The Third Workshop on Computational Models of Narrative

(CMN'12)

26-27 May 2012

ABSTRACTS

Editor:

Mark A. Finlayson

Workshop Programme

Saturday, 26 May 2012

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14:00	Toward Sequencing "Narrative DNA": Tale Types, Motif Strings and Memetic Pathways, *S. Darányi, P. Wittek, L. Forró*
14:20	Computational Models of Narratives as Structured Associations of Formalized Elementary Events, *G.P. Zarri*
14:35	Objectivity and Reproducibility of Proppian Narrative Annotations, *R. Bod, B. Fisseni, A. Kurji, B. Löwe*
14:50	An Experiment to Determine whether Clustering will Reveal Mythemes, *R. Lang, J.G. Mersch*
15:00	In Search of an Appropriate Abstraction Level for Motif Annotations, *F. Karsdorp, P. van Kranenburg, T. Meder, D. Trieschnigg, A. van den Bosch*
15:15	Understanding Objects in Online Museum Collections by Means of Narratives, *C. van den Akker, M. van Erp, L. Aroyo, R. Segers, L. van der Meij, S. Lêgene and G. Schreiber*
15:30	**Best Student Paper on a Cognitive Science Topic**: Indexter: A Computational Model of the Event-Indexing Situation Model for Characterizing Narratives, *R.E. Cardona-Rivera, B.A. Cassell, S.G. Ware, R.M. Young*
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16:55	TrollFinder: Geo-Semantic Exploration of a Very Large Corpus of Danish Folklore, *P.M. Broadwell, T.R. Tangherlini*
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17:50	Towards a Culturally-Rich Shared Narrative Corpus: Suggestions for the Inclusion of Culturally Diverse Narrative Genres, *V. Romero, J. Niehaus, P. Weyhrauch, J. Pfautz, S.N. Rielly*
18:00	Towards a Digital Resource for African Folktales, *D.O. Ninan and O.A. Odejobi*
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Workshop Programme

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Sunday, 26 May 2012

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9:35	Similarity of Narratives, *L. Michael*
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10:10	Story Retrieval and Comparison using Concept Patterns, *C.E. Krakauer, P.H. Winston*
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11:20	Is this a DAG that I see before me?: An Onomasiological Approach to Narrative Analysis and Generation, *M. Levison, G. Lessard*
11:40	Automatically Learning to Tell Stories about Social Situations from the Crowd, *B. Li, S. Lee-Urban, D.S. Appling, M.O. Riedl*
12:00	Prototyping the Use of Plot Curves to Guide Story Generation, *C. León, P. Gervás*
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15:00	Integrating Argumentation, Narrative and Probability in Legal Evidence, *B. Verheij*
15:10	Arguments as Narratives, *A. Wyner*
15:20	Towards a Computational Model of Narrative Persuasion: A Broad Perspective, *J. Niehaus, V. Romero, J. Pfautz, S.N. Reilly, R. Gerrig, P. Weyhrauch*
15:30	Discussion
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Organizing Committee

Mark A. Finlayson (Chair)	Massachusetts Institute of Technology, USA
Pablo Gervás	Universidad Complutense de Madrid, Spain
Deniz Yuret	Koç University, Turkey
Floris Bex	University of Dundee, UK

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Bart Verheij	University of Groningen, the Netherlands
Patrick H. Winston	Massachusetts Institute of Technology, USA
R. Michael Young	North Carolina State University, USA

Invited Keynote

Saturday 26 May, 13:00–14:00

13:00–14:00

Crowd Sourcing Narrative Logic: Towards a Computational Narratology with CLÉA

Jan Christoph Meister

I will discuss a collaborative, computer aided approach towards building and exploiting a shared resource that can aid further research into the history and development of narrative, as well as into its phenomenology and logic. The particular example illustrating this approach is a project called CLÉA, short for *Collaborative Literature Éxploration and Annotation*.

