Storifying Observed Events: Could I Dress This Up as a Story?

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Abstract. The format preferred by people to receive reports on events that have been observed is a story. Sometimes real life events inspire a story, but either lack the structure or the clear motivation for the characters that one would expect in a story. When this happens, a process of "fictionalising" these real life events can be applied. This process usually creates a discourse in which the real life events may have been filtered, adapted or extended, possibly with additional material added, and which presents the type of causally connected structure we are used to observing in a story. We call this process *storifying* the events. The present paper postulates one possible computational model of how this process is carried out. Based on the record of piece movements for a chess game, and a set of schemas for plot, the model selects narrative threads for particular pieces (based on the concept of pieces having a restricted view of the whole board), finds the portions of those threads that match plot schemas, and uses them to instantiate the schemas into stories.

1 Introduction

Narrative plays a significant role in human communication as the vehicle generally employed by individuals to convey to others information about events that have been observed. Yet the mechanisms by which such narratives are constructed from the basic building blocks of a set of events are badly understood. In a world where technological advances are progressively making it possible to extract basic information about events from multiple sources (surveillance videos, postings in social networks, records of change of location of specific devices, sensors, smart objects), there is a need for solutions that can model the ability of humans to sift through large amounts of event descriptions acquired in this fashion and automatically carry out the task of selecting and combining a subset of these into pseudo-narrative formats that can act as adequate renderings of the part of what has happened that is worth reporting.

To achieve this, it would be extremely useful to have accurate models of how humans construct narratives from observed experience, and how these processes address the task of selecting particular events to mention while omitting others, how they postulate particular connections among these events to provide a body for the narrative, and how they choose to arrange the selected material into the linear sequence of statements that constitute a narrative.

Beyond basic reporting of observed events, where faithful rendering of fact is fundamental, humans have developed a more elaborate form of storytelling, in which departure from accurate fact is allowed (even encouraged) if it achieves certain desired (literary?) effects. These effects may take different forms, including making the stories easier to remember, conveying a particular message in a subtle way, or providing pure entertainment value. To achieve such effects human storytellers operating from an inspiring set of facts apply a number of operations. Again, while most of us have seen these operations applied in film or literature to repackage episodes from reality in fictional form, very little is known about them from the computational point of view. Yet endowing a computer with the ability to so enhance bare-bones information to make it easier to remember or simply more entertaining might go a long way towards reducing the feeling of dry-fact presentation that one gets from computer generated material.

The present paper addresses these problems by presenting a computational model of how input data that record patterns of movement and interaction between basic agents is mined for possible pseudo-narratives that present a significant subset of the observed events packaged into a sequence of statements that exhibits desirable properties that make it resemble narratives as preferred by humans.

2 Related Work

A number of academic disciplines – narratology, psychology, artificial intelligence – have focused on narrative from various points of view. Yet the ability to build story-like discourses from conceptual records of experience has very rarely been addressed, as it lies much at the gaps between disciplines – too elementary to be considered by literary studies, more elaborate than other yet to be understood abilities to be addressed in experimental psychology, and side-lined by artificial intelligence as less glamorous than *ex novo* generation of stories.

2.1 Narrative

Narrative has been considered as an elementary cognitive ability relevant for human beings [49, 7, 29]. Yet the process by which a particular experience of reality gets transformed into a narrative in the classic sequential sense that we consider a "story" is poorly understood. In recent years there has been a significant effort to relate narrative to the study of human cognition [28, 30]. It is clear that this line of research constitutes a major challenge, given the levels of complexity involved in both narrative and human cognition. The picture to be considered is complex and full of open questions.

Insights on narrative may also be obtained from a number of related disciplines, such as narratology, psychology, cognitive science and creative writing.

An important obstacle that faces this challenge is the fact that humans are notoriously poor at identifying the processes that they apply

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in processing reality [40]. As a result, we are faced with the task of postulating the underlying latent processes from the observation of their external manifestation. Observable manifestations are the actual *narratives as literary works*, which are studied by narratology, or the *processes by which humans produce narratives*, which are studied from different points of view by cognitive science and creative writing. Another possible approach is to consider the *role of simulation* in the understanding of how narrative works.

