Narrative Generation through Characters' Point of View

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ABSTRACT

Virtual Actors are at the heart of Interactive Storytelling systems and in recent years multiple approaches have been described to specify their autonomous behaviour. One well known problem is how to achieve a balance between the characters' autonomy, defined in terms of their individual roles and motivations, and the global structure of the plot, which tends to emphasise narrative phenomena and the co-ordination of multiple characters. In this paper we report a new approach to the definition of virtual characters aimed at achieving a balance between character autonomy and global plot structure. Where previous approaches have tended to focus on individual actions our objective is to reincorporate higher-level narrative elements in the behaviour of individual actors and address the relation between character and plot at the level of behaviour representation. To this end we introduce the notion of a characters' Point of View and show how it enables a story to be described from the perspective of a number of different characters: it is not merely a presentation effect it is also a different way to tell a story.

As an illustration, we have developed an Interactive Narrative based on Shakespeare's Merchant of Venice. The system, which features a novel planning approach to story generation, can generate very different stories depending on the Point of View adopted and support dynamic modification of the story world which results in different story consequences. In the paper, we illustrate this approach using example narratives generated using our fully implemented prototype.

Categories and Subject Descriptors

H.5.1 [**Multimedia Information Systems**]: Artificial, augmented and virtual realities

General Terms

Algorithms

Keywords

Interactive Storytelling, Narrative Modelling, Planning, Agents in games and virtual environments

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1. INTRODUCTION

Interactive Storytelling systems rely on the autonomous behaviour of virtual characters: it is those characters actions that provide the story content. In recent years several approaches have been developed for the definition of such character behaviour which vary according to: the level of autonomy granted to each character; the principles underlying characters' motivations; and whether the narrative is seen as emerging from characters' behaviours or determined by a top-down plot representation. One well-known problem is how to achieve the right balance between the characters' autonomy, defined in terms of their individual roles and motivations, and the global structure of the plot, which tends to emphasise narrative phenomena and require the co-ordination of multiple characters. This relationship between characters and the narrative they are part of has been recognised as a central problem in Interactive Storytelling and depending on the approach taken, systems can be characterised as either character-centred or plot-centred. The former offers a modular description, an easy route to generativity [6], and can be closer to some forms of story creation, whilst the latter facilitates the synchronisation of multiple characters/actors, the control of user interaction [20], and the explicit control of global narrative properties such as suspense [2], or narrative tension [25].

In this paper, we introduce a new approach to the definition of characters' behaviours. The approach is based on the concept of Point of View (PoV) which describes one character's perspective on the story. Our work arose from an attempt at revisiting the duality between character and plot at a representational level. We observed that in earlier work in character-based storytelling [4], key narrative actions had to be either distributed over individual characters' actions (raising real-time control and synchronisation issues), or described as the actions of a principal character, whose role tended to become so prominent that it would almost equate with the whole plot. Our working hypothesis is that a given narrative action (such as a contract, a betrayal, a challenge, and so on ...) can be represented differently depending on the perspective of each character taking part in that action. In other words, a PoV consists of a character's representation defined from the perspective of the overall plot, not just of the character's role independent of any other. The PoV also implements the naive concept of a given character's standpoint on a set of events, although in an a priori rather than a posteriori fashion. This is achieved by defining different representations for the same narrative action depending on the PoV, which in turn requires, for instance, different sets of pre (resp. post) conditions. With such representations, narrative generation will adopt a given character's PoV for the selection of the actual narrative action, thus resulting in story variants according to the PoV. In addition, these variants will respond differently to real-time modifications of the narrative domains such as those introduced by user interaction.

To illustrate the concept, we have developed an Interactive Narrative based on Shakespeare's Merchant of Venice[1] [22], which is notorious for offering multiple interpretations depending on which character's perspective is considered. However, rather than offering post hoc interpretations, our system is actually able to generate different stories depending on the PoV adopted. In addition dynamic modification of the story world will result in different consequences.

The paper is organised as follows: we start in section 2 with a discussion of closely related work. Then in section 3 we present a definition of character Point of View and rationale for its use in narrative generation. In section 4.2 we discuss the control mechanism that we have implemented as our narrative generation engine before subsequently presenting a overview of our implemented system and results in section 5. We end in section 6 with conclusions.

2. PREVIOUS AND RELATED WORK

Issues emerging from the duality between character and plot in Interactive Storytelling (IS) were originally discussed by Mateas and Stern [13] following an early analysis of Interactive Narrative concepts by Mateas and Sengers [12].

Character-based approaches have been extensively described in IS research, and range from character-based storytelling [4], in which the global narrative action is projected onto individual roles, often from a main character's perspective [4], to emergent narrative, in which the story results from the motivation-driven behaviour of characters (including their affective responses) [1]. A recent, intermediate variant has based characters' behaviours on a comprehensive list of feelings, inspired from a narrative description instead of cognitive data [5]. Other approaches involving communication and responsibility attribution can also be situated within a character-based storytelling paradigm [23].

