

Setup and Rules



The Glass Beat Game

Setup:

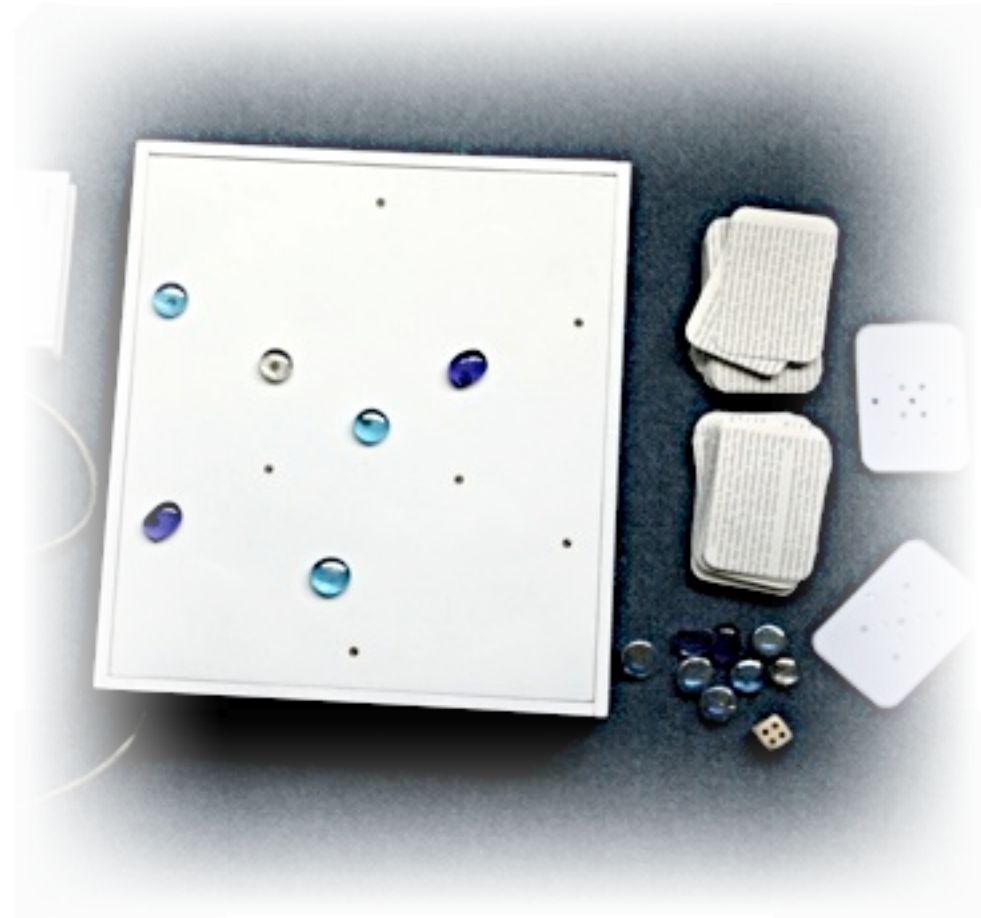
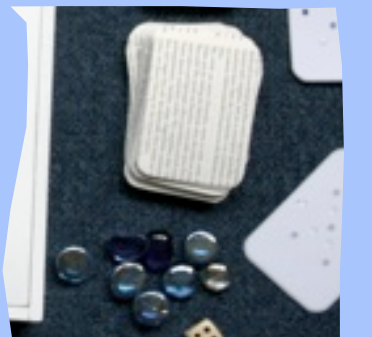
Plug the interface in your computer and start the max/msp patch. The game is for 1-4 player.

