



Wellspring Music in association with CDP

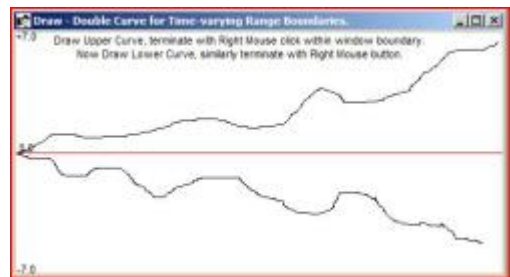
Announcing *ProcessPack's DISPERSAL*

~ Modules for Composers ~

After several phenomenal and exciting decades of computer tool-making for music, *ProcessPack* re-focuses energies on the act of composition itself. It has been put together during the past 18 months by **Archer Endrich and Richard Orton**, working in partnership as 'Wellspring Music'. It combines CDP and algorithmic processing. *We are exploring what it would be like to compose on computer directly with high-level musical design patterns.*

For example, a pattern like 'dispersal'. We are familiar with graphic animations in which a visual image is broken into small fragments which then fly out in all directions. This is what *ProcessPack's* DISPERSAL module does in sound: a soundfile is fragmented into up to 999 pieces (either randomly, or moving forwards or backwards in the source).

The pieces are then spread out in time and space, with *numerous options* with which to shape the result, particularly an expanding wedge, with linear or exponential edges ('Wedge Out'). The image **on the right** shows a 'wedge-out' accomplished with the **FreeDraw** function. The reverse is also possible ('Wedge In'), producing a convergence of all fragments towards a single point in space and time

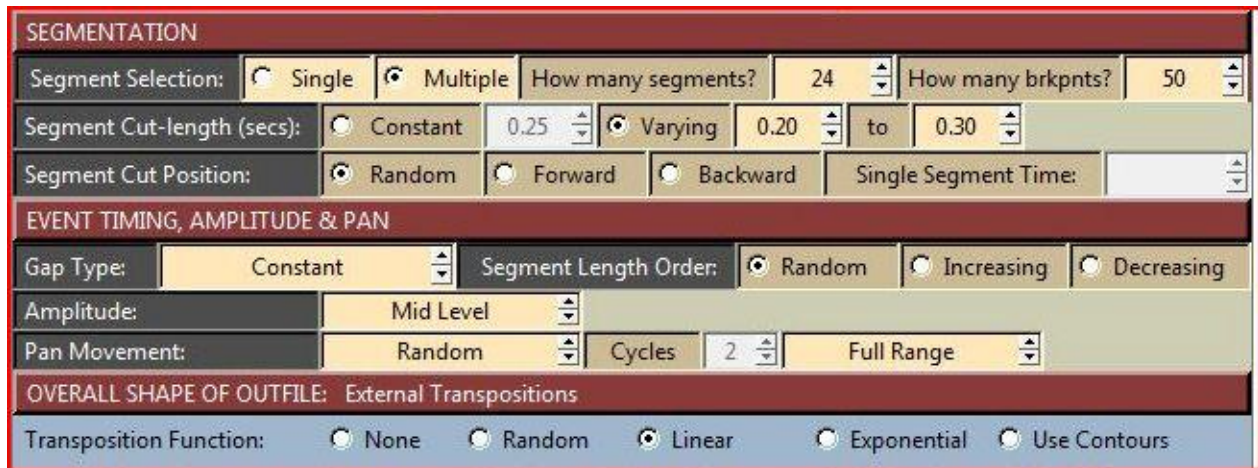


With *ProcessPack's* DISPERSAL, the composer is not creating these design patterns from scratch, but rather, is working with existing design templates, templates that are inherently musical in nature, shaping events over time in a particular way: musical 'micro-time-forms'.

- The presence of the pattern templates means that the computer does a great deal of work behind the scenes, thanks to intricate programming that guides orderings, transpositions and timings, and ensures that the specified output length is precisely accomplished. The **detail below** shows the main shape options.

