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# Predicting Board Game Complexity

# Problem Statement

With platforms like Kickstarter, anyone with an idea can easily make and produce a board game on their own. But while it's easy to produce a game, it's hard to know how how complicated the game will be for players. There is a complexity, or weight, rating on Board Game Geek, though it relies on community voting. Is it possible to predict that rating knowing what a creator would know at the start of their project?

Is there a correlation between the mechanics and features of a board game and the game's complexity rating, or weight, on Board Game Geek?

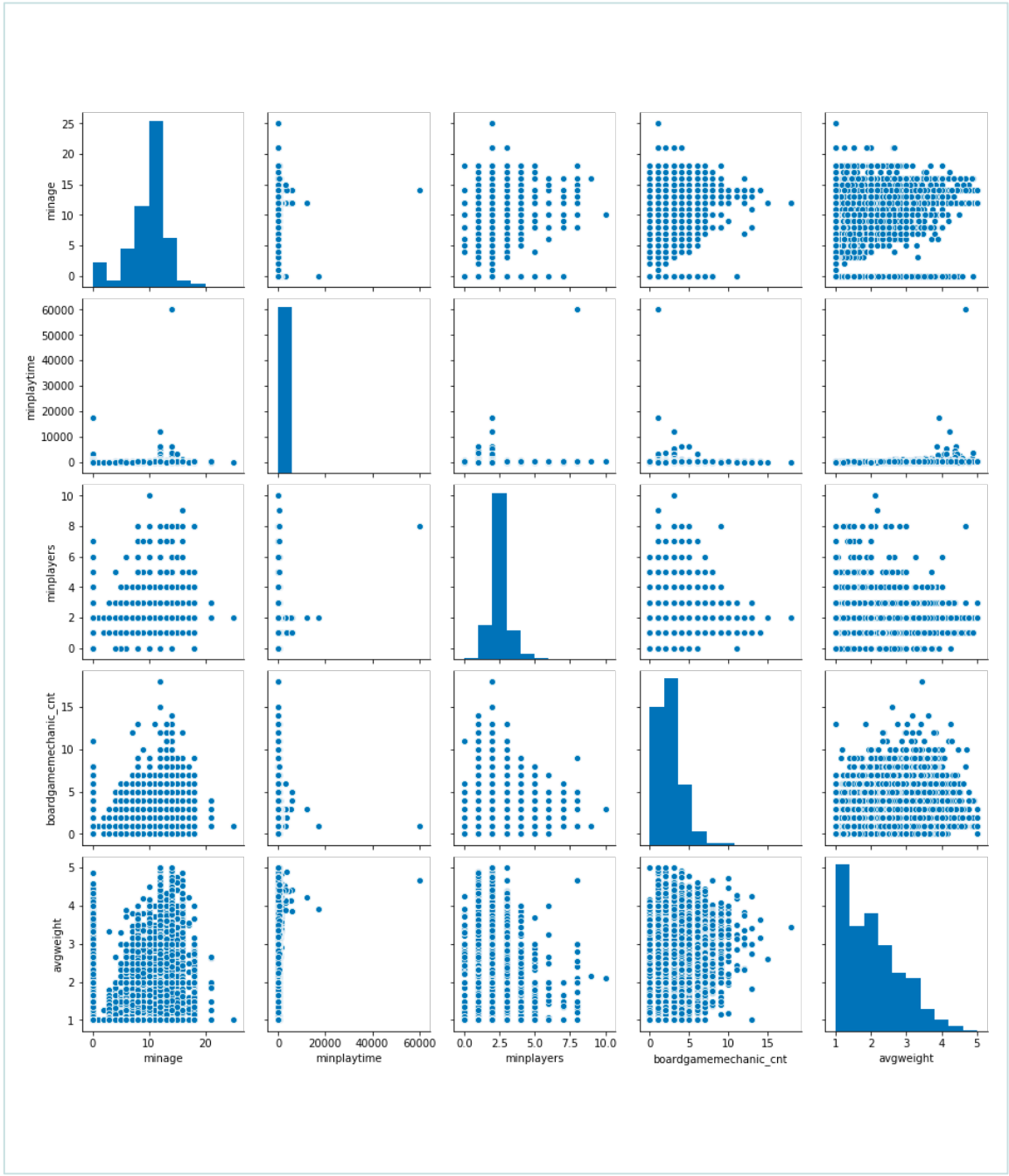
# Data Sources

Board Game Geek

Kaggle

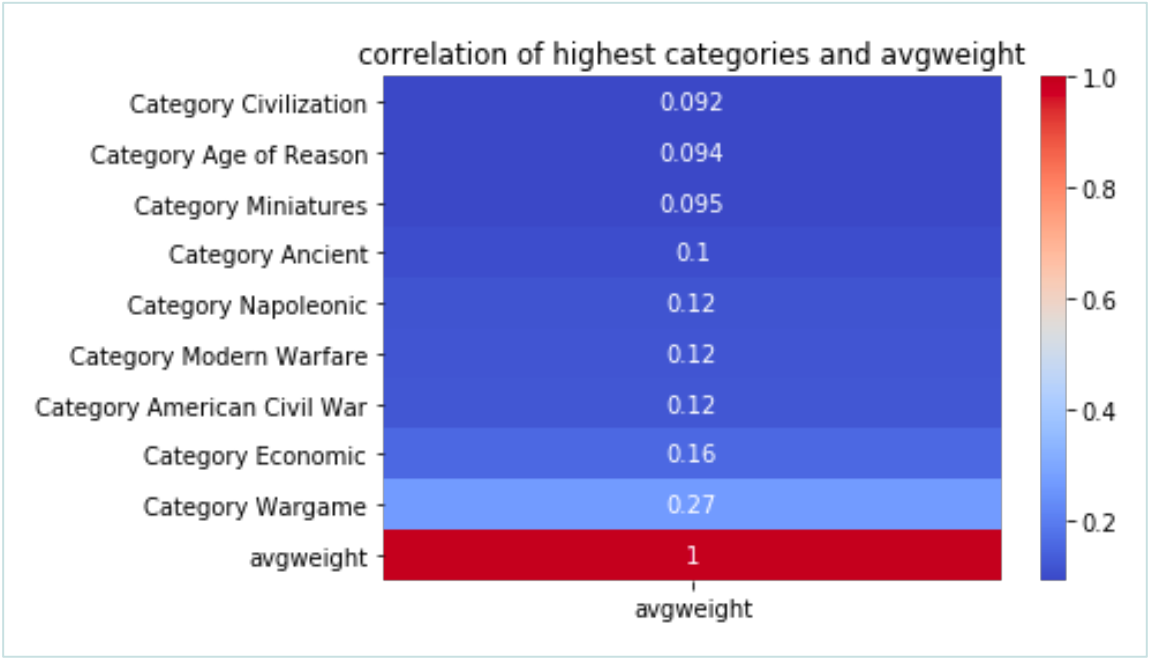
# EDA

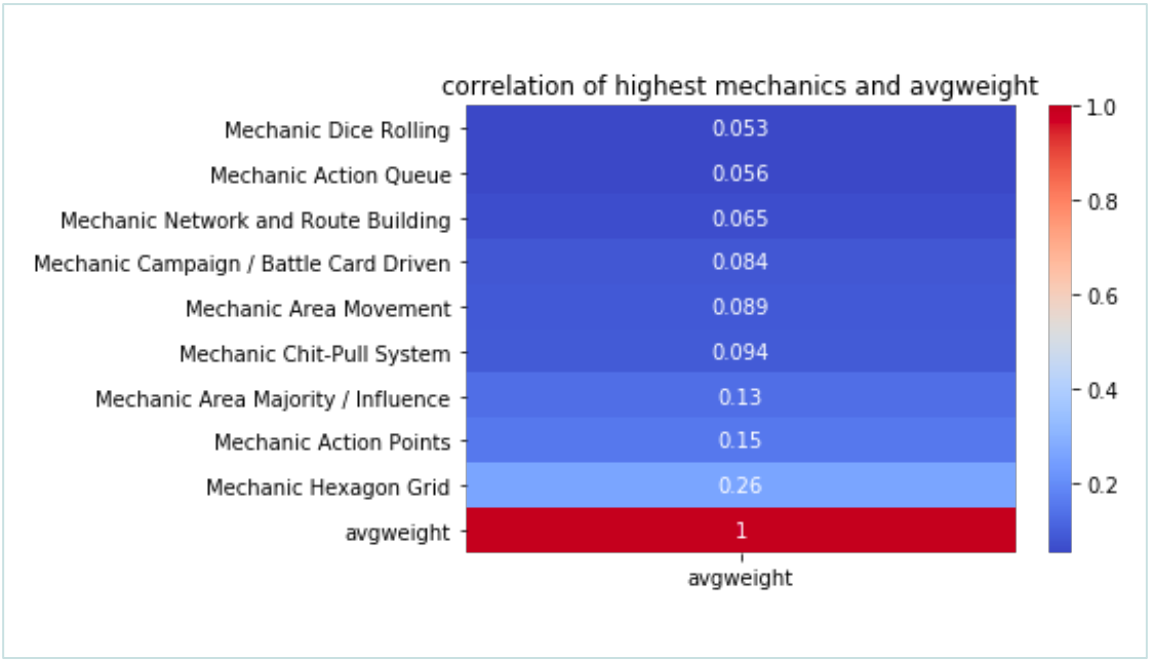
- Not much correlation
- Had to decide between regression and classification



