GLASS II

(version October 2020)

audio-visual performance

for two or three performers and a concert space with large windows

Hans Roels

GLASS II

This performance creates mixtures and fusions of the place where you are and the places surrounding you (where others are). What you feel, hear, see and know about a place are experience fields; these fields collide, fuse, disconnect and overlap in Glass II. Sounds, people and things move through these old and new places.

A concert space with large windows is necessary for Glass II. Performers play both inside (the concert space) and outside (indoors and/or outdoors). A significant part of these outside performance zones should be visible for the audience, sitting in the concert space. The concert space needs a 'fast' (approx. less than 30 seconds) route to the outside spaces, therefore locations on the 2nd floor or higher probably aren't a good choice. There is no preference for a specific landscape visible through the windows, it may vary (a street, public square, woods, parking lot, etc.). A dull, non-diverse character of the outside spaces makes it harder to realize a convincing performance.

There are at least two performers: one stationary performer – mainly playing in the concert space on a bicycle and also mixing/processing the sound inputs – and a second, mobile performer, moving around and performing in various zones in and around the concert space. A third performer is optional: (s)he could take over the live mixing activities of performer 1, turning this performer into a more mobile player.

The performed sounds & music are mainly created by amplified *bicycles and rotating objects* (wheels, spinners hitting objects, objects with ball bearing, etc.). *The location and setup of the speakers mirrors and amplifies the landscape* seen through the windows and the sounds captured with microphones.

These are the main six guidelines to create a performance:

(G1) *The environment and its soundscape around and in the concert space at the moment of the performance are part of the performance.* Environmental sounds may be captured (by microphones) and amplified (by speakers). Different types of microphones (surround, directional, contact mics, etc.) at different (sub)places may be used for this. The concert space may also be manipulated physically/acoustically to hear different outside places by opening doors or windows, moving walls, partitions, surfaces, etc.

(G2) *The performed sound/music is moving in the landscape.* The performance takes place. This can happen through physical movements (performers or objects moving to or from the audience or microphones), through digital panning, filtering and spatialization or by locating the sound production unit (for example, the speakers of a synthesizer) at a large distance from the performer (see the score of my older work 'Here and There').

(G3) *Visible silences – silent visuals – are part of the performance.* These are moments in which the audience sees performers or active sound sources but hears no amplified sound; thus, probably there will only be soft – or no – acoustical sounds. Examples are: a performer – outdoor but visible through the windows – bowing a wheel with contact microphones, next, the amplification is suddenly switched off to create a visible silence; the amplified sound of a performer – moving a microphone through the landscape – fading in and out in the concert space; a performer playing an extremely soft sound object in the concert space, only audible at less then 1 meter.

(G4) *Treat the microphones as active instruments* by walking with the microphones, changing their positions during the performance, exploiting the spatial characteristics of different microphones, etc.

(G5) *Interact with the environment.*

(G6) *Use a wide range of musical synchronization/ensemble methods.* Examples are: playing together in one tempo or rhythmic flow; performing in different, simultaneous tempi; making similar, physical gestures with a joined, imprecise (slow) timing flow but with different dynamic flows; etc. Also find ways to play together (in the previous wide sense) in 'asymmetric' situations, for example when one performer hears the second but not vice-versa, or player 1 sees player 2 but not vice-versa. Possible solutions may be: following/accompanying a visible player as in a silent movie, using environmental (visible or audible) cues to start or stop sound layers, etc.
A consequence of these varied ensemble methods is that the performance will have both monophonic fade-ins and fade-outs, polyphonic layers (with independent transformations) and sudden ruptures: joint stops/starts (loud or soft).

Procedure to realize a performance:

The basic starting point to realize a performance and musical form of Glass II is *to design a route for the mobile performer (player 2)* at the specific performance site. Base this route on:
- the practical possibilities of a site (where is it possible to walk?)
- the lively character of the whole location (where can you see things happening? People or animal doing things?)
- the present soundscapes (explore the quality and places of sound sources, where are sounds being made by people, animals, wind, water, etc.?)
- the (musical) performance possibilities (is there an echo or special reverb; architecture with special acoustics; is there a fixed object along the route with a fitting sound?).

