

## **Adding Tales to the Equation - Exploring the Narrative Potential of Late Medieval and Early Modern Reckoning Books**

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When we think about studying mathematics, some of the first things that come to mind are the small stories often surrounding the numerical values and arithmetical operations: The narrations are mostly simple, at times funny and even slightly absurd, but they tell us about the world of trade, about merchantry, and - in the case of late medieval and early modern German reckoning books - sometimes even about drunk virgins, apple thieves and Jews who practice rampant usury.

The widely used handwritten and printed reckoning books of this period often contain extensive collections of examples (so-called *Practica*), where short stories are embedded in the greater context of the didactic work. There, the border between the non-narrative and the narrative is fluid: Single examples span from preliminary, so-called „narratogene“<sup>1</sup> stages of narration to full blown, protonarrative stories that outline a short sequence of events. All of them provide a necessary content-related backdrop, setting the stage for a mathematical problem waiting to be solved. Therefore, storytelling is intrinsically linked to the purpose of mathematical didactics and instruction: Reckoning books have multi-layered, ambivalent functions in which a mathematical *prodesse* and a literary *delectare* do not exist as polar opposites, but rather as companions that can't always be separated. Their narrative potential is great: Through the narration and the world that is opened up, connections to an experienced reality are made, and a learning process is activated and amplified through the impressions created and emotions evoked.

The aim of this paper is to gain insight into the narrative forms of late medieval and early modern arithmetical examples as well as their potentials and limitations in a seemingly non-narrative text environment: Regarding the narrative form on a microlevel, the arithmetic example treads a fine line between various characterizations of small format text genres: Like an *exemplum*, it can be defined by its functionality<sup>2</sup> while also bearing resemblance to the forms of the riddle and the joke as described by André Jolles<sup>3</sup>.

On a macrolevel, the question about the relation of singular examples and the overarching narrative of knowledge in an individual text has to be posed: For a successful functionalization of examples, the existence of an underlying, engaging organizing principle is required. In the reckoning books of the 15th and 16th century, a relatively fixed, popular structure soon develops and therefore creates the possibility for the implementation of broader content and the inclusion, transmission and omission of individual text modules. Due to the widespread popularity of the reckoning book, these structures are later also used to implement and present chronical or moralic contents. An exemplary diachronic analysis of several reckoning examples and books therefore provides an interesting insight in how storytelling and mathematical instruction are interwoven in the singular example, the individual text and the overarching „text genre“ of the reckoning book.

Fußnoten:

1 Martínez, Matías: Nullstufen und Vorstufen des Erzählens: Überlegungen zu einer liminalen Narratologie. In: Anglistik 34/2 (2003), S. 155-163, S. 155.

2 Vgl. Schwitzgebel, Bärbel: Noch nicht genug der Vorrede. Zur Vorrede volkssprachiger Sammlungen von Exempeln, Fabeln, Sprichwörtern und Schwänken des 16. Jahrhunderts. Tübingen: Niemeyer 1996, S. 12.

3 Vgl. Jolles, André: Einfache Formen: Legende, Sage, Mythe, Rätsel, Spruch, Kasus, Memorabile, Märchen, Witz. Berlin/Boston: De Gruyter 82010.