



The linear structure of narrative figures in the Saint Francis Cycle: a linguistic analysis

Niels Boogers, Linda Badan, Giuseppe Samo & Gaetano Fiorin

To cite this article: Niels Boogers, Linda Badan, Giuseppe Samo & Gaetano Fiorin (2022): The linear structure of narrative figures in the Saint Francis Cycle: a linguistic analysis, *Social Semiotics*, DOI: [10.1080/10350330.2022.2080544](https://doi.org/10.1080/10350330.2022.2080544)

To link to this article: <https://doi.org/10.1080/10350330.2022.2080544>



© 2022 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 18 Jul 2022.



Submit your article to this journal [↗](#)



Article views: 524



View related articles [↗](#)



View Crossmark data [↗](#)

The linear structure of narrative figures in the Saint Francis Cycle: a linguistic analysis

Niels Boogers^{a,*}, Linda Badan^b, Giuseppe Samo ^c and Gaetano Fiorin^d

^aDepartment of Humanities, University College Utrecht, Utrecht University, Utrecht, Netherlands;

^bDepartment of Translation, Interpreting and Communication, Ghent University, Gent, Belgium;

^cDepartment of Linguistics, Beijing Language and Culture University, Beijing, People's Republic of China;

^dUtrecht University College, Utrecht Institute of Linguistics, Utrecht University, Utrecht, Netherlands

ABSTRACT

This study examines the linear order of the narrative figures that appear in the frescoes of the Cycle of Saint Francis in the Upper Church of the Basilica of Saint Francis in Assisi, Italy (1288–1297). This linguistic analysis of the visual-pictorial modality explores the distribution of thematic and discourse roles as an authorly tool to express meaning. Findings include that the linear order of figures in the frescoes is patterned according to semantic principles and has been used here to convey particular relations, roles and other semantic information. Findings of this analysis can be fruitful both for the field of Art History and that of Linguistics, by offering insights into the potential application of linguistic patterning in narrative imagery, into the functions of artworks in this period, and how they combine their aesthetic, theological and communicative functions. The interdisciplinary methodology proposed here pioneers a new field of academic inquiry, for which future directives are provided.

KEYWORDS

Linearity; thematic roles; discourse roles; semantic principles; mural painting

Introduction

Christian pictorial cycles have an inextricable bond with written sources, as they originated from late antique manuscript illuminations where written texts were first paralleled to episodic narrative images (Weitzmann 1977). Subsequently, Christian mural paintings were often accompanied by inscriptions that cofunction with the frescoes in explanatory symbiosis (Lavin 1990; Rosewell 2014). This long tradition of parallelism of textual and visual sources is widely explained to be a consequence of the different functions and constraints of these two modalities (Durand [1286] 1843; Lessing [1766] 1910): painting captures a frame, and therefore must select one particular moment in a chain of events to depict the entire episode; writing can describe events in temporal sequences, but is limited in its truthful depiction of objects and the physical world. Consequently, a majority

CONTACT Niels Boogers  niels.boogers@student.uva.nl

*Present address: Department of Cultural Analysis, University of Amsterdam, Amsterdam, Netherlands

© 2022 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group

This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way.

of the narrative cycles combines the visual and the written modalities in order to communicate both the temporal and the spatial dimension optimally.

The present research seeks to uncover the connections between the linguistic and visual-pictorial modalities by applying a linguistic analysis to narrative imagery.¹ In language, word order is governed by syntactic rules that result in different linear patterns cross-linguistically and that signal dependencies between words. This study explores how linearity (i.e. the order of depicted figures) guides the interpretation of the pictorial modality, specifically in the frescoes of the Cycle of Saint Francis in the Upper Church of the Basilica of Saint Francis in Assisi, Italy (1288–1297). As in other cycles, the frescoes of the Saint Francis Cycle² are accompanied by descriptive textual captions, henceforth referred to as *tituli* (singular: *titulus*). Just like literary texts, late thirteenth-century cycles such as the Saint Francis Cycle are meant to be read from left to right (Cooper and Robson 2013) in order to convey a story (Lavin 1990).

The type of analysis pursued in the present research continues a longer line of inquiry regarding this cycle. Posèq (2002) investigates how changes in linear order of the figures in the frescoes of the Saint Francis Cycle affect the meaning of the representation. He argues that the painter shapes the meaning of the images by manipulating the allocation of the protagonists. Posèq underpins his argument by extending his theory to other works by Giotto,³ establishing a pattern that positions the main actor on the left side of the paintings, but also containing exceptions to this convention, consciously applied by the painter to convey particular meanings. On the basis of these observations, Posèq draws a connection between language and pictorial composition by asserting that a change in the spatial order of the figures in a painting alters the painting's meaning in the same way as when the order of the words in a sentence is altered through, for example, passivation or topicalization.⁴ In this manner, linear composition can be utilized to convey specific meanings by (de-)emphasizing different aspects or protagonists in the narrative.

Our research expands Posèq (2002) by investigating the patterns within the entire cycle, searching for structural parallels between the linguistic and the painted modalities with a focus on the functioning of the linear order of the figures in the frescoes. In particular, the present investigation aims to uncover the visual equivalents of thematic and grammatical roles, and any other factors that influence the visual rendering of the linearity of the figures. Such an inquiry can provide insights into the role of linear order as a tool to manipulate the semantic content of the frescoes.⁵

Since this inquiry employs a linguistic analysis, the narrative captions of the cycle are taken as a starting point to map the various roles and verbs onto the paintings. The *tituli* were based on the life of Saint Francis as documented by Saint Bonaventure in the *Legenda Maior* (1260–1263), and are compared here to the frescoes to illustrate the similarities and differences of the use of linearity in the two modalities.⁶ In terms of linguistic form, a significant share of the syntactic structure and other elements of the *tituli* that will be scrutinized in the present research cannot be proven to predate the creation of the frescoes, and was, in fact, created for the very same purpose as the frescoes, that is, to concisely summarize episodes from the *Legenda Maior*. By both overlapping and complementing each other, and representing slightly different contents from the *Legenda Maior*, clearly the frescoes are not visual translations of the *tituli*, nor the other way around. Therefore, our research question is not how text is translated into visuals (or vice versa), but how the visual modality potentially employs patterns found in language to communicate its message. This said, this research takes the *tituli* as a starting point for the comparative aspects of the research design, since

their structure was partially predetermined by Bonaventure's text.⁷ The mapping of tituli and corresponding frescoes is visualized in Appendix 2.

The most prominent mode of analysis pursued here is the exploration of correlations between linear order and thematic roles (relating to the role of an argument in the action expressed by a verb) and discourse roles (relating to information structure). Thematic roles are extracted from the frescoes by locating the action a figure plays a role in, and making a judgment of the nature of the figure's involvement in this action. The present research adopts the view of thematic roles of Haegeman (1991) and further limits the selection of thematic roles to the ones listed below in order to create analyzable groups that are systematically and frequently represented in the tituli and in the frescoes.⁸ Other thematic roles are marked in Appendix 2 as "other."

- (1) *Agent*: one who intentionally initiates the action expressed by the verb (e.g. *Mary walks*; *Mary talks to John*).
- (2) *Experiencer*: the entity that experiences some (psychological) state expressed by the verb (e.g. *Mary feels cold*; *Mary sees John*).
- (3) *Theme*: the entity affected by the action or state expressed by the verb (e.g. *John meets Mary*; *Mary is at work*). (Haegeman 1991)

For discourse roles, the present study distinguishes between "focus" and "non-focus" (only the former are marked in Appendix 2). "Focus" refers to the element of an utterance that contributes novel information (typically considered in opposition to "topic," which corresponds to the given information). To apply this concept to the frescoes, the cycle is regarded as a discourse produced by the painter to communicate information to future spectators (the discourse partners). Therefore, to locate the focus (the new information) on an individual painting, all discourse antecedents (the background information) need to be taken into account.

Jackendoff (2002) identifies some primitive semantic principles that determine linear order whenever the syntax of a language is somehow disrupted.⁹ We hypothesize here that these principles also apply to pictorial cycles, as they also lack syntactic rules and instead, depend on the linear order of figures to communicate their interdependencies. Two such principles that will be used in the present research are *AgentFirst* and *FocusLast*.

- (1) *AgentFirst* is a principle that dictates that the Noun Phrase referent with the highest control, the agent, comes first.
- (2) *FocusLast* is a principle that dictates that the information that is in focus, new information, should be at the end of the utterance. (Jackendoff 2002)

Notably, these principles relate to both discourse and thematic roles. This investigation will be further supplemented with a general analysis of the visual distribution of other thematic roles and their correlation with linear order.

Methodology

As explained above, we took the linear order of elements in the tituli as a starting point in order to be able to discover similar patterns in the frescoes. To this end, we identified all

linearly represented elements in the tituli. Any text that is not in some way depicted in the frescoes was omitted from the data, as visualized Appendix 1, Part I (omitted phrases in red). The verbs (underlined) and their arguments (**bold**) were marked for the reader's convenience. Arguments were selected on the basis of their locatability in the frescoes. This entails that elements must be identifiable as a specific depicted element with a particular placement in the composition. We selected for analysis any argument represented visually by one or multiple elements (for an overview of the comparative data see Appendix 2) on the basis of the following criteria:

- (1) Only the heads (i.e. the (pro)noun that is highest in the syntactic structure) of the arguments are marked in bold in Appendix 1.¹⁰ When an entire sentence forms an argument, it is included in its entirety (in curly parentheses).
- (2) Clauses that have no direct representation in the frescoes, since they do not meet the requirement of locatability, will be excluded from the analysis, while we include clauses that are partially represented (see point 4).
- (3) Clauses without overt arguments or only a single argument are not included, since they cannot add any insights to the analysis based on the linear order of arguments.
- (4) When an obligatory argument of a verb (e.g. an object to a transitive verb) is not depicted in the painting, but the rest of the clause is, all arguments are included in the analysis, and the non-depicted arguments are marked as such in the data overview.
- (5) The tituli are written in Latin. Latin is a subject pro-drop language, meaning it does not require overt subject pronouns. Therefore, subjects are often not repeated when they have already been mentioned in the same discourse. Languages like English also do not consistently repeat their arguments, but they replace them by pronouns instead. To determine relative linear order between arguments, however, the relative positioning of these dropped arguments must be determined. When a subject is dropped, it is almost exclusively the case that the corresponding overt subject – the antecedent – has already occurred prior in the same titulus. Therefore, these covert subjects are always analyzed as the initial argument in the clause.
- (6) Sometimes, the antecedents of dropped subjects occur in prior clauses that themselves have not been depicted on the frescoes. For example, an undepicted circumstantial clause can contain the subject of a depicted main clause (e.g. “cum beatus Franciscus nocte sequenti se sopori dedisset, palatium [...] vidit” (3); “*when the blessed Francis had fallen asleep the following night, he saw a [...] palace*”). In such cases, arguments from clauses that are not visualized are used for the analysis (i.e. “*Francis saw a palace*”). When they are also the subject of the main clause, they are described as being in the sentence initial position, because in the larger text they precede the other arguments.