A route implies timing and duration constraints for player 2 and the whole performance. Moreover, at several parts of the route performer 2 should be visible or (acoustically) audible for the audience. Once you have decided on a rough draft of the main player-2-route, decide on interesting locations for the microphones around the concert space (to capture environmental sounds and/or mobile performers) and further adjust the player-2-route if necessary.
Next, create a musical structure that fits this route and is based on the environmental sounds (the ones from the microphones and the purely acoustic ones) and the performed music (the mobile sound-objects for player 2, player 1 mixing and performing on a amplified bicycle). Also include synchronization spots between the players (to 'play together' in several ways) at specific points of the player-2-route. Larger, stationary instruments for player 2 (for example, an amplified bike) can be placed at these points. Re-adjust this route in this end stage by adding variations and smaller side-routes if necessary.

Extra options:

1) Apart from volume, panning and spatialization changes, extra sound effects and digital processing (for example, delays or pitch-shifts) may be applied, mainly on the audio from the contact microphones, *as long as the whole performance remains in balance with – and related to – the physical* (acoustic, visual, social, etc.) *character of the concert place.* Thus, do not overrule or overwhelm the place with a virtual (sound) space.

2) Playback of local recordings may be used sparsely and for a limited time. Recordings of sounds are made *on the same place* and with the same microphones as in the live set. For example, you could make a 2 minute recording of a different season, moment or weather conditions at the same location or – example 2 – record the daily event of children passing by after school.

3) The current version of Glass II is based on bicycles, wheels and rotating movements. Perhaps other versions can be made, for example based on walking (with walking 'pits' on the stage, walking inside and outside the concert space with varied pavements, floor material, plants, etc. and capturing these live walks with microphones).

Musical material and instruments

A. Bicycles
It takes experimentation to find good spots for contact mics on a bicycle. Moreover, there are many contact mics – and similar condensator microphones such as the AKG C411 – and each has its own sound.

With two or more contact microphones attached to a bicycle you can create all kinds of percussive sounds by beating, scratching or rubbing on different spots.

The back wheel of a bike makes a 'ticking' sound when turned backward. You can also produce this ticking sound on a loose, mobile (back) wheel by turning the chainring.

Spokes:
- You can beat or strike them with percussion mallets and sticks. The kind of stick makes a huge difference; some wheels need specific sticks to sound well. Rolling, rubbing (while rotating) the spokes is also possible, search or design fitting sticks or objects.
- You can play spokes with a string bow and create visual signs for specific pitches, timbres, fascinating harmonics, beating frequencies, etc. By pressing a smooth metal or glass object against the spokes with one hand and bowing with the other, you can produce different pitches on one spoke. You can also bow 'col legno'.
- Rotated bowing: you can move/push the wheel with one hand and hold the bow against the spokes with the other. As the wheel turns, the spokes are pushed against the bow and bowed tones or harmonics are produced (in the 'rhythm' of the turning wheel). This technique is more practical on the front wheel.

Pedaling (with your hands):
- These movements create related but different sounds: pedaling forward, pushing/rolling the back wheel forward with your hands, pedaling backward, pushing/rolling backward with your hands. Another variation: let the bike roll without pedaling until it stops (this is practical because you have both hands free to make other sounds or perform the live mixing). You can also suddenly start or stop the motion with the brake or you hands on the tire.
- Attach rubber, small wooden hammers, plastic strips, etc. to a clothes peg or clamp, hold this against the spokes (as children do) and pedal. Changing the position of the clamp and the pedaling speed influences the sound.

