

Final Project: Requirement Specifications for Rolling Dice Synthesis

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The sound proposed for the final project in 21m.380: Music and Technology is that of dice rolling on a surface, which could be a wooden table, a game board, or a Frisbee (a thing some people do to avoid dropping dice). People play with all sort of dice and in many numbers. For synthesis here, the focus will be on six sided die in numbers from one to ten. This collection of sounds begins with picking up the dice, which could be done multiple ways. The dice could individually be picked off the surface with a short scraping sound and then put into the hand with a thud or in to a hand of dice with clinking. They could also be picked up by sliding a hand along the surface, scraping the dice across the surface as they collide together one by one until they are all gathered and taken up into the hand. After they have been picked up, people usually shake them around in their hand, although some prefer to shake them around in a cup. The dice clink and slide together rhythmically yet sporadically as they move around in the hand or they also clink against the cup and the sound resonates inside and travels out sounding somewhat hollow. This could last very little time or many seconds, depending on hopes of the player. Finally, the dice are released. They continue to clink and slide along each other but now they also hit usually a hard surface. They start out making a lot of collisions with each other and the table until the lose energy and spread out. Some dice stop before others. Sometimes they begin to spin and make the characteristic sound of a coin spinning down and falling. As this happens, they usually pan across the soundscape from one ear to the other – right to left if right handed and left to right if left handed. It may go another direction if from an adjacent player, or it may not travel far across the soundscape if it is a far away player. After the dice have been rolled once, a number of things could happen. Mostly likely, the turn is over and the next roll will come from an adjacent player's location. Sometimes, they player gets to reroll and the whole sound occurs again. Maybe they get to only reroll a fraction of the dice, so the number of dice in the sound decreases.

Sound Components

- One average sized six sided die clinking on another
- Die sliding on die
- Die clinking on wooden table
- Die clinking on Frisbee
- Die clinking on game board
- Die sliding on wooden table
- Die sliding on Frisbee
- Die sliding on game board
- Die spinning down on wooden table
- Die spinning down on Frisbee
- Die spinning down on gameboard
- Hand sliding on wooden table
- Hand sliding on Frisbee
- Hand sliding on gameboard
- Randomization algorithm for picking up
- Randomization algorithm for in the hand
- Randomization algorithm for falling on surface
- Panning algorithm for creating stereo soundscape

Timeline

April 6 – 12	Research and Model
April 13	FP2 Due
April 14-19	Implement dice on table sounds and dice on dice sounds.
April 20-26	Implement randomization algorithms
April 27	FP3 Due
April 27-May 3	Work on stereo panning and refining algorithms
May 4 – May 10	Continue editing work and if time allows add in different surfaces and/or cup
May 11	FP4 Due

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