

# Ludoforming

## Changing Actual, Historical or Fictional Topographies into Ludic Topologies

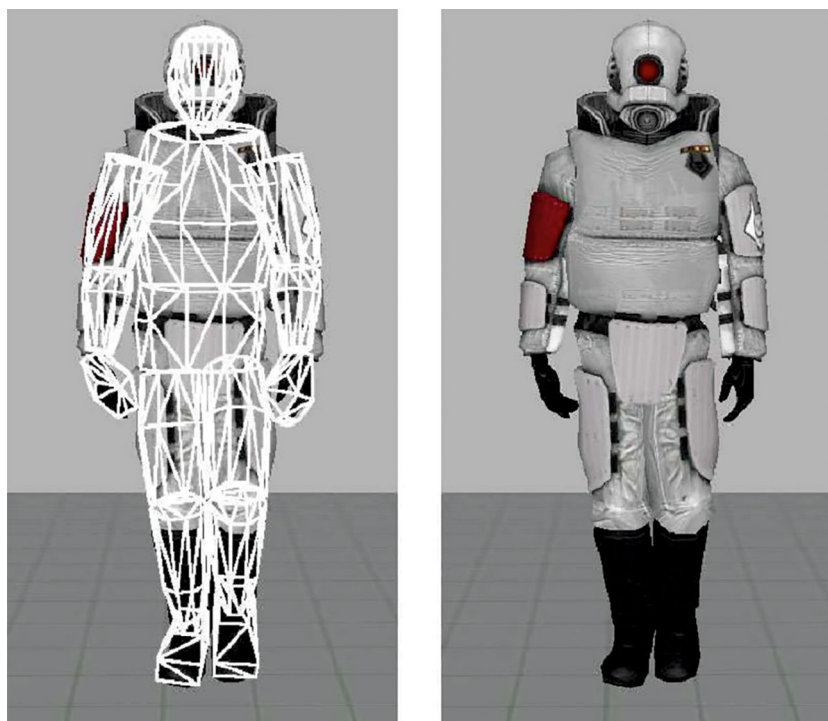
---

Espen Aarseth

How are non-ludic geographies used in games? What happens in the process of changing a real or fictional space into a virtual arena for gameplay? Most ludic spaces are invented more or less from scratch, usually inspired from real, historical or fictional spaces but without any claim to absolute or approximate fidelity. Like Metropolis or Gotham City, they are not representing a particular place in our world, but generic ideas of the possible or the fictional. Adams (2003, 6) even makes the claim that “ludic architecture is disanalogous from real-world architecture.” But sometimes, real, fictional or historic landscapes are found in games, and that situation is the focus here. What operations are performed in the ludification of a geography?

This paper addresses the process and significance of *ludoforming*, that is, turning a contemporary, historical or fictional landscape into a gameworld. Ludic landscapes consist of two layers that are superimposed, but independent: The topographical, which is presented by the game engine to the player, and the topological, which is the actual room-for-movement through which the player's tokens navigate. This distinction is inspired by Andreas Gregersen's (2008, 182) doctoral dissertation where he distinguishes between the physical simulation of a game object and its graphical representation (fig. 1a-b). Why we would want to make this distinction becomes clear when we consider familiar game situations where parts of bodies are seemingly impossibly overlapping with walls or floors.

Fig. 1a-b: Combine soldier from Half-Life 2: physical model and fully textured character model



This is yet another aspect of the fundamental duality between code and appearance or between mechanics and semiotics, that I pointed out in *Cybertext* (Aarseth 1997), and which was first theorized as ‘intrinsic’ vs. ‘extrinsic fantasy’ by Malone (1980). Information about the hidden layer is fed us through the representation layer, but we usually have no problem seeing through the representation and discern the ludic reality of the situation. When parts of our avatar appear temporarily lodged in the landscape, we don’t panic but simply dismiss the tableau as a graphical ‘artefact’ without ludic significance (fig. 2a-b). In a fiction, on the other hand, we would assume that body parts submerged in walls would have special significance and possibly even fatal consequences. But games are not fictions, although *videogames* may contain both.

