Dasein

This piece deals with two main ideas found in division I and II of Heiddeger’s “Being and Time”, namely those of *modes of encounter* and *authenticity*. The first are the philosopher’s attempts to sketch what a fundamental ontology could be, centering it around *Dasein* (being-there), the entities for whom *being* itself is an issue and who exist as already immersed in their surrounding world. The first idea describes how our usual unreflective engagement with objects (as *ready-to-hand*) depends on them being already embedded within a web of significance that precedes our experience of them as objects (*present-at-hand*). The latter usually comes when they are taken out of the usual context, either by malfunctioning or being used in an unfamiliar way. The second idea, that of *Authenticity*,deals with Dasein as involved with time, whose decisions can be consciously guided by envisioning its own mortality and reinterpreting and adapting its own past.

According to Heidegger, Dasein is inherently social, but even if equipment is inseparable from a constellation of shared significance, the experience of engaging with it is a deeply personal one. Can the difference between modes of encounter be made explicit to the public by relating authentically to a system mediated by sound? As a controller for this piece I used an EWI[[1]](#footnote-1), a MIDI controller built to resemble and be played like woodwind, that controls a patch programed in SuperCollider. The controller’s shape and mode of operation can give rise to a constellation of associations, such as the roles similar acoustic instruments take and what to expect from particular gestures in music performance, that allow for the instrument to become ready-to-hand. In contrast, the same controller can be made to be intractable by giving it unexpected roles or only allowing for limited and dynamic measures of control. This latter case requires conscious engagement with the physicality of the instrument as present-at-hand.

I used the Akai EWI USB model for the performances, which provided continuous MIDI data coming from breath and bite pressure sensors on the mouthpiece, as well as a couple of touch sensors for the right thumb, and MIDI note information from the fingering and a series of rollers on the left thumb to choose between 5 octaves. This delimited the controller’s set of affordances to be somewhat similar to those of playing a double-reed instrument. Within these I determined a mapping scheme with different sets of constraints depending on the octave used, thus allowing the performer to effortlessly switch between different levels of control and sonic environments.

The five octaves are mapped as follows:

1. Used exclusively to cue the main 5 sections of the piece.
2. C to A flat either triggers or controls high-level parameters of a series of long events.
3. Allows for playback and minute control of an iterative gesture.
4. Playback and loop of a series of recordings, either of percussive sounds or chants.
5. Accordion-like granular synthesizer, timbre can be changed via MIDI continuous controllers provided by the wind and bite sensors.

Being an Oboe player myself, the controller’s similarity with it made it easy to switch between modes of encounter. Some of the mapping (like in octave 3 and 5) was explicitly devised to make the controller ready-to-hand, maintaining the usual links such as that between fingering and pitch and making the device almost transparent, focusing on the relation between performer and sound. In contrast, the mapping of some other elements bears little resemblance to the role usually allotted to woodwinds, and is strongly non-intuitive, thus allowing for a present-at-hand engagement. Furthermore, the mapping tends to be more dynamic and thus unpredictable. In such cases the controller itself becomes somewhat inflexible as a tool in the performance, emerging as present-at-hand and switching the focus to that between performer and controller. This is an example of how setting a series of constraints via mapping allows for the emergence of phenomenologically differentiated experiences in a performer for interactive computer music.

Of course, after performing with it for a while, even the dynamic mapping gets internalized, and the instrument becomes ready-to-hand all over again. So, a successful performance requires the performer to always be pushing the limits of the system. This involves looking from time to time for unexpected behaviors from the system that makes physical engagement with the controller a conscious activity.

The idea is that both modes of encounter afford different kind of control, which result in different relations with the instrument that can be made evident to the public via the physical effort of the performer. This is where the concept of *authenticity* becomes important, describing a way to consciously engage with others without losing ourselves into the public discourse. Authenticity requires an understanding of temporality, as within it is where envisioning outcomes and reinterpreting past experiences becomes possible. Only “authentically” can such a piece of music hope to make engagement visible. Real-time interaction becomes the ideal vehicle, one where the performer can choose at every moment how to act based on previous events and looking for particular results.

