

Pixelation as a Teleological Strategy in Music Composition

Abstract. This paper explores how the visual process of pixelation can be manifested in novel teleologies for acoustic music composition through ekphrastic notions of transmedialisation. Beginning with definitions proposing to support the decentralisation of ekphrastic musicology, this paper introduces the practical phenomenon of pixelation, as well as transmedializing the visual to the aural through drawing upon areas such as ‘graphical ekphrasis’, ‘sonification’, and linguistic concepts of metaphor and metonymy. By means of demonstration, this paper then provides three case studies in pixelated teleologies within the author’s music (*DISSOLUTION, All Dead Paper, Pixelating the River*), focussing on the encompassing idea of a ‘teleology of failure’ that manifests itself at multiple parametric levels, all intimately connected to the pixelated visual representations used as musical generators. Through this analysis, it is hoped that pixelation can be seen not only as a useful teleological strategy for the formal concept of music composition, but also as a metaphorical scaffold upon which compositional process and poetics can be holistically synthesised.

Keywords: composition, pixelation, teleology, ekphrasis, transmedialisation.

This paper will explore how the visual, computational process of pixelation can be manifested in novel teleological approaches to acoustic musical composition, serving as both a meaningful musical generator and as a heightened poetic metaphor. It is an opportunity to explore and extend the author’s work on “graphical ekphrasis” (Metcalf 2020) by looking at how contemporary compositional designs themselves can be used to highlight, or obscure, musical semiotics in the creation of robust structures; all connected to the varied levels of pixelation that are used as generators.

1. Definitions

It is first necessary to define some terms for the purposes of clarity, namely, “graphical ekphrasis”, and “pixelation”. Graphical ekphrasis is a term used by the author to extend upon Siglind Bruhn’s “musical ekphrasis”, which she defines as “[a] transformation of messages—in content and form, imagery and suggested symbolic signification—from one medium to another” which focuses on the “transmedialisation” of a text into music (Bruhn 2000: xvi). Some examples of ekphrastic music cited in Bruhn’s study include Schoenberg’s *Verklärte Nacht* (1899), and Elliott Carter’s *Concerto for Orchestra* (1969) which both focus on poetry, as well as John McCabe’s *The Chagall Windows* (1974), based on the eponymous stained-glass work. Traditional ekphrastic thought relies on the transmedial process to relate one defined artistic object (painting, poetry, etc), into another. The extension into “graphical” ekphrasis treats the entire space of the source material as this artistic object, moving the onus away from the idea of ekphrasis as something that privileges the notion of the “artwork”, thus attempting a decentralisation of ekphrastic thought and process. This does not deny either the transmedialisation or the ekphrasis of the space, since the key tenets of musical ekphrasis are still present: a transformation of messages in content and form, image, and suggested symbolic signification. In this way, graphical ekphrasis incorporates ideas of *sonification*, if we take Carla Scaletti’s definition as acceptable for this term:

a mapping of numerically represented relations in some domain under study in relations to an acoustic domain for the purposes of interpreting, understanding, or communicating relations in the domain under study. (Scaletti 1994: 224)

Comparing Bruhn’s and Scaletti’s definitions for the two terms, one can find some crossover in their common goal. Graphical ekphrasis acts as a merger of the two viewpoints, highlighting the imagery and symbolism of Bruhn’s musical ekphrasis, with the mapping and communication of empirical relations in Scaletti’s sonification. In linguistic terms, one could then argue that graphical ekphrasis is an example of both metaphor and metonymy in action, using the definition below, with the former representing imagery, and the latter the communication of relations in the observed domain:

Metaphor is based on perspective change and looking for *similarity under the new perspective*; metonymy is based on perspective change and contiguity relationships, such as relationships of part-whole, cause-effect, means-end... (Bartsch 2002: 55)

The summation of this, then, is that through unified logical and metaphorical structures, communication to listeners can be heightened, and engagement widened. As well as this, composers can mount novel responses to any represented space, and create axioms that demonstrate their own personal impression of that space (accounting for educational and preferential biases). The incorporation of compositional systems into extra-musical stimuli thus will create a musical structure that is likely not immediately foreseen by the composer, which is uncovered through iteration.¹ Indeed, in his book on musical metaphor, Michael Spitzer makes the argument that “by letting music structure itself, we obtain (musical) structure without structuralism” (Spitzer 2004: 135). This notion will become clear as the discussion moves to pixelation as a teleological strategy.

