# JUDGING A SCORE BY ITS COVER: THE ROLE OF VISUAL DESIGN IN INTERPRETING COLOUR SCORES

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## ABSTRACT

Music notation is typically viewed to be an interface for the transfer of musical information, with a performer's individual interpretation of a score determining the aural outcome. Performers rely on learned symbols and context clues to interpret a score, supplemented by semantic information inferred by the style and font of the score. When scores contain novel graphic elements that have no standardised framework for interpretation, such as colour and shape, the semantic information contained in the visual presentation of the graphics becomes integral in influencing a player's unique interpretation. Though marketing and graphic design literature demonstrate the clear importance of visual design in mediating the relationship between viewer and media, examination of this phenomena remains largely absent from most academic score analyses. In this paper, I use colour as the primary lens through which to explore the role of visual design in mediating a performer's response to a score. I present three original and visually distinct compositions as case studies, each uniquely demonstrating the role of colour and peripheral extra-musical content (such as font, shape, size, and layout) as mediators of interpretation. I centre verbal and written responses from performers to explore how the interaction of and with these visual characteristics shapes interpretation of the score and resulting music.

## 1. INTRODUCTION

The score is at the centre of many Western classical and contemporary music traditions, and the role of notation in mediating the exchange of musical ideas continues to foster boundless discussion and innovation. In my own experience of reading and interpreting notation, the physicality of the score has always felt vitally important in shaping my engagement with the work. I recall sitting in the university library as an undergraduate composer and sifting through large scores, feeling the yellowed grain of the paper, learning to recognise the unique style of each composer or engraver. The huge size and aged quality of these scores seemed to suggest the enormity and richness of the musical material within. It was a vastly different experience to what I had previously experienced in picking up thin, white A4 scores with the same stock Finale or Sibelius fonts, and evoked a lasting regard for the ability of a physical score to seemingly reflect the music material held within. This sentiment is echoed in discussion with colleagues and enforced in composition courses and texts which emphasise the importance of good score engraving**.** However, though music notation is historically an explicitly graphic medium, academic analyses of scores typically focus on *what* musical material is being communicated through notation, without touching on *how* that notational material is visually designed and represented (such as font, format, size, medium, colour, and shape) and how it mediates a player's interpretation. Building on the importance of visual design established in fields like advertising, I formed my hypothesis that the visual design of notational material (both in terms of aesthetics and functionality) might create an intrinsic difference in how that notation is interacted with and interpreted by performers.

Within the vast field of novel and/or graphic notations, I limited my scope to the use of "colour-notation" as a lens through which to examine the role of visual presentation in shaping players' interaction with a score. In this paper, I present three case studies of original compositions which I have workshopped and discussed with performers in an iterative process. Using an artistic research framework, I highlight the lived experience of performers through thematic analysis of their verbal and written responses from collaborative workshops and surveys, and then compare this to my own reflections on the scores I created. Each case study uniquely demonstrates the value of colour as a visual design tool which mediates a performer's interpretation and realisation of the score.

## 2. VISUAL DESIGN AND INTERPRETATION

Schuiling's definition of musical notations as "interfaces for imagining virtual musical relations" [1, pp. 432] understands the score as a site for interaction and interpretation, with meaning that is flexible depending on the interpreter. In Western classical scores, some musical characteristics are

prescribed and proscribed, and some are left open to the judgement of the performer, who typically draws on historical and contextual clues to seek out and embody the composer's emotional and narrative intentions implicit in those technical actions [2]. Silvermann describes two approaches to interpretation: formalist, in which the performer is tightly bound to and protecting the composer's perceived intention, or subjective, allowing a performer more 'poetic license' to experiment [3]. For notated compositions, this process of analysis and interpretation is essential to aurally realising a work.

This relationship becomes complicated by non-standardised notations, such as graphic and/or coloured scores. In [4], Sobakina likens the process of interpreting such scores to that of experiencing synaesthesia, as without an existing frame of reference provided by Western staff notation, the performer must personally perceive intrinsic relationships between the graphics and a musical outcome. Here, musicians often rely on semiotic associations triggered by colour, shape, size, and visual interaction of elements. Therefore, musical responses and interpretation become closely tied to the performer's individual response to the visual presentation of the score, including graphic components, format, style, and aesthetic value. Including open elements evokes Silvermann's *subjective* approach to interpretation, centring the musical voice of the performer.

