphor of the labyrinth

we typically understand as intuition. - **corrected:** we typically understand as *intuition*. (**first time italicized, thereafter regular**)

But the idea of *recombining* and *transforming* the space - **corrected:** But the idea of recombining and transforming the space

If we think again of a labyrinth, - **corrected:** If we think again of the labyrinth,

this endeavor could benefit from a multidisciplinary perspective - **correct:** this endeavor would benefit from a multidisciplinary perspective

## Introduction (page 2)

*Constraint Satisfaction Programming (CSP)*, - **corrected:** constraint satisfaction programming (CSP)

*Artificial Neural Networks (ANN)\**. - **corrected:** artificial neural networks (ANNs)\*. (**corrected throughout the text**)

‘Late (or Second) Modernity,’ - **corrected:** Late –or Second– Modernity,

However, many more specific - **corrected:** Additionally, many more specific

In addition, other inquiries, particularly those related (...) - **corrected:** Other inquiries, in particular those related (...)

### Multidisciplinary Insights

the act of *composing* yields - **corrected:** the act of composing yields

act of music composition as a *communicative act*\*. - **corrected:** act of music composition as a communicative act\*.

*I think musically*, - **corrected:** I think musically,

However, recently, I have faced - **corrected:** Recently, however, I have faced

and somehow, for the first time, - **corrected:** and for the first time, somehow,

in connection with electronic music and computer-assisted composition. - **corrected:** in connection with electronic music and CAC.

mostly connected to the wintry landscape of Schubert-Müller’s *Winterreise*, - **corrected:** –primarily connected to the wintry landscape of Schubert–Müller’s *Winterreise*,

the outcome of composing is *not generalizable, non-verifiable, and non-descriptive*; - **corrected:** the outcome of composing is not generalizable, non-verifiable, and non- descriptive;

what is or should be considered consciousness - **corrected:** what is or should be considered *consciousness*

from the perspective of psychology cognitive sciences, - **corrected:** from the perspective of psychology and cognitive sciences,

(1) rapid perception and understanding of the situation at hand, (2) lack of awareness of the processes involved, (3) holistic understanding of the problem situation, (4) the fact that experts’ decisions are better than novices’ even when they are made without analytical means, and (5) concomitant presence of emotional *coloring*\*. - **corrected:** (1) *rapid perception and understanding of the situation at hand*, (2) *lack of awareness of the processes involved*, (3) *holistic understanding of the problem situation*, (4) *the fact that experts’ decisions are better than novices’ even when they are made without analytical means*, and (5) *concomitant presence of emotional coloring*\*.

between situational and bodily knowledge and unconscious understanding. - **corrected:** between situational, bodily knowledge and unconscious understanding.

The first explains intuition from a mechanistic perspective, - **corrected:** The first explains it from a mechanistic perspective, **(removed redundancy with previous sentence)**

the ideas about conscious and unconscious processes, or rational and intuitive, have a long-standing. - **corrected:** the ideas about conscious and unconscious processes, or rational and intuitive, have a long-standing presence in the discourse.

the classic model of creativity by Graham Wallas\* already differentiated between conscious and unconscious thought processes within his well-known four stages: *preparation, incubation, illumination, and verification*-. – **corrected:** the classic model of creativity by Graham Wallas already differentiated between conscious and unconscious thought processes within his well-known four stages: *preparation, incubation, illumination, and verification*\*. **(the asterisk was moved to the end of the sentence)**

(nonconsciousness, fringe consciousness, consciousness) and five stages (Preparation, Incubation, Intimation, Illumination, and Verification)\*. - **corrected:** *(nonconsciousness, fringe consciousness, and consciousness)* and five stages *(Preparation, Incubation, Intimation, Illumination, and Verification)*\*.

creativity is viewed as a *contextually embedded phenomenon*\*, - **corrected:** creativity is viewed as a contextually embedded phenomenon\*,

The relationship between music composition an intra-personal act versus a *contextually embedded phenomenon* - **corrected:** The relationship between music composition as an intrapersonal act and as a contextually embedded phenomenon.