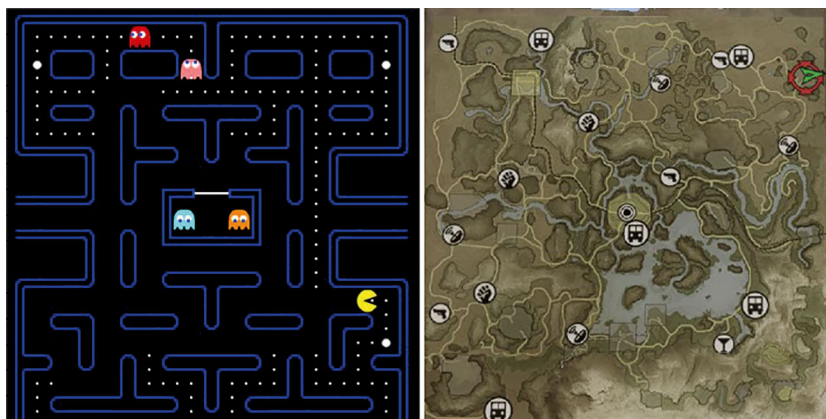
Fig. 2a-b: The Quake Arena tower (right) also consists of (collision) boxes, not human-shaped avatars



Ludoforming is not a new trend in games, but can be found in the very first extensive landscape game, Crowther and Woods' (1976) *Colossal Cave Adventure* where William Crowther faithfully mapped parts of the Mammoth Cave-system in Kentucky to serve as the world simulation. Crowther was an avid spelunker, and created the cave simulation as a hobby project for his daughters (Jerz 2007).

If we zoom out and look at game landscapes in general this way, we can make the same distinction between topography and topology. In *Myst* (Cyan 1993), we are bound to very narrow points of navigation, within a topology that resembles a hypertext novel or a bidirectional graph, while the visual representation of the landscape appears much more accessible, promising a lot more than the player can access. In *Half-Life 2* (Valve Corporation 2004), we are marching along a unicursal corridor that is cleverly masked by being embedded in a seemingly open world. Even in fairly open worlds, such as the 50 km<sup>2</sup> world of *Far Cry 2* (Ubisoft Montreal 2008), the hills and mountains form a labyrinth very similar in shape to that of *Pac-Man* (Namco 1980) (Fig. 3a-b).

Fig. 3a-b: Pac-Man and Far Cry 2 with the same labyrinthine topology (including teleportation between certain points on the edges of the map), but different topography; bad guys inhabit the center



This is all well and good. Players understand and accept the game makers' need to shape the game world in order to achieve their ludic design goals. But what about game worlds explicitly modelled on real or fictional locations? One of my biggest ludic disappointments was playing *Project Gotham Racing* (Bizarre Creations 2001), which promised racing tracks from cities like San Francisco. Unfortunately, the very narrow view from the track could have been from anywhere, and lacked any kind of resemblance to the real city.

We can assume a number of different motivations for using well-known landscapes as game worlds: 1. *sheer recognition value*: Having a famous location generates curiosity and an interest in exploration; 2. *nostalgia*: In a model of a real place the players may revisit a favorite spot; 3. *authentic simulation*: Geographical fidelity is a must for historical games and simulators of all kinds. The careful mapping of known landscapes provides players with not just added value, but possibly also the best reason to pick one game over another. Ludoforming provides multiple pleasures but also the risk of player dissatisfaction and rejection if its promise is not made good.

