

SIFT: Schematic Instances For Transmedia

Position paper for ACE 2007 “Transmedial Interactions and Digital Games” Workshop

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1 INTRODUCTION TO SIFT

SIFT (Schematic Instances For Transmedia) is a way of thinking about designing transmedia games which is structured around schemas in entertainment content and around schemas in the patterns of use of particular technologies, with a focus on the gaming experience. If entertainment is a human factor (Cherny *et. al.* 1997) then the gaming experience must be a central part of any interaction framework for transmedia games.

SIFT draws on the author’s ongoing research on schemas, including his formulation of SCUSI and other work on film and computer games. This material is a work in progress and is specifically presented at this workshop for discussion, critique and refinement.

2 SCHEMAS IN SIFT

Schemas are patterned regularities in human concepts and artefacts which mediate perception and minimize cognitive load, consisting of a name, identifying ‘slots’ and slot content (e.g. Hale 2005). Schemas are multi-level structures which encompass (in story artefacts) the universal story, the three act structure, genre, entities within a story (characters, objects, environments), relationships between entities and the behaviours of entities. Regularities in schemas are important i.e. schemas can be prototypical, but it is the addition of sufficient (but not too much) novelty in schemas which creates interest and facilitates an engaging experience for people using the film or game. One formal application of schema theory is SCUSI (Hale 2006b, 2006c, see Note).

SCUSI (Story Content Using Schematic Instances) is an approach to automatic story generation that uses schematically structured prewritten segments that are randomly selected within specified schematic frames which are themselves schematically organized, to generate stories. Such an approach is similar to early story grammar approaches and the SCUSI project is being undertaken partly to expose hidden assumptions in existing work on automatic story generation and to critique other critiques of story grammar based approaches (paper currently under preparation).

In the first version of SCUSI the *Little Red Cap* story (<http://www.pitt.edu/~dash/grimm026.html>) was shortened and put into schematic frames, with separate sentence fragments connecting these frames to make a readable story. For each schema, the ‘slots’ related to characters and behaviors were altered by randomly selecting from prewritten choices for each slot, generating a new story, *Big Purple Cape* (see Table One, below). So, for instance, the characteristics of the protagonist are generated from a choice of pre-written elements related to gender (woman, in this instance), personality (rude, in this instance) and physical (large, in this instance). This randomly generated slot content (rude big woman) is then re-used later in the story, passed as a value to other schematically determined positions of the slot, ‘protagonist characteristics’. The resulting story fits a generic story structure (also in Table One), with the addition of a Naming schema which explains how the character got her name, drawn from *Little Red Cap*. There are occasional similarities in slot content of the generated story to the shortened version of the *Little Red Cap* story. This came about because the predetermined variants for slot content included one variant that matched the shortened version of the *Little Red Cap* story, to allow one variant of the generated story to not just be ‘in the style of’ *Little Red Cap*, but actually to be *Little Red Cap*. The final words of the story in italics were added manually due to time constraints – the task of creating a module that generates humorous endings would constitute a major project in itself.

A point to note is that SCUSI generates story (i.e. a series of events) mixed in with generated plot (i.e. the telling of the series of events). SIFT generates a story that is ‘told’ across the different distribution channels, with the story spanning the transmedia game elements and reflecting the final implementation of the game. The use of story as a central part of design corresponds to real design practice for computer games, though other elements are also important (not discussed

here).

