Coming Together: LUG
A Generative Installation

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Abstract

This installation is a second collaboration between the first author, a coder-composer, and the second author, a dance/theatre artist. Triggered by the world-wide shutdown brought on by the COVID pandemic, the authors viewed the situation as an opportunity to comment upon issues of isolation, remote collaboration, separation, and potential convergence.

1. Introduction

This paper will describe the generative system (Sections 2 and 3), the artistic choices made in the movement (Section 4), and the role of collaboration in the work (Section 5).

2. Previous Work in *Coming Together*

Coming Together are a series of generative artworks in which the process of convergence by agents is the focus of the work, in the movement from random individualism to united ensemble interaction. As with most of the first author's creative research, the use of multi-agents are integral to the generative process; instead of attempting to create complex top-down systems for intelligent control or creation, imbuing individual agents with the capacity to make decisions and interact with other agents to create complex, dynamic, and emergent systems provides a bottom-up method that has been successfully used in games [2], sound art [1], and interactive environments [8].

Coming Together: Beauty and Truth (2010) utilised agents that had individual desires to generate repeating phrases that had a musically meaningful relationship to all other agent phrases. Agents moved towards a collective goal by listening to one another's output, as well as messaging one another. Agents altered their own musical output based

upon formed beliefs as to the other agent states. The end result was a negotiated solution that demonstrated a unique melodic, harmonic, and rhythmic environment that was arrived at collectively [3].

Coming Together: Freesound (2011) was an autonomous soundscape composition created by four agents, who chose sounds from a large pre- analyzed database of soundscape recordings based upon their spectral content and metadata tags. Agents analyzed, in realtime, other agent's audio, and attempted to avoid dominant spectral areas of other agents, selecting sounds that did not mask one another. Selections from the database were constrained by metadata tags describing the sounds. Thus, water sounds could trigger other water sounds, or agents could choose to oppose contextual references. As the composition progressed, convergence was further facilitated by lowering the bandwidth of the agent's resonant filters, projecting an artificial harmonic field upon the recordings that were derived from the spectral content of the recordings themselves. Finally, each agent added granulated instrumental tones at the resonant frequencies, thereby completing the "coming together" [4].

3. Technical Description

Like previous works in the series, *Coming Together: LUG* uses agent negotiation as a process. Aspects such as selection, duration of gesture, and processing are all fluidly determined during individual performances. The visual and aural result is one of moving from "band-limited" chaos to converging upon a single video and audio performance. We use the term "band-limited" because both audio and video agents are constrained in their individual

presentations, and the perception of "the whole" can only be achieved through the combination of individual agents.

The five audio agents are essentially the "drivers" of the processes; it is their selection of constraints (equalisation, described later), and gestural initiation and duration, that the five video agents follow. Individual video agents – uno, due, tre, quattro, cinque – are locked to the identically named audio agents, so that audio and video agents remain synced.

The audio agents have access to a database of recordings made by four musicians: Joshua Hyde (Graz), saxophones; Alice Purton (London), cello; David Del Tredici (Montreal), trombone; Daniel Brew (UK), guitars. Performers were asked to improvise on a general theme of living during the COVID shutdown, and limit their improvisations to 30 to 40 seconds in duration; these recordings were then analysed for spectral content and segmentation. Five video agents have access to video recordings made by the second author, and are described below; no analysis is done on the video database.

At the start of a performance, all agents initially select a random item from their available databases, together with a segment from within it: because every segment has both a starting point and duration, this selection implies a gesture's duration as well. Agents then notify other agents of their selections. Throughout the performance, agents can choose to continue to present their selections, or move towards what they believe to be an emergent meeting point within the ensemble. For gestural durations, this is done through averaging of all agent values; for database

selection, this is done using an index that is randomised before each performance.

Beginnings of gestures are decided by a combination of a segment's duration, and the interonset delay between gestures decided upon by the agents, another negotiated parameter. During the performance, as agents converge on a single audio and a single video recording, gestural durations and interonset delays will begin to converge as well; in order to align actual start points, a background metronome that counts a variable beat structure (anywhere from eight to twelve beats), and the agents use negotiation to converge upon a single beat.