2.1.1 Narratives as Products

Relevant concepts from the field of narratology [1] are the distinction between *fabula* – the set of events behind a story, independently of how they are rendered – and *discourse* – the particular way of rendering a given fabula as a sequence of statements – and *focalization* [11] – the way in which a story is told from the view point of particular characters, switching between them at need to cover what happens elsewhere.

Existing narratives can very rarely be paired with alternative records of the experience that led to them, or even the events that are represented in them. This is a significant obstacle for applying a data-driven approach to model narrative construction computationally, as these approaches require instances of both the input that lead to the communication impulse, the narrative that arose from it, and possibly representations of intermediate design decisions.

2.1.2 Narrative Construction as a Process

Two different processes on narrative have been studied by cognitive science: comprehension and writing.

Narrative comprehension involves progressive enrichment of the mental representation of a text beyond its surface form by adding information obtained via inference, until a situation model (representation of the fragment of the world that the story is about) is constructed [55]. Trabasso et al [53] postulate comprehension as the construction of a causal network by the provision by the user of causal relations between the different events of a story. This network representation determines the overall unity and coherence of the story. These insights need to be considered in the identification of the relevant aspects to be represented for a fabula.

Cognitive scientists have proposed models of the *writing task*. Flower and Hayes [10] define a cognitive model of writing in terms of three basic process: planning, translating these ideas into text, and reviewing the result with a view to improving it. These three processes are framed by what Flower and Hayes consider “the rhetorical problem”, constituted by the rhetorical situation, the audience and the writer’s goals. This corresponds to the contextual parameters considered in the present proposal. Sharples [50] presents a description of writing understood as a problem-solving process where the typical writer alternates between the simple task of drafting possible additions to his text and the more complex task of reflecting on how the text matches his goals to review what to do next. This type of feedback loop based on satisfaction of the stated goals needs to be considered both in fabulation and discourse composition processes.

Creative writing emerged as a specific discipline to obtain insights into the processes that lead to the production of narrative. The difference in purpose with traditional treament of literature in the humanities has been identified as an open question that needs solving [31].

2.1.3 The Role of Simulation

Disciplines such as social psychology have long accepted the role of computer simulation as a useful tool for addressing research problems that are difficult to represent linguistically or mathematically [42]. Computational modeling of processes of narrative construction allows us to study how they replicate observed human behaviour as well as how they operate internally. This has a potential for yielding insights on how humans address the same tasks.

2.2 Automated Story Telling

Storytelling efforts in AI have focused on two different tasks: building fictional plots from scratch and structuring appropriate discourse for conveying a given plot. Solutions to *build fictional plots* [12] rely on different techniques, such as grammars [33, 6, 34]– to build stories according to a particular structure –, planning [38, 36, 48] – to build stories that reach particular given goals –, reuse [54, 44, 18, 47, 41] – to build stories that resemble previous instances of valid stories –, or simulation of world dynamics [52] – to build stories that emerge from the interactions of modelled characters. Solutions to *build a discourse that renders a given plot* have been developed for the logs of a social simulation system [27] and for constructing cinematic visual discourse [3, 32]. My own work [13, 14, 15] pioneered the task of first identifying valuable stories from the record of a chess game and then generating natural language renderings of them. However, the narratives resulting from this effort lacked a clear concept of plot, which is a central focus of the present paper.

Following a general trend in computational creativity to develop generative systems that are capable of carrying out some evaluation of their outputs – as human creators do – there has been considerable progress in the development of *metrics for automatically generated narratives* [43, 16, 51] .

Different storytelling systems tend to focus on the representation and manipulation of a particular subset of the *possible relevant aspects* [21], whereas full-fledged solutions to the problem are unlikely to succeed unless they provide sufficient coverage of the complete range of relevant features.

Existing story generation systems often rely on extremely simple solutions for rendering their results as text [8], far removed from the state of the art in natural language generation. This disconnect – between the set of events that can be generated and the well-structured discourse plan that an NLG system needs to produce adequate prose to narrate them – may partly be resolved by the consideration of storytelling as a form of data to text generation. The present paper proposes a possible avenue in which to address this issue.