For both standardised and non-standardised notations, visual design of the page plays a role in influencing a performer's interpretative process. In staff-notated compositions, familiar elements such as font, typesetting, and format may subtly guide a player's approach to a score. Different fonts possess distinct emotional connotations, described as 'semantic signatures' by Kulahcioglu and de Melo [5], and can influence value judgements of a text [6]. In scores, the most common example is the use of 'classical' sans-serif font versus 'jazz' script-style font, which separate perception of each genre by drawing on connotations of 'seriousness' and 'looseness'/'fun' that Shaikh and Chaparro [7] attribute to serif/sans-serif vs. script fonts respectively. In a study on font and brand choice, Doyle and Bottomley [8] suggest that a font's perceived appropriateness to its context can determine its appeal; in a score context, appropriate typesetting may indicate both professionalism and serve to reinforce a narrative for a player. Similarly, the appearance of staff notated scores carries extra-musical connotations. Experienced performers can differentiate baroque, classical, romantic, and "new" music simply by looking at how information is distributed on the page; their own personal preferences for or against certain eras (and learned understanding of how they "should" be played) will immediately influence their attitude and approach to the learning process. The dense appearance of musical content in "new complexity" scores such as Brian Fernyhough denotes complexity and technical difficulty, and thus intellectual-musical value [9]. In contrast, sloppily engraved scores may be viewed as the work of an inexperienced or inattentive composer, and therefore are given less care in the interpretative process.

Manipulation of otherwise-familiar content may also serve to illustrate the narrative of a work. George Crumb's famously circular and spiral-shaped piano scores such as *Makrokosmos* could have been notated using a traditional staff format, but McKay suggests that the unique calligraphic format perhaps adds an intangible narrative quality which "changes something fundamental about what the work communicates to a performer" [10, pp. 13].

Colour is a particularly versatile component of graphic scores, as demonstrated by the wealth of unique colour-scores and notation systems curated by sources such as Theresa Sauer's *Notations 21* [11], Read Garner's *Source Book of Music Notation Reforms* [12], and Cat Hope's curated site *Drawn From Sound* [13]. Because there is no standardised symbolic meaning to colour as a notational construct, colour can be assigned open, ambiguous, or highly specific meanings depending on context. When colour is used as an open parameter, performers may draw upon associations between music and colour mediated by emotion, personal experience, and cultural metaphor [14]. For example, the association of red with excitement, anger and strength translates musically to speed, agitation and loudness, while cooler hues are associated with softer, passive sounds [15] [16] [17] [18]. John Cage's *Aria* (Figure 1) is a notable example of an open colour-score which invites a performer to harness personal colour associations to create a variety of vocal timbres [19].

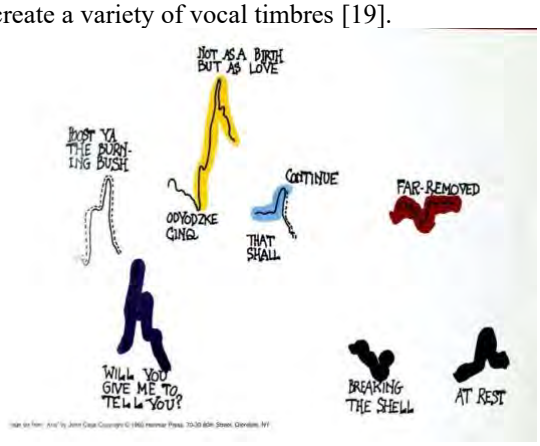


**Figure 1.** Excerpt of *Aria* by John Cage (1958)

Composers – such as Michael Poast, Deborah Pritchard, Anthony Braxton, and Cilla McQueen – join this tradition either by using coloured shapes, lines and spatial relationships alongside some traditional markings, or emancipating themselves from traditional notation styles entirely in

experimental, abstract scores [20] [21] [22] [11]. By applying graphic design principles in scores such as these, a carefully selected colour palette can communicate mood, style and concept, while also drawing the eye to or from specific elements [23]. Recognisable colour combinations can be used to illustrate narrative in a score, guiding an interpreter. The design (or in-/ex-clusion) of elements such as staff notation, text, colour, and imagery might suggest a genre or interpretative approach to a performer, e.g. more non-standardised characteristics might connote open interpretation.

Colour-scores can also be explored through a variety of visual mediums, from pencil and paint to digital, with each medium carrying different connotations for a viewer. In the 21st century, digital scores and score-sharing present a particularly compelling and adaptable platform with which to experiment with colour and visual format, as the physical constraints of colour printing and paper no longer exist [24]. The Decibel ScorePlayer is a prominent example, hosting scrolling, animated scores that frequently feature line, shape and colour-based graphics, most notably by composer-researchers and developers such as Cat Hope, Aaron Wyatt, and Lindsay Vickery [25]. Cat Hope's *Human Cathedral* (see Figure 2) is an example of a left-to-right scrolling score supported by the ScorePlayer [26].

