Prototype ChronoQueue

Motivation

With ChronoQueue we want to create a fun Arena Battler focusing on fast paced action-packed fights with the strategic element of replaying your past actions. While the fighting system itself is mostly known from other successful games the incorporation with our copying mechanic will be a challenge.
For this purpose we have created a physical prototype focusing on the aspect of replaying aspects. The goal of this prototype is to:

- Find problems regarding technical details
- Understanding the weaknesses and advantages as a strategic element in the game
- Find balancing regulators inside the Chronoqueue system
- Set initial balancing parameters
- Evaluate the complexity and mental difficulties of working with Phantoms and Revenants
- Evaluate how much fun the Chronoqueue mechanic is

What this prototype can not do:

- Evaluate the fighting mechanic and controls
- Evaluate the flow of the game
- Evaluate artistic design

Concept

Following the definition of our motivations for the physical prototype, we proceeded to directly represent our game field on a 2D grid of squares, where vertical and horizontal movement and shooting is possible. In this version, the players would make their moves in turns, so there would be no real-time/simultaneous actions. After quickly sketching these ideas out in our presentation software, we tested our prototype and noted the results.

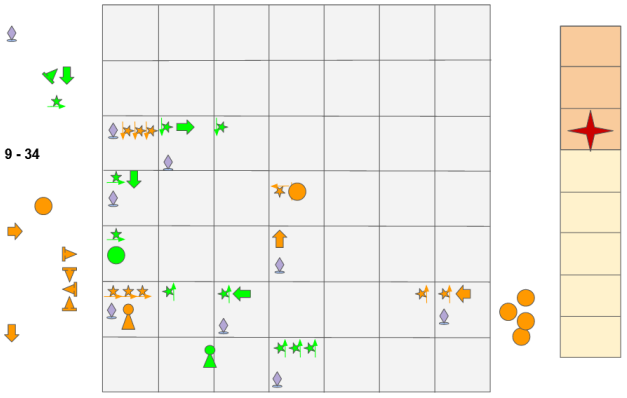


fig. 1; First version of the prototype

The prototype itself was improved multiple times to better match our actual game mechanics.
Our first version (fig. 1) was played on a regular squared field. Actions after placing a ChronoGate were marked on the board itself. A turn counter was used to determine the Revenant spawning time. Players would do their turns in order.
Because of the simultaneous spawning time of Revenants the winning strategy for gaining the most points was just to actively attacking revenants and passively letting your Revenants destroy enemy Revenants. Without player on player actions the game was not fun.

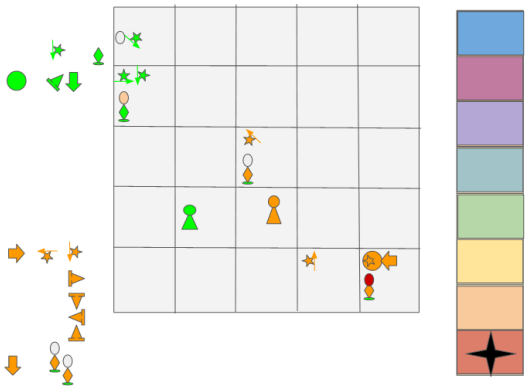


fig. 2; Second version of the prototype

Improving on this problem we changed the Revenant spawning rules. In fig. 2 the turn counter now has colors for each turn. When placing a ChronoGate the gate is assigned the color of the current turn and it spawns a Revenant whenever the turn counter reaches this color again. This immediately solved the Revenant farming strategy.
But now we encountered a different problem. In a turn based game the attacker always had to move first into the attack range of the enemy. This means the defender always had the

advantage as he could attack first. This resulted in an immediate stalemate between players as no one wanted to start at a disadvantage.