OVERALL SHAPE OF OUTFILE: EXTERNAL TRANSPOSITIONS				
ExtTrnFn	ExtTrnShape	Contours	ExtTrnRange	Options
<input type="radio"/> None <input type="radio"/> Random <input type="radio"/> Linear <input type="radio"/> Exponential <input type="radio"/> Use Contours	<input type="radio"/> Raw=Random <input type="radio"/> Rising only <input type="radio"/> Falling only <input type="radio"/> Wedge Out <input type="radio"/> Wedge In	<input type="radio"/> Sine <input type="radio"/> Sine Hump <input type="radio"/> Sine Dip <input type="radio"/> Caret-Lin <input type="radio"/> Caret-Exp <input type="radio"/> Caret-Log <input type="radio"/> Vee-Lin <input type="radio"/> Vee-Exp <input type="radio"/> Vee-Log <input checked="" type="checkbox"/> NumCyc ___ <input type="radio"/> Free-Draw	<input type="radio"/> Centred <input type="radio"/> Low/High <input type="checkbox"/> Vary Range	<input type="radio"/> Harmonic Grid <input type="radio"/> Sequence <input type="checkbox"/> Keep Exact Timing

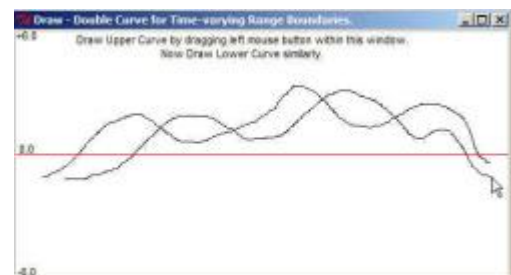
- Copious parameter options provide a great deal of flexibility and composer control over the final result, ensuring results tailored to the specific composition context. For example, there is a remarkable interplay between the number of segments, the nature of the time-gaps between the segments, and the ordering of the lengths of the segments. The **image below** shows part of the DISPERSAL dialog box with a number of the main options.



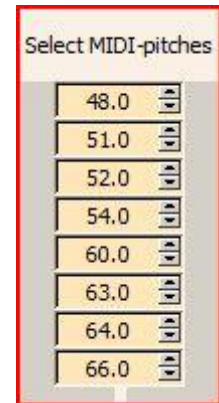
- Some of the other shaping options are shown in more detail below. The image is taken from a Reference Chart prepared for use with DISPERSAL.

EVENT TIMING, AMPLITUDE & PAN				
GapType	SegLenOrder	Amplitude	Pan Movement	Pan Range
<input type="radio"/> None <input type="radio"/> Constant <input type="radio"/> Random <input type="radio"/> Inc-Linear <input type="radio"/> Inc-Exp1 <input type="radio"/> Dec-Linear <input type="radio"/> Dec-Exp1	<input type="radio"/> Random <input type="radio"/> Increasing <input type="radio"/> Decreasing	<input type="radio"/> Mid-Level <input type="radio"/> Higher-Level <input type="radio"/> Lower-Level <input type="radio"/> RandAccents <input type="radio"/> Drawn Shape <input type="radio"/> Flat	<input type="radio"/> Centred <input type="radio"/> Random <input type="radio"/> L to R <input type="radio"/> R to L <input type="radio"/> L-R-L <input type="radio"/> R-L-R <input checked="" type="checkbox"/> NumCyc __	<input type="radio"/> Full Ranged <input type="radio"/> ½ Range L <input type="radio"/> ½ Range C <input type="radio"/> ½ Range R <input type="radio"/> Extended Range