2.3 Natural Language Generation

Natural language generation (NLG) studies the automated construction of text documents from input data [46]. It is traditionally considered in terms of three different phases: *content planning* – deciding what to say and how to organize it into a structured set of sentences, or a *discourse plan* –, *sentence planning* – deciding how to structure each of those sentences internally –, and *surface realization* – deciding how to convey each sentence as text. Academic efforts in the recent past have shown a tendency to focus on sentence planning and surface realization, partly due to the fact that content planning tends to be very dependent on the particular domains of application, and scientific work on content planning faces a strong requirement of having access to appropriate input data for the domain in a machine-readable format.

Content planning is usually considered in terms of two different operations. *Content determination* is the task of identifying which facts from the input data are to be included in the intended message. *Discourse planning* is the task of establishing a particular ordering and structuring for the discourse created to convey a particular message. Existing efforts to model these tasks have focused on construction of texts to report sporting events [2, 5, 35], or generation of elaborate narrative variations for sequences of user actions in interactive fiction [39].

The present proposal addresses the task of constructing a story to match a set of input data in terms of a specific stage of content planning based on matching the input data with known narratives schemas, and using the match to drive both the selection (content determination) and the organisation (discourse planning) of the content to be conveyed. The complete transcription of the planned discourse to text is not considered in this proposal, as state of the art solutions exist that could be applied to solve that task [8].

2.4 Computational Narratology

Emerging in recent times at the joining point of computer science and narratology, computational narratology [37] focuses on the algorithmic processes involved in creating and interpreting narratives, modeling narrative structure in terms of formal, computable representations. Much of the work carried out in artificial intelligence could be considered computational narratology, as the borders are considerable blurred.

Originally based on accounts of narrative structure in narratology, recent advances have proposed formal computable representations for plot [22], an enriched vocabulary of representational abstractions of narrative content [20], procedures for generating plot structures [19, 26] and procedures for composing narrative discourse from an input set of data [23, 24, 15, 25].

3 Storifying

A computational model of the task of storifying a set of observed events must address a number of tasks. First, it needs to be able to see the events from the point of view of the participating agents. This is the process known in narratology as focalisation, and it partitions experience into narrative threads centred on particular characters. Second, it needs a representation of the structure expected for a story. Existing accounts of archetypal plots will be of use here. Third, it needs to establish mappings between the narrative thread for some character and some instance of archetypal plot. This is the key to the process. The mapping should provide the information required to instantiate the plot with the characters from the observed events. Metrics must be provided to measure the degree to which the mapping respects the information in the observed events used as inspiration. Finally, it would need to generate a readable version of the resulting discourse.

The solution for storification described here has been implemented as an application named *StoryFire*.

3.1 Focalised Representation of Events

The task of addressing computationally the partition of experience into narrative threads centred on particular characters had already been addressed in [23, 15]. We adopt here the solution proposed there, based on the establishment of a range of perception for each agent which determines how much of the reality around her she perceives at any given moment in time. This requires explicit representation of space and explicit encoding of the location of both events and observing agents. The simplest way of achieving this is by relying on a simple two-dimensional grid. By applying this constraint, a representation can be obtained for the narrative thread for each character by compiling into a linear thread all the events that fall within the range of perception of the agent over time. In this way, a *fibre* is a sequence of events that either involve or are seen by a given character. It represents a focalized perception of the world.

The task of *heckling* involves establishing the range of perception, tracking the set of all possible characters involved in the events to be narrated, and for each character constructing a fibre representation that includes descriptions of all the event that the character initiates, suffers or perceives. These descriptions will appear in the fibre in chronological order.

A short example of a fibre – extracted from the application to telling stories from a chess game developed in section 3.5 – is given in Table 1. It describes what the focalising character can see at a given point in time, separated into a descriptive section that accounts for static information and a narrative section that accounts for changes occurring at this particular point in time. This is verbose to guarantee that all relevant information is registered. When actually rendering this information, whatever has not changed from a previous stage is omitted.

```
START-FIBRE for : lwr
[
Focalizer: lwr
Time: 7
Date: 7
a 1 /
Perception Range: 2
DESCRIPTIVE:
  is_at(wp1, a 2)
  is_at(lwk, b 1)
  is_at(wp2, b 2)
  is_at(lwb, c 1)
  is_at(wp3, c 2)
NARRATIVE:
  leaves_from(wp3, c 2)
]
(...)
END-FIBRE
```

Table 1. Example of a short fibre focalised on chess piece `lwr`, includes snapshot of the fabula at time 7, in which the focaliser, at a point where it can see pieces `wp1`, `lwk`, `wp2`, `lwb` and `wp3` around it, notices piece `wp3` leave

3.2 Representing Archetypal Plots

The hypothesis on which we base our current approach to storifying is that the storifier applies to the observed set of events a set of pre-existing frames for stories, and selects the best pairing between a subset of the observed event and one of the possible storytelling frames. Other approaches are possible, but this seemed a plausible baseline to start the research.

