

Les moteurs de jeu comme outils de scénarisation

Game Engines as Scripting Tools

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[Voir la fiche.](#)

Excerpt of the storyboard of *Alteration* (Jérôme Blanquet, 2017).
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Les moteurs de jeu comme outils de scénarisation

par Dominic Arsenault

La scénarisation cinématographique consiste, dans sa plus simple expression, à écrire, par le biais d'un texte linéaire, la description d'une expérience audiovisuelle linéaire qui reste à réaliser. Or, les processus d'écriture et de réalisation sont tout sauf linéaires, et il y a mille façons de passer des mots aux images. Pour réaliser une prévisualisation rapide et flexible, on peut utiliser un moteur de jeu vidéo. Le choix du moteur dépendra du point d'équilibre recherché entre accessibilité, flexibilité et complexité. Les moteurs de jeu offrent trois types de possibilités intéressantes pour la scénarisation, selon l'accent qu'on met sur chacun des trois termes :

- Les *moteurs* de jeu vidéo fournissent des outils conviviaux pour la mise en scène et l'animation de modèles numériques dans un environnement 3D, ce qui permet d'obtenir une prévisualisation de scènes ou d'un scénarimage tout entier.
- Les moteurs de jeu *vidéo* fournissent des éléments préfabriqués (*prefabs*) et sont conçus pour accueillir des éléments externes, ce qui permet de réaliser à très peu de frais des maquettes (*mock-ups*) à partir de contenus génériques ou temporaires (*placeholders*).
- Les moteurs de *jeu* vidéo fournissent des règles d'opération qui peuvent servir d'aide à l'idéation, avant même d'en arriver à la prévisualisation.

Depuis longtemps, les designers de jeux vidéo (*game designers*) créent des prototypes de leurs concepts sur papier dans la phase d'idéation, avec des pions, jetons, cartes à jouer, dés, etc. Conceptuellement, ces dispositifs fonctionnent comme des moteurs de jeu : ils transforment des gestes (lancer un dé, tirer une carte) en résultats exprimables au sein d'un système de règles (obtenir un 6 ou piger un as et réussir une manœuvre difficile). Parallèlement, depuis longtemps les écrivains utilisent aussi des systèmes de règles pour générer des idées (qu'on pense au jeu du cadavre exquis). Le jeu de rôles, popularisé avec *Donjons & Dragons* dans les années 1970, est devenu la configuration archétypale de ce mélange de jeu et de récit. Si le maître de jeu peut inventer un scénario comme il l'entend, dans les faits il trouvera dans les livres et les règles du jeu différents éléments qui stimuleront son imaginaire et agiront comme moteur d'intrigues, qu'il s'agisse de règles pour crocheter des serrures ou

CHAPTER 12: MONSTERS

AS THE DUNGEON MASTER, YOU HAVE A VAST ARRAY OF resources available to you to make the game exciting and fun for the players—and monsters are at the top of the list. A monster is defined as any creature that can interact with and potentially fought and killed. Even something as harmless as a frog or as benevolent as a unicorn is a monster by this definition. The term also applies to humans, elves, dwarves, and other folk who might be friends or rivals to the player characters. This chapter presents a wide selection of ready-to-play monsters—a sample of what can be found in the *Monster Manual*. Each description uses a standardized format that clearly explains a monster's capabilities. Guidelines for understanding the information found in a monster's statistics are given below.

STATISTICS

A monster's statistics, sometimes referred to as its **stat block**, provide the essential information that you need to run the monster.

SIZE

A monster can be Tiny, Small, Medium, Large, Huge, or Gargantuan. See chapter 9 of this document for more information on creature size and space.

TYPE

A monster's type speaks to its fundamental nature. Certain spells, magic items, class features, and other effects in the game interact in special ways with creatures of a particular type. For example, an *arrow of dragon slaying* deals extra damage not only to dragons but also other creatures of the dragon type, such as dragon turtles and wyverns.

The game includes the following monster types, which have no rules of their own.

