

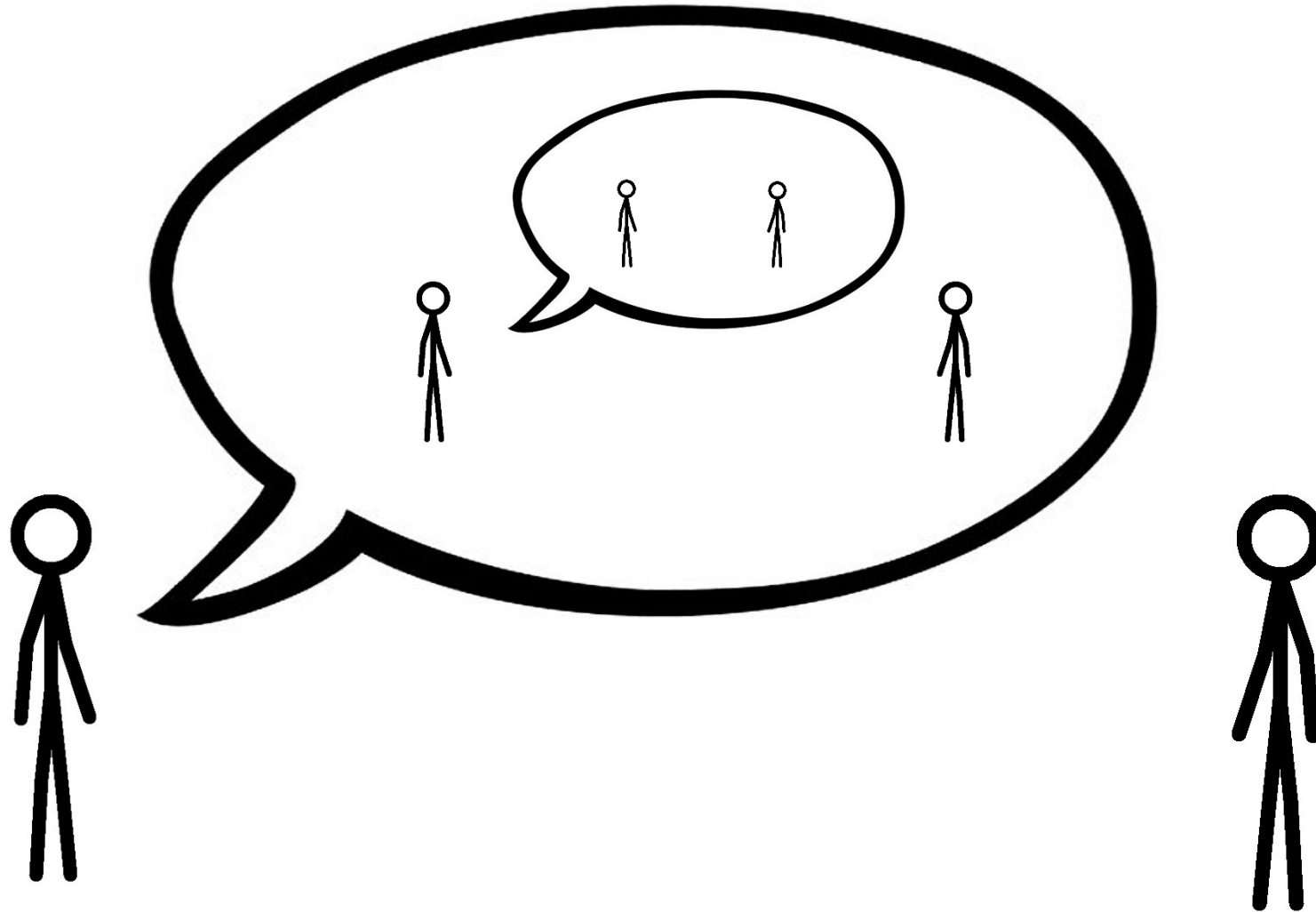
Motivation

- 20 years trying to build programs that create stories
- Results disappointing no matter the algorithm used
- Could the problem be in the representation I was using?
- Tried transcribing good stories in that representation and...

