

“It’s Only A Game”

GAME DESIGN METHODOLOGY

by Jim Wallman

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Introduction

This paper is based on my own experience as a game designer, informed by discussion with others, theories produced by other professionals (in particular those in the RAND Corporation) and a wish, on my part, to crystallise my thoughts on the subject into one place.

The methodology I outline here applies primarily to historical simulation and games.

I have used it to design over 50 multiplayer megagames, and around 30 recreational wargames and simulation at one time or another and this an attempt to distil that experience in a more systematic way.

It isn’t a recipe for the Perfect Game – but what I have tried to set out here is a review of the major considerations that go into a functional simulation game – a sort of checklist of factors, and a model of how that might fit together.

The principles involved would, I’m sure, be applicable to other sorts of games as well - the demands of interpersonal interaction - the core of a good game - are, in my opinion, the same for a commercial board game as they are for a crisis simulation.

If you have any comments, thoughts or suggestions on this paper, I would be delighted to hear them. Email [**wargames@pastpers.co.uk**](mailto:wargames@pastpers.co.uk)

Jim Wallman
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1. SETTING THE AIM

The first and most important element of any game design is that of setting your aims and objectives. These are implicit in your initial decision to design a game on a given subject. Perhaps a book you have just read or a film you've just seen; whatever the inspiration - it creates your first aim.

BE CLEAR ABOUT YOUR AIM

Nearly all the most common problems in game design can often be brought back to the designer being unclear about their aims. If you don't know exactly what you want the game to be about - how can you hope to design it successfully?

As you will see the aim is inextricably tied up with a range of other factors. The sort of game, such as

- The sort of game you like to play
- Your experience with different game types
- The needs or expectations of your players (if you know who they are, or broadly the sort of gamer you're aiming at)
- The areas of interest that especially grabbed your interest when you became inspired to design a game.

So, setting out, in your own mind at least, the basic aim of your game can be the most challenging step – there are many options. It is also the most important.

My advice is do avoid doing anything or rules or mechanisms, do not decide on the game type or prepare props until you have settle on the fundamental aim.

How you express that aim is up to you – either keeping it in mind or writing it down. Here are some examples of design aims:

“To simulate the operations of brigade level battles in the Northwest Europe theatre during 1944-45”

“To simulate low level operational firefighting during the London Blitz in 1940/41”

“To simulate low level inter-tribe raiding and rivalry between Iron age Celtic tribes”.

“To simulate the events and actions of a major public disturbance of the type seen during the post-war years in the Western world.”

Let's take an example and examine it in more detail.

“A wargame about the Battle of Buena Vista in 1847”

If this were to be a typical battle game the first step might be to decide what aspect of the battle is greatest most interests to the designer?

There are a number of perspectives on the battle itself

- a game of the battle as a whole,
- the actions of one or two regiments in the battle,
- the general strategic problems of Gen. Santa Anna and Gen. Taylor in the

- Mexican War,
- or the detail of operation of mobile artillery batteries (a feature of this battle).

All of these are legitimate approaches to a battle game.

One can take the design options even further to encompass a wider context than the mere battle game – such as:

- A role playing game about being soldiers in an army of 1847.
- A logistics game about supplying the armies on campaign.
- An abstract game about deciphering participant's accounts of the battle after the event.
- A teaching game to give a group of students the background to the battle prior to visiting the battlefield on a school trip.

The answer to this step usually determines all the following design steps – and certainly informs the key question of game type that might best fit the aim.