Pixelation is a term used to describe a computational process carried out upon an image, whose purpose is to obscure the visual representation. Daniel Chandler and Rod Munday offer these two definitions:

1. (television) An effect that turns a video picture into a mosaic of squares, which is often used in news programmes and documentaries to conceal sensitive information such as car number plates.
2. (computer graphics) A mosaic effect, especially when an image is magnified—revealing that it is made of a series of pixels. (Chandler & Munday 2020)

These definitions, whilst achieving the same visual effect, differ slightly in their process, and this is fundamental in approaching pixelation musically. The first pixelation method, rather than magnifying an image, changes the pixel size of the presented image by resampling (either up or down) and then applying an algorithm such as a “near-neighbour interpolation”. In this pixelation method, the entire image remains as the source input, yet the values of sampling and interpolation (i.e. changing pixel size) are altered. A demonstration is given in Example 1 using an online pixelation tool, changing the pixel size (as defined by this tool) of a representation of the word “pixel” from 1 to 10:



Example 1. An example of the first definition of pixelation

The second pixelation method involves magnification of a portion of an entire image in order to reveal its pixel layout. As such, the entire image does *not* remain through the pixelation process, and a bound, or frame, is imposed on the area that is to be magnified. Anti-aliasing algorithms often try to correct for this, particularly when being printed, as it is seen as an undesirable visual effect, instead representing it as a blur where pixels are not visible. An example on the same image is shown in Example 2:



Example 2. An example of the second definition of pixelation

The distinction between these two processes is important as they allow for different explorations of compositional processes and musical representations that affect a work’s teleological function. Through exploration of three works, I will demonstrate the value of pixelation as a compositional tool, and therefore, the effectiveness and depth of graphical ekphrasis in contemporary music.

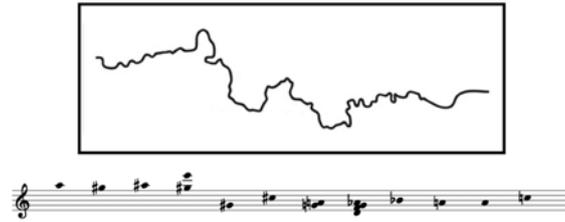
2. Pixelation in Practice

2.1. Failure as a teleological process | *DISSOLUTION* for organ (2020)

DISSOLUTION is a work for solo organ, composed for Daniel Mathieson, which explores twelve increasingly pixelated representations of a map of the River Thames. The piece begins with an un-pixelated (or original) image and ends with a single pixel as a result of the vastly increased pixel size. This graphic trajectory is

¹ Defined here as the repetition of a process. In this musical context, the process of transmedialisation will be iterative such that the results produced are in some way consistent.

mirrored by a harmonic one. The piece generates a pitch set from projecting the map into a pitch–time space, and transcribing the results, as seen in Example 3:



Example 3. Initial pitch set derived from River Thames graphic in *DISSOLUTION*

Over the course of the piece, the pitch sets are “averaged” in order to emulate the near neighbour interpolation that is happening in the visual input. This process is shown in Example 4 for Part One:



Example 4. Pitch averaging process in *DISSOLUTION*

As a result, the available pitches and harmonies not only reduce over the course of the piece, but become increasingly dissonant as a result of the averaging process, such that there is only a single three-note cluster aligned with a single pixel in movement XII.



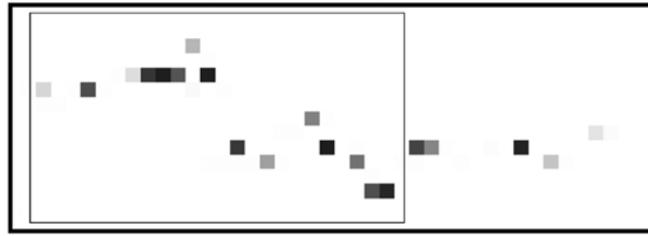
Example 5. Pixel layout and performance instructions of movement XII of *DISSOLUTION*

This is the *structural* process of failure that outlines the entire piece, and it acts as a sonified scaffold upon which to mount an ekphrasis through the incorporation of musical metaphor and communicative semiotics. First, however, it may be useful to demonstrate how pixelated images can be used to generate material, as this often defines the characteristics of movements, and thus the creation of dramaturgy in the construction of the “failure” metaphor.