GOOD STORIES ARE NOT FLAT!

embedding in narrative:

"literary device of the 'story within the story', the structure by which a character in a narrative text becomes the narrator of a second narrative text framed by the first one".



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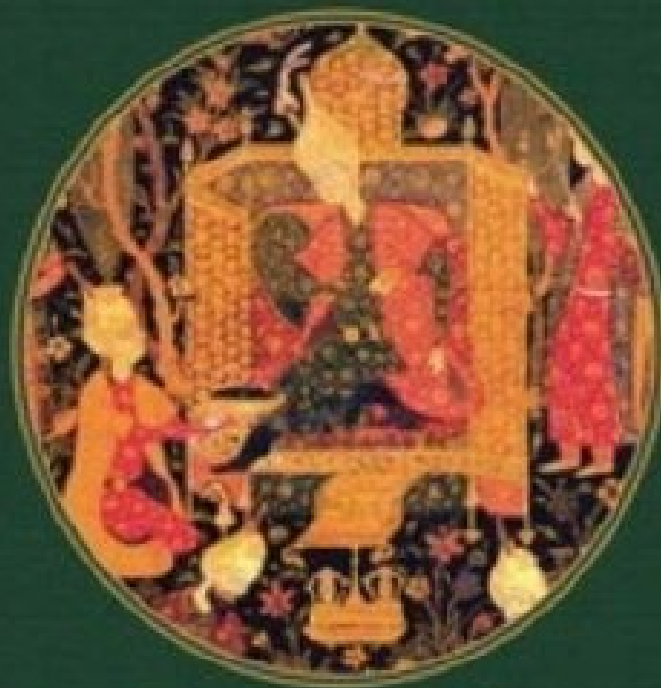
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ARABIAN NIGHTS

THE BOOK OF A THOUSAND NIGHTS
AND A NIGHT



SIR RICHARD BURTON
THE UNEXPURGATED EDITION

*The Tale of King Shahryār and of his
Brother, King Shahzamān*

IT is related—but Allāh is all wise and all knowing, all powerful and all beneficent—that there was, in the tide and show of ancient time and the passage of the age and of the moment, a king among the kings of Sāsān, in the isles of India and China. He was master of

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When King Shahr̄yār entered his palace, he caused his wife's head to be cut off at the neck, and in the same way the heads of the slaves, both men and women. Then he ordered his Waz̄ir to bring him every night a young and virgin girl, whom he ravished and, when the night had passed, caused to be slain. This he did for three long years; so that the people were all one cry of grief, one tumult of horror. They fled away with such daughters as remained to them; and in all the city there remained not one girl who retained the state to serve for this assault.

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and that of the younger Dunyazād. Shahrazād had read the books, the annals, and the legends of old kings, together with the histories of past peoples. Also she was credited with possessing a thousand books of stories telling of the peoples, the kings, and the poets of bygone ages and of past time. She was sweetly eloquent of speech and to listen to her was music.

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Shahrazād said: ‘By Allāh, father, you must marry me to this king; for either I shall live or, dying, I shall be a ransom for the daughters of the Mussulmāns and the cause of their deliverance out of the hands of the King.’ Then said he: ‘Allāh be with you! You shall never expose yourself to such a danger.’ And she answered: ‘It is necessary that I do this.’ So he said to her: ‘Take care that the fate of the ass with the bull and the husbandman befall not you also. Listen’:

The Fable of the Ass, the Bull and the Husbandman

KNOW, my daughter, that there was once a merchant, master of riches and cattle, married and the father of children; to whom

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until she swooned away. Finally, when she could speak, she cried: ‘I repent! I repent!’ and, beginning to caress her husband’s hands and feet, did repent in very truth. Afterwards she walked out with him, and all the relatives and those gathered there rejoiced. Happy and prosperous were the fortunes of them all until their deaths.

Thus he spoke, and when Shahrazād, the wazīr’s daughter, heard her father’s story, she said: ‘Even so, my father, I wish you to do what I have asked you.’ So the Wazīr, without insisting further, had the wedding garments of his daughter Shahrazād made ready, and then went to tell the matter to King Shahrīār.