Grammatical functions, thematic/discourse roles, and gloss

In the data overview (Appendix 2), the first layer consists of the selected arguments from the Latin text that together with the verbs form an abridged version of the tituli. The second layer presents the grammatical functions of the arguments in the top layer. The arguments have been categorized as subjects, objects and indirect objects. Agents of

imperatives have been analyzed as subjects. The third layer provides the gloss. For the translated arguments, the determiners were specified to clarify anaphoric relations. If any anaphoric relation was ambiguous from the gloss, the antecedent was added in square parentheses. The fourth layer represents the thematic-discourse roles of the arguments in the tituli.

Visual equivalents and relative order

The relative positions of the figures in the paintings and in the tituli is shown in the fifth layer of Appendix 2, which allows for comparisons between the uses of linearity in the two different modalities. We verified the relation between written and painted elements using art historic descriptions of the cycle (Smart 1971; Posèq 2002; Ruf, Diller, and Roli 2004; Cooper and Robson 2013), especially for ambiguous cases. Following the reading order of the frescoes, the order of the elements is marked from the initial position (on the left) to the final position (on the right) in the fifth layer (see Appendix 2; “/” indicates the start of new clauses). This means that the first occurring argument of a verb is marked as initial (relative to the following arguments in the same clause). An argument is marked as “middle” if it appears in between two other arguments in the same clause, or to clarify that it is depicted in the middle of the painting (“[...]/middle”). This latter use is unrelated to the linear order of the arguments within the clause, but it can reveal the element’s relation to other elements in the same fresco-titulus pair.

Matching of visual and textual linear order

The order of constituents in the paintings and in the texts has been compared and visualized with a color system in the fifth layer of Appendix 2. Green denotes that the element is in the same relative position in both the painting and the text and red conveys that the element does not occupy the same relative position. Constituents marked yellow do not occupy a clearly identifiable position in the linear order, while blue-marked arguments are not depicted in the paintings.

All the tituli consist of multiple clauses or multiple sentences. The frescoes generally merge several actions and events into one single visual representation, as the painted modality selects one particular moment in a chain of events to depict an entire episode (Lessing [1766] 1910). We define this singular representation as the “main depicted event” (MDE). The Cycle does not repeat figures within the same episode to portray different actions or events sequentially. In the tituli, however, arguments are often repeated within the same inscription to describe sequential actions and events. In order to compare linear order in the two modalities, in an additional layer in Appendix 2, we identified the order in which the main arguments are introduced over the entire inscription and examined whether this order is reflected in the frescoes.

Determining visual renditions of thematic and discourse roles

To achieve an accurate mapping of roles and the linear order of figures, we focus on the visual depiction of the interaction between figures, predominantly in the form of hand gestures and glances, which are proposed here to be the most prominent visual

equivalent of verbs. Hand gestures most prominently relate to what a figure is saying or conveying. Especially figures representing visions often direct their hand(s) at what they are showing (e.g. *Dream of the palace* (3); *Vision of the thrones* (9)). The direction of the eyes often reveals whom a person is addressing, directing the eyes of the “reader” (spectator) and thereby providing a reading direction that marks a clear linear order between the figures. By examining the direction of features, some ambiguities in linearity can be resolved. In addition, the interaction that becomes visible through hand gestures and eye contact between two figures helps to determine a MDE in the frescoes and distinguishes the centrally depicted figures from peripheral figures or onlookers, whose glances are often directed towards the main figures but are not reciprocated.

Findings and discussion

Subjects and agents

The first pattern under scrutiny concerns the visual positioning of the “leading actor” in relation to other figures. Posèq (2002) posed that the left side of the depictions in the Saint Francis Cycle is usually reserved for the leading actor - or agent. Similarly, many linguists have theorized hierarchies of thematic roles in the order they tend to take the position of the grammatical subject. Hierarchy 1 was proposed by Grimshaw (1990), where the more an argument is to the left the more likely it is to take the subject position.

Hierarchy 1: Agent > Experiencer > Goal/Source/Location > Theme

(Grimshaw 1990)

The present analysis does not use Goals, Sources and Locations (annotated as “other” in Appendix 2) and will therefore use the following simplified version of the hierarchy:

Hierarchy 2: Agent > Experiencer > Theme/(Others)

Analogously, an equivalent for grammatical subjects exists in the visual-narrative modality. We propose here that this equivalent takes the shape of a “visual subject position” (VSP), which we define as “taking the left position in a depicted act involving two or more figures.”¹¹ Important to identify the VSP is the presence of an interaction with another figure. These interactions can be identified via previously discussed features such as hand gestures and glances, which can be regarded as the visual renderings of verbs. Table 1 shows the frequency of occurrence of agents in the VSP. A small majority of the agents, shown in the top row, does indeed occupy the left position relative to the figures they interact with. However, it is notable that this number includes agents that do not occur in the initial position in the frescoes, although they still occupy the VSP, because they are depicted to the left of the figures they interact with. This occurs when agents show no relation to the figures that precede them (i.e. when the initial figure does not partake in the MDE). The second row shows the frescoes that display agents on the right side of at least one of the figures they interact with, and that are therefore not in the VSP. The third row contains the cases without an agent, where the VSP is occupied by another thematic role. The bottom row shows the remainder of the frescoes, in which no VSP was identifiable (i.e. when there is no clear linear order present to base this position on).

Table 1. Agents in the VSP.



	Fresco #	Total	Colour
VSP identifiable, and is occupied by an agent	2, 4, 10, 11, 13, 14, 15, 16, 17, 23, 25, 26, 27	13	
VSP identifiable, but the agent occupies another position	1, 3, 5, 6, 7, 9, 12, 19, 22	9	
VSP identifiable, but no agent present	18, 28	2	
No VSP identifiable	8, 20, 21, 24	4	

Fresco 1: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_01_-_Homage_of_a_Simple_Man.jpg [29 September 2021].

Fresco 2: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_02_-_St_Francis_Giving_his_Mantle_to_a_Poor_Man.jpg [29 September 2021].

Fresco 3: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_03_-_Dream_of_the_Palace.jpg [29 September 2021].

Fresco 4: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_04_-_Miracle_of_the_Crucifix.jpg [29 September 2021].

- Fresco 5: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_05_-_Renunciation_of_Wordly_Goods.jpg [29 September 2021].
- Fresco 6: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_06_-_Dream_of_Innocent_III.jpg [29 September 2021].
- Fresco 7: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_07_-_Confirmation_of_the_Rule.jpg [29 September 2021].
- Fresco 8: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_08_-_Vision_of_the_Flaming_Chariot.jpg [29 September 2021].
- Fresco 9: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_09_-_Vision_of_the_Thrones.jpg [29 September 2021].
- Fresco 10: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:GiottoArezzo.jpg [29 September 2021].
- Fresco 11: [https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_11_-_St_Francis_before_the_Sultan_\(Trial_by_Fire\).jpg](https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_11_-_St_Francis_before_the_Sultan_(Trial_by_Fire).jpg) [29 September 2021].
- Fresco 12: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_12_-_Ecstasy_of_St_Francis.jpg [29 September 2021].
- Fresco 13: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_13_-_Institution_of_the_Crib_at_Greccio.jpg [29 September 2021].
- Fresco 14: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_14_-_Miracle_of_the_Spring2.jpg [29 September 2021].
- Fresco 15: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_15_-_Sermon_to_the_Birds.jpg [29 September 2021].
- Fresco 16: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_16_-_Death_of_the_Knight_of_Celano.jpg [29 September 2021].
- Fresco 17: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_17_-_St_Francis_Preaching_before_Honorius_III.jpg [29 September 2021].
- Fresco 18: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_18_-_Apparition_at_Arles.jpg [29 September 2021].
- Fresco 19: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_19_-_Stigmatization_of_St_Francis.jpg [29 September 2021].
- Fresco 20: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_20_-_Death_and_Ascension_of_St_Francis.jpg [29 September 2021].
- Fresco 21: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_21_-_Apparition_to_Fra_Agostino_and_to_Bishop_Guido_of_Arezzo.jpg [29 September 2021].
- Fresco 22: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_22_-_Verification_of_the_Stigmata.jpg [29 September 2021].
- Fresco 23: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_23_-_St_Francis_Mourned_by_St_Clare.jpg [29 September 2021].
- Fresco 24: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_24_-_Canonization_of_St_Francis.jpg [29 September 2021].
- Fresco 25: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto_-_Legend_of_St_Francis_-_25_-_Dream_of_St_Gregory.jpg [29 September 2021].
- Fresco 26: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto-Uomo_di_llderda.jpg [29 September 2021].
- Fresco 27: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto-Confessione_della_donna.jpg [29 September 2021].
- Fresco 28: https://it.wikipedia.org/wiki/Storie_di_san_Francesco#/media/File:Giotto-Liberation_of_the_Eretico.jpg [29 September 2021].

Table 1 demonstrates that the VSP is slightly more often occupied by agents than by other thematic roles (13 vs. 11). **Table 2** reconstructs the hierarchy of thematic roles as in Hierarchy 2, comparing which figures take the VSP in which combinations. The left column shows the different combinations of thematic roles that occur within the main depicted events of the frescoes. The second column contains the corresponding fresco numbers, and the third column shows the frequency of agents in the VSP for this combination. The last row shows the combination experiencer-theme, and the frequency of experiencers in the VSP in the third column. Frescoes that do not contain an identifiable VSP have been excluded from **Table 2**.

As becomes apparent from **Table 2**, there is not one thematic role in particular that takes the VSP when it is not an agent. In both instances of the combination agent-experiencer, the experiencer takes the VSP, which implies that the experiencer, in fact, is higher

Table 2. Frequency and distribution of thematic roles in the VSP.



Thematic roles of the figures in the MDE	Fresco #	Frequency in the VSP	Colour
Agent-Experiencer	3, 9	Agent: 0/2 (0%)	
Agent-Theme	2, 6, 10, 12, 13, 14, 16, 22, 26, 27	Agent: 7/10 (70%)	
Agent-Other	1, 4, 5, 7, 11, 15, 17, 19, 23, 25	Agent: 6/10 (60%)	
Experiencer-Theme	18, 28	Experiencer: 2/2 (100%)	

See Table 1 footnote.

in the hierarchy than the agent. An interesting case in this context is *Stigmatization of Saint Francis* (19) (Figure 1) in which Francis is both the experiencer who sees Christ, as well as the goal¹² (“other” in Appendix 2) of the stigmata he receives from Christ (agent). The agent occurs in the second position here, after its goal. The fact that Francis occupies the VSP might reveal that he is depicted as an experiencer, which potentially supports a claim that experiencers are higher in the hierarchy than agents. However, it should be noted that these three instances (frescoes 3, 9, and 19) constitute exceptions rather than the rule. All the other experiencers in the frescoes – the vast majority – do not occur in the VSP, but they are not visible in Table 2 because they do not occur in an interaction with other figures. Experiencers are more often onlookers than they are involved in



Figure 1. *Stigmatization of Saint Francis* (19), fresco in the Upper Church of the Saint Francis Basilica in Florence, Italy (1288–1297). Source: Wikimedia Commons. Retrieved from https://commons.wikimedia.org/wiki/Saint_Francis_cycle_in_the_Upper_Church_of_San_Francesco_at_Assisi#/media/File:Giotto_-_Legend_of_St_Francis_-_19_-_Stigmatization_of_St_Francis.jpg [3 June 2021].

the MDE (see “The place of experiencers”). In the other two combinations, the agent is the dominant holder of the VSP.