(...) by looking into creativity as an intra-personal exploration within socially constructed spaces of thought: a conceptual space. - **corrected:** (...) by examining creativity as an intrapersonal exploration within socially constructed spaces of thought: conceptual spaces.

the ‘Conceptual Level’. - **corrected:** the *Conceptual Level*

(or regions) - **corrected:** –or regions–

a distinct *quality* or property - **corrected:** a distinct quality or property

Wiggins proposes an example - **corrected:** Geraint Wiggins proposes an example

the metaphor of a labyrinth - **corrected:** the metaphor of the labyrinth

### Artificial Intelligence

the work of Alan Turing\*. Turing’s concept of computation is now commonly referred to as the universal Turing machine, which serves as the foundation for all modern computers. - **corrected:** the work of Alan Turing. Turing’s concept of computation is now commonly referred to as the universal Turing machine, which serves as the foundation for all modern computers\*. **(the asterisk was moved to the end of the**

sentence)

Both systems then reduce the *dimensionality*\* of this data, – **corrected:** Both systems then reduce the dimensionality\* of this data,

while latent space focuses on uncovering hidden structures, embedding spaces are more focused on the transformation of data into vectors in a way that preserves similarity. - **corrected:** While *latent space* focuses on uncovering hidden structures, *embedding spaces* are more focused on the transformation of data into vectors that preserve similarity.

Gärdenfors’ theory of *conceptual spaces*. - **corrected:** Gärdenfors’ theory of conceptual spaces.

Namely, the human -and potentially of other animals- capacity to have subjective sensations. - **corrected:** Namely, the capacity of humans –and potentially other animals– to have subjective sensations.

*embodiment* seems to be a crucial aspect – **corrected:** embodiment seems to be a crucial aspect

The embodied experience - **corrected:** The embodied experience

On the one hand, it is the development (...) – **corrected:** On the one hand, the development

organic support\*, – **corrected:** organic substrates\*,

(...) potentially might lead to AI existing in an organic medium. – **corrected:** could potentially lead to AI existing in an organic medium.

(along with a fourth approach related to abstraction, which intersects the symbolic, connectionist, and embodied paradigms). - **corrected:** along with a fourth approach related to abstraction, which intersects the symbolic, connectionist, and embodied paradigms.

### The Cognitivist Paradigm

\*\* The video of the performance of the piece *Versificator – Render 3* during the final concert presenting artistic results has been included \*\*

\*\* The video caption: “Versificator - Render 3 for vocal quintet (Vokalensemble Tabula Rasa; Rikke Lina Sorell Matthiesen, soprano Sigrun Jødre, mezzo-soprano Tord Kalvenes, tenor Arild Rohde, tenor Jakub Niedziela, bass)” **has been updated to:** Premiere of *Versificator – Render 3* by the vocal ensemble Tabula Rasa (Rikke Lina Sorell Matthiesen, soprano; Sigrun Jødre, mezzo-soprano; Tord Kalvenes, tenor; Arild Rohde, tenor; Jakub Niedziela, bass) at Bergen Kjøtt, February 7, 2023. Concert organized in collaboration with Avgarde, partially funded by the Morte Eide Pedersen Minnefond and Norsk Komponistforening Ekspresskonsertstøtte. Recording technician: Emiliano Ortiz. \*\*

\*\* The score viewer has been replaced by a button link to the score \*\*

is known as the cognitivist approach. **corrected:** is known as *cognitivism*.

*cognition* is seen as essentially being *computation*: the mind is viewed as a *machine*\* - **corrected:**  
cognition is seen as essentially being *computation*: the mind is viewed as a *machine*\*

In his book *Modularity of the Mind*, – **corrected:** In his book *Modularity of the Mind*,

(such as perception, memory, language processing, decision-making, and motor control). - **corrected:**  
such as perception, memory, language processing, decision-making, and motor control.

The notion of computability in composition - **corrected:** The notion of *computability* in composition

Isorhythm – **corrected:** *Isorhythm*

(talea) - **corrected:** –a talea

(color) – **corrected:** –a color.

the idea of musical search spaces, - **corrected:** the idea of *musical search spaces*,

known as heuristic rules. - **corrected:** known as *heuristic* rules.

Example of a melodic contour used as a ‘heuristic’ rule. - **corrected:** Example of a melodic contour used  
as a heuristic rule.

two chained ‘true-false’ rules - **corrected:** two chained *true-false* rules

‘CAGE’ – **corrected:** CAGE (corrected throughout the text.)

### Versificator - Render 3

outside-of-the-system - **corrected:** “outside-of-the- system” (**corrected throughout the text**).

*Text-To-Speech* (TTS) system – **corrected:** Text-To-Speech (TTS) system

*Cluster-Engine* – **corrected:** Cluster-Engine (throughout the text)

*PWGL* – **corrected:** PWGL (corrected throughout the text.)

*MOZ’Lib* – **corrected:** MOZ’lib (corrected throughout the text.)

*Bach* – **corrected:** BACH (corrected throughout the text.)

*PWConstraints* – **corrected:** PWConstraints (corrected throughout the text.)