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Afterwards they spoke together and Dunyazād said to Shahrazād: ‘Allāh be with you! Tell us, my sister, some of your tales of marvel, that the night may pass pleasantly.’ And Shahrazād answered: ‘Gladly and as a duty, if the great and courteous King permits.’ When the King heard these words, and being moreover unable to sleep, he was in no way averse to listening to the tale of Shahrazād.

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And Shahrazād, this first night, began the following tale:

*HERE BEGIN THE
THOUSAND NIGHTS AND ONE NIGHT*

The Tale of the Merchant and the Ifrīt

SHAHRAZĀD SAID:

IT has come to me, O auspicious King, that there was once a merchant of the merchants, master of many riches and of affairs of commerce in all lands.

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But the first sheikh, master of the gazelle, at last plucked up his courage and kissed the hand of the Jinnī, saying: ‘O Jinnī, O chief among the Kings of the Jinn and their crown also, if I relate to you the tale of myself and this gazelle and it is such that you marvel at it, oh grant me in return mercy for a third of the blood of this merchant!’ The Jinnī answered: ‘Assuredly, O venerable sheikh. If you tell me the story and I find it indeed extraordinary, I will grant you mercy for a third of this blood!’

The Tale of the First Sheikh

THE FIRST SHEIKH SAID:

O GREAT Ifrīt, know that this gazelle was my uncle’s daughter and my own flesh and blood. I married her when she was quite

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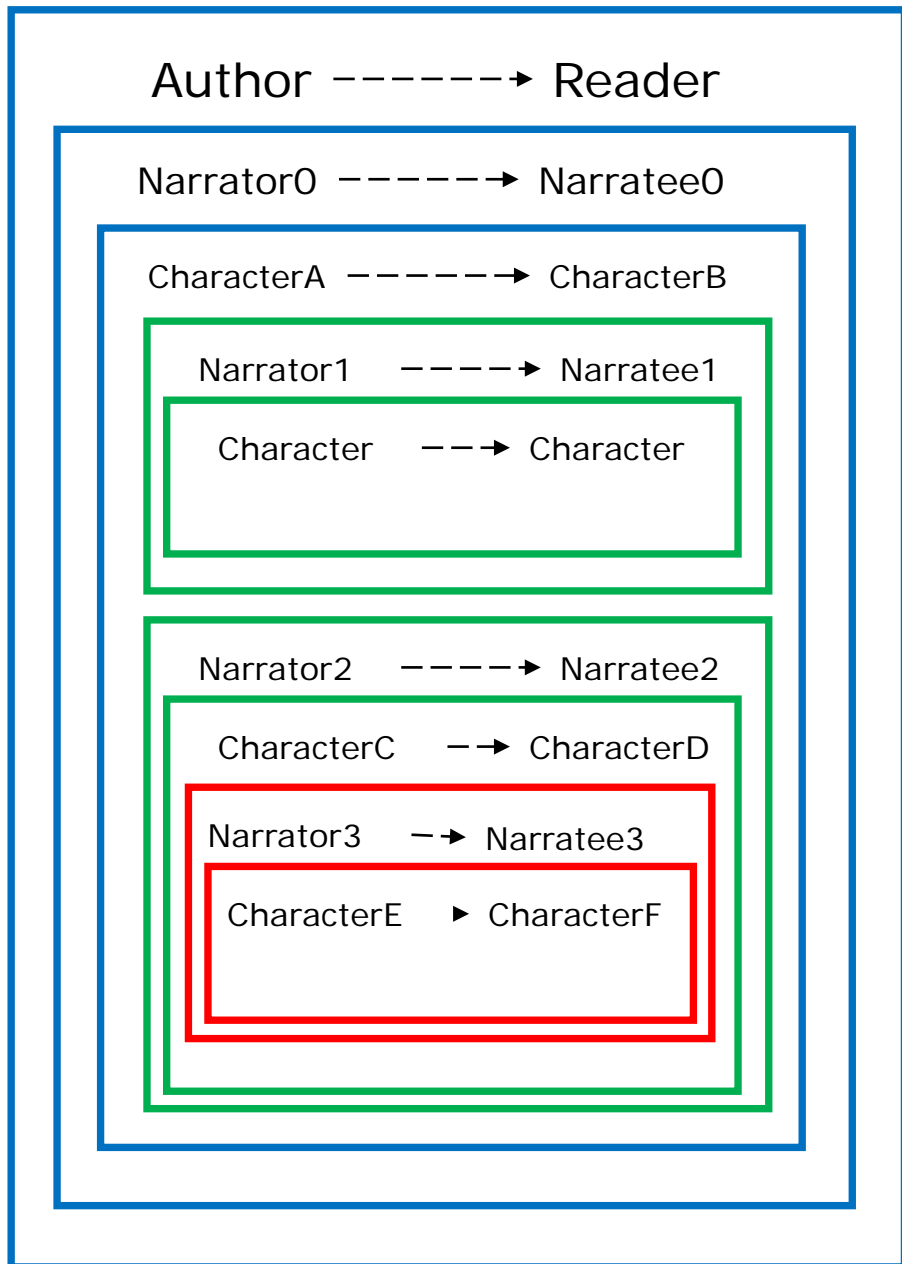
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When the calf saw me, he broke the cord that held him and running to me rolled at my feet with groans and tears. Then I had pity on him and said to the herd: 'Bring me another cow and let this be.'