## Topology vs. Topography in Ludic Environments

Ludic landscapes consist of two layers that are conceptually superimposed, but independent: The topographical, which is the sign-stream presented by the game engine to the player, and the topological, which is the actual room-for-movement through which the player's tokens navigate. In these projects, where real

or fictional space is modelled and virtualized for ludic purposes, or *ludoformed*, the latent conflict between topology and topography becomes apparent. Doors that should have been openable aren't, and fences that ought to be climbable are impassable. The topography, inasmuch as it pretends to represent real space, fails to do that as well as support the gameplay. The worlds have borders where none should be, and painted-on doors where functional and openable ones should be. Topology rules the ludic world. Gameplay is topological, and the fidelity of the topography therefore yields to the ludic topology.

### S.T.A.L.K.E.R.: Ludoforming as Cut-Up Technique

*S.T.A.L.K.E.R.: Call of Pripyat* (GSC Game World 2009) is a case in point. The game takes place in the vicinity of the real Chernobyl site, to the extent that the game map is clearly borrowed from the real, abandoned town of Pripyat. However, the topographies are not identical. Areas in the game world are pieced together from the real locations in a most eclectic fashion. In this case, Ludoforming appears to be taking the interesting bits of a landscape, cut them up, and put them together in a new map, a bit like reconstructive surgery. The face of the landscape has been changed, but we recognize certain areas (fig. 4a-b).

Fig. 4a-b: Pripyat, left: Google Earth, right: ludic landscape – notice the different width of buildings



The *S.T.A.L.K.E.R.*-series is a special case of ludoforming, given the extraordinary heterogeneous origins of the landscape. The initial work in this heteroglossic, transmedia amalgam is the Strugatsky brothers' novel *Piknik na obotschinje*

from 1971, first adapted into a film as *Stalker* (Tarkovsky 1979) and then the game series in 2007 to 2009. In the novel, an alien, space traveling race has visited earth briefly and left behind certain mystical and powerful artefacts, like leftover trash from a picnic by the roadside, thereby creating hostile and unpredictable ‘zones.’ In the novel and film, guns are not the way to solve problems, but will only create worse ones, whereas in the games, weapons are a commonplace necessity. In the book and games, however, there is a focus on the artefacts and their effects which are completely missing from the movie. Finally, today real ‘stalkers,’ documented on YouTube, are entering the zone around Chernobyl/Pripyat and bringing back artefacts from the abandoned houses, as a parallel to the novel (fig. 5a-d).

*Fig. 5a-d: Pripyat on the left, ludo-Pripyat on the right*





## TLOTRO: From Fictional to Virtual Map

The MMORPG-adaptation of J.R.R. Tolkien's *The Lord of the Rings* from 1954 is perhaps the best example of the ludoforming of a fictional world, since the fictional map in the novel is the most recognized and detailed of its kind. The virtual world of the game is dramatically different from the fictional, even though it topologically resembles it to a certain degree. As can be seen from the below illustrations (fig. 6a-b), however, the areas which are ludoformed represent a selection of the novel's core landscape rather than the whole sub-continent. Furthermore, the distances are shrunk to such a degree that the 200-mile road from Bree to Rivendell can be traversed on horse in ten minutes in the game. In the words of one anonymous player of *The Lord of the Rings Online* (Turbine 2007) complaining on a game forum: "Why can't I go where I want? Why are there invisible walls, why are the trees in Old Forest more like a wall than like trees? Why the hell does it take 10 minutes to ride from Bree to Rivendell?"

Fig. 6a-b: Map of Middel-Earth in Tolkien's printed novel (left) and in TLOTRO (right)



## Ludo-Compression in 'Red Dead Redemption 2'

We see this same mismatch in most large-scale open game worlds that are ludoformed; a recent example can be found in *Red Dead Redemption 2* (Rockstar Studios 2018), where the player/protagonist, Arthur Morgan, must ride from the snowy Rocky Mountains to the fictionalized New Orleans, 'St. Dennis.' This can be done in minutes, not weeks, and as we study the map, we see ludo-compression at work; the whole of the American Southwest, an area that should span at least a quarter of the lower 48 states, is reduced to a few dozen square miles (fig. 7). Notice how much relative space is taken up by the city itself. Railroads carve through the landscape, from the low-land lakes by the city to the mountains in the North, but as I rode the train for a good hour or so, and as can be seen below, it looped around

to the same place I boarded it, circling the map like a typical but expensive model railroad display cabinet.