# Mechanics & Categories

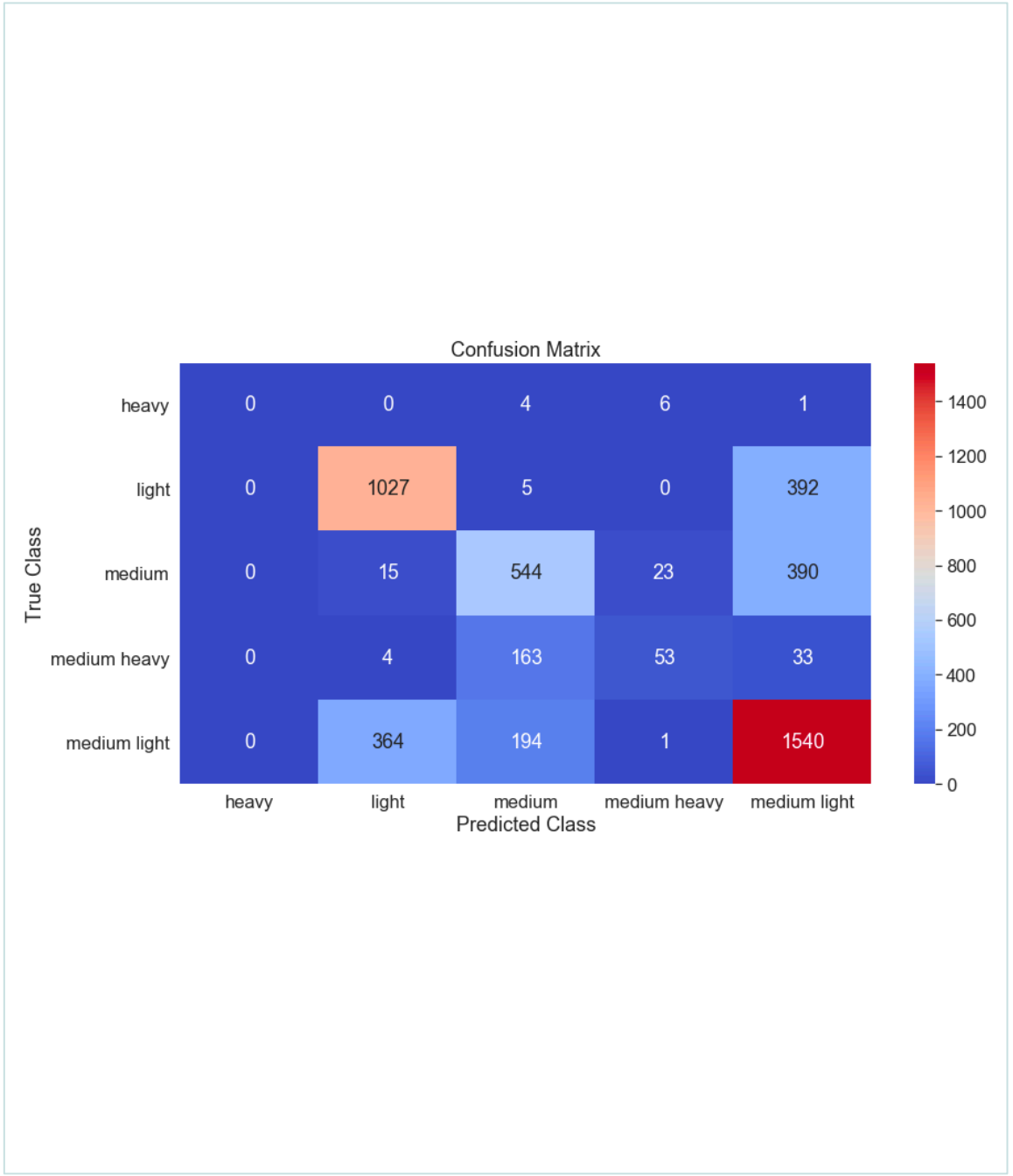
- 103 total mechanics
- 82 total categories
- None are highly correlated with weight



