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Empathic Speculation: A 4E Cognitive Approach to Jazz Interaction

[...] allows for creative risk-taking, which can result in the production of spontaneous musical utterances. (Seddon, 2005: 58)

Case Study Four: *Mosvatnet*

- Currently planned for June 2023
- Performances in Birmingham and London, UK plus a studio recording
- Featuring: Angelica Sanchez (piano), John O’Gallagher (alto saxophone), Tori Freestone (tenor saxophone), Per Zanussi (bass) & Andrew Bain (drums)
- Currently discussing the post-performance cognitive analysis structure with Dr. Raymond MacDonald (University of Edinburgh, UK) & Dr. Joel Krueger (University of Exeter, UK)

micro-timing as a theory to better understand groove (Feld and Keil, 1994; Iyer, 2002 & 2004; Doffman, 2008)

[...] model of creativity and cognition [that] brings into view the divergent viewpoints of collaborating improvisers, as opposed to traditional accounts of improvisation that often emphasize the participants' sharing of a common perspective as centrally important. (Linson & Clark, 2017)

A 4E approach to the living mind is represented by four categories (embodied; embedded; enacted; and extended) and has been used extensively in recent times to explain various approaches to music cognition (Clarke, 2005; Krueger, 2014; van der Schyff et al., 2018)

Grounded Theory

- Stage One: Immersion
- Stage Two: Categorisation
- Stage Three: Phenomenological Reduction
- Stage Four: Triangulation
- Study One)
- Stage Five: Interpretation

Player Piano (2015) excerpt 52'



Early analysis:

Player Piano
(Case Study
One, 2015)

Embodied Knowledge

- Familiarity with compositions and solo forms
- Knowledge of compositional context
- Preparation and planning
- Personal practice
- Rehearsal
- An experiential knowledge of improvisation

Knowledge in Action

- Physical gesturing
- Eye contact
- Musical repetition
- Reactive interaction
- Aural Instruction
- Musical intuition
- Sympathetic mirroring of musical ideas
- Creative risk-taking
- Spontaneous musical utterances

Group Response

- Pro-active interaction
- Empathic interaction
- Aural Cooperation/ Collaboration/Dissonance
- Increased emergence of group attunement
- Group problem solving
- Creation of original group textures
- Maintaining energy between solos
- Macro group shaping of solos, tracks, sets and performance

- Aural Instruction (including repetition of phrase, rhythmic alignment [where one instrument affects the underlying pulse of a solo], melodic/harmonic mirroring of a phrase or idea, and repetition/chromaticism as a means to elevate the dynamic of the group)
- Aural Cooperation: aural instruction is acted upon by another player
- Aural Collaboration: emergent from elevated group attunement and resulting in a musical dialogue between the soloist and the accompanist(s) where an empathically creative approach is evident
- Aural Dissonance: existing when one or more player's empathic reaction to the solo differs

Player Piano example of analysis

Events as follows:

1 – guitar introduction to melody (see Appendix A) on soprano saxophone (the only time Dixon chose to play this). Drums used hands to play drums as a textural contrast and to reflect the intimate nature of this composition (Aural Cooperation)

2 – soprano saxophone solo on the form. Continues with the sparse texture created in the melody. Drum transition to brushes in bridge to reflect shape of solo (Aural Cooperation/Empathic Interaction)

3 – guitar solo on the form

4 – piano solo on the form. Descending chromatic lines seemed to mirror the compositional context (Aural Cooperation)

5 – melody played by saxophone to end with contrasting piano tremolo textures on the bridge. Drums return to hands, and piano returns to descending chromatic figures, until the saxophone plays the final vamp

Track Five [49'44"] 'Mark Time' (Kenny Wheeler)

Events as follows:

1 – melody (see Appendix A) played freely by the saxophone with piano accompaniment. Then rhythm section join (Aural Cooperation and Collaboration; Empathic Interaction)

1b – time is brought in by drums after a pause on the last note of melody (Aural Instruction), and then the piano signals the top of the form by physical gesture (head nod). Second time through, the counter melody is played