Let us sweep up these options, and consider the game types that could be applicable. Remember that the list of game perspectives, and the list of game types are not exhaustive:

Table 1 : Battle of Buena Vista – Game Type Options

Perspective	Possible Game Type
Battle as a whole	Miniatures game, map game / kriegsspiel, board game.
Operations of a few regiments	Miniatures game, map game / kriegsspiel, board game. Dialogue game,
Strategic problems	Map game, board game, megagame
Mobile artillery operations	Miniatures game, role playing game, cardboard box simulator (CBS)
Solders' experiences	Role playing game, CBS, dialogue game
Logistics game	Map game, kriegsspiel, megagame, board game
Interpreting the story of the battle	Committee game, role playing game, board game
Teaching game	Board game, megagame

As you can see, there is considerable overlap where some game types can be applied to several perspectives of the battle. So all we can do at this stage is get a shortlist of game types that might be applicable. We need more information to hone in our design and to start structuring the game. This brings us on to further design considerations.

2. DESIGN CONSIDERATIONS

This section deals with the fundamental machinery of game design and is at the core of this methodology. This is where we move from the general aim and a short list of possible game types to a specific 'best fit' game type, and on to actual game structure and writing rules.

I have divided these design considerations into two main headings, Structure and Resources.

These are not to be taken as separate and independent stages, since much of the design process is iterative, each area being revisited in turn several times before the design is finalised.

2.1 Structure

There are four main areas that need to be considered under structure, these are Level, Resolution Game Type and Layout.

a. Level:

This can be restated as: What are the players going to do?

This is most important and is closely related to Resolution (see below).

You must always be clear about what the players are going to do, and the sorts of decision being taken by them at the level they are supposed to be representing.

This is an important element of the research on any game, since you have to get an idea of the decision making process in the real-world situation you are simulating.

In the Buena Vista example - you might ask yourself the following questions when deciding on the level of the game:

- i. Who is taking the influential decisions and what are they??
- ii. How often are decisions taken? (once per battle, once per hour, once per few minutes?)
- iii. Do the decisions have any impact on the outcome? (Someone might merely be deciding whether to have red or white wine for dinner).

The questions you ask in your research are also informed by the choice you made during 'Aims' – the perspective you've chosen will set the questions to some degree as key player decisions depend on their role in the game – obviously different in, say, the 'soldiers' experiences' game to the 'strategic issues' game.

Armed with the answers to these questions, then imagine yourself sitting down and playing.

Would a player have enough to do and of interest at the level you have chosen?

Do commanders at their level exercise wide freedom of decision-making or must

they follow closely the orders of others?

You need to have some idea of the real-life decisions taken at this level.

Often these questions require some in-depth research – the answers and not always immediately self-evident. Often the people we imagine are key actors (such as perhaps a regimental commander) often have severe limits on their scope for decision making as a result of their place in a command hierarchy - or there may be realistic limitations on their knowledge of the situation.

b. Resolution:

There is a well known rule of thumb in simulation which says that the resolution in a battle game should normally be two organisational levels below the player level. Hence if the game is set at divisional level, resolution should normally be battalion, or if the game is battalion level, the smallest unit would be a platoon.

This should not be considered some sort of rigid design rule, however, merely a very useful starting point.

You can see how the resolution is important - a game set at brigade level with battalion resolution (only one level down) would mean that the player only had 3 or 4 units to make decisions for. In such a case, unless the game system had very challenging time pressures, the players would be very likely to be under-employed (and hence bored - the ultimate crime in game design).

On the other hand, a game set at brigade level with platoon resolution (three levels down) would give the player typically 27-36 sub units to consider, which is probably too much unless the players have several hours to complete each round of decision-making.

c. Game Type.

In our field of historical crisis simulations or games, there is quite a sophisticated lexicon of game types.

For definitions, see the Glossary at Annex B. I shall assume a working knowledge of the main types at this stage.

We have already been considering game type that could be used.

On the first stage of the design process you should avoid making a firm decision on game type until you have looked further at the other design considerations.

Reject nothing - you will be surprised how many game structures can be used to meet the same objectives.

A key early decision to be taken, however, is whether the game is to be *Open* or *Closed*. (or somewhere in between; Open – Closed is really a continuum of closure). The degree of closure is vital when deciding on basic game type - for example it is very much harder to have a high degree of closure on a two-player board game (though not completely impossible - just very difficult).