The initial random audio recordings are granulated, time-stretched, and heavily filtered through selected equalisation bands. The bands selected, using a Bark analysis [12], are based upon the audio selection – highlighting prominent bands within the individual recording, and are communicated to other audio agents. Other agents will attempt to select a recording – when they choose to do so – in which other agent's specific Bark bands are not as prominent, in an effort to avoid spectral masking. Initially, a single Bark band is chosen by each agent; during the course of the performance, this increases to five bands, which cumulatively fills out the entire 25 bands of the Bark spectrum.

The videos are presented on a monitor divided into five equal vertical segments/slices, and the video agents display their portion of their video; for example, the first agent ("uno") displays the left most 20% of its video, while the second agent ("due") displays the next slice (see Figure 1), and so on.

Figure 1. Video presentation of five agents, close to beginning of a performance

The agents initially process their videos by limiting the colour and sharpness, a process that parallels that of the audio agents. Over the course of the performance, colours are added until a complete colour spectrum is presented (see Figure 2.). Each performance seems to last between 10 and 20 minutes in duration.

Figure 2. Video presentation of five agents, close to end of a performance. Colours are complete, but starting points of gestures have not aligned

4. Dancing in the Neighborhood with LUG

I have characters that I inhabit for the purpose of creating kinaesthetic provocations towards emancipatory encounters. My 16 year old character LUG, donning an old overcoat and felt

hat and always 'lugging' and old leather suitcase, dances stories of displacement, longing, belonging and in-betweeness.

In this period of isolation, LUG and I wandered my neighbourhood; the warehouse district of Regina, Saskatchewan and each week we created a very brief improvisation inspired by a site that resonated with us. The works are in dialogue with fierce winds, new grass and blooms, ever changing graffiti and general grit and rust akin to this area. The themes that arose; islands of isolation, tunnels of despair, fierce need for rest not wanting to be just another statistic, longing for touch.

When contemplating this collaboration it was requested that more footage be provided to allow for a greater range of 'play' with the aleatoric sonic and visual systems that were being introduced. Instead of dancing the neighborhood I chose to take LUG to the coullies outside of Regina in a valley with a string of lakes. In -18 temperatures, we created slow motion scenes like a broad sketched line in the landscape. I decided to work devoid of narrative as I thought it would compliment the warehouse series and allow for a play between poetic narrative and elongated images. My criteria for choosing the sites remained the same, they needed to be simple and steeped in metaphoric possibility.

4.1 LUG in the Neighborhood

We were sent home with the rest of the world on March 15th.

We thought that this temporary isolation could be generative, refreshing, inspiring.

An invitation to re imagine ourselves. I live in the warehouse district and took to walking my neighborhood. It is truly industrial, not trendy industrial. I wake to the sound of delivery trucks backing up

and trains grinding through with hoarse whistles relentlessly sounding. My only green space is a 150 year old cemetery spanning 3 square city blocks.

I walked and then would come home and sterilize our surfaces and then sit down to work in my many stations in the house.

My walking was different though.

I was not frantically watching the clock to see how late I would be for my next meeting. I was simply walking. This presence and attention to my neighborhood constructed a new lens and soon that lens was also my camera. I noticed stunning shadows and odd juxtapositions, curious combinations and expressive and yet forgotten architecture. I simply noticed….

Soon I had collected over 100 photographs and then these every day and yet exotic still captures began to knock on the door of the dancer and the dancer in me began to see these sites as fleeting performance locations for what later became a series of movement haikus.

I began to walk my neighborhood with an alertness that almost beckoned the perfect combinations of tensions, metaphors and textures. I would identify a possible site in the week and then let it incubate, calling forward the traits of a character that I have been improvising with for the last 16 years; LUG. LUG, donning an oversized overcoat and felt hat, carries an old leather suitcase which often conceals and reveals artifacts that change within the context and conditions of these improvisations. I know LUG well but am always surprised with the decisions that are instantly made within the moment of every performance. Although there is a melancholic tone to LUG, there rests a small sweet clown

and a tender hopefulness for comfort, safety and even joy.

