

# Stepping Back: Players as Active Participators

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## ABSTRACT

Instead of confining the player to a single role, the *active participator* model positions the player in a more flexible position towards the fictional gameworld: involved and immersed in its various events without being limited to one role. The research project *Common Tales* explores this model in a serial game structure that stages the flexible relationship between the two game heroes. Players can change controls from one character to the other, guiding them through their adventures, and shaping their relationship with each other. Enabled through interactive functionality and expressed through cinematic mediation and spatial organisation, the character-driven gameworld engages the player as the central addressee and originator at the same time.

## Keywords

Character, Identification, Interface, Space, Cinematic Mediation

## INTRODUCTION

Poole claims: 'In the cinema, the world is projected *at* you; in a videogame, you are projected *into* the world' [22]. This is not the case – at least not in single-player third-person point-of-view (POV) videogames such as the *Tomb Raider* saga. 'You' are not present in this fictional world created by these games, but you can control a character who is present in the virtual world. This character has certain abilities and limitations that are not directly related to the interactor's own physical abilities. They are distinctly artificial elements based in the rule-system and design of the game. They are made available to the player and provide a defined and structured point of access for participation in the gameworld. Players can feel present in the fictional world of the game but they are not embodied in this world themselves. The question of identity and embodiment of the player have been discussed in academia (e.g. [29] [24] [27] [11]), but a specific use of the distance between player and virtual character is still underdeveloped. While playing a videogame, the player does not have to merge with a single role inside the gameworld to have a meaningful experience. The given distance between player and character can be used for what this paper calls a player-positioning as a participator in multiple roles.

A changing positioning and perspective towards the events in the fictional world is a regular feature for readers of books or audiences of films. It is a valuable element of these media's narrative capabilities (for discussion of changing perspectives in film see

e.g. [30] [2]; for approaches towards narrative perspective in literature see e.g. [7] [1] [10]; for a discussion of the role of visual perspective in interactive digital media see e.g. [16]). For example, the changing identification of a film audience during the narrative is an immensely important part of cinematic storytelling. Through a shifting of the audience's perspective, expert directors can make an audience hope for protagonists and antagonists at the same time of intensify a love-story by portraying both lovers' fears, hopes, and motivations. A variable player-positioning offers a powerful technique for dramatisation in character-driven videogames.

### **Approach: Characters – Multiple Points of Access and Identification**

During the navigation through the virtual world of a 3D game, the position of the player-avatar can function like a selector that activates different events in space. The virtual character can be seen as kind of cursor that symbolises the player's access to the gameworld not unlike the 'intelligent cursor' of many 2D point-and-click titles. The movements of the player-avatar are limited by walls, ceilings, and any other form of spatial restrictions; its manoeuvrability allows only a certain range of explorative movements that excludes some areas and routes. In other words, the character provides a designed point of access into the game through its functionality within the restrictions of the gameworld and through the avatar-control granted to the player. Whether through their visual appearance or through the abilities the player is granted by the character in the virtual world – videogame characters attract the player's interest. Poole argues: 'Good characters are good largely by virtue of having a wide range of physical abilities, and by having those physical abilities particularly well animated' [22]. The access to the virtual world through an appealing character invites the player to sympathise with the virtual hero, initiating the identification process with the virtual character. It also situates the player into a special context in the gameworld. Players step into a dramatic position in relation to the fictional world – defined by the very character they control.

Allowing the player (or the game) to change the player-positioning and 'swap characters' includes a possible change of the dramatic positioning. There are two major advantages of such variable player-positioning: the gameworld can be experienced through the eyes of multiple characters that explore the theme of the game in different ways and therefore allows for a multi-faceted thorough exploration of the fictional universe; and changing player-positioning supports character-driven interactive conflicts – a feature clearly under-developed in videogames so far.

