UvA-DARE (Digital Academic Repository)

What Makes Stories Similar? Report on a Research Project, 2011-2014

Fisseni, B.; Löwe, B.

Link to publication

What Makes Stories Similar? Report on a Research Project, 2011–2014

Bernhard Fisseni[1] and Benedikt Löwe[2,3]

1   **Fakultät für Geisteswissenschaften, Universität Duisburg-Essen**
    Universitätsstraße 12, 45117 Essen, Germany
    `bernhard.fisseni@uni-due.de`
2   **Institute for Logic, Language and Computation,Universiteit van Amsterdam**
    Postbus 94242, 1090 GE Amsterdam, The Netherlands
    `b.loewe@uva.nl`
3   **Fachbereich Mathematik, Universität Hamburg,**
    Bundesstraße 55, 20146 Hamburg, Germany

──── **Abstract** ────

We present a survey of the results and findings of the research project *What makes stories similar?* funded by the John Templeton Foundation from October 2011 to May 2014.

1   Overview

In analytic philosophy, the notion of *similarity* has created a great deal of debate [1, 15]. Two entities can be similar in many different respects while being dissimilar in other respects; the philosopher is interested in which of the features according to which entities can be similar or dissimilar are essential in a given situation. This philosophical debate becomes an interesting topic of scientific inquiry when there is a chance to make an intuitive notion of similarity precise and measurable and when different measures of similarity can be compared in their relationship to the actual human practice of narrative similarity judgments.

The research project *What makes stories similar?* funded by the John Templeton Foundation from October 2011 to May 2014 aimed at providing a methodological discussion of measures of similarity for narratives, some candidates for such measures, tools and techniques for comparing the measures, and empirical results using these tools and techniques. Guided by its eponymous question and based on [11, 12], the project aimed to find out whether there are structural (rather than presentational) properties that contribute or even define story similarity, whether they can be expressed in formal representation systems, and how such representations can be empirically tested.

2   People involved

The project *What makes stories similar?* was based at the Universität Hamburg and was coordinated by the second author of the present paper as principal investigator; Carlos

🟨 **Table 1** The empirical research performed as part of the project *What makes stories similar?* with publication references. There were two more experiments on Lehnert's *Plot Units* [10] and the *Doxastic Preference Framework* of [13, 14] during the March 2013 seminar. These results are as of now unpublished.

Experiment	Date	Language	Paper
Propp I	November 2011	English	[2]
Propp II	December 2011	English	[2]
Queneau I	October 2011	German	[8]
Queneau II	December 2011	German	[8]
Fairy Tales	December 2011	German	[8]
Summaries	January 2012	German	[9]
Eliciting Variation	August to December 2012	English/German	[7]
Propp III	March 2013	English + German	[5]
Propp IV	August 2013	German	[5]

León and the first author of the present paper were researchers on positions funded by the project; Alexander Block, Varun Dwarakanathan, Deniz Sarikaya, and Mira Viehstädt were student assistants funded by the project. In addition to this, the researchers in the project closely collaborated with Rens Bod, Faith Lawrence and Aadil Kurji; the researchers became members of the *Interdisciplinary Center for Narratology* (ICN) at Universität Hamburg and have interacted with the ICN researchers, among others, by co-teaching a two-week course, organizing the workshop *Computational Models of Narrative 2013* (CMN 2013) in Hamburg, and by participating in scientific exchange at the *Narratological Colloquium.*

3   Activities

One of the main activities of the project was to develop a series of experiments listed in Table 1 with pointers to the relevant publications. Since some of the experiments required extensive training of the test subjects, it was natural to link some of the experiments to training courses in formal models of narratives. Deniz Sarikaya organized one such course entitled *Formale Ansätze in der Erzählforschung* at the Universität Hamburg, funded in the programme *StipendiatInnen machen Programm* of the *Studienstiftung des deutschen Volkes*, and the experiment **Propp III** was performed during this course by the authors together with Aadil Kurji. Together with Marco Petris, the authors taught a two-week course entitled *Digitalisierung und Formalisierung von Erzählstruktur* at the *Sommerakademie XV 2013* of the *Studienstiftung des deutschen Volkes* held at Schloss Salem; the experiment **Propp IV** was part of this course. In addition to the experiments listed in Table 1, the project used corpus research [6] and formal modelling [9].