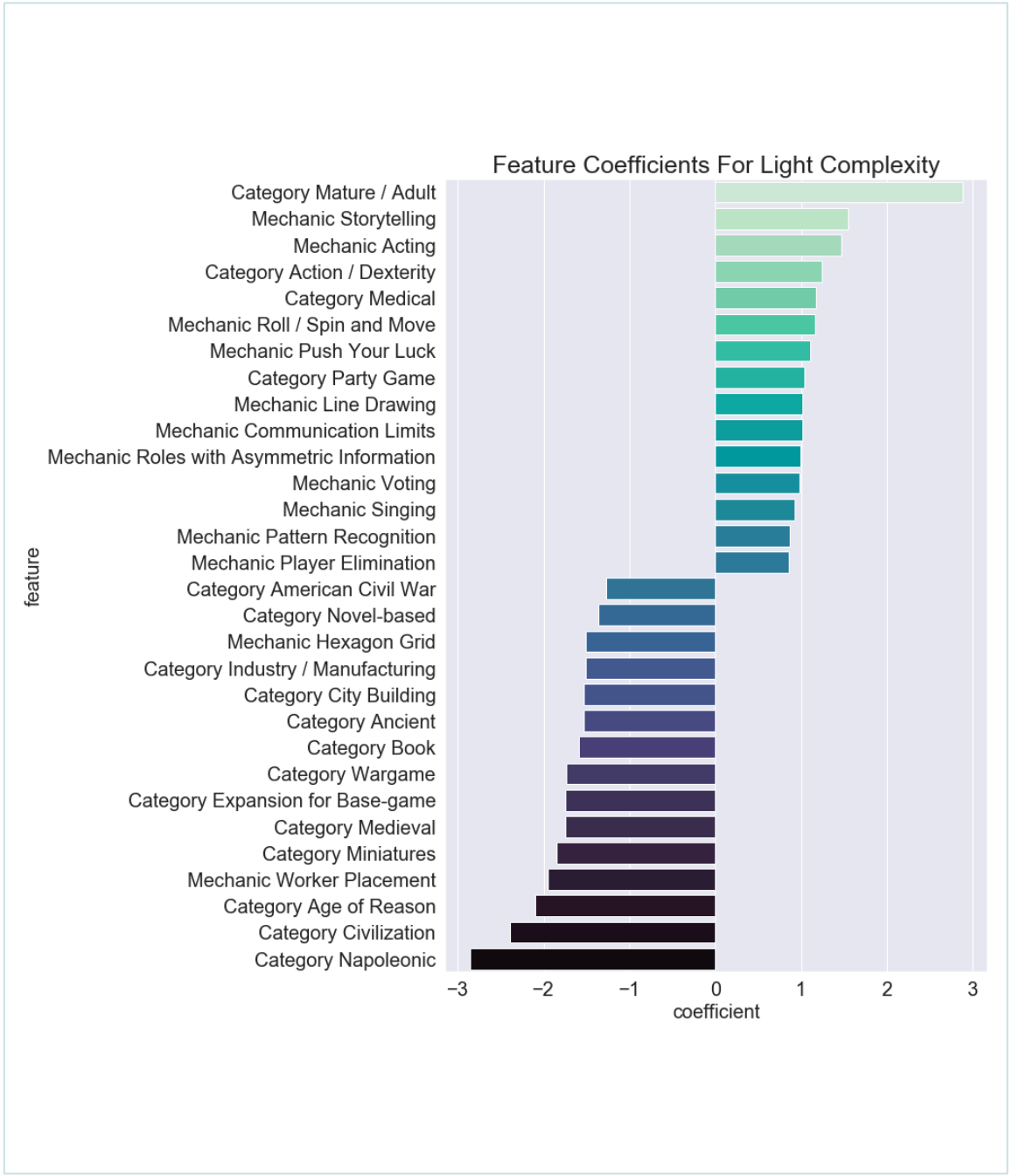
# Voting Classifier Model

- 66% accurate
- TPR ”light”: 72%
- TPR “medium light”: 73%
- TPR “medium”: 55%
- TPR “medium heavy”: 21%
- TPR “heavy”: 0%



