

# Information Dynamics Installation

## Pattern and Predictability in Music

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One of the noticable features of most sorts of music is that it involves patterns in time—a repeating bass line, the cycle of harmonies in a 12 bar blues, a melodic theme that is repeated, perhaps in slightly different forms, at different pitches or at different speeds, and so on. One of the tools available to a composer or performer is to play with his or her audience's expectations, by setting up patterns that seem more or less predictable, sometimes doing what listeners expect, and sometimes doing surprising things.

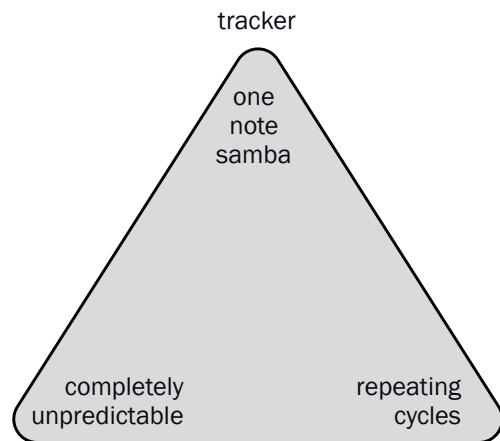
Our work on *information dynamics* involves studying several different kinds of predictability in musical patterns, how we as human listeners might perceive these, and how they shape or affect the listening experience.

This installation allows participants to explore a space of melodic and rhythmical patterns organised by *how predictable* they are, at least according to a simple model of how one might guess the next musical event given the previous one. Each person in the space generates one instrumental line, at a certain speed and using a certain pitch range.

### **Moving around**

As you enter the space, the system will start generating an instrumental line or voice. The loudness of your voice is linked to your height, so if you crouch, you will become quiet. The active space is triangular, with each corner corresponding to three different extremes of predictability/unpredictability. As you move around,

the system will generate patterns corresponding to where you are in the space. With other people in the space, you can cooperate to create polyhonic textures, for example, you could lay down a predictable repeating ostinato or bass line while your companion can generate a freer melodic line on the off-beats.



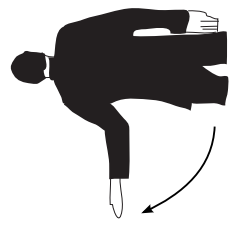
**Tip** It's best not to move around too quickly, to give yourself time hear the pattern you are generating to notice its characteristics. Then you can decided if you like it or want to try somewhere else. If you move around quicky, the patterns will change so quickly that there will effectively *be no pattern*.

## Control gestures

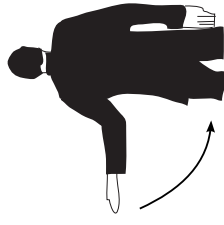
Control gestures are made pushing out or pulling in your left and right arms rapidly, either separately or together (while facing the Kinect motion tracker; if you face away, then left and right are reversed).

It should be noted that the system will sometimes detect gestures when none was intended. In particular, you might find the timing of your voice goes wild if you walk around quickly. In this case, the (**out**→ **in**,**out**→ **in**) gesture will reset your voice to the initial tempo and on the beat.

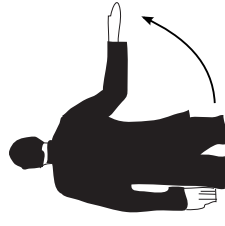
left arm	right arm	meaning
in→ out	static in	double tempo
out→ in	static in	halve tempo
static in	in→ out	triple tempo
static in	out→ in	one-third tempo
in→ out	static out	shift by half-beat
in→ out	in→ out	change instrument
out→ in	out→ in	reset tempo



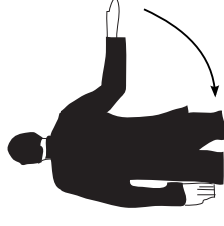
double tempo



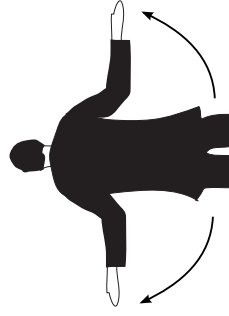
half tempo



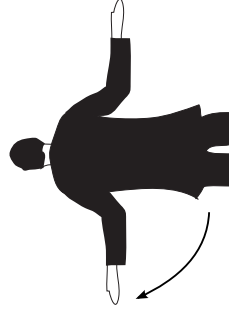
triple tempo



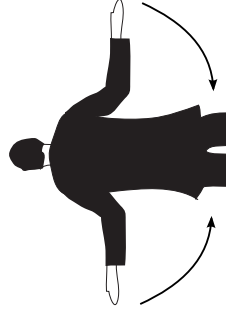
one third tempo



change instrument  
and octave



shift to  
off beat



reset tempo