Session I: Representation

Saturday 26 May, 14:00–15:50 & 16:30–16:55

14:00–14:20

Toward Sequencing "Narrative DNA": Tale Types, Motif Strings and Memetic Pathways

Sándor Darányi, Peter Wittek, László Forró

The Aarne-Thompson-Uther Tale Type Catalog (ATU) is a bibliographic tool which uses metadata from tale content, called motifs, to define tale types as canonical motif sequences. The motifs themselves are listed in another bibliographic tool, the Aarne-Thompson Motif Index (AaTh). Tale types in ATU are defined in an abstracted fashion and can be processed like a corpus. We analyzed 219 types with 1202 motifs from the "Tales of magic" (types 300-749) segment to exemplify that motif sequences show signs of recombination in the storytelling process. Compared to chromosome mutations in genetics, we offer examples for insertion/deletion, duplication and, possibly, transposition, whereas the sample was not sufficient to find inverted motif strings as well. These initial findings encourage efforts to sequence motif strings like DNA in genetics, attempting to find for instance the longest common motif subsequences in tales. Expressing the network of motif connections by graphs suggests that tale plots as consolidated pathways of content help one memorize culturally engraved messages. We anticipate a connection between such networks and Waddington's epigenetic landscape.

14:20–14:35

Computational Models of Narratives as Structured Associations of Formalized Elementary Events

Gian Piero Zarri

In this paper, we describe the conceptual tools that, in an NKRL context (NKRL = Narrative Knowledge Representation Language), allow us to obtain a (computer-suitable) description of full "narratives" as logically- and temporally-ordered streams of formalized "elementary events." After having introduced, first, the main principles underpinning NKRL, we describe in some detail the characteristics of the second order (reification-based) tools, like the "completive construction" and

the "binding occurrences," which implement concretely the association of the NKRL-formalized elementary events. Examples concerning some recent applications of NKRL in different domains will be used in the paper to better explain the use of these tools.

14:35–14:50

Objectivity and Reproducibility of Proppian Narrative Annotations

Rens Bod, Bernhard Fisseni, Aadil Kurji, Benedikt Löwe

A formal narrative representation is a procedure assigning a formal description to a natural language narrative. One of the goals of the *computational models of narrative* community is to understand this procedure better in order to automatize it. A formal framework fit for automatization should allow for objective and reproducible representations. In this paper, we present empirical work focussing on objectivity and reproducibility of the formal framework by Vladimir Propp (1928). The experiments consider Propp's formalization of Russian fairy tales and formalizations done by test subjects in the same formal framework; the data show that some features of Propp's system such as the assignment of the characters to the *dramatis personae* and some of the functions are not easy to reproduce.

14:50–15:00

An Experiment to Determine Whether Clustering Will Reveal Mythemes

R. Raymond Lang, John G. Mersch

Claude Levi-Strauss proposes a universal structure for narrative myths. The structure is expressed as the canonical formula, $f_x(a) : f_y(b) \approx f_x(b) : f_{a-1}(y)$, where the four terms of the formula denote bundles of gross constituent units, his term for predicate relations. The bundles are referred to as mythemes. The deep meaning of a myth is given by associating its semantic content with the terms of the formula. The analytic approach to myths is hindered by (1) circularity between the bundles and their components, and (2) heavy reliance on expert knowledge. This project is to develop a system for the algorithmic identification of these bundles. The investigation is starting with clustering of only word senses (semantemes) and will proceed to clustering of predicate relations. The number of desired clusters is known, and the clustered objects are non-numeric, so an appropriate algorithm is k-mediods, using distance metrics computed with the WordNet::Similarity Perl module. Status of the experiment and planned directions for the work are described.

15:00–15:15

In Search of an Appropriate Abstraction Level for Motif Annotations

Folgert Karsdorp, Peter van Kranenburg, Theo Meder, Dolf Trieschnigg, Antal van den Bosch

We present ongoing research on the role of motifs in oral transmission of stories. We assume that motifs constitute the primary building blocks of stories. On the basis of a quantitative analysis we show that the level of motif annotation utilized in the Aarne-Thompson-Uther folktale type catalogue is well suited to analyze two genres of folktales in terms of motif sequences. However, for the other five genres in the catalogue the annotation level is not apt, because it is unable to bring to front the commonalities between stories.