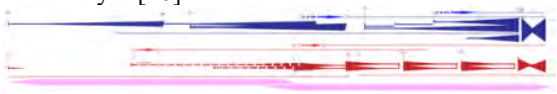

**Figure 2.** Excerpt of *Human Cathedral* (2019) by Cat Hope in the Decibel ScorePlayer

The movement of the score allows colour to be used as a linear narrative tool in itself, unfolding as the piece progresses. This exciting format offers an opportunity for visual immersion to performers and even audiences. Its applications for colour-scores are explored as one case study in this paper.

## 3. CASE STUDIES

In my recent work, I've become increasingly aware of the limitations of standardised classical music notations and performer-composer relationships enforced therein. The use of colour in my scores provided a gateway for me to begin exploring alternative notational spaces which gently disrupt those hierarchies. To centre the voices of performers in realising my work, I primarily explore the use of colour as an open, expressive device which invites players to draw deeply on their own creativity.

What follows are three case studies, each analysed through an artistic research framework in order to illustrate the role of score design in mediating performer-score interactions. Each work uses a different medium, format, ensemble, purpose, and intended role of colour as an expressive tool, with the goal of examining how the visual qualities of a score can mediate and transform the musical response of performers. These works are part of an ongoing and iterative creative immersion in colour notation, during which I created and workshopped "colour-scores" over a period of years. In order to conduct an analysis of the effectiveness of each notation system, I sought feedback from performers using questionnaires and a semi-structured interview process.

Using an action research spiral (O'Leary, 2004), each composition was developed and workshopped through a *workshop – reflect on feedback – re-compose – workshop* cycle in order to hone in on the effectiveness of colour notation. To gather feedback, performer-participants completed a detailed survey before and after workshopping the piece, and I guided and transcribed in-rehearsal discussions regarding players' evolving impressions of the score. By triangulating these data with my own reflections and recordings of each work, I can include the perspective of both composer *and* performer(s) in evaluating the role that presentation and aesthetic value played in interpretation of each work. In each of the case studies that follow, I synthesise these two perspectives to discuss how colour is uniquely utilised and presented, consider the role this played in performers' interpretations, and evaluate its function as a visual notation tool. As the case study scores all contain open and semi-open notations – wherein one performer's response might differ from another's – each performer's lived experience is offered equally as a unique perspective on the potential of the different scores, and my discussion of each case studies suggests the implications and questions that arise from my findings rather than a decisive conclusion. Due to the surprising lack of writing regarding this topic within music literature, the scope of this paper is limited to my analysis of this phenomena in the three case studies, alongside synthesis of my observations with literature from non-musical fields to offer an explanation as to how and why the performers in this study engaged with the scores as they did.

## 4. FIREFLIES (2021)

*Fireflies* (2021) is a piece for piano and open-instrumentation ensemble of 6 or more players. Composed with the intention of creating a minimalist soundscape with a progressive narrative driven by player decisions, the six players act as "fireflies", gradually modifying an individually assigned three-note motif which is underlaid with a different colour (Figure 3). Performers are instructed to create a "personality" for their motif by manipulating the dynamics, articulation, speed, register and presence of the motif according to their personal interpretation of the given colour.

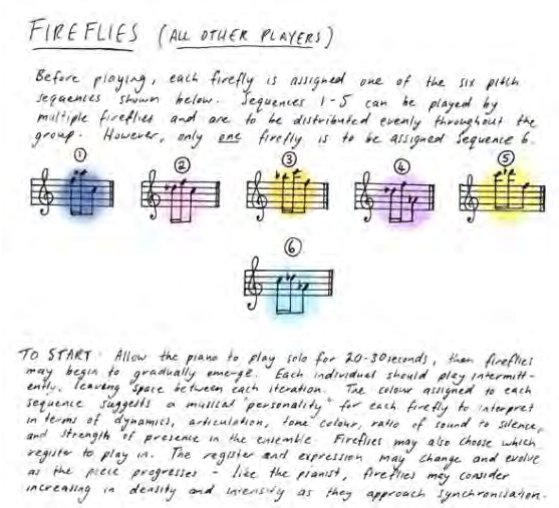


**Figure 3.** Excerpt from *Fireflies* (2021) displaying coloured 'firefly' motifs

Two ensembles workshopped this piece in September 2021 and August 2022; this analysis draws from the responses of both groups. Instrumentation for group 1 included piano, vibraphone, flute, two violins, marimba, recorder, and banjo, and read from paper booklet-style scores. Group 2 included a range of pitched percussion instruments and mostly read from digital tablets. The score was originally hand-drawn, with coloured graphics later added digitally to the scanned score. Following suggestions made during the 2021 workshop, I re-drew the score in 2022 using Procreate for iPad and altered the format slightly. Figures 4 displays an excerpt from the 2022 fully-digital score.