Taking into account the numbers in [Tables 1 and 2](#), a hierarchy as in (2) can be supported. When looking at all the thematic roles separately, agents occupy the VSP over all other roles more than the other way around and therefore are at the top of the hierarchy. From the fact that experiencers occur in the VSP position twice in the presence of an agent and also take the VSP over themes, it may be concluded that they take the second place in the hierarchy, right below agents. The data shows no significant difference between themes and other thematic roles, placing them all together at the bottom of the hierarchy. Therefore, despite the slightness of the majority of agents in this position compared to other thematic roles, the data shows that the VSP can indeed be regarded here as a visual counterpart to the grammatical subject in the linguistic modality, making a strong argument for the idea that linear order can express grammatical roles in the visual-narratives modality.

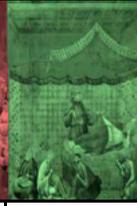
Agent and focus patterns

In addition to the dominant initial position of agents, the frescoes of the Saint Francis cycle also display a dominant FocusLast pattern. To illustrate and compare, [Tables 3 and 4](#) show the identifiable AgentFirst and FocusLast patterns. The upper two rows of [Table 3](#) contain the frescoes with agents in the initial position and non-initial position in the MDE, respectively, and are thereby identical to the top two rows of [Table 1](#). The lower two rows account for the remainder of the frescoes that either do not show any identifiable agent or do not exhibit a clear linear order between the agent and other figures. Consequently, it becomes apparent from [Table 3](#) that a slight majority of the frescoes shows the figure with the most agency in the initial position relative to other depicted figures in the MDE. Nine agents, however, are depicted to the right of other figures they interact with. Beyond the MDEs, it is even more often the case that agents are preceded by other figures, and it is for this reason that this section focuses on agents within the MDEs.

The top two rows of [Table 4](#) show a significant majority of the frescoes that exhibits a focus in the final position, whether that is the single focus of the episode or one of multiple. The third row shows some exceptions to this rule, which form a small minority. The fourth row accounts for the first fresco, in which all elements are new information and thereby focus, since there are no prior discourse referents. The bottom row again contains the frescoes that do not exhibit a clear linear order between the focus and other depicted figures.

From the tables above it becomes clear that both principles seem to apply throughout the cycle, with a stronger effect for FocusLast than for AgentFirst. It should be noted that a single episode can contain multiple elements in focus, whereas it can have only one agent. Due to this difference, the numbers in the top row of [Table 3](#) and the sum of the upper two rows in [Table 4](#) cannot be evenly compared. However, when comparing the number of agents in non-initial positions (within the MDEs) and the number of focuses in non-final position, there exists a significant difference. It is rarely the case that the final position is not taken up by a figure or element that is in focus (the new information that the episode is concerned with). It is far less rare that the figure with the

Table 3. Occurrence and distribution of AgentFirst.

						
1	2	3	4	5	6	7
						
8	9	10	11	12	13	14
						
15	16	17	18	19	20	21
						
22	23	24	25	26	27	28

	Fresco #	Total	Colour
Agent in initial position within the MDE	2, 4, 10, 11, 13, 14, 15, 16, 17, 23, 25, 26, 27	13	
Agent in non-initial position within the MDE	1, 3, 5, 6, 7, 9, 12, 19, 22	9	
No agent	18, 20, 24, 28	4	
Linear positioning unclear	8, 21	2	

See Table 1 footnote.

Table 4. Occurrence and distribution of FocusLast.



	Fresco #	Total	Colour
Single focus in the final position	2, 3, 4, 12, 13, 14, 15, 16, 17, 22, 23	11	
Multiple focus, of which one in the final position	5, 7, 9, 10, 11, 19, 25, 26, 27, 28	10	
Focus in non-final position	6, 18	2	
No identifiable focus due to lack of previous reference	1	1	
Linear positioning unclear	8, 20, 21, 24	4	

See Table 1 footnote.



Figure 2. *Preaching to the birds* (15), fresco in the Upper Church of the Saint Francis Basilica in Florence, Italy (1288–1297). Source: Wikimedia Commons. Retrieved from https://commons.wikimedia.org/wiki/Saint_Francis_cycle_in_the_Upper_Church_of_San_Francesco_at_Assisi#/media/File:Giotto_-_Legend_of_St_Francis_-_15_-_Sermon_to_the_Birds.jpg [3 June 2021].

highest level of control and intention (the agent) is preceded by other figures in the MDE.¹³

The general patterns found are in line with the principles proposed by Jackendoff (2002) and demonstrate that both thematic roles and information structure can be



Figure 3. *Saint Francis in ecstasy* (12), fresco in the Upper Church of the Saint Francis Basilica in Florence, Italy (1288–1297). Source: Wikimedia Commons. Retrieved from https://commons.wikimedia.org/wiki/Saint_Francis_cycle_in_the_Upper_Church_of_San_Francesco_at_Assisi#/media/File:Giotto_-_Legend_of_St_Francis_-_12_-_Ecstasy_of_St_Francis.jpg [3 June 2021].

visually expressed through linear order. Potential explanations for anomalies will be discussed in SECTIONS XYZ. These patterns do not constitute a significant break with the findings of Posèq (2002). Both the current and the previous section support his conclusion that agents often occur in the initial position. The current section also, however, underscores the importance to distinguish between thematic and discourse roles, not conflating “leading actors” (agents) and the most important information (focus), as it has been demonstrated here that they adhere to different principles.



Figure 4. *Saint Francis renouncing his father* (5), fresco in the Upper Church of the Saint Francis Basilica in Florence, Italy (1288–1297). Source: Wikimedia Commons. Retrieved from https://commons.wikimedia.org/wiki/Saint_Francis_cycle_in_the_Upper_Church_of_San_Francesco_at_Assisi#/media/File:Giotto_-_Legend_of_St_Francis_-_05_-_Renunciation_of_Wordly_Goods.jpg [3 June 2021].

The place of experiencers

As established above, very often experiencers are depicted not as partaking in the main depicted event, but as onlookers (i.e. experiencers) of this event. An example of this is *Preaching to the birds* (15) (Figure 2), where the MDE consists of Francis preaching to the birds. On the left side of the painting, a friar is positioned witnessing this event. Similar to this example, in many frescoes the experiencer takes the initial position, while the middle position is usually occupied by the agent, and to their right there is a non-agent with whom the agent interacts in the main depicted event. This embedment

parallels linguistic constructions, in which a particular clause is perceived (or “experienced”) by an experiencer in a larger clause (e.g. *Mary sees [John make a sandwich]*). The frescoes in which this pattern occurs can therefore be seen as containing a form of “visual embedment” that relies on the linear order of the figures. To illustrate, in *Saint Francis in ecstasy* (12) (Figure 3) the MDE is the interaction between Francis and Christ (who blesses the former in his ecstasy). The friars depicted on the left are witnesses to this event. Interestingly, while the titulus captures this episode in a passive construction and thereby positions Francis in the initial position (“Franciscus [...] visus est a fratribus”; “Francis [...] was seen by the friars”), this fronting is not maintained in the painting, which shows the visual equivalent of “the friars saw Francis in ecstasy [being blessed by Christ],” creating a similar embedment as in *Preaching to the birds* (15) (Figure 2).¹⁴ In the tituli of both *Saint Francis in ecstasy* (12) and *Preaching to the birds* (15), Francis appears first, and the onlookers (experiencers) are mentioned last.

(12) “When the blessed Francis was praying fervently sometime, he was seen by the friars to rise from the ground [...].”

(15) “When the blessed Francis went to Bevagna, he preached to many birds [...], and all this his waiting companions saw on the way/road.”

(Translations reproduced from Appendix 1, Part I)

In contrast to the agent-experiencer order in the captions, the experiencers in the corresponding frescoes take the initial position. These two examples point towards the dominance of experiencers in the initial position of the frescoes.¹⁵ This pattern also constitutes an argument against Posèq’s (2002) hypothesis that agents often occur on the left half of the painting. In fact, it is very common for experiencers to precede agents in the linear order of figures. This suggests that agents can be recognized by their initial position in the MDE rather than their position in the fresco in its entirety.

In addition to the experiencers that appear in both the tituli and the frescoes, there are several experiencers that most frequently occur in the form of groups of multiple anonymous bystanders anywhere around the MDE (i.e. on the right or left side, on both sides, in the background). For instance, in *Saint Francis renouncing his father* (5) (Figure 4), the onlookers representing the people in Francis’ old secular life are positioned on the left, behind his father, and those representing the church and his newfound piety stand behind Francis himself on the right. These experiencers are not subject to a rigid linear order but are employed for symbolic purposes, as a positioning of all bystanders on the far left would diminish this effect.

Experiencers as higher subjects

We proposed above that experiencers appear in a visual embedment, mirroring clausal embedment that occurs in language. Experiencers in this position might have qualities that coincide with proposals concerning performativity in language starting from Ross (1970). According to Ross’ Performative Hypothesis, all declarative sentences are derived from a “deep structure” containing a performative verb (e.g. *I like John*, in deep structure: *I claim that I like John*). This deep structure reveals the utterance as the speech act it is. Namely, by pronouncing the words *I like John*, the speaker is in fact

claiming that they like John. Therefore, in addition to their propositional content – that which is explicitly said – sentences also include an additional subject of which the propositional content (*I like John*) is the object. It is here that a potential parallel to the position of experiencers in the Saint Francis Cycle can be discerned. Many frescoes with experiencers do not just contain the main depicted event – the propositional content – but also contain one or multiple experiencers, who have the MDE as their object of experience. Important to realize here is that the parallel exists in the fact that both performative subjects and the experiencers in the paintings function as higher subjects. The acts that they perform, however, are not comparable. The frescoes function as report acts to their spectators, not as performative acts. Experiencers can be understood to visually express this report act. Therefore, the spectators of the Saint Francis Cycle are often watching figures in the painting that in turn witness the MDE, functioning as a higher subject to the figure in the VSP.¹⁶

The exact function of peripheral experiencers is difficult to determine. One possibility is that these experiencers visualize the perspective from which the event is reported. For example, in *Preaching to the birds* (15) the friar on the left witnesses Francis preaching to the birds and his testimony is the reason why this episode from Francis' life has been preserved for posterity. Another concrete example that points towards this hypothesis is the depiction of brother Leo in *Stigmatization of Saint Francis* (19). Brother Leo is a peripheral experiencer, added to the composition because of his crucial role as a witness to the stigmatization of Francis, confirming the authenticity of the stigmata (Cooper and Robson 2013). Another possible function of peripheral experiencers – which is not mutually exclusive with the previous hypothesis – is that they serve to guide the response of the spectator. In many of the paintings, experiencers and peripheral figures do not merely experience the main depicted events, but also actively respond to it through facial expressions, movement and hand gestures. Onlookers of the scenes can be seen to be surprised or distressed in response to the MDE. Both in *Homage of a simple man* (1) and *Saint Francis renouncing his father* (5) – as well as many more of the frescoes – onlookers can be seen to witness the MDE in awe and discuss it among each other. In this way, experiencers show spectators of the frescoes that something extraordinary is happening in the scene and could be therefore argued to guide the spectators' interpretation of the paintings.

Spatial depiction of the temporal dimension

A common tool for the depiction of temporal sequences is the linear order of figures. In cases where multiple events are represented or referred to in the same episode, they will usually be linearly ordered from left to right. Generally, one main event is depicted, but prior (and future) events can also be referred to in the same episode. For instance, in the *Miracle of the spring* (14) Francis is described to ascend the mountain on a donkey, being in prayer and turning stone into water for a man in need.