Act schemas	Schemas within acts	Generated story content
Act 1 Opening State of Affairs	Genre signifier indicating fairy tale type of story	Once upon a time
	Introduction to protagonist (protagonist schema) Introduction to supporting characters (supporting character schemas) Naming schema	there was a rude big woman. One day the Grandmother gave the big woman a purple cape. The big woman was very happy with the purple cape and wore it all the time and so was called Big Purple Cape. One day the Mother
	The inciting event	told Big Purple Cape to take a cake and a bottle of poison to Grandmother. The Mother told Big Purple Cape “Don’t play silly games” and Big Purple Cape agreed rudely.
Act 2 The Journey	Meeting the antagonist	Walking along Big Purple Cape met a brutal hungry boar.
	The antagonist’s plan unfolds	The boar asked, “Where are you going?”. “To take a cake and a bottle of poison to Grandmother”, replied Big Purple Cape. “Why don’t you play silly games instead?”, the boar asked and Big Purple Cape agreed rudely. Big Purple Cape and the boar went off to play silly games.
Act 3 Danger and Triumph	Direct danger to the protagonist	The boar said to Big Purple Cape, “Big Purple Cape, I am hungry. I want to eat [i.e. eat you]!”.
	Danger averted by victory	Big Purple Cape gave the boar the cake and bottle of poison.
	Happy ending (genre signifier)	And was left sadder but wiser – <i>a vomiting boar is best given a very wide berth indeed. Particularly if you are wearing your favourite cloak.</i>

Table One: Story schemas in an automatically generated story, *Big Purple Cape*

3 DESIGNING WITH SIFT

Four elements are the irreducible top level elements for any transmedia game: users, delivery systems, game content (which includes the rules) and contexts of use. Note that the gaming experience is *prompted* in users, not deterministically imposed but rather created dialogically as users bring their own experiences and interpretations to the game.

3.1 SIFT: list the schemas

The first stage is to identify the schemas of design relevance *to* potential users and schemas of design relevance *about* potential users as they might use the game. Human designers list out key schemas for users, user contexts, delivery systems and game content. This narrows down the design possibilities, ensuring that these possibilities are appropriate. Identifying schemas, slots and slot content allows considered manipulation of slot content, making the game more enjoyable by creating novelty whilst retaining cognitive efficiency. The listing of schemas can be supplemented with examples drawn from other games and media content, for a richer and more referential exposition of schemas. Using SIFT is not therefore a mindless automatic process but offers a range of psychologically valid choices for the human designers.

3.1.1 Users and user contexts

Schematically, the opening of the story ‘Once upon a time’ references the fairy tale genre, so for illustrative purposes the game will be considered as being for 5 to 7 year old children (in real life the choice of target users/players would

probably be made before the specifics of the story or game are decided). SIFT requires knowledge of cognitive and physical capacities of the users, so a player centered design process is required. For child safety reasons, it has been decided that the game will not have roaming capability beyond that offered by the mobility of the mobile telephone and for the same reason there will not be clues and game elements in the physical world.

3.1.2 Delivery systems

Delivery systems have their own schematic uses. It was decided that this game is delivered via mobile telephone, children’s magazines and internet: each of these artefacts is common in children’s experience and has schematic uses attached (for example, the mobile telephone references the landline telephone schema of making and receiving calls, but has its own schematic uses such as texting and the opportunistic use of cameras). The SIFT approach requires that these different schematic uses be understood by designers and appropriately incorporated into the game.

3.1.3 Game content

Certain elements in games (such as opening cinematics and credits) are schematic and function schematically to orientate users to the beginning and ending of the game, freeing the player’s cognitive resources to concentrate on the game content and enjoy it. In transmedia games for children such start and stop cues need to be relatively overt, for safety reasons related to the limited cognitive capacity of young children, who must never confuse the game with real life. The original story is reshaped as a result of the SIFT process (see below).

3.2 SIFT: designing the content and delivery systems

With this game, the story has already been developed using SCUSI (see above). In SIFT, story content integrates the users, user contexts and delivery systems. The designer takes the story developed using SCUSI and selectively shares it out across three top level elements (users, contexts and delivery systems) with the story being re-shaped and changed as this process takes place. Filling in and cross-tabulating the SIFT table (Table Two, below) is a central part of the design process and results in an outline of the final game, the SIFT table being itself informed by user/context information (not shown in Table Two). The design process iterates around the four elements of users, delivery systems, user contexts and story content until saturation is reached i.e. no new design insights are forthcoming, resulting in a comprehensive and integrated design proposal (which would be supplemented by art work, business costings and so on in a real design task). Table Two lists the games steps for the player (column one) and how the content is shared out across different media (columns two and three). Using SIFT has resulted in a game structured as a fairy tale and integrated around a quest schema. Players respond to a magazine advertisement, gain a ‘secret password’ by texting and move between a central ‘quest’ website and a ‘Beat the Bear’ seven tasks (seven small computer games in actuality) website by means of codes (‘secret passwords’) accessed via mobile telephones.