You need to be clear why you are selecting a particular game type. As I have said, at this stage you would not necessarily arrive at a single game type - but the short-list should be apparent early on.

Be clear why you are excluding particular game types as well as why you're including others. As we have indicated few game subjects are applicable to *all*

game types. Unfortunately, only practical testing and experience can tell you what does and doesn't work for a particular design.

d. Game Layout:

In terms of pure game design, the layout of the venue should be of minor importance. But in the real world, we have to fit our games into the spaces available. If you are fortunate enough to be involved in a group that has access to a large hall or conference centre, then this is less of a problem than if you are running games in a friend's house or classroom setting.

Here again, the layout of the game is related to the degree of closure, as well as the game type. Let us examine how the game layout is influenced by some main game types we would normally consider.

Table 2 : Game Type Layout Considerations

Game Type	Layout Considerations
<i>Figure Wargame</i>	Needs reasonable space for a table. One room, space for props etc.
<i>Map Wargame / Kriegsspiel</i>	Can be done on one table with screens, usually multiple rooms required.
<i>Committee Game</i>	Normally single room with chairs as a minimum, a table would be a help.
<i>Dialogue Game</i>	Depending on the context a central map/model is a help, otherwise the same as a committee game in layout.
<i>Megagame</i>	Space for multiple teams, either at separate tables in a large hall, or a large number of separate rooms.
<i>Cardboard Box Simulator</i>	These can be held almost anywhere, depending on the game - often the CBS is structured around the space available (e.g.: Bomber simulator in a loft, deep sea diver simulator in a cellar)
<i>Role Playing Game</i>	Same requirements as for a committee game, although the more elaborate can be like a figure game.
<i>Board Game</i>	Usually only a few players (typically 2) and a table.

To recap; in defining your structure, you should have a number of potential game types, and some reasonably clear idea of the game layout and the level of players and resolution of forces represented. But it doesn't end here since you must consider your resources too.

2.2 Resources

The three main resources you have are your **audience**, **time** and **equipment**.

These feed back into your structural considerations, and as I have already mentioned, you may be simultaneously considering game type and equipment or audience.

a. Audience:

There are four main factors that arise when considering the people who you anticipate will be playing your game;

1. 'What will they put up with?' Sometimes players like complexity, sometimes challenges, sometimes they only want gentle entertainment.

2. How many you will you get to play. In practice you do need to be flexible. In a recreational context it is not a good plan to design a game for a precise number because you often need to accommodate an extra player or a few less depending on who turns up. If you are planning a commercial game you need to recognise the likely number of players who sit down for a game.

3. What can they cope with? The abilities (or otherwise) of the players are important factors - it is no use designing a game that requires half the players to be able to speak Spanish if none of them do.

4. What is their expectation? In other words you should have some idea what they want from a game. It is, of course, not a bad thing to challenge their preconceptions occasionally - but you should perhaps avoid doing it too often, or you'll end up a solo gamer pretty quickly.

For example: in the CLWG the expectation of a historical game is that, above all, it is reasonably realistic with a good level of playability.

Again the size, ability and expectations of the audience have an influence on the game type.

In many cases the main expectation of the audience is merely that they are going to experience a particular game type (i.e. figure game, board game, commercial RPG etc.).

b. Time:

The most important question here is: How long have you got?

This has an effect on the game type selected, since some game types have overheads in terms of setting up time (e.g. figure games), and in terms of game complexity - is there enough time to see the game through to a satisfactory conclusion?

The calculation of time is important and it is often ignored.

Perhaps an example will help illustrate the point:

Let us say that at the Battle of Buena Vista, the example action we want to simulate took 6 hours to fight in real life. We plan to play it in 3 hours at a club

meeting.

So, the question here is; how long should it take to process a game move? Much of this will depend on the mechanisms chosen (and I will talk a little more on mechanisms shortly) but the mechanisms are themselves dependent on how long you have to resolve the battle.