(14) "When the blessed Francis [...] ascended a mountain on some poor man's donkey, and, calling on this man, while praying, he produced water out of stone, [...]"

(Translation reproduced from Appendix 1, Part I)

These sequential events are depicted from left to right in the corresponding fresco, starting with the donkey standing on the left (representing Francis' arrival), then Francis himself in the middle, and finally the man drinking the water on the far right. This example and several other frescoes show clear parallels between the tituli and the painted linear order regarding the representation of the temporal dimension. However, while the linear representation of time is consistent throughout the paintings, this is not a universal pattern in the tituli. Generally, the captions recall the main event – the narrative present – first, and then list any prior events in subsequent clauses (see Appendix 1, Part II). *Healing of John of Lérida* (26) shows Francis healing John after physicians have given up on him. In the titulus, Francis and John are mentioned first, and then the physicians, who ceased their treatment in the narrative past.

(26) "The blessed Francis, immediately and perfectly healed John, of the city Lerida, mortally wounded and given up on by doctors [...]."

(Translation reproduced from Appendix 1, Part I)

In the fresco, however, these positions are reversed in accordance with the temporal order. A physician is depicted on the left, while the narrative present (the healing) is depicted on the far right of the painting. Examples like this demonstrate that the visual modality functions more dominantly as a paratactic mode of representation, using the linear order of figures to depict a chronological order of events. The tituli generally represent the same events hypotactically, meaning that the linear order of events can be inferred and that syntactic mechanisms (as opposed to linear order of figures) are used to express the temporal order.¹⁷

Posèq (2002) proposed that the reading direction and this temporal directionality also have implications for suggestions of movement. Due to the directionality of the paintings, movement from left to right can be understood as moving forward, while the opposite direction would represent backwards movement. The protagonist of the cycle, Francis, is almost in all cases depicted facing the right. Since the narrative follows him, he progresses (i.e. goes forward) through the story. Therefore, any other figure that crosses his path generally faces him and is directed towards the left. This results in a majority of the frescoes containing Francis in the initial position relative to his main interlocutor (i.e. in the VSP), even if he is not an agent in the episode. This is mirrored in many of the tituli as well, of which half start with Francis before any other argument (see Appendix 1, Part I).¹⁸ This pattern occurs in *Homage of a simple man* (1), in which a man spreads his garment in front of Francis, who then walks onto it. Francis (not the agent) is depicted on the left, in the VSP, whereas the man (the agent) is depicted on the right. Not only does Francis' position in this first fresco establish him as the protagonist of the cycle but also has a semantic function. If their positions were reversed, Posèq (2002) argues, the man would have spread out his garment behind Francis instead of in front of him. This would mean that Francis would have turned around to face the man and then intentionally stepped onto the man's garment, scorning the man's gesture (Posèq 2002). Therefore, both the semantic implications of linear order as well as the visual representation of temporal order explain why some agents do not occur in the VSP or in the overall initial position.

Francis in the middle

As the protagonist of the cycle, Francis holds a special position in the linear order of figures. As discussed above, he is usually directed towards the right and his interlocutors generally find themselves in the opposite position, facing him. In many frescoes in the cycle he, therefore, occupies the initial position. Unlike in the tituli, however, there are just as many other episodes that show Francis in the middle of two other figures. Cooper and Robson (2013) indicate that positioning Francis in the middle of a composition is a method to focus the attention of the viewer on Francis. According to them, Francis' central positioning throughout the cycle was used to underline his role as the protagonist and juxtapose the different actions he performs throughout the episodes. In the case of the *Miracle of the spring* (14), this compositional choice becomes especially clear, as this fresco forms an idiosyncrasy compared to later reproductions of the same scene. Other renditions of this miracle often position the focus (i.e. the spring created by Francis) at the center of the composition, rather than Francis himself (Cooper and Robson 2013). Many episodes from the Upper Church cycle, however, show Francis in this middle position. This pattern makes apparent that composition, and therefore the visual linear order, is used here to construct a visually coherent cycle. Parallel to this visual pattern, the majority of the tituli shows a consistent initial placement of Francis, creating a prosaic coherence. The "Francis-in-the-middle pattern" explains the embedment found in many of the frescoes, with experiencers occurring in the initial position. By placing an experiencer on one side and a non-agent on the other (or groups of experiencers on both sides), the painters aimed to create balanced compositions, in which the protagonist or the MDE in its entirety is centered and therefore easily recognizable for the spectator (Cooper and Robson 2013).

Concluding remarks and avenues for further research

This research aimed to uncover patterns in the relative linear order of figures in the painted-visual modality. We discussed various factors that influence this linear order and the discussion offered potential explanations for the detected patterns. The findings support the claim that the linear order of figures is semantically patterned and that many of the frescoes use linear order as a tool to express the thematic roles of their respective figures. However, in the formation of visual linear order, a multitude of patterns and different roles interact, resulting in varying compositions throughout the cycle. Namely, linear order cannot be predicted solely by thematic roles, but is codetermined by discourse roles, the position of the protagonist, the temporal sequence of the depicted events, visual symbolism, logical as well as contingent (im-)possibilities of the depicted action and the additional meanings that the painters wanted to convey. In addition, the visual linear order has been found to reinforce the didactic-explanatory function of the paintings through the clear directional and central positioning of the protagonist, the consistent placement of elements in focus, semantic effects (Posèq 2002) and the addition of experiencers, which may function as a tool to aid spectators in their interpretation of the scenes.

The variety of the patterns identified demonstrates that an interdisciplinary approach is vital to this field of inquiry. It is inconceivable to explain all the linearity patterns with

terminology and theoretical frameworks from the field of Linguistics. In the discussion of the various anomalies, it becomes clear that art historic considerations of composition, symbolism and ideology constitute important factors in the linearity patterns of the Saint Francis Cycle. In turn, taking a linguistic perspective adds considerable depth to the analysis of the cycle, especially concerning distributional patterns of various roles that stem from linguistic theory and were not present in previous research (i.e. thematic and discourse roles). For example, this study has found that the thematic roles of figures can be more accurately predicted by their relative linear order than by their distribution across the composition, the latter having previously been analyzed as an important factor by Posèq (2002). This finding suggests that the use of linearity analyses as a methodology in the study of narrative cycles could potentially deepen the understanding of these cycles and how they convey their messages.

This study operates in a new field of academic research and therefore still leaves many questions to be answered. The present research endeavor has potential to be expanded in several directions. Based on the current findings, future studies could further examine the complex system of principles that seems to be at work here, further integrating existing literature on the compositional features of the Upper Church Saint Francis Cycle or expanding the set of thematic and discourse roles to detect more intricate complexities in their visual distribution. Furthermore, it would be fruitful to compare the Saint Francis Cycle to other cycles depicting the same legend, to examine differences and commonalities with a focus on linearity. An obvious candidate for such a comparison is the Saint Francis Cycle in the Bardi Chapel in the Church of Santa Croce (1325-28, Florence, Italy), as this has historically been a common paring with the Upper Church cycle (Stubblebine 1985; Posèq 2002).

The line of questioning of the present research could also be extended to Christian narrative cycles about other Biblical figures or saints, in order to discover whether any more general patterns can be discerned. On a larger scale, this research can be conducted beyond the western and Christian traditions of narrative painting and instead focus on visual narratives from other historical periods and cultural contexts. From a linguistic perspective, it would be especially compelling to study visual narratives that are accompanied by descriptions in languages with word order patterns that differ significantly from Indo-European or Romance languages such as Latin. This could demonstrate whether there are cross-linguistic or cross-cultural patterns in visual linearity and the distribution of thematic and discourse roles. If this is not the case, perhaps then an argument could be made for a correlation between linguistic and visual linearity patterns. In this line of inquiry, an interdisciplinary approach remains crucial to correctly distinguish the linguistic factors from the cultural and art historical ones. Whereas the answer to the question whether knowledge of language impacts the visual representation of narratives remains elusive, we hope that the present study provides some interesting theoretical considerations and innovative methodological guidelines for future endeavors in this truly fascinating field.

Notes

1. This endeavor is by far not the first at the intersection between the study of the spatio-visual and the linguistic modalities. Most notably, Linguistics scholars have examined the visual

modality through the study of sign languages (e.g. Winston 1991; Perniss 2012), which are produced in the sign space and are therefore not subject to the same constraints as spoken languages.

2. "The Saint Francis Cycle" is used hereafter to refer exclusively to the Saint Francis Cycle in the Upper Church of the Basilica of Saint Francis in Assisi, unless otherwise specified.
3. The authorship of the Saint Francis Cycle in the Upper Church has been attributed to Giotto by various scholars (which Posèq bases his analysis on), but this attribution remains widely disputed. See for example Stubblebine (1985), Smart (1971) and Offner (1939) for an overview. The present study refers to the author of the cycle as "the painters" (plural), since there is a general consensus that – headed by Giotto or not – there must have been a collective of painters working on this cycle.
4. These are both syntactic mechanisms that alter the linear order of constituents in a clause. For example, the sentence *Mary sees John* can be rewritten as *John is seen by Mary*. The function of these mechanisms is to slightly alter the meaning of the sentence, without changing any of the participants or their relation.
5. To account for discrepancies between the written and visual modalities in terms of linearity patterns, it is important to acknowledge that the linearity of figures and the composition of the frescoes are influenced by other factors than the efficiency of conveying information. For example, the composition of individual frescoes is codetermined by their position in the church and position relative to surrounding frescoes (Ruf, Diller, and Roli 2004; Cooper and Robson 2013), forming coherent and symmetrical units of three or four frescoes along the bays of the Upper Church (Smart 1971). The compositions of many scenes are also codetermined by their compositional analogies to biblical scenes, with the function to liken Saint Francis to Old and New Testament figures such as Saint Paul, Moses, Samson, Abraham and, most notably, Christ (Cooper and Robson 2013).
6. The tituli below the Saint Francis Cycle were transcribed by Marinangeli (1911). The English translations of the tituli used in the present paper (see Appendix 1, Part I) have been produced by the authors with the aim to be as faithful to the Latin original as possible, in order to most clearly convey the syntactic structure of the tituli to the reader. Literary translations of the tituli have been provided by e.g. Smart (1971) and Dozzini (2006).
7. It should be noted that even when the tituli form a compression of a longer piece of Bonaventure's text, the original order of appearance and the thematic roles of the figures are often maintained. The tituli therefore at least partially predate the paintings. A brief overview of the discrepancies between the tituli and Bonaventure's original text is included in Appendix 1, Part II.
8. Haegeman (1991) includes other thematic roles such as goals, sources, benefactives and locations. These either do not occur, do not constitute large groups within the tituli and the frescoes, or do not show varying distributions compared to the other thematic roles. These roles are therefore not used in the analysis.
9. As for instance: pidgins – linguistic systems that can develop between two or more groups that do not share a common language; the so-called Basic Variety – an adapted version of a language as produced by adult L2 learners; homesigns – signed systems developed between hearing parents and their deaf children who are not exposed to fluent signing (Jackendoff 2002, chapter 8).
10. Note that, when present, determiners and prepositions constitute higher heads than (pro)-nouns (Abney 1987). However, we selected nouns and pronouns as heads, due to their lexical centrality to the phrases they occur in.
11. This marks a contrast with Posèq's hypothesis that agents predominantly occur on the left half of the frescoes. Even though agents do often occur on the left half, the present study aims to investigate the linearity of the figures relative to each other, not necessarily their spatial distribution over the fresco.
12. The entity towards which the activity expressed by the verb is directed (Haegeman 1991).
13. Since the categories of agent and focus are not mutually exclusive, there are some cases where they coincide. Due to the small number of instances and the uneven linear distribution of these figures, no pattern could be distilled from these examples.