—at both micro and macro levels— - **corrected:** –both at micro and macro levels—

sung *nonsensical* words – **corrected:** sung nonsensical words

‘*Non-sensical Canon*’ – **corrected:** Non-Sensical Canon (**corrected throughout the text**).

The ‘Vowel-choral’ module – **corrected:** The Vowel-Choral module (**corrected throughout the text**).

‘Consonant Cloud’ module – **corrected:** Consonant-Cloud module (**corrected throughout the text**).

According to the IPA chart, consonants can be classified according to (i) phonation -as voiced or unvoiced-; (ii) place of articulation -as bilabial, alveolar, velar, labiodental, dental, postalveolar, palatoalveolar and postalveolar- and (iii) manner of articulation -as plosives, nasals, fricatives, and affricatives. – **corrected:** According to the IPA chart, consonants can be classified according to (i) phonation -as *voiced* or *unvoiced*-; (ii) place of articulation -as *bilabial*, *alveolar*, *velar*, *labiodental*, *dental*, *postalveolar*, *palatoalveolar* and *postalveolar*- and (iii) manner of articulation -as *plosives*, *nasals*, *fricatives*, and *affricatives*.

\*\* In the section ‘Composition/generation flow,’ the caption of the image is repeated from the previous image. **The correct caption is:** Composition/generation flow diagram using the *Versificator* system. \*\*

(such as words, vowels, and consonants), – **corrected:** –such as words, vowels, and consonants–,

(in groups of two or three, depending on the number of voices in the ensemble). – **corrected:** –in groups of two or three, depending on the number of voices in the ensemble.

(a detailed explanation of these processes will be left out of this text since it would take too much space). – **corrected:** –a detailed explanation of these processes will be left out of this text since it would take too much space.

E.G., – **corrected:** for example,

most of this work is done *manually* afterward. – **corrected:** most of this work is done “by hand” afterward. (**changed for consistency throughout the text**)

(I will come back to this character indication later). – **corrected:** –I will come back to this character indication later.

The addition of *rallentandos* and *accelerandos* – **corrected:** The addition of *rallentandos* and *accelerandos*

1-to-1 – **corrected:** one-to-one

–such as *sforzatos*. – **corrected:** –such as *sforzatos*.

*glissandos* – **corrected:** *glissandi*

(this is more a feature of the *roll/score* objects of the Bach library rather than an actual feature of the *versificator*). – **corrected:** –this is more a feature of the *roll* and *score* objects of the BACH library rather

than an actual feature of the *Versificator*.

-as they are easier to sing in tune-. – **corrected:** –as these are easier to sing in tune.

(the range of pitches that can be chosen) – **corrected:** –the range of pitches that can be chosen–

Furthermore, the-system,’ following a logic was not systematic on the temporal dimension (order of apparition of each mouth shape) (...) – **corrected:** Furthermore, following a logic was not systematic on the temporal dimension –order of apparition of each mouth shape– (...)

-inside and outside the system, – **corrected:** both inside- and outside-the-system

‘transchynklisys’ – **corrected:** *transchynklisys*

‘suphrinchy’ – **corrected:** *suphrinchy*

‘difponieance’ – **corrected:** *difponieance*

‘homovirish abolish’ – **corrected:** *homovirish abolish*

Palestrina-like style. – **corrected:** *Palestrina-like style*

sound psychedelic (60s-ish). – **corrected:** sound *psychedelic* (60s-ish).

‘as from radio news,’ – **corrected:** *as from radio news*, (**corrected throughout the text**).

A purely symbolic approach, therefore, proves insufficient (...) – **corrected:** A purely symbolic approach, therefore, proved insufficient (**grammatical correction**)

what is my own aural sensibility? What are my criteria for deeming a piece artistically valuable? Is this judgment based solely on my own subjectivity, or is it influenced by notions of what contemporary music should be, how it should sound, or even how it should appear on the score? – **corrected:** *what is my own aural sensibility? What are my criteria for deeming a piece artistically valuable? Is this judgment based solely on my own subjectivity, or is it influenced by notions of what contemporary music should be, how it should sound, or even how it should appear on the score? (style fix)*

What guides my auditory selection of algorithmic rules? Are these, ultimately, rules of style? If so, is this style rooted in a particular tradition? or institution? Did my knowledge of the intended performing ensemble influence my choice of rules and material? - **corrected:** *What guides my auditory selection of algorithmic rules? Are these, ultimately, rules of style? If so, is this style rooted in a particular tradition? Or institution? Did my knowledge of the intended performing ensemble influence my choice of rules and material? (style fix)*

how can we truly be creative beyond the bounds of these institutionalized constraints? And to what extent can we deviate from an established style when that very style defines our relevance as artists? -