Riedl [18] explicitly addressed how to balance character and plot, and has developed a Planning framework in which to reconcile plot coherence, the fact that all events are relevant to the story outcome, and characters' believability, using the fact that their actions appear motivated by a set of beliefs. This is achieved by incorporating a personality model that can be used by the heuristic functions contained in the story planner.

Damiano and Lombardo [7] have introduced the notion of characters' values (in the sense of ethical or personal values) to reconcile story structure and characters, within an approach that remains character-centric, inspired from characters' definition in scriptwriting techniques [14] rather than traditional narratology.

Our own approach shares similarities with plot-based systems, since one single plan is generated to determine actions for all characters, in contrast with traditional character-based approaches where separate plans are generated for each character [5]. However, the plan contents follow a strong character-centric perspective, which addresses some limitations reported in previous work [18], in particular on the relationship between personality traits and actions.

Our narrative generation engine features a novel decomposition approach with a control mechanism that dynamically selects constraints that are used to structure the narrative trajectory. This decomposition is different from the types of decomposition that have featured in other IS systems. For example, Hierarchical Task Network decomposition in the tradition of SHOP [15] has featured in the work of Cavazza et al [4] with decomposition of a hierarchy of compound tasks, with action effects only allowed to be associated with non-compound tasks. In contrast, our approach has no notion of hierarchy simply sub-division of the narrative generation task into a series of smaller tasks all at the same "level".

A key feature of our engine is the use of constraints to force the planner to make certain conditions occur in the course of a narrative variant. These are similar to the "author goals" described by Riedl [21]. He extended his intent driven planner [19] to plan with the inclusion of author goals in a process he referred to as "complexifying". Riedl was the first to use explicit constraints in narrative paths in IS and one way to view our approach is as a dynamic extension of Riedl's ideas. For example, we have developed a control mechnism which dynamically handles constraint selection at run-time.

3. CHARACTERS' POINT OF VIEW

The concept of a character's Point of View has been intuitively introduced as a particular standpoint on an overall plot through which a story can be told. This is very different to a character's role, since the role doesn't necessarily encompass the actions of other characters and would result in indifferent application of the actions dictated by the role regardless of the behaviour of other characters.

In order for an IS system to be able to adopt the standpoint of a given character (i.e. tell a story from a characters' PoV), the description of narrative actions that are used to construct the plot must be specialised. Specialisation may include asymmetry, according to the nature of the action (e.g. borrowing versus lending), or differences in the situations that can trigger a given action, owing to differences in motivation and sensitivity (but these have to be absolute, not based on beliefs or partial knowledge of a shared set of facts). When a Planning based approach to narrative generation is adopted, these specialised narrative actions can be naturally represented as planning operators: the different standpoints will correspond to variations in operator pre- and post-conditions which relate to different sensitivities and motivations as well as differences in execution. Hence the PoV is not merely a presentation choice (a discourse variant) but a different way to tell a story, in which the relevance of certain facts will vary, even at the level of narrative causality.

It should be noted that a characters' PoV is more than a mere caricature of their personality that fully determines their actions: within a given PoV a character remains free to follow different lines of conduct. For example, if we consider the Merchant of Venice from Shylocks' PoV, it contains a single invariant, that he considers himself a victim rather than a ruthless usurer. But this does not prescribe how

[1]We cannot ignore the controversy which has surrounded the play throughout its history. Modern interpretations have offered a more sympathetic treatment of Shylock, such as that shown in the 2004 filmic adaptation by Michael Radford [17] which was an inspiration for this work.

he should act: whether he should seek revenge or try to convince others to do him justice by granting him the consideration he deserves in a free city or even suffer his fate in silence. It is therefore an essential aspect of PoV that a given character PoV will allow for different attitudes and consequently support the generation of a range of different story variants for that individual PoV.

The implementation of a PoV approach is closely tied to the narrative generation method that is used and consequently it places certain constraints on the representation and control of the PoV itself. When using Planning for narrative generation this necessitates the definition of alternative operators that correspond to different narrative actions (for each of the different character's PoV). Furthermore, since a PoV will behave as a framework to control action selection it is also important that this be defined in an explicit and possibly declarative fashion on top of the Planning algorithm used for narrative generation (this framework and the general approach to narrative generation that underpins it are presented in section 4.2).