The flexible player-positioning proposed in this paper, and exemplified with a practical research project, allows players to identify with, follow, and control several virtual characters like different windows to the content of the game during one game-session. Each virtual character might have special restrictions (on the level of its functionality) and a certain unique perspective to the events in the game (expressed through a differing presentation, for example a different visualisation) but all of them are part of the same fictional world. Players can be allowed to switch between different characters or might be automatically switched by the system during their exploration of the game. Such a variable positioning demands a certain distance from the virtual characters and the interactive access/ functionality of swapping control and changing the player's identification without breaking the immersion. Both elements have been discussed since the end of the here described research project *Common Tales* independently from it in academic research on dramatic structures of simulation games. First, this paper will position its approach in relation to these recent works, before some details of the

practical research illustrate the concept of the variable player-positioning as active participators in multiple roles in the *Common Tales* prototype.

### Using the Distance

Frasca illustrates the distance between player and characters in the interactive virtual environment by referring to *The Sims* [28], where players are not staged as actors on the virtual stage (see [15]) but as semi-controllers of the ongoing simulation between different agents of which the player is none. Frasca relates this distance between virtual character and player to the theatrical principles of Augusto Boal, who developed the 'spect-actor' [3] as a form of active audience participation in theatrical events. In *The Sims*, Frasca sees the player in a fixed position: as an onlooker and controller of the simulation who plays with characters like substances to be combined in an experiment that is based on the simulation settings of *The Sims* in 'non-immersive videogame playing' [4]. This decisively non-Aristotelian approach, he argues, allows for a critical depth of videogames that makes them more relevant and meaningful. Frasca directs this valuable approach towards socially relevant design of videogames – 'The Sims of the Oppressed' [3] – rejecting the notion of narrative while focussing on the element of simulation.

Diverging from Frasca, the player-character distance in the *Common Tales* project becomes a powerful narrative and dramatic element of videogames. This distance does not have to result in a non-immersive design but offers a change of perspective towards the events in the gameworld without breaking the immersion. Players can swap controls between characters without risking a pause in the gameflow. What Frasca contributed to this approach of a variable player-positioning is the use of the distance between player and character that allows such a change. The gap between character and player does not always have to be closed and players do not always have to 'become' a single virtual character. Instead, the difference between player and character can be a significant feature of the content and gamedesign.

### Changing the Player-Positioning

Friedman argues that the player-positioning in *SimCity* [25] changes so fast, that the identification of the player is with the virtual environment 'as a whole, as a single system'; and the player identifies 'less with a *role* than with a *process*' [6]. He concludes that 'you do not identify with any of these subject positions so much as with the computer itself' [5]. Friedman's concentration on the fast-changing player-positioning as an important factor for any identification and relation to the dramatic content of the RT 3D VE is insightful. However, this paper interprets the player's identification not as 'with the computer itself', but with the fictional gameworld delivered by the computer. Game designers concur with this argument: 'What we're saying to the gamers is, If you want to win in this universe, you're going to have to enter it completely, and this is the way you're going to have to think' (game designer David Fox [26]). The universe that players are asked to enter is the fictional world created by the game – it is not the logic of the coding language of the computer. Players encounter a reflection of the underlying code and do not have to learn the logic of any programming language but the rules of the fictional world.

Any changing player-positioning in *SimCity*, therefore, stays on the level of the fictional world. *SimCity* stands out as a game that is designed on the basis of simulation of in-world characters and entities without a direct player personification inside that fictional world. Although the player is addressed as the mayor of the virtual city, any power-cut

to the virtual town hall does not affect the interactive access and no traffic jam will ever slow down the player's journeys to the city's suburbs. Like the tradition of the first-person shooting game that confines the player to the role of one virtual character (like Gordon Freeman in *Half-Life* [8]), *SimCity* describes one extreme end of the spectrum of possible player-positioning. When looking for a more flexible dramatic positioning of players in relation to game characters, one has to search between these two poles.

Insofar, this paper maintains Frasca's demand for a more elaborate player-positioning in order to unlock the full potential of RT 3D VEs and it is inspired by Friedman's concept of fast-changing player-positioning that seems to blur into the identification with the fictional world provided by the computer. It differs from both approaches, as it does not target simulation titles but single-player third-person POV games. These titles offer player control over specific characters (in contrast to the lack of a dominant player-avatar in *The Sims* or *SimCity*) and can apply elaborate cinematic visualisation (the camera-work in *The Sims* and *SimCity* is more functional than dramatic) [19]. However, how this changing position is to be achieved stills needs to be investigated. This investigation was undertaken in the research project *Common Tales*.