**corrected:** *how can we truly be creative beyond the bounds of these institutionalized constraints? And to what extent can we deviate from an established style when that very style defines our relevance as artists?*



(style fix)

### The Connectionist Approach

\*\* The video of the performance of the cycle *Oscillations* during the final concert presenting artistic results has been included \*\*

\*\* The video caption: “Premiere of Oscillations (i) for voice, electronics and visuals (voice: Julie Hasfjord)” **has been corrected to:** “Performance of Oscillations (i) by Julie Hasfjord (voice), Andrea Urstad (visuals), and Juan S. Vassallo (electronics). Recorded at Studio A, Grieg Academy, on November 22, 2022. Recording technician: Davide Bertolini.” \*\*

\*\* The video caption: “Workshop of the piece *Oscillations* (iii) for narrated voice, piano, accordion, electronics and visuals (narrator: Alexander Fiske-Fosse; Piano: Késia Decote Rodrigues/Anders Hannevold; Accordion: Sergej Tchirkov).” **has been corrected to:** “Performance of Oscillations (iii) at the Drop-in Concerts during Festspillene i Bergen, Stikk Innom series, on Saturday, May 25. Performers: Késia Decoté Rodrigues (grand piano, toy piano), Anders Hannevold (percussion, accessories), Sergej Tchirkov (accordion), Alexander Fiske-Fosse (narration), Andrea Urstad (video), Juan S. Vassallo (electronics). Recording technician: Juan S. Vassallo.” \*\*

\*\* The score viewers have been changed to individual links to the scores. \*\*

-in the form of video and projections-. – **corrected:** –in the form of video and projections.

More about Andrea here: <https://www.andreatoft.com/> – **corrected:** More about Andrea can be found at <https://www.andreatoft.com/>

*Connectionism* – **corrected:** Connectionism (**italicized on its first apparition, thereafter regular**)

Neural Network. –**corrected:** *neural network*.

‘neurons,’ – **corrected:** *neurons*,

*Weights* in a neural network – **corrected:** Weights in a neural network

-the weights- – **corrected:** –the weight–

supervised and unsupervised. – **corrected:** *supervised* and *unsupervised*.

In both cases, these systems rely on a learned dataset of preexisting musical data. These *datasets*\* can consist of musical symbolic representations, such as the information encoded in a musical score or audio samples. – **corrected:** In both cases, these systems rely on a learned *dataset*\* of preexisting musical data. These datasets can consist of musical symbolic representations, such as the information encoded in a musical score or audio samples. (**The word datasets is italicized and defined in its first appearance.**)

‘Intuitive Computers / Rational Composers,’ – **corrected:** *Intuitive Computers / Rational Composers*,

allowing the integration of inferential (intuitive?) and rule-based (rational?) approaches in a compositional workflow. – **corrected:** allowing the integration of inferential –*intuitive?* and rule-based – *rational?* approaches in a compositional workflow.

‘NeuralConstraints.’ – **corrected:** NeuralConstraints (**corrected throughout the text**)

PLACEHOLDER NeuralConstraints: Integrating a Neural Generative Model with Constrained Computation, <https://doi.org/10.3389/fcomp.2025.1543074> – **corrected:** Vassallo, Juan S. et al. Neuralconstraints: Integrating a Neural Generative Model with Constraint-Based Composition. *Frontiers in Computer Science*, vol. 7, 2025, doi:10.3389/fcomp.2025.1543074.

Its poeticized philosophy of existential torment\* – **corrected:** *its “poeticized philosophy of existential torment”*\*

Particularly relevant to me is Susan Youens, (...) – **corrected:** Particularly relevant to me are **Susan Youens**, (...)

**Susan Youens**, Retracing a winter’s journey: Schubert’s Winterreise (Ithaca: Cornell University Press, 1991). – **corrected:** **Youens**, Retracing a Winter’s journey: Schubert’s Winterreise.

*inward exploration*\*. – **corrected:** inward exploration\*.

