Heroscape and Unit 2 of *Rules of Play*

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1   Introduction

On a first read-through of parts of *Rules of Play* [2] I found that I frequently used games with which I'm familiar to explore the concepts under discussion. I thought it might be a valuable exercise for the Games Theorists Play tutorial for each of us to run through the various "systems" with a specific game in mind to see to what extent the ideas were illuminated. The hope is that such an exercise might also reveal deficiencies in the collection of systems: if some crucial aspect of the game is not accounted for, what needs to be added to Salen and Zimmerman's viewpoints?

In the spirit of playtesting a game before unleashing it on an innocent public, I decided to complete the exercise myself. It probably won't surprise you to learn that I chose Heroscape. It's a game that I've already thought about in many of the ways described in *Rules of Play*. Here's a one paragraph summary for those unfamiliar with the game. Beyond this I'll try and explain the crucial points as they become relevant.

Heroscape is the "Battle of All Time". The backstory is that archkyrie on Valhalla have summoned warriors at the moment of death from across time and space. This gives a game in which robots fight dragons fight vikings fight samurai fight vampires fight dinosaur-riding orcs fight... Beneath the fluff it is a flexible combat system that can be played in many configurations (and the fluff is fluff; there is no role-playing aspect—the rules fully determine

the game). The board is modular and can be redesigned for each game. It can be played one-on-one or in larger groups and there are various official and unofficial scenarios with different victory conditions and modified rules. Whatever the format, each player will build an army of a given total point value from the roughly 150 units (each of which has a point value). Each unit has various attributes describing how fast it moves, how strongly it attacks, how many lives it has and so on, and all units have at least one special ability that lets them do something that other units cannot. Play takes place in rounds and in each round each player has three turns. On a turn a player will activate a unit and the move and attack with it. Combat is resolved by rolling six-sided dice that have three skulls and two shields (and one blank face). If the attacker rolls more skulls than the defender rolls shields then wounds are inflicted. The win condition is often to destroy all of the opposing army (or armies). There is a semi-official web forum [1] that contains everything you could ever want to know about the game.

The rest of this document is laid out in sections corresponding to the seven systems of Unit 2 of *Rules of Play* [2] followed by some concluding remarks and miscellaneous odds and ends that didn't really fit anywhere else.

This is an initial response to the reading. The point of the exercise is to play with the points of view Salen and Zimmerman provide and be sure I understand them. Deeper critical thought and synthesis of ideas will come later (well, that's the idea).

2 Heroscape as an Emergent System

Heroscape certainly qualifies here. The game can be learnt very easily, but there is a huge amount of strategy that can be incorporated to improve your play and there are three aspects of the system that significantly enlarge the game space:

- Each game can be played on a different board,

- There is a virtually limitless supply of different armies available,

- There is a turn-by-turn random element that sends the game in directions that are only partly predictacble.

These items are more sensibly discussed in later sections, so I'll defer them until then.

The concept of "engines" [2, p. 166] struck a chord. In Heroscape, players are required to build an army at a set point limit. Some units work well together, others do not. The situation is exactly analogous to the description of the Gearheads engines.

Some of the engines in Heroscape are explicitly designed into the game: the text of the special abilities makes this clear. For example, the Blastatron unit has the special ability that you may move a unit of Gladiatrons each time you activate the Blastatrons. These two units clearly gain something when used together (and Gladiatron/Blastatron armies frequently do very well in tournaments). Other examples include the 4th Mass Line's "Valiant Defense bonus", Ulginesh's Mindlink that can be used only for elf wizards, and the various "bonding" squads that allow you take a full turn with a specific hero unit in addition to a turn with the squad.