Let us say that you expect it to take 10 minutes to resolve a single game move. Simple maths from the assumptions above will tell you that each game move must therefore represent 20 minutes of battle time.¹

From this falls out how much detail you can afford to include in your rules in order to ensure that a game turn is resolved in the required 10 minutes.²

c. Equipment:

This is determined very largely by the game type you choose. It is not a particularly sensible idea to choose a game type just because you have the equipment to do it that way (figure games are a classic example). Similarly, if you cannot get the equipment together for your chosen game type, then you are forced to look at alternatives.

¹ 3 hours ÷ 10 minutes = 18 game turns
6 hour battle ÷ 18 game turns = 20 minutes represented by each turn

² In the old days of figure wargaming it was common for 'battles' to take half an hour to resolve a single turn, which was supposed to represent one minute or so of action. Not surprisingly, few wargame battles were ever fought to any sort of conclusion, and they therefore lacked any sort of realism

3. TESTING THE DESIGN

The final part of the design process is testing. Testing starts even before you actually write the game details - you must first ask yourself:

Has it met the Aim?

Refer back to your aim. It may be that once you start to construct the design the game you have outlined to meet the aim is actually very dull, or not what you actually wanted.

Perhaps you should have thought more about the aim? Go back and change it – decide to rewrite or even discard the idea.

You might find that after going through a design process, the game is not workable in the way you want.

Be prepared to discard it.

Pressing on regardless with an unworkable design may be a measure of your determination but it will earn you no thanks from your game-playing audience. If you do not complete the design, or turn it into a game, write it up anyway - this is an easy (and good) way of meeting your article requirement for CLWG, if nothing else.

And the effort will not have been a total waste because you will have helped someone else who might have had a similar idea.

The value of being part of a design-oriented game-playing group (like CLWG) is that members should be able to spark ideas off each other - your incomplete design might be just the inspiration someone else is looking for in a similar project.

Sharing the ideas and design process is, in my experience, always rewarding.

Testing is part of an iterative process. Most of the time where you are designing an historically based game, the test is against your historical sources. For example, if you are designing a game on a specific battle or campaign, use your game to refight the real-life actions and compare the results and overall outcome against the historical sources.

There is a serious potential pitfall here, however. Your game is not a re-enactment – that is it should not be so designed as to recreate exactly every anecdotal incident in the real battle. This sort of game places the players on metaphorical ‘tramlines – usually giving them little choice about their actions or freedom of decision making.

The more balanced design should, in my view, provide a range of potential decision and outcome consistent with the range of possibilities available to the historical prototypes, taking account of physical, cultural and organisation factors.

This is a matter of fine judgement, of course – but the test of plausibility is the hardest one to be objective about. Some gamers find the most unrealistic games

'plausible', perhaps because their knowledge of the historical period is cursory, or their expectations of a 'mere game' is low. Many of the Design Consideration factors come into play here in deciding whether you have achieved the required level of plausibility such that the players find it easy to take on a willing suspension of disbelief and regard the game as a satisfactory simulation.

Half Baked?

I have found that in many cases it is helpful to play test the game when it is in a very minimal state of preparedness. A half-baked game play test might happen without carefully prepared props (perhaps using cardboard squares instead of miniatures for example) and with maybe only a few notes of the basic mechanisms and rules.

Playing through the game idea in this half-baked way can lead to a range of really helpful insights into the dynamics of the game - most especially in player interactions and levels of player activity. Also, the playtesting players will challenge the designer's fondly held assumptions about how the game might go. It also give you a chance to assess they key elements of your game – the bits people pay most attention to before writing long and elaborate rules systems.

The half-baked playtest session is a very powerful tool – as it can be an opportunity to create a synthesis of players' and designer's ideas to make the final design stronger.

The Design Cycle

The process briefly described here is show in Annex A in the design cycle diagram. This shows the process as being largely iterative – the design process being influenced by testing against the research sources, the player's feedback and, ultimately against the designer's aims.