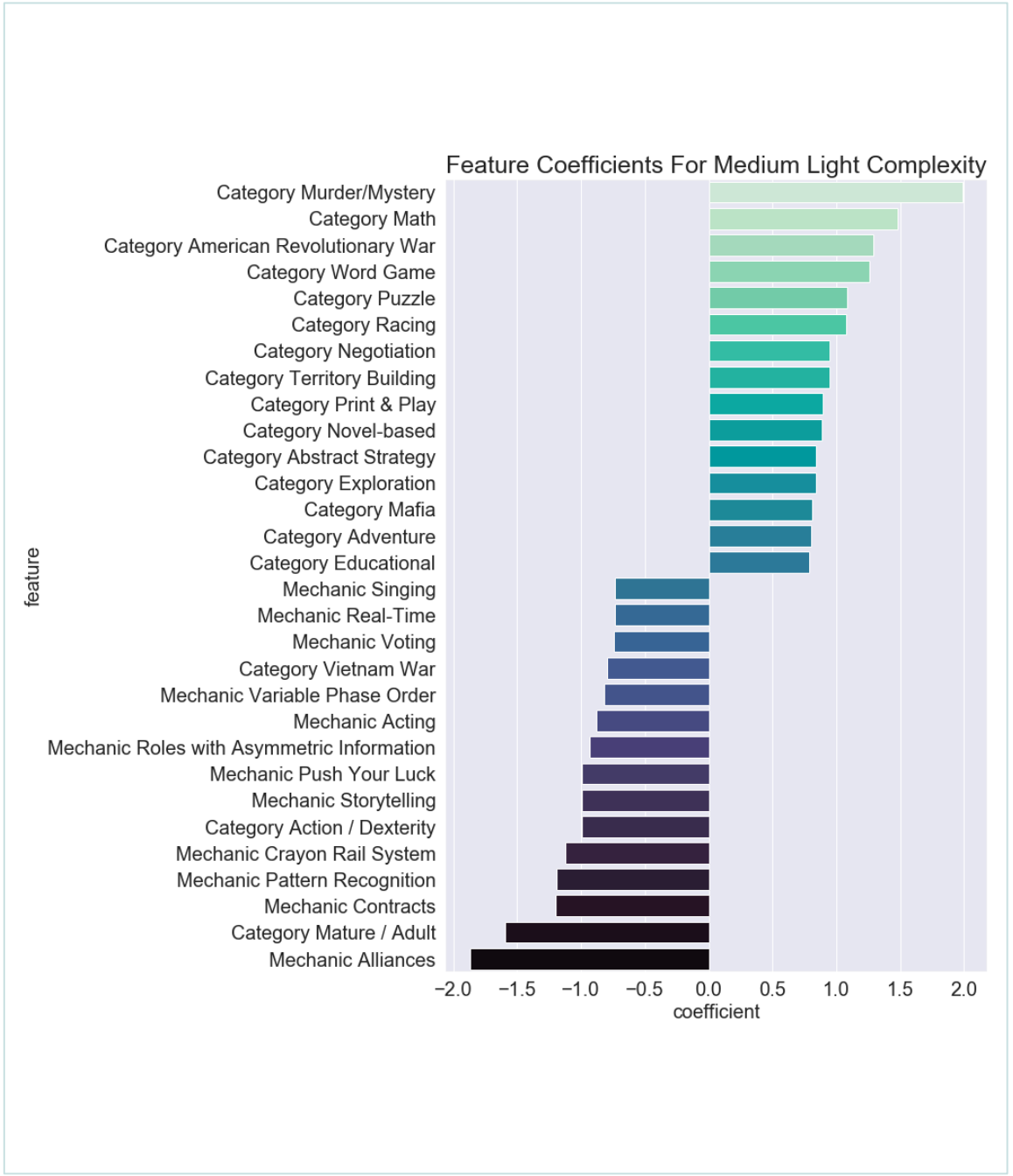
# Linear Regression: Light Complexity

- Mature/Adult is the biggest positive coefficient
- Napoleonic and Civilization the biggest negative coefficients



