Where Do Game Design Ideas Come From?
Invention and Recycling in Games Developed in Sweden

Ulf Hagen

Södertörns University

141 89 Huddinge, Sweden

ulf.hagen@sh.se

ABSTRACT

The game industry is often accused for not being original and inventive enough, making sequels and transmediations instead of creating new game concepts and genres. Idea creation in game development has not been studied much by scholars. This paper explores the origin of game design ideas, with the purpose of creating a classification of the domains the ideas are drawn from. Design ideas in 25 games, developed by the four main game developers in Sweden, have been collected mainly through interviews with the designers and through artifact analyses of the games. A grounded theory approach was then used to develop categories "bottom-up" from the collected data. This resulted in four main categories and a number of sub categories, describing different domains that game design ideas are drawn from. The analysis of the game design ideas also showed that all games consist of a recycled part and an inventive part, and that the ideas in the recycled part mainly come from domains that are closely related to games. This indicates that games perhaps would be more inventive if design ideas were drawn from more distant domains.

Author Keywords

game concept, idea creation, invention, game design, game development

INTRODUCTION

If we consider the games [1] on the market today, the contemporary "game landscape" as a whole; does it indicate creativity and originality? Is there a flourishing diversity among the games, or are they uniform when it comes to gameplay, genre, topic, theme, setting, and story? Some game developers, like Chris Crawford [7, 14], Greg Costikyan [5, 6], and Jean-Paul LeBreton [13], argue that new games are not as innovative and creative as they could be. They are referring to genre stagnation, a lack of variation when it comes to gameplay, the large number of

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[1] In this paper the word 'game' refers to digital games, (video games and computer games). Traditional games, like board games, are called 'non-digital games'.

sequels and licensed games. In this paper I will try to contribute to the discussion by examining the design ideas behind the games.

In media studies many scholars have observed that the media landscape of today is characterized by a flow of content in between different media forms and individual works. Intertextuality and transmediation are terms that describe aspects of this phenomenon, which Jenkins [11] sees as a sign of a "convergence culture". Bolter & Grusin's [3] concept *remediation* describes how not only content, but also representational approaches and styles are used, borrowed, reshaped, adapted, and recycled all over the media landscape. They even propose that in contemporary culture "all mediation is remediation" [3].

Against this background it is not far-fetched to assume that games also are a part of this convergence culture, and that game design ideas are being borrowed from other games and game genres, but also from the media landscape as a whole. Therefore, my research question will be: Where do game design ideas come from?

With game design ideas I mean ideas that game designers have about the features and components of the game they are developing. Since industrial game development is teamwork, these ideas must be verbalized, or explained to team members in one way or another (e.g. in concept art and prototypes). These ideas are also discussed in reviews, interviews, and promotion of the game after its finalization and release. It is also possible to detect some of the underlying ideas when analyzing a game.

Method

I have collected data about design ideas in 25 games, developed by the four major development studios in Sweden and published between 2000 and June 2009 (See Table 1).

I have used a qualitative approach that includes a wide variety of data collection techniques, which gave me both primary and secondary data. The primary data comes from artifact analysis of the games themselves and from interviews with four game designers, each representing one

of the four major game development studios in Sweden (see Table 1). The secondary data comes from different sources, including interviews with game developers made by others (available on the web), official web sites of publishers and developers, web sites advertising individual games, and game reviews in magazines and on the web.

The four interviews I did lasted about one hour each, and was tape recorded, with the consent of the interviewees, and then transcribed to typed format for analysis.

Table 1: Games (with year of release) examined, ordered by developing studio.

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Avalanche Studios
1.  Just Cause (2006)
2.  The Hunter (2009)
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Digital Illusions CE (DICE)
3.  Shrek Extra Large (2002)
4.  Rallisport Challenge (2002)
5.  Battlefield 1942 (2002)
6.  Midtown Madness 3 (2003)
7.  Rallisport Challenge 2 (2004)
8.  Battlefield Vietnam (2004)
9.  Battlefield 2 (2005)
10. Battlefield 2142 (2006)
11. Battlefield Bad Company (2008)
12. Mirror's Edge (2008)
13. Battlefield Heroes (2009)
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GRIN
14. Ballistics (2001)
15. Bandits: Phoenix Rising (2002)
16. Tom Clancy's Ghost Recon Advanced
    Warfighter (2006)
17. Tom Clancy's Ghost Recon Advanced
    Warfighter 2, the PC-version (2007)
18. Bionic Commando Rearmed (2008)
19. Bionic Commando (2009)
20. Wanted: Weapons of Fate (2009)
21. Terminator Salvation (2009)
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Massive
22. Ground Control (2000)
23. Ground Control II: Operation Exodus
    (2004)
24. World in Conflict (2007)
25. World in Conflict: Soviet Assault
    (2009)
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I have used a grounded theory approach [4] to develop categories "bottom-up" from the collected data. This was done by analyzing the design idea data for the games one at the time and then coding each idea with respect to origin, and finally compile the different origins into categories and sub categories.