Authenticity involves considering Dasein’s own past and reinterpreting it in light of their current goals. So, as the composer and planned performer of the piece, I decided to use material with deep personal significance at the moment of working on it. My main struggle at that time was to find a way to move from Chiapas, Mexico to Connecticut, US in at the beginning of the COVID-19 pandemic. Thus, most of the material comes from field recordings I took during a period of 6 months around that time. The recordings are varied in character, anything from people chanting in Tzotzil language, rubbing of rocks in ancient maya temples, improvisations with Mesoamerican instruments, and environmental recordings of various out-doors environments.

The three first sections of the piece are a series of evolving textures made by processing the recordings, mostly by using granular synthesis. The fourth section slowly fades out the previous textures and leaves a kind of blank slate, allowing for improvisation with live processing and looping of various recordings. The fifth and last section employs as sonic material a reading of the last sentence in Macquarrie & Robinson’s translation of *Being and Time* (Heidegger, 1962): “Does time itself manifest itself as the horizon of being?”. The sentence is sliced into its constituent words, which are scrambled and treated in a granular fashion like the earlier material. The piece slowly fades without giving any definitive answer to the question I posed earlier about making engagement explicit, just like Heidegger leaves open the question about the nature of time.

An important concept in the sonic environment of the piece is the distinction made by Smalley (1986) between *texture* and *gesture*. The first correspond to sound events whose evolution tends to be slower and to follow an immanent logic, for example the drone that starts the piece or the dense choral textures starting at around 1:20[[2]](#footnote-2). In contrast, gesture involves sudden changes in the profile of the sound, usually with sharper attacks and a spectral evolution where the energy input is evident. Gesture “it is synonymous with intervention, growth and progress, and is married to causality” (Smalley, 1986). For example, compare the previous excerpts with the more dynamic gestures at 1:30 and 6:20.

The roles taken by elements in the system are usually distributed according to this distinction. The textural elements are triggered and controlled by autonomous processes defined in the code, while gestures are the performer and controller’s domain. All the examples previously mentioned follow this distinction, although there are a few elements where the roles are reversed, such as the percussive gestures at 7:59 and the vibrato texture at 12:55. Furthermore, the distinction is purposefully blurred in cases such as the looping of percussion instruments, where constant repetition of short percussive gestures eventually becomes textural in character.

Gesture and texture are used as way to make modes of encounter between performer and controller more explicit, with the first usually being shaped by the performer’s actions as mediated by the mapping. Not only that, but the contrast between gesture and texture also mirrors that of present-at-hand and ready-to-hand, with intentionality being the key distinction in both cases.

Aurora

This piece explores the idea of musical creation as a middle ground between two extremes: freedom of action and deterministic systems. It was born by reflecting during a period of feeling constrained by natural forces beyond my control and trying to carve enough wiggle room to further my interests, namely the COVID-19 pandemic once again. The idea behind the title was born after trying to watch the Aurora Borealis during a period of intense geomagnetic storms, and how this led to having to make choices (from driving to locations to whether to even stay up to watch for it) based on the current state of astronomical phenomena.

Auroras are caused by disturbances in Earth’s magnetic field caused by streams of charged particles released by the sun. When a geomagnetic storm releases a big enough number of them, they interact with Earth’s magnetic poles creating a visual display of colors (with some sound component to them, according to some sources) in high-latitude regions.

The area where Auroras are visible is expanded during events such as coronal mass ejections, and the simplest way to determine the probability of watching them at a specific latitude is to monitor the K-index. This index is determined by averaging several readings of fluctuations in the magnetosphere taken at 3-hour intervals around the globe It is measured from 0 to 9 with three intervals in between each digit, amounting to 28 different possible levels.

The piece involves a score and a piece of software that functions as a conductor. The score consists of 6 sections, like the one shown in fig. 5. The first one is through-composed and the rest consist on two columns (A and B) with diverse musical material and instructions. Some sections have material that is more determinate, like specific rhythmic patterns, while others just suggest via graphical notation musical gestures to be performed. Most give at least a couple of choices of material to be played and connects them via edges in a flowchart manner, giving enough freedom to the performer in the way they want to structure each section.

A picture containing text, oven, device

Description automatically generatedThe software looks online for the latest K-index and uses it to determine the length of the whole piece and each of the 6 sections. The index is mapped in an inverse relation to the length of the piece. So, the more magnetic activity leads to a shorter piece, with greater change of rate between material. A graphical interface displays a counter with the time remaining for each section. This is only intended to give a general idea of the location within the whole piece, and performers are encouraged to switch sections independently and even some time before or after the counter reaches 0. The use of Independent, asymmetrical, and even fluid tempos is encouraged, and strict synchronization between both instruments isn’t intended.

