AN EXPLORATORY PILOT STUDY ON PICTORIAL NARRATIVITY AND EYE SCAN PATTERNS

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Abstract

The philosophical debate on the nature of narrative has been mainly concerned with literary narratives, whereas forms of non-literary and especially pictorial narrativity have been rather neglected. Within traditional art history, however, the narrative potential of the visual arts has usually been taken for granted, though rarely by attempting to elucidate any deeper cognitive, semiotic, and philosophical aspects involved. The question whether narrative should be regarded as an exclusively verbal or verbally based (i.e. necessarily presupposing the receivers' previous knowledge of verbally transmitted plots) phenomenon has of course been discussed within narratological research. Undoubtedly, there might be certain limitations – though perhaps also advantages - to pictorial media compared to verbal ones as to their narrative potential. Discussions on these lines have usually been more or less of a theoretical nature, although sometimes research from cognitive science has been taken into account. Nevertheless, empirical and psychological research may have an important contributing role to play, and it seems that scholars within narratology - compared to other branches of philosophy, most notably perhaps philosophy of mind - are somewhat too reluctant to recognize that role.

In this paper, I intend to outline how empirical studies making use of eye-tracking methods may help to clarify these issues. Numerous studies seem to have corroborated that eye movements are strongly synchronized with and indicative of cognitive processes going on during spoken or written word recognition, sentence processing and picture or visual scene encoding – and mental imagery in general. Now, as to the study of narrativity, which certainly is a quite complex, heterogeneous phenomenon, it would seem fruitful to focus upon some of its constituents which - according to common usage within narratological research - appear to belong to its core structure. We suggest, without any claims of being exhaustive in this respect,

that the following ones fruitfully could be considered within an experimental approach:

(i) Chronological ordering

(ii) The establishment of causal agency and effects

(iii) The establishment of goal-related agency and intended effects

(iv) The establishment of breaks or deviations from/within canonical scripts or schemas

The purpose of this paper will be to discuss to which extent the comprehension and identification of narrative features as here outlined can be indicated by eye-tracking methods and to which extent there will be differences according to various viewing conditions, with and without the inclusion of explicit and specific verbal texts (rather than any tacit acquaintance with common action scripts, or the like) directing or influencing the narrative structuring of the used pictorial stimulus material. Put in another way, to which extent will there be intersubjective overlaps or regularities concerning the narrative comprehension of pictures? These differences and overlaps could be registered in form of verbal reports made by the beholders. However, it will also be hypothesized that concurrent saccadic movements and fixations, reflecting attention and underlying cognitive processing, might be correlated with the narrative structuring of pictorial stimuli. Preliminary results from a pilot study, making use of eye-tracking laboratory at Lund University, will be presented.

1. Introduction

The philosophical debate on the nature of narrative has been mainly concerned with literary narratives, whereas forms of non-literary, especially pictorial narrativity have been rather neglected. Within traditional art history, however, the narrative potential of the visual arts has usually been taken for granted, though rarely by attempting to elucidate any deeper cognitive, semiotic, and philosophical aspects involved. Undoubtedly, there might be certain limitations to pictorial media compared to verbal ones as to their narrative potential. Discussions on these lines have usually been more or less of a theoretical nature, although sometimes having taken research from cognitive science into consideration. Still, outspoken empirical and psychological research may have an important contributing role to play, although it seems that scholars within narratology are sometimes tend to neglect that role.

2. On Narrativity

The exact nature of what constitutes narratives has been and still is a matter of standing dispute within contemporary research. A minimal requirement for something being a narrative has, for example by Prince, been claimed to be "the representation of at least two real or fictive events or situations in a time sequence, neither of which presupposes or entails the other" (Prince 1982: 4). No particular requirement thus seems to be imposed on the expression side, which opens up for the possibility of narrative being enacted in media other than language. Quite frequently, narrativity has been regarded in a relatively descriptive, extensional, and quite fixed sense, delineated from nonnarrative texts (e.g. arguments, explanations, or chronicles) by a set of defining criteria, such as temporal sequentiality, emplotment, eventfulness, causality or causal agency, particularity (vs. generality), teleological, intentional, or goal-related event structures, and so forth. Some scholars have apart from proposing more or less extensional definitions also adhered to more scalar senses of narrativity, i.e. degrees of "narrativeness" of narratives. A frequently proposed, contributing candidate in this respect is the "tellability" of a story, i. e. what makes it worth telling at all, or its "noteworthiness". Originating from analyses of conversational storytelling, e.g. by William Labov, this concept has come to be applied to numerous other kinds of narratives (cf. Labov 1972, Bruner 1991).

Presuppositions for or conceptually interrelated to the tellability of a narrative are especially features such as eventfulness, or changes of state, and the deviation of event or action sequences from pre-established expectations (alternative notions would e.g. be suspense, curiosity, and surprise, unusualness, switches and contrasts, breaks with canonical scripts or schemas, sudden plot switches; see e.g. Herman 2002, Ryan 1991, Bruner 1991, Suter & Hettling 2001, Sternberg 2001)

At first glance, narratives are indeed primarily manifested by "genuine" temporal arts, such as poetry, drama, literature in general, motion pictures, and the like which "by nature" have a sequential structure. Pictures, on the other hand, are "by nature" static, only capable of representing timeless situations or single, momentary instants (cf. Lessing 1766/1957). It may be argued, though, that the representation/perception of actions in pictures is thus not impossible per se, but it demands more effort, it is less 'convenient' compared to poetry. Actually, the difference between painting and poetry is rather a matter of degree than a matter of kind: poetry represents actions directly, painting only indirectly. And pictorial media seem indeed to lack narrative precision compared to verbal ones, e.g. concerning the representation of internal states and motivations. Moreover, static pictures seem rather to suggest changes which the viewer has to infer, rather than explicitly representing actual changes. It could also be argued that pictorial media only to a very limited extent can represent disnarrated elements, i.e. detailed alternative courses of action or characters' unfulfilled intentions (Wolf 2005). In general, it seems, pictorial media appear to require recipients which are more cognitively active in the reconstruction of narratives compared to verbal texts. On the other hand, also literary works consist of ellipses, unstated facts or assumptions, causal relations, gaps, points of indeterminacy, and so on, which require mental acts on part of the reader of filling in or completing the perceived patterns. In this respect, then, the narrative indeterminacy between texts and pictures seems rather to be a matter of degree rather than kind.

Static pictures may more or less have a rather illustrative function, sometimes having (external or internal) textual descriptions, comments, or the like as complements; in other cases the direction of a narrative interpretation is at least suggested by a verbal title (cf. Ryan 2011, sect. 3.4.1). In many cases, though,

pictorial stimuli are narratively quite indeterminate or polysemic, permitting multiple interpretative paths and fixations. Still, that does not necessarily mean that 'anything goes' or that a certain, even considerable, lack of narrative explicitness completely disqualifies the stimulus in question qua narrative. It seems far from controversial to assume that the production as well as the reception of narratives in general presupposes significant and necessary background knowledge of various kinds (e.g. lifeworld, discourse or genre knowledge