Several intensive work meetings took place: in Amsterdam in October 2011 and in Cambridge in February 2012, when several members of the project were all there as visiting fellows during the programme *Semantics & Syntax* at the *Isaac Newton Institute for Mathematical Science*; furthermore, the project organized a panel session entitled *Computational models of narrative structure* at the conference *Digital Humanities 2012* in Hamburg, the workshop *Computational Models of Narrative 2013* in Hamburg as well as a symposium at the *Annual Meeting of the Cognitive Science Society* (CogSci 2013) in Berlin entitled *Computational and Cognitive Aspects of Narratives.*

The project produced a number of publications [12, 2, 8, 9, 6, 7, 5] in which the findings of the activities mentioned above were published. Some of the experimental results will be documented in future publications. Together with Mark Finlayson and Jan Christoph Meister, the authors of this report edited the CMN 2013 proceedings volume [4]. At the moment, a special issue of *Sprache und Datenverarbeitung*, the major German print journal on computational linguistics, is prepared with contributions by leading researchers in our field.

References

1   Paul Bartha. Analogy and analogical reasoning. In Edward N. Zalta, editor, *The Stanford Encyclopedia of Philosophy*. Fall 2013 edition, 2013.

2   Rens Bod, Bernhard Fisseni, Aadil Kurji, and Benedikt Löwe. Objectivity and reproducibility of Proppian narrative annotations. In Finlayson [3], pages 17–21.

3   Mark A. Finlayson, editor. *The Third Workshop on Computational Models of Narrative*, İstanbul, 2012.

4   Mark A. Finlayson, Bernhard Fisseni, Benedikt Löwe, and Jan Christoph Meister, editors. *2013 Workshop on Computational Models of Narrative*, volume 32 of *OpenAccess Series in Informatics (OASIcs)*. Schloss Dagstuhl – Leibniz-Zentrum für Informatik, Dagstuhl, Germany, 2013.

5   Bernhard Fisseni, Aadil Kurji, and Benedikt Löwe. Annotating with Propp's *Morphology of the Folktale*: Reproducibility and trainability, submitted.

6   Bernhard Fisseni, Aadil Kurji, Deniz Sarikaya, and Mira Viehstädt. Story comparisons: Evidence from film reviews. In Finlayson et al. [4], pages 94–99.

7   Bernhard Fisseni and Faith Lawrence. A paradigm for eliciting story variation. In Finlayson et al. [4], pages 100–105.

8   Bernhard Fisseni and Benedikt Löwe. Which dimensions of narratives are relevant for human judgments of story equivalence? In Finlayson [3], pages 114–118.

9   Bernhard Fisseni and Benedikt Löwe. Event-mappings for comparing frameworks for narratives. *Logique et Analyse*, to appear.

10   Wendy G. Lehnert. Plot units and narrative summarization. *Cognitive Science*, 5(4):293–331, 1981.

11   Benedikt Löwe. Comparing formal frameworks of narrative structures. In Mark Finlayson, editor, *Computational models of narrative. Papers from the 2010 AAAI Fall Symposium*, volume FS-10-04 of *AAAI Technical Reports*, pages 45–46, 2010.

12 Benedikt Löwe. Methodological remarks about comparing formal frameworks for narratives. In Patrick Allo and Giuseppe Primiero, editors, *Third Workshop in the Philosophy of Information, Contactforum van de Koninklijke Vlaamse Academie van België voor Wetenschappen*, pages 10–28, Brussel, 2011. KVAB.

13 Benedikt Löwe and Eric Pacuit. An abstract approach to reasoning about games with mistaken and changing beliefs. *Australasian Journal of Logic*, 6:162–181, 2008.

14 Benedikt Löwe, Eric Pacuit, and Sanchit Saraf. Identifying the structure of a narrative via an agent-based logic of preferences and beliefs: Formalizations of episodes from CSI: Crime Scene Investigation™. In Michael Duvigneau and Daniel Moldt, editors, *Proceedings of the Fifth International Workshop on Modelling of Objects, Components and Agents. MOCA'09*, FBI-HH-B-290/09, pages 45–63, 2009.

15 Harold Noonan. Identity. In Edward N. Zalta, editor, *The Stanford Encyclopedia of Philosophy*. Winter 2011 edition, 2011.