

"Choreophony"

(a work in progress attempt of a definition through praxis
by Pablo Ventura)

The generating of polyphony through choreography.

The art of generating polyphonic sound textures through several dancers choreographies with the aid of motion tracking and gesture recognition technologies. Sounds are triggered and influenced, modulated, distorted, slowed, speeded, made louder or silenced by dancers movements mapped to these sound files. These can be affected by the dancers travelling in space (positional recognition), or to dancers gestures in place (gesture recognition).

Sounds are then redirected in space through Multichannel PA sound system and distributed through an array of speakers in a performance space. (refer to **Choreofony*).

Choreophony as an element of an overall **Choreography of Space** entails:

- composing of sound layers by means of dancers movements captured through motion tracking technologies and mapped to sound files.
- redirecting sounds in space / choreographing space through sounds (eg. DTS 5.1 Surround/ Multichannels). (refer to **Choreofony*)
- not to attempt to compose music but to find out how a certain dance sequence's dynamics and rhythms can affect sounds. (The generation of auditive textures instead of composing music).
- choreographing space using dance interrelated to audios, lights and video projections.

Considerations:

Whilst precision in the choreography and precise placement and timing in space is crucial for mapping, overlapping of layers and randomness of sounds is desired.

(Image: swimmers under water as the sources of waves reverberating throughout and affecting the whole space).

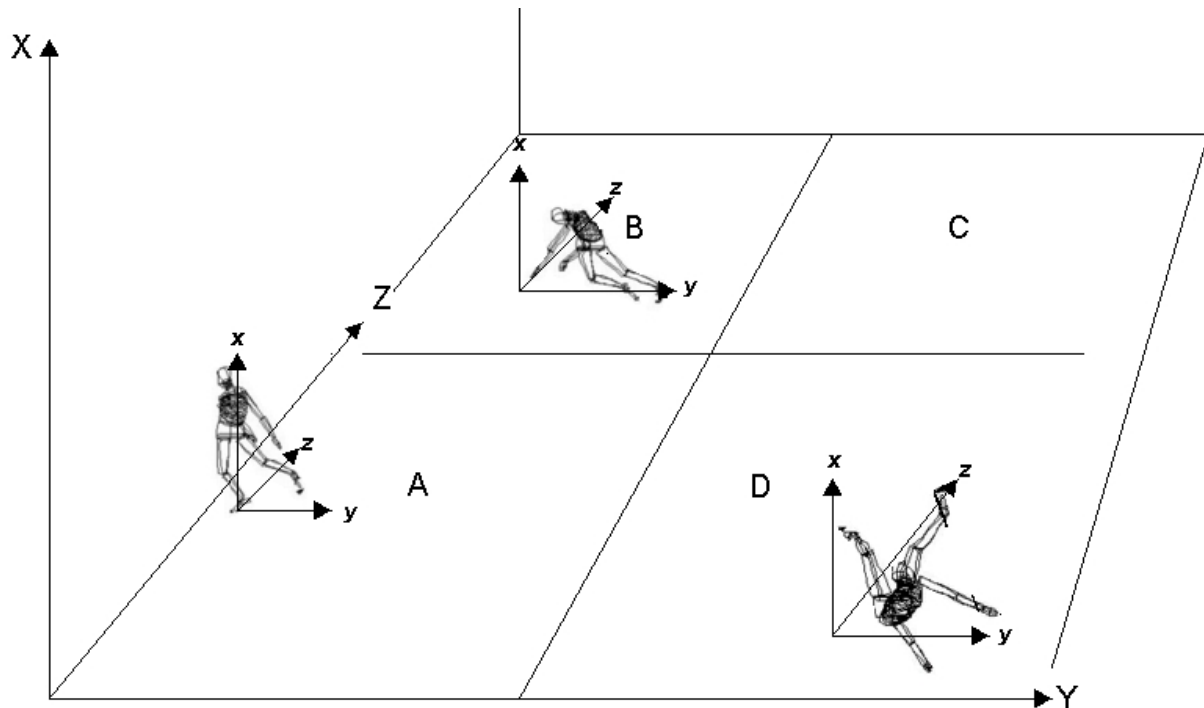
The choreography is not to be devised in order to generate specific 1 to 1 mapped sounds but should retain it's independence and validity as dance composition in itself. The dancer retains the freedom to interpret set choreographies affected by the sounds produced (double feedback). He is not to be used to trigger imaginary buttons to generate a sound composition for a composer.

