Persistent Vision is a collaborative dance piece made with Choreographer Carol Murota and Ali Momeni. The musical accompaniment for this piece was based on capturing and processing dancer initiated sound events. A special choir of dancers called the Turba was stationed behind a scrim while a smaller group of soloists worked on the visible stage. An array of microphones and sensors were positioned around the stage area and all the signals were fed to a Max/MSP patch built by Ali Momeni.

The dancers in Persistent Vision were taught by Campion to be sensitive to sound and to learn to use the body as a musical instrument. A special training, a specific vocabulary of sounds, and a method for conducting the dancers was invented.

Persistent Vision --> Guide for Dancers on sound production and terminology.

Everyone in Persistent Vision must memorize the details of this manual. It contains the specific vocabulary we will use when rehearsing and creating the sound.

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**SOUND**

ABOUT SOUND IN PERSISTENT VISION

- Value every sound that originates with your body!
- Silence is important and all sounds are meaningful!
- SOUNDS have lives: they are born, they live, they die.

The life of a SOUND can be described as the combination of 4 elements.

Mode of excitation, duration, loudness, timbre

I. **MODE OF EXCITATION (EXTERIOR --> INTERIOR)**

   In the physical world, the body EXCITES an object and produces a SOUND.

   1. *Excitation off the body (hitting the floor, walking on the floor, playing an instrument).*
      This is contact with the external world. This is communal excitation. This is communication.
   2. *Excitation on the body (hands rubbing together, clapping).*
      This could be on your own body or on someone else's body or with a group of bodies. It is exterior excitation, the body as a musical instrument. It is self-awareness.
   3. *Excitation from the mouth (clicking the tongue, or blowing breath).*
      This is intimacy - internalized excitation. Language is born from here

II. **DURATION**

   We classify the duration of a sound as one of two types:

   1. *One duration intrinsic to the sound.*
      For example, clapping, stumping, snapping…
   2. *Scalable duration*
      Scalable durations are created by scalable physical actions (breathing fast, breathing slow) or internal counting (rub hands for 4 - silence for 4).
III. LOUDNESS

A SOUND has LOUDNESS (the measure of energy at any given moment in the SOUND). We distinguish FIVE levels of loudness

1. Inaudible
2. Very soft
3. Medium
4. Loud
5. Very loud

The life of a SOUND in regards to its loudness involves 5 possible trajectories

a. Loudness is fixed at same level throughout (———)
b. Loudness comes from inaudible and goes to very loud ( < )
c. Loudness comes from very loud and goes to inaudible ( > )
d. Loudness begins at inaudible, goes to very loud, goes back to inaudible ( < > )
e. Loudness begins at very loud, goes to inaudible, goes back to very loud ( > < )

IV. TIMBRE

Timbre is the distinctive character of a sound apart from its pitch and intensity, the sonic color. The timbre of a sound is either

1. Bright (~high)
2. Dull (~low)

The table below summarizes our method of categorizing sounds:

<table>
<thead>
<tr>
<th>Quality</th>
<th>Possibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excitation</td>
<td>Off the body</td>
</tr>
<tr>
<td>Duration</td>
<td>One Intrinsic Duration</td>
</tr>
<tr>
<td>Loudness</td>
<td>Inaudible</td>
</tr>
<tr>
<td>Timbre</td>
<td>Dull</td>
</tr>
</tbody>
</table>

Some other things to keep in mind about a SOUND.

- A SOUND happens in a physical space and this adds other dimensions to the sound (reverb).
- A SOUND has RESONANCE (something remains in the air after the sound is long over)
- The RESONANCE of a SOUND is different from the RESONANCE of a "TEXTURE" (described below).
- A SOUND is communication. Air is the transmitter, our eardrums the receiver, and our brains the translator. Our brains are oftentimes ahead of the sound - we predict, verify, reject, and re-predict when we listen. This is important because sometimes we will want to confirm or deny expectations in the listener.

SOUND also exists in the psychological realm:

- SOUNDS have conceptual RESONANCE (a psychological weight)
- SOUNDS are signifiers (evidence of activity).
- SOUNDS become signs (the sound of a train evokes the notion of a powerfully moving force as well as the physical object of a train etc..)
You must be able to answer the following question about each SOUND you produce:

*What is the mode of excitation, loudness, duration, and timbre of this sound?*

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**TEXTURE**

SOUNDS are combined and produced collectively to form TEXTURES.

A TEXTURE has DENSITY (the rate of sound being produced at any given time). There are three types of Density:

1. *sparse*
2. *dense*
3. *very dense*

DENSITY has three possible time trajectories:

a. It stays the same ({--})

b. It begins sparse or extremely sparse and gets very dense ({{}})

c. It begins very dense and gets sparse or disappears ({{}})

d. It begins very sparse, gets very dense, then gets sparse again ({{}})

e. It begins very dense, gets very sparse, then gets very dense again ({{}})

Density is controlled by timing the production of audible SOUND in different choreographic ways. This might include the addition of silence between SOUNDS by counting or by a certain natural movement that results in a repetitive SOUND - like the length of a breath or instructions like _hop-then wait 4 then hop etc._ One goal of Persistent Vision is to marry movement and the sound production of the body.

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**PUFF CHAIR AND SOLOIST**

The soloist's puff chair is a sonic microscope that captures every excitation and transmits that to the computer, to the speakers, to the audience and to the players in Persistent Vision.

All sounds in Persistent Vision concretely or metaphorically originate from the soloist.