B. Other rotating objects
By attaching short plastic strips to (toy) spinners, you can strike objects to produce very fast repetitions or ritardando rhythms. Striking (architectural) objects along the player-2-route is one option, specific spots on the amplified bicycle another. Hard lids, caps, tins, jars or boxes (of plastic or metal) also make nice sounds and can easily be carried around or placed at locations along the route. With practice you can trigger/start the spinners with just one hand (for example, against your knee), this frees your other hand to perform or carry other objects.

Ratchet wrenches (Dutch: ratelsleutel) make ticking sounds, similar to the back wheels of a bicycle and contain a rotating mechanism. By pressing them against resonating objects (a wooden door, box or a heater), you can change the timbre of this ticks.
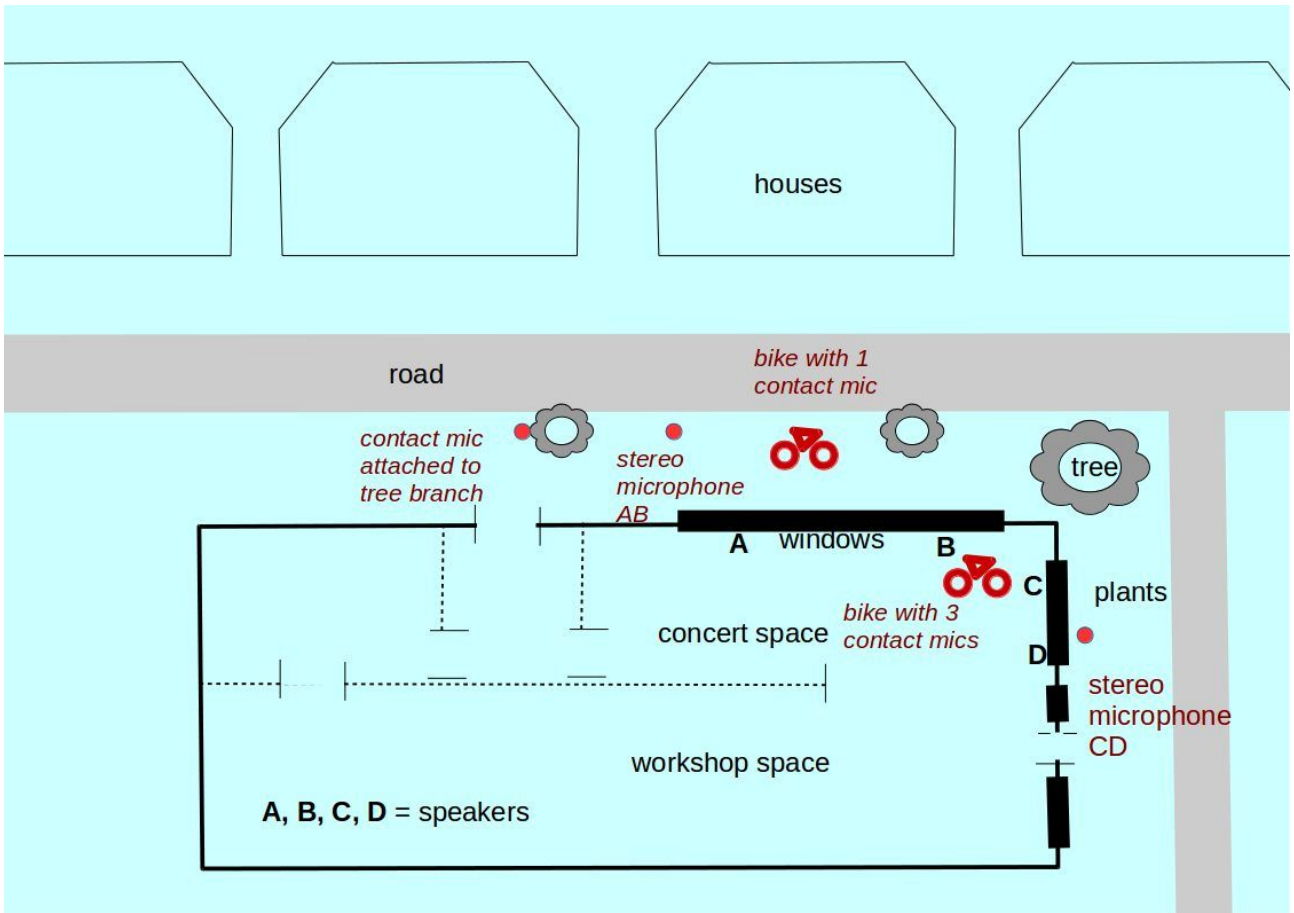
Other objects with wheels (skate board, trolley cases, scooter, etc.). Cycle around the concert space with a wireless contact mic, etc.