At this point in her tale, Shahrazād saw the approach of morning and discreetly fell silent. Then her sister Dunyazād said: 'Sister, your words are sweet and gentle and pleasant to the taste.' And Shahrazād answered: 'Indeed they are nothing to that which I would tell both of you tomorrow night if I were still alive and the King thought good to spare me.' On this, the King said to himself: 'By Allāh, I will not kill her until I have heard the rest of her tale!'

Then the King and Shahrazād passed the rest of the night in each other's arms, till the King departed to sit in judgment. When he saw

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Narrator0 ([Sir Richard Burton](#)) tells Story0 to Narratee0 ([us](#))

Narrator1 ([father](#)) tells Story1 to Narratee1 ([Sharazad](#))
Story1 is an **embedded story** inside Story0

Narrator2 ([Sharazad](#)) tells Story2 to Narratee2 ([King](#))
Story2 is an **embedded story** inside Story0

Narrator3 ([1st Sheik](#)) tells Story3 to Narratee3 ([Ifrit](#))
Story3 is an **embedded story** inside Story2
Story2 acts as **frame story** for Story3

Story0 acts as **frame story** for Story1 and Story2

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Challenges for modelling interpretation of embedded stories

1. To identify from the discourse of a story when an embedded story is present.
2. To have a representation of the story that allows for explicit distinction of different narrative levels
 - a simple story is represented at a single narrative level
 - a multi-level narrative explicitly represents each level as a distinct element
3. To provide means for handling transitions from one narrative level to another during interpretation.

Solutions proposed

1. Stories are represented in a simple notation based on predicate-argument structure (challenge 0).
2. The language includes notational devices to mark the start of an embedded story (challenge 1)
3. Data structures are proposed to represent more than one narrative level (challenge 2).
4. An interpretation procedure for the handling of embedding is defined relying on these definitions (challenge 3).