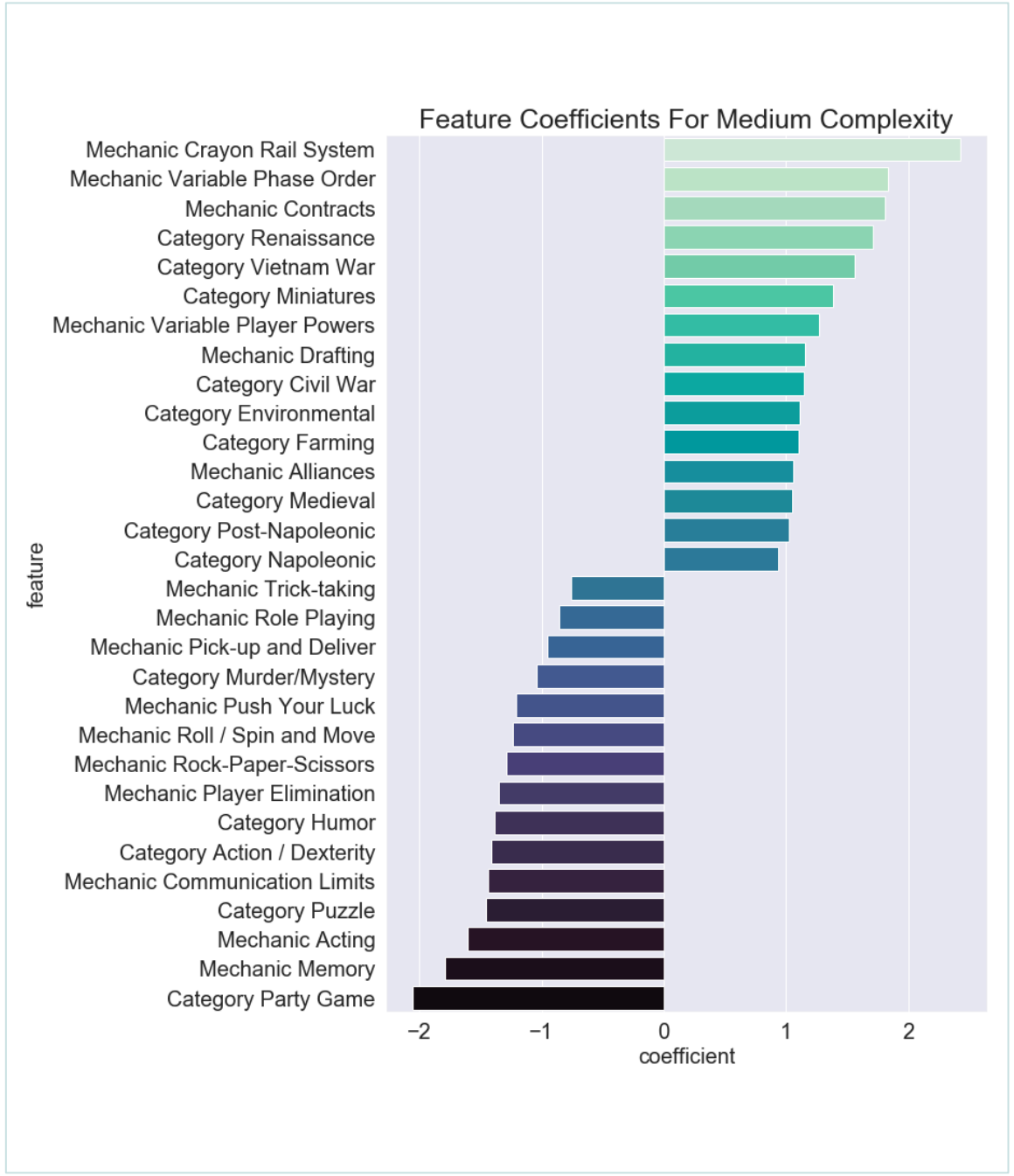
# Medium Light

- Murder/Mystery biggest positive coefficient
- Alliances and Mature/Adult biggest negative coefficients