15:15–15:30

Understanding Objects in Online Museum Collections by Means of Narratives

Chiel van den Akker, Marieke van Erp, Lora Aroyo, Roxane Segers, Lourens van der Meij, Susan Lêgene, and Guus Schreiber

In this contribution, we present the narrative model used in Agora, an interdisciplinary project of the history and computer science departments at VU University Amsterdam and two cultural heritage institutions, the Rijksmuseum in Amsterdam and Sound & Vision in Hilversum. In the Agora project, we develop methods and techniques to support the narrative understanding of objects in online museum collections. A first demonstrator is now being tested. Here, our focus is on the specificity of modeling narratives in the heritage and history domain and the solutions Agora offers to specific problems of that domain.

In Agora, we believe that the interpretation of objects in online museum collections is supported by enriching the museum collection metadata with a structured notion of historical events and the (semi-)automatically generation of proto-narratives from those events. Starting from historical theory, three proto-narratives are distinguished: a biographical, a conceptual, and a topological proto-narrative. These proto-narratives are organizations of events based on the theory of narrative and historical theory. Proto-narratives not only take basic characteristics of the narrative into account, but also historical periods and complex historical events.

15:30–15:50

Best Student Paper on a Cognitive Science Topic

Indexter: A Computational Model of the Event-Indexing Situation Model for Characterizing Narratives

Rogelio E. Cardona-Rivera, Bradley A. Cassell, Stephen G. Ware, R. Michael Young

Previous approaches to computational models of narrative have successfully considered the internal coherence of the narratives structure. However, narratives are also externally focused and authors often design their stories to affect users in specific ways. In order to better characterize the audience in the process of modeling narrative, we introduce Indexter: a computational model of the Event-Indexing Situation Model, a cognitive framework which predicts the salience of previously experienced events in memory based on the current event the audience is experiencing. We approach computational models of narrative from a foundational perspective, and feel that salience is at the core of comprehension. If a particular narrative phenomenon can be expressed in terms of salience in a persons memory, the phenomenon, in principle, is representable in our model. This paper provides the fundamental bases of our approach as a springboard for future work which will use this model to reason about the audiences mental state, and to generate narrative fabula and discourse intended to achieve a specific narrative effect.

16:30–16:40

Towards Finding the Fundamental Unit of Narrative: A Proposal for the Narreme

Alok Baikadi, Rogelio E. Cardona-Rivera

Verb- and action-based event representations have been the cornerstone of narrative representation. However, these suffer from a lack of specificity as to the level of abstraction being discussed. For example, a single verb-based event can be elaborated *ad infinitum*, generating arbitrarily many new verb-based events. In this position paper, we present a proposal for the fundamental unit of narrative, which we call the *narreme*. Our contribution is two-fold. First, we present the structure of the narreme, which encodes the state of the narrative, not the state of the world. Second, we present the ways narremes can be combined, which gives rise to the structure of the narrative itself. These com-

binations have special properties which account for the causal, temporal and intentional relationships between the events that make up a narrative. Lastly, we present an interpretation of common narrative tasks within the context of the narreme.

16:40–16:55

People, Places and Emotions: Visually Representing Historical Context in Oral Testimonies

Annie T. Chen, Ayoung Yoon, Ryan Shaw

This paper presents visualizations to facilitate users ability to understand personal narratives in the historical and sociolinguistic context that they occurred. The visualizations focus on several elements of narrative time, space, and emotion to explore oral testimonies of Korean "comfort women," women who were forced into sexual slavery by Japanese military during World War II. The visualizations were designed to enable viewers to easily spot similarities and differences in life paths among individuals and also form an integrated view of spatial, temporal and emotional aspects of narrative. By exploring the narratives through the interactive interfaces, these visualizations facilitate users' understandings of the unique identities and experiences of the comfort women, in addition to their collective and shared story. Visualizations of this kind could be integrated into a toolkit for humanities scholars to facilitate exploration and analysis of other historical narratives, and thus serve as windows to intimate aspects of the past.