Figure 5. Fragment of Aurora.

From section 2 on, the software also uses the aforementioned index to make a weighted choice for each instrument between the “A” and “B” columns, displaying the result in a graphical interface. Using spectromorphological definitions, the piece can fluctuate between being predominantly textural or gestural, depending on low and high K-index values respectively. Musical material found in “B” columns tend to have more active and rhythmic characteristics, while those found in “A” tend to be more continuous and textural. Therefore, lower geomagnetic activity would on average reflect on a performance with more sustained elements and slower timbral evolution, while the opposite would involve more active and dynamic gestures.[[3]](#footnote-3)

The piece is a sort of very loose sonification of geomagnetic data, following in the footsteps of Charles Dodge’s *Earth Magnetic Field*. However, while in Dodge’s piece the pitched material is chosen based on successive reading of the k-index, in this case only the form and overall orientation toward the gesture/texture poles are defined by a few readings constrained in time by the length of the performance. The score defines a constrained sonic space within which the instrumentalists choose in real-time the material.

Leap Studies

The Leap Motion Controller is a hardware sensor capable of contactless tracking of hand and finger positions, described in more detail in the previous chapter. By doing some light editing to a script provided by its SDK[[4]](#footnote-4), I managed to transmit data coming from the sensor via OSC, to be subsequently used by audio synthesis software such as SuperCollider. The issue then became how to classify a gesture and ascribe different meanings to its variations.

My experience as an orchestral musician made me interested in how hand gestures can contribute to give shape to musical material. Although I’ve come to question the overly hegemonic role played by conductors in symphonic orchestras (and all the social and political assumptions this entails), I’m still amazed by how variations on gestures can have some impact in the resultant sound. This can be easily accomplished in systems involving human beings as mediators by harnessing our finely tuned communicational skills, as we attach meaning to subtle variations in verbal and non-verbal communication. Even when there’s no clear one to one relation between intention and movement, we tend to ascribe one by relating to it vicariously.

In my past work with motion and gesture tracking I’ve focused on a very straightforward parameter mapping paradigm: one parameter of movement (be it location, speed, rate of change, etc) gets translated into one or multiple parameters for a sound synthesis engine. However, in order to consider gestures as they evolve in time as meaningful elements in our being-in-the-world and not only as positions or lengths in a three-dimensional space, I had to provide the mapping layer in the system with a certain kind of agency. In a way this is analogous to an orchestral performer being constantly on the lookout for the conductors’ gestures. Machine learning techniques such as classification helped me approach this goal, as well some basic gesture recognition natively provided by the Leap Motion.

The first two studies I worked on utilize only a single gesture: circles drawn by the index finger. In the first study involves rhythmic values that can be added or subtracted to a sequencer, their length determined by the diameter of the gesture. The patch reacts to four types of gestures: Clockwise circles adds and counterclockwise subtracts, while the hand used determines whether the rhythm will be added or subtracted from the beginning (left hand) or the end (right hand) of the list of values. An intuitive interactive system is thus created, with very clear rules and a transparent mechanism.

The second study involves the same set of gestures. However, instead of adding and subtracting single rhythmic values, each gesture creates and loops more complex musical phrases using the HenonC Ugen on SuperCollider, a chaotic generator. Some parameters are determined randomly, but the range used by the pitched material and average amplitude are determined respectively by the diameter and the number of times the circumference is drawn. The resultant sounds are unpredictable but stay within some constraints determined by the gesture.

The third study consists of a 3-track live looping system. Each track can be selected by raising the corresponding number of fingers in the left hand using the index, middle and ring fingers. Each track can be controlled by three right hand gestures: closing the hand to start recording audio coming from the microphone, opening it to start looping the recorded sound and waving it to stop the current loop. Once stopped it can’t be played back again and a new loop should be recorded from scratch. This creates a very intuitive system, with hand gestures whose meaning tends to be transparent to both the performer and the public.

To train a system with such gesture recognition skills I once again employed Fiebrink’s open-source software called Wekinator. For the third study I employed one of its pre-coded algorithms known as “dynamic time warping”, as it can be trained to perceive time-based gestures independently of the speed they are performed.