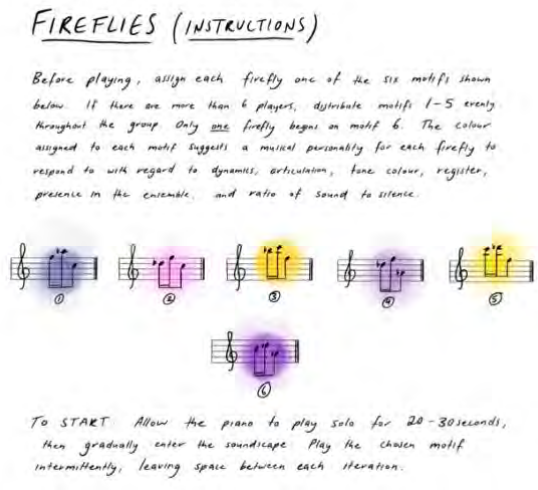


**Figure 4.** Excerpt from *Fireflies* (2021, rev. 2022) displaying coloured 'firefly' motifs

Within my survey data and rehearsal transcriptions, I identified several key themes which pointed to the role of both the style of the score and its aesthetic appeal in shaping the way that participants approached their performance.

### 4.1 Creative immersion and engagement

First, the "homespun" presentation (as one player put it), including watercolour graphics and handwritten text instructions in lieu of bars and systems, engaged players differently than a black-and-white score. Several players believed that, although traditional notation could have been used to achieve a similar result, they might have had a more "narrow-minded view… just counting rests and playing at the right time". The existing format provided "more freedom… consciously thinking about how I could and should make the motif sound and where I should place it". Another player suggested that if the score did not include colour, they "would have interpreted it more as [they] would a Reich score" and that they were "not so much worried about executing the correct notes as much as [they were] committed to evoking the colour of my firefly". These responses echo McKay's suggestion that Crumb's *Makrokosmos* may have lost some intangible immersive quality if traditional notation were used [10].

Without the score containing any pre-defined expressive approach to their motifs, players reported having to "dive into [their] imagination" and incorporate "more personality and individual interpretation" as they 'interpreted' colour. Reflecting Sobakina [4] and Palmer *et al* [14], their vivid descriptions of their colour interpretation drew on natural and emotional metaphor, including "a sombre, rainy blue"; "cherry blossom gardens"; "sadness and an anguish with a hint of tenderness"; "like the warmest hug". Phrases like "embody", "evoking", and "see[ing] the music" suggest a deeply immersive interpretative process for each player. Here, the coloured score provided a visual and musical framework that invited players to feel comfortable contributing their personal musical ideas, and experimenting creatively within that framework. When presented with a work that visually deconstructed their expectations of what a score should look like, the group understood the need to subvert their own interpretative assumptions.

### 4.2 Narrative subtext

Another key role of colour and visual design in *Fireflies* is to reflect and enforce the narrative and emotional atmosphere of the work. Players repeatedly mentioned the visual appeal of the score, calling it "beautiful" and "a joy to look at", with one player stating that "the hand-written, drawn and painted elements created a kind of organic homespun quality that worked for the piece." Ren *et al* [27] found that when used in marketing, hand-written font styles project qualities of warmth and personality; the response from performers suggests these qualities are also present in a score context, perhaps allowing players to feel more personally

connected with the score. Further, the handwritten style and "beautiful" score design is indexical of the personal care, time, and attention present in the making of the score, which perhaps inspired players to engage with a similar degree of care.

Through each player's understanding of their motif colour, the piece takes shape and progresses organically; the unpolished, freely handwritten style of the score may have subtly reflected the creative freedom of the music itself. The warm, ethereal musical atmosphere was further enforced by the colour palette for the motifs: I intentionally selected colours which, to me, evoked either the warmth of nightlights or the colours of dusk. A player commented that "the colour palette… allowed for the score to evoke the delicacy and vibrancy of fireflies". A stronger, darker colour palette may have evoked a different atmosphere. In this sense, visual design served to immerse players in both their creative roles and in the narrative of the work; as put by a player, "it is quintessentially a firefly piece in aesthetic!".

### 4.3 Reflection

Overall, the unique design of the score mediated a positive relationship with the performers. The open notation elements, soft colours, and care implicit in the visually engaging hand-drawn score each contribute to a greater level of musical immersion and understanding of its narrative. Participants offered positive comments mentioning how "fun" and "engaging" they found the workshop, and when invited to add suggestions for future colour scores, even players who had previously expressed apprehension toward open scores were enthusiastically offering ideas. These included suggestions for shading and colouring the motifs, and a percussionist proposed adapting the work for pairs with a gradual colour gradient representing changes in sound. In future developments of *Fireflies,* I plan to re-create the score digitally with a black background and white text to take a more literal approach to visually illustrating the firefly narrative.