Aberrations are utterly alien beings. Many of them have innate magical abilities drawn from the creature's alien mind rather than the mystical forces of the world. The quintessential aberrations are aboleths, beholders, mind flayers, and shadls.

Beasts are nonhumanoid creatures that are a natural part of the fantasy ecology. Some of them have magical powers, but most are unintelligent and lack any society or language. Beasts include all varieties of ordinary animals, dinosaurs, and giant versions of animals.

Celestials are creatures native to the Upper Planes. Many of them are the servants of deities, employed as messengers or agents in the mortal realm and throughout the planes. Celestials are good by nature, so the exceptional celestial who strays from a good alignment is a horrifying rarity. Celestials include angels, coatlans, and pegasi.

Constructs are made, not born. Some are programmed by their creators to follow a simple set of instructions, while others are imbued with sentience and capable of independent thought. Constructs are the iconic creations. Many creatures native to the outer plane of Mechanus.

such as modrons, are constructs shaped from the raw material of the plane by the will of more powerful creatures.

Dragons are large reptilian creatures of ancient origin and tremendous power. True dragons, including the good metallic dragons and the evil chromatic dragons, are highly intelligent and have innate magic. Also in this category are creatures distantly related to true dragons, but less powerful, less intelligent, and less magical, such as wyverns and pseudodragons.

Elementals are creatures native to the elemental planes. Some creatures of this type are little more than animate masses of their respective elements, including the creatures simply called elementals. Others have biological forms infused with elemental energy. The races of genies, including djinn and efreet, form the most important civilizations on the elemental planes. Other elemental creatures include azers, invisible stalkers, and water veils.

Fey are magical creatures closely tied to the forces of nature. They dwell in twilight groves and misty forests. In some worlds, they are closely tied to the Feywild, also called the Plane of Faerie. Some are also found in the Outer Planes, particularly the planes of Arborea and the Beastlands. Fey include dryads, pixies, and satyrs.

Fiends are creatures of wickedness that are native to the Lower Planes. A few are the servants of deities, but many more labor under the leadership of archdevils and demon princes. Evil priests and mages sometimes summon fiends to the material world to do their bidding. If an evil celestial is a rarity, a good fiend is almost inconceivable. Fiends include demons, devils, hell hounds, rakshasans, and yugoloths.

Giants tower over humans and their kind. They are humanoid in shape, though some have multiple heads (titans) or deformities (horrorions). The six varieties of true giant are hill giants, stone giants, frost giants, fire giants, cloud giants, and storm giants. Besides these, creatures such as ogres and trolls are giants.

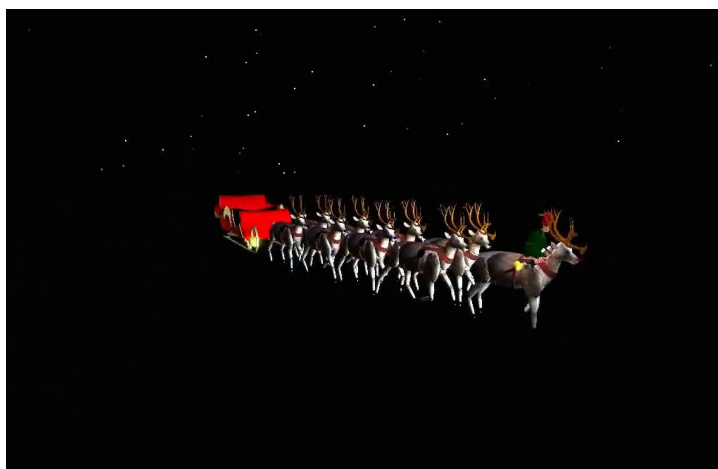
Humanoids are the main peoples of the D&D world, both civilized and savage, including humans and a tremendous variety of other species. They have language and culture, few if any innate magical abilities (though most humanoids can learn spellcasting), and a bipedal form. The most common humanoid races are the ones most suitable as player characters: dwarves, elves, and halflings. Almost as numerous but far more savage and brutal, and almost uniformly evil, are the races of goblinoids (goblins, hobgoblins, and bugbears), orcs, gnolls, lizardfolk, and kobolds.