14. Another relevant case in this context is *Vision of the thrones* (9). Both the titulus and the fresco place the experiencer (the friar) in the initial position. The position of “to the friar” in the titulus of *Vision of the thrones* (9) can be interpreted as a topicalization. This is a syntactic mechanism that moves a particular part of a sentence to the clause-initial position to mark it as the topic of the clause. This is the case for “to the friar”, since in the canonical word order of Latin (Subject-Object-Verb) indirect objects like these do not take the clause-initial position by default.
15. Note the difference with the VSP. Agents tend to take the left position in interactions with other figures, experiencers take the overall initial (left) position. Both of these patterns often occur within the same episodes.
16. See Delfitto and Fiorin (2011) for a version of the Performative Hypothesis that finds a parallel between performative subjects and experiencers.
17. A potential explanation for the fronting of the MDE in the captions can be discerned from the presence of the word “cum” – or an equivalent - at the beginning of all the tituli. This is not uncommon for captions accompanying Christian narrative cycles. This word translates to “when” or “the moment when.” With these markers, the tituli have been shaped to represent one moment in time analogous to the paintings, which are also constrained to the depiction of a singular moment. The only difference is that the captions then again circumvent this constraint by adding in a narrative past in subsequent clauses. This can explain the fact that the captions often refer first to the MDE and then return to the past, whereas Bonaventure generally adheres to the chronological order of events in his writing (see Appendix 1, Part II for individual instances).
18. In the remaining captions Francis appears a middle or final position.

Acknowledgements

We are grateful to Tijana Žakula for her academic assistance in matters of Art History and for her comments and suggestions on a previous version of this manuscript.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Notes on contributors

Niels Boogers is a rMA student Cultural Analysis at University of Amsterdam and an alumnus of University College Utrecht. With a background in Linguistics, Art History and Cultural Studies, he is interested in narratology and the intersection of art and language.

Linda Badan is Associate Professor of Linguistics at Ghent University. Her research interests include theoretical linguistics at the interface between syntax and prosody and syntax and pragmatics, comparative syntax between Romance and Sinitic languages and the acquisition of Italian as second language.

Giuseppe Samo is Associate Professor of Linguistics at Beijing Language and Culture University. His research focuses on the interface between syntactic theory and other linguistic domains, the use of quantitative and computational methods in the field of Linguistics, and the nature of syntactic complexity and learnability among text genres and registers.

Gaetano Fiorin is Assistant Professor of Linguistics and Logic at University College Utrecht and a researcher at the Utrecht Institute of Linguistics. His research spans from theoretical linguistics to experimental linguistics and the philosophy of language.

ORCID

Giuseppe Samo  <http://orcid.org/0000-0003-3449-8006>

References

- Abney, Steven P. 1987. "The English Noun Phrase in its Sentential Aspect." PhD diss., MIT.
- Cooper, Donal, and Janet Robson. 2013. *The Making of Assisi: The Pope, the Franciscans and the Painting of the Basilica*. New Haven: Yale University Press.
- Delfitto, Denis, and Gaetano Fiorin. 2011. "Person Features and Pronominal Anaphora." *Linguistic Inquiry* 42 (2): 193–224.
- Dozzini, Bruno. 2006. *Giotto: The 'Legend of St. Francis' in the Assisi Basilica*. Assisi: Minerva.
- Durand, Guillaume. [1286] 1843. *The Symbolism of Churches and Church Ornaments*. Translated by John Mason Neale, and Benjamin Webbs. Leeds: Green.
- Grimshaw, Jane. 1990. *Argument Structure*. Cambridge: MIT Press.
- Haegeman, Liliane. 1991. *Introduction to Government and Binding Theory*. Oxford: Blackwell.
- Jackendoff, Ray. 2002. *Foundations of Language: Brain, Meaning, Grammar, Evolution*. Oxford: Oxford University Press.
- Lavin, Marilyn A. 1990. *The Place of Narrative: Mural Decoration in Italian Churches, 431-1600*. Chicago: University of Chicago Press.
- Lessing, Gotthold E. [1766] 1910. *Laocoön: An Essay upon the Limits of Painting and Poetry*. Translated by Ellen Frothingham. Boston: Little and Brown.
- Marinangeli, Bonaventura. 1911. "La serie di affreschi giotteschi rappresentanti la vita di S. Francesco nella Chiesa Superiore di Assisi." *Miscellanea Francescana* 13: 97–112.
- Offner, Richard. 1939. "Giotto, Non-Giotto." *The Burlington Magazine for Connoisseurs* 74 (435): 259–269.
- Perniss, Pamela M. 2012. "Use of Sign Space." In *Sign Language: An International Handbook*, edited by Roland Pfau, Markus Steinbach, and Bencie Woll, 412–431. Berlin: Mouton de Gruyter.
- Posèq, Avigdor W. G. 2002. "On Left-to-Right Reversals of Giotto's Imagery." *Notes in the History of Art* 22 (1): 1–13.
- Rosewell, Roger. 2014. *Medieval Wall Paintings*. Oxford: Bloomsbury.
- Ross, John Robert. 1970. "On Declarative Sentences." In *Readings in English Transformational Grammar*, edited by R. A. Jacobs and P. S. Rosenbaum, 222–277. Waltham: Ginn.
- Ruf, Gehrard, Stefan Diller, and Ghigo Roli. 2004. *Die Fresken der Oberkirche San Francesco in Assisi: Ikonographie und Theologie*. Regensburg: Schnell and Steiner.
- Smart, Alastair. 1971. *The Assisi Problem and the Art of Giotto: A Study of the Legend of St. Francis in the Upper Church of San Francesco*. Assisi. Oxford: Clarendon Press.
- Stubblebine, James H. 1985. *Assisi and the Rise of Vernacular Art*. New York: Harper and Row.
- Weitzmann, Kurt. 1977. *Late Antique and Early Christian Book Illumination*. New York: Chatto and Windus.
- Winston, Elizaebeth A. 1991. "Spatial Referencing and Cohesion in an American Sign Language Text." *Sign Language Studies* 73: 397–410.

Appendices

Appendix 1: Tituli: English translations and comparison to Bonaventura's Text

Part I: Translated tituli

This appendix features the tituli of the Saint Francis Cycle as transcribed and reconstructed by Marinangeli (1911). The references under the tituli refer to their origin in Bonaventura's *Legenda Maior*. The tituli have been translated by the author of the present study. Arguments, verbs and visually non-depicted sections have been marked as described in Chapter 2.

1. Cum **vir** simplex de Assisio sternit vestes Beato **Francisco** fuditque **[vir] honores ipsi eunti, super hoc, creditur, eruditus a Deo, [vir] asserens omni Franciscum reverentia dignum, quia esset in proximo magna facturus, et ideo ab omnibus honorandus.**

Cfr. Saint Bonaventure, Legenda Maior, I, 1.

When a simple man of Assisi spreads his clothes before the blessed Francis and paid homage to him (while Francis was) passing by, in addition to this, it is believed (to be) by God's instruction, that he claimed Francis (to be) worthy of all reverence, because he was going to do big things in the near future, and therefore (is to be) honored by all.

2. Cum beatus **Franciscus** obvium habuit militem quemdam generosum sed pauperem et male vestitum, cuius pauperiem pio miseratus affectu, **[Franciscus] illum** protinus, se exuto, vestivit.

ibid. I, 2.

When the blessed Francis met a certain soldier, noble but poor and badly-dressed, of whom he pitied the poverty with pious affection, he, after undressing himself, dressed him instantly.

3. Cum beatus **Franciscus** nocte sequenti se sopori dedisset, palatium speciosum et magnum cum militaribus armis crucis Christi signaculo insignitis vidit, et cum quaereret cuius essent, "illa omnia sua fore militumque suorum" superna fuit assertione **responsum.**

ibid. I, 3.

When the blessed Francis had fallen asleep the following night, he saw a splendid and large palace with warlike weapons emblazoned with the sign of the cross of Christ, and when he asked of whom they were, "they were all his and his soldiers" was the response by a celestial assertion.

4. Cum beatus **Franciscus** oraret ante imaginem crucifixi, **vox delapsa est de cruce ter dicens: Franciscus, vade repara domum** meam quae tota destruitur: **per hoc romanam significans ecclesiam.**

ibid. II, 1

When the blessed Francis was praying before the image of the crucifix, the voice descended from the cross saying three times: "Franciscus, go repair my church that is totally destroyed," thereby meaning the Roman church.

5. Cum **[Franciscus]** restituit patri omnia, et, vestimentis depositis, renuntiavit bonis paternis et mutabilibus, [Franciscus] dicens ad patrem: Amodo secure dicere possum «Pater noster qui es in coelis» cum repudiaverit me Petrus Bernardonis.

ibid. II, 4.

When he returned everything to (his) father, and, after the clothes were deposited, he renounced his paternal and temporal goods, saying to (his) father: from here I can say with certainty "Our father who is in heaven", because Peter of Bernardone has rejected me.

6. Quomodo **Papa** videbat Lateranensem **Basilicam** fore proximam ruinae, **quam** quidem **pauper-culus, scilicet beatus Franciscus,** proprio dorso submisso, ne cederet, substantabat.

ibid. III, 10.

As the pope saw the Lateran Basilica was close to ruin, a poor man supported it, the blessed Francis of course, by putting under (it) his own back so that it would not collapse.

7. Cum **Papa** approbavit regulam et **[papa] dedit de poenitentia praedicanda mandatum, et fratribus,** qui sanctum fuerant comitati, **[papa] fecit coronas** fieri, **ut verbum Dei praedicarent.**

ibid. III, 10.

When the pope approved the rule and gave the mandate to preach penance, and to the friars, who were company to the saint, he had tonsures done, so that they preach the word of God.

8. Cum beatus **Franciscus** oraret in quodam **tugurio** et cum sui **fratres** essent in alio **tugurio extra civitatem, quibusdam quiescentibus et quibusdam perseverantibus in orando,** et **ille** corporaliter

absentaretur a **filiis** ecce **isti** viderunt **paullo post** beatum **Franciscum** in curru igneo et perlucido, **per domum, fere media noctis hora**, volitare, **dum magna luce tugurium resplenduit**, unde obstupefacti sunt vigilantes, excitati et exterriti dormientes.

ibid. IV, 4.

When the blessed Francis prayed in a certain hut and when his brothers were in another hut outside of the city, some resting and others persevering in prayer, and he was physically distant from (his) children, here they saw shortly afterwards the blessed Francis flying on a burning and transparent chariot, through the house, at about midnight, while a big light burst from the hut, those awake were astonished, those sleeping were awakened and terrified.

9. Cum **uni fratri visio** coelitus ostensa **monstravit** multas in coelo **sedes** et **unam** prae ceteris digniorem omni gloria refulgentem, et **[frater]** **audivit vocem [vox]** **dicentem sibi: sedes ista unius de ruentibus angelis fuit**, et nunc humili **[sedes]** **servatur Francisko**.

ibid. VI, 6.