Previous research

There are very few studies done about game design and the origin of game design ideas. The literature in the area consists mainly of handbooks that aim to teach the reader how to design and develop games. The authors of these books are often experienced game designers or developers that reveal their knowledge and methods.

Tschang & Szczypula [19] have studied game design from a product development perspective. They regard games as a special kind of creative industry product, that they call *virtual freeform artifact*. Their aim is to characterize this kind of artifact, and, using games as example, they create a framework with three major aspects that distinguish them from traditional products: *idea creation*, *constructivism*, and *evolution*.

Idea creation represents the premise that games are "composed of ideas generated by individuals' creative processes" [19]. Tschang & Szczypula examines these creative processes in a vast number of games, and divide them into six categories: *inspiration, influences, vision, background, insight,* and *brainstorming*. Describing and illustrating *inspiration* and *influences*, they touch upon my topic; where do game design ideas come from.

Constructivism stands for "the ability to combine concepts […] into a coherent whole for the purpose of a game." [19] The objective for Tschang & Szczypula is to demonstrate the "plasticity" of the game software that allows this open-ended combination of concepts (in contrast to physical artifacts). Also here they are touching upon my topic, since they give lots of examples of where the combined concepts come from.

Evolution, finally, describes the changes of the artifact over time "as a result of the change in the artifacts' constituents". This change can occur in a specific game during its development, but the evolutionary aspect can also refer to the gradual changes in the game landscape as o whole (or in a specific genre).

Albeit with a different perspective and another objective than in my study, Tschang & Szczypula use a similar method, and partly obtain the same kind of data as I.

Game design

The way a digital game is designed and developed has changed remarkably during the 25 years since the first book on game design was published. When Chris Crawford wrote his book "The Art of Computer Game Design" [8] back in 1984, most games were designed and programmed by one single person. I say 'programmed', not 'developed', because the main component of games at that time was the programming code, not all the assets (graphics, animations and sound) that today require specialized professionals in the development team. Contemporary game development is

an expensive and complex process, especially when it comes to the so called AAA-titles, which can have a development team of more than 100 persons, working for up to three years, or in some cases even more.

The following description of the design process is a synthesis of what my interviewees told me, and how a number of handbooks on game development describe it. [1, 10, 16, 17]

When producing expensive AAA-titles, the phases of the production process are substantially influenced by the financing situation of the game. The first stage, often called *the concept phase*, is about designing a game concept to be presented to a potential sponsor (often an external publisher or the internal financial department). The pitch could be presented in a (pitch) document, but it could also take the form of an oral presentation, maybe supported by a Power-point presentation, or so called concept art. In this stage the design team is very small, since there is yet no money provided for the game.

If the game concept gets a green light from the sponsor, the production goes into *pre-production*, with more people involved. In this phase the assignment is to provide Proof of Concept and to plan the production phase. Research is being done, ideas are searched for in different domains, and the game concept takes a more elaborated form. This phase is perhaps the one that differs the most from company to company. Some developers write a very detailed game design document (GDD), which will be the blueprint to follow during the production while others work in a more agile manner and are more open to changes during the production phase. It is common to make a prototype of the game during the pre-production phase, and sometimes a second approval is required from the publisher before production can start.

The production phase requires even more team members to produce all the assets of the game as well as the program code. The team now consists of many professionals like producers, game designers, programmers, writers, artists, level designers, sound designers, composers and sound engineers. The payments from the publisher are sometimes based on so called milestones, which force the team to follow the time plan. At the end of the production phase there is often an intensified working period, when the game is tested, bugs are fixed, and last minute features are added. When the game is completed, it is distributed to the consumers via retailers or via the web by the publisher, who also advertises it, often by drawing attention to its unique selling points (USPs) or innovative features. The marketing of the game normally starts long before the game is finished, in order to prepare the market for the coming release.

The *post-production* can include making patches with bug fixes, and game balancing changes. Expansion packs with new game areas, levels, objects, characters, and story elements can also be regarded as part of the post-production phase.

Paper organization
The rest of this paper is organized as follows: In the next section I present my model of the game concept, which is developed bottom-up from my data. Thereafter I give an example of a game concept, by analyzing the game *Wanted: Weapons of Fate* (game no. 20 in Table 1). This analysis also gives an idea about how the collecting of data about design ideas in games was conducted. In the next section I present the categories that I developed from the coded data. I explain each category and give a number of examples from the games examined.[2]

THE GAME CONCEPT
A game can be described as an artifact designed with ideas that describe the different components of the game. In this paper I will use the term 'game concept' to stand for the collection of all the important design ideas that constitutes a game. One could say that the game concept is what makes a certain game title a unique work of art. Therefore, e.g. the platform, for which the game is made, is not a part of the game concept, since it is usually regarded as the same title, irrespective of platform.