***Choreofony.**

According to Andres Bosshard: the "Hörballett" (Listening ballet) that we constantly hear. *"Im Hörballet der Choreofonie... sind nicht nur verschiedenste Orte der Stadt akustisch miteinander verworben, auch Sie Tanzen auf dem Parkett allen Tages- und Nachtzeiten..". Andres Bosshard. „Stadt hören: Klangspaziergänge durch Zürich“. Verlag Neue Zürcher Zeitung 2009.*

A possible approach to achieve a Choreophony performance could be through the combination of:

Positional and Gestural Recognition of Dancers in a Space.



Positional recognition: whenever a dancer actuates a field A, B, C, or D he/she can trigger or affect a sound or video sample. (e.g.: mapped to generate choral sounds, audio textures or graphics, e.g.: „Zone“ 2001).

Examples generating video graphics with *Eyecon by F. Weiss (2001):

<http://www.youtube.com/watch?v=ovb8sM6otag&feature=related>

Example2:

http://www.youtube.com/watch?v=xzv_LOdHqMk&list=UUt3jickNK2ZKCIK12EoO03w&index=32&feature=plcp

Gestural recognition: cameras, sensors, on body gyroscopes or microphones picks up movements of individual dancers which are then mapped to sound files (gestures, body tilting, panning, acceleration, changes of level, etc.). (e.g.: mapped to generate melodic lines/single „voices“ or thin textures)

The position of bodies in space does not play a role other than being in the field of the camera view for it to register dancers movements (usually centre stage).

Examples generating sounds using *SoftVNS3 by C. Ziegler (2011):

http://www.youtube.com/watch?v=t_0LC97jXxc&list=UUt3jickNK2ZKCIK12EoO03w&index=7&feature=plcp

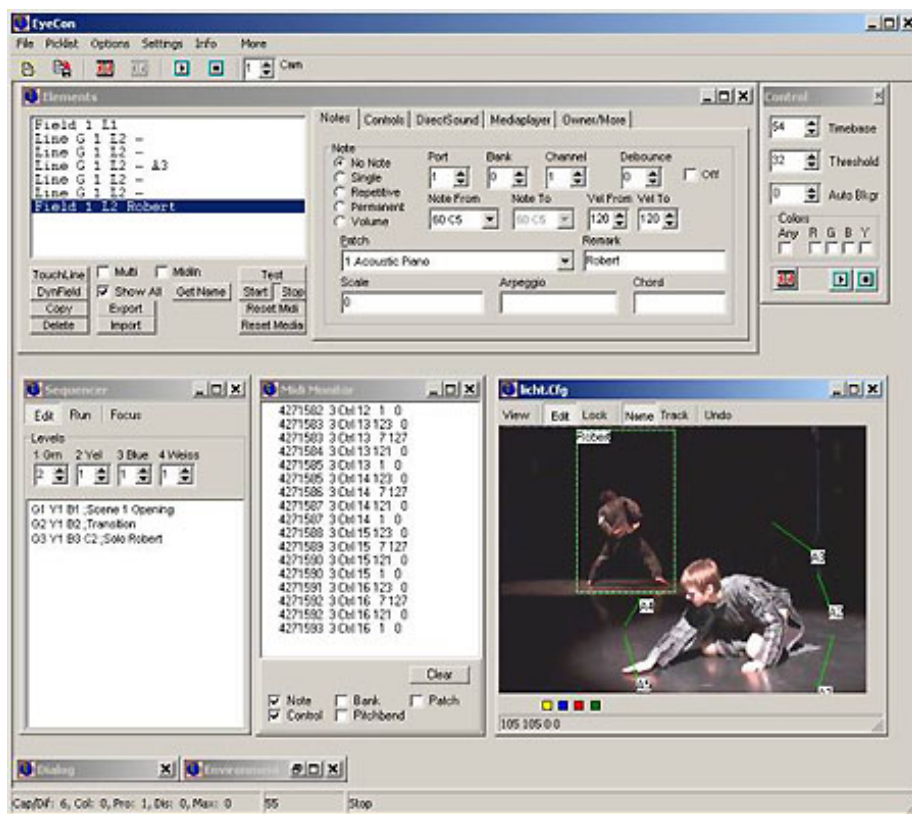
Example 2 (2009):

http://www.youtube.com/watch?v=prfaE_glTCM&list=UUt3jickNK2ZKCIK12EoO03w&index=20&feature=plcp