Session II: Corpora

Saturday 26 May, 16:55–18:20

16:55–17:15

TrollFinder: Geo-Semantic Exploration of a Very Large Corpus of Danish Folklore

Peter M. Broadwell, Timothy R. Tangherlini

We propose an integrated environment for the geo-navigation of a very large folklore corpus (>30,000 stories). Researchers of traditional storytelling are largely limited to existing indices for the discovery of stories. These indices rarely include geo-indexing, despite a fundamental premise of folkloristics that stories are closely related to the physical environment. In our approach, we develop a representation of latent semantic connections between stories and project these into a map-based navigation and discovery environment. Our preliminary work is based on the pre-existing corpus indices and a shared-keyword index, coupled to an index of geo-referenced places mentioned in the stories. Combining these allows us to produce heat maps of the relationship between places and a first level approximation of the story topics. The heat maps reveal concentrations of topics in a specific place. A researcher can use these topic concentrations as a method for building and refining research questions. We also allow for spatial querying, an approach that allows a researcher to discover topics that are particularly related to a specific place. Our corpus representation can be extended to include multimodal network representations of the corpus and LDA topic models to allow for additional visualizations of latent corpus topics.

17:15–17:30

A Hybrid Model and Memory Based Story Classifier

Betul Ceran, Ravi Karad, Steven Corman, Hasan Davulcu

A story is defined as "an actor(s) taking action(s) that culminates in a resolution(s)." In this paper, we investigate the utility of standard keyword based features, statistical features based on shallow-parsing (such as density of POS tags and named entities), and a new set of semantic features to develop a story classifier. This classifier is trained to identify a paragraph as a "story," if the paragraph contains mostly story(ies). Training data is a collection of expert-coded story and non-story paragraphs from RSS feeds from a list of extremist web sites. Our proposed semantic features are based on suitable aggregation and generalization of <Subject, Verb, Object> triplets that can be extracted using a parser. Experimental results show that a model of statistical features alongside memory-based semantic linguistic features achieves the best accuracy with a Support Vector Machine (SVM) based classifier.

17:30–17:50

A Crowd-Sourced Collection of Narratives for Studying Conflict

Reid Swanson, Arnav Jhala

In this paper we have described a corpus that provides many of the details required to understand the context and dynamics that factor into a persons emotional state, the perception of consequences and their likely selection of a conflict resolution strategy. We believe this information is useful for meta-reasoning about narrative through a deeper knowledge about peoples thought process. It also provides enough detail for attempting a data driven approach for modeling the mental process of conflict resolution in computational agents that respond in a way that people find believable. Finally,

we have provided a methodology to extend the corpus, so that over time we may cover a broader spectrum of conflicts and target specific domains when they are needed for applications.

17:50–18:00

Towards a Culturally-Rich Shared Narrative Corpus: Suggestions for the Inclusion of Culturally Diverse Narrative Genres

Victoria Romero, James Niehaus, Peter Weyhrauch, Jonathan Pfautz, Scott Neal Reilly

This paper proposes that the inclusion of culturally diverse narrative genres should be an explicit goal when developing a shared narrative corpus. We argue that narrative genres from underrepresented cultures and from cultures relevant to specific applications of computational narrative research should be prioritized. We offer the example of Mexican narcocorridos as a narrative genre that satisfies both these criteria.

18:00–18:15

Towards a Digital Resource for African Folktales

Deborah O. Ninan, Odetunji A. Ọdéjọbí

This paper explores the development of a digital resource that is amenable to the formal specification of African folktales. The ultimate aim of this project is to develop computational structure and models for the narrative underlying African Folktale. We collected a number of Yorùbá folktales with corresponding English translations. We then analysed their components and the structure of the narrative that they embodied. The requirements of a markup language to capture the content and structure of the narratives was proposed. Ongoing work is aimed at the development of a framework for the computational model and the automatic generation of folktales based on this data.