Game ideas are hierarchical since they can refer to more or less general parts (components) of the game. High-level ideas are about general components, and low-level ideas are about specific components. General components are things like core mechanics or the fictional world of the game, and specific (sub) components are details in the game, e.g. how a specific puzzle is solved or what a particular NPC (non-player character) looks like.

The components of games have been classified by different theorists, like Juul [12], Salen & Zimmerman [18], Björk & Holopainen [2], Perry & DeMaria [16]. There is also a wiki project called Game Ontology Project (GOP) [9], which aims to create a hierarchical framework of game ontology elements. Juul [12] makes a division between two basic components of a game: *rules* and *fiction*. Rules are the principles that control the *gameplay*, and fiction is the *gameworld, the setting*, with its *milieu*, its *characters*, its *story* etc. Other important game components are the *core mechanics* [18] (what the player is actually doing when playing the game).

Typically the basic game concept is defined during the concept phase, but the game concept is further elaborated throughout the whole development process. Initially the designers focus on high-level ideas and later in the

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[2] Note that this way of presenting my study is done "backwards", compared to the order the actual research was done.

development process all team members can come up with low-level ideas, when they shape the actual details of the game. There is no standard way to formulate and document the initial core concept, different developers use different styles and they also use dissimilar names on the document and its parts.

My study shows that a game concept generally consists of two parts (see Figure 1):

1. **The recycled part** consists of ideas that has been used before in earlier games, in a movie, a book etc. Usually they can be bundled together under labels – e.g. a genre name ("This is a First Person Shooter game") or a brand ("This is a new game in the Battlefield series") or with reference to a film ("The game is based on a film with the same title").

2. **The inventive part** consists of game ideas that have not been used in the same way in games before. It is hard to make an unambiguous definition of what an inventive idea is, since newness is a relative concept.

All design ideas in the game concept have an "origin" and a "destination". The origin is the domain from which the idea is drawn; it could be the source of inspiration or something that influenced the designer when he or she came up with the idea. The "destination" is the component of the game that the idea is about (refers to). It could e.g. be the core mechanic, the setting, the way a character in the game talks, or the game's point of view (where the virtual camera is positioned).
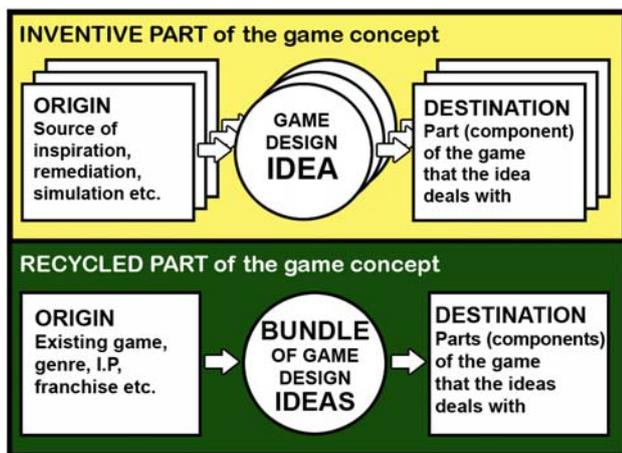
Figure 1: The game design concept.

I will now illustrate the game concept model with an example from my study.

Example: *Wanted: Weapons of Fate* (no. 20 in Table 1[3])
Wanted: Weapons of Fate is a transmediation of the 2008 film *Wanted* (which in its turn is loosely based on a graphic novel, by Mark Millar). In the recycled part of the game there is therefore a bundle of ideas taken from the film (and a few from the graphic novel). As with most ideas drawn from film, they mainly have to do with the *gameworld;* e.g. the setting, the characters and the plot. The game characters have a likeness with the actors that play the film characters, and some of them do the voice acting for their character in the game. The protagonist, both in the film and in the game, is a man called Wesley Gibson, and he is, as you would expect, the main player character in the game (later in the game, under certain conditions, you can also play some of the other film characters).

The story of the game begins just a couple of hours after the end of the film. Gibson is supposed to continue his task from the film: to develop and use his special talents as an assassin following the traditions of an ancient guild called "the Fraternity". There are also flash-backs in the game, where you play episodes that happened before the events in the film. The extended storyline of course involve some new (inventive) elements of the game that consequently goes under the inventive part of the game concept. In an interview made by IGN.com with Nick Torchia, the external producer (from the publisher of the game), he expresses his satisfaction with this way to solve the film-to-game transmediation:

"Look at The Thing and Scarface, these games do not follow the old way of thinking of "see the movie and play the movie". That is old and boring, what Wanted: Weapons of Fate does is dive into the world and expand on it so the player finds out new and interesting things about the universe. [---] [T]ons of new areas! But what is cool about this game is that you do travel to film locations but they are set in different time periods."[4]

Wanted: Weapons of Fate is an action game. The subgenre is a 3D shooter with a third person perspective [1], usually called 'third person shooter' (TPS). As with almost all games, the recycled part of its game concept contains a collection of genre conventions. One of the typical design ideas of the genre that *Wanted: Weapons of Fate* belongs to is that the player controls a character, which is seen from behind in a third person perspective. The game also uses the typical core mechanics of a 3D shooter, which is to move the player character, detect enemies, aim at them and shoot, without being killed by them. 3D shooters often simulates the real world, aiming for realism on many levels; for example concerning the physics of the world, the graphics,

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[3] From now on, I will use the numbers in Table 1, when I refer to the games examined in the study.