3.1 An illustration of Point of View

The Merchant of Venice rests on the opposition between two central characters: Antonio, a wealthy Christian merchant and Shylock, a Jewish moneylender, against the backdrop of XVIth century Venice, which is characterised by trade and prosperity, but also by racial and religious discrimination. A central element of the play is a bond between Antonio and Shylock, by which the latter agrees to lend 3000 ducats to the former without interest, despite having suffered multiple humiliations from Antonio, but if he fails to repay the loan then the penalty would be "one pound of (his) flesh". Antonio accepts somewhat carelessly whilst retaining his attitude of superiority. When the prospect of him defaulting materialises, the two end up in court, where their opposition allows the play to discuss issues such as the conflict between law and equity, or Venetians' attitudes towards their possessions.

Following Hinely's analysis of the play [9], the notion of bond unifies the three sub-plots of the play: we shall be concerned here only in the pound-of-flesh sub-plot. The same analysis identifies the standpoint and values of the two characters, without giving up to simplistic, albeit appealing oppositions. From this we can define PoV's for each character in terms of their standpoint and the range of actions permissible within these. Shylock sees himself as a victim of discrimination and later as a victim of Antonio's refusal to abide by the (contractual) law he wants to see enforced. Within this standpoint, his behaviour could range from revenge to conciliation. Antonio's values may not be diametrically opposed to Shylock's [9] but his standpoint is that of the ruling class, despite the contradictions that follow such as his need for Shylock's assistance. Within this standpoint his behaviour can range from carelessness (mistreating Shylock, accepting the bond) to conciliation.

For both characters, as soon as we define a range of such behaviours, we are departing from the baseline plot and entering the speculative realm of narrative generation. We are following an untold but apparently common hypothesis in IS research according to which the modelling of a baseline classical plot is a first step towards interactive narrative: this approach, which is not unlike the Remediation hypothesis [3], has been illustrated in a number of interactive narrative systems such as (Madame Bovary) [5] and (Little Red Riding Hood) [24].

3.2 Representing Characters' Point of View

The different characters' PoV are represented declaratively using one invariant for each character which can take one of two values representing the opposing PoV's for that character.

For example, in the Merchant of Venice, Shylock's PoV can be that he is a victim or that he is ruthless which could be represented as: *(pov shylock-victim)* or *(pov shylock-ruthless)*. Antonio's PoV can be that he is a victim or a carefree risk taker, represented as: *(pov antonio-victim)* or *(pov antonio-risk-taker)*. The PoV is set initially and remains unchanged for the duration of a particular narrative (although the system can switch to the PoV of another character in response to real-time user interaction).

3.3 Asymmetric Narrative Actions

Using PoV in narrative generation, means that the generator must adopt the PoV of a particular character for the generation of a variant. In order that the generator can select actions that are consistent with that PoV any asymmetric narrative actions involving multiple characters must be described in a number of different ways, each one corresponding to the perspective of one of the characters taking part in that action.

As an illustration we'll consider an asymmetric action that features in our Merchant of Venice Interactive Narrative. A key element in the play is the loan of three thousand ducats, by Shylock to Antonio. The two characters have different roles in this financial transaction: Shylock is the lender of the money and Antonio is the borrower. When PoV is taken into account this results in the following different ways of representing this narrative action:

Action 1: (pov antonio-risk-taker)
Antonio is a carefree risk taker who borrows money from Shylock with no thought for the consequences.

Action 2: (pov antonio-victim)
Antonio is a loyal friend who is aware of the risks but nevertheless borrows money from Shylock.

Action 3: (pov shylock-victim)
Shylock is a patient victim who extends a favour to Antonio by lending him money.

Action 4: (pov shylock-ruthless)
Shylock is intent on revenge and lends money to Antonio in the hope of collecting the forfeit.

These actions all share one effect: that Antonio and Shylock have sealed a bond over the loan of money. The actions differ with respect to their other effects and any necessary enabling conditions. For example, when the PoV is Antonio as victim then an effect of sealing the bond is that he is concerned over the forfeit, but when his PoV is that of a risk taker then he will be unconcerned. Narrative actions corresponding to these PoV's could be represented as follows:

Action 1
(borrow-money-confident-repay antonio shylock venice-rialto)
pre: (pov antonio-risk-taker), ...
post: (sealed-bond-over-loan shylock antonio),
(unconcerned-over-forfeit antonio), ...

Action 2
(borrow-money-wary-of-risk antonio shylock venice-rialto)
pre: (pov antonio-victim), ...
post: (sealed-bond-over-loan shylock antonio), (concerned-over-forfeit antonio), ...

Action 3
(lend-money-as-favour shylock antonio venice-rialto)
pre: (pov shylock-victim), ...
post: (sealed-bond-over-loan shylock antonio), ...

Action 4
(lend-money-intent-on-revenge shylock antonio venice-rialto)
pre: (pov shylock-ruthless), ...
post: (sealed-bond-over-loan shylock antonio), ...