When a vision, displayed from heaven, showed to a friar many seats in heaven and one more worthy than the others in shining glory, and he heard a voice telling him: this seat belonged to one of the fallen angels, and it is now reserved for the humble Francis.

10. Cum beatus **Franciscus** **vidit** supra civitatem Aretii **daemones** exultantes et **[Franciscus]** **ait socio: [socio]** **Vade, et in virtute Dei daemones expelle, sicut in Domino ipso tibi praescriptum est, clamans in porta. Ut autem ille obediens clamavit, daemones aufugerunt, et pax illico facta est.**

ibid. VI, 9.

When the blessed Francis saw above the city of Arezzo exulting demons he said to his companion: 'Go to the gate and, by the virtue of God, cast out the demons, while shouting, just as it is ordered to you by the Lord himself.' And as he obeyed, he shouted, the demons fled and immediately peace was made.

11. Cum beatus **Franciscus ob Christi fidem** voluit **intrare ignem** magnum cum **sacerdotibus** Soldani Babilonie, sed **nullus** eorum **voluit** intrare cum **eo, sed statim de suis conspectibus aufugerunt.**

ibid. IX, 8.

When the blessed Francis, out of faith in Christ, wanted to enter a great fire with the priests of the sultan of Babylon, but none of them wanted to enter with him, but immediately fled from his sight.

12. Qualiter cum **aliquando** beatus **Franciscus ferventer oraret** **visus est a fratribus** toto corpore sublevatus a terra, manibus protentis, et **nubecula** quaedam lucidissima **circumfulsit eum.**

ibid. X, 4.

When the blessed Francis was praying fervently sometime, he was seen by the friars to rise from the ground with his whole body, with his hand stretched out, and a very bright cloud shone around him.

13. Quomodo beatus **Franciscus in memoriam natalis Christi** **fecit** praeparari **praeseptium, apportari foenum, bovem et asinum adduci, et de nativitate pauperis Regis praedicavit, itemque sancto viro habente, miles quidem** **vidit puerum** Jesum loco illius quem sanctus attulerat.

ibid. X, 7.

How the blessed Francis in memory of the birth of Christ, had prepared a stall, and had brought hay, and had an ox and a donkey, and he preached of the nativity of the poor King, and while the holy man held (his prayer), a nobleman saw the child Jesus in the place of what the saint had brought.

14. Cum beatus **Franciscus causa infirmitatis** in **asino** unius pauperis hominis **ascenderet** quemdam **montem**, eidem **[Franciscus]** **homini** siti **periclitanti** orando **[Franciscus]** **aquam produxit** de petra, **quae nec antea fuerat nec postea visa est.**

ibid. VII, 12.

When the blessed Francis, due to infirmity, ascended a mountain on some poor man's donkey, and, calling on this man, while praying, he produced water out of stone, that was never seen before, nor after.

15. Cum beatus **Franciscus** iret **Bevanium** praedicavit multis **avibus** quae gestientes extendebant colla, protendebant alas, aperiebant rostra, tunicam eius tangebant, et **ista** omnia videbant **socii** expectantes in via.

ibid. XII, 3.

When the blessed Francis went to Bevagna, he preached to many birds that, being eager, extended their necks, stretched out their wings, opened their beaks, touched his tunic, and all this his waiting companions saw on the way/road.

16. Cum beatus **Franciscus** impetravit **salutem animae** cuidam **militi** de Celano **qui eum** devote ad **prandium** invitaverat, **qui et post confessionem et domus suae dispositionem**, aliis manducare incipientibus, ipse statim spiritum exhalavit et in Domino obdormivit.

ibid. XI, 4.

When the blessed Francis obtained the health of a soul of a nobleman of Celano, who had devoutly invited him to lunch, who after confession and after the arrangement of his house, while the others had started to eat, suddenly exhaled his soul and fell asleep in the Lord.

17. Cum beatus **Franciscus** coram domino **Papa et cardinalibus** ita devote et efficaciter praedicavit, **ut patenter claresceret quod ipse non in doctis humanae sapientiae versis sed divino spiritu loqueretur.**

ibid. XII, 7.

When the blessed Francis, in the presence of the holy pope and the cardinals, preached with such devotion and efficacy, that it was clear that he did not speak in words learned from human wisdom, but from divine inspiration.

18. Cum beatus **Antonius** in **capitulo** arelatensi **de titulo crucis** praedicaret, beatus **Franciscus** absens corpore apparuit, et extensis manibus, benedixit fratres, sicut **[Franciscum]** vidit quidam frater **Monaldus**, et alii **fratres consolationem maximam habuerunt.**

ibid. IV, 10.

When the blessed Anthony preached in the chapter of Arles on the title of the cross, the blessed Francis, absent with the body, appeared and stretched out his hands, he blessed the friars, as friar Monaldo saw it/him, and the other friars had great consolation.

19. Cum beatus **Franciscus** oraret in latere montis Alvernae, vidit Christum in specie Seraphim crucifixi, **qui impressit in manibus et pedibus** et etiam in **latere** dextro **stigmata** crucis eiusdem Domini nostri Jesu Christi.

ibid. XIII, 3.

When the blessed Francis was praying on the side of the mountain La Verna, he saw Christ in the appearance of a crucified Seraph, who pressed upon his hands and feet, and also in his right side the stigmata of the cross of our Lord Jesus Christ.

20. Quomodo in hora transitus beati Francisci unus **frater** vidit animam eius sub specie stellae prae-fulgidae in **coelum** ascendere.

ibid. XIV, 6.

How in the moment of the passing of the blessed Francis, one friar saw his soul rise to heaven in the form of a bright star.

21. **Minister** Terrae Laboris cum laboraret in extremis et diu iam perdidisset loquelam, clamavit et dixit: expecta me, pater, ecce venio tecum et statim defunctus secutus est sanctum patrem. **Episcopus** insuper Assisii **cum esset in monte Sancti Michaelis Archangeli** vidit beatum Franciscum **[episcopus]** dicentem sibi: ecce vado ad coelum. Et tali hora ita inventum est.

ibid. XIV, 6.

The minister of Terra di Lavoro, when he was sick towards the end (of his life) and had already long since lost his speech, he shouted and said: "Wait for me, father, then I will come with you", and immediately the

dead person followed the holy Father. In addition to this, when the bishop of Assisi was on the mountain of Saint Michael the archangel, he saw the blessed Francis, while saying to him: “here I go up to heaven”. And in that moment, it happened.

22. In Portiuncula et cum iaceret beatus **Franciscus** mortuus, dominus **Hieronimus** doctor et litteratus ceber movebat **clavos**, sanctique **[Hieronimus]** **manus, pedes et latus** manibus propriis contrectabat.

ibid. XV, 4.

When the blessed Francis lay dead in the Portiunzola, master Jerome, a famous doctor and literary, moved the nails and he handled his hands, feet and the side of the Saint with his own hands.

23. Cum **turbae** quae convenerant deferrent **ad civitatem Assisii cum ramis arborum et cereorum multiplicatis luminibus** sacrum **corpus margaritis coelestibus insignitum**, **[turbae]** **eum** videndum beatae **Clarae** et aliis sacris **virginibus** obtulerunt.

ibid. XV, 5.

When the crowds that gathered transported to the city of Assisi, with tree branches and a multitude of lighted candles, the sacred body adorned with celestial gems, and they presented it to the blessed Clara and the other sacred virgins, so they could see it.

24. Cum dominus **Papa** personaliter veniens ad **civitatem** Assisio, **miraculis diligenter discussis, de consilio fratrum suorum [papa]** beatum **Franciscum** canonizavit **et catalogo sanctorum ascripsit**.

ibid. XV, 7.

When the holy pope personally came to the city Assisi, after the miracles were diligently examined, on the advice of his friars he canonized the blessed Francis and inscribed him in the list of saints.

25. Cum dominus Papa **Gregorius** aliquantulum dubitaret de **plaga** vulneris lateralis, dixit ei in somnis beatus **Franciscus: [Gregorius] Da mihi phialam** vacuum; **[Gregorius] quam sibi daret**, sanguine lateris **videbatur** impleri.

ibid., Legenda Maior: Miracula, I, 2.

When the holy Pope Gregory somewhat doubted the wound in the wounded side, the blessed Francis said to him in a dream: “Give me an empty phial”, and when he gave it to him, he saw it filled with blood from his side.

26. Beatus **Franciscus loannem**, de civitate Ilerda, vulneratum ad mortem et **[loannem]** a **medicis desperatum**, et se, dum vulneraretur, devote invocantem, statim perfectissime liberavit, sacris suis manibus ligaturas solvens et plagas suavissime tangens.

ibid. I, 5.

The blessed Francis, immediately and perfectly healed John, of the city Lerida, mortally wounded and given up on by doctors, devoutly invoking him (Francis) while he (John) was wounded, (Francis) untying the bandages with his devout hands and gently touching the wounds.

27. Beatus **Franciscus** suscitavit istam **dominam** mortuam, quae, **facta confessione unius peccati quod nondum fuerat confessa, [dominam]** videntibus clericis et **aliis** qui astiterunt, **et iterum defuncta obdormivit in domino** et **diabolus** confuses aufugit.

ibid. II, 1.

The blessed Francis resurrected this dead woman, who, having made a confession of the only sin that she had not yet confessed, while clerics and others who attended saw her, dying a second time, fell asleep in the lord and the devil ran away confused.

28. Beatus **Franciscus** liberavit istum **captivum** **accusatum de haeresi et de mandato domini Papae [captivum]** recomm datum **sub poena episcopatus episcopo** tiburtino, **et hoc fuit in festo ipsius beati Francisci cuius vigiliam ipse captivus de more ecclesiae ieiunaverat**.

ibid. V, 4.

The blessed Francis liberates this prisoner accused of heresy and by the order of the holy pope transferred to the bishop of Tivoli [Latin: Tibur, place in Italy] under the punishment of losing the episcopate, and this happened at the feast of the blessed Francis himself, on whose night the prisoner had fasted, according to the customs of the church.

Part II: Comparison of Bonaventure's *Legenda Maior* and the tituli of the Saint Francis Cycle in the Upper Church

1: The first caption is not an exact copy but does take most wordings from the original text, only having replaced some of the verbs. The order of occurrence of the constituents (including all the figures) is the same in the captions and the original text. The caption forms an abridged version of a longer text but conveys the same message. 'Cum' has been added at the beginning. This word (or an equivalent, in some cases) has been added to all the captions and marks them as such. These markers are briefly discussed in Appendix footnote 1.

2: This caption is an exact copy of the original description of this episode, which in Bonaventure's text is followed by more elaborations on the scene that are not included in the titulus.

3: Bonaventure's word order has been maintained, but the titulus is abridged by omitting some parts from the middle of the original text. Compared to Bonaventure's text, the main difference is that Francis is inserted as a subject and experiencer in the first clause of the titulus, whereas in the original text it is a 'divine kindness' who shows him the palace (with Francis being an indirect object and goal of 'show').

4: This caption is a partial copy of the original, the main difference being that the voice as an agent is a new construction (likely to make it more concise), in the original it is the object/theme of Francis's hearing. The final clause of the titulus is an addition to the original, which functions as a clarification for the spectator (these additions occur multiple times throughout the tituli).

5: This caption has been assembled from a larger piece of text, the main difference is that 'omnia' and 'patri' have been reversed compared to the original source. The last clause naming Francis' father has been added.