[4] Retrieved August, 01, 2009 from:
(http://pc.ign.com/articles/925/925740p2.html)

with light and shadow effects, the sound, and so on. The realism also affects the gameplay in different ways. The enemies often have artificial intelligence, and behave realistically, detecting the player character if he or she is incautious. The amount of weapons and ammunition the player character can carry is limited, and in many 3D shooters there is difference in damage, depending on what part of the body is hit by a shot. [1]

Wanted: Weapons of Fate follows most of these TPS genre conventions, which means that the bundle of design ideas typical for a third person shooter is found in the recycled part of the game concept. Since *Wanted* is an action movie, with a lot of shooting in it, it is of course well-suited to be transmediated to a 3D shooter game.

Now, what about the inventive part of the game concept? We have noticed some gameworld design ideas connected to the extended storyline that was somewhat inventive, but in most cases the more praised inventions concern the gameplay and the core mechanics. The distributor of the game lists the following USPs (unique selling points) on the game's web site:

- *"Bend the laws of physics by curving bullets*

- *'Quick-Chain' Cover to shield yourself and move through the environment with remarkable speed*

- *Take down multiple enemies with sheer precision while using Assassin Time"* [5]

The first one (curving bullets) means that the player can make the bullets from his weapons describe a curved trajectory on its way towards the target, which allows you to hit enemies that are hiding behind objects. This feature has never been used in a game before, which makes it an invention according to my definition. It is also a breach against the realistic approach in the 3D shooter genre. But that doesn't mean the idea is brand new, without any origin. It is actually taken from the film, where all the assassins of the Fraternity have this ability to curve bullets, but the invention is that the developers put it in a game and made it work in the gameplay there. Nick Torchia says in the interview I quoted before:

"This has never been done before in any game – both a blessing and a curse. The good thing is that it is fresh and new; your game already has an identity and you can then build off that. But the challenging part is that there no game reference; since no game out there has this mechanic, we literally started from scratch and we spent months and months trying to get it right. The idea behind curving bullets was great but the execution was the tricky part. Now

that we have it working and it feels effortless, the future looks bright for curving bullets." [6]

What Torchia says at the end of the quote is perhaps that the *invention* (curving bullet mechanic) could become an *innovation*, in the sense that it could become a commonly used mechanic in games.

The second USP ("Quick-Chain" cover) is a well-known feature in games, a variant of what is usually called "cover mechanics", and was made popular in TPS games by the *Gears of War* series. This could therefore be seen as a recycled feature, but one might also argue that the specific way this mechanic is utilized in *Wanted: Weapons of Fate* makes it inventive. Kristen Spencer describes this in his review of the game:

"Wanted's cover system emphasizes chaining your movements, laying down suppressing fire so you can quickly move from one piece of cover to the next undetected, flanking and sometimes even sneaking behind your enemies to score a stealth kill or grab a human shield." [7]

The third USP ("Assassin Time") has also been used in games before. It is usually called *bullet time* and stands for hyper-slow-motion (so slow that you can se a bullet move), often together with unusual camera angels and movements. The first game that used it was *Max Payne* (2001), but it is also borrowed from the movies, especially the Matrix series. Bullet time is primarily a visual, cinematic effect, but in games it can also affect the gameplay, which is the case in *Wanted: Weapons of Fate*, where it can be used to handle several enemies at a time.

In combination, the three described features (together with some other available combat abilities in the game), enable a varied gameplay, which could be regarded as an invention of its own. Combinations of ideas can give effects on the game that becomes something more than the sum of the parts [19].

THE ORIGIN OF GAME DESIGN IDEAS
I will now present the design idea categories in the order of occurrence in my data, with the most frequently used categories first. Under each category, I will also present its subcategories.

1. **Ideas drawn from the game domain**
The most basic ideas in this category are so obvious that they are taken for granted in design situations; it's the high level ideas that make a game a game, e.g. that it must have

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[5] Retrieved August, 01, 2009 from:
http://thewanted.warnerbros.com/ (game info)

[6] Retrieved August, 01, 2009 from:
http://pc.ign.com/articles/925/925740p2.html

[7] Retrieved August, 01, 2009 from:
http://countgameula.com/post/91899106/review-wanted-weapons-of-fate-ps3

rules, a fictional world, and interaction between the player and the game. These ideas obviously belong to the recycled part of the game concept.