Fig. 7: Red Dead Redemption 2 – *the wildish west in a nutshell*

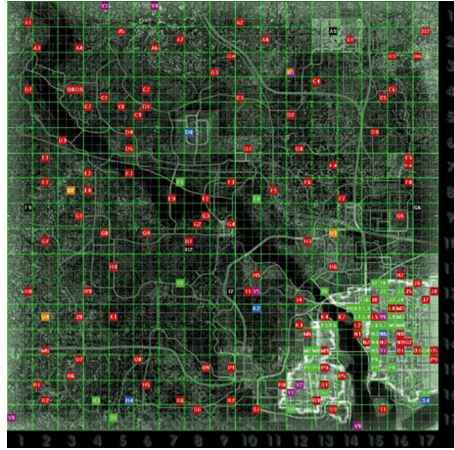


### **'Fallout 3': Washington, D.C., as an Incomplete Wasteland**

*Fallout 3* (Bethesda Game Studios 2008) has an interesting, dual map structure; primarily a vast, open landscape littered with various places to the west and north, and a labyrinthine set of ground-zero-like ruins in what used to be Washington, D.C., to the southeast (fig. 8). In the ruined city, the player must navigate by subway tunnels to make their way, while in the open wilderness most areas can be reached by straight-forward trajectories. The game is a spectacular form of ludo-forming, which retro-anticipates a post-holocaust land, using nuclear devastation as a form of estrangement that has transformed the familiar urban and suburban areas into a wilderness that retains place-names and ruins from the players' present and future.



Fig. 8: Fast-travel locations in Fallout 3



## Ludic Space Deludified

The inverse of ludoforming occurs when an indigenous ludic space reaches a status that transcends its ludic purpose. This opposite movement might be termed deludification, whereby an original game landscape is transformed by social experience into an ontologically non-fictional, merely physically virtual space of social importance. Typical examples hereof is central meeting places in massive multiplayer games like *World of Warcraft* (Blizzard Entertainment 2004), where virtual cities like Ogrimar or Stormwind become non-physical but socially real alternatives to our places of living and doing business.

This may happen when players attach meaning to the place independent on the intended gameplay the place was designed for. One example is the lake in Winterspring in *World of Warcraft* where the infamous ‘funeral raid’ took place, in which members of the enemy faction crashed a commemorative moment for a deceased guild member; it used to be the mourned guild member’s favourite fishing spot, but is now remembered as the site of one of the most contested episodes in the history of MMO gaming (Goguen 2009).

Deludification of this nature is most typical in social, multiplayer games, where of course many non-ludic activities tend to transpire as part of the players’ use of the virtual world for non-ludic socializing. However, one might also imagine *deludified* space in other kinds of games. A classic example was made by the artist Jim Munroe (2004), when he was documenting his experience as a tourist in Liberty City, by simply walking around and observing the city as though it were a

real place and not a gameworld (fig. 9). Munroe ironically also points out the positive difference between a ludoformed city versus its source.

Fig. 9: “It’s the place where the game *Grand Theft Auto III* is set...”



## Aesthetic Parallels to Ludoforming in Painting and Fiction

Although ludoforming is by eponymous necessity restricted to games, it might be worthwhile to contemplate parallels from the other arts. In literature, the phenomenon of fictionalizing real space by adapting it to narrative needs is common but also a bit hard to pinpoint, since the comparison may not be very clear. In painting, it is easier to spot transformations, as the differences show up visually, just like in ludoforming. For instance, in James Holland's *Venice* from 1850 we have a scene that absolutely resembles Venice, except that it does not “correspond to any real view but is a pastiche of known and imaginary features” as the wall text in the Manchester Art Museum reads (fig. 10).