As a computational approximation of this type of pre-existing storytelling frame we turn to existing work on formal computable representations for plot. Existing solutions rely on a representation of plot as a succession of labels that represent units of abstraction of plot-relevant actions by the characters, along the lines of Propp's concept of a *character function* [45]. Such representations have been used to build a set of narrative schemas for plot [22] and even to develop a case-based solution for generating plots in terms of them [19]. However this type of representation restricted to flat labels does not hold enough data to inform a subsequent process of instantiation with knowledge from real life. A plot as a storytelling frame is tied together by relations that need to hold between the elements that compose it, such as who the hero and the villain are, and what relative roles they play in the elements used to build the plot line.

For this reason, in the present paper we rely on an enriched representation of plot. A *plot frame* has a basic skeleton that is indeed as sequence of labels for character-function-like elements (referred as *plot elements*), but holds additional information to indicate what roles are relevant to the plot (hero, villain, victim,...) and who the protagonist of the plot is. The roles used for this purpose were originally based on Propp's concept of the *dramatis personae* of a Russian folk tale but had to be extended to account for other types of stories. The need for explicit indication of who the protagonist arose from the observation made in [22] that archetypal plots for *Overcoming the monster* and *Tragedy* were very similar in structure, and only differentiated by who the protagonist is (the hero in one, the villain in the other). Each plot element has a more specific set of roles that describe how the characters take part in it. For instance, an *Abduction* involves an *abductor* and an *abductee*. In most instances of plot, the abductor is the villain, but this need not always be the case. For this reason, each instance of a plot element occurring within a plot explicitly provides a mapping between the narrative roles for the plot and the specific roles for the plot element.

The plot frames considered in the present paper are instantiations of the seven basic plots defined by Booker [4]. These are not considered to be exhaustive but constitute a good set for the initial trials. Extension of the set of plot frames will be considered as further work. An example of a short plot frame is given in Table 2.

```
PLOT FRAME = Comedy-UnrelentingGuardian
PLOT PROTAGONIST = hero
PLOT ROLES = hero love-interest obstacle

PLOT-START

PLOT ELEMENT NAME = CoupleWantsToMarry
ROLE-DATA
lover hero
beloved love-interest

PLOT ELEMENT NAME = UnrelentingGuardian
ROLE-DATA
lover hero
beloved love-interest
guardian obstacle

PLOT ELEMENT NAME = HighStatusRevealed
ROLE-DATA
lover hero
beloved love-interest
guardian obstacle

PLOT ELEMENT NAME = Wedding
ROLE-DATA
lover hero
beloved love-interest

PLOT-END
```

Table 2. Archetypal Plot for Unrelenting Guardian Comedy Plot

3.3 Storifying: matching an observed thread of events to a known plot frame

The establishment of mappings between the narrative thread for some character and some instance of archetypal plot would ideally consider all available information about what the character does in the thread and what it is expected to do in the archetypal plot. For this paper, we will consider only a first approximation of how basic mappings may be established. More elaborate solution may be considered later once the overall feasibility of the approach has been tested.

A *mapping* between a thread and a plot frame involves an alignment between a subset of the events in a thread and the sequence of plot elements in a plot frame, and a correspondence between the characters present in the thread and the plot roles in the plot frame. An example of such a mapping is given in Table 3.

```
BEGIN thread to plot frame match
Thread lwk
PlotFrame Comedy-UnrelentingGuardian
Score 83

alignMENT
9 [0]
11 [1]
16 [2]
17 [3]
MAPPING
bp4=love-interest
rwb=obstacle
lwk=hero
END thread to plot frame match
```

Table 3. Mapping between thread and plot frame

The basic constraint to be satisfied when matching a thread and a plot frame is that, at each point where an event is aligned with a plot element, the plot roles for the plot element are appropriately instantiated with characters present in the event according to the correspondence established in the mapping.