Examples: All 25 games in the study

Ideas drawn from the game's (dominant) genre

Most games rest peacefully inside an established and well-known genre. These games use a bundle of design ideas typical for the genre, ideas that belong to the recycled part of the game concept. This goes for all the games in the study, even if a few of them (especially no 2, 5, 12, 14 and 22) also have made contributions to their genre's evolution, by introducing new ideas into the genre concept.

Examples: Games in the study, whose game concept to a large extent consists of genre conventions, are the car racing games (no. 4, 6 and 7). My interviewee from DICE, who was the designer of *Rallisport Challenge 2* (no. 7) says:

"There are hundreds of car games on the market. What is the difference between them, conceptually? Nothing. The goal is the same. We want to create the experience of driving a car." [My translation from Swedish]

Ideas borrowed from another game genre

This category works on the supposition that the recycled part of the game concept is a known game genre, and that the innovative idea is a genre convention in *another* genre.

Example: Battlefield 1942 (no. 5) is a successful first person shooter in a World War 2 setting, that has become a profitable brand for the developer. A common explanation for the success is that the games in the Battlefield series allow the player not only to control the player character, but also a lot of different vehicles (military cars, tanks, boats, air planes etc.). This feature could be said to represent a loan from the so-called vehicle simulation genre.

A special case of this subcategory is when a game borrows bundles of ideas from more than one genre. The first time this is done, it is an invention, but if many games do the same, it can result in an *innovation* in the form of an established *hybrid genre*, e.g. the action-adventure genre.

Example: Mirror's Edge (no. 12) is described as a mixture of a first person shooter and a platform game in GameZone's review:

"When you think of a first-person shooter, you usually have a certain concept in mind. More often than not, the idea includes a fixed view of running down paths and corridors with a gun in hand and hordes of enemies blocking your way. This has worked out for years now, but now EA and Battlefield developer DICE are looking to change up the formula with their latest new IP, Mirror's Edge.

Mirror's Edge is a game that owes more to platformers like Prince of Persia or Assassin's Creed than it does its FPS

brethren, as the title features an emphasis on free running, or parkour, as opposed to shootouts with enemies. You'll perform moves like wall runs and jumps, leaps from rooftop to rooftop, and a variety of other moves in order to get the drop on your foes. While the game is not perfect and suffers from a few design flaws and shortcomings, the game is a great first installment for what hopefully will become a franchise, as well as a pretty revolutionary entry to the FPS genre."

Another way of describing the *Mirror's Edge* is that it is an action-adventure-platform game, like the *Tomb Raider series*, but with a first person perspective.

Ideas borrowed from another game (or game brand)

There could be a fuzzy line between borrowing design ideas and stealing intellectual property (IP). The developers of the game *Limbo of the Lost* (2007) have been accused for plagiarism, since a lot of the assets in the game obviously are copied from other games.[8] But, in most cases borrowing ideas is accepted, probably because it is hard to precisely define what an idea consists of, and thus tell the difference between 'copying' and 'being inspired by'. Furthermore, as this study shows, many ideas have an origin in some other idea, so it is also hard to make sure from which source a borrowed idea actually comes. (The borrowing forms a "chain of influences", and it is probably a matter of coincidence which link in the chain the developer happens to be acquainted with, and get inspired by)

When the developer owns the IP there is, of course, no problem. Many studios cherish a brand they have created, and make series, step by step improving the concept with some new ideas in every sequel.

Examples: As mentioned above, a characteristic feature in *The Battlefield series* (no. 5, 8, 9, 10, 11 and 13) is that the player can control different kinds of vehicles in the game. This is a feature that all new Battlefield games have borrowed from the earlier games in the series. Another shared characteristic, according to my interviewee from DICE (quoted below), is that the Battlefield games don't try to simulate war, but rather to create the feeling you have when *playing* war.

Another example is Grins game *Bionic Commando* (no. 19) that is a sequel to the old NES console game with the same name, from 1988. Grin didn't own the IP, but they got the mandate to make a sequel from the owner, Capcom. Since the sequel came 21 years after the original game (and there have been no other sequel in between), the new game have a quite different appearance graphically, but the core mechanics are the same; in order to complete the given mission, the player is supposed to use the player character's

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[8] See: http://lotl.wikia.com/wiki/Limbo_of_the_Lost_Wiki (retrieved August, 01, 2009)

"bionic arm" to swing through the gameworld and kill enemies.

An extreme form of borrowing from other games is the *remake;* when an old game is recreated with new technology, for modern platforms (computers and consoles)

Example: Bionic Commando rearmed (no. 18) is an enhanced remake of the old NES console game *Bionic Commando* from 1988. It has some new features (e.g. a co-op mode, better enemy AI, and a new soundtrack), but is essentially the same game as the old one.

2. **Ideas borrowed from narratives and visual art**

Narratives are usually stories mediated by books, movies and other art forms, but it could also refer to myths and legends that are hard to associate with an individual work of art.

