Beginning in the early twentieth century, composition branched out into a variety of new representations, the most common being the graphical score. John Cage’s *Variations II* is a prime example, utilizing only dots and lines as its basis: dots for sound events and lines for sound parameters. Each line defines an axis for the parameter, such as duration or frequency. Perpendicular distance of the dot from the line determines the value. Thus movement of the dot, the event, dynamically changes all of the values of the event. A potential downside to these new methods of representation is the intense burden it places on the performer to define the parameters for the realization. We have created an interactive version of Cage’s piece, called here *Variations 10b*, where a performer can change the score and get immediate feedback as to the result. We hope that both listeners and performers will develop a more nuanced understanding of the score through the use of the interface.