2 – guitar solo on form. As the last piece in the first set, drums tried to keep the group energy up at this stage of the concert (Aural Instruction). With the use of double-time rhythmic figures and drum interjections, the arcs of each solo are the most pronounced of the concert so far *** (increased Empathic Interaction)

(no)boundaries example:
(Case Study Three, 2017)
excerpt 29'



20'22" – peak of activity in the set so far (Empathic Speculation)
20'40" – plateauing of intensity. Then drums embellish to continue elevation
Section IV (10'50")
21'50" – introduction of electronically sustained tom-tom pulse. Drum solo continues as energy unravels and electronics process. Cymbal cadenza
23'08" – alto saxophone joins. Feeling of tension building again as drums and alto play a duet. Tom-toms with mallets interact with electronic sustained pulse
23'56" – trumpet enters playing contrasting counter melodies. Horns exchange melodic ideas
25'10" – tom-toms start to harmonise with pulse and play against the rhythm. Horns continue dialoguing. Energy drops as horns blow long sustained sounds through their horns
26'31" – drums carry melody, as bass drum begins to replicate pulse
27'10" – alto saxophone enters with an ascending chromatic line. Then alternates similar phrases with space in between as reverberation continues. Leading to alto saxophone wails
28'18" – trumpet enters with quartal melodic approach (Empathic Speculation)
28'34" – back side of mallets create intensity leading to an angular alto saxophone solo. Piercing trumpet sustained notes heard
29'20" – rock-feel from drums increases intensity again. Trumpet counter melody. Alto saxophone/drums synching occurs as electronic pulse continues (Empathic Speculation)
30'47" – climax of set (Empathic Creativity)
31'11" – alto saxophone and drums pause together leading to a loosening of energy, long sustain sounds, slowing down of textures, confluence of melodic lines, sustained trumpet
32'31" – trumpet stops, percussive rattles
32'40" – Finé

Empathic Creativity

In composing the suite, my priority was to facilitate attuned group improvisation that led to creative risk-taking and spontaneous musical expression, resulting in an empathic creativity

between the performers. However, during the course of this tour, I was aware of three

different facets to this phenomenon in the following order of increased connection:

Empathic Interaction

1. Empathic Attunement (an empathic alignment with other group members)
2. Empathic Creativity (Empathic Attunement with creative risk-taking and spontaneous musical utterances)
3. Empathic Speculation (a pro-active approach to group interaction that attempts to adapt the behaviour of another beyond their perceived boundaries)

Andrew Bain: *Mosvatnet* – early planning

- Lake I (quintet)
- Tenor & Double Bass
- Lake II (quintet)
- Alto & Piano
- Lake III (quintet)
 [Break if two sets]
- Piano, Double Bass & Drums
- Lake IV (quintet)
- Alto & Drums
- Final Piece (quintet)

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A 4E perspective for musical empathy

According to a family of approaches that fall under the label “4E cognition,” cognition and perception are forms of ecologically situated action. As such, the domain of the mind is comprised not only of in-the-head processes, but also by bodily and environmental factors (Gallagher, 2017). Perception, for example, is constituted by neural activity along with bodily processes and world-directed activities (e.g., movements of the eyes and head; focusing and refocusing attention; reaching, grabbing, manipulating, etc.) that support our skillful engagement with the environment (Noë, 2004). Likewise, cognitive processes, such as remembering, are often distributed across heterogeneous systems involving a mixture of bodily and socio-material resources, from skills, habits, diaries and sticky-notes, to smartphones, cultural practices, and other social interactions (Michaelian & Sutton, 2013). Instead of relying exclusively on processes in our brain, we routinely “offload” cognitive tasks onto external (i.e., beyond-the-head) resources. The latter act as cognitive *scaffolding*: relatively stable relationships with environmental factors that help us improve our performance, minimize cognitive load, and achieve otherwise-inaccessible mental, perceptual, and affective feats (Risko & Gilbert, 2016).

Thank you. Email: andrew.bain@bcu.ac.uk

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