However, the training is not flawless. The system can classify gestures incorrectly depending on a long series of variables. It can be influenced by the length of the training data, complexity of gesture, slight variations in the position of the sensor, unforeseen secondary gestures and the threshold chosen to confidently choose out of multiple options. Successful training can be a time consuming and frustrating endeavor, and even after achieving satisfying results during a training session I often had to retrain it after picking it up the next day. Furthermore, every person using the instrument would have to train it first, which involves some troubleshooting.

This kind of training is useful when the expected result is an instrument for musical performance adapted to the idiosyncrasies of a particular individual and not that much as a general-purpose controller for several users for interactive computer music or as part of an installation. That being said, the gestures I chose for this study are simple enough and can be easily trained, and the low number of them also helps with accuracy. I consciously sent a different floating-point number for each hand as part of the training data, even though it could infer this from the position of my fingers I found that some redundancy in the system helps it make better decisions, helping avoid the dreaded issue of overfitting. This makes the role of both hands clear for everyone involved, including the software.

The fourth study is a longer piece that involves a more formal interactive music system than the previous studies. The idea was to explore if a middle ground between Heidegger’s two modes of encounter[[5]](#footnote-5) could be approached without employing instrumentality as a medium. Can hand gestures be made to resemble conscious engagement with an object while retaining freedom of action characteristic of the present-at-hand? A formal phenomenological exploration along such lines could lead to the discovery of differentiated nodes along the continuum between the poles of both modes of encounter. Although such ventures are far beyond my means, an informal kind of exploration can still be attempted by employing sound as the object to be manipulated.

I used wekinator once again, but this time to classify hand gestures and assign functions to those classes. The roles of both hands are divided along the previously described gesture/texture divide, the left hand tends to move at a slower pace and controls the evolution of textural material, while the right one controls dynamic gestures (both in the spectromorphological and literal sense), such as the circular motion described in studies 1 and 2. I choose these roles to imply a relation with the archetypal divide of both hands in homophonic keyboard playing style: melody and accompaniment. The purpose of this is twofold. First, to make the interaction mode and control style of the system more transparent to the public, assuming their familiarity with the keyboard performance. And second, to make a clear connection to instrumentality and anchor the gestures to roles my hands are accustomed to. While the affordances of the leap motion controller can be widely expanded by employing machine learning, a space of constraints can thus be carved to allow for exploration within the piece to occur.

The left hand employed sound material similar to that found on my piece *Dasein*. That is, mostly granulated field recordings taken once again from my surroundings, this time a hiking stop right across the street from my apartment in Middletown, Connecticut. Field recording was employed, because it is itself an activity that turns what is ready-to-hand, the ever-present sonic environment which we are usually unaware of, into a present-at-hand entity, a digital file that can be used for reproduction and manipulation.

The granular texture ranges from short clicks at random intervals to slow changes in the overtonal outline of the recordings. The changes depend on the hand being closed into a fist, slightly opened, and as open as possible, as well as the flexing of each finger individually.

On the right hand, the mapping is devised so that the hand gestures require more energy input, which is then reflected in the sound. Three types of movement are used to control sound: a swipe motion, clockwise and counterclockwise circles. The first is used sparsely, and simply triggers a kind of percussive hit with a long envelope. The latter two play, respectively, a heavily reverberated tone rising in pitch following continuous circle drawing by the performer, and an individual harpsichord-like tones with pitch inversely mapped to the circumference.

Shoshin

The title is a concept borrowed from Japanese Zen Buddhism, meaning literally “beginners mind”. It outlines a way of approaching familiar practices with new eyes to find possibilities previously unthought of. This is usually meant to apply to the way we approach phenomena in the world, allowing them to radiate their inherent series of affordances without being limited to the constraints we impose to them after encountering repeatedly. According to Shunryu Suzuki’s (1970) famous remark: “In the beginner’s mind there are many possibilities, but in the expert’s there are few”.

This is related to what’s known in the western world as the “Einstellung effect”: a distinguishable tendency to mechanize a set of operations and abstract problems to solve them faster, as described by Luchins & Luchings (1942) famous water jar experiment. In it, subjects were conditioned to discover an algorithm to solve a series of problems involving measuring a predefined amount of water using 3 jars with different sizes. After that, it was observed that they continue using it even for problems where easier answers were possible. They had generalized a set of rules and extrapolated them to every problem that shared only superficial qualities.