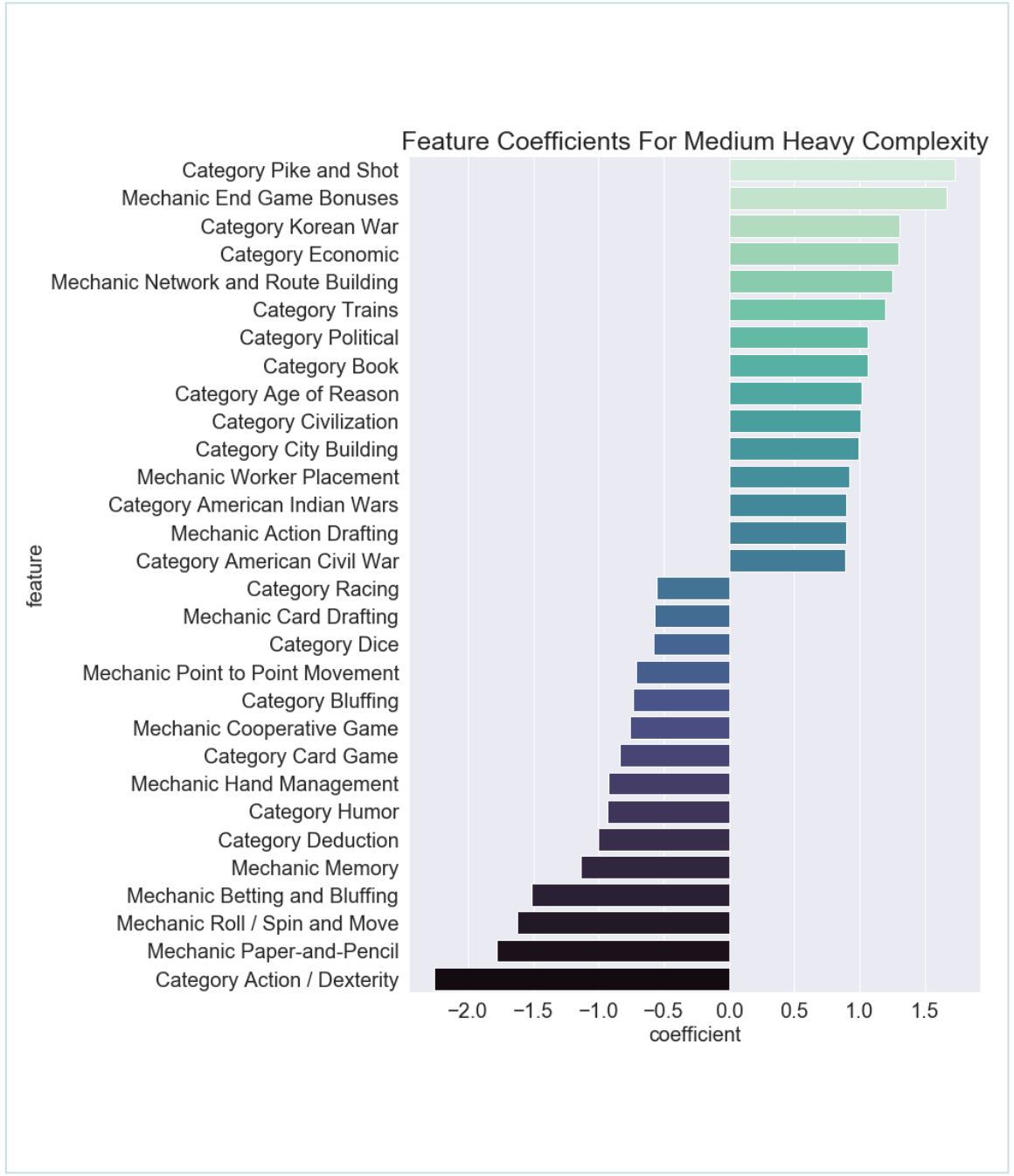
# Medium Complexity

- Crayon Rail System is biggest positive coefficient
- Party Game and Memory are biggest negative coefficients