The piece is structured in three parts: “Representations” (movements I–III), “Pixelations” (movements IV–VIII), and “Obfuscations” (movements IX–XII), and one could argue that musical processes in each part are considered under these headings. For example, at the beginning of Part Two (“Pixelations”), an isorhythm is constructed from the pixel layout which is used for the whole of the fourth movement, which opens dissonantly with the two parts playing apart at interval class one. It is arguably the simplest music so far, and it communicates both the “dot-like” pixel characteristic, as well as the idea of a kind of computational

“processing” error—it is the first overt sign of “failure” within the structure, and is aligned with a process that sonifies the pixel layout obviously and incessantly.²

IV: derivation of talea/isorhythm



Pixel layout: 1 (2) 1 (2) 6 (1) 1 (1) 1 (2) 2 (1) 3

Molto energico $\text{♩} = 344$, $\text{♩} = 172$

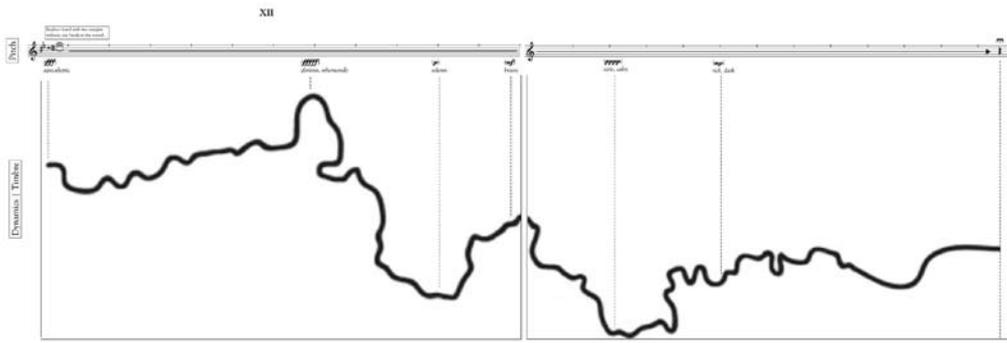
Example 6. Processes of pixelation in movement IV of *DISSOLUTION*

Looking to movement VIII, the end of Part Two, one can see a further reinforcement of a processing error through the disintegrating, or “glitchy” accompaniment figure in the left hand, along with brusque interjections of clusters that are aligned to the pixel layout. The culmination of this gesture that begins in IV finds its resolution from b. 30 in VIII, where the music completely ruptures, causing a breakdown of the musical “machine”, represented by a 12-tone chord at the loudest dynamic in the piece (*ffff*).

Example 7. Bars 28–39 of movement VIII of *DISSOLUTION*

Part Three’s pixel processes are much looser as a result of this rupture, and the final movement epitomises this relegation (or inability) of control through the presentation of a graphic score, which uses the original image, where the organist must modulate timbre and dynamics to interpret the contour of the map: the composer has, in a sense, failed in the transmedialisation process from visual image to determinately-notated score.

² All of the pieces discussed in this article are available at www.thomasmkmetcalf.com



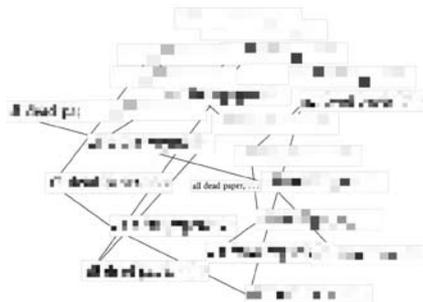
Example 8. The first half of movement XII of *DISSOLUTION*