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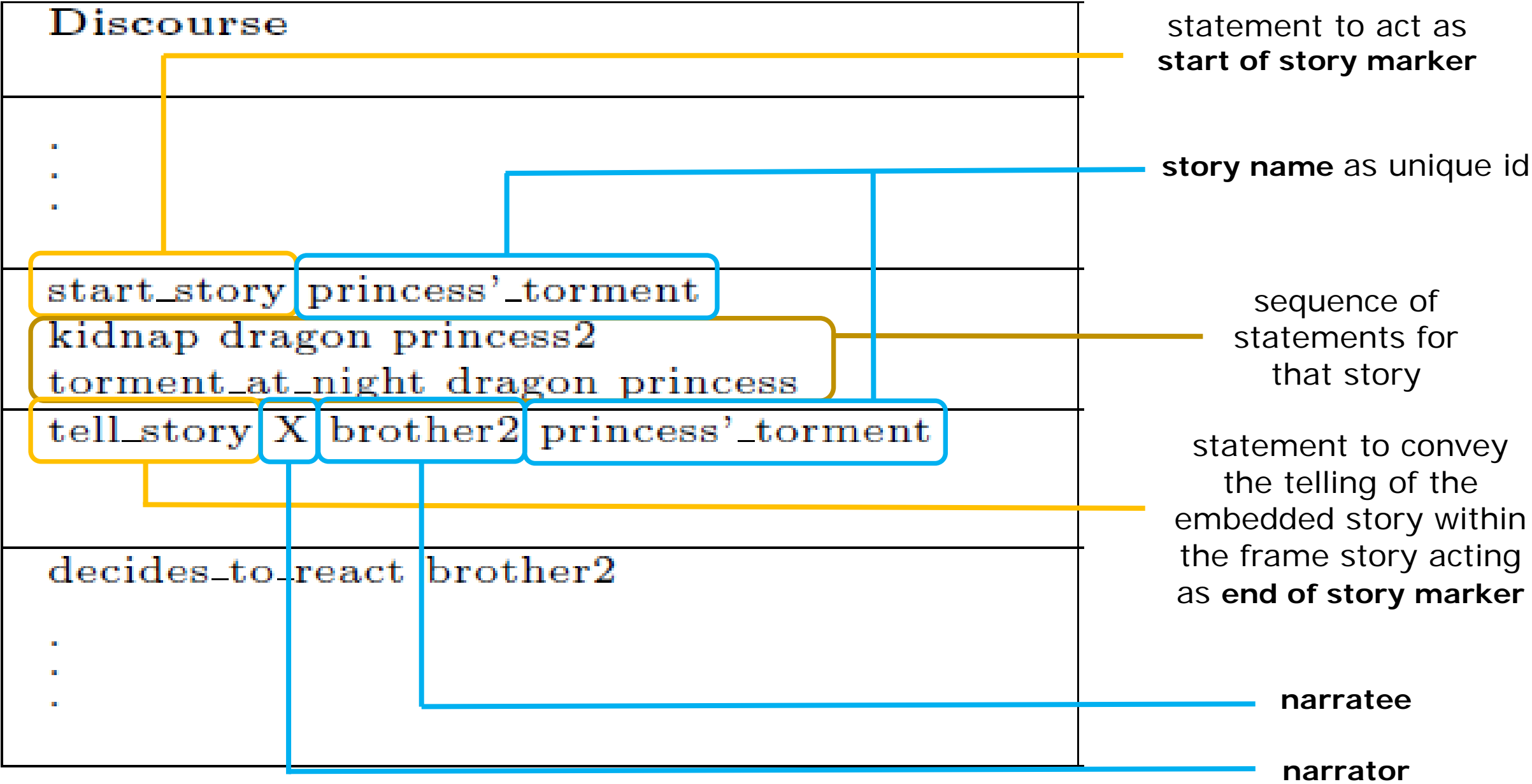
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Representing an Interpretation

```
1 import java.util.HashMap;
2
3 public class NarrativeInterpretationImpl implements NarrativeInterpretation {
4
5     String storyName;
6
7     Fabula plainInterpretation4priorMoment;
8
9     Map<String, NarrativeInterpretation> subStories;
10 }
```

initial level of
narrative
(sequence of
statements)

embedded narrative levels
(recursive nesting,
indexed with name of story)

Discourse	Interpretation	
	Narrative level 0	Narrative level 1
.	.	
.	.	
.	.	
start_story princess'_torment kidnap dragon princess2 torment_at_night dragon princess		
tell_story X brother2 princess'_torment	tell_story X brother2	princess'_torment kidnap dragon princess2 torment_at_night dragon princess2
decides-to-react brother2	decides-to-react brother2	
.	.	
.	.	
.	.	

Narrative level N is stored within the interpretation of Narrative level N-1!