Monstrous are monsters in the strictest sense—frightening creatures that are not ordinary, not truly natural, and almost never benign. Some are the results of magical experimentation gone awry (such as oozebeasts), and others are the product of terrible curses (including minotaurs and yuan-ti). They defy categorization, and in some sense serve as a catch-all category for creatures that don't fit into any other type.

Extrait du guide d'utilisation reprenant les bases du jeu *Donjons & Dragons* adressé au maître du jeu. [Voir la fiche](#).

pour persuader un prisonnier de parler, de sortilèges permettant d'emprisonner l'âme d'un personnage dans un objet ou d'entrer dans ses rêves pour livrer un message, ou d'une ceinture magique qui fait changer de sexe.

Outre l'aide à l'idéation, les moteurs de jeu sont utilisés dans la création de jeux vidéo pour réaliser des implémentations préliminaires à peu de frais lors du *prototypage* ou *sketching* (croquis), mais on les a aussi utilisés pour la création cinématographique ou plus précisément vidéographique dès les années 1990, dans ce qui allait plus tard devenir les *machinima* (portail Web fondé en 2000, dont le nom est la contraction de « *machine cinema* »).



Un extrait vidéo est accessible [en ligne](#).

Capture d'écran d'un *machinima* produit dans *Second Life*. [Voir la fiche](#).

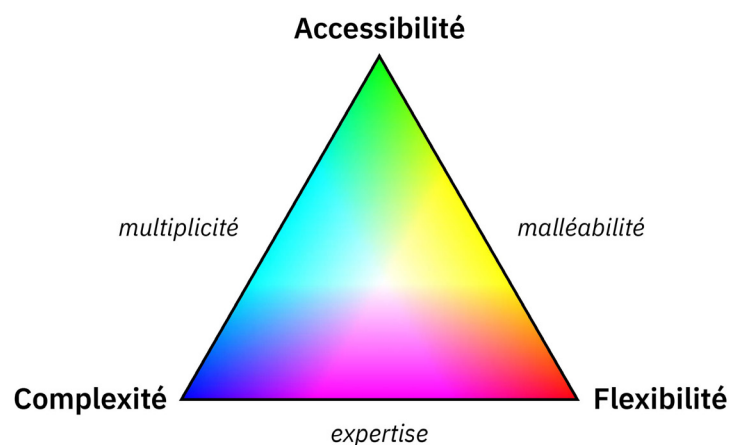
Ces films réalisés au sein de moteurs de jeux ont préfiguré la convergence technologique du cinéma, de l'animation 3D et du jeu vidéo qu'on trouve dans toute production numérique aujourd'hui, les moteurs de jeux permettant la prévisualisation des décors et des images numériques en temps réel sur les plateaux de tournage (autrement bien monochromes avec leurs écrans verts). De la même manière que les règles du jeu *Donjons & Dragons* entraînent la création d'un certain type d'intrigues, chaque moteur de jeu va ouvrir des portes et en fermer d'autres. Le choix d'un moteur se fait ainsi en fonction de l'équilibre recherché entre accessibilité, flexibilité et complexité.

Les moteurs qui se spécialisent dans une forme de jeu en particulier permettent d'offrir une grande complexité, c'est-à-dire un contrôle très fin des paramètres offerts, tout en restant accessibles. C'est le cas de RPG Maker, de MUGEN ou d'Adventure Game Studio, qui servent respectivement à la création de jeux de rôles (*role-playing games*, ou RPG), de jeux de combat et de jeux d'aventure graphique 2D. Cette spécialisation leur permet d'éliminer ou presque le recours à la programmation, puisqu'ils fournissent tous les paramètres usuels qu'on trouve dans ces types de jeux. Ces moteurs favorisent l'esprit de multiplicité; les créateurs n'ont qu'à se familiariser avec plusieurs de ces moteurs et à choisir celui qui convient à chaque projet.