Fig. 10: James Hollands 'Venice' – but exactly where in Venice?



In theatrical plays and in movies, likewise, it is far from unusual to use real places that represent themselves or stage sets that faithfully mimic the real location in which the action is taking place. But here also, the mixing of faithful or real and invented elements will often be the preferred technique, serving the needs of the dramatic presentation rather than expectations of historical accuracy.

## What is Ludoforming?

Perhaps my construction of *ludoforming* might be a form of ludo-essentialism (the insistence that games are essentially different from all other kinds of human expression); or, does it perhaps belong to a more general phenomenon? If so, which one? Are there aspects of ludoforming that cannot be found in non-ludic spatial transformations, or can it simply be subsumed under a more general label? Here we might consider a number of possible candidates:

*Simulation:* Simulations typically work by reducing a phenomenon to its essential features (with the essential thus defined by the context and purpose of the simulation), thereby avoiding the full and indiscriminate representation of everything present in a situation. Therefore, ludoforming could be seen as a form of simulation, where only game-relevant aspects are included, but with most ludoformed landscapes this is not truly the case. Instead, we see that the landscape is altered from the original (tweaked, pinched, and otherwise enhanced to afford better gameplay), and this is not congruent with simulation.

*Remediation:* Bolter and Gruisin's (1999) concept is not very clearly defined, but has to do with the media-channel transfer of content. As such, it is clear that a real or historical landscape cannot be said to be remediated, only mediated, since it is not mediated originally. A fictional landscape, on the other hand, can be said to be remediated when it appears in a game, but this does not mean that it has been ludofomed, since no special care need have been made for its ludification. So ludofoming and remediation are not necessarily overlapping, nor, when they do overlap, sufficiently overlapping concepts.

*Adaptation:* Ludofoming could be seen as simply a form of adaptation, that is, aesthetic code-switching from one medium to another, eg., from novel to film, or from videogame to board game. However, while some cases of ludofoming are clearly adaptations, such as the LOTRO example above, most are not. And even when they to some extent are, such as the early instalments of the *Call of Duty* series, they present the player with so much new material that 'adaptation' is not a fitting term. 'Allusion' might be a better term here.

*Theming:* Theming, or "the use of an overarching theme, such as western, to create a holistic and integrated spatial organization of a consumer venue" (Lucas 2007: 1) can also be connected to ludofoming, but it does not have to be; instead, they appear to be orthogonal: one can theme without ludofoming and one can ludofom without theming, but they can also be combined. An extreme example of such a combination would be the Parker Brothers' board game *Monopoly* from 1935, which not only is themed with the street names from a capital or important city in its localized versions, but also can be said to be a ludofomed version of same. The main difference, however, is that theming involves modifying the representational aspects of the *target* alone (and functional), while ludofoming does the opposite: it tries to reproduce the representational aspects of the *source* while modifying its structural aspects.

As should now be clear, ludofoming is not really reducible to these somewhat similar representational processes. This does not mean that it could not in principle be reduced to some other, overarching concept, but let's assume, for now, that such a concept does not (yet) exist. Might there be other terms that provide parallels to ludofoming? I have already coined 'picturaforming' in the case of James Holland's *Venice*, but there are much more well-established notions at hand. For instance, fictionalization, and also dramatization, are clear parallels which contain some but not all of the operational qualities of ludofoming. In both cases key representational aspects are typically sought preserved, which structural aspects are modified to meet the target purpose. But neither these purposes, their structural aspects, nor the operations needed to modify them are the same.

Ludoforming's more general category is *ludification*. To ludify is to turn something into a game (as opposed to gamification, which does not change the main purpose of the endeavour, but only tries to stimulate the operators' motivation), by changing communicational, structural and material aspects in such a way that the original purpose is secondary or abandoned altogether. Ludoforming, then, is that part of ludification which has to do with the landscape. Ludoforming works by editing an existing topography to fit the ludic topology. It often but not necessarily involves a restriction, reduction or distillation of the source landscape, or simply a reshaping that meets the ludic demands, for instance in terms of balancing the game or making it more (and sometimes less) challenging.