4. WRITING THE RULES / GAME MECHANISMS

I have left this to the last because it is, to me, the easiest and least important part.

Wargames are interesting in their emphasis on written and often complex rules. Often wargame rules are merely a collection of mechanisms only loosely held together by a central model or a game design (if a design exists at all).

Writing game mechanisms *is* simple, and everyone can do it with only the minimum of thought. Once you have the design structure the mechanisms will usually fall into place.

I do not intend to give you too much sage advice on the minutiae of mechanism writing, we don't have time and in any case it is usually highly design-specific³.

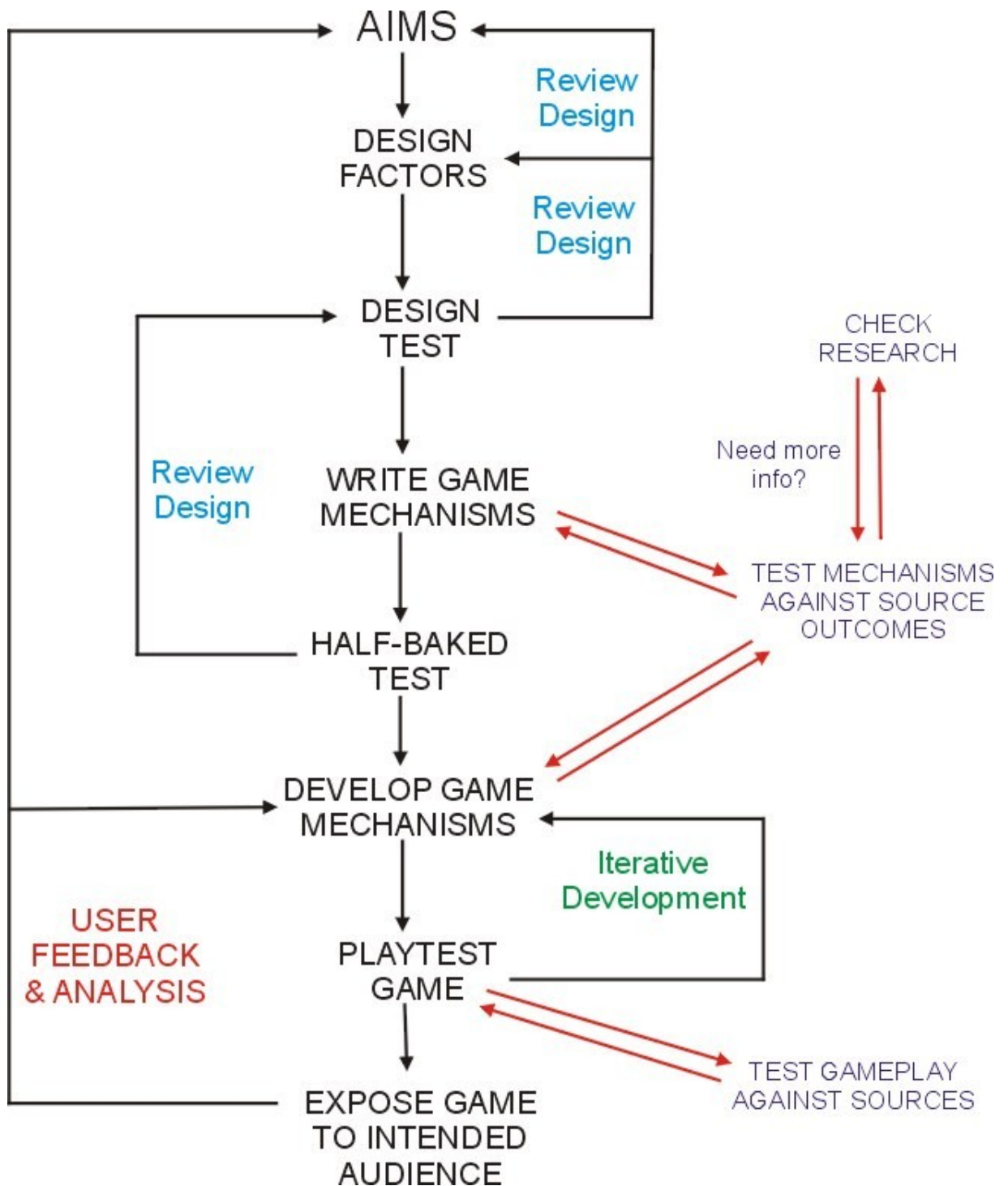
There are thousands of different game mechanisms, employed in published wargames, board games and role-playing games. Most people borrow extensively from other games – and so long as you have done the design work, knowing what mechanism is appropriate becomes very easy.