These actions share the effect of sealing the bond concerning the loan, although the way in which this outcome is brought about differs depending on PoV.

4. NARRATIVE GENERATION

We have developed a Planning based narrative generation engine that adopts a particular character PoV and generates narrative variants accordingly. A novel feature of this generator is that it uses *constraints* to help control the content of the narrative that is generated. Constraints can be thought of as key components of the plot structure, they are conditions that we might want to feature in a narrative. For example, in the Merchant of Venice, key components of the plot include the sealing of a bond over the loan of money from Shylock to Antonio and the response by Shylock to the news that Antonio's ships are lost. For the purposes of narrative generation these could be represented as constraints using the predicates *(sealed-bond-over-loan shylock antonio)* and *(responded-to-news-lost-ships shylock)*. Some, but not necessarily all, constraints are also accompanied by information about their relative position in the narrative. Since not all constraints need to be given a relative position, we say that the constraints are partially ordered.

The constraint information constitutes a meta-level of representation for the plot: in terms of contents it can be assimilated to invariants which have to hold true for all well-formed narratives (meaning consistent with the baseline plot, despite constituting a variant). This is also a way to address a recurrent problem in IS which is to control the level of variation around the baseline.

4.1 Representing Constraint Information

Constraints are identified from an analysis of a baseline plot, as are operators for the narrative actions, only at a more abstract and declarative level. The constraint information forms a network, where nodes in the network have two components: an set of PoV's and a set of constraints The network also includes information about required orders between pairs of nodes. The control mechanism traverses this constraints network and uses PoV to select nodes and constraints from these nodes for different narrative variants.

As an example, a fragment of the constraints network for our Merchant of Venice system is shown in figure 1. The node labelled N1 has the single PoV *(pov shylock-victim)* whereas node N3 has four associated PoV's *(pov antonio-risk-taker)*, *(pov antonio-victim)*, *(pov shylock-victim)* and *(pov shylock-ruthless)*. This information is used by the narrative generator to determine whether the node is relevant

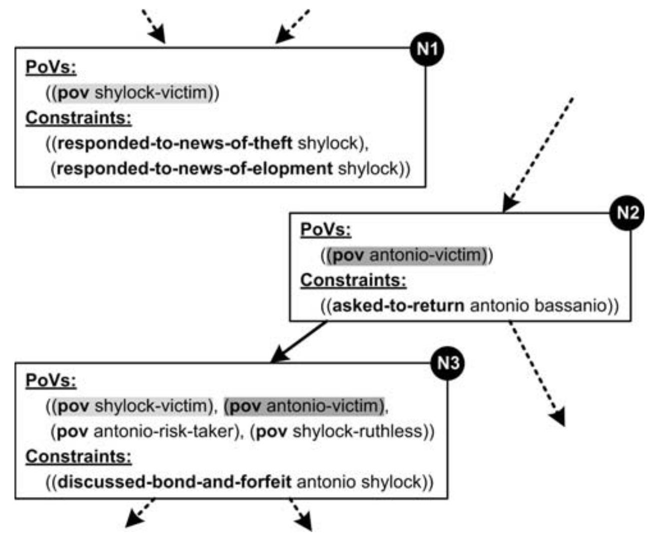

Figure 1: A fragment of the Constraints Network for our Merchant of Venice Interactive Narrative.

to the current narrative variant. Since node N1 has the single PoV *(pov shylock-victim)* it is only relevant when the narrative is told from this PoV, whereas node N3 is relevant for variants told from all four associated PoV's.

Nodes in the network also contain a set of constraints: N1 has two constraints of interest, *(responded-to-news-of-theft shylock)* and *(responded-to-news-daughters-elopement shylock)*, whereas node N3 has a single constraint of interest *(discussed-bond-and-forfeit antonio shylock)*. At run time the narrative generator arbitrarily selects one of these constraints for inclusion in the current narrative.

The network also contains information about any required orderings between constraints. The ordering shown in Figure 1 is partial since not all nodes are ordered with respect to each other: node N2 is ordered to occur before node N3 (shown as a solid line in the figure) but there is no such restriction on other nodes, such as N1 and N3, which could appear in different orders in different variants.