We propose a baseline algorithm in two stages. The first stage establishes a set of possible correspondences between the set of characters in the thread and the set of roles in the plot frame. This is done by assigning the focaliser of the thread to the protagonist of the plot frame, and considering all other possible assignments of remaining characters in the thread to the remaining roles in the plot frame. The second stage identifies the best possible alignment between thread events and plot elements in the plot frame. For each of the possible correspondences between characters and roles, an assignment of roles is made to the characters in the thread. the sequence of plot elements in the plot frame is then traversed, trying to match the set of roles involved in the current plot element with the set of roles now assigned to the characters present in the next event in the thread. If the set of roles assigned to the characters present in the event matches at least 50% of the set of roles involved in the plot element, they are considered aligned, if not that event is skipped. A valid alignment results if the end of the sequence of plot elements in the plot frame is reached before the events in the thread run out.

For each valid alignment a score is computed as the average of the percentage of satisfaction of set of roles involved in the plot element by roles assigned to the characters present in the event, over the whole set of plot elements. This constitutes an acceptable baseline metric to measure the degree to which the mapping respects the information in the observed events used as inspiration.

3.4 Instantiating a Plot Frame

A plot frame is an abstract representation of a possible story structure. As such, it needs to be instantiated into a story by providing the additional detail that has been omitted during the process of abstraction. The task of instantiating abstract representations of stories had already been addressed in [17] for the case of Russian folk tales. In this paper we rely on an updated version of that procedure to instantiate plot frames into conceptual descriptions of stories. To account for the broader range of stories covered by the archetypal plots considered, we have expanded the original vocabulary of story actions to those considered by the Propper Wryter system [20], which was used to generate the plot of the *Beyond the Fence* musical [9].

3.5 Storifying Partial Views of a Chess Game

To provide a preliminary benchmark for the various intuitions outlined in the rest of the paper the simplest approximation to a case study that could be conceived is described in this section. This is done by considering a chess game as a very simple model of a formalised set of events susceptible of story-like interpretations. Chess provides a finite set of characters (pieces), a schematical representation of space (the board) and time (progressive turns), and a very restricted set of possible actions. Operating on simple representations of a chess game in algebraic notation, exploratory solutions for the tasks of content selection and content planning are explored based on a fitness function that aims to reflect some of the qualities that humans may value on a discourse representation of a story.

1. d4 d5	11. Bc2 h6
2. Nf3 Nf6	12. b3 b6
3. e3 c6	13. Bb2 Bb7
4. c4 e6	14. Qd3 g6
5. Nc3 Nbd7	15. Rae1 Nh5
6. Bd3 Bd6	16. Bc1 Kg7
7. O-O O-O	17. Rxe6 Nf6
8. e4 dxe4	18. Ne5 c5
9. Nxe4 Nxe4	19. Bxh6+ Kxh6
10. Bxe4 Nf6	20. Nxf7+ 1-0

Table 4. Algebraic notation for an example chess game

Each individual chess piece taking part in the game is considered a character. Perception range is defined as the small space of N x N squares of the board that constitutes that immediate surroundings of each piece at any given moment.

Events are triggered by pieces moves. Whenever a piece moves, this constitutes an event for the piece itself, for any other piece captured during the move, and for any other piece that sees either the full move, the start of the move or the conclusion of the move.

Fibres for each of the pieces are built by collecting event descriptions for those moves that they are involved in or they see. The same event may get described differently in different fibres depending on the extent to which the corresponding focalizer is involved in it.

An example of how the storification process applies to the chess game given in Table 4 is shown in Figure 5. The figure shows the partial views of the game as seen by the focaliser (in this case, the left white knight) for the events of his thread that have been aligned with the UnRelenting Guardian plot frame shown in Table 2. This corresponds to the best scoring mapping found for pairing the plot frame with threads from the game. Further examples of storification of other threads from the game are shown in Appendix A.

The process of rendering the conceptual description of a story as text introduces in itself a number of compacting solutions (aggregation, ommission, replacement of nouns with anaphoric pronouns...) that somewhat obfuscate the data to which it is applied. In order to allow the reader to evaluate directly how well the results of the described storification process respect the input data, and how much additional material has been introduced in each case, the examples given below include the conceptual representation of the resulting story rather than its text rendering.