Les moteurs accessibles peuvent être plutôt généralistes et flexibles, comme GameMaker, Construct ou Scratch (pour les jeux 2D), ou Stencyl (pour les jeux mobiles). Ils permettent la

création de jeux 2D à partir d'un système de programmation visuelle où on emboîte et raccorde des blocs de conditions et d'effets logiques prédéfinis plutôt que d'écrire du code. Pour travailler dans ces moteurs, il faut suivre les voies tracées dans le logiciel et considérer l'idée comme malléable afin de pouvoir réviser ses plans si le moteur ne s'y prête guère.

Enfin, plus un moteur combine la complexité des paramétrages avec la flexibilité, plus il devient difficile d'accès. Les grands moteurs comme Unity, Unreal ou Godot tentent bien de rester accessibles en offrant, par exemple, des microprojets préconfigurés de différents genres vidéoludiques ou d'autres options que la programmation par écriture d'un code. Mais leurs interfaces sont chargées, et les manipulations de base ou les étapes du processus (*workflow*), difficiles à conceptualiser. Ces moteurs valorisent la notion d'expertise, que l'on développe lentement et qui permet d'éventuellement réaliser n'importe quel projet au sein du moteur.



Caractéristiques des moteurs de jeu comme outils de création et de conception (sur les sommets), et attitudes qu'ils valorisent chez leurs utilisateurs (sur les arêtes, en italique). [Voir la fiche](#).

Pour une scénarisation qui sort du cadre du jeu vidéo, la nature très orientée des moteurs qui visent l'accessibilité fait qu'ils ne permettent pas de réaliser une maquette de l'expérience audiovisuelle. On peut les utiliser pour faire des croquis conceptuels (*concept art*) ou des images de référence (*moodboard*), mais les logiciels de graphisme sont assez accessibles et beaucoup plus flexibles pour ce faire. Ce que les moteurs de jeu permettent pour la scénarisation, c'est d'éviter entièrement la captation ou la construction d'images, pour employer plutôt la manipulation, l'agencement et le bricolage d'éléments sur le mode ludique.

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Translation: Timothy Barnard

In its simplest form, scripting a film consists in writing, by means of a linear text, the description of a linear audiovisual experience which remains to be created. And yet the processes of writing this script and making the film are anything but linear, and there are thousands of ways of converting words into images. In order to create a quick and flexible previsualization, one can use a video game engine. The choice of engine will depend on balance sought between accessibility, flexibility and complexity. Game engines offer three kinds of interesting possibilities for scripting, depending on the emphasis one places on each of these three terms:

- Video game *engines* provide congenial tools for staging and animating digital models in a 3D environment, making it possible to obtain a previs of scenes or an entire storyboard.
- Video game engines provide prefabricated elements and are designed to host external elements, making it possible to make mock-ups at low cost out of generic or temporary content (placeholders).
- Video *game* engines provide operating rules which can be used to help conception even before reaching previsualization.

For a long time, video game designers in the conception phase have created prototypes of their concepts on paper out of pawns, tokens, playing cards, dice, etc. Conceptually, these get-ups function like game engines: they transform gestures (throwing a die, drawing a card) into expressible results within a system of rules (throw a six or draw an ace and succeed in a difficult manoeuvre). At the same time, for many years writers have also used rules-based systems for generating ideas (think of the “exquisite corpse” game). Role-playing, popularized with *Dungeons & Dragons* in the 1970s, has become the archetypal configuration of this blend of game and narrative. If the game master can invent a scenario the way he or she sees it, in practice they will find various elements in the books and rules which will stimulate the imagination and act as a plot engine, whether this consists in rules for picking locks or for persuading a prisoner to talk, spells for imprisoning a character’s soul in an object or for entering into their dreams to deliver a message, or a magic belt for changing one’s sex.