4.2 Constraint-based Narrative Generation

A number of approaches to planning with constraints have been proposed, such as MIPS-xxl [8] and SGPLAN [11]. Our approach was inspired by the work on landmarks of [10], and uses constraints to decompose the problem of generating a narrative into a sequence of sub-problems, where each sub-problem has a constraint, selected from a node in the constraints network, as its goal. The nodes in the constraints network are considered in order starting with the earliest (any ties are broken arbitrarily) and continuing until all nodes have been considered. A node is selected if the currently adopted PoV is one of the PoV's that are associated with this node. As an example consider the network shown in figure 1. For a PoV of *(pov shylock-victim)* the nodes N1 and N3 would be selected but for a PoV of *(pov antonio-victim)* nodes N2 and N3 would be selected. When a node is selected a constraint is arbitrarily chosen from that node and this is used as the goal for generating the next segment of the narrative. Narratives are generated for each sub-problem in turn and the final narrative is built up incrementally by sequencing together the narrative for each

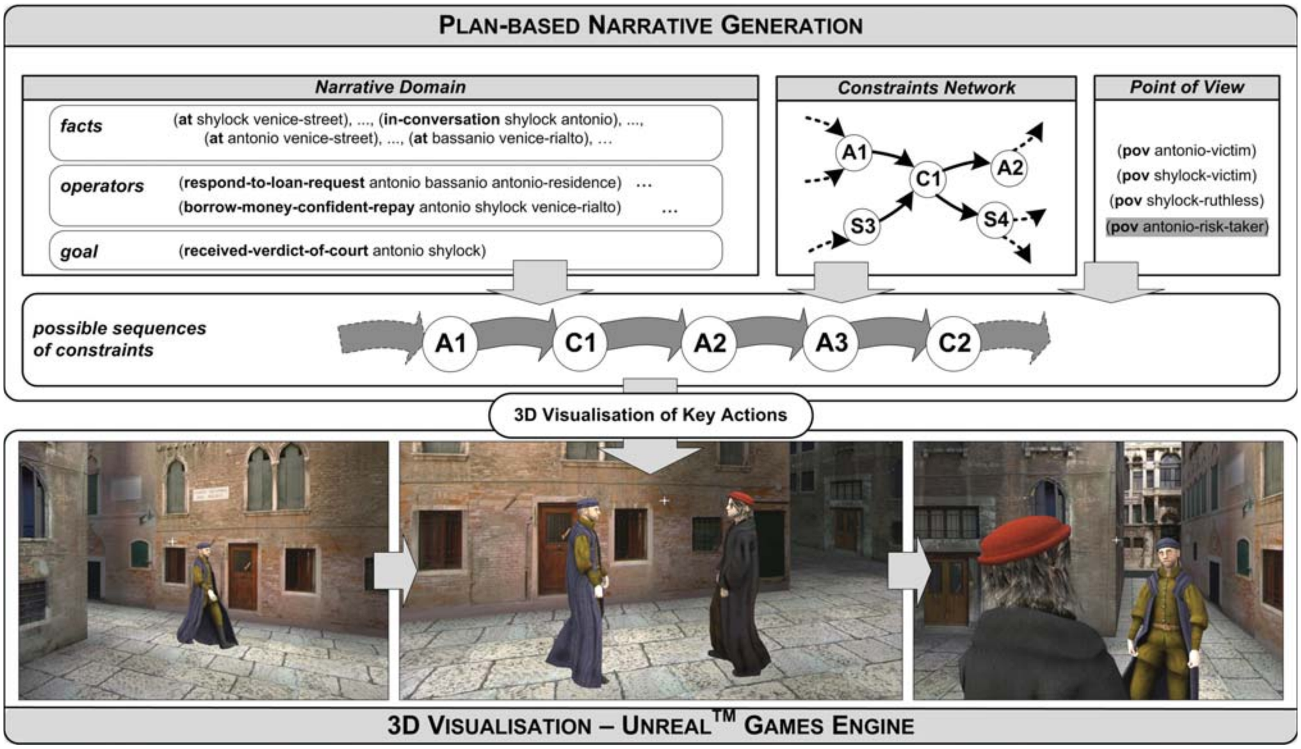

Figure 2: System Architecture for the Merchant of Venice Interactive Narrative. Input is a narrative domain, constraint information and PoV information. The system adopts a PoV (shown highlighted) for the duration of the narrative, selects a sequence of constraints and then generates a narrative consistent with the constraints. This sequence of narrative actions are then passed to the games engine to be visualised.

sub-problem. Further detail of the algorithm is given in [16].

We have adapted this base algorithm so that it can switch between the PoV of different characters during the generation of a single narrative in response to user interaction. Once a user request to change PoV is received, the narrative switches to the PoV of a different character at the next constraint that is common to both PoV's. As an example, in the network fragment shown in figure 1 node N3 is common to both characters' PoV, since *(pov shylock-victim)* and *(pov antonio-victim)* are in the set of associated PoV's. In order to be able to switch between the PoV of different characters the algorithm is amended to maintain a record of the PoV's that have featured in the narrative so far and also to monitor for change of PoV requests and making changes, such as updating the currently adopted PoV, as appropriate.