Even if approaching problems with a beginner’s mind requires more computation power by the brain, and is therefore not the usual tendency, it can help bring forth new possibilities by employing the same material. It even has the potential to save lives, for example when employed for disease diagnostics, where every case may be different in some meaningful way.

I wrote this piece for Koto and EWI, with the encouragement and help of Koto player, Japanese Music scholar, and fellow graduate student Garret Groesbeck. “Shoshin” was the approach I employed while working on this piece in two ways. First, I am literally a beginner with respect to writing for Koto and Japanese Music in general, so I could approach the instrument with fresh eyes and find a few sonic possibilities that wouldn’t occur to a professional performer, while at the same time learning the conventions of writing for Koto. I spent some time exploring the instrument, trying to find interesting ways for it to produce sound, either acoustically or employing real-time signal processing.

Furthermore, I tried to consciously engage with the concept of the piece by limiting the amount of material I would employ, carving a timbral space within which the piece could exist. This involved once again engaging with the related Heideggerian concept of *authenticity*, stripping my compositional practice of a lot of the conventions I’ve been employing the last few years and switching some of the focus to practices that highlight my origins as a conservatoire-trained musician. In short, I decided to employ a more traditional western ABA form, with the material being strongly melodic.

So, the piece evolved as a middle way between both extremes, both of which I considered integral parts of my personal approach to the piece with a *beginner’s mind*. Approaching the instrument as an unknown sonic device gave shape to the middle section, employing the variable gestures created by the release of different overtones when striking the string in different areas in relation to the bridge. But also, approaching the A section as a conventional exploration of austere melodic material and silence, leading to more rhythmic material. Both materials were simply juxtaposed, allowing them to coexist and shape the piece.

A picture containing dark, night sky

Description automatically generatedFurthermore, the Koto and EWI are conceived as shaping an extended instrument. A single contact microphone is placed in the body of the Koto, and the sound coming from it can be processed in real time by the EWI, with every note mapped to a different function independent of octave. Further control is achieved by mapping air flow to volume, while bite and both thumb sensors provide control of high-level parameters, with intermediate mapping layers as described in the first chapter. This allows for more intuitive and direct control by linking multiple parameters of signal-processing algorithms. Notes C to F# are set to a kind of harmonizer, leaving the original pitch and simultaneously playing two copies of it with the pitch shifted according to the first trichord of a series of scales using in Japanese Music[[6]](#footnote-6), with octave above or below chosen randomly. This can be heard at 3:47 in the recording made for the 8th installment of the Wesleyan Graduate Music Series[[7]](#footnote-7). G to A allow for control of a usual set of effects: distortion, feedback reverb and delay respectively. B flat and B are used to record, play and stop two different loops. This is used, for example, to extend the gesture shown in figure 6 and heard at 6:20 until it is repeated at 9:50.

Figure 6. Fragment of Shoshin.

The mapping scheme for this piece is less dynamic than the rest of the pieces being discussed here. However, some unpredictability in the interaction with the system is maintained by involving two performers. Both react to each other’s actions, with the Koto-EWI paring emerging as a single stream of sound to which both contribute equally.

Sunyata

The current iteration of the piece is conceived for Oboe and Kinect. I started working on this piece as my final project for the class “Composition in the Arts”, co-taugth by Professors Ronald Kuivila and Jefrey Schiff. In it, we were created a piece every week following a series of prompts, while for the final project we were allowed to choose from any of the previous ones. The prompt for was to create a piece in which the material used comes from our own bodies.

I chose to use my body with relation to the interactive system in two fundamentally opposite ways throughout the piece: as provider of sound material being processed by the computer, and as movement shaping the sound generated by it. The body then feeds both audio and control information to the system at different times in the piece.

*Sunyata* is a concept in Mahayana[[8]](#footnote-8) Buddhist philosophy, highlighted by 2nd century philosopher Nagarjuna as part of the “middle way” (*Madhyamaka*) school of though. The middle way is an attempt to find a philosophical position that avoided the poles of “eternalism” and “nihilism” (in western terminology). The first posits that things exist because they are sustained by an eternal essence, while the latter ascribed no existence at all to things beyond the mind. What is sought by the *Madhyamaka* is not a synthesis in the Hegelian sense, but a third point of view that explicitly avoids the perceived pitfalls of both.