Ideas borrowed from cinematography and the film domain
The film domain is a very common origin in my data. The most radical type of borrowing from film is the transmediation, when a game borrows a large part of its ideas from one specific movie. The connection to the movie is normally indicated by the name of the game, that is the same, or similar, to the name of the film. Often the film and the game are released at the same time, and promoted together as well.

Examples: Besides *Wanted: Weapons of Fate* (no. 20) that was analyzed earlier, my data also contains two other examples of transmediation: *Shrek Extra Large* (no. 3) that is a transmediation of the first *Shrek* movie (2001), and *Terminator Salvation* (no. 21) that transmediates the 2008 movie with the same name.

Game developers can also borrow features from movies without broadcasting it in the same way as they do with transmediations.

Examples: In a review, Michael L. House describes the synopsis of *Bandits: Phoenix Rising* (no.15) like this :

"BANDITS: Phoenix Rising is reminiscent of a world run amok similar to that from the movie Mad Max 2: The Road Warrior, with gangs competing for resources and survival with combat-ready vehicles of various types." [9]

Grin acknowledges it to on their own web site, where they describe the game like this: *"Set in a Mad-Max style post-apocalyptic wasteland, Bandits is a vehicular-based combat game".* [10]

[9] Retrieved August, 01, 2009 from:
http://www.allgame.com/game.php?id=42183

[10] Retrieved August, 01, 2009 from:
http://www.grin.se/games.aspx

A game can also be influenced by the film medium in general; it could be "*cinematic*". In his book "Cinematic Game Secrets" [15], Rich Newman states that "cinematic" in games earlier just referred to so called cut-scenes, but that "cinematic" nowadays "is a general term used to describe many of the techniques used in the film industry for video game production". This means e.g. to "incorporate good filmmaking techniques throughout the game play" (instead of only in cut-scenes), "better story and characters", "epic music and sound design, the use of celebrity talent (and directing them), and creating better levels through the use of framing, blocking, and camera movement" [15].

Example: According to my interviewee at Grin, who had the producer role in the development of *Terminator Salvation* (no. 21), one of the three "keywords", used by the developers of the game as guidelines for finding new features in the game, was "cinematic" (the other two were "man against machine" and "tactical")

Camera position and camera movements are important features in games, especially since they got 3D graphics.

Examples: Ground Control is a Real Time Strategy (RTS) game. In my interview, the game designer of the game, recalls how the idea was initiated:

"Our founder had played a game called **Command & Conquer**[11]*, a large 2D game, and what he wanted... this is so funny because he is so extremely distinct about what it was that ignited the idea... he played the game, and there was this little guy throwing grenades, and he wanted to see this guy in full 3D. He didn't want to see him that small in a top-down perspective; he wanted to go down with the camera, all the way down to the ground, and see, from all angles, when he threw the grenade. So that's why we made a 3D RTS game. That was the basic idea, that started it all."* [my translation from Swedish]

The result of this "seed idea" [19], is that the RTS genre's point-of-view convention at that time (a 2D top-down view), was replaced by a player controlled free-moving camera, that could move in three dimensions, from top-down view to a ground view ("craning"), and also zoom in an out, tilt, pan, and move sideways ("tracking"). These camera movements are well known by the film audience of today, so they are easy to comprehend and use in the interactive game context.

Ideas borrowed from books
Many movies are transmediations of books, so when an idea in a game seems to be borrowed from such a movie, one might have to ask the game designer whether the influence came from the movie or from the book.

[11] Command & Conquer is a Real Time Strategy (RTS) game released 1995.

Examples: As told earlier, the film *Wanted* is loosely based on a graphic novel (comic book) by Marc Millar, and although most features in the transmediated game *Wanted: Weapons of Fate* (no. 20) are borrowed from the film, a few game ideas are obviously taken from the book, since they occur only in the book and not in the movie (that applies for example to some of the characters in the game). In an interview by Michael Thompson, the director of the game says that the game tie into both the film and the book. "Story-wise, it's heavily connected to the movie... but visually, it has some hook-ins to the comic".

Comic books (and cartoons) can also lend their art style to games.

Example: Battlefield Heroes (no. 13) has a cartoon-like style. However, it has been questioned if the designers of *Battlefield Heroes* got their idea from cartoon art style, or if they imitated the similar game *Team Fortress 2*, that was released in October 2007. In an interview by Wesley Yin-Poole, the executive producer of *Battlefield Heroes* claims that the developers did not imitate *Team Fortress 2*:

"If you asked our art director he would point out probably 200 differences in the art style between our game and Team Fortress. There are only two cartoony shooters out there and those are the two. If there were 50 cartoony shooters out there we wouldn't be having this discussion. No one says that Battlefield: Bad Company's ripping off Call of Duty because it's realistic. [---]We developed our art style in January 2007. At that point there were very little images out there from Team Fortress. As more details about Team Fortress came out we said 'well there's a similarity here because we're both cartoony, shall we change and go realistic again?'. But no we decided we wanted to keep going. The alternative would have been another gritty, realistic WW2 game and everyone's fed up with those. We really believe in our style and we're just going to go ahead and do it." [12]

Ideas borrowed from other narratives
In every culture there are traditional narratives and folklore that could be used as inspiration when developing games.