A continued direction of inquiry for colour-scores is summarised by a player's suggestion that "small injections of colour 'de-colonise' the score". The work mostly uses text instructions, which contain prompts for verbal group discussion, alongside colour, which invites players to include their personal narrative. The reduction of staff notation in favour of alternative notational tools means that a player needs only basic knowledge of western notation to successfully perform the piece. By using tab or letter-names in noteheads, the score could easily be adapted to require *no* staff notation experience whatsoever. With such adaptations, the visual design of *Fireflies* suggests some possibilities for making tonal, contemporary art music more accessible to ear-trained and/or non-classically trained players.

## 5. VENUS FLYTRAP (2022)

*Venus Fly Trap* was commissioned in 2021 by the Night Window Trio, including piano, Bb clarinet, and viola. It is a programmatic work which follows an unlucky fly's demise in the jaws of a Venus flytrap. *Venus Fly Trap* is an experiment in combining colour with an otherwise very conventional staff-notated format (Figure 5).

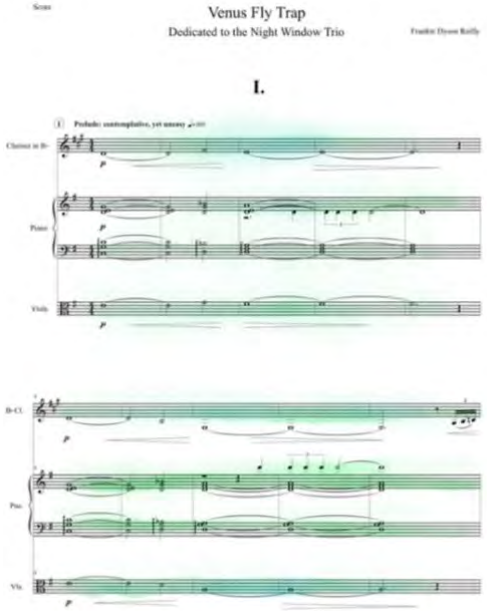


**Figure 5.** Excerpt from *Venus Fly Trap* (2022)

I used Finale to engrave the staff notation – using mostly default font settings to keep the style as familiar as possible – and edited in the colour using Procreate. Performers were not given any instruction as to how colour should be interpreted, other than that they should draw on their own intuition to connect it to an expressive musical response. My intention for this work was to understand how colour might complement (rather than replace) the traditional score, and how presenting it might inform or disrupt the perceived meaning of the score.

### 5.1 Expressive cues

A major benefit of combining colour and staff notation is that it provided an intuitive visual framework within which players could shape their expressive performance. This was present first at a micro level, as players used the colours provided as expressive referents to shape each individual phrase of the work. Throughout the work, the underlaid colour was "easy to read" and blended visually with the staff. It allowed players to absorb all information simultaneously, perceiving nuances in colour and their relationship to pitch and time. Positioning the colour within/behind the staff ensured that it was

seen as a welcome enhancement – rather than a replacement – of the familiar staff-notated content. Players responded to this addition by using colour as a tool to find the expressive meanings they had sometimes found staff notation to be lacking in. They noted that colour "evoked more of [their] emotions while playing" and "made [them] consider things like timbre and emotional intent". This corroborated their pre-workshop predictions that colour would "enhance" and add "more direction and meaning" to traditional notation. Players mentioned the creative challenges arising from combining expressive markings and colour, such as when their personal interpretation of the colour information did not line up with assigned dynamics. A suggested solution was to combine perceived expressive qualities for more depth. As one player put it, "A red *piano*, may be produced with a slower, weightier bow with an intensely fast vibrato. This creates an intensity without the instrument being loud."

### 5. 2 "Highlighting" structure

Colour's role in expressing narrative was also evident at a macro level, as colour contrast provided immediate visual reference to the overarching programmatic structure of the work. Flipping through the score, players can immediately differentiate green, orange/red, and purple as distinct thematic material, with the return to green at the end signalling a return to the same musical material (Figures 6 – 7).