Examples – frames:

These are examples of possible 'frames' in which practices and techniques from (experimental) music performance, recording studios and acoustics are mixed.

(to do...)

Description of performance in Postx (Ghent, Belgium), 10 October 2020

houses

road

bike with 1 contact mic

contact mic attached to tree branch

stereo microphone AB

tree

A windows B

C

plants

concert space *bike with 3 contact mics*

D

stereo microphone CD

workshop space

A, B, C, D = speakers

Route of performer 2:

— = *first half of performance*

— = *second half*

INTRO, ZIJKANT, … = sections of the performance

houses

road

VOOR

start INTRO

tree

A concert space B

end C

SLOT ZAAL

D

ZIJKANT
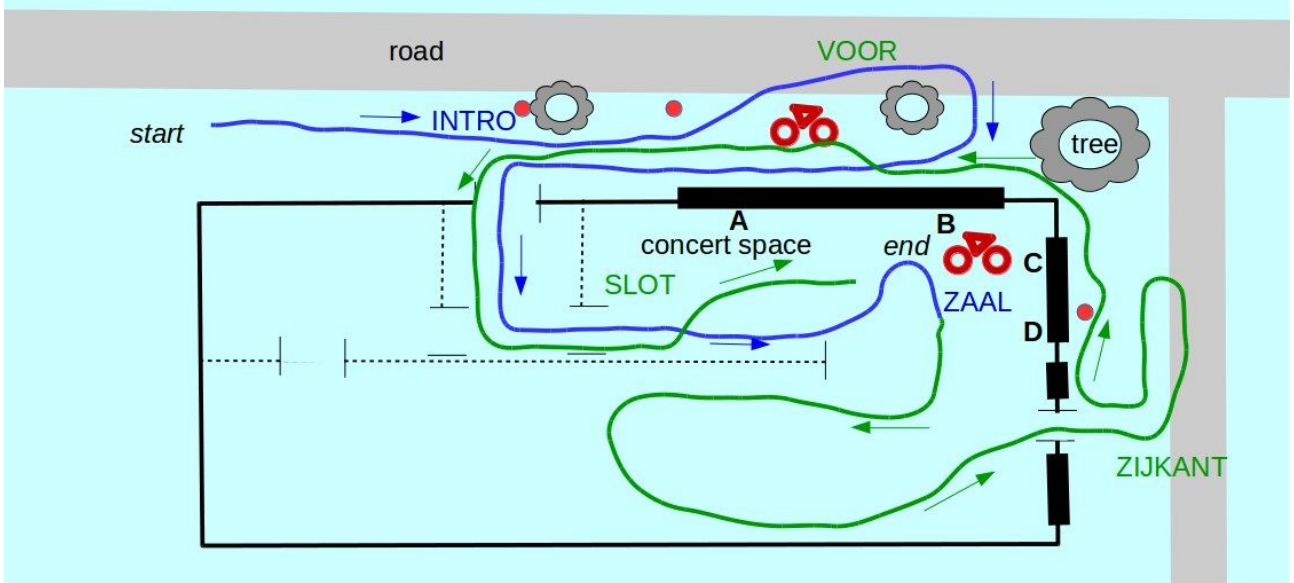
This is a page on my website with a description, pictures and an audio recording of the two concerts on 10 October 2020. The photos are from the 5pm concert, the audio from the 8.30pm concert. The route of performer 2 was the same in both concerts.
http://www.hansroels.be/glass2-demo.html