I would take LUG and my videographer to an identified site on the weekend and decked in costume, I would 'play' in the site for about 10 minutes. I was always surprised how fast I could land on metaphors that integrated the long trailing coat, the hat, the suitcase and the small glass heart concealed within.

It seemed as though the site had been brewing in my body co-mingling with the familiarity of my performative character and my lived experiences. I was able to listen very deeply to what was present in this 'play' and combine in it with a kind of performative wisdom. What resulted was a series of 40 second performative captures that integrated the metaphors deeply embedded in the site. These metaphors become heightened in light of my Becketesque character that always conveys the complexities of displacement and longing and now is doing so in stark environments during a global pandemic.

In my work with LUG within a broad range of performance conditions throughout the world, I would always create a subsequent LUG LOG. I found that these improvisations often unearthed a sense of exposure and vulnerability and I needed to construct a reflective container that would allow me to understand more clearly the meaning making in this work and that could transcend the raw emotion it often generated. There is a price to pay in stripping expectations and preconceived frameworks in my approach to performance. This approach allows for an extreme immediacy and availability which can become a direct hotline to the heart and soul of an audience but the other side of this is the nakedness of the performer in a context whereby impulses can become reckless and bold without care for the safety, both emotional and physical, for the performer. The LUG LOG becomes a kind of reflective blanket to that nakedness and assembles that which is dismantled in the powerful event of performing. Both the surrender to this nakedness and the re assemblage are critical in the prospect of sustainability. If I truly allow myself to access life experiences during my performances I run the risk of cracking open dark spaces that have otherwise been protected and in doing so, create a lesion. LUG is a seasoned character and seems to have many years left and I would attribute this to the careful methods such as the LOGS that are practiced in attending to these resulting emotional lesions.

I performed in 8 sites in my neighborhood and the rest of my writing will be in the form of LUG LOGs that reflect on the choices and the meaning making I experienced in each of these 40 second performances. These brief performative containers necessitated an economy of choice making in order to find a succinct arc in narrative and these LUGS LOGS reflect this poetic concision.

Site #1

A stairway going nowhere

Arduously I climb the stairs with my trailing overcoat reminding me of my regrets.

I retreat to the door, or at least I thought it was a door but in fact it is a wall that I slam into. I turn in on myself as if to transform the wall to a door. Hoping for an opening, a new possibility. It does not come but opening my suitcase I feel the cool smooth heart within and know that the possibility I am seeking is coming from within. There is no door right now but there is possibility.

Site #2

Railings to protect and contain

"...the imagination is unleashed by constraints. You break out of the box by stepping into shackles." — Jonah Lehrer, 2019, as cited in [11].

I am entangled with my coat and the railing. Which is holding me back. I am doubling up on myself and am confused with my own repetitions and habits. Who/what is holding me back? If I let go of my ancient thoughts and gather new ones I can hover on the precipice of restriction and surrender.

Site #3

Islands of Despair

I found my island and climbed upon it. From a ship wreck it became a small savior. Pulling in what matters and leaving behind the rest. Fishing for the essential. Tracing my history and finding solace in the simplicity of the present moment.

Site #4

Lost in the Tunnel

This isolation, this stasis where suddenly we are thinking nostalgically about tiny airplane bathrooms, folding toothbrushes and inflatable neck pillows. We are propelled out of the world of travel, out of the possibility of touching those who are outside of our bubble. Our world

becomes a close-up lens of small boxes and yet still we find the necessary heat.

Site #5

You will (never) be free

"For too long, information, opportunities, and resources have been constraints, they need to be the bridges" [7].