In our final version of the prototype we accurately defined the rules of this board game:

- The game is played on a field of hexagons with each hexagon having its own number (fig. 3)
- Each player has an Action Table in which they record their actions in every turn (fig. 3)
- Each player actively controls one character on the board
- The game is played in turns meaning at each turn there are different phases which each player has to do

- **Turn:**
  - **Planning Phase**
    - Each player secretly writes down what actions they will make in the later phases
    - Optional actions:
      - Place ChronoGate
      - Move up to 1 Hexagon
      - Attack any hexagon/direction

  - **Spawn Phantom Phase**
    (Only occurs after a specific number of turns (3) after the last Spawn Phantom Phase)
    - Each player places a new Phantom piece on the board position specified in the current position of turn 0

  - **Move Phase**
    - Each player moves his character according to the planning phase
    - Each player moves all their Phantoms and Revenants according to their recorded move action in the Action Table

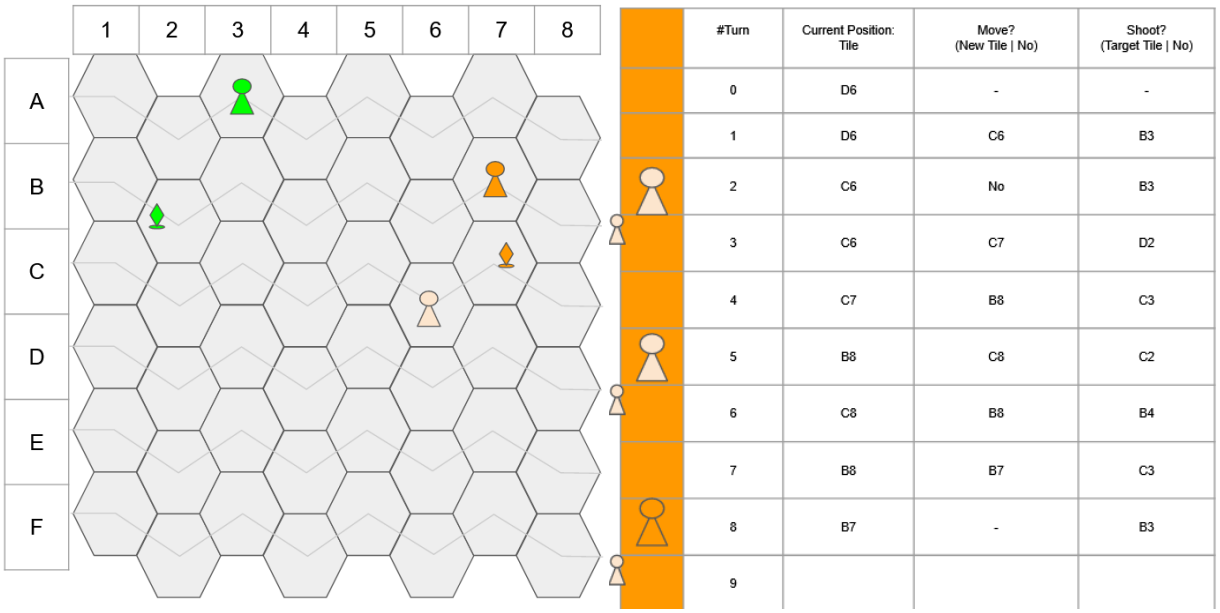
  - **Phantom Activation Phase**
    - All Phantoms standing on a hexagon with a ChronoGate are converted into Revenants

  - **Attack Phase**
    - Each players' character shoots according to the planning phase
    - Each players' Revenants on the board shoots according to their recorded shoot action in the Action Table

    Shooting will hit the first enemy hit in the line spanning from the starting position and the target hexagon.
    The line only hits a hexagon if it crosses the 'center' of the hexagon.
    If piece was move during this turn shooting has a chance of 4/10 to miss = not activated

  - **Cleanup Phase**

- Each Revenant hit in the Attack Phase will be removed
- Assign points according to all hits
- Each Revenant that was already on the field for 3 turns will be converted into a Phantom