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Excerpt from a user’s guide going over the basics of the game *Dungeons & Dragons* intended for the Dungeon Master. [See database entry.](#)

In addition to being an aid to conception, game engines are used in the creation of video games to carry out preliminary implementations at low cost during the prototyping or sketching stage. But they have also been used for creating films, or more precisely videos, since the 1990s, in what would later become Machinima (an Internet portal founded in 2000 whose name is a contraction of “machine cinema”).



A video clip is available [online](#).

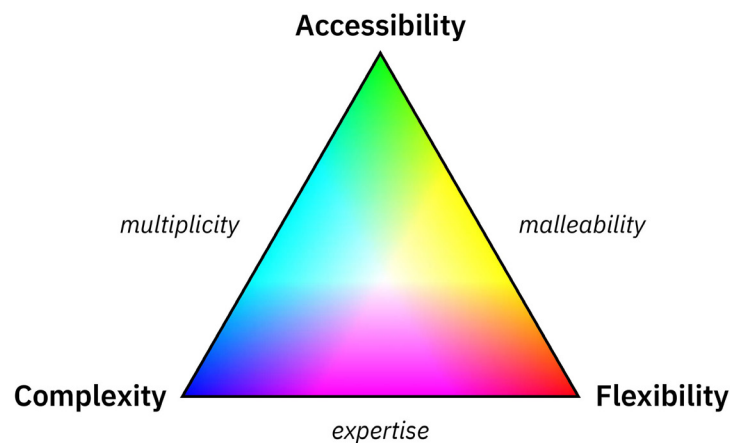
Screenshot of a machinima filmed in *Second Life*. [See database entry](#).

These films made in game engines prefigured the technological convergence of cinema, 3D animation and video games found in every digital production today, as game engines make it possible to previsualize the decors and digital images in real time on shooting sets (which are otherwise quite monochrome with their green screens). Just as the rules for *Dungeons & Dragons* brought about the creation of a certain kind of plot, every game engine will open some doors and close others. The choice of engine is thus made according to the balance sought between accessibility, flexibility and complexity.

An engine specializing in one kind of game in particular makes it possible to provide great complexity, meaning very fine control over the parameters provided, while remaining accessible. This is the case with RPG Maker, MUGEN and Adventure Game Studio, which are used respectively to create role-playing games (RPG), battle games and 2D graphic adventure games. This specialization enables them to eliminate, or almost, the use of programming, because they supply all the usual parameters that one finds in these kinds of games. These engines promote a spirit of multiplicity; creators need only familiarize themselves with several of these engines and choose the one which best suits each project.

Accessible engines can be quite general and flexible, such as GameMaker, Construct or Scratch (for 2D games) or Stencyl (for mobile games). They make it possible to create 2D games out of a system of visual programming in which one fits together and matches predefined blocks of conditions and logical effects rather than write code. To work with these engines, one must follow the paths outlined in the software and see the idea as malleable in order to be able to revise one’s plans if the engine does not lend itself to them very well.

Finally, the more an engine combines the configuration's complexity with flexibility, the less accessible it becomes. Major engines such as Unity, Unreal and Godot try to remain accessible by offering preconfigured micro-projects of various genres of video games or options other than programming by writing code. Their interfaces, however, are overloaded, and basic manipulations and workflow stages are difficult to conceptualize. These engines promote the notion of expertise, which one develops slowly and which may one day make it possible to create any kind of project with the engine.



The characteristics of game engines as tools of creation and conception (at the peaks), and the attitudes they bring out in their users (on the edges, in italics). [See database entry](#).

For scripting outside the framework of the video game, the highly guided nature of engines geared to accessibility is such that they do not make it possible to make a mock-up of the audiovisual experience. They can be used to make conceptual sketches, or concept art, or reference images (moodboards), but graphic design software is fairly accessible and much more flexible for these purposes. What game engines allow one to do when scripting is to completely avoid capturing or constructing images and to engage instead in manipulating, arranging and patching together elements in a game-like manner.