

The Hrafnkel Saga: Graph drawing algorithm project

Tamara Drucks, Moritz Leidinger, Giulio Pace

Technische Universität Wien

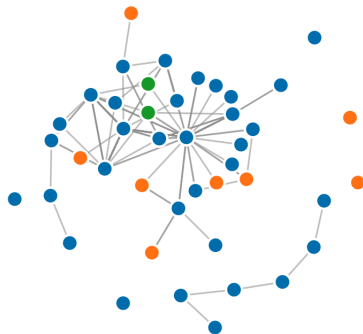
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Overview

- 1 Introduction
- 2 Our thought process
- 3 Final version
- 4 The execution
- 5 Problems during the project

Dataset exploration

- First visualizations
- Read story and manually examined dataset
- [Interactive version](https://observablehq.com/@buboh/hrafnkells-saga)¹



¹<https://observablehq.com/@buboh/hrafnkells-saga>

Our thought process

- Main aspects that we wanted to communicate:

- interactions between characters
- timeline of events

⇒ Metro map visualization (character=line, action=station)

- Started to consider different shapes

- story has inherent cyclic structure
- sense of "coming back"

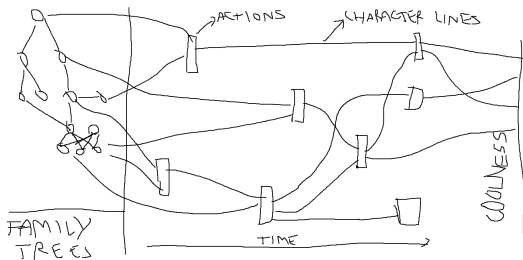
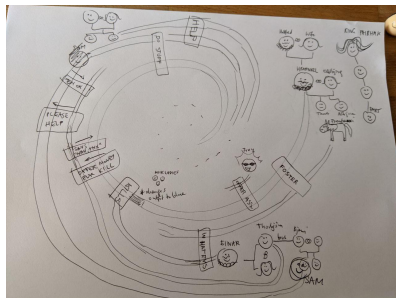
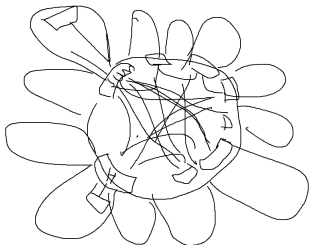
⇒ Spiral visualization

- Story takes place in three main areas of Iceland

⇒ Align spiral to map of Iceland

- gives possibility to add details
- place family trees where they are from

First sketches

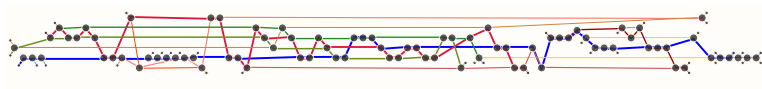


Preprocessing

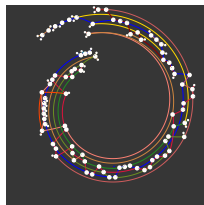
- **Transformed graph** (actions \rightarrow nodes, characters \rightarrow edges)
- Added "origin" and "last seen" nodes
- Ordered the actions chronologically based on the story
- Divided actions into "storyline" and "family"
- Weighed characters according to # of performed actions
- Added flags to one-time characters
- Assigned color class to each family and specific colors to characters
- Assigned symbols to actions

The Layout

- JavaScript: interactive visualization to fix linear layout



- Python: transform linear layout to spiral, add icons, compile svg



- Affinity Designer: all the fancy stuff (formatting, styling, etc.)

Final version



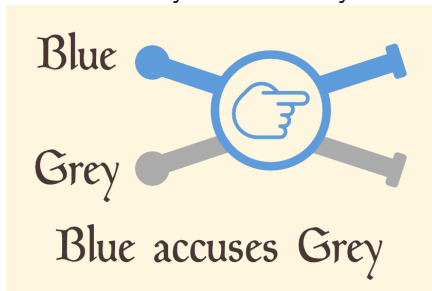
Key concepts

- Time flows clockwise starting from the outside of the spiral
- Families as color classes
- Individuals as shades of their family color
- Thickness of a line is a rough indicator of how important/active that character is



Key concepts

- Junctions between lines are actions represent actions and they are denoted by the action symbol

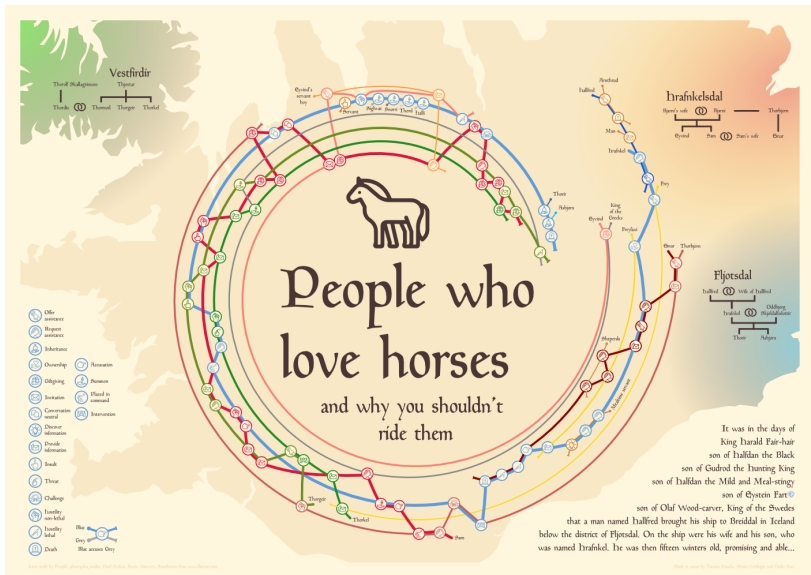


- Families are located approximately around the area of Iceland they are from

Problems during the project

- Graph didn't make too much sense with the actual story (accomodation: we re-ordered them ourselves)
- We wanted to physically meet but COVID-19 situation made it impossible
- Hard to coordinate three people with busy schedules (university/work)
- Only one of us had experiences with vector graphics
- Usage of symbols etc. (accomodation: found free sets by same creator)

Thanks for your attention!



Links

- Repository:
<https://github.com/buboh/hrafnkel>
- Observable:
<https://observablehq.com/@buboh/hrafnkells-saga>
- Final version:
https://github.com/buboh/hrafnkel/blob/master/afdesign/hrafnkel_spiral_v4.pdf