Winterreise – **corrected:** *Winterreise* (**corrected throughout the text**)

*Gute Nacht* – **corrected:** “Gute Nacht” (**corrected throughout the text**)

*Frühlingstraum* – **corrected:** “Frühlingstraum”

*Der Lindenbaum* – **corrected:** “Der Lindenbaum” (**corrected throughout the text**)

*Der Leiermann* – **corrected:** “Der Leiermann” (**corrected throughout the text**)

Thus, the reader appears as an eavesdropper, listening to things never meant to be overheard. – **corrected:** According to Susan Youens, the reader appears as an *eavesdropper*, listening to things never meant to be overheard. (**Added a reference to Susan Youens**)

antitheses – **corrected:** *antitheses*

The wanderer experiences deep feelings throughout the cycle, but he is also a realist with an analytical and philosophical mind. – **corrected:** According to Youens, the wanderer experiences deep feelings throughout the cycle, yet Youens suggests he is also a realist with an analytical and philosophical mind. (**Added a reference to Susan Youens**)

as discussed by Susan Youens, – **corrected:** as discussed by Youens,

*To Remember and Forget*, (1999-2000)\*, – **corrected:** *To Remember and Forget* (1999-2000)\*,

Some theorists have described this approach as ekphrastic. – **corrected:** Some theorists have described this approach as *ekphrastic*.

the use of *ekphrasis* (...) – **corrected:** the use of ekphrasis (...) (**first appearance italicized, thereafter regular**).

always pianissimo and *lontano*. – **corrected:** always *pianissimo* and *lontano*.

*Wasserflut* – **corrected:** “Wasserflut” (**corrected throughout the text**).

*Die Post* – **corrected:** “Die Post”

*Gefrorene Tränen* – **corrected:** “Gefrorene Tränen”

*Erstarrung* – **corrected:** “Erstarrung.”

*Mut!* – **corrected:** “Mut!”

*melodrama* – **corrected:** melodrama

(my own). – **corrected:** –my own.

*deviation* heuristic – **corrected:** “deviation” heuristic (**corrected throughout the text**)

Oscillations (i) – **corrected:** *Oscillations (i)* (**corrected throughout the text**)

Oscillations (ii) – **corrected:** *Oscillations (ii)* (**corrected throughout the text**)

Oscillations (iii) – **corrected:** *Oscillations (iii)* (**corrected throughout the text**)

An example of the opposite process is (ii). – **corrected:** An example of the opposite process is *Oscillations (ii)*.

(iii) – **corrected:** *Oscillations (iii)* (**corrected throughout the text**)

-which is commonplace along the full cycle- – **corrected:** –which is a commonplace along the full cycle–

the original verses appear at the beginning and at the end of the narration -and they are meant to be pronounced with a poetic narrative voice- and subsequently and over the three sections of the piece, a slow process of drifting takes place. – **corrected:** the original verses appear at the beginning and at the end of the narration, pronounced with a poetic narrative voice. Subsequently, and over the three sections of the piece, a slow process of drifting takes place. (**The grammar of the original sentence was corrected.**)

symbolizing the footsteps of the *wanderer*\*. – **corrected:** symbolizing the footsteps of the wanderer\*.

Other connections come from more semantic-referential (...) – **corrected:** Other connections come from more semantic/referential (...)

For example, a *crescendo* sound that originates from a heavily processed sample (the pedal of a piano is struck and allowed to resonate, then inverted, creating a crescendo) – **corrected:** For example, a *crescendo* sound that originates from a heavily processed sample (the pedal of a piano is struck and allowed to resonate and then inverted) (**removed redundancy**)

(ongoing) reflections

'Azul 514' – **corrected:** Azul 514

### The Embodied Perspective

\*\* The video of the performance of the piece *Elevator Pitch* during the final concert presenting artistic results has been included \*\*

\*\* The recording caption “*Elevator Pitch* for cello and electronics (cello: Lucas Fels)” **has been corrected:** “Recording of *Elevator Pitch* for cello and electronics. Cello: Lucas Fels. Recording technician: Juan S. Vassallo. Venue: Studio A, Grieg Academy, University of Bergen. Date: April 19, 2024.” \*\*

The *isolated* Mind? – **corrected:** The *Isolated* Mind?

seem to operate in *isolation*\* – **corrected:** seem to operate in isolation\*

*embodied cognition* – **corrected:** embodied cognition (**first appearance italicized, thereafter regular**)

*embodiment* – **corrected:** embodiment (**first appearance italicized, thereafter regular**)

*metaphor* – **corrected:** metaphor (**first appearance italicized, thereafter regular**)

a *figure* of speech – **corrected:** a figure of speech

*dodecaphonic* music – **corrected:** dodecaphonic music

the *symbolic* and the *connectionist*. – **corrected:** the symbolic and the connectionist.