	#Turn	Current Position: Tile	Move? (New Tile | No)	Shoot? (Target Tile | No)
	0	D6	-	-
	1	D6	C6	B3
	2	C6	No	B3
	3	C6	C7	D2
	4	C7	B8	C3
	5	B8	C8	C2
	6	C8	B8	B4
	7	B8	B7	C3
	8	B7	-	B3
	9			

fig. 3; Board of the final game prototype and player action table

Reflections

From the results of our prototype we could derive certain design decisions for our game.
One important point is giving attacks a certain cost attached to it. Without a downside in attacking the player would permanently attack while moving around which majorly reduces the strategic aspect and increases the general chaos of the game. We decided to introduce movement related restrictions.
Another critical design choice is the reward system for hitting a Revenant. Playing the prototype showed that focusing on hitting Revenants instead of the player was easier and was disproportionately rewarded. While our prototype did not result in any definite decisions we will be carefully evaluating the player-Revenant interactions in our game. This also includes the problem of killing Revenants. If all Revenants and Phantoms are destroyed the ChronoQueue mechanic on which our game is built on would have no impact.
Even though it was not our goal with this prototype, we encountered a problem with our attack system. In earlier iterations of our prototype melee attacks were possible but had no advantage over ranged attacks. While this could be solved by the nature of the actual game we still have to be careful to give melee attacks a meaningful impact in our game.

The critiques from the participants of other groups have been helpful in predicting the public perception and players' opinion on our game idea. Looking at all the comments left for our game proposal, we compiled a couple of recurring themes regarding the hopes and concerns about our game.

First off, we were quite pleased to see that there was an overall excitement about our game idea. Most course participants were able to grasp the excitement we get from the core idea and the peripheral utilities we intend to build around it.

On the other side of this, there seems to be a common concern around the potential chaos emerging from the core elements of our game. Since we are planning to have multiple players on the playing level, and each player would have a number of *phantoms* (clones following the player's actions with a time offset) some of which would have become *revenants* (clones that are activated and are affecting the current game state), a high level of visual and aural activity is expected in our output. The commentators were rightfully concerned about the game being too cluttered to follow and too chaotic to play along in a meaningful manner.

We took this recurring feedback to heart, fully agreeing with the danger of having a loaded gameplay that is difficult to track. This insight has helped us with the decision to keep our physical prototype as a simplified version of our eventual digital game.

However, as the exact implication of this concern will reveal itself during our implementation of the digital game itself, we did not take any further action regarding the physical prototype but noted this risk to be continuously evaluated as we progress.

Some other comments appeared to require more time for being understood and relevant. As an example, a comment stating that we could leave the phantoms invisible until they are activated and become revenants; however, we envision the potential of the phantoms that

can be activated by the player to be a big part of the strategic gameplay, and therefore having visual feedback of where they are and what they are doing is important. We might come to a point when we consider this, if we choose to make big changes in the core gameplay itself.

Overall, we got what we wanted out of the physical prototype. The core mechanic of our game relies on fast-paced gameplay, the use of reflexes and swift strategic moves. The same kind of fun is difficult to capture on an analog platform. As a result, our prototype is not exactly as fun as we imagine the digital version to be. Moreover, emulating the real-time flow of the original game has proven to be difficult to follow as we manually enter our moves on the board, and designate the directions we are shooting at. However, while playing the physical prototype of the game, we did get the sense of what meaningful strategic choices our game mechanic will provide. We found ourselves having to make similar decisions. We found that aspect of the physical prototype to be promising of the original idea.

Takeaways

We concluded the iterations on our physical prototype with several important tomes of knowledge added to our inventory. Some practical outcomes included the ability to come up with rational solutions for adapting a game idea into various contexts, turning our rationale into concrete design decisions, and communicating these design decisions efficiently and accurately.

Moreover, we learned how to quickly build a Minimum Viable Prototype to test out our design decisions. As we went through the phase of physical prototype building, we noticed how helpful it was to start from and completely focus on the core idea of the game, without even writing any code. It was refreshing to learn about new creative ways to test out a game idea without committing to it any further. This way, trying out our game idea turned out to be easier than expected.

Finally, following our prototype tests, we learned how to reflect on the dynamics generated by our game mechanics, and we made the appropriate design changes based on our findings.

On the other hand, we found out that it was harder than expected to handle all edge cases generated with our game rules that could make the game unbalanced and therefore less fun to play unless it is balanced properly. Especially outside the context of a real-time simulation where players' reflexes and quick actions are the main impact points of the game, the game as a turn-based mechanic becomes a modified chess scenario with a few deadlocks between the players & revenants.