Examples: The ultimate goal in *Bandits: Phoenix Rising* (no. 15) is to conquer an impregnable town with high walls called *Jericho City*. The towns name is of course borrowed from the story about the battle of Jericho in the Bible.

The subtitle of the game alludes to the firebird in ancient mythology that rises again after death. In the game *Phoenix* is a weapon, the only battle-car powerful enough to conquer Jericho City.

3. Ideas borrowed from human activities
Since games are interactive and thus require activity from the player, it is not unexpected that many game design ideas come from human activities in real life. Such activities can be *simulated* in games, and the main goal is often to give the player the *experience* or the *feeling* of the simulated activity.

Ideas borrowed from sports
Several ideas in my data come from different branches of sport.

Example: The Hunter (no. 2) is a hunting game, a genre that simulates hunting. The recycled design ideas in the game are mostly genre conventions, so they are actually borrowed from the *genre*, and not from the hunting sport directly. The inventive part, on the other hand, consists of ideas that are inspired by the designer's knowledge of hunting. In my interview with the lead game designer of the game, he said that the basic idea was to make the game realistic in the sense that it shouldn't be too easy to find the animals and to come near them to be able to shoot them. In his opinion, hunting games in general focus only on the aiming and the shooting part, and allow the player to find and come near the animals without any effort. To make *the Hunter* more realistic, he therefore introduced a track mechanic into the gameplay, which means that the player has to walk around in the wide forest, listening for deer calls and looking for tracks and droppings. To further imitate authentic hunting, the game also simulates different weather conditions, and wind directions, which affect the animal's ability to detect the hunter.

The most frequent kind of sport, that the ideas in my data come from, is racing. Game no. 4, 6, 7, 14 and 15 are racing games. The design ideas the developers mention when they talk about their racing game, is very often related to the player *experience* they want to create. In an interview by John "Gestalt" Bye, Grin's CEO says about *Ballistics* (no 14):

"Our producer […] wanted to nail that speed sensation you have when you're flying low in a jet or using a road camera on an F1 car. He worked out a way to get good speed reference by redesigning the usual racing road into a tunnel which gives you reference in your whole 360 spectra. Adding outside scenes he then found the final part that was to make a total speed simulation." [13]

There is also an arcade version of Ballistics that reinforces the simulation even more. It has a motion simulator in the cabinet that provides force feedback through the seat, which

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[12] Retrieved August, 01, 2009 from:
http://www.videogamer.com/pc/team_fortress_2/news/dice_denies_battlefield_heroes_tf2_rip-off_claims.html

[13] Retrieved August, 01, 2009 from:
http://www.eurogamer.net/articles/i_grin2

allows the player to experience up to 2g of acceleration and 100 movements per second whilst playing the game. [14]

Ideas borrowed from playful activities
This subcategory is closely related to the game domain, but refers to the *activity*, not the artifact that sometimes is used. Children's play is one example of this.

Example: As mentioned before, the producer at DICE that I interviewed, describes the core vision behind all *Battlefield* games (no. 5, 8, 9 10, 11 and 13) like this:

"We don't try to make people feel it's a war simulator. We don't try to create war, we try to create the feeling you had when you were a kid and played war, [or] when you go out in the woods and play paintball." [my translation from Swedish]

Some playful activities are very physical, and therefore similar to sport.

Example: The gameplay in *Mirror's Edge* (no. 12) is inspired by so called *parkour*.[15]

Ideas borrowed from war and warfare
A lot of games simulate war in various ways. Depending on genre, the gameplay focuses on different aspects of war.

Example: Massive's games (no. 22, 23, 24 and 25) are all Real Time Strategy games. Sometimes they are categorized as Real Time Tactics (RTT) games, since they focus on the tactical part of the warfare and not on base- and unit building, as most RTS games do. This means that the ideas behind the gameplay are drawn from tactical *group* activities in a war.

The *Battlefield games* (no. 5, 8, 9 10, 11 and 13) on the other hand are First Person Shooters (FPS), and consequently they draw their ideas from a more individual perspective of a war. However, since these games can be played in multiplayer mode, the designers also have to borrow ideas from tactical warfare.

4. Ideas borrowed from human technology and artifacts

If human activities mainly influence ideas for the gameplay, this domain perhaps is more likely to influence the gameworld.

Borrowing from historical or contemporary society
Many game developers have an ambition to make realistic games, and therefore they borrow ideas from contemporary, or (if the game takes place in the past) historical technology and artifacts. However, this doesn't mean that the striving for realism is allowed to overshadow the ambition to make the game fun to play.