More closely related to the idea of emergence are the combinations that arise organically. Gladiatrons have the ability to lock small or medium units in place; Marcu is a medium unit that is powerful for his points but may betray you temporarily each turn (there is a one-in-five chance that you have to let an opponent take the turn with him each time he is activated). By placing a (relatively expendable) gladiatron next to Marcu you can limit the damage he does when he betrays you: attacking that gladiatron is his only choice. Other examples include "rats and range" (use fragile but hard-hitting ranged units from behind a tough screen of high-defence/low-attack Deathreavers), Morsbane and Nakitas/Gorilliantors (Morsbane can eliminate special attacks from your opponents; Nakitas and Gorillinators have special abilities that work against normal attacks) and Raelin and Samurai (Raelin boosts the number of defence dice rolled; Samurai score hits when defending if they roll excess shields).

A point on engines that I think Salen and Zimmerman could have emphasised more: it's not just the combination of units, it's the combination of units

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and some tactical deployment. If you know that rats and range is a powerful combination, but not that you need to use the rats as a protective screen, then you won't use the engine to its full potential. I'd go further and argue that you weren't using it as an engine at all. Sometimes, as in my rats and range example, there are many components that can fulfil one of the roles of the engine. I suppose at this point we're talking about strategy and tactics that arise from the game rather than engines. Tactical and strategic play in games seems only to be addressed in passing in Unit 2 (here and in the Game Theory Systems section). I think this might deserve a greater proportion of our attention (or maybe I disproportionately enjoy games based around tactics and strategy).

3   Heroscape as a System of Uncertainty

Despite the core mechanic being based on dice, better strategic and tactical play will almost always win a game (I am including army selection under strategy—a great way to even games up between unequally skilled players is for the more experienced player to use a less strong army). However, at any point in the game there is always a non-zero chance that either side could win.

On the level of individual turns there is much fun to be had with probability. Which unit do would cause the most damage to an opponent's unit? Some units have choices between different types of attack; which one is best in a given situation? What is the probability that your unit is going to survive long enough to be activated on the third turn of the round? The Heroscapers fourm [1] contains many examples of such calculations.

Salen and Zimmerman talk about expected values (well, almost) when looking at Pig [2, p. 182]. The type of analysis there is relevant to each turn in which an attack happens in Heroscape. Something that Heroscape brings beyond Pig is variable variance. That is, in Pig everyone is using the same die: six sides with one of each number from 1 to 6. Suppose you could bring to a game of Pig one of a selection of dice. The standard die would be one choice. Another might have sides $1, 1, 5, 5, 6, 6$ allowing you to score faster at higher risk. Another might go further: $1, 1, 1, 1, 10, 25$. Perhaps you can choose

a lower-risk (and lower-reward) twelve-sided die: $1, 2, 2, 2, 2, 2, 3, 3, 3, 4, 4, 5$. [What makes a "fair" Pig die? Good probability exercise?]

The Heroscape analogue is in the choice of units from which you build your army. Some of the most competitive armies are often the low-risk and low-reward kind, the classic example is the 4th Mass Line. Filling up on as many of these units as the army point limit and starting zone size will allow gives a very solid army that will usually slowly grind down the opposition. On the other hand, if the army does fall behind it finds it very hard to catch back up. Other units are more like the high-risk and high-reward dice— capable of massive destruction but not reliably. The Anubian Wolves are possibly the most extreme example. Each time they are activated you must roll a twenty-sided die: if you get a 20 then you have three attacks of 9 (the highest possible in the game without getting bizarrely hypothetical); if you get a 1 then you destroy a wolf and have three attacks of 2; numbers between 1 and 20 have intermediate outcomes. An army based on Anubian Wolves will almost certainly not win a tournament as one loss often takes you out of the running. On the other hand, in any given game you have a reasonable chance of winning, even against the strongest of opposing armies.

A Heroscape army is usually made up of several units and so you can mix and match these characteristics and deploy them at different points of the game. A popular unit is Isamu. He costs just 10 points and almost always does nothing. However, he has the unlikely possibility of surviving for a long time and causing a lot of damage. Players frequently draft him to have a last ditch longshot chance at recovery should they find the rest of their army destroyed.