6: This titulus exhibits the same constituent order as Bonaventure's text but is a slightly altered version concerning individual words. Again, an explanatory clause was inserted similar to the one in caption 4, this time to identify the 'poor man' as Saint Francis.

7: This caption is almost a literal copy, with some slight alternations in word use and some omitted modifiers.

8: A longer text has been summarized in this caption. Most elements do occur in the original text, but their original order of appearance has been altered. The word order until 'civitatem' is completely new compared to Bonaventure's text. The construction of 'they see Saint Francis in the chariot' is also new.

9: This caption has been constructed out of several sentences in Bonaventure's description of this scene. The constituents until 'monstravit' have been taken out of an earlier sentence, while everything else is a direct quotation of a later section, with an omitted sentence in between.

10: Until 'exultantes' the caption is a direct quote. The following clauses are a summary of a longer text with completely new grammatical constructions. In the original text, 'socius' (the companion) is explicitly named as 'Silvestrus' (Sylvester).

11: The first part is a newly constructed summary of an important event. The main components were in a different order (original: 'ego cum sacerdotibus ignem ingrediar'). The last clause is original from 'de suis' onwards.

12: This caption is more or less a direct quotation, only 'fratribus' has been added. The last clause has been significantly reworded (originally it was a PPP-construction).

13: Some words in the caption have been taken directly from Bonaventure but they form a minority. The titulus is a short summary of the events originally described in a longer paragraph, and the constructions are mostly new. The knight is explicitly named John of Greccio in the original text ('Ioannus').

14: This caption has been completely reconstructed compared to Bonaventure's text. The general order of figures is the same as in the original. Francis is made the agent of the producing of water, originally this is Christ (answering Francis' prayer). This is an instance that shows how Francis is posited as the protagonist throughout the cycle, in both captions and frescoes.

15: This caption is also a summary of longer piece of text that has maintained the order of occurrence of figures. It contains some direct quotations.

16: A longer piece of text has been rewritten into entirely new sentences that are content-wise the same but without any direct quotations. The first clause of the titulus gives a summary of the story, and the rest gives an explanation. This is not the case in the original text, where the story is told in chronological order.

17: Again, the caption is a summary that is only in content faithful to the original text. Only 'coram ... cardinalibus' is a direct quote.

18: This caption, a summary of a longer description containing some direct quotations, differs from the original in terms of its linear order of figures. The original text mentions Antonius first and then Monaldo who sees Francis blessing the friars. In this case, the depiction is more faithful towards this linear order than the caption.

19: This caption is a paraphrased summary of a longer description without any direct quotes.

20: The caption is an abridged version of the original text, 'sub ... praefulgidae' is a direct quote.

21: This fresco and its caption contain two scenes mentioned in close proximity in Bonaventure's text. The description of the first scene in the caption is almost entirely a direct quotation, only the response by the friars has been left out compared to the original (and that the minister was named brother August). The part of the caption describing the second scene also contains direct quotes, which have been simplified compared to the original. The last sentence is newly constructed in its entirety.

22: From 'movebat' onwards, the caption is a direct quote (the constituents before this are new). The description of Jerome has been shortened and altered. The fact that Jerome doubted the stigmata at first is omitted in the caption, even though it was part of the original description.

23: This caption is a summary of a larger piece of text. Most of the constituents are quotations, but elements have been shifted around and sentences in between have been omitted. The main linear order and thematic roles have been maintained.

24: The painting only depicts the moment of the pope coming to Assisi and performing the canonization ceremony, while the examination of the miracles is in the narrative past. In the caption, the pope coming to Assisi is fronted and the examinations are presented as the narrative past in relative clauses. Bonaventure tells this story chronologically. All the elements are quoted, but the order has been altered in several places, and several clauses and modifiers have been omitted to create an abridged version.

25: This caption is a summary of a larger piece of text. The last clause is almost directly quoted from the original source. The order of elements is more or less the same in both the caption and Bonaventure's text.

26: This caption is a summary of a larger piece of text without direct quotations. The painting reflects the chronological order of the story as Bonaventure tells it. The caption fronts the main depicted event (Francis healing John), moving the doctors to the next clause.

27: This caption is a summary of a larger piece of text with some direct quotations. The original text does not mention the devil, this might indicate that (this part of) the caption was written to accompany the painting and therefore was adapted to the painting.

28: This caption is a summary of a larger piece of text without direct quotations. An earlier pattern repeats itself here, first describing the depicted moment (the MDE) and then the narrative past. The original text tells the story chronologically.

Appendix 2

Matches order in written text	/ = subsequent clause
Does not match order in written text	[] = covert argument
Argument is not represented in the fresco	Verbs are represented in bold
Argument has no clearly indentifiable linear position (e.g., because it is part of the scenery, or it is depicted above other elements)	

fresco

1	<i>Verb and arguments</i>	Vir	sternit	vestes	Francisco	/fudit	[vir]	honores	eunti
	<i>Grammatical function</i>	Subject		Object	Indirect object	Subject	Object	Object	Indirect object
	<i>Gloss</i>	A man	spread	clothes	before Francis	pay	the man	homage	to him passing
	<i>Thematic-discourse</i>	Agent/Focus		Theme	Other/Focus		Agent/Focus	Other	Other/Focus
	<i>Visual representation</i>	Final		Middle	Initial		Final	[NA]	Initial
2	<i>Verb and arguments</i>	/[vir]	asserens	Franciscum					
	<i>Grammatical function</i>	Subject		Object					
	<i>Gloss</i>	the man	claim	Francis					
	<i>Thematic-discourse</i>	Agent/Focus		Theme/Focus					
	<i>Visual representation</i>	Final		Initial					
3	<i>Verb and arguments</i>	Franciscus	(obvium) habuit	militem	/[Franciscus]	illum		vestivit	
	<i>Grammatical function</i>	Subject		Object	Subject	Object		Object	
	<i>Gloss</i>	Francis	meet	a soldier	Francis	him [soldier]		dress	
	<i>Thematic-discourse</i>	Agent		Theme/Focus	Agent	Theme/Focus			
	<i>Visual representation</i>	Initial/middle		Final	Initial/middle	Final			
4	<i>Verb and arguments</i>	Franciscus	Palatium	vidit	/[quote]	luit		responsum (superna assertione)	
	<i>Grammatical function</i>	Subject	Object		Subject	Object		Object	
	<i>Gloss</i>	Francis	a palace	see	[quote]	be		the response	
	<i>Thematic-discourse</i>	Experiencer	Theme/Focus		Other/Focus			Theme	
	<i>Visual representation</i>	Initial	Final		[NA]			Solitary element	Middle
5	<i>Verb and arguments</i>	Franciscus	oraret	ante imaginem	/Vox	delapsa est	de cruce		
	<i>Grammatical function</i>	Subject		Indirect object	Subject		Indirect object		
	<i>Gloss</i>	Francis	pray	before the cross	voice	descend		from the cross	
	<i>Thematic-discourse</i>	Agent		Other/Focus	Agent/Focus			Other	
	<i>Visual representation</i>	Initial		Final	Represented as same object				
6	<i>Verb and arguments</i>	/Francisce	repara	domum					
	<i>Grammatical function</i>	Subject		Object					
	<i>Gloss</i>	Francis	repair	the church					
	<i>Thematic-discourse</i>	Agent		Theme/Focus					
	<i>Visual representation</i>	Undetermined		Undetermined					
7	<i>Verb and arguments</i>	[Franciscus]	restituit	patri	omnia	/[Franciscus]	dicens	ad patrem	
	<i>Grammatical function</i>	Subject		Indirect object	Object	Subject		Indirect object	
	<i>Gloss</i>	Francis	return	to his father	everything	Francis	say	to his father	
	<i>Thematic-discourse</i>	Agent		Other/Focus	Theme	Agent/Focus		Other/Focus	
	<i>Visual representation</i>	Final		Initial	Middle	Final		Initial	
8	<i>Verb and arguments</i>	/repudiaverit	me	Petrus Bernadonis					
	<i>Grammatical function</i>		Object	Subject					
	<i>Gloss</i>	reject	me	Peter of Bernadone					
	<i>Thematic-discourse</i>		Theme	Agent/Focus					
	<i>Visual representation</i>		Final	Initial					
9	<i>Verb and arguments</i>	Papa	videbat	Basilicam	/quam	pauperulus	substentabat		
	<i>Grammatical function</i>	Subject		Object	Object	Subject		Object	
	<i>Gloss</i>	The pope	see	the church	it [the church]	A poor man	support		
	<i>Thematic-discourse</i>	Experiencer		Theme/Focus	Theme/Focus	Agent			
	<i>Visual representation</i>	Final		Initial	Initial	Final		Initial	
10	<i>Verb and arguments</i>	Papa	approbavit	regulam	/[Papa]	dedit	mandatum		
	<i>Grammatical function</i>	Subject		Object	Subject		Object		
	<i>Gloss</i>	The pope	approve	the rule	the pope	give	the mandate		
	<i>Thematic-discourse</i>	Agent/Focus		Theme/Focus	Agent		Theme/Focus		
	<i>Visual representation</i>	Final		Initial/middle	Final		Initial/middle		

Continues on the next page.