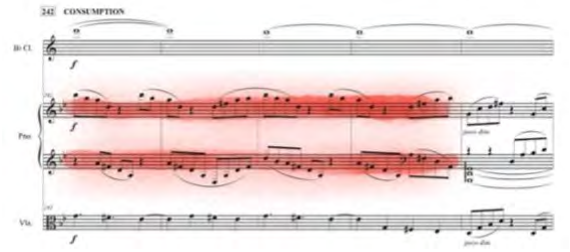


**Figure 6.** Red excerpt from *Venus Fly Trap*

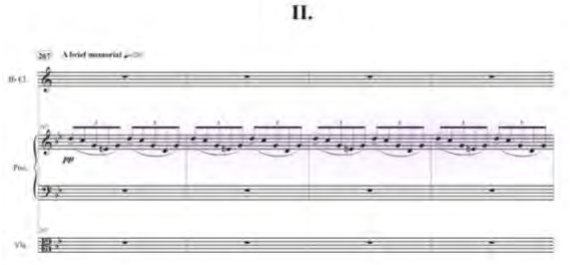


**Figure 7.** Purple excerpt from *Venus Fly Trap*

Like in *Fireflies,* the group's interpretation of each colour emphasised the accompanying narrative content, though in this case it was likely complemented by expression markings. Green sections (marked as '*a summer's day, an innocent* fly') were described as having a "light alive green sound"; the red/orange sections (a fly being consumed by the flytrap) "made for a darker and more intensive timbre"; and the purple (alongside the marking *'a brief memorial'*) added "a sadness". Though expression markings might have been sufficient, the inclusion of colour "played an important role in defining character and storytelling aspects of the music" and "definitely enriched my response to the emotion and character of the different sections." Within the comfortable boundaries of the familiar A4, white-paper, engraved staff notation, performers were able to explore colour's expressive potential without becoming totally untethered from the familiar.

### 5.3 Rehearsal cue

The inclusion of colour played a major role in opening a dialogue around tone-colour and expression among the players and helping to shape rehearsals. Colour was seen as a useful prompt for "meaningful ensemble conversation about musical intentions and sonority"; this view reflected my own experience of the rehearsals, which were full of discussion surrounding colour and its relation to expression. Though one player expressed concern in the pre-workshop survey that the ensemble wouldn't interpret colour consistently, the same player amended this opinion in the follow-up survey: "I believe [colour notation] adds to group unity in terms of phrasing and musical intention… and could even help to make the rehearsal process more streamlined and efficient".

### 5.4 Reflection

In *Venus Fly Trap,* colour as a visual tool provided clarity in three ways: first, in providing an engaging enhancement to expressive information in staff notation; second, in visually illustrating the overarching narrative and structure of the work; and third, in prompting productive and creative rehearsal discussion. The trio's experience (and the musical outcome) was positive, yet the design still has potential to be improved upon. In writing the piece, I used colour sparingly, concerned that including colour for the entire score might be overwhelming for players. In contrast, players suggested that sections without colour "definitely felt a little uninteresting when compared to the coloured sections". Dark colours can sometimes obscure notes within the staff; in works since, I have experimented with colour above and below the staff. Both of these considerations exemplify the importance of *how* colour is styled (as opposed to simply *whether or not* it is included) within a piece in determining a player's interpretation.

## 6. STICKS, TWIGS, BRANCHES (2022)

*Sticks, Twigs, Branches* (2022) is a three-movement scrolling score compatible with the Decibel Score Player. It was composed for prepared piano with extended techniques, three violins, and electric guitar with the intention of exploring the varied sounds created by different branches of the string family. Drawing on the style of scrolling scores by composers like Lindsay Vickery and Kate Milligan, in which artistic graphics are presented alongside some standardised notation, *Sticks, Twigs, Branches* combines elements of staff notation and open graphics on a colourful bed of shapes and lines (Figures 8-10).