Also, the “non-specific” nature of the registration markings (using just expressive terms) has meant that, to an extent, the organist has been in dialogue with the music and constructing an interpretation of the failure narrative timbrally that goes beyond the composer’s initial aural intention and control. As Andy Hamilton summarises, “[a]ll skilled action is at some level improvised beyond a supervisor’s instruction and therefore creative” (Hamilton 2020: 68), and this inversion of musical control, a realisation of improvisation, is a counterpoint to the loss of musical data in the graphical source. The expressive possibilities of this piece will vary wildly depending on the organ that is used, and the organist who is playing it, and crucially whether the registration process was collaborative or not. All of these considerations will ultimately affect the communication of the teleological goal.³

The relation of pixelations to macro-structure, micro-process, and musical narrative makes this piece strongly graphically ekphrastic and imbue it with a teleology of failure, where the loss of data in the visual representation is mirrored closely in the musical materials. The realisation of this failure is the teleological goal of *DISSOLUTION*, with the final movement acting as the catharsis of the piece that re-contextualises the preceding music, and this teleological failure is achieved through both a formal sonification of failure as well as a metaphor of it.⁴

2.2. Non-linear teleological failure | *All Dead Paper* for soprano and viola (2020)

All Dead Paper is a work for soprano and viola, written for Sarah Dacey and Stephen Upshaw as part of the *Nonclassical Academy 2020*. It uses the same pixelation type as *DISSOLUTION* but aims to create a different representation of the pixelated images; namely by arranging them into “pixel arrays”. Instead of using a river map, this piece variably pixelates the phrase ‘all dead paper’ (taken from Elizabeth Browning’s *Sonnets from the Portuguese*, No. 28 (1846)) which was then arranged freely onto a single display. In these arrays, all pixelations are represented simultaneously, and through the use of a random number generator, the composer moves through each representation once, without repetition, until all have been used. The pixel array for *All Dead Paper* is shown in Example 9.



Example 9. Pixel array using the phrase “all dead paper...”

³ For more on the collaborative process behind this work, see Mathieson, Daniel & Metcalf, Thomas (2022), “The ‘Graphical’ Scaffold: Approaching Composition and Performance through the Lens of Timbral Diversity.” In: *The Journal of the Royal College of Organists*. Vol. 15, forthcoming.

⁴ The full score of *DISSOLUTION* is available at <https://thomasmkmetcalf.com/media/#solo>

The pixelation processes lie with the viola, which represents the array, with the soprano becoming affected by it as a result. Three axioms were introduced to realise the pixel representations and an illustrated example can be seen in Example 10:

1. The number of horizontal units determined the durational unit of that pixelation group.
2. The number of vertical units determined the density of the attacks, up to four (for quadruple stopping).
3. The colour of the pixel generally determines dynamics (dark = loud, light = soft).

Example 10. Bars 1–3 of *All Dead Paper*, showing links to pixelations

The rules achieve a consistent system of composition that relates levels of pixelation to one another in a compact and adjacent sense (unlike in the longer structure of *DISSOLUTION*). As such, it is a sonification of the pixel array through the mapping of parameters to data. The random nature of moving through the arrays denies a linear sense of teleology moving from pixelation to pixelation, and thus the metaphorical aspect of the music (portrayed by the soprano) is integral in achieving coherence, as well as a graphical ekphrasis, that will fulfil the teleological failure. The soprano part exists in three sections, and these sections are highlighted through a shared durational unit between viola and soprano that aligns with “all dead paper” (the pixelated phrase).

Example 11. Disintegration of the vocal part in *All Dead Paper*

As can be seen, the text becomes increasingly nonsensical as a result of the progressive metaphor of pixelation, with the final section introducing phonemes, rather than words. The alignment and deployment of these shifts are aligned with the most pixelated material in the viola, meaning that the new sections follow chaotic passages of very short durations. As such, the connection to speech breakdown is linked with higher levels of pixelation, where pixelation in the viola has been established through means of duration, density, and dynamic. This heightens the metaphor and allows for a teleology to emerge which centres on the speech itself, arguably the most easily comprehensible aspect of the music. The fulfilment of this teleology is at the point of termination, where the voice produces a non-sibilant sound, and the viola uses scratch tone: both denying their normative playing functions and sounds in order to represent rupture as well as the end of the pixel array.