4 Discussion

The process of storification as described takes data on observed movement of characters and superimposes on them a layer of possible motivation for their actions. The information on such motivation cannot normally be observed and has to be inferred by viewers. Humans are very good at this task, and much of the information they obtain about the events they observe results from such processes of inference. The procedure proposed in this paper replicates such functionality at a very basic level.

When humans carry out these processes to interpret reality, their purpose is usually to compile information on the observed characters with a view to predict future behaviour. However, in cases of storification, departure from truth is generally accepted as a tool of the craft. To make the result interesting the storyfier can introduce conflicts that were not apparent, or take sides for one of the characters, and from that point on minimise references to their shortcomings and maximise those of their rivals. In some cases, characters may be introduced to play the role of rivals if none were available in the observed events.

The procedure described here relies on these allowances to provide a baseline storification process that produces acceptable simple stories that respect the observed relevant features of the events they are based on. In doing so, some events from the thread are omitted if they are not considered relevant to the plot frame under consideration. Some characters present in the scene may be omitted from the story if they play no relevant role in the plot being told. These solutions conform to acceptable practice when telling a story.

Formal evaluation of this type of storification presents several important difficulties. The most relevant is that the storification of a given set of events is, by definition, subjective. Given sequence of snapshots of a game – as the one shown in Figure 5 – human judgements on the plausibility of a given storification for it, or on the entertainment value of the resulting story, may be collected. However, only very extreme negative values would be damaging for the validity of the process.

5 Conclusions

Storification of observed events can be modelled computationally with very basic baseline solutions for the intervening steps. Whereas there may not be an immediate practical application of this type of process, we believe it to be a fundamental ingredient of the human storytelling capacity. As such, computational models of it are useful *per se* as accounts of how the task may be carried out. In the process of developing the one reported in the present paper, important insights on the nature of plot – such as the need to represent explicitly protagonism, narrative roles, and mapping of narrative roles to specific plot elements – and the process of content determination – how the requirement of a successful alignment between observed event and intended plot frame forces selection or ommission of particular

Move: 9

	a	b	c	d	e	f	g	h
1								
2								
3								
4				p				
5			P	**P**				
6			**N**		P			
7	P	P						
8	R		B	Q	K			

character lwk (**N**)
character wp4 (**P**)
mutual_love lwk wp4
want_to_marry lwk wp4

The left white knight and the fourth white pawn are in love. They want to get married.

Move: 11

	a	b	c	d	e	f	g	h
1								
2								
3								
4				p				
5			P	**P**				
6			**N**	**B**	P			
7	P	P						
8	R		B	Q	K			

character rwb (**B**)
(guardian rwb wp4)
opposed_to_plan rwb
sundered lwk wp4

The right white bishop is the guardian of the fourth white pawn. The right white bishop is opposed to their union.

Move: 16

	a	b	c	d	e	f	g	h
1								
2								
3								
4								
5			P	**P**	p			
6			**N**	**B**				
7	P	P						
8	R		B	Q	K			

(different_class lwk wp4)
high_status_revealed lwk
¬ sundered lwk wp4

The high status of the left white knight is unexpectedly revealed. The right white bishop relents in his opposition.

Move: 17

	a	b	c	d	e	f	g	h
1								
2								
3			p	b	p	n		
4								
5			P	**P**	**N**			
6				**B**		N		
7						P	P	
8								

marry lwk wp4

The left white knight and the fourth white pawn get married.

Table 5. Storification as a Comedy of the thread for the left white knight (lwk, represented in the diagrams as **N**) in terms of his romance with the fourth white pawn (wp4, represented in the diagrams as **P**) in the face of opposition of is guardian the right white bishop (rwb, represented in the diagrams as **B**).

events or characters – have emerged. In addition, they may provide useful tools to enhance existing storytelling solutions.

Many refinements of the proposed procedure are possible. At present, baseline decision making has been applied at all the relevant stages. Detection of co-location of characters required as a prerrequisite for interaction is currently based on co-presence of both within the perception range of one another. Proximity may be introduced as a further refinement. The establishment of mappings between characters and roles is currently done by exhaustive testing of all possible combinations. Informed procedures at this point may lead to more efficient implementations. The metric for satisfactory alignment is currently opaque to the semantics of the events and the plot elements. In all these cases, the fact that the baselines solutions employed lead to acceptable results suggest that investing effort in exploring more refined solutions would be worthwhile.