A beautiful abandoned brick building. The entire wall becomes the canvas for a fleeting proclamation through black spray paint " You will never be free". Despite the alluring aesthetic of disorganized font on red brick it was troubling for me to think about the site throughout the week. Although the setting for these performative haikus are gritty and dark there is always a little hope that glimmers even within the very brief time frame. How might I find this within this very definitive statement? I arrived in costume struggling with my coat in 45 kilometer winds and looked up to the wall to find the word never sprayed over. A gift, the wind the erasure became an invitation for surrender. The fierce wind stripped me of the weight of my coat , it flew away from me and with it the weight of always choosing the path of resistance. I was free.

Site #6

Dandelions in the suitcase

Space, like time, engenders forgetfulness; but it does so by setting us bodily free from our surroundings and

giving us back our primitive, unattached state ... Time, we say, is Lethe; but change of air is a similar draught, and, if it works less thoroughly, does so more quickly" [7].

The sensuous pleasure of nature. Not understanding social distance, the dandelions are abundant. Savoring the moment. Weary from the stark, bleak winter, the tender cracking open of light and warmth. Now rest and know that you are safe.

Site #7

A patch of grass

"To make biological survival possible, Mind at Large has to be funnelled through the reducing valve of the brain and nervous system. What comes out at the other end is a measly trickle of the kind of consciousness which will help us to stay alive on the surface of this particular planet."- Aldous Huxley as cited in [6].

I am navigating an electric box and white boulders to find a small patch of simulated grass. How do we get to these places where wrong and right live side by side? How and why do we set and play the games that we know do harm to self and others?

Site #8

Not just another statistic

"When love is roaming in our mind, looping in the deepest fringes of our heart, undreamt spaciousness emerges, repealing the constraints of triviality and letting stifling narrowness fade away. While our mindset is besieged by a revolving burst of emotion, our world is ultimately opening up" [9].

I know you are here and I am frantically searching for you. Even though everything looks the same I know I will find you. I do. I crumble to my knees with the sheer sorrow of knowing I have both found you and lost you. I leave you my heart as it precariously perches on the top of the gravestone, it will never fall. I promise you that.

4.2 LUG in the Coullies

I chose 4 sites in and around the lakes that rest in the Qu'appelle Valley in Saskatchewan. I was struck by the crisp turn to winter with subzero temperatures and biting winds and yet the ground was still insulated by a blanket of crisp golden leaves. It reminded me that we have in fact travelled through all seasons with COVID and that this promised short-term isolation, with the intention of flattening the curve, is entering a daunting new chapter as we slip into yet another elongated prairie winter. There is something foreboding and yet resigned about the way LUG carries the coat, the hat and the suitcase as he slowly contemplates the relentlessness of this desolate demise.

5 Conclusion

KR: As an improvisational performer I am always collaborating both with animate and inanimate influences. Previous in my description of LUG in the neighborhood I wrote about fierce winds and soft grass, unexpected graffiti additions and railings perfectly placed. These are all my partners in the performative event and completely influence my spontaneous choice making. Working with the first author guarantees both as he introduces his musbots and speaks of them in an almost endearing manner, imbuing with both admirable and frustrating human traits. So through these complicated systems that impact both the visual and the sonic outcomes of our presentation,

we are also bringing our own humanness as a necessary factor in the constructed event and this is pivotal to our meaning making and intentionality throughout the process.

AE: Composers have traditionally relied upon human performers to hear their music. I have long argued the benefits of working with generative systems, which allow coder-composers to create processes in which they can hear the results immediately, without the delay of having to find musicians to perform them. And while Coming Together: LUG is still a generative system that does not directly rely upon human performance, it would not have been possible without the close interaction with the second author. The work is a collective reaction to the bizarre situation that we all found ourselves living in 2020, and we both approached it from our distinct artistic practices. My agents do not (yet) have the volition to create an artwork in response to a worldwide pandemic, but they are a critical part of our collaboration and as such contribute to the complexity of our choices and responses to the world as we now know it. This disruption, this invitation and this incongruence can also become a catalyst to explore and galvanize human truths.

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