18:15–18:35

Formal Models of Western Films for Interactive Narrative Technologies

Brian Magerko and Brian O'Neill

Interactive narrative technologies have typically addressed the authoring bottleneck problem by focusing on authoring a tractable story space (i.e. the space of possible experiences for a user) coupled with an AI technology for mediating the users journey through this space. This article describes an alternative, potentially more general and expressive approach to interactive narrative that focuses on the procedural representation of story construction between an AI agent and a human interactor. This notion of procedural interaction relies on shared background knowledge between all actors involved; therefore, we have developed a body of background knowledge for improvising Western-style stories that includes the authoring of scripts (i.e. prototypical joint activities in Westerns). This article describes our methodology for the design and development of these scripts, the formal representation used for encoding them in our interactive narrative technology, and the lessons learned from this experience in regards to building a story corpus for interactive narrative research.

Session III: Similarity

Sunday 27 May, 9:00–10:30

9:00–9:20

Detecting Story Analogies from Annotations of Time, Action and Agency

David K. Elson

We describe the Story Intention Graph (SIG) as a model of narrative meaning that is amenable to both corpus annotation and computational inference. The relations, focusing on time, action and agency, can express a range of thematic scenarios and lend themselves to the automatic detection of story similarity and analogy. An evaluation finds that such detection outperforms a propositional similarity metric in predicting human judgments of story similarity in the Aesop domain.

9:20–9:35

Story Comparison via Simultaneous Matching and Alignment

Matthew P. Fay

Story understanding is an essential piece of human intelligence. If we are to develop artificial intelligence with the cognitive capacities of humans, our systems must not only be able to understand stories but also to incorporate them into the thought process as humans do. The techniques I present enable efficient gap filling through story alignment. The approach demonstrated leverages the solid foundation of bio-informatics alignment techniques to create the simultaneous matching and alignment algorithm for story comparison. The algorithm provides a large improvement in efficiency in solving the matching problem, reducing the search space from 10^{30} nodes to 535 nodes in an example narrative comparison. The technique enables effective story comparison as an important step towards enabling higher level narrative intelligence.

9:35–9:55

Similarity of Narratives

Loizos Michael

The task of recognizing narrative similarity is put forward as a concrete metric of success for machine narrative understanding. For this task, one seeks to determine which of two narratives is more similar to a third target narrative. As a first step towards building machines that achieve this goal, we investigate herein the notion of narrative similarity through a computational lens. We approach similarity as a balancing act between a listeners search for commonalities between stories, and an authors quest to guard a storys intended inferences.

9:55–10:10

Which Dimensions of Narratives are Relevant for Human Judgments of Story Equivalence?

Bernhard Fisseni, Benedikt Löwe

We present an experimental approach to determining natural dimensions of story comparison. The results show that untrained test subjects generally do not privilege structural information. When asked to justify sameness ratings, they may refer to content, but when asked to state differences, they mostly refer to style, concrete events, details and motifs. We conclude that adequate formal models

of narratives must represent such non-structural data.

10:10–10:30

Story Retrieval and Comparison using Concept Patterns

Caryn E. Krakauer, Patrick H. Winston

Traditional story comparison uses key words to determine similarity. However, the use of key words misses much of what makes two stories alike. The method we have developed use high level concept patterns, which are comprised of multiple events, and compares them across stories. Comparison based on concept patterns can note that two stories are similar because both contain, for example, revenge and betrayal concept patterns, even though the words revenge and betrayal do not appear in either story, and one may be about kings and kingdoms while the other is about presidents and countries. Using a small corpus of 15 conflict stories, we have shown that similarity measurement using concept patterns does, in fact, differ substantially from similarity measurement using key words. The Goldilocks principle states that features should be of intermediate size; they should be not too big, and they should not too small. Our work can be viewed as adhering to the Goldilocks principle because concept patterns are features of intermediate size, hence not so large as an entire story, because no story will be exactly like another story, and not so small as individual words, because individual words tend to be common in all stories taken from the same domain. While our goal is to develop a human competence model, we note application potential in retrieval, prediction, explanation, and grouping.