5. RESULTS

Our working hypothesis is that by describing narrative actions from the different perspectives of each of the characters that take part in the action it is possible to generate consistent narratives adopting the PoV of one of the characters. The generation process is however non-trivial and cannot be reduced to the substitution of one action to another. The PoV is more than mere presentation since it corresponds to different action sets and different dependencies towards potential interaction and dynamic changes. As a consequence, story variants that are obtained will respond differently to real-time modifications of the narrative domains, such as those introduced by user interaction.

In this section we present, through analysis of a selection of sample narratives, experimental results that support our hypothesis. The experiments featured our Merchant of Venice Interactive Narrative, whose architecture is shown in figure 2. This system features a generator which is an implementation of the algorithm outlined in section 4.2. Our tests showed acceptable levels of performance with average solution time of 0.38 seconds for narratives with an average 23 actions, and an average of approximately 900 instantiated actions and 8 constraints per problem instance.

5.1 Example: Generating Narrative Variants

Previous IS work has often followed the convention of classical theatre by modelling in detail fragments of novels or plays and pacing the animation and staging the action to reflect the real-time unfolding of the action. A consequence of this approach is that key actions may be staged with minimal description, resulting in the whole play being condensed rather than including dialogue commensurate with the complexity of the play. Hence we are departing from this approach and in this study we aim to generate complete sub-plots that span the entire play.

Figure 3 compares two narrative variants obtained by generating the pound-of-flesh subplot from the PoV of Antonio and from that of Shylock. The two variants share specific events which constitute the backbone of the pound-of-flesh plot, these events being represented by constraints C1 (that the bond be sealed), C2 (that the bond be forfeit) and C3 (the dispute ends in the high court).

There is a marked difference in the content of these nar-

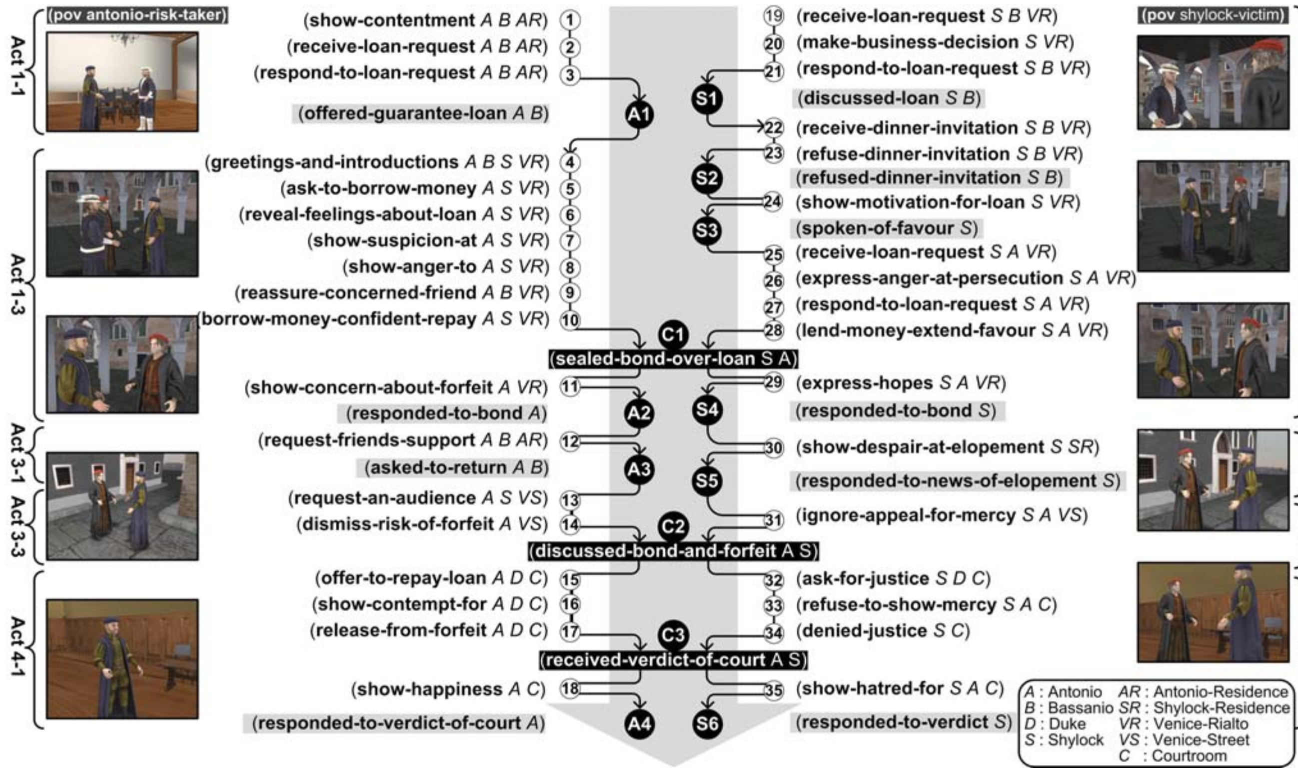

Figure 3: Comparison of narrative variants obtained by generating the pound-of-flesh subplot with different PoV (left side (pov antonio-risk-taker), right side (pov shylock-victim)). Key constraints selected by the generator run down the centre with the selected narrative actions for each PoV to the sides of the constraints.