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Interpretation Procedure

- The process starts with an empty stack for the initial narrative level.
- On detecting the start of an embedded story (`start_story <story-name>`):
 - the interpretation of the frame story to that point is pushed to the stack, and
 - a new empty interpretation is created for the embedded story.
- The discourse for the embedded story is processed against this specific representation for its interpretation.
- When end of the embedded story is reached (`tell_story statement <narrator> <narratee> <story-name>`):
 - the accumulated interpretation for the embedded story is stored in a table for embedded sub-stories, indexed by the name of the sub-story (`<story-name>`), and
 - the interpretation for the frame story acting as context is popped from the stack and established as context for the rest of the frame story
 - add the `tell_story statement <narrator> <narratee> <story-name>` statement to the interpretation of the frame story, indicating how the embedded story fits into the frame story

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Interpretation Narrative level 0	Narrative level 1
:	
:	
tell_story X brother2	princess'_torment kidnap dragon princess2 torment_at_night dragon princess2
<u>decides_to_react</u> brother2	
:	
:	
<u>fight</u> brother2 dragon <u>wounded</u> brother2 wins brother2 <u>releases</u> brother2 princess	
:	
:	
order tsar water_carrier to_bring water_carrier princess'_bones	
tells_a_story water_carrier	water_carrier's_false_claim fight water_carrier dragon releases water_carrier princess
:	
:	
<u>arrives</u> brother2 palace recognises princess2 brother2	
<u>exposed</u> water_carrier	(brother2_real_deed) (fight brother2 dragon) (wounded brother2) (wins brother2) (releases brother2 princess)
punished water_carrier	

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ARTASERSE, DRAMMA PER MUSICA,