7	<i>Verb and arguments</i>	/fratribus	[papa]	fecit	coronas			
	<i>Grammatical function</i>	Indirect object	Subject		Object			
	<i>Gloss</i>	for the friars	the pope	make	tonsures			
	<i>Thematic-discourse</i>	Other	Agent		Theme/Focus			
	<i>Visual representation</i>	Initial	Final		Feature of <i>fratribus</i>			
8	<i>Verb and arguments</i>	Franciscus	oraret	in tugurio	/fratres	essent	in (alio) tugurio	
	<i>Grammatical function</i>	Subject		Indirect object	Subject		Indirect object	
	<i>Gloss</i>	Francis	pray	in a hut	the friars	be	in another hut	
	<i>Thematic-discourse</i>	Agent		Other/Focus	Theme		Other/Focus	
	<i>Visual representation</i>	Undetermined		Initial	Undetermined		Initial	
			Initial					
	<i>Verb and arguments</i>	/ille	absentaretur	a filiis	/isti	viderunt	Franciscum	
	<i>Grammatical function</i>	Subject		Indirect object	Subject		Object	
<i>Gloss</i>	he [Francis]	be distant	from his children	they [children]	see	Francis		
<i>Thematic-discourse</i>	Theme		Other	Experiencer		Theme		
<i>Visual representation</i>	Undetermined		Undetermined	Undetermined		Undetermined		
		Undetermined			Final			
9	<i>Verb and arguments</i>	Fratri	visio	monstravit	sedes et unam	/[frater]	audivit	vocem
	<i>Grammatical function</i>	Indirect object	Subject		Object	Subject		Object
	<i>Gloss</i>	To a friar	a vision	show	seats and one	the friar	hear	a voice
	<i>Thematic-discourse</i>	Experiencer	Other		Theme/Focus	Experiencer		Theme/Focus
	<i>Visual representation</i>	Initial	Undetermined		Undetermined	Initial		Final/middle
						Initial		Middle
	<i>Verb and arguments</i>	/[vox]	dicentem	sibi	/[sedes]	servatur	Francisco	
	<i>Grammatical function</i>	Subject		Indirect object	Subject		Indirect object	
<i>Gloss</i>	the voice	say	to him [friar]	seat	be reserved	for Francis		
<i>Thematic-discourse</i>	Agent/Focus		Other	Theme		Other/Focus		
<i>Visual representation</i>	Final/middle		Initial	Undetermined		Final		
						Final		
10	<i>Verb and arguments</i>	Franciscus	vidit	daemones	/[Franciscus]	ait	socio	
	<i>Grammatical function</i>	Subject		Object	Subject		Indirect object	
	<i>Gloss</i>	Francis	see	demons	Francis	say	to his companion	
	<i>Thematic-discourse</i>	Experiencer		Theme/Focus	Agent		Other	
	<i>Visual representation</i>	Initial		Final	Initial		Final/middle	
				Final			Middle	
	<i>Verb and arguments</i>	/[socie]	daemones	expelle				
	<i>Grammatical function</i>	Subject	Object					
<i>Gloss</i>	companion	demons	cast out					
<i>Thematic-discourse</i>	Agent	Theme/Focus						
<i>Visual representation</i>	Initial/middle	Final						
11	<i>Verb and arguments</i>	Franciscus	voluit intrare	ignem	cum sacerdotib;/nullus	voluit intrare	cum eo	
	<i>Grammatical function</i>	Subject		Object	Indirect object	Subject	Indirect object	
	<i>Gloss</i>	Francis	want to enter	a fire	with the priests	none	want to enter	
	<i>Thematic-discourse</i>	Agent		Theme/Focus	Other/Focus	Agent	Other	
	<i>Visual representation</i>	Final		Middle	Initial	Initial	Final/middle	
	<i>Verb and arguments</i>	Franciscus	visus est	fratribus	/nebucela	circumfulsit	eum	
	<i>Grammatical function</i>	Subject		Indirect object	Subject		Object	
<i>Gloss</i>	Francis	be seen	by the friars	cloud	shine around	him [Francis]		
<i>Thematic-discourse</i>	Theme		Agent	Agent/Focus		Theme		
<i>Visual representation</i>	Final/middle		Initial		Depicted in the same position			
13	<i>Verb and arguments</i>	Franciscus	fecit	Praesipium	/miles	vidit	puerum	
	<i>Grammatical function</i>	Subject		Object	Subject		Object	
	<i>Gloss</i>	Francis	prepare	a stall	a soldier	see	the child	
	<i>Thematic-discourse</i>	Agent		Theme/Focus	Experiencer		Theme/Focus	
	<i>Visual representation</i>	Initial/middle		Final	NA		Final	

14	<i>Verb and arguments</i>	Franciscus	in asino	ascenderet	montem	/[Franciscus]	homini	periclitanti
	<i>Grammatical function</i>	Subject	Indirect object		Object	Subject	Indirect object	
	<i>Gloss</i>	Francis	on a donkey	ascend	a mountain	Francis	the man	call on
	<i>Thematic-discourse</i>	Agent	Other/Focus		Theme/Focus	Agent	Theme/Focus	
	<i>Visual representation</i>	Final/middle	Initial		Undetermined	Initial/middle	Final	Middle
	<i>Verb and arguments</i>	/[Franciscus]		produxit	aquam			
	<i>Grammatical function</i>	Subject		Object				
	<i>Gloss</i>	Francis		produce	water			
	<i>Thematic-discourse</i>	Agent		Theme/Focus				
	<i>Visual representation</i>	Initial/middle	Final					
15	<i>Verb and arguments</i>	Franciscus		praedicavit	Avibus	/ista	videbant	socii
	<i>Grammatical function</i>	Subject		Indirect object	Object	Object	Subject	Subject
	<i>Gloss</i>	Francis		preach	to birds	this [preaching]	see	the companions
	<i>Thematic-discourse</i>	Agent		Other/Focus	Theme		Experiencer	
	<i>Visual representation</i>	Initial/middle		Final	Final		Initial	Initial
16	<i>Verb and arguments</i>	Franciscus		impetravit	(salutatem) mili/qui	eum	ad prandium	invitaverat
	<i>Grammatical function</i>	Subject		Object	Subject	Object	Indirect object	
	<i>Gloss</i>	Francis		obtain	the health of a s who [soldier]	him [Francis]	to lunch	invite
	<i>Thematic-discourse</i>	Agent		Theme/Focus	Agent	Theme	Other/Focus	
	<i>Visual representation</i>	Initial		Final	Final	Initial	Initial	
17	<i>Verb and arguments</i>	Franciscus	coram Papa et carnalibus	praedicavit				
	<i>Grammatical function</i>	Subject	Indirect object					
	<i>Gloss</i>	Francis	to the pope and the cardinals	preach				
	<i>Thematic-discourse</i>	Agent	Other/Focus					
	<i>Visual representation</i>	Initial	Final					

18	<i>Verb and arguments</i>	Antonius	in capitulo	praedicaret	/Franciscus	benedixit	fratres	
	<i>Grammatical function</i>	Subject	Indirect object		Subject	Object	Object	
	<i>Gloss</i>	Anthony	in the chapter	preach	Francis	bless	the friars	
	<i>Thematic-discourse</i>	Agent/Focus	Other		Agent		Theme	
	<i>Visual representation</i>	Undetermined (Undetermined)		Undetermined	Undetermined	in relation to fra	Undetermined	
	<i>Verb and arguments</i>	/[Franciscum]	vidit	Monaldus	/fratres	consolationem	haberunt	
	<i>Grammatical function</i>	Object		Subject	Subject	Object	Object	
	<i>Gloss</i>	Francis	see	Monaldo	the friars	consolidation	have	
	<i>Thematic-discourse</i>	Theme		Experiencer/Fo	Theme	Other		
	<i>Visual representation</i>	Final/middle		Initial	Undetermined	NA		
19	<i>Verb and arguments</i>	Franciscus	vidit	Christum	/qui	impressit	in manibus, pedibus, latere	stigmata
	<i>Grammatical function</i>	Subject		Object	Subject	Object	Indirect object	Object
	<i>Gloss</i>	Francis	see	Christ	who [Christ]	pressed	upon his hands, feet and side	the stigmata
	<i>Thematic-discourse</i>	Experiencer		Theme/Focus	Agent		Other/Focus	Theme/Focus
	<i>Visual representation</i>	Initial		Final	Final		Initial	Middle
20	<i>Verb and arguments</i>	Frater	vidit	animam	in coelum			
	<i>Grammatical function</i>	Subject		Object	Indirect object			
	<i>Gloss</i>	A friar	see	the soul	in heaven			
	<i>Thematic-discourse</i>	Experiencer		Theme	Other/Focus			
	<i>Visual representation</i>	Undetermined		Undetermined (Undetermined)				
21	<i>Verb and arguments</i>	Minister	clamavit et dixit /Episcopus	vidit	Franciscum	/[episcopus]	dicentem	sibi
	<i>Grammatical function</i>	Subject		Subject	Object	Subject	Object	Indirect object
	<i>Gloss</i>	The minster	scream and say	the bishop	see	Francis	the bishop	say
	<i>Thematic-discourse</i>	Agent/Focus		Experiencer/Focus		Theme/Focus	Agent	Other
	<i>Visual representation</i>	Undetermined		Undetermined	NA	Undetermined	Undetermined	NA
		Initial					Final	

22	<i>Verb and arguments</i>	Franciscus	iaceret	/Hieronymus	movebat	clavos	/[Hieronymus]	manus, pedes et latus	contractabat
	<i>Grammatical function</i>	Subject		Subject		Object	Subject	Object	
	<i>Gloss</i>	Francis	lie	Jerome	move	the nails	Jerome	hands, feet and side	handle
	<i>Thematic-discourse</i>	Theme		Agent/Focus		Theme	Agent/Focus	Theme	
	<i>Visual representation</i>	Undetermined		Undetermined		NA	Final	Initial	
		Initial		Final					
23	<i>Verb and arguments</i>	Turbae	deferrent	corpus	/turbae	eum	Clarae et virginibus	obtulerunt	
	<i>Grammatical function</i>	Subject		Object	Subject	Object	Indirect object		
	<i>Gloss</i>	The crowds	transport	the body	the crowds	him [Francis]	to Clarae and the virgins	present	
	<i>Thematic-discourse</i>	Agent		Theme	Agent	Theme	Focus		
	<i>Visual representation</i>	Initial		Final	Initial	Middle	Middle/final		
24	<i>Verb and arguments</i>	Papa	veniens	ad civitatem	/[papa]	Franciscum	canonizavit		
	<i>Grammatical function</i>	Subject		Object	Subject	Object			
	<i>Gloss</i>	The pope	come	to the city	the pope	Francis	canonize		
	<i>Thematic-discourse</i>	Agent/Focus		Other	Agent	Theme			
	<i>Visual representation</i>	NA		NA	NA	NA			
25	<i>Verb and arguments</i>	Gregorius	dubitaret	de plaga	/dixit	ei	Franciscus		
	<i>Grammatical function</i>	Subject		Object		Indirect object	Subject		
	<i>Gloss</i>	Gregory	doubt	the wound	say	to him	Francis		
	<i>Thematic-discourse</i>	Agent/Focus		Theme		Other	Agent		
	<i>Visual representation</i>	Final		Initial/middle		Final	Initial/middle		
		Final		Initial/middle	Middle	Final	Middle	Initial/middle	
25	<i>Verb and arguments</i>	/[Gregorius]	da	mihi	phialam	/[Gregorius]	quam	sibi	daret
	<i>Grammatical function</i>	Subject		Indirect object	Object	Subject	Object	Indirect object	
	<i>Gloss</i>	Gregory	give	(to) me	a phial	Gregory	it [the phial]	to him	give
	<i>Thematic-discourse</i>	Agent		Other	Theme/Focus	Agent	Theme	Other	
	<i>Visual representation</i>	Final		Initial/middle	Middle	Final	Middle	Initial/middle	

26	<i>Verb and arguments</i>	Franciscus	ioannem	liberavit	/[ioannem]	a medicis	desperatum		
	<i>Grammatical function</i>	Subject	Object		Subject	Indirect object			
	<i>Gloss</i>	Francis	John	heal	John	by doctors	given up on		
	<i>Thematic-discourse</i>	Agent	Theme/Focus		Theme	Agent/Focus			
	<i>Visual representation</i>	Initial	Final		Final	Initial	Initial		
		Middle	Final						
27	<i>Verb and arguments</i>	Franciscus	suscitavit	dominam	/[dominam]	videntibus	clericis et aliis	/diabolus	aufugit
	<i>Grammatical function</i>	Subject		Object	Object		Subject	Subject	
	<i>Gloss</i>	Francis	resurrect	a woman	the woman	see	clerics and others	the devil	run away
	<i>Thematic-discourse</i>	Agent		Theme/Focus	Theme/Focus		Experiencer	Agent/Focus	
	<i>Visual representation</i>	Initial		Final	Final		Initial/undeterm	Undetermined	
		Initial		Final	Final		Undetermined	Middle	
28	<i>Verb and arguments</i>	Franciscus	liberavit	captivum	/[captivum]	recomendatum	episcopo		
	<i>Grammatical function</i>	Subject		Object	Subject		Indirect object		
	<i>Gloss</i>	Francis	liberate	a prisoner	the prisoner	be transferred	to the bishop		
	<i>Thematic-discourse</i>	Agent		Theme/Focus	Theme		Other/Focus		
	<i>Visual representation</i>	Initial		Final	Final		Initial		
		Initial		Final	Final		Middle		