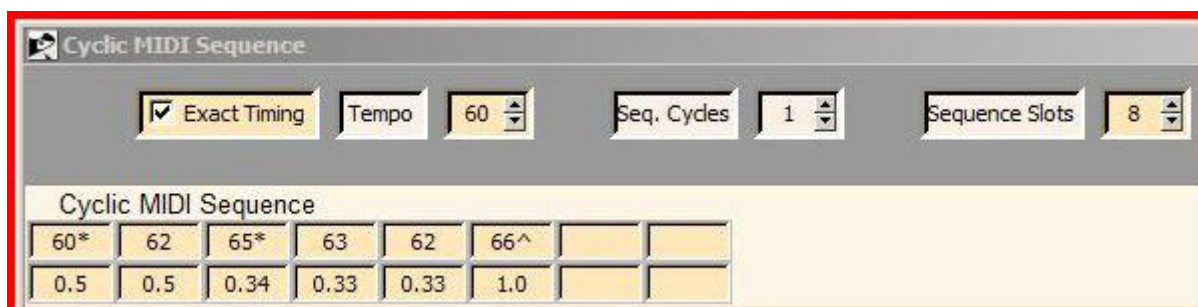
DISPERSAL's potential for composition is increased by several auxiliary features. One of the most important of these is the ability to apply a number of the shape-options *within each segment*, not just over the whole texture. Such *internal* shaping hugely affects the sonic outcome. There is also the ability to randomise segment distributions without using shapes, or to work with a **Harmonic Grid** (harmonised distributions), a **Sequencer** (create melodic & motivic units), various **Curve shapes** (such as 'Sine', 'Caret' or 'Vee') and to **FreeDraw** shapes (single or double draws – the latter are allowed to cross over, resulting in unusual sonic pivots). **On the right** we have overlapping FreeDraw curves.



The **Harmonic Grid** facility provides a way to produce harmonies in the resulting texture. It works in conjunction with randomised transposition, but not with the automatic shape options. However, it will work together with the hand-drawn shapes, so there is much scope for producing shapes with a harmonised content. The *Examples* file accessible from the program illustrates a number of ways in which the Harmonic Grid can be used. The pitches for the grid are given in MIDI Pitch Values and entered as a vertical list, with up to 8 slots. A typical result will use several DISPERSAL features at once, such as: wedge out with ever-shorter segments ('classic dispersal'), coloured with a Harmonic Grid.



The **Sequencer** operates in a way that relates directly to the way DISPERSAL works. The user defines pitch, duration and accentuation for each 'slot' in the Sequencer, and these are filled with the stream of segments that have been extracted from the input soundfile. If only a single segment has been extracted (but 'multiple times' is selected), it will be what fills all the slots. If there are, for example, 30 segments extracted while moving forward through the input soundfile, a sequence pattern with 6 slots will impose its pattern on the ongoing stream of segments 5 times.



DISPERSAL therefore represents a very special case in which the defined and the randomised can be woven together in endless ways. The computer 'earns its living' by working very hard behind the scenes to assist the composer with his or her high-level designs. The TCL/Tk graphic user interface is simple but effective, showing which parameters are active in various combinations.

Dispersal is the first design module for **ProcessPack**, which is the umbrella program – more are planned! There will be an upgrade path as more modules are added. It comes with a comprehensive HTML reference manual and a second document which works through 38 examples that illustrate many of the compositional purposes to which this high-level design software can be harnessed. The current version runs only on PC computers.

The Authors: Richard Orton and Archer Endrich – As composers, our focus has always been on high-level musical design – our efforts with the computer way back in 1982 were first directed towards pre-compositional tasks.

- Richard has been developing composing tools such as *Tabula Vigilans* (algorithmic score generation), *Score-Builder* (creating multi-instrument scores in various formats), and *Form-Builder* (providing templates for various instrumental combinations). He was therefore well-positioned to undertake the complex programming required to complete this module.
- Archer has spent much of the past 27 years assisting colleagues with the evolution of the Composers' Desktop Project's sound transformation software. DISPERSAL achieves maximum creative power by using sound inputs that have been carefully prepared with such software. He provided the basic idea of working with micro-forms and has focused on defining compositional objectives and preparing documentation and worked examples.