Thus, Nagarjuna emphasized such distinction with the Sanskrit word *Sunyata*, usually translated as “emptiness”. Every phenomenon is said to be empty, but not on the nihilist sense of things being ultimately devoid of existence, but just of the fixed intrinsic existence we usually ascribe to them. Things have no eternal essence, but they do exist by virtue of a process of dependent origination, that is, arising out of a complex web of interrelated phenomena. No thread in the tapestry can be pulled individually. This applies to the self, and goes to explain it as a sort of body/mind/environment system, similar in many ways to *Dasein*. Being is always a *being-in-the-world*.

In Buddhist practice it’s not sufficient to understand *Sunyata* conceptually, it has to be experienced repeatedly. Traditionally, visualizations of impermanence and dependent arising are employed for this end, but some sonic practices like Mantras and recitations have been employed by different cultures for the same purpose. In this piece I try to find a way to not only embody the concept of emptiness as a performer, but to create a practice mediated by sound that would help me experience and understand it phenomenologically.

I employed a Kinect as a way to use movement as material for the piece. The device was initially developed as a video-game controller, as it can sense the position and motion of body parts in a space directly in front of it via a series of cameras and infrared projectors. By using a computer program called “NI MATE”[[9]](#footnote-9), I managed to extract coordinates of various parts of my body in a cartesian space (x, y and z) and send them to SuperCollider via OSC.

The piece itself involves no score, and is developed as an interactive computer music system for improvisation. It has to main sections that can be repeated as many times as the performer wish, before pressing a button in a graphical user interface that stops the piece altogether and fades out the sound.

The first one is triggered if the performer moves out of the sensing area of the Kinect, triggering a dense series of delays that effectively lengthens and harmonizes every sound gesture into a dense cluster with a long decay time. In this section of the piece I usually explore sounds coming from my body, mainly from my mouth cavity and fingers, as well as the interaction between them and the reed-less Oboe. I continue exploring such sounds, incrementally raising my volume until the output sound feeds back into the microphone and is sustained indefinitely.

The second section starts as soon as the Kinect senses at least one person in front of it, the feedback from the previous section is slowly faded out. For a random amount of time between 2 and 3 minutes, I’ll improvise a series of gestures that are recorded onto a buffer. After said time, the recording is separated into harmonic and percussive components, and then sliced into individual elements using automatic audio segmentation as implemented by the Fluid Corpus Manipulation Toolkit[[10]](#footnote-10) on SuperCollider. Such slices are then played and looped in random order thought the rest of the section, with the playback rate and various effects being controlled by the position of body parts in space.

Even if the mapping between coordinates and effects parameters is explicit and one-to-one, the sheer quantity of them and the way they are distributed through body parts not neighboring each other makes them difficult to control in isolation. There are very few exceptions, such as room size and wetness on reverb growing when moving further back from the sensor, and even then, unexpected results tend to happen depending on the position between body parts. Movement is thus expected to be conducted as meaningful to the performer and/or audience and not only as coordinates in space. The self is thus reated as a complex web of relations, embedded and forming part of a bigger interactive system within which agency is distributed but individual actions result in changes.

1. Electronic Wind Instrument. [↑](#footnote-ref-1)
2. <https://soundcloud.com/hector-gonzalez-orozco/dasein-for-wind-midi-controller> [↑](#footnote-ref-2)
3. A performance of the piece can be found on:

   <https://www.youtube.com/watch?v=EKQTLL-AJWo>

   In this instance the solar activity was on the low side, therefore the predominance of textural passages and slightly lengthy performance. [↑](#footnote-ref-3)
4. Software Development Kit [↑](#footnote-ref-4)
5. Described in the piece *Dasein,* at the beginning of this chapter [↑](#footnote-ref-5)
6. Yo, Ro, Ritsu, In and Ryukyu scales. F and F# are harmonized with fourths and augmented fourths respectively [↑](#footnote-ref-6)
7. Available at: <https://www.youtube.com/channel/UCLB2eWWh3MBAH1KTHXxqeWg> [↑](#footnote-ref-7)
8. “Great Vehicle”, one of the two major extant Buddhist traditions. It’s the main tradition in Tibet, China, Japan, Korea and most of southeast asia. [↑](#footnote-ref-8)
9. <https://ni-mate.com/> [↑](#footnote-ref-9)
10. <https://www.flucoma.org/> [↑](#footnote-ref-10)