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**TURBA**

ABOUT THE TURBA (name for the group behind the scrim)

Conceptually, the Turba might be the voices and sounds in the soloist's head or it might be the public crowd or it might be a live processor that mirrors in some way the computer processor. Concretely it is 15 or so people behind the scrim who move and make SOUNDS. The Turba is governed by a strict set of rules with all the parameters of sound production being pre-defined and highly constrained.

The Turba creates sonic TEXTURES from the collections of sounds, movements and degree of social organization (described below). Sometimes the TEXTURES are picked up by microphones and processed with computers, sometimes just amplified, sometimes not amplified.

EACH OF THE CURRENT WEEKLY REHEARSAL GROUPS WILL BE CONSIDERED A UNIQUE ENSEMBLE. COMBINATIONS OF THESE ENSEMBLES WILL FORM THE STRUCTURES DESCRIBED BELOW.
The TRUBA is governed by a pyramid structure that defines group behaviors (the dance) according to levels of social organization in the pyramid. At the base of the pyramid, the TURBA is a set of individuals working independently (i.e. a crowd clapping where each person is responsible for a particular clap that gets added to the greater swarm of sonic activity in an automatic way). This is called TURBA_SINGLES. At the top of the pyramid the TURBA works as a single synchronized whole (i.e. a crowd clapping one time at exactly the same moment). This is called TURBA_ALL.

The base of the pyramid is the most common grouping of the TURBA and the top of the pyramid is the least common. Along the way up and down the pyramid, the Turba will group itself into TURBA_DUOS (pairs), TURBA_TRIOS (five groups of three), TURBA_HALVES (two groups split), and finally TURBA_ALL (everyone together). The ENSEMBLES (made up of the groups that have been rehearsing together throughout the semester) will have some special duties within this structure to be explained later.

In the beginning of Persistent Vision the soloist introduces the sounds from the puff chair and this contaminates the TURBA and gets it going. The soloists will produce NODES (points in time when an important sound is heard). The NODES will cue the TURBA and/or add new sounds to the Turba vocabulary. The TURBA_SINGLES at that moment only have a "limited" vocabulary of sound. When the TURBA moves to TURBA_DUOS it will gains more sounds to work with. At that point, the TURBA can accordion back and forth between TURBA_SINGLES and TURBA_DUOS. The only difference being that now TURBA_SINGLES can employ the new sounds gained in TURBA_DUOS (TURBA_SINGLES will not gain any new rules - the rules will be set from the outset for each grouping and never change). The TURBA moves again to TURBA_DUOS and then graduates to the TURBA_TRIOS. This comes along with a greater and greater sound palate. The soloist can time the introduction of new sounds once the Turba has reached a new organization state. As needed, the TRUBA can accordion down to TURBA_SINGLES AND/OR BACK UP TO TURBA_TRIOS. The difference is now that all the sounds gained so far contaminate all the sections. So in the end of the process you have the TURBA_ALL and it can produce all the possible sounds allowed in Persistent Vision. And the TURBA now has the possibility of going down the ladder - back to TURBA-SINGLES or up ladder to TURBA_ALL using all the sounds. You cannot skip steps in between. We will develop the rules by which you move to and from groupings. These rules for changing groups will be called TRIGGERS.

Along the way up or down the pyramid there is a set of continuums whose parameters change both physically and psychologically according to the current position in the pyramid.

The RHYTHMIC continuum: below is aperiodic (not specifically coordinated) above is periodic (totally coordinated).

The TEXTURAL continuum: below is a swarm like the leaves of a tree, above is one sound-fully formed - a powerful sonic image.

The RESONANCE continuum: below is dry and short, above is fully resonant and ringing.

The NOISE/PITCH continuum: below is noisier and more varied, above is specific and focused (i.e. one person plucking the monochord to cause one note ringing)

The UTTERANCE/LANGUAGE continuum: below language is proto-language without linguistics and syntax/grammar. Above language exists.

The figure below depicts these continua:
We move from the bottom of the pyramid where autonomy produces a statistical whole, towards the top end where greater degrees of organization produce more and more organized forms of behavior and sound making. You can think of a fully formed musical performance living at the top with the daily sounds of life living at the bottom.

**TALKING CHOIR**

Language is the domain of the TALKING CHOIR.

The members of the talking choir have texts memorized. They will appear on the front stage with the soloist. They will appear later in the piece along with the TURBA_ALL formations. They are representative of the fully-formed conscious selves. Their role, rules of behavior etc. is still under consideration and construction. Sonically, they will need to be able to do the following things: 1) whisper the text, 2) speak the text, 3) break the text up in different ways

**ELECTRONICS**

- The puff-chair is wired with 20 or so small microphones that pick up and transmit sound through the computer and out to the speakers
- The Turba is surveyed by two overhead microphones, two floor microphones, and one floating microphone. This forms a basic left/right division of the stage behind the scrim.
- The Diddly-Bow is a single string instrument that is a prop on the frontal stage. It will be played by the Voice Choir in different ways and maybe by others as well.
- All of these sounds can be transmitted to a computer system that has advanced signal processing algorithms organized by Ali Momeni and myself.
- The sounds can also just go out over the loud speakers without processing.

**WHY ALL THIS TROUBLE WITH THE ORGANIZATION?**

This will make it possible for Ed or Ali to visit the class during the semester and present new ideas and sound making possibilities in an efficient way without surprising Carol with stuff that doesn't jive with the direction of the choreography. It will give Carol a way of understanding how to approach the choreography without destroying the sonic possibilities that Ali and Ed are building. It will allow us to move quickly and efficiently once we get into full rehearsal. At that time the piece will begin to reveal itself and we need to have a clear language for making adjustments and changes.