Game steps for player	Delivery system	Game content/action
Step one	Children’s magazine	a) “Once upon a time – YOU had an adventure” b) Texting info (i.e. a telephone number for a mobile telephone message to be sent to, a word that should be sent)
Step two	Mobile telephone	a) Text special word to game manager
Step three	Game telephone management system	a) Text received b) Text sent to player with website URL
Step four	Game website (Quest)	a) Parental permission page b) Cinematic and game content (structured around an ‘initiation’ schema) which presents the overall task of “Beat the Bear and rescue the Diamond Fairy”, states the prize, lists seven tasks to be completed, text info for task 1.
Step five	Mobile telephone	a) Text special word to game manager
Step six	Game telephone management system	a) Text received b) Text sent to player with URL of ‘Beat the Bear’ website
Step seven	Mobile telephone	a) Text with URL received by player
Step eight	Game website (Beat the Bear)	a) Play the mini-game (i.e. task one of seven) and beat the bear, to win the next text info
	ETC.	ETC.
Final step	Website (Quest)	a) Enter information received from each successfully completed challenge. b) Winners cinematic (schema of winning in front of a crowd), with a prize giving and the winner’s first name entered into Roll of Honour

Table Two: SIFT table with cross-tabulation of hypothetical transmedia game content

4 CONCLUSIONS

Three issues arising from this illustrative design process (above) need further further comment.

4.1 *What is the story of the game?*

The output of the SIFT process (Table Two) does not give much sense of what the user experience (the gameplay) might be. A further stage should be added to SIFT where the results are put into a told story form, with the aim of capturing the flavour of the gameplay as it might be prompted in players. Here the fairy story and quest schemas would be key structuring mechanisms in the game play. Detailing how the prompted gameplay might be experienced by players offers further design iterations between the material in the SIFT table and this gameplay experience story, with these iterations yielding further significant improvements in the transmedia game. Conventional games development makes use of storyboards etc. and these would also be incorporated.

4.2 *What about the player input?*

With SIFT, actual users would be involved at key stages in the process (see Davis *et. al.* 2005 for one way of doing this). One perennial problem of involving end users in design is that end-users are not for the most part designers and they may have little sense of the types of decisions to be made in design (lead users excepted). With schemas, a full schema can be invoked in users by presenting key slots to them, so 'quick and dirty' prototyping can be used, based on offering potential users a limited range of artefacts or experiences that may invoke certain key schemas. Further work needs to be done on how such novelty prompting might work in practice, in SIFT. Player input also provides a natural arena for testing novel delivery technologies, with a key focus on how quickly a representative range of players can adapt to the novel uses of technology and the effects of this novelty on their experience of the game. In real computer game design, user input does not always feature strongly, often being confined to relatively late in the process.

4.3 *Real design*

SIFT is suggestive of a comprehensive design process, yet in real design tasks designers tend to 'satisfice' i.e. they do not necessarily look for optimal design solutions (excluding the actual technical issues related, for example to game speed, which can be critical) but rather find solutions that just 'do the job'. Any approach to design such as SIFT will need to be tested in real design situations and developed with input from games developers.

5 FURTHER RESEARCH

The PhD has currently comprised four studies (two investigations of schemas in viewer's talk, two investigations of schemas in artefacts). The fifth (final) study will take the schematic framework being developed from these four studies and other existing cognitive research on films and computer games, to apply a SIFT-like schema based design process to the development of a small casual computer game, delivered at the desktop. This design process will itself be reflected on and analyzed, to develop the final version of the schema based design approach.

ACNOWLEDGEMENTS AND NOTE

Greg Hale is currently undertaking a PhD at the University of York (supervisor Andrew Monk), funded by Microsoft Research Cambridge. Some of the material in this position paper was previously used in Hale (2006b, 2000c).

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