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A Further Storification Examples

Further examples of storification by the StoryFire system are shown in Figures 6 and 7. The system does produce instances of a number of additional plot frames. However, most of these are longer than the examples shown, which makes it impractical to include instances of them in a paper of this length.

The hero in the Tragedy in Figure 6 often absents himself from the story. This is acceptable because the protagonist of the tragedy is the villain. The punishment meted to the villain appears to be one of banishment.

The Comedy in Figure 7 involves some of the same characters in the tragedy in Figure 6, but storyfied differently (with a different plot frame and a different selection of events and characters). It also provides a different instantiation of the plot frame used in Figure 5. The movement of the pieces in Figure 6 seems to scenify the sundering of the lovers, and a conference between the suitor and the guardian.

In the example in Figure 5, the guardian seems to interpose himself between the lovers in the second frame of the story, and the suitor jumps over the guardian to stand next to his lover in the last frame.

All these surprising interpretations of the actual movements by the pieces arise in the present version by serendipity. The possibility of examining these serendipitous behaviours to be incorporated as features of an improved system will be considered as further work.

Move: 23

	a	b	c	d	e	f	g	h
1								
2								
3								
4								
5								
6		**P**						
7	P		B					
8	R		**B**	Q				

0 character lwb
0 kidnap lwb wp2
0 character wp2
0 misbehaved lwb
0 abductor lwb
0 abducted wp2

Move: 25

	a	b	c	d	e	f	g	h
1								
2								
3								
4								
5			P	P				
6		**P**						
7	P	**B**	B					
8	**R**			**Q**				

1 character lwr
1 character wq
1 orders wq lwr
1 called lwr

Move: 29

	a	b	c	d	e	f	g	h
1								
2								
3								
4								
5			P	P				
6		**P**		**Q**				
7	P	**B**	B					
8								

2 sets_out lwr
2 traveller lwr

Move: 31

	a	b	c	d	e	f	g	h
1								
2								
3								
4								
5								
6		**P**		**Q**				
7	P		B					
8			**B**		**R**			

3 fight lwr lwb
3 confrontation lwr lwb
3 enemies lwr lwb
3 attacker lwr
3 defender lwb

Move: 33

	a	b	c	d	e	f	g	h
1								
2								
3								
4								
5								
6		**P**		**Q**				
7	P		B					
8			**B**					

4 wins lwr
4 winner lwr

4 looser lwb

Move: 37

	a	b	c	d	e	f	g	h
1						r		
2						p	k	
3						n	p	**B**
4								
5								
6								
7								
8								

5 punished lwb

Table 6. Storification as a Tragedy of the thread for the left white bishop (lwb, represented in the diagrams as **B**) who kidnaps the second white pawn (wp2, represented in the diagrams as **P**) and is finally defeated by the left white rook (lwr, represented in the diagrams as **R**) sent to the rescue by the white queen (wq, represented in the diagrams as **Q**).

Move: 27

	a	b	c	d	e	f	g	h
1								
2								
3								
4								
5			P	P				
6		P		**Q**		**N**		
7		B	B			P		
8						R		

0 character wq
0 character rwk
0 mutual_love wq rwk
0 want_to_marry wq rwk
0 lover wq
0 beloved rwk

Move: 35

	a	b	c	d	e	f	g	h
1								
2								
3								
4					**N**			
5			P	P				
6		P		**Q**				
7			B			P		
8			B			R		

(1 character bp3)
(1 guardian bp3 rwk)
1 opposed_to_plan bp3
1 sundered wq rwk

Move: 36

	a	b	c	d	e	f	g	h
1								
2								
3								
4			**p**		**N**			
5			P	P				
6		P		**Q**				
7			B			P		
8			B			R		

(2 different_class wq rwk)
2 high_status_revealed rwk
2 ¬ sundered wq rwk

Move: 39

	a	b	c	d	e	f	g	h
1								
2								
3								
4			**p**					
5			P	P				
6		P		**Q**				
7			B			P		
8						R		

3 marry wq rwk

Table 7. Storification as a Comedy of the thread for the white queen (wq, represented in the diagrams as **Q**) in terms of her romance with the right white knight (rwk, represented in the diagrams as **N**) in the face of opposition of her guardian the third black pawn (bp3, represented in the diagrams as **p**).