Both *DISSOLUTION* and *All Dead Paper* can be situated in Kim Cascone’s notion of the “aesthetic of failure”, where he describes that “our control of technology is an illusion” (Cascone 2000: 13). Pixelation is a degenerative visual process, from terms of representation, and one cannot (easily) control the algorithm that is used. As a result, the composer allows the music to structure itself, but when the structure is inherently one of degeneration then failure becomes a fundamental aesthetic quality of the work itself. Indeed, Cascone continues that, “[n]ew techniques are often discovered by accident or by the failure of an intended technique or experiment” (Ibid.). This could be true of novel teleologies as well—the teleological catharsis of *DISSOLUTION*, the graphic score, was a result of the failure of the process to generate any meaningful material with which to create a musical realisation; it is an exploitation of the terminal nature of the pixelation process.

A tempo
colla parte

28 *mp*

(mp) *ffff* poss.

3

5

f

rubato as necessary

ond. non vib. → scratch tone

mp ff mf ff rub. mp p

* long enough to hear the voice briefly isolated in the texture.

Example 12. The ending of *All Dead Paper*

2.3. (Re)constructive teleology | *Pixelating the River* for string quartet (2020)

Pixelating the River is a large-scale work written for the Kreutzer Quartet as part of the project *Pixelating the River: Engagement with contemporary music through graphical inputs*, funded by The Oxford Research Centre for the Humanities, which was premiered in May 2021.⁵ Its harmonic structure is directly linked to pixelated representations of the River Thames, but this time using the second type of pixelation discussed above: magnification. The river graphic was divided into quarters and assigned to one of the quartet instruments. Each quarter was then projected into a pitch-time space in order to derive a pitch set that is inherently linked to that section. A section of that quarter is then magnified, and re-projected into a pitch-time space, deriving a secondary harmonic field that is linked with the first: these are the **regenerated pitches**. However, the portion of the graphic that is magnified carries through its pitches into subsequent iterations: these are **retained pitches**. A summary example is shown in Example 13.

The diagram shows a sequence of five stages from left to right, each with a corresponding musical staff below it:

- Stage 1:** A rectangular box containing a wavy line representing a section of the River Thames. Below it is a musical staff labeled "initial pitches" with a few notes.
- Stage 2:** The wavy line is magnified. Below it is a musical staff labeled "retained pitches" with more notes.
- Stage 3:** The magnified line is further processed. Below it is a musical staff with notes and some dynamic markings like *pp* and *ppp*.
- Stage 4:** The line becomes increasingly pixelated and blurry. Below it is a musical staff with notes and some dynamic markings like *pp* and *ppp*.
- Stage 5:** The line is almost entirely black and indistinct. Below it is a musical staff with notes and some dynamic markings like *pp* and *ppp*.

Example 13. Summary of harmonic fields in Quarter 1 of *Pixelating the River*

This process is applied to all quarters of the graphic to create a harmonic structure for the entire piece. As well as structuring the piece, this process also sets up harmonic tensions between retained and regenerated

⁵ The concert can be viewed here: <https://youtu.be/fad1WN0BRkA>

itches, which act as analogous to the representational tension between the original image and the magnified, or distorted, images. Indeed, this could be pragmatically characterised into “foreground” and “background” procedures and their balances. An example of this can be seen at rehearsal mark P, where the quartet is split to represent the two harmonic fields at once:

The image displays a musical score for a quartet, with a graphic of a river above it. The graphic shows a dark, wavy line representing a river, with a white rectangular box highlighting a specific section. Below the graphic is a musical staff with a treble clef, showing a sequence of notes: G4, A4, B4, C5, B4, A4, G4. This sequence is then shown in a larger, more detailed musical notation for the quartet, with four staves (Vln. I, Vln. II, Vla., Vc.) and various dynamics and performance instructions.

Rehearsal mark P is titled "Longing (l'istesso tempo ♩ = 39)". The score includes dynamics such as *pp*, *p*, *mp*, *mf*, and *pppp*. Performance instructions include "non vib.", "soulful wandering", "gliss.", "arco", and "vib. crd.". The score is divided into two systems, with the first system starting at measure 178 and the second at measure 185.