Session IV: Generation

Sunday 27 May, 11:00–12:30

11:00–11:20

From the Fleece of Fact to Narrative Yarns: A Computational Model of Composition

Pablo Gervás

From a given observable set of events, a large number of stories may be composed, by deciding to select or omit specific events, by restricting attention to smaller subsets of the overall setting, by focusing on particular characters, or by narrating the chosen events in different order. This particular task of narrative composition is not covered by existing models of storytelling or cognitive accounts of the writing task. This paper presents a model of the task of narrative composition as a set of operations that need to be carried out to obtain a span of narrative text from a set of events that inspire the narration. To provide guidance in structuring the task, an analogy is drawn between the narrative composition task and that of manufacturing textile fibres, with corresponding concepts of heckling the original material into fibres, then twisting these fibres into richer and better yarns. The model explores a set of intermediate representations required to capture the structure that is progressively imposed on the material, and connects this content planning task with a classic pipeline for natural language generation. As an indicative case study, an initial implementation of the model is applied to a chess game understood as a formalised set of events susceptible of story-like interpretations. The relationships between this model and existing models from other fields (narratogical studies, cognitive accounts of writing, AI models of story generation, and natural language generation architectures) is discussed.

11:20–11:40

"Is this a DAG that I see before me?" sAn Onomasiological Approach to Narrative Analysis and Generation

Michael Levison, Greg Lessard

We present a framework for the analysis of literary texts by means of a semantic representation based on the use of directed acyclic graphs which may be threaded in various ways to represent elements of plot, character perspective, narrative sequencing and setting. The model is illustrated by application to a simple fairy tale and to a Sherlock Holmes story. We argue that it is possible to represent in this way, in a manner accessible to non-computer scientists, the high-level dependencies which underlie a text as well as particular characteristics of literary texts, including the use of various recurring narrative sequences. We provide examples of the functional representation used, of the graphical representations achieved and the results obtained when the semantic representations are used to drive a natural language generator.

11:40–12:00

Automatically Learning to Tell Stories about Social Situations from the Crowd

Boyang Li, Stephen Lee-Urban, Darren Scott Appling, and Mark O. Riedl

Narrative intelligence is the use of narrative to make sense of the world and to communicate with other people. The generation of stories involving social and cultural situations (eating at a restaurant, going on a date, etc.) requires an extensive amount of experiential knowledge. While this knowledge can be encoded in the form of scripts, schemas, or frames, the manual authoring of these knowledge

structures presents a significant bottleneck in the creation of systems demonstrating narrative intelligence. In this paper we describe a technique for automatically learning robust, script-like knowledge from crowdsourced narratives. Crowdsourcing, the use of anonymous human workers, provides an opportunity for rapidly acquiring a corpus of highly specialized narratives about sociocultural situations. We describe a three-stage approach to script acquisition and learning. First, we query human workers to write natural language narrative examples of a given situation. Second, we learn the set of possible events that can occur in a situation by finding semantic similarities between the narrative examples. Third, we learn the relevance of any event to the situation and extract a probable temporal ordering between events. We describe how these scripts, which we call plot graphs, can be utilized to generate believable stories about social situations.

12:00–12:10

Prototyping the Use of Plot Curves to Guide Story Generation

Carlos León, Pablo Gervás

Setting objectives for automatic story generation is needed for a story generation system to produce content. Among the potentially useful methods, curves defining the evolution of specific features of a narrative that evolve along time are particularly appropriate because they focus on the evolution of those features and are easy to create, modify and understand by human users. In this paper we propose a theoretical definition of curve-based story generation, its relation to existing story generation algorithms and how this theory can be applied to new systems.