Setup and Location
In the concert space the audience looked at two large sets of windows: one in the direction of the speakers A&B, the other C&D. Through the 'AB' windows you could see a rather busy street with cars, buses, cyclists and passers-by. There were also a few small trees and a bicycle (turned upside down) on a table. This bike had a contact mic and was played by performer 2. There was a small mixer and headphone near this bike to ensure that this performer could hear himself while playing the amplified bike. The 'CD' windows showed some trees, smaller plants and a (less busy) street. Inside the concert space there was a 'stage' bike with 3 contact microphones (attached to different parts of the bike), played by performer 1. It was positioned upside-down on a low, central table together with the laptop, soundcard, keyboard controller and sound objects (spinners, mallets, string bows, etc.). The set-up of the speakers – and the spatialization – mirrored the visible landscape: microphones A&B were panned to speakers A&B, and microphones C&D to speakers C&D. The use of 3 contact microphones on the stage bike enabled performer 1 to process and control what was played on the front and back wheel (of the stage bike) independently, in a Pure data (Pd) patch. In general, (indoor) performer 1 spatialized the stage bike through the four speakers. The main controllers of performer 1 (for the live mixing and electronics) were: the volume, distance/dept (filtering & reverb) and panning for the front wheel, the same three parameters for the back wheel, the volume for the outside microphones A&B and C&D and finally switches to turn off the three contact mics independently, the contact mic from the outside bike and the main output volume.
On a two-octave keyboard performer 1 also switched on pitch-shifts (one for the front wheel, one for the back). The amount of the pitchshifts was derived from the pitches of the spokes and the difference between these pitches and the ones of the (loose, mobile) wheel, bowed by performer 2. In fact, four of these pitch-shifts were harmonizers (= chords of 3 pitchshifts).

Description of the performance sections
This is a short description of the main 5 sections in the performance:

INTRO: Performer 2 starts to walk at a large distance from the concert space. He strikes (in circles) the spokes of a small, bicycle wheel. After a while he becomes audible (acoustically and through the microphones A&B) and visible for the audience through the front windows. He passes by these microphones. In general, the intro-section presented the environmental sounds of the front landscape (microphones A&B). Performer one pedals forward on the stage bike, this is panned to speakers C&D. Performer 2 enters the audience space while playing the small wheel and closes the door behind him.
ZAAL (=hall): In general, this is a more intimate section with the doors closed, less environmental sounds from the outside microphones – except for the contact mic in the tree – and duo ensemble parts between performer 1 and 2.
ZIJKANT (=side): As performer 2 walks outside via the back 'workshop space' he makes ticking sounds with spinners against objects. Outside he (audibly) comes nearer and further to the microphones C&D. These microphones and the 'side' environment are central to this section. Performer 1 also makes ticking sounds by pedaling backwards and next creates polyphonic layers (with different pannings) by playing a distant melody with mallets on the front wheel, attaching a clothes peg with soft rubber to the back wheel and pedaling this back wheel.
VOOR (=front): The front section – with player 2 standing visibly in front, next to the outside bike – starts more intimately with a soft 'contact mic' bowing

solo on this bike. Next there is a sudden ensemble climax, with both players at their amplified bikes pedaling and playing with wooden hammers attached to the turning wheels. There are sudden shifts in perspective in this section: performer 2 heard through the contact mic, the outside omni microphones A&B and pure acoustic sections (without any amplification).
SLOT (=end): this section moves from environmental sounds (from both sides, microphones A&B and C&D) to an intimate, nearby part. In the end both players play and rub on the bicycle wheels without amplification.

Throughout the whole performance and all sections 'ticking' sounds were produced by both players (wheels turning back, spinners against objects, etc.)