ratives and the different PoV places emphasis on specific actions. In particular, the narrative following Antonio's PoV, emphasises the reasons for the loan: the relation between Antonio and Bassanio (operators 1-3), and the associated risk-taking (operators 6-9). Conversely, according to Shylock's PoV it is the relationship between Antonio and Shylock which is prominent, in particular with a history of persecution and humiliation (dinner refused, operators 22-24) and how the loan is seen by Shylock as an offer of friendship (operators 27-29). The next important stage of the pound-of-flesh sub-plot concerns the forfeiting of the bond (Antonio is unable to repay the loan). After the bond has been sealed, the narrative for Antonio's PoV still considers the risk and once again involves his relation to Bassanio (operators 11-12; 14). On the other hand, from Shylock's perspective the narrative describes further suffering with his daughter fleeing his house, adding to his victim status and justifying his future insistence on enforcing the bond (operators 30-31; 32). After the forfeit, in the courtroom, the opposite PoVs find their most salient expression in clearly reflecting Antonio's contempt for Shylock (operator 16) and Shylock's desire for justice (operators 33-34). This example illustrates that even by remaining true to the baseline plot (in the absence of user interaction) it is possible to generate narrative variants which retain the plot information and its consistency but shed light on the motivation and can be more sympathetic to a given character.

Let us now look at how these narratives were generated. Figure 3 shows the constraints that have been automatically selected from the input constraint information using the method described in section 4.2. For Antonios' PoV the selected constraints are labelled A1 to A4, and for Shylocks' they are labelled S1 to S6. There are also a number of constraints that are common to both characters, labelled C1 to C3. The constraints are key components of plot structure as they form the backbone of the plot outline. For example, if we look at the narrative for Antonio, the plot outline consists of the following sequence of constraints: $A1 < C1 < A2 < A3 < C2 < C3 < A4$. Each of these constraints forms the goal of a separate subproblem, so the goal of the first problem is A1 *(offered-guarantee-loan antonio bassanio antonio-residence)*, the goal of the next sub-problem is the constraint C1 *(sealed-bond-over-loan shylock antonio)* and so on. The output narrative is built up incrementally by joining together the narratives that are generated for each of the sub-problems. However these sub-problem narratives aren't independent: the conditions that are true at the end of one sub-problem become the initial conditions for the next sub-problem. Hence the sub-problems must be tackled in order.

One source of narrative variation results from the selection of constraints at nodes in the constraints network. This occurs because selecting different constraints results in differences in narrative content. For example, recall node N1 from figure 1 which features the constraints *(responded-to-news-of-elopement shylock)* and *(responded-to-news-of-theft shylock)*. For the narrative from Shylocks' PoV shown in figure 3 the constraint S5, *(responded-to-news-of-elopement shylock)* has been selected arbitrarily from node N1 in the constraints network, but for another variant the other con-