Example 14. Example of “retained” and “regenerated” pitches used at rehearsal mark “P” of *Pixelating the River*

The structure of the quartet is signified through the use of graphical insertions of the river into the score, with the instruction, “all lines are interpreted as glissandi; as if flowing through a river”. These moments are concluding points of harmonic fields, and their usage allows for the coherence of both “types” of material and the prevailing harmonies. A similar graphic practice can be seen in Kenneth Hesketh’s *Forms Entangled, Shapes Collided* (2012), where freeform lines are drawn in certain parts (usually isolated within textures) instructing the execution of a harmonic glissando which matches the contour of the graphic, and these moments happen between movements I, II, and VI.⁶ Techniques such as this not only signify a change in modality (from 12-tone to indeterminate glissando), but also allow for the construction of a sonic *ductus*: a palaeographic concept in which the work leads you through itself in its visual presentation and features of production.

⁶ For more on this, see Metcalf, Thomas (2021): Labyrinths, Liminality, and Ekphrasis: The Graphical Impetus in the Music of Kenneth Hesketh. In: *Tempo* 75(295): 45–71.

87

A. Fl. *p* (*sotto voce, molto misterioso*)

B. Cl. *p* (*sotto voce, molto misterioso*)

Perc. (mba.) *p* *sonore* Tam-tam

Vln. * see footnote arco, sul pont.

Vc. *pp* (*icy!*) *poco* *sim.*

c. 45"

vib. ord
 → bow pressure ord.
 all lines are interpreted as glissandi, as if flowing through the river; change bow ad lib.
 solo

Vln. I 64 *ff* *molto espress. e drammatico* *p*

Example 15. Hesketh, "Forms Entangled, Shapes Collided" bb. 87–90 (above); Violin 1 "solo" in *Pixelating the River* (below)

In *Pixelating the River*, this ductus is also visual in two senses. The use of the specific graphic as a performance instruction further bolsters the sonification and metaphorical aspects of the graphical ekphrasis. Moreover, the fragmentation of the original set, through retained pitches, acts as an analogy to the magnification process that happens in the pixelation process. The teleology is based upon the de-construction of these rows, and their situation in surrounding material (the regenerated pitches). In the same way that we focus on a single pixel through magnification, the set narrows to reveal a key pitch that is the culmination of a process of obfuscation. In this sense, the teleology of the work exists as four "arrivals", where the tensions of the pixelation process are set up in the preceding music.

Through this logic, the piece should feasibly end after the fourth, and final, graphical insertion. However, this is not the case. The final section of the piece exists as a contracted analogy for pixelation itself. The brash, unison music of rehearsal mark Y is unfurled in such a way that subsequent parts become audible (away from the whole); much like how pixels become visible through magnification. This is sonically signified at rehearsal mark CC, where the quartet is in four different metrical layers which disintegrate to a sparse texture, representing a move from high data to low. The final section elongates all "initial pitches" in harmonics, therefore referring to the opening material but also, for the first time, using these pitches *simultaneously*. In the same way that the magnifications are a relation to their original image, one must also acknowledge that these four quarters, when assembled, make a whole. This is the true teleological goal of *Pixelating the River*: **re-construction**.

Relentless ($\downarrow = 98$)

Violin 1, Violin 2, Viola, Violoncello

322 **Y** *fff incantant, malis incantant*

329 **CC** *Liberamente, disintegrating (l'istesso tempo)*

Example 16. “Unfurled” presentation of previous unison material, b. 322–333 of *Pixelating the River*

Violin 1, Violin 2, Viola, Violoncello

339 **CC** *Liberamente, disintegrating (l'istesso tempo)*

344

Example 17. Disintegration of quartet texture in the penultimate section of *Pixelating the River*

Example 17. Disintegration of quartet texture in the penultimate section of *Pixelating the River*

Example 18. Ending section of *Pixelating the River*

Example 18. Ending section of *Pixelating the River*

3. Concluding Remarks

This paper has introduced pixelation as a teleological function of acoustic music composition. It has shown that through the application of both formal and poetic procedures, the pixelation metaphor can be constructed alongside the sonification of its properties; thusly creating a sonic representation of the image(s) which can allow for heightened teleological communication to audiences and performers. This expands graphical ekphrasis to a form of “double ekphrasis”, something concerned as much with the musical representation of spaces themselves, but also interested in the *movement between spaces*, and how this can factor into music’s structural and teleological properties. The effectiveness of this, or any graphic approach, can be demonstrated through Jeffrey Kallberg’s study of genre when he states that,

[a] kind of “generic contact” develops between composer and listener: the composer agrees to use some of the conventions, patterns, and gestures of a genre, and the listener consents to interpret some aspects of the piece in a way conditioned by this genre (Kallberg 1988: 243).