"Breakdown 3: Probability Fallacies" [2, p. 186] is interesting from an in-game tactical point of view as well as a game design point of view. If you correct for these fallacies in your own thinking, does it make you a better player? How do you do this without over-correcting? Can you take advantage of these fallacies in your opponent's choices? A Heroscape example: Stinger Drain. The Marro Stingers have an optional ability whereby you can choose to roll a twenty-sided die to potentially increase your attacking power at the risk of losing your attack for that turn entirely and destroying a Stinger. More experienced players use this power only in rare specific circumstances; new players are tempted almost every time. Various calcualtions [1] have

backed-up the idea that the reward is not worth the risk.

4 Heroscape as an Information Theory System

Information Theory is certainly fascinating, but I'm unsure what it brings to the study of game design. The main insight of this section seemed to be that games need to offer sufficient choice to allow for many different games while being sufficiently constrained to make it a game. I don't think Information Theory is going to shed much light beyond this fairly basic observation and I think this observation is best pursued under some of their other headings.

However, this is where the first two of the list of three emergent items in Section 2 naturally reside (the final one is, of course, in the previous section). Heroscape has three distinct phases (or more, or less, depending how you break it down): build a map; choose an army; play the game. These two "pre-game games" add a vast amount of information without making the "actual-game game" more complicated.

5 Heroscape as a System of Information

Heroscape can demonstrate all four kinds of information as Pearce delineates them [2, p. 205]:

Information known to all players. The map and the placement of figures upon it are there for all to see.

Information known to only one player. This is in the order marker system. At the start of each round each player places four order markers (labelled 1, 2, 3, and X) on unit cards so that the opposing player cannot see them. In each round every player has three turns: use the units with the 1, 2, and 3 markers respectively. The X is a bluff (your opponent can see which cards have markers on them, but not how they are labelled).

Information known only to the game. You can choose to play the game

with random glyphs. A glyph is a tile that, once a figure steps on it, has some influence on the game. These can be placed face up, in which case they are "information known to all players" or face down in which case only the game knows what they are before they are stepped on.
Randomly generated information. There's a lot of dice rolling.

In the summary, Salen and Zimmerman [2, p. 211] note that "games of perfect information tend to be analytically competitive, whereas games of imperfect information tend to have more uncertainty and inspire distrust among players". Two of Heroscape's fundamentally different play-types illustrate this distinction. In one-on-one play, the goal of both players is to destroy the other. Most of the information is in the first and last types above, and the play of such games is correspondingly analytical. In free-for-all play among three or more players, the goal is to be the last player standing. With more opponents there are more other order markers so the second type of information increases. Moreover, there are various strategies by which you might become the last player standing, including temporary alliances about which other players might not know. There is certainly more "uncertainty and distrust" in these games.

6   Heroscape as a Cybernetic System

The order marker mechanic provides a limited positive feedback loop. If you kill a unit on which your opponent has unrevealed (but non-X) order markers, as well as the basic advantage of the damage, your opponent also misses a turn. This loop does not run out of control, however, because order markers are reset every three turns.

While not a negative feedback loop, it is damage-per-turn that is important to the rate of change of point differential betwen opposing armies. For common squads with more than a card's worth left and heroes, this does not decrease as they take damage and so the leading player does not naturally pull away further. For unique squads there is a decrease in power as figures are lost; this positive loop is taken into account when the units are priced (a unique squad is cheaper than a common squad with comparable stats and abilities).

Some units have their own feedback loops. For example, Krug hits harder the more he is hurt (a negative loop) whereas the Zettian Guards have a disproportionately high second attack when they are both alive (a positive loop on top of the unique-squad positive loop of the last paragraph).

Given that Heroscape often ends with a close finish I expected to be able to identify more negative feedback loops. What am I missing? Am I just remembering the exciting close games more vivdly than the humdrum massacres? Perhaps an absence of unchecked positive loops is sufficient explanation.