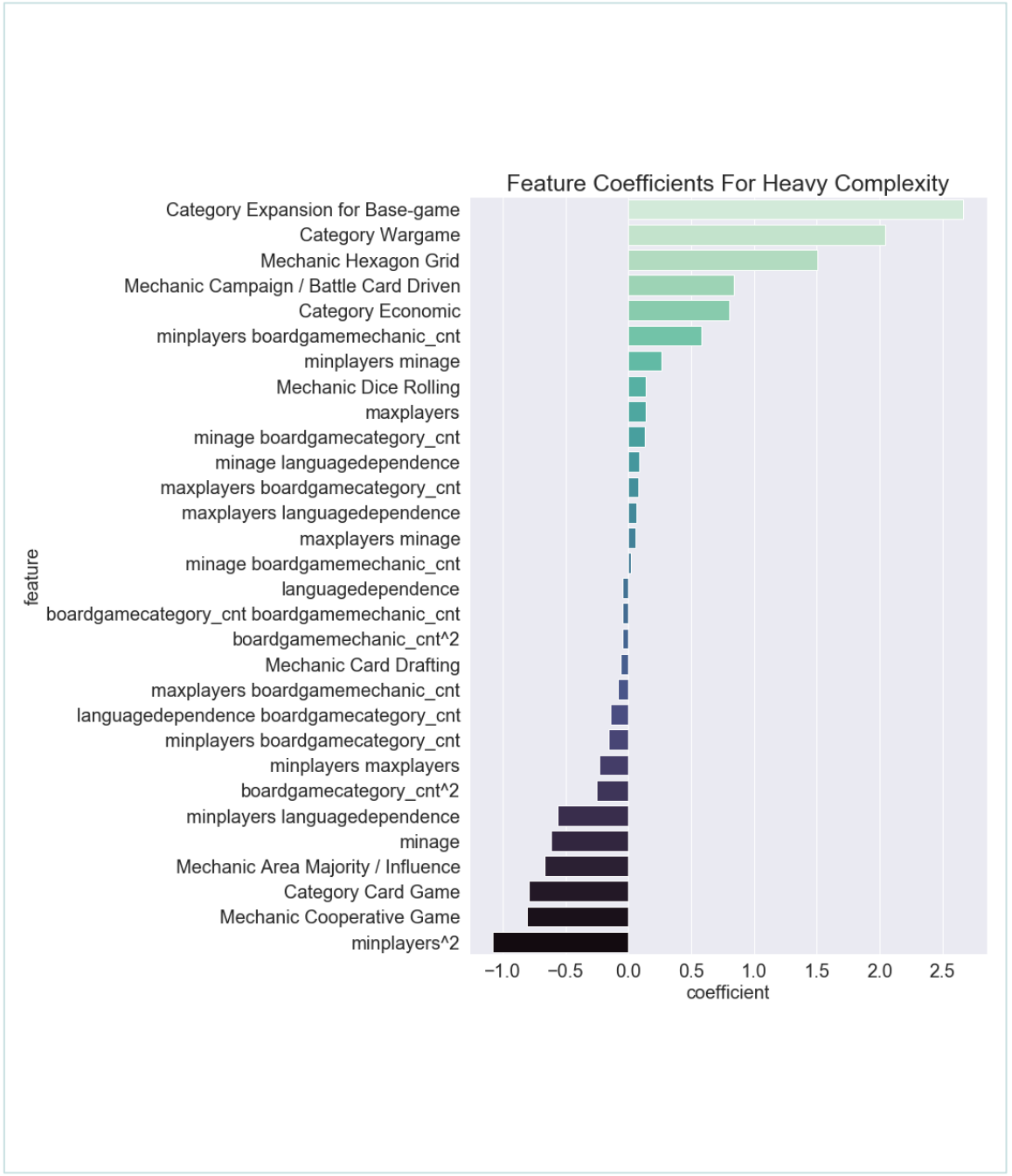
# Medium Heavy Complexity

- Pike and Shot and End Game Bonuses are biggest positive coefficients
- Action/Dexterity and Paper-and-Pencil are biggest negative coefficients



# Heavy Complexity

- Expansions and Wargames are the biggest positive coefficients
- Minimum Number of Players Squared and Cooperative Games are biggest negative coefficients



# Production Model

- Live demo of deployed model here