The communication of graphical aspects of contemporary music can fit into this “contract”, where the sonification (or more empirical) aspects of the transmedialisation from visual to aural, are mediated through a metaphor of culturally understood notions of what these images represent, e.g., pixelation as failure or obfuscation. In this way, we should understand graphical (or transmedial) composition of this kind as a “genre” in itself. Therefore, we can interrogate previous examples of the genre throughout contemporary music history, and its writing more generally, uncovering communicative and formal aspects of the music that may be overlooked in traditional analytical approaches.

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Pikseliacija kaip muzikos kūrinio teleologinė strategija

Santrauka

Šiame darbe tyrinėjama, kaip vizuali pikseliacija gali tapti akustinės muzikos teleologiniu komponavimo pagrindu. Pradedant ekfraziškos muzikologijos decentralizacijos sąvokomis, šiame straipsnyje pristatomas praktinis pikseliacijos fenomenas ir transmediacija iš vaizdinės sferos į girdimąją, paliečiant tokias sritis kaip „grafinis ekfrazis“, „sonifikacija“, lingvistiniai metaforų ir metonimų konceptai. Pagrindinė idėja yra prielaida, jog ekfrazinis atvaizdavimas neprivalo būti sukoncentruotas į vadinamąjį „meno kūrinį“, bet jis gali atspindėti bet kurią transmediaciniam procesui tinkamą erdvę. Taigi sujungtų erdvių judėjimas (pavyzdžiui, vis didesne pikseliacija pasižymintis paveikslėlis) gali išplėsti ekfrazę iki kažko panašaus į dinamišką „dvigubą ekfrazę“, kur vaizdo atvaizdavimas garsinėje dimensijoje yra toks pat svarbus, kaip ir atvaizduojamų erdvių judėjimas. Čia ir glūdi tokių procesų kaip pikseliacija panaudojimo muzikoje teleologinis aktualumas.

Straipsnyje pateikiama trijų autoriaus kūrinių, kuriuose panaudota pikseliacijos teleologija, studija. Čia itin svarbiu aspektu tampa „nesėkmės teleologijos“ idėja, kuri įvairiai pasireiškia daugelyje parametrų, glaudžiai susijusių su vaizdinėmis reprezentacijomis kaip muzikos generavimo priemonėmis. *DISSOLUTION* (2020) panaudota lineari „nesėkmės teleologija“: palaipsniui pereinant nuo aukštos raiškos į žemą, nuolat didinamas šaltinio taškų (pikselių) dydis, kol belieka tik vienas taškas. *All Dead Paper* (2020) iliustruoja taškų masyvo (angl. *pixel array*) idėją, kai panaikinamas linearus, kryptingas pikseliacijos laukų judėjimas ir atveriamas kelias atsitiktinumui, kuris turi būti realizuotas trumpoje muzikinėje struktūroje, kad sukurtų koherentišką „nelinearią teleologiją“. Kitaip nei prieš tai aptartuose kūriniuose, *Pixelating the River* „nesėkmės teleologija“ yra taikoma kaip rekonstrukcijos priemonė – pasitelkiamas vaizdo išdidinimas (priešingai pikselių dydžio kitimui). Taip kuriami „išlaikytas“ ir „regeneruotas“ harmoniniai laukai kūrinio struktūroje padeda išlaikyti didelės apimties (30 min. trukmės) teleologinę koherenciją.

Šiomis analizėmis siekiama parodyti, jog pikseliacija gali būti panaudota ne tik kaip perspektyvi teleologinė strategija, muzikos formos koncepcija, bet ir kaip metaforiniai „pastoliai“, ant kurių pasilypėję galėtume holistiškai sintezuoti poetiką ir kompozicinius procesus.