7 Heroscape as a Game Theory System

The only point in Heroscape at which players make the sort of simultaneous choice economic game theorists study is in the placement of order markers. I don't think there is much worthy of investigation in Heroscape from this perspective (though this is a crucial part of the game).

Decision tree strategies are much more relevant; a generalisation that allows for the randomness generated by dice rolls could generate interesting observations. Larger scale "strategic decision trees" are also intuitively used when playing the game: "using my forces to attack over here will overwhelm that portion of the map; my opponent could fight there or attack on my other flank, in the first case... in the second case... on the other hand if I reinforce defences now, my opponent has a choice of attacking here or there, if here... if there... and so on.)

Degenerate strategies are a worry in Heroscape. For a given point total and starting hex limit, is there such a thing as the best army? There appears to be a rock-paper-scissors dynamic. If you know what army your opponent is playing then coming up with an army that can exploit its weaknesses is not too hard. However, chances are that the army you create will have many weaknesses of its own. Are there engines that are overpowered? There are certainly powerful ones, but looking through a list of tournament winning armies none stand out above many others. Coming from the other end, of the 150 available units there are only a few that are almost never seen at tournaments.

8 Heroscape as a System of Conflict

Heroscape does not do much to probe the subtleties of conflict and cooperation. The basic idea, in the one-on-one version at least, is to wipe out your opponent. Victory (and loss) conditions are unambiguous. There are, however, potentially cooperative aspects: deciding on (or designing) a map, choosing a pair of armies that will lead to a good well-matched game and scenario-based games, for example.

9 Concluding remarks

So, was this a useful exercise? On the whole, I'd say yes. I had a definite headstart in this chapter in that I tend to think about Heroscape (and other games and maybe even the world in general) in the style of this unit. However, working through every viewpoint and seeing how each one applies to a single game was interesting. I think I'll get even more from it in later chapters when I'm further away from my usual style of analysis.

Could these be useful for the group as well the writer? Half a dozen of documents like these tracking different games through the systems might give a nice overall picture and contrast Salen and Zimmerman's (completely correct) decision to vary their examples to best illustrate the system at hand. If this is a goal, does this introduce restrictions on the games? Was this incomprehensible to those that haven't played Heroscape? Was it trivially obvious to those that have? This might be a useful secondary function but I think the primary use is to give a framework for each of us to engage more thoroughly with a particular game and to therefore deepen our understanding of the systems.

10 Miscellaneous Asides

No need to read this bit. While I was reading various minor irks and pleasures emerged that were not of any importance. I catalogue them here mainly for

my own amusement but also so that we don't spend twenty minutes of class thinking of words in which 'G' follows 'T'.

Does "interrelate" mean the same as "relate"? If not, how do objects relate without interrelating?

"There are no words, for example, in which 'G' follows 'T'" [2, p. 198]. Whenever I read something like this I tend to take it as a challenge. Most likely because I had Heroscape in mind while doing this reading, I immediately managed "Utgar", a Heroscape general. Not really fair. A happy five minutes pondering (mainly on words, partly on whether Catgirl was a superhero I'd just invented and, if so, what her superpowers would be) led me to a real example. I'll let you find it (or a different one) yourself.

"...we do not have the luxury of being non-numerical" [2, p. 238]. Can you imagine anyone saying "we do not have the luxury of being non-literate"? Or, "we do not have the luxury of being non-musical"?

Gauntlet! Hurrah for something I once thought was the best thing ever yet haven't thought about for twenty years.

Can something be a "wonderful paradox" [2, p. 256] if you immediately explain why it isn't a paradox at all?

Salen and Zimmerman consider the notion of "fairness" in Pig Redux [2, p. 262]. I would argue that the version that has a dice roll to determine the first player is fair: the dice roll becomes part of the game; no player has any advantage over any other in advance. As such, absolute equality is not the myth they claim.

References

[1] `www.heroscapers.com`

[2] K. Salen and E. Zimmerman, *Rules of Play: Game Design Fundamentals*, Cambridge Massachusetts: MIT Press, 2004.