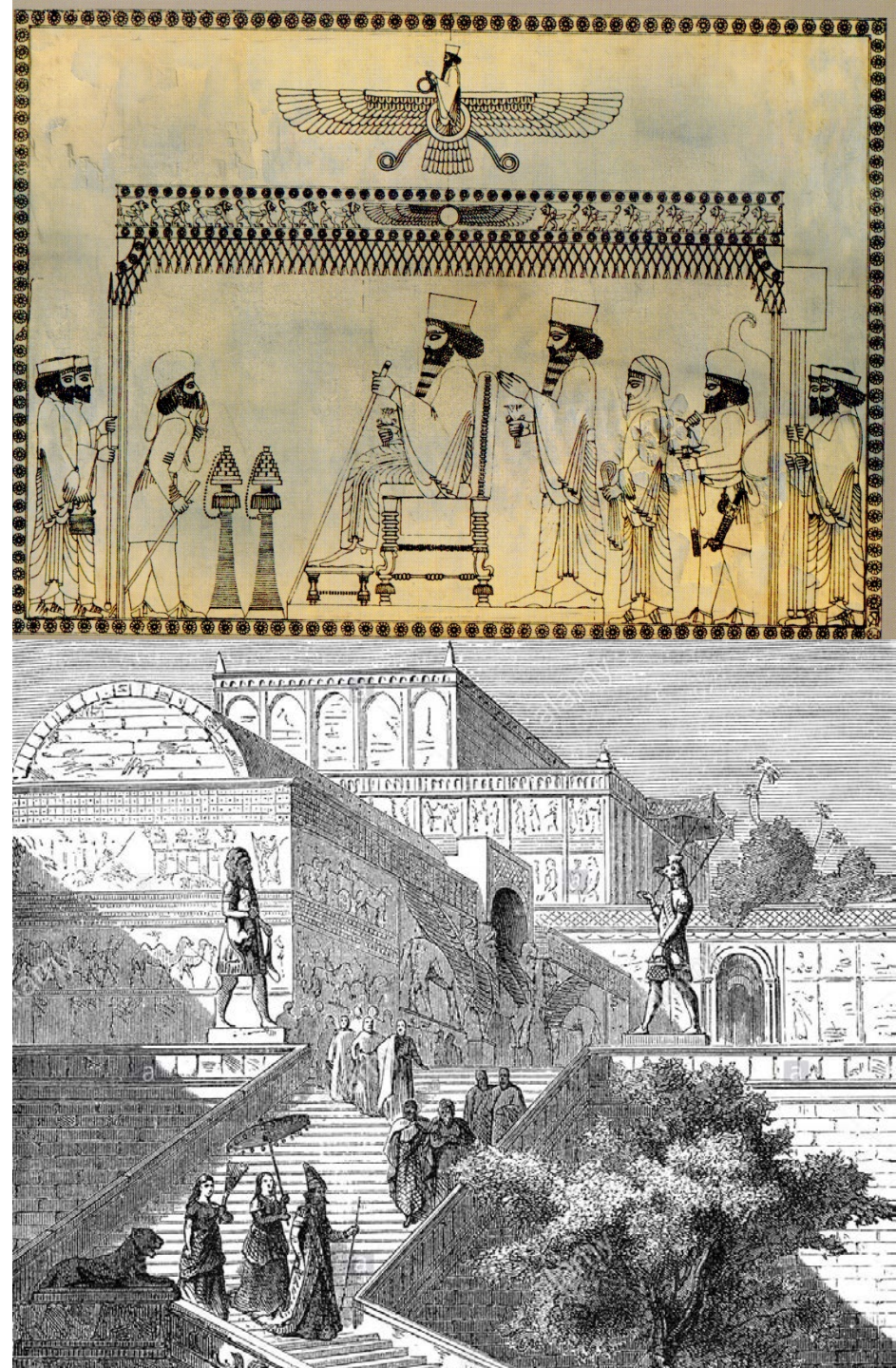
RAPPRESENTATO

NEL NUOVO REAL
TEATRO PRIVI-
LEGIATO.

L' ANNO MDCC XLVI.

IN

D R E S D A.



parent Artabano Arbace parent Serse Mandane loves Mandane Arbace loves Arbace Mandane guardian Serse Mandane different_class Mandane Arbace opposed_to_plan Serse punished Arbace banished Arbace location garden arrives Arbace garden sad Arbace sad Mandane leave Mandane	
arrives Artabano garden	
tells_a_story Artabano Arbace	murder_Serse_Artabano kills Artabano Serse
offers_exchange Artabano sword Arbace agrees_to_exchange Arbace in_despair Arbace leave Arbace	
aspires Artabano Arbace_king	
tells_a_story Artabano audience	plan_Artabano kills Artabano Serse kills Artabano Dario kills Artabano Artaserse acceeds_to_throne Arbace
goal Arbace_king arrives Artaserse garden	
tells_a_story Artabano Artaserse	murder_Serse_Dario kills Dario Serse

order Artaserse Artabano to_kill Artabano Dario confident Artabano sad Artaserse leave Arbace	
arrives Megabise garden parent Artabano Semira arrives Semira garden loves Semira Artaserse loves Artaserse Semira leave Artaserse	
tells_a_story Megabise Semira	murder_Serse_Dario (see above)
in_despair Semira confident Megabise aspires Megabise Semira's_love loves Megabise Semira goal Semira's_love sad Semira sundered Semira Artaserse leave Semira location palace	
arrives Mandane palace sad Mandane arrives Artaserse palace sad Artaserse arrives Artabano palace	
tells_a_story Artabano Artaserse	execute_Dario_Artabano kills Artabano Dario
sad Mandane confident Artabano sad Artaserse	
arrives Semira palace	
tells_a_story Semira Artaserse	murder_Serse_other kills other Serse

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Limitations

1. assumes that embedded stories are always told as a single span of discourse
 - fails to account for cases in which the embedded narrative is split into several spans interleaved with the frame story (The Heart of Darkness, 1001 Nights)
2. encoding of the examples employed is based on synopses of the plots rather than full text
 - issues such as narrative distance - whether the embedded story is rendered as reported or transcribed speech, as a summary, or even left implicit - are obscured
3. assumes that stories - whether framing or embedded - are told in chronological order
 - handling of anachrony is beyond the scope of this paper
 - BUT anachronies may be embedded stories with narrator implicit

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Conclusions

1. interpretation of embedded stories is an open problem that needs substantial amounts of further work
2. proposed model provides an elementary computational frame that:
 - captures the nested structure of narrative
 - relies on a stack mechanism to model required context changes
 - embedded stories stored in an indexed table
3. model is intended as a first approximation to the problem
4. further work:
 - extensions operating on textual discourse
 - solution for identifying transitions between narrative levels

Thank you!

`http://nil.fdi.ucm.es/`