### Elevator Pitch

Examples of Musical Equivalents of Rhetoric Figures. – **corrected:** Examples of musical equivalents of rhetoric figures.

weak musical parameters at an important compositional level, possibly not any less than pitch and rhythm\*. – **corrected:** *weak*\* musical parameters at an important compositional level, possibly not any less than pitch and rhythm.

an *archetypical* musical form – **corrected:** an archetypical musical form

the equivalent rhetoric processes of additio (or auxesis) – **corrected:** the equivalent rhetoric processes of *adiectio* (or *auxesis*)

For this, I used two Lisp rules\* that metaphorically align with the figures of *immutatio* and *transmutatio*, expressed as two logical statements in the LISP code that are enforced by the constraint engine. –

**corrected:** For this, I used two Lisp rules that metaphorically align with the figures of *immutatio* and *transmutatio*, expressed as two logical statements in the LISP code that are enforced by the constraint engine\*. (The style of the words *immutatio* and *transmutatio* was corrected, and the asterisk was moved to the end of the sentence.)

(e.g., ‘s.p. -> ‘s.t’) – **corrected:** (for example, sul pont. to sul tasto)

(e.g., ‘s.p.’, ‘ord.’, ‘s.p.’) – **corrected:** (sul pont., ord., sul tasto)

using the text ‘Eugene Onegin’ by Alexander Pushkin as a model\*. – **corrected:** using the book *Eugene Onegin* by Alexander Pushkin as a model\*.

order ‘1’ – **corrected:** order 1

On the one hand, *analytic*, – **corrected:** On the one hand, analytic,

Markov chains – **corrected:** MCs (corrected throughout the text)

MC – **corrected:** MCs (corrected throughout the text)

*steerable* Markovian models, – **corrected:** steerable Markovian models,

the (long-advertised) – **corrected:** the –long-advertised–

Elevator Pitch – **corrected:** *Elevator Pitch* (corrected throughout the text)

steered-Markovian text. – **corrected:** steered Markovian text.

(the candidates are letters or syllables, depending on the order of the Markov chain) – **corrected:** –the candidates are letters or syllables, depending on the order of the Markov chain–

I developed a Max abstraction that I termed *MarkovConstraints* – **corrected:** I developed a Max abstraction that I named MarkovConstraints (the style of the word MarkovConstraints has been

**corrected throughout the text)**

a determined ending rhyme pattern (a b a b ). – **corrected:** a determined ending rhyme pattern (abab).

such as (a b a b ). – **corrected:** –such as abab.

'VoxBox' – **corrected:** VoxBox (**corrected throughout the text**)

*non-sensical* – **corrected:** nonsensical (**corrected throughout the text**)

alter-ego – **corrected:** alter ego

*musical procedural rhetoric* – **corrected:** musical procedural rhetoric (**first appearance italicized, thereafter regular**)

the *procedurally* created narrative – **corrected:** the procedurally created narrative

my strategy was to de-formalize the piece, – **corrected:** my strategy was to *de-formalize* the piece,

reflect their physical—embodied—production process. – **corrected:** reflect their physical –embodied–production process.

an *embodied* approach and an *intuitive* mode of thinking, – **corrected:** an embodied approach and an intuitive mode of thinking,

They *underlie* the music. – **corrected:** They underlie the music.

‘composing is like building a car that breaks down while driving.’ – **corrected:** “*composing is like building a car that breaks down while driving.*”

### Joining the Threads

\*\* The video caption “I am a Strange Loop for saxophone quartet and electronics (JÓR saxophone quartet).” **has been corrected to:** “Recording of I Am a Strange Loop by JÓR Saxophone Quartet (Anja Nedremo, soprano saxophone; Kathrine Kirkeng Oseid, alto saxophone; Morten Norheim, tenor saxophone; Anna Magnusson, baritone saxophone), with Anders Hannevold (organetto) and Sergej Tchirkov (accordion). Date: June 7, 2024. Recording technician: Davide Bertolini.”

\*\* The video of the performance of the piece *Elevator Pitch* during the final concert presenting artistic results has been included \*\*

\*\* The score viewer has been changed to a link to the score. \*\*

-the *Canon N. 3* from ‘*The Musical Offering*’ BWV 1079 by J.S. Bach- – **corrected:** –the Canon No. 3

from *The Musical Offering*, BWV 1079, by J. S. Bach–

*abstraction* –**first appearance italicized, thereafter regular**

*translation* –**first appearance italicized, thereafter regular**

*sonification* –**first appearance italicized, thereafter regular**

*symbolic sonification* –**first appearance italicized, thereafter regular**

*parametrical remapping* –**first appearance italicized, thereafter regular**

the piece *Gondwana* by Tristan Murail. – **corrected:** the piece *Gondwana* (1980) by Tristan Murail.

these aggregates sound less intricate – **corrected:** these aggregates sound less complex

Despite their visual complexity, these aggregates sound less intricate due to the fusion created by precise frequency relationships, intensities, and timbres. In terms of dynamics, Murail opted for a simplified approach, associating higher modulation indices with weaker intensities rather than modeling FM with complete mathematical fidelity. – **In the original text, this sentence was repeated; in the corrected version, the repetition was deleted.**

*David Evan*, Compositional Control of Phonetic / Nonphonetic Perception, *Perspectives of New Music* 25, no. 1 (1987). – **corrected:** **David Evan**, Compositional Control of Phonetic / Nonphonetic Perception, *Perspectives of New Music* 25, no. 1 (1987).

