The `draw` family of functions is used to smoothly play multiple notes from a single sample. The intent is to play multiple notes as does a violinist when changing the fingering on the neck of the violin during a single draw of the bow.

```c
void draw(double beats, int instrument, int octave, int pitch, double length, ..., (int) 0);
void ndraw(double beats, int instrument, int numberedNote, double length, ..., (int) 0);
void adraw(double beats, int instrument, int count, int *octaves, int *pitches, double *lengths);
```

The `draw` function is a variadic function for playing multiple notes from a single sample. The sample is given by the instrument and the first triple (`instrument` and `octave, pitch, and length`). The variadic part contains a series of (`octave, pitch, length`) triplets that designate the subsequent notes and durations to be resampled from the given sample. The variadic part is terminated by a zero. Since subsequent notes start playing where the previous note left off in the given sample, the transition does not produce any discontinuities.

The `draw` function is normally used when the notes have a distinctive attack and the attack is not desired for short subsequent notes.

For example, this use of `draw` plays a little trill:

```c
draw(W, recorder,
   4, C, Q,
   4, D, Q,
   4, C, I,
   4, D, I,
   4, C, I,
   4, D, I,
   4, C, Q,
   (int) 0
);
```

The last triplet designates the pitch that is used to fill out the total number of beats. If there isn’t enough data in the original sample, silence is played.

The `ndraw` function is similar to `draw` but takes numbered notes instead of octave/pitch pairs. The variadic part consists of `int numberedNote` and `double length` pairs.

The example call to `draw` above could be equivalently rendered as:

```c
ndraw(recorder,
   C4, Q,
   D4, Q,
```
Both draw and ndraw are wrapper functions for adraw. The adraw function takes three parallel arrays of size count. These arrays are filled with octave/pitch/length triplets.

There are also two convenient wrapper functions for draw when the goal is to play two notes:

```c
void resolve(int instrument,
            int firstOctave,int firstPitch,double firstBeats,
            int secondOctave,int secondPitch,double secondBeats);

void nresolve(int instrument,
              int firstNumberedNote,double firstBeats,
              int secondNumberedNote,double secondBeats);
```

The following two calls are equivalent:

```c
resolve(W,violin,3,C,Q,3,D);
draw(W,violin,3,D,0.0,3,C,Q,D3,W,(int) 0);
```

Transitions between notes

The transitions between notes within the draw family is controlled by the variable drawRamp. The drawRamp setting specifies the number of seconds it takes for a preceding note to slide into the following note, using a linear ramp. The default setting of drawRamp is 0.25 seconds. You can get and set the drawRamp with the functions:

```c
double setDrawRamp(double seconds)
double getDrawRamp(void)
```

See also: playingNotes,