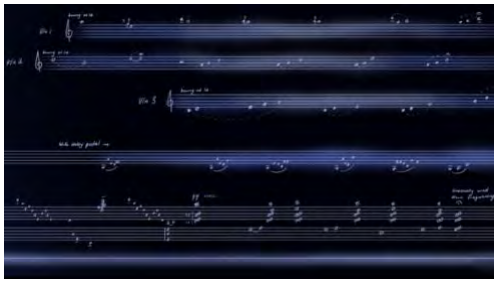

**Figure 8.** Excerpt from *Sticks* (2022)

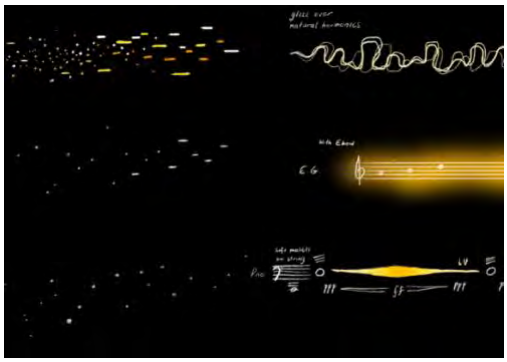

**Figure 9.** Excerpt from *Twigs* (2022)

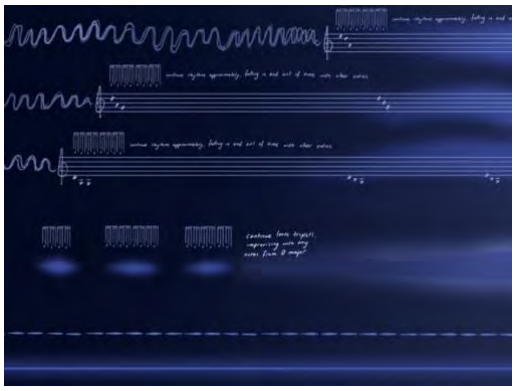

**Figure 10.** Excerpt from *Branches* (2022)

The work was created entirely using Procreate for iPad. During the three workshops of this piece, I played the piano part with the goal of being a part of the interpretive discussion alongside the other performers. Performer quotes in this section are from the three violinists and guitarist.

Unlike in *Fireflies* and *Venus Flytrap*, some explicit parameters were given to guide the interpretation of graphic elements; as a much greater proportion of this work included non-standard notations, establishing this framework provided coherency throughout the work. Performers were instructed to approach blue hues as passive, warm, and legato, and yellow hues as more active, bright, and angular, and relative size of shape was mapped to volume. Some instructions were informed by an early workshop in which the group freely improvised to simple graphic scores incorporating yellow and blue colour schemes, allowing me to embed the performer's intuitive responses to colour within the score. Players are reminded in the performance notes that the instructions are guidelines only and intuitive exploration of sound and colour is encouraged.

### 6.1 Immersive visual design

A primary role of visual design in *Sticks, Twigs, Branches* was to provide an immersive platform for performers to explore both intuitive and learned responses to visual characteristics. In the pre-workshop surveys, players were apprehensive about whether colour might impede their ability to "correctly" perform the work according to the composer's (my) intentions. After playing the work, players' focus had shifted away from this initial rigidity. Phrases like "I was thinking much more about sound in general than 'am I getting it right'", "it felt more fun and freer", and "[the piece was] engaging to play, anxiety free" show the significant change in attitude from start to finish. The change in attitude reflects a shift from the traditional 'formalist' interpretative approach described by Silvermann [3] to a more personal, performer-led 'subjective' approach. By presenting colour and shape as having negotiable sound outcomes within some mapped parameters, performers were given safe boundaries within which to exercise their own musical voice.

### 6.2 Font and colour contrast

Colour also provided an opportunity to harness semiotic associations and visually signpost the musical style. Throughout the movements, I purposefully paired different colours and styles with different sounds. The movements *Sticks* and *Branches* were designed in a clean, digital style with shades of blue, whereas *Twigs* had a rough, sketchy style in shades of yellow and orange. My stylistic and font choices were intended to enforce and enhance the ensemble's intuitive free-improvised responses to graphic drafts in an early workshop. The sketchy, unpolished *Twigs* (Figure 11) was played "a little more chaotic and energetic", "more

disruptive", and for the guitarist had "a more energetic feel and coarser texture that I would respond to in distorted sound and dissonance".


**Figure 11.** Excerpt of 'rough, sketchy' style from *Twigs* (2022)

The roughness of the style denoted a similarly rough musical approach. The yellow-against-black colour contrast created by the dark background enforced the electricity intensity of the movement, as "higher contrast" equated to "more [musical] presence" with stronger dynamics and attack.

In comparison, one violinist was "more attentive to the timing of other players in *Sticks* and *Branches* because of the "cleaner" style", as it complemented the "calmer/smoother" response to blue. The lack of contrast between background and foreground (Figure 12 and 13) may have further emphasised the soft, warm musical outcome.

