

## Notes on "Four Anna Studies" (tape)

*Study: Anna, the long and the short of it* (1993)  
*Four Voice Canon #9b ("Anna Canon")* (6:7:8:9) (1994)  
*Study: baa baa birthday have you any star* (1995)  
*to foster and encourage* (2005)

All four pieces realized at the Bregman Electronic Music Studios, Dartmouth College. The first three pieces use the voice of my daughter Anna Diamond Polansky, recorded binaurally, at ages 6 months, 3-4, and 4 1/2 respectively. The third study also uses the voice of Eleanor Wilson, age 4 1/2. The fourth piece uses Anna's voice at age 15.

### **Study: Anna, the long and the short of it**

1993

:54 seconds

*Study: Anna...* makes use of a very short binaural recording of a single cry, including preliminary inhale, of my daughter Anna at age six months, in a bad mood. That sound, and portions of it, were pitch-shifted and time-stretched using an early version of Tom Erbe's Soundhack program to produce this piece.

*Study: Anna...* appears on the CD *The Aerial #6*, from Non Sequitur Recordings, and my Artifact CD *Change*.

### **Four Voice Canon #9b (6:7:8:9) ("Anna canon")**

1994

4:02 minutes

*Four Voice Canon #9* is a set of short tape pieces made using five vocal sounds of my four year old daughter Anna as the source. *FVC#9* is a set of mensuration canons in the manner of my eight previous *Four Voice Canon* s (1975-present), and is composed using my computer language *HMSL* (co-authored with Phil Burk and David Rosenboom). *FVC #9* uses *HMSL* to generate a *Csound* score, which is then used in conjunction with *Soundhack* to create the canon. The *Csound* score is for one voice only, and determines the permutation list of each voice (the permutations are by a kind of "closest neighbor" algorithm), as well as detailed panning, durational, and loudness information. The mensuration canon is a strict one of pitch- and time-compression, and is generated in *Soundhack*. Each of the four versions of the piece is the same, except for the superparticular duration and pitch ratios used for the four voices, which are: *a*: 4-5-6-7, *b*: 6-7-8-9, *c*: 8-9-10-11, and *ø*: the golden mean.

*FVC#9* is available on the Cold Blue CD collection of my four voice canons, and my Artifact CD *Change*.

**Study: baa baa birthday have you any star**

1995

1:44 minutes

*Study: baa baa birthday ...* uses the voices of my daughter Anna Diamond Polansky and her friend Eleanor Wilson, at around age 4 1/2. Recordings of them singing "Happy Birthday" (to each other), "Baa Baa Black Sheep," "Twinkle, Twinkle, Little Star," and "Puff, The Magic Dragon," were morphed into each other in a wide variety of ways using my own spectral mutation functions implemented in Tom Erbe's Soundhack. I was particularly interested in morphing their names, said by each other in their renditions of "Happy Birthday..." All the sounds in this piece are the results of these mutation functions.

*Study: baa baa birthday ...* is on the *Computer Music Journal* CD, 20th Anniversary Issue, and my Artifact CD *Change*.

**to foster and encourage (Anna Study #4) 2005**

1:30

Commissioned by the American Music Center, Siday Music On Hold commissions.

*to foster and encourage (Anna Study #4)* is in four sections, each using a different heterophonic technique. The text is taken from the American Music Center's website, including their original mission statement, which begins with the words "to foster and encourage." The piece is "about" plurality, multiple directions, various paths. And why that sounds good.

The second section uses a signal-processing technique I designed and helped implement (with Tom Erbe) in Soundhack, which normalizes time-variant time-expansion/contractions. I call it the "crowd effect." The third section, in a kind of homage to Henry Cowell, is another kind of heterophony, this time harmonic. Many versions of Anna's voice are gradually glissed into a large, harmonic-series chord. The first and last sections are informally composed, and no processing is used on Anna's voice.

Thanks to Travis Garrison for helping with the original recordings. This piece is available by calling the American Music Center in New York City, and being put on hold.