*Piccoli Studi sul Potere - Obama 06\_04\_2009* for cello and video by F. C. Ciardi – **corrected:** *Piccoli Studi sul Potere - Obama 06\_04\_2009* for cello and video (2014) by F. C. Ciardi

Versificator – Render 3. – **corrected:** *Versificator* – *Render 3*.

‘The time for empty talk is over.’ – **corrected:** “The time for empty talk is over”

EEG, on the other hand, or electroencephalography, – **corrected:** Electroencephalography (EEG), on the other hand,

a *break-point function* (BPF) – **corrected:** a break-point function (BPF)

the concepts of *recursion* and *self-similarity* – **corrected:** the concepts of recursion and self-similarity

‘prolatio’ – **corrected:** *prolatio* (**corrected throughout the text**)

*Musical Offering* (BWV 1079) – **corrected:** *Musical Offering*, BWV 1079,

The Art of Fugue (BWV 1080). – **corrected:** *The Art of Fugue*, BWV 1080.

*strange loop* –**first appearance italicized, thereafter regular**

‘audible’? – **corrected:** audible?

the theme from Canon n. 2 – **corrected:** the theme from the Canon No. 2

Main Theme of Bach’s *Musical Offering* – **corrected:** Main theme of the *Musical Offering*, BWV 1079, by J. S. Bach

sub-harmonic – **corrected:** *subharmonic* (first appearance italicized, thereafter regular)

a line of repeated notes, -a flat line- in m. 70. – **corrected:** a line of repeated notes –a flat line– in m. 70.

virtual (subharmonic) fundamentals. – **corrected:** virtual subharmonic fundamentals.

-C minor, derived from the G8 subharmonic scale-. – **corrected:** –C minor, derived from the G8 subharmonic scale.

recompose – **corrected:** re-compose

Bars 34-37: – **corrected:** Bars 34-36:

post-facto – **corrected:** posterior

a literal reproduction of the Canon – **corrected:** a literal reproduction of the canon

as a function – **corrected:** as a BPF

gradual accelerandos and rallentandos – **corrected:** gradual *accelerandos* and *rallentandos*

the reeds duo becomes ‘responsive’ – **corrected:** the reeds duo becomes responsive

*fNIRS\_to\_Live* – **corrected:** fNIRS\_to\_Live (corrected throughout the text)

### The Question of Contemporary Music

*modernity* – **corrected:** modernity

‘New Complexity’ – **corrected:** “New Complexity”

‘Neo-Tonalism’ - **corrected:** “Neo-Tonalism”

‘Late Modernity,’ – **corrected:** “Late Modernity,”

-a situation mirrored in much of Europe-. – **corrected:** –a situation mirrored in much of Europe.

(as commonly understood in the context of Kourliandsky’s lecture) – **corrected:** –as commonly understood in the context of Kourliandsky’s lecture–



the idea of seclusion and the notion of epistemological colonialism, - **corrected:** the idea of *seclusion* and the notion of *epistemological colonialism*, (**first appearance of the terms italicized, thereafter regular**)

I wonder: can we envision a concept – **corrected:** I wonder: Can we envision a concept

social capital – **corrected:** *social capital*

“The Modern World System” – **corrected:** *The Modern World System*

-aimed exclusively at highly educated practitioners— - **corrected:** –aimed exclusively at highly educated practitioners—

### Composition and Generative AI

in particular with symbolic AI-often so-called GOF AI – **corrected:** –in particular, with symbolic AI, often so-called GOF AI

Machine Learning and *Deep Learning*. – **corrected:** Machine Learning (ML) and Deep Learning (DL). (**First time appearance as terms, thereafter replaced by acronyms**)

into daily life, and, ultimately, - **corrected:** into daily life, and ultimately,

generative AI – **corrected:** gen-AI (**first time appears as a term, thereafter replaced by acronym**)

*sampling* –**first appearance italicized, thereafter regular**

Oswald’s presentation at the “Wired Society Electro-Acoustic Conference” in Toronto in 1985 has become fully valid nowadays, - **corrected:** Oswald’s presentation at the *Wired Society Electro-Acoustic Conference* in Toronto in 1985 remains fully valid nowadays,

alters it somehow -but keeps some resemblance to the original- - **corrected:** alters it somehow, but keeps some resemblance to the original

‘contribution’ – **corrected:** “contribution”

I used *symbolic* datasets – **corrected:** I used symbolic datasets

‘prompting’ – **corrected:** *prompting* – **first appearance italicized, thereafter regular**

*novelty?* – **corrected:** novelty?