The actual world is not a good playground, so when it is used unchanged, like the last area in *S.T.A.L.K.E.R.*, it is the least successful in the game. Another example is the highly documentary WWII-shooter *Brothers in Arms: Road to Hill 30* (Gearbox Software 2005), where the landscape from historical battles were faithfully modelled down to the shape of the window sills (fig. 11). While the title deserves praise for successfully recreating the tedious and repetitive tactics of authentic warfare, it did not, at least for this player, give the same satisfactory feeling of play as the more cinematically derived, ludoformed titles.

Fig. 11: *Brothers in Arms: Road to Hill 30*



## References

- Aarseth, Espen (1997): *Cybertext: Perspectives on Ergodic Literature*, Baltimore, MA/London: Johns Hopkins UP.
- Adams, Ernest (2003): The Construction of Ludic Space, in: *Proceedings of the 2003 DiGRA International Conference: Level Up*, [digra.org:8080/Plone/dl/db/05150.52280.pdf](http://digra.org:8080/Plone/dl/db/05150.52280.pdf).
- Bethesda Game Studios (2008): *Fallout 3*, PC: Bethesda Softworks.
- Bizarre Creations (2001): *Project Gotham Racing*, Xbox: MS Game Studios.
- Blizzard Entertainment (2004): *World of Warcraft*, PC: Vivendi.
- Bolter, Jay David/Grusin, Richard (1999): *Remediation: Understanding New Media*, Cambridge, MA/London: MIT Press.
- Crowther, William/Woods, Don (1976): *Colossal Cave Adventure*, PDP-10: Crowther/Woods.
- Cyan (1993): *Myst*, PC: Brøderbund.
- Gearbox Software (2005): *Brothers in Arms: Road to Hill 30*, PC: Ubisoft.
- Gregersen, Andreas Lindegaard (2008): *Core Cognition and Embodied Agency in Gaming: Towards a Framework for Analysing Structure and Function of Computer Games*, PhD thesis, University of Copenhagen.
- Goguen, Stacey (2009): Dual Wielding Morality: World of Warcraft and the Ethics of Ganking, in: *Proceedings of The Philosophy of Computer Games Conference 2009*, [proceedings2009.gamephilosophy.org](http://proceedings2009.gamephilosophy.org).
- GSC Game World (2009): *S.T.A.L.K.E.R.: Call of Pripyat*, PC: bitComposer Games.
- Jerz, Dennis G. (2007): Somewhere nearby Is Colossal Cave: Examining Will Crowther's Original 'Adventure' in Code and in Kentucky, in: *Digital Humanities Quarterly* 1/2, [digitalhumanities.org/dhq/vol/1/2/000009/000009.html](http://digitalhumanities.org/dhq/vol/1/2/000009/000009.html).
- Lukas, Scott A. [Ed.] (2007): *The Themed Space: Locating Culture, Nation, and Self*, Lanham, MD/Plymouth: Lexington Books.
- Malone, Thomas W. (1980): *What Makes Things Fun to Learn? A Study of Intrinsically Motivating Computer Games*, Palo Alto, CA: Xerox.
- Munroe, Jim (2004): My Trip to Liberty City, [youtube.com/watch?v=fxpDHIH5PKk](http://youtube.com/watch?v=fxpDHIH5PKk).
- Namco (1980): *Pac-Man*, Arcade: Midway Games.
- Rockstar Studios (2018): *Red Dead Redemption 2*, PS4/Xbox One: Rockstar Games.
- Tarkovsky, Andrei (1979): *Stalker*, Film: USSR.
- Turbine (2007): *The Lord of the Rings Online*, PC: Turbine.
- Ubisoft Montreal (2008): *Far Cry 2*, PC: Ubisoft.
- Valve Corporation (2004): *Half-Life 2*, PC: Valve Corporation.