Rules:

- Every player takes a card from the stack of cards. This card is the personal "assignment". There are five different possible assignments:
 - A picture on the card shows how to place the glass stones on the board.
 - There is a picture on the card – the sound shall be altered in a way that it is associated with the picture.
 - There is a color on the card – the sound shall be altered in a way that it is associated with the color.
 - There is a word on the card – the sound shall be altered in a way that it is associated with the word.
 - There is a sentence giving a psychological/tactical assignment like "make something your opponent likes" on the card.
- The players are throwing the dice, one after another, clockwise. The dice decides which positions/ glass stones on the board can be altered:
 - A "one" means, only one position can be changed, however it can be any position.
 - A "two" means two states can be changed, however they have to be aligned in a row.
 - A "three" means three states can be changed, however they have to be aligned in a row.
 - A "four" means four states can be changed, however they have to be aligned in a rectangle.
 - A "five" means five states can be changed, however they have to be aligned forming the rectangle with a center.
 - A "six" means nothing can be changed, but your assignment can be swapped against the next card if the player wants to.
- If you fulfill your assignment, take the next card from the stack.
- If all cards are gone or the players want to end the game the player with the most fulfilled assignments wins the glass beat game.

About the Game

The glass beat game focuses on sound, music, spatialization, hearing, psychology, tactical behavior and synesthesia. It can be modified for educational purposes in a music/sound/hearing context or to explore tactical behavior. It can also be used in research about the (possible) relation between board games and music making. However its main purpose is also to have fun with it. The interface can also be used outside the game context for music making.



The Idea

Referring to Hermann Hesse's book "The Glass Bead Game" in which the glass bead game is closely related to music making we wanted to built a glass beat game in which a player or a group of players can make music by putting marbles on a game board. The idea includes building an instrument for simple music making as well as exploring the possibilities of using the setup as a game with rules focusing on topics like sound, music, spatialization, hearing, psychology, tactical behavior and synesthesia. We wanted to explore the relation between board games and music making; the game component as well as the process of music making. The goal was to built a game-board which can be used to make music by putting different marbles on specific places on the board. The music is shaped as well by the placing/position of the marble on the board but is also influenced strongly by the characteristics (transparency) of the marble itself.



The Glass Bead Game

is the final novel by Hermann Hesse, published in 1943. Set in the 23rd century, the novel purports to be a biography of Josef Knecht. Since childhood Knecht has been consumed with mastering the Glass Bead Game. A game which requires a synthesis of aesthetics and scientific arts, such as mathematics, music, logic, and philosophy. He achieves this in adulthood and becomes the Magister Ludi (Master of the Game).

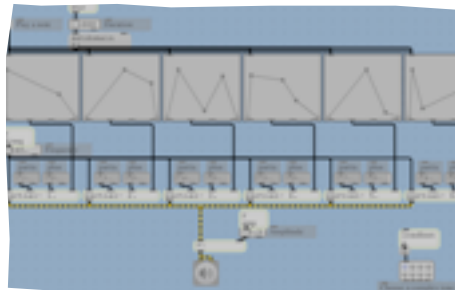
The Realization



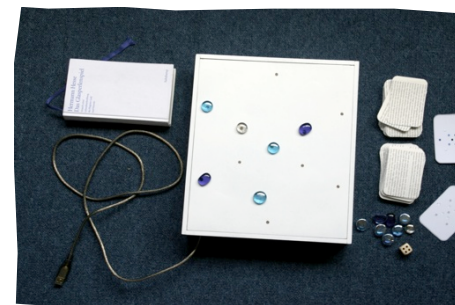
We did realize this using an arduino board, eleven light dependent resistors, two multiplexers in connection with max/msp running on a computer. The interface itself was realized building a wooden box.



After successfully building the interface we experimented with different game rules, did design game cards and and also were experimenting with different max/msp settings.



In the final version we work with additive synthesis in combination with reverb to achieve an intuitive response to the players actions. The sounds are spatialized in the room according to the position of the glass stone on the board using a four speaker setup.



In the future we hope to extend this project and are planing to work with with RGB sensors, different max/msp patches and different game rules. On the hardware layer we plan to use built in speakers. We also want to explore the possibility of using the interface as a purely musical interface.