We sometimes use the term analysis/resynthesis in computer music to describe the process of breaking down a sound into some essential, quantifiable components, altering those components in some way, and reconstituting them into a sound. The phase vocoder is an example: sounds are analysed in terms of amplitude and phase partial coefficients, those coefficients are available for any number of mathematical/cognitive transformations, and those "numbers" may be put back together as a new sound. This new sound emanates from the old sound via some describable, specific transformation.

There is a philosophical conundrum known as the Ship of Theseus: a ship, over time, has every part of itself replaced by a new part. Every board, oar, sail, ornament. Philosophers ask whether or not it remains the same ship. In fact, they consider putting all the old parts together, in a new place, and then asking, “what ship is that?”

The same questions might be considered vis a vis analysis/resynthesis. For example, in the case of the phase vocoder: What are these component sinusoids? Why, in fact, do we need an "original" sound from which to reconstitute them into a new one? This is perhaps relevant to questions of influence, historical development, and derivation in our own field of composition. Musical responses to this question might invoke compositional notions such as intent, insight (into the original sound and its transformative possibilities), recognizability, and any number of other things.

**Assignment**

Make a piece that is the analysis/resynthesis of some other piece (thanks to Charles Dodge for suggesting this concept). Take some existing piece, and first analyse it in some way that you claim (and you will be expected to argue that claim) represents important features of its structure or existence. Next, transform the results of the analysis into a new piece.

The object of this assignment is to produce an interesting, beautiful work that is directly related to its source, and which, by the nature of that relation, yields insight on the source, your composition, as well as the ideas of composition and analysis themselves.
I ask that you do this not in an "intuitive" way, but rather in a formal, way, one that can be articulated clearly. Describe the process of analysis/resynthesis accurately enough so that we could, in fact, more or less replicate or reproduce the process (even the outcome). I am not interested in a poetic analysis/resynthesis, nor an homage, nor that you were "influenced" by the source piece. I want you to actually extract something salient and fungible from the source piece, and transform that information into the new piece. In a sense I am asking you to be a filter, and the interest of the process will have a lot to do with the way we describe what a filter does well, does poorly.

I am imposing one final, somewhat arbitrary restriction on this excercise. The source piece should not be a piece of popular music, nor one that is immediately recognizable to a large number of people. In fact, I would suggest that you avoid source pieces whose connotations will be obvious in a simple way. On the other hand, I want you to use something that is meaningful, interesting, and important to you, and try to learn something about that work and your own via the analysis/resynthesis process.