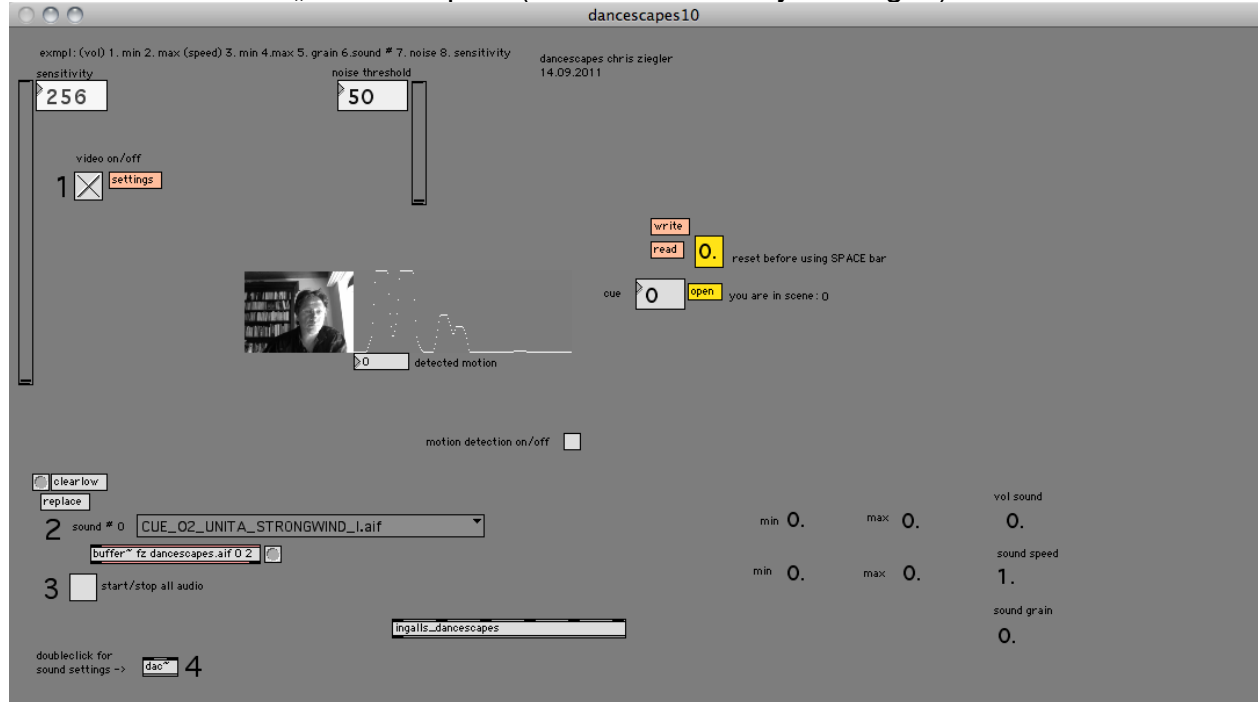
Example 3 generating swarm graphics using *ISO by D. Bisig (2009):

<http://www.youtube.com/watch?v=GKwHF8DJf8Q&list=UUt3jickNK2ZKCIK12EoO03w&index=12&feature=plcp>

*“Eyecon's main use has been to facilitate interactive performances and installations in which the motion of human bodies is used to trigger or control various other media (music, sounds, photos, films, lighting changes, etc.). Eyecon does this using a video feed from the performance or installation area (any normal video camera may be used). When the video signal is fed into the computer, the image appears in the main window of the program. You can now draw lines, fields or other elements over the video picture. If a person then moves into the video image and some part of their body touches one of the elements you have drawn on, then an event can be triggered, for example a certain sound might be heard. Alternatively, if you have drawn a field, Eyecon can measure the amount of motion occurring within that field. Additional features let you track the position of persons within the performance area, measure their height, their width, their overall size or the degree of left-right symmetry in their shape (assuming they are facing the camera). These control elements may each be assigned a different output“.



*SoftVNS3 used for „Dancescapes“ (to be enhanced by C. Ziegler)



*Interactive Swarm Orchestra (ISO):

<http://www.icst.net/research/projects/iso/>

Bisig, Daniel; Neukom, Martin; Flury, John

Interactive Swarm Orchestra

11. December 2007

Proceedings of the Generative Art Conference. Milano, Italy, 2007.

The project Interactive Swarm Orchestra (ISO) employs flocking algorithms to control computer sound synthesis and 3D sound positioning. Synthesis, positioning and movement of several simultaneous sound events are modeled according to swarm behavior. Camera-based tracking allows visitors to interact with this acoustic flock and thereby change its spatial distribution and synthesis properties.

These components encompass of a sound synthesis frame- work, functionality for 3D sound projection based on Ambisonics, a generic multi- agent simulation environment, and video tracking software for conventional video cameras and for SwissRanger 3D cameras. All software source code is publicly available.

Pablo Ventura. SinLab2012. (<http://www.sinlab.ch>)

March 2012.

<http://www.ventura-dance.com>