Example: In a video film made by Massive and Ubisoft, lead artist Anders Lejcak, talks about the realism in World in Conflict: Soviet Assault (no. 25):

"First of all it's a reality based game, so our main source of inspiration is, well, the surrounding world, the nature, and the real life architecture. [---] We also have to be careful, because there's a lot of people that are really interested in military stuff, so we can't make things unrealistic."

But he also admits that they don't always choose the most realistic alternative:

"We are looking for 'post card locations' that are kind of typical for a specific environment, but a bit over the top... a bit... too much, I think that makes it extra fun to destroy it."[16]

Predicting future technology and artifacts
Many games are set in the future, and that means that the designers and the artists must have ideas about artifacts and technology in the future. One way to find such ideas is to study visions of the future, and the state of the art of today, and then "extrapolate" this to a plausible prediction of the future.

Example: In the interview (by John "Gestalt" Bye) quoted earlier, Grin's CEO describes the vehicles used in Ballistics (no. 14):

"In the races you use vehicles called Speeders, hover bikes which are either attached to a magnetic field inside the tunnel that makes up the race track, or can be driven detached from this field and freely accelerate inside the tunnel."[17]

This technology is still science fiction, but it is apparently inspired by hovering vehicles, like hovercrafts, using air instead of magnetic field, and by experiments with magnetic levitation trains in Japan.

Another example of this way of predicting future technology can be found in *Ghost Recon Advanced Warfighter* (no. 16), developed by Grin. On the Xbox site about the game the advanced war technology in the game is described:

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[14] Retrieved August, 01, 2009 from:
http://www.trio-tech.com/pdf/ballistics_sell_sheet.pdf

[15] Parkour is "a recreational pursuit in which participants traverse urban structures by running, jumping, vaulting, rolling, etc." (http://www.parkour-online.com/What-is-Parkour.html)

[16] Retrieved August, 01, 2009 from:
http://www.youtube.com/watch?v=yI34WNiD9ao

[17] Retrieved August, 01, 2009 from:
http://www.eurogamer.net/articles/i_grin2

> *"The soldier of the future: Gain access to the future of military technology. Using a fully integrated combat system with cutting-edge weapons and communication systems, gamers will embody the soldier of the future. Based on actual military research, the Ghosts give gamers a realistic view of how war will be fought in the next decade."*

As said in the quote, some of this technology is based on military research, namely the US Army *Future Combat System* project that included the *Future Force Warrior* project. [18]

CONCLUSIONS

All the ideas I examined have an origin somewhere outside of the creator's mind. Ideas don't come out of thin air, but from different domains of the human experience and fantasy. My study shows that games are a part of the cultural eco-system that has been called the convergence culture. The domain categories I have extracted from my material are:

1. the game domain
    a) the game's (dominant) genre
    b) another game genre
    c) another game (or game brand)
2. narratives and visual art
    a) cinematography and the film domain
    b) books
    c) other narratives
3. human activities
    a) sports
    b) playful activities
    c) war and warfare
4. human technology and artifacts
    a) historical or contemporary technology and artifacts
    b) future technology and artifacts

This should be seen as a tentative classification, since my data set is limited. It is likely that the classification will be modified, when more games are examined. For instance; since it is expected that ideas can come from all domains that humans can experience, there are two main categories from the non-human domain (analogue to the third and fourth category above), that seem to be missing:

5. events in nature (including animal activities)[19]
6. objects in nature (including organisms) [20]

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[18] See: http://en.wikipedia.org/wiki/Future_Force_Warrior (retrieved August, 01, 2009)

[19] This category could include games that are playing with the laws of physics, like *Crayon Physics Deluxe* (2009)*,* by Petri Purho.

[20] Will Wrights game *Spore* (2008) could be seen as an example of both these categories (5 and 6).

There are probably also subcategories missing in the classification above, one is *non-digital games.* Many digital games are based on, or inspired by, board games and other non-digital games.

Returning to the discussion about inventiveness in the game landscape, I believe that there are many variables that affect whether a game design idea is regarded inventive or not, the origin of the idea is just one of those variables. A variable that my interviewees emphasized is *how* the ideas are implemented. A game design idea that is borrowed from e.g. a film, could still be used in the game in a creative way, that justify placing it in the inventive part of the game concept. In the analysis of *Wanted: Weapons of Fate* (no. 20), I argued that the *combination* of otherwise non-inventive ideas sometimes make an inventive high-level idea.

When it comes to the origin of the ideas, it seems as ideas from domains far away from the game domain tend to be more inventive, than ideas from the game domain itself or from similar domains. Most of the game ideas that I have assigned to the recycled part of the game concept come from the game and the film domain. As expected, sequels and film transmediations are often criticized for being non-inventive.

Future research on the origins of game design ideas needs to study games developed in other parts of the world, and other types of games, like causal games, and indie games.

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