12:10–12:30

Simulating Plot: Towards a Generative Model of Narrative Structure

Graham Alexander Sack

This paper explores the application of computer simulation techniques to the fields of literary studies and narratology by developing a model for plot structure and characterization. Using a corpus of 19th Century British novels as a case study, the author begins with a descriptive quantitative analysis of character names, developing a set of stylized facts about the way narratives allocate attention to their characters. The author shows that narrative attention in many novels appears to follow a long tail distribution. The author then constructs an explanatory model in NetLogo, demonstrating that basic assumptions about plot structure are sufficient to generate output consistent with the real novels in the corpus.

Session V: Persuasion

Sunday 27 May, 14:30–15:30

14:30–14:45

A Choice-Based Model of Character Personality in Narrative

Julio César Bahamón, R. Michael Young

The incorporation of interesting and compelling characters is one of the key components of effective narrative. Well-developed characters have features that enable them to significantly enhance the believability and overall quality of a story. In this paper we present preliminary research on the development of a computational model aimed at facilitating the inclusion of compelling characters in narrative that is automatically generated by a planning-based system. The model centers on the use of an intelligent process to express character personality. In this model, personality is operationalized as behavior that results from choices made by a character in the course of a story. This operationalization is based on the Big Five personality structure and results from behavioral psychology studies that link behavior to personality traits. We hypothesize that the relationship between choices and the actions they lead to can be used in narrative to produce the perception of specific personality traits in an audience.

14:45–15:00

Persuasive Precedents

Floris Bex, Trevor Bench-Capon, Bart Verheij

Stories can be a powerful vehicle of persuasion. We typically use stories to link known events into coherent wholes. One way to establish coherence is to appeal to past examples, real or fictitious. These examples can be chosen and critiqued using legal case-based reasoning (CBR) techniques. In this paper, we apply these techniques to factual stories, assessing a story about the facts using precedents. We thus show how legal reasoning in a CBR model is equally applicable to reasoning with factual stories.

15:00–15:10

Integrating Argumentation, Narrative and Probability in Legal Evidence

Bart Verheij

Reasoning on the basis of legal evidence has been analysed using three types of approaches: argumentative, narrative and probabilistic. As each type of approach has been defended as a complete account of evidential reasoning, it is natural to assume that there is an integrating perspective. It is here proposed that a logico-probabilistic argumentation theory can integrate argumentative, narrative and probabilistic approaches to legal evidence.

15:10–15:20

Arguments as Narratives

Adam Wyner

Aspects of narrative coherence are proposed as a means to investigate and identify arguments from text. Computational analysis of argumentation largely focuses on representations of arguments that are either abstract or are constructed from a logical (e.g. propositional or first order) knowledge

base. Argumentation schemes have been advanced for stereotypical patterns of defeasible reasoning. While we have well-formedness conditions for arguments in a first order language, namely the patterns for inference, the conditions for argumentation schemes is an open question, and the identification of arguments in the wild is problematic. We do not understand the source of rules from which inference follows; formally, well-formed arguments can be expressed even with random sentences; moreover, argument indicators are sparse, so cannot be relied upon to identify arguments. As automated extraction of arguments from text increasingly finds important applications, it is pressing to isolate and integrate indicators of argument. To specify argument well-formedness conditions and identify arguments from unstructured text, we suggest using aspects of narrative coherence.

15:20–15:30

Towards a Computational Model of Narrative Persuasion: A Broad Perspective

James Niehaus, Victoria Romero, Jonathan Pfautz, Scott Neal Reilly, Richard Gerrig, Peter Weyhrauch

This paper presents a preliminary view on the elements of persuasive narratives from a computational perspective. We argue for a broad perspective of narrative persuasion, drawing on existing literature from multiple disciplines. We present a brief, first-steps analysis of the possible narrative elements that may influence narrative persuasion. Finally, we consider how these elements may influence the formation of narrative corpora.