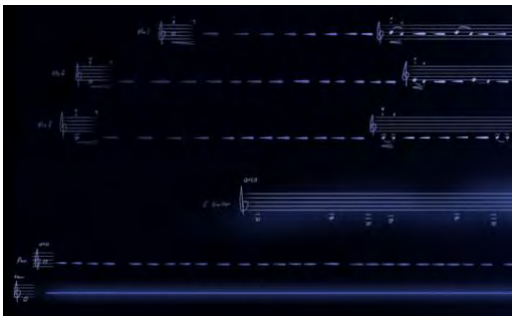

**Figure 12.** Dark blue against black in excerpt from *Branches* (2022)

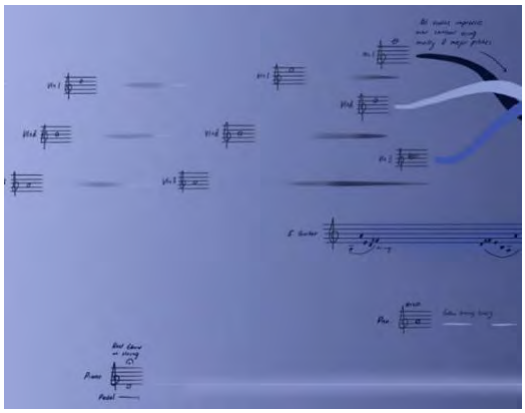

**Figure 13.** Light blue against blue in excerpt from *Sticks* (2022)

In both cases, the visual style complemented the explicitly notated musical content in each movement: *Twigs* includes more fully improvised gestures and distorted/dissonant sounds, while *Sticks* and *Branches* are more expansive, tonal, and include more pitch notation. This strategy, in which the visual design semiotically reflects the musical style, allowed players to immediately perceive (and become immersed in) the intended expressive approach upon looking at the score.

### 6.3 Reflection

The overall response to the work was very positive, particularly regarding the democratic process of determining the interpretation. During workshops, players discussed drawing from cultural metaphor, associations between colour and natural phenomena, and personal synaesthetic associations. Allowing musicians to play, discuss, and reconvene created an opportunity for free negotiation of the "meaning" of the colour amongst players. The process was described as "collaborative", "fun", and "anxiety free", with colour providing a visually engaging framework within which the musicians in the ensemble could play together and make individual creative choices in response to score directions. Indeed, as this work was shaped around initial improvisational responses to coloured graphics, it felt more akin to a collaboration than other works. Though I developed and notated the score, each performer's creative essence is present in the final work. In this sense, colour and peripheral visual characteristics provided a gateway to gathering collaborative musical ideas and disrupting the expected hierarchy of creative interaction between 'composer' and 'performers'. In *Sticks, Twigs, Branches,* all of us existed somewhere in between those traditionally rigid roles.

## 4. CONCLUSION

When a score is flooded with colour and visual gesture, it can present a deeply immersive musical and visual experience for performers, offering a different way to engage with and "see" music. Throughout this paper, I have observed how manipulating the visual design of colour-notation can transform the interpretative process in both historical examples and in the context of my own three distinct case studies. Though performers' *interpretation* of (or, musical responses to) coloured stimuli are not always consistent from one performer to another, my findings demonstrate the relatively consistent influence of score design in transforming their *approach* to interpretation. Throughout the case studies, three key themes emerge which frame performers' interactions with score design, even when the specifics of those interactions differ from player to player.

1. Introducing a novel visual parameter (colour) to a score causes musicians to

engage differently with the score than they would have with a familiar format.

2. Colour, font, style, shape, format, and interaction of colour notation with standardised notation all distinctly contribute to musical response and shape the perceived narrative of a work, though the musical response may be variable from performer to performer.
3. Colour, particularly when framed as a semi-open notation, provides a framework for collaboration between musicians and for democratic creative interactions.

Primarily, these themes highlight how manipulating the appearance of notation can alter the way in which musicians engage with the score in a *functional* sense (i.e. how the score influences their audible musical response). Beyond the functional roles that score design can play in mediating performer's responses, comments from participants describing the scores as "beautiful" bring me to consider the role of the score as a visual accompaniment to a performance, or even as a stand-alone artwork. In other words, how might the score mediate an *audience's* interaction with a musical performance? In the context of screen-scores, Hope and Vickery suggest that a score projected alongside a performance could be a deeply immersive experience for audiences, but could also become a distraction from the musical performance, depending on the work [28]. If the score is intended to be able to stand alone without music – like in the case of Cilla McQueen's *Picnic* [11], which consists of sweeping coloured shapes labelled with instruments – can it still be considered a score? Further research into score design and score aesthetics may continue to bring light to these definitions and differences.

Within the scope of the score 'experiments' I have created thus far, the responses I have received from performers have impressed on me the immense value of learning new notation and design techniques as a composer. Colour and shape opened up new channels of communication between myself and the performers in this project, presenting a new way to suggest musical narrative and expression and, when the context called for it, welcoming performers into a more creative role. Performers often reported 'interpreting' colour by finding personal connections between colour and nature, symbolism, metaphor, and culture, and then triangulating these with aural associations – a fascinating and personal process which warrants further investigation to understand. As questions continue to emerge, the findings presented in this paper open a doorway for myself and others to deepen our exploration of the role of colour and score design in extending notation practices. In my own research and composition practice, I will continue experimenting with creative uses of colour, imagery, and design in written score formats, moving toward a better understanding of how score, performers, *and* audience might interact.

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