‘the best music ever’ – **corrected:** “the best music ever”

(in this case, sequences of pitches, pitch classes, intervals, etc.) – **corrected:** –in this case, sequences of pitches, pitch classes, intervals, etc.—

ateliers – **corrected:** *ateliers*

In the book ‘Artificial’ – **corrected:** In the book *Artificial*

‘Comedian’ – **corrected:** *Comedian*

(prompted?) – **corrected:** –prompted?

-as M. Boden largely discusses-. – **corrected:** –as M. Boden largely discusses.

socially accepted ‘artists’ – **corrected:** socially accepted “artists”

*derivative grey goo* – **first appearance italicized, thereafter regular**

Does anyone remember the software ‘FruityLoops’\* or the old ‘Reason?’\*, both precursor to today’s industry mainstream Ableton Live?\* - **corrected:** Does anyone remember the software *FruityLoops*\* or the old *Reason*?, both precursors to today’s industry mainstream *Ableton Live*?

I recommend the article ‘Angèle et l’art.ificiele’ published in the magazine AOC\*. – **corrected:** I recommend the article “*Angèle et l’art.ificiel*”, published in the magazine *AOC*.

*latent space* – **corrected:** latent space (**fixed style thereafter**)

tertiary memories – **corrected:** *tertiary* memories

the vast data of the Web. – **corrected:** the vast data of the World Wide Web.

## Field of Practice

*postmodernism* – **corrected:** postmodernism (**corrected throughout the text**)

the term ‘Late Modernity’ or ‘Second Modernity’, - **corrected:** the term “Late Modernity” or “Second Modernity”, (**corrected thereafter**)

‘Late Modernism’, - **corrected:** “Late Modernism,” (**corrected thereafter**)

some pieces by composers labeled as late-modernists – **corrected:** some pieces by composers labeled as *late-modernists*

Computer-Assisted (or aided) Composition (CAC) centers on (...) – **corrected:** CAC centers on

Sparks explores a dynamic relationship (...) – **corrected:** The piece explores a dynamic relationship (**removed redundancy with the name of the piece from the previous sentence**)

Silent Data Corrupt explores the metaphor (...) – **corrected:** The piece explores the metaphor (**removed redundancy with the name of the piece from the previous sentence**)

## Contributions

*nPVIconstraints* – **corrected:** nPVIconstraints (**corrected thereafter**)

The module *MarkovConstraints* – **corrected:** The abstraction MarkovConstraints

*MarkovConstraints-Matrix* – **corrected:** MarkovConstraints-Matrix (**corrected thereafter**)

*MarkovConstraints-Rule* – **corrected:** MarkovConstraints-Rule (**corrected thereafter**)

A fully-detailed discussion about *NeuralConstraints* can be found in placeholder – **corrected:** A fully-detailed technical discussion about NeuralConstraints can be found in **Vassallo, Juan S. et al.** Neuralconstraints: Integrating a Neural Generative Model with Constraint-Based Composition. *Frontiers in Computer Science*, vol. 7, 2025, doi:10.3389/fcomp.2025.1543074.

Interface of the *NeuralConstraints-Train* module. – **corrected:** Interface of the NeuralConstraints-Train module.

reading preexisting data (as text files). – **corrected:** reading preexisting data as text files.

-such as the response of the auditory cortex to auditory stimuli-. – **corrected:** –such as the response of the auditory cortex to auditory stimuli.

## Conclusions?

In this sense, a contribution of this project may lie in offering insights that highlight how the reality of the creative process extends far beyond any single paradigm. In this sense, (...) – **corrected:** One contribution of this project may lie in offering insights that highlight how the reality of the creative process extends far beyond any single paradigm. In this sense, (...) (**redundant phrase at the beginning of the sentences was removed**)

frequent and rapid transitions – **corrected:** frequent and rapid transitions

‘creativity’ – **corrected:** “creativity”

(like numbers or strings). – **corrected:** –like numbers or strings.