Initially, when testing, many designs do not need wholly worked out and detailed written rules – certainly at the 'Half Baked' stage, since the game designer is present to interpret and extemporise during the game play. *Free Kriegsspieling* the game is easy under these circumstances. You really only need formal and codified written rules when the game is expected to transport from the designer to other users or other groups, or when the designer has a large and complex situation he or she wishes to simulate (for example in a game with complex economic rules).

In any event, testing of early outline designs before going firm on detailed mechanisms writing can help formulate simpler and more elegant game systems.

³ Since originally writing this in a game design article, I have been pressured by a number of people who say "well it might be easy for *you*..". There may be something in this, but it isn't even possible to talk about mechanisms until one has discussed the structural considerations outlined in this article - and the precise mechanisms one uses - whilst important, will be very specific to those aims and to the game type chosen. For a discussion of the issues around top-down mechanism design in the battle game format, see my article on 'One Brain Cell Rules'

THE GAME DESIGN CYCLE



GLOSSARY OF TERMS

Term	Brief Description	Web links
Kriegsspiel	The original military training game devised by Georg von Reisswitz and adopted by the Prussian Army.	http://www.kriegsspiel.org.uk/
Megagame	A Megagame is a multi-player simulation game, in which the participants are organised into teams, and those teams into an hierarchy of teams	www.megagame.org.uk
Dialogue Game	A game of directed group storytelling in an operations context.	
Cardboard Box Simulator	A type of role playing game where some element of the physical environment is simulated. This might be something simple like playing a committee game set in on a railway journey during an actual railway journey. It doesn't have to involve cardboard (the term 'cardboard box' was used to distinguish it from elaborate and expensive computer simulators).	
Open Game	A game in which all the rules and all the moves of all participants are known to all other participants. For example, chess.	
Closed Game	A game in which some aspects are unknown to the players. This might be some parts of the rules – but most commonly in wargames it is a game where many of the actions of the enemy are unseen. Sometimes also called the 'fog of war' aspects of a game. Many computer games have some elements of closure.	
Figure (or 'miniatures') wargame	A table-top game, usually of battles, where the terrain and the fighting units are represented by scale models.	
Map wargame	A game in which the locations of forces are marked on a map (as they would be in real military operations). Professional military wargames are most often map wargames of one sort or another.	
Free Kreigsspiel	A development of the Kriegsspiel, pioneered by Verdy du Vernois. In essence it is a game where the hitherto complex and slow-moving written rules are largely superseded by the judgement of experienced umpires, who can move the action along rapidly.	en.wikipedia.org/wiki/Julius_von_Verdy_du_Vernois

Term	Brief Description	Web links
Committee game	A type of role playing game where the players represent the members of a committee – usually tasked with planning something, or negotiating a treaty or conducting diplomacy. It does not normally have an operational aspect.	
Role Playing Game	A game in which the player's actions are focussed on a specific individual character or role and all the game activities are centred on the decisions and actions of the individual.	en.wikipedia.org/wiki/Role_playing_game
Board Game	Any game using a stylised board and counters or blocks. In general, boardgames do not aim to show scaled representations (unlike map wargames or figure wargames) – and can be quite abstract. In military board wargames they are often also characterised by complex rules and mechanisms.	