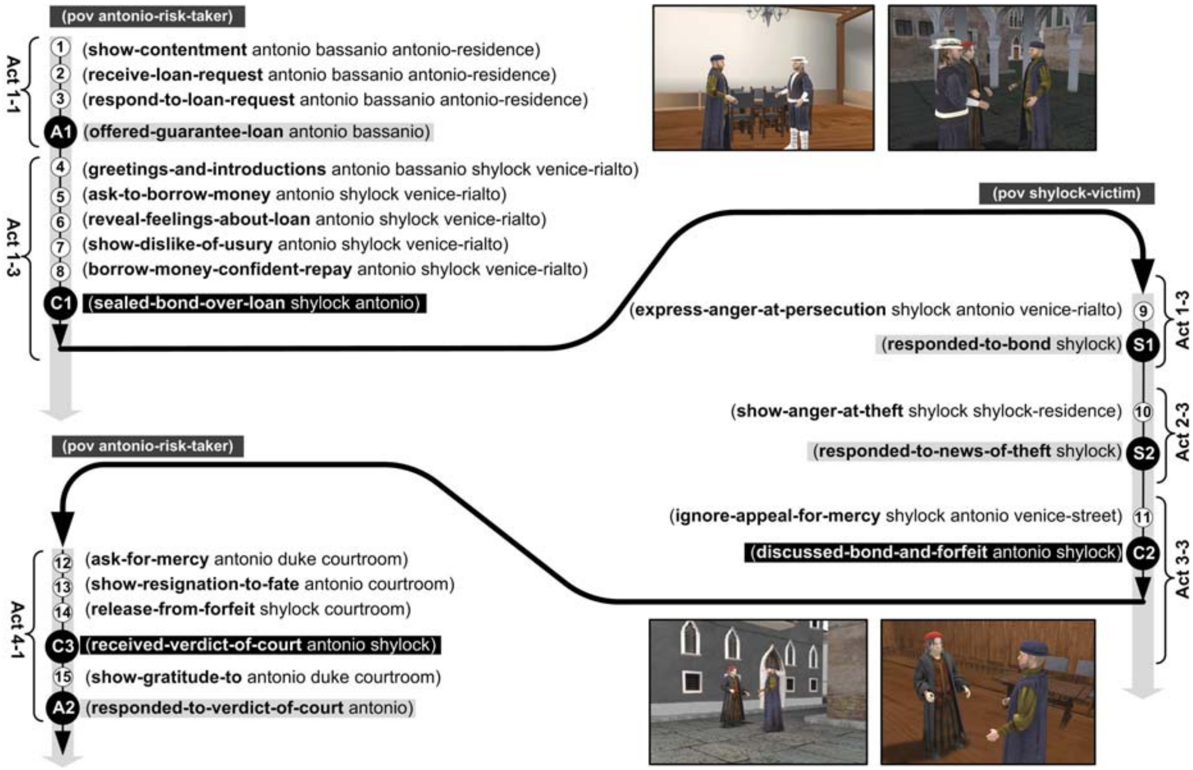

Figure 4: A single generated narrative that switches PoV from (pov antonio-risk-taker) to (pov shylock-victim) and back to (pov antonio-risk-taker). Key constraints selected by the generator are highlighted (A1, C1, S1, S2, C2, C3, A2) and are preceded by the sequences of narrative actions selected for those constraints.

straint might be selected and the *(responded-to-news-of-theft shylock)* would feature in the narrative instead. The selection of different constraints forces the planner to search for narrative actions, resulting in different narrative variants.

Another source of variation at the planning level is the selection of asymmetric narrative actions on the basis of character PoV. For example, as we saw in section 3.3 there are a number of asymmetric narrative actions that all result in the loan being arranged between Shylock and Antonio i.e. make true constraint C1 *(sealed-bond-over-loan shylock antonio)*. In figure 3 we can see that the action *(borrow-money-confident-repay antonio shylock venice-street)* has been selected, in keeping with the point of view, *(pov antonio-risk-taker)* that has been adopted for this narrative. For a different PoV, such as *(pov shylock-victim)* shown on the right hand side of figure 3, then a different asymmetric narrative action, *(lend-money-extend-favour shylock antonio venice-rialto)* is selected to achieve this same constraint.

5.2 Example: Simulating Modifications

So far our focus has been on narrative generation, however the use of character PoV introduces the possibility for a user to interactively switch PoV, for example, in order to get a different perspective on a story. Hence we have included an example narrative (figure 4) to illustrate how a narrative can switch between PoV's within the same generated narrative, thus simulating changes introduced by user interaction.

We can make a number of observations about the content of this narrative. For example, in the initial segment the PoV is *(pov antonio-risk-taker)*, the same PoV as the narrative in figure 3 but the narratives differ. The narrative in figure 4 features a discussion about lending money with interest rather than the angry exchange and reassurances that feature in the narrative in figure 3. This difference is a consequence of the control mechanism allowing for different lines of conduct within the same PoV.

Another variation in narrative content can be observed in the narrative for PoV *(pov shylock-victim)*. In this example, the generator has arbitrarily chosen the constraint *(responded-to-news-of-theft shylock)* with the selection of the narrative action that has Shylock speaking of his anger at his daughter's theft of his money rather than his despair at her elopement (as was the case in the variant in figure 3).

The final segment of the narrative shown in figure 4 returns to a PoV of *(pov antonio-risk-taker)*. Here, variation is possible since the final narrative action chosen enables Antonio to follow a slightly different line of conduct to the narrative shown in figure 3 and show gratitude to the court for freeing him.

6. CONCLUSION

In this paper, we have shown how a baseline plot can be adapted in order to be told from the perspective of one of the feature characters. The method we have presented ensures that the essence of the plot is retained, rather than simply being projected onto a character's role [4]. The overhead of our approach is that the representation must be extended to include key asymetric narrative actions: we would think that this is offset by the possibility of declarative control using constraints. The real impact of this approach could be to reconcile narrative generation with modern scriptwriting which often takes characters as its starting point. An ability to explore various realisations of the narrative according to the characters' perspective would be a powerful tool to explore the narrative space. In future work we will extend our approach to real-time Interactive Storytelling, taking as a starting point our experiments on the dynamic modification of story worlds.

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