## **EXAMPLE: COMMON TALES**

### **What is Common Tales?**

*Common Tales* was a joined research project of the Digital Studios with the National Film and Television School (NFTS), and Sony Computer Entertainment Europe (SCEE) with its main funding being provided by Sony. The project was conducted at the SCEE game development studio Cambridge 1999 to 2000.

The overall goal of the *Common Tales* project was to combine cinematic storytelling with Playstation console-games technology – not to create a new game, but to test visual and narrative elements from cinema and television for the Sony Playstation. The work was carried out against the backdrop of an upcoming new generation of consoles (back then, Sony's Playstation 2) that promised new technical features to deliver new kinds of interactive titles. The basic design of *Common Tales* applied TV-like series structures to storytelling for games consoles. It focussed on the adventures of two main heroes (Fiz and Thomas) – both under the player's control – whose relationship developed over the course of multiple adventures. Depending on the player's actions, extra information about the heroes' characters and their background were provided, and the heroes' relationship developed within given limitations. The uncovered character information and the state of the heroes' relationship is carried forward from one episode to the next, allowing for unique player-defined background databases for the hero-characters.

The conflict in *Common Tales* evolves around a central and unsolvable dramatic setting: fictional characters that were created in narratives (such as films, books, and plays) live hidden among the 'real' beings. This main conflict is mirrored in the main protagonists: Thomas, a materialistic, street-wise burglar, meets Fiz, an idealistic fairy sprung from a children's book. Both have to grow together as a team before the adventures continue to follow their relationship as constantly quarrelling 'battling lovers' from literally different worlds. The prototype developed these characters' first adventure that sees Thomas stealing the magical sword Excalibur from the *Cube Club* – the heart of the world of the fictional characters in the 'real' London – for a mysterious client (Mordred). Fiz tries to stop him and their relationship is introduced as a hostile opposition. Only when Mordred betrays Thomas and is exposed as the true antagonist,

Thomas and Fiz grow together collaborating as a team chasing down Mordred and bringing back Excalibur to its true owners.

In collaboration with participants from the National Film and Television School, the visualisation of the interactive events was a second focus of the project, which investigated various camera techniques and their usability in videogames. This led to a number of pre-programmed conditional camera behaviours that could be tested practically in the prototype. The design-needs also demanded a scripting layer for the structuring of pre-scripted events, spatial camera behaviour, or – to a limited extent – the behaviour of computer-controlled characters. The author defined the necessary features of this scripting language, which was coded by Mike Edie of SCEE, and applied by the author in the final prototype.

Technically, *Common Tales* was based on the SCEE game environment created for the commercial Playstation game *MediEvil 2* [17]. It delivered a prototype running on the Playstation development kit. The author's role was that of a lead designer responsible for every aspect of the implemented design including narrative setting, story, character design, world design, interaction design, visualisation design (the latter in collaboration with Ludvig Lohse from the NFTS).

#### Model of Player Participation in *Common Tales*

Implementing the concept of the player as active participator in multiple roles, *Common Tales* did not tie the player to any single character, but instead involved players in the relationship between both characters while interacting with them. The basic concept of player-character-relationship in *Common Tales* was as follows:

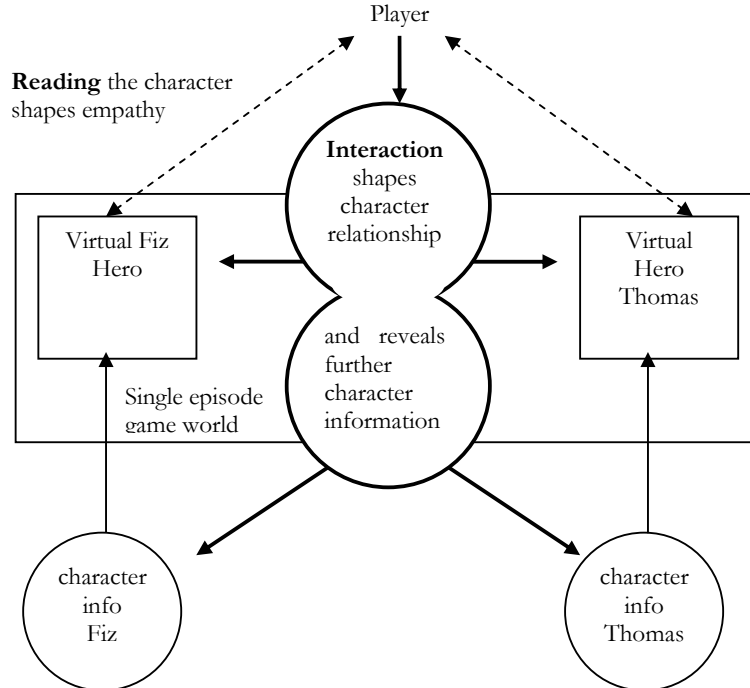


Figure 1 – Player-character relationship in *Common Tales*

Apart from proceeding in the game adventure, the player's interactions in *Common Tales* had character-relevant impact: they shaped the relationship between the main characters within given boundaries and revealed further information about individual heroes. The exploration of the characters and the influence over their relationship are the defining dramatic features of the project. They were the only data taken forward from one episode of *Common Tales* to the next.

### **Exploring the Characters**

At special points – spread like hidden ‘extras’ in the environment – the player of *Common Tales* can discover some new background information about either of the two virtual heroes. Each time a new character twist (like a catch phrase, a hobby, a weakness, a memory) is discovered, this information is stored and future episodes can use it as additional character information. Depending on the way the player approaches the game, the prototype of *Common Tales* hid one character ‘extra’ about Thomas at a dramatic turning point of the adventure. When the player plays the events in a certain way, a short extra-scene is activated that tells the player about Thomas’ fear of dogs. This character revelation is then stored on the Playstation memory-card for possible later use in following episodes. Such elements add colour and a sense of history to the characters but do not necessarily influence the main adventure. The main function of the growing character-information is to deepen the characters, and enhance and customise the relationship between the virtual heroes and the real interactor. It furthermore simulates a ‘customisation’ of the characters.

Each player plays the *Common Tales* episodes differently and discovers different ‘character extras’. Ultimately, this leads to a highly personal collection of character-traits for each player stored on the Playstation memory-card, which is used to customise the gaming experience. The pre-defined adventure of each single episode restricts the interactive freedom and forces the events to unfold in a certain order – much like other ultimately linear exploration games. However, over the run of multiple episodes, *Common Tales* counters these restrictions as it weaves a more and more complex net of the character-information between several predominantly linear adventure episodes. This network of relationships is much less linear than the structure of a single episode. The little quirks and twists (like possible references to Thomas’ fear of dogs) that make the characters interesting (and the title engaging) differ between each player – depending on the ‘character extras’ found, collected, and stored on the memory cards of the individual player. As each player creates a personalised character-history through their unique ways of gameplay, each player will ultimately steer exclusive versions of Thomas and Fiz, different from anybody else’s. This also provides for a new form of replay value: players might replay a title to uncover more of these character extras instead of the traditional search for hidden levels, Easter eggs, or special weapons.

### **Shaping the Relationship**

In *Common Tales*, in order to shape the relationship between the player and the virtual characters, the events engage the player on three main types of interaction between the two fictional heroes:

- *teamwork*
- *anguish*
- *rescue*

*Teamwork* develops the positive aspects of the virtual heroes’ relationship and is an important part of the narrative options in the virtual storyworld. Co-operation between

both heroes is a design goal of *Common Tales* and its narrative settings. The title rewards teamwork with progress in the tasks set, as well as literal spatial progress. The virtual heroes have to cooperate – that means the player has to make them cooperate – in many key scenes. For example, during the *Tanker* level in *Common Tales*, a lift is used to enforce a teamwork event. The lift platform only operates if one character stands on it and the other operates the lever to activate the lift. It is the task of the player to discover the need for planned teamwork and realise the necessary collaboration of the two heroes. How this is finally achieved within the diegesis – e.g. who stands on the platform and who pulls the lever – is left open to the player.

*Anguish* describes the dramatically necessary tension between the virtual heroes. At some points in the virtual world of *Common Tales*, the characters can only succeed in solving a problem if one ‘uses’ the other in a painful way, or one has to place the other in danger. For example, in one situation the heroes are trapped in an office with a huge glass window. In order to break through a pane and escape, one character has to stand on a swivel-chair to give it enough weight to crash through the glass, the other character has to push the chair, with the first hero on it, through the windowpane, which will break only if this set-up is complete. It is up to the player to decide who stands on the chair and who pushes, but it is pre-defined that one or the other must do so. Depending on who is pushed out of the window, the relationship between the characters will undergo a twist. Players not only solve the set task in the fictional world but also are actively engaged in the rising tension between the two virtual heroes.

*Rescue* provides relief of tension between the characters. Often, the design of *Common Tales* directs the rescue activity to whichever character inflicted pain to the other hero before, in order to balance the ongoing relationship and keep it believable. An ‘anguished’ character has, then, to be rescued by the one who is still in safety and comfort. For example, during the dangerous descent into a hazardous engine-room, one hero has to rescue their partner, who has been trapped there before, on the mission to solve the room’s puzzle. Whoever had to descend into the engine-room first, faced the potential ‘anguish’ while the other character stayed in a safe location. Now, it is up to this second character to ‘rescue’ the first one. Players have to steer both heroes, participating in the crisis and resolution of the situation and the relationship.

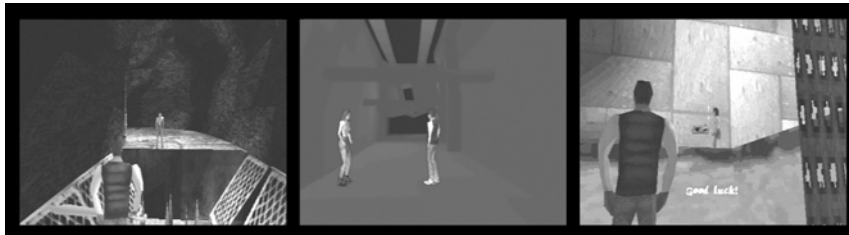
Players do not have a fixed representation of themselves inside the virtual world of *Common Tales* (for example, the virtual characters are not aware of the players and do not address them), but constantly shift between the two main heroes. Nevertheless, they are taking part in the storyline as active participators immersed in the fictional world through the character unlike in *The Sims* or *SimCity*. The player takes the roles of an actor (controlling Fiz or Thomas immersed in their world; defining their definite activities), spectator (‘following’ the two characters and the relationship between them rather than ‘becoming’ one of them), and director/ co-author (shaping the relationship between the characters within the limitations set by the fictional world) during the changing player-positionings.

### **Practical Implementation through Spatial Design**

The changing player-positioning and the relationship between the characters needed further support in the visualisation of the events. *Common Tales* provided this support mainly through two design elements: spatial design and cinematic mediation.

3D space has been identified as a significant element for the structure of real-time 3D titles (see e.g. for various aspects of spatial design in games and 3D worlds: [9] [21] [14] [12] [13] [20]). However, in the context of this paper, the space *between* the virtual heroes

is significant and a discussion of this space in games has not yet materialised. Having two heroes battling with certain tasks spread on a virtual stage filled with dramatic elements, and the functionality of switching between these characters, transforms the space between the virtual heroes in *Common Tales* into a valuable expressive element of the relationship between the main characters. For a relatively pre-defined and linear single-player environment like *Common Tales*, such a visual factor can be applied in a controlled dramatic set design of the locations the virtual heroes have to explore.



**Figure 2** – Spatial design shaping and expressing the character relationship: hostile opponents (left); effective teamwork (middle); forced separation (right)

Like a designed film set, the virtual architecture is capable to hide one hero from the other, separate or unite them – depending on the dramatic and emotional circumstances. The heroes might be staged as separated on opposite sides of a spatial structure (see the open trap-door in the tunnel; fig 2 - left), or they might be united in an enclosed space (see the corridor example; fig 2 - middle), or might be torn apart (as one hero descends into the dangerous next room – fig 2 - right).

In addition to the spatial design, the game can adjust the interactive features at given locations. Where a separation is intended (in the descend and trap-door cases) the system forbids any character-swapping and the interactor cannot change the player-positioning; where a unification is intended (in the corridor scene) the interactor is free to change controls between the two avatars. To enhance the collaborative setting in this environment charged with the ‘teamwork’ notion, the computer-controlled character follows the player-controlled one in the corridor scene. The spatial structures – combined with a structured interactive access and the non-player-character behaviour – support the narrative setting. The trap-door scene symbolises the differences between the two hero characters in the beginning of the adventure, the corridor scene stands for their success as a team, and the descend scene demonstrates the separating dangers for this team, which they (and the player) have to face in order to succeed together.

Players are the final recipients of the ongoing interpretation through spatial structure, not as actors of a single role but as active participators in the events in multiple roles. They utilise the space through their interactive exploration of the virtual world and receive an evocative dramatic interpretation of the events through the specifics of pre-designed spatial structures. *Common Tales* demonstrates, that dramatic third-person POV games can use narrative connotated space as functional means to dramatise a flexible relationship between the main characters. But, just as in cinema, the presentation of this space and the characters within it has to be arranged through some form of mediation. It is part of the distance of the player to the fictional world that it has to be mediated in order to be accessible. The visualisation through elaborate camera-work played its own role to support the changing player-positioning in *Common Tales*.



### Practical Implementation through Cinematic Mediation

*Common Tales* experimented with a lot of different camera-work, which was either under the control of the player (e.g. an interactive accessible third-person following camera), pre-defined and indirectly influenced by the player (e.g. views that keep the player-avatar and a second element in view), or entirely pre-defined by the designer (e.g. a pre-defined static viewing frame). To support the changing player-positioning these camera features were combined when needed.

For example, in the opening scene of *Common Tales*, the player steers an unknown character from a first-person perspective. Only when a certain location has been reached, does the camera pull back to reveal this character's identity (Thomas). Although the camera position changes from a character-dependent first-person POV to an interactive third person POV following-camera, the player remains in control and continues the exploration of the virtual world. The changing camera-work introduced the notion of a variable player-character-relationship in the first sequence – even before the swapping between the two main characters is enabled.

Throughout the prototype, various forms of cinematic mediation were mixed: from player-controlled interactive cameras to pre-rendered video scenes that consisted entirely of pre-defined camera-work. With such a vocabulary of available expressions, different player-positionings were visualised often in direct combination with a change in the interactive access. For example, the effect of changing controls from one character to the other is introduced after the player has led Thomas into a virtual library to fulfil the first task set in the game: find the magic sword Excalibur. Entering the small room that contains this sword triggers a short pre-scripted scene in which Thomas picks up Excalibur and leaves the room. On leaving, he is spotted by the second character – Fiz. Not only is this indicated through a camera cut, but also by the change of the player's control that switch to Fiz at the end of this cut-scene.

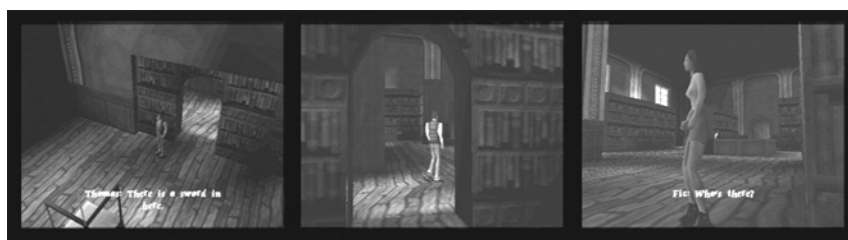


Figure 3 – Combining a change of POV and interactive access in *Common Tales*

Visual strategies, similar to the one exemplified in this particular scene, explore and support the flexible player-positioning through the expressive cinematic mediation of the camera in combination with varying functionality in the change of the controls. However, a direct quotation from cinematic traditions did not always work in the interactive setting of the gameworld and its goal of character-driven narrative.

In order to stress the relationship between the characters, a 'reaction shot', a normal feature in cinematic *mise en scene*, was introduced that consisted of a short cut-away to the second, currently computer-controlled, hero-character whenever the player-controlled character was 'wounded'. The intention was to enhance the relationship

between the characters in a visual way and motivated short character-interactions such as comments, encouragement, or warnings. However, the shot proved irritating for the player in a crucial moment of danger. Receiving a damaging hit could activate the 'reaction-shot' (steered by random behaviour to avoid repetitive camera-work) that would cut to the second, currently passive character. This character could give some encouraging advice (again randomly selected from a list of possible reactions), before the view would cut back to the original player-avatar. Although the cut was very short (approximately 1-2 seconds, depending on the response chosen), it demanded a re-orientation in the virtual space. Instead of concentrating on the moment of danger and enable the player to avoid the next damaging hit, the camera distracted the player's focus and complicated the interaction. This led to frustrating experiences for the player and the feature was excluded in later versions. The failure of the implementation of the 'reaction shot' exemplifies a clash between typical cinematic visual storytelling and the demands of videogames even if a comparable dramatic setting is predominant: in games the visualisation has to keep the interactive access in mind.

That is why, instead of a concentration on one hero (like a 'reaction shot'), cameras that referred to both heroes (like cameras that kept both heroes simultaneously in view and automatic over-the-shoulder-shots focussing on the second character) proved far more effective. They still provided a visualisation of the relationship between the two main heroes but avoided any disorientating change of focus. The relationship expressed with both heroes in view (e.g. using fore-ground, back-ground, or scale) seemed to make more sense in visual terms.

## CONCLUSION

One structure entirely dependent on flexible character-driven drama is the TV-series. Referring to this kind of television-series and utilising its flexible player-positioning, *Common Tales* asks the player to take part in multiple, game adventures that form single episodes of a potentially never-ending series. The core-concept is that of a character-driven series and depends on the ongoing always-shifting relationship between the two main characters and how this relationship refers to the numerous adventures that can be encountered in the *Common Tales* world. The adventures provide the backdrop for this developing relationship – not the main feature.

A valuable feature of the unresolvable basic tension as it is implemented in *Common Tales* is the openness of the dramatic situation. Each single adventure might follow its own structure and comes to a designated end – the principle difference between the characters, though, cannot be changed. The tension between the two hero-characters will never be resolved as long as it stays open whether the heroes ultimately unite or separate. Similar to long-running TV series some unresolved possible development between the heroes remains that keeps the audience interested and the series. In order to sustain this tension, the system never gives the possibility to resolve this dramatic core element. In order to keep its core tension alive, *Common Tales* does not channel the player's interest towards a *single* character, but engages via participation in the progress, 'life', and story of *both* characters.

Many of the techniques described in this paper are not new to game design. Highly flexible and character-driven camera-work can be found in games like *Metal Gear Solid 2: Sons of Liberty* [18], changing controls between different characters with distinct features is present in games like *Primal* [23], and the debates about efficient and dramatic level design are legion especially in the mod-community. The new element, that this paper offers is, that the expressive techniques available to videogames can be applied to create

a form of character-driven drama in which the player is not confined to one role but explores the drama established in the game and whatever is at its heart through participating in the events in multiple roles. As this area is one of the least developed in commercial videogame-design, it hopes to provide some inspiration for analytical as well as creative approaches towards game design.

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### REFERENCES

1. Bal, M.: *Narratology*. University of Toronto Press Inc., Toronto Buffalo London, 1997.
2. Bordwell, D.: *Narration in the Fiction Film*. University of Wisconsin Press, Madison, 1985.
3. Frasca, G.: *Videogames of the Oppressed: Videogames as a Means for Critical Thinking and Debate* (MA, Georgia Institute of Technology, 2001)
4. Frasca, G.: Rethinking Agency and Immersion: Videogames as a Means of Consciousness-Raising (essay). *SIGGRAPH 2001 N-Space Art Gallery* (Los Angeles, 2001)
5. Friedman, T.: *Electric Dreams: Cyberculture and the Utopian Sphere (unpublished draft)*.
6. Friedman, T.: Making Sense of Software: Computer Games and Interactive Textuality. In: Jones, S.G. (ed.): *CyberSociety: Computer-Mediated Communication and Community*. Sage Publ., Thousand Oaks, 1995 , 73-89.
7. Genette, G.: *Narrative Discourse: An Essay in Method*. Cornell University Press, Ithaca, 1980.
8. *Half-Life* (PC (Win)). Designed by Team Half-Life Developed by *Valve*. Published by Sierra. USA Release, 1998.
9. Harrison, S., Dourish, P.: Re-place-ing Space: The Roles of Place and Space in Collaborative Systems. *Proceedings of the 1996 ACM Conference on Computer Supported Cooperative Work* (Boston, 1996) ACM Press, 67-76.
10. Herman, D.: *Story Logic: Problems and Possibilities of Narrative*. University of Nebraska Press, Lincoln London, 2002.
11. Hillis, K.: *Digital Sensations. Space, Identity and Embodiment in Virtual Reality*. University of Minnesota Press, Minneapolis London, 1999.
12. Isdale, J., Daly, L., Fencott, C., and Heim, M.: Content Development for Virtual Environments. In: Stanney, K.M. (ed.): *The Handbook of Virtual Environments*. Lawrence Erlbaum Associates, Inc., New York, 2002.
13. Jenkins, H.: Game Design as Narrative Architecture. In: Harrington, P., Wardrup-Fruin, N. (ed.): *First Person: New Media as Story, Performance, and Game*. MIT Press, Cambridge MA, TBP.
14. Jenkins, H., Squire, K.: The Art of Contested Spaces. In: King, L. (ed.): *Game On: The History and Culture of Video Games*. Universe, New York, 2002, 64-75.
15. Laurel, B.: *Toward the Design of a Computer-Based Interactive Fantasy System* (PhD, Ohio State University, 1986)

16. Meadows, M.S.: *Pause & Effect. The Art of Interactive Narrative*. New Riders, Indianapolis, 2003.
17. *MediEvil 2* (Playstation). Designed by Shepherd, J. Developed by *SCEE Studio Cambridge*. Published by SCEE. UK Release, 2000.
18. *Metal Gear Solid 2: Sons of Liberty* (PS2). Designed by Kojima, H. Developed by *Konami*. Published by Konami. UK Release, 2002.
19. Nitsche, M., Roudavski, S., Thomas, M., Penz, F.: Drama and Context in Real-Time Virtual Environments: Use of Pre-Scripted Events as a Part of an Interactive Spatial Mediation Framework. *Proceedings of 1st International Conference on Technologies for Interactive Digital Storytelling and Entertainment* (Darmstadt, 2003) Fraunhofer IRB Verlag, 296-310.
20. Nitsche, M., Roudavski, S., Thomas, M., Penz, F.: Building Cuthbert Hall Virtual College as a Dramatically Engaging Environment. *Proceedings of the Participatory Design Conference 2002* (Malmoe, 2002) CPSR, 386-90.
21. Oliver, J.H.: Polygon Destinies: The Production of Place in the Digital Role-Playing Game. *Proceedings of the First Conference on Computational Semiotics for Games and New Media (COSIGN) 2001* (Amsterdam, 2001) Centrum voor Wiskunde en Informatica, 67-73.
22. Poole, S.: *Trigger Happy. The Inner Life of Videogames*. Fourth Estate, London, 2000.
23. *Primal* (PS2). Designed by Sorrell, C. Developed by *SCEE (Cambridge Studios)*. Published by SCEE. UK Release, 2003.
24. Reid, E.M.: Text-based Virtual Realities: Identity and the Cyborg Body. In: Ludlow, P. (ed.): *High Noon on the Electronic Frontier: Conceptual Issues in Cyberspace*. MIT Press, Cambridge, MA, 1996, 327-345.
25. *SimCity* (PC (Win)). Designed by Wright, W. Developed by *Maxis*. Published by Maxis. USA Release, 1987.
26. Snider, B.: Rocket Science. *WIRED* (online Journal), Vol. 2. 11, (1994)
27. Stone, A.R.: *The War of Desire and Technology at the Close of the Mechanical Age*. MIT Press, Cambridge MA, 1998.
28. *The Sims* (PC (Win)). Designed by Wright, W. Developed by *Maxis Software Inc*. Published by Electronic Arts. USA Release, 2000.
29. Turkle, S.: *Life on the Screen. Identity in the Age of the Internet*. Weidenfeld & Nicolson, London, 1996.
30. Wilson, G.M.: *Narration in Light. Studies in Cinematic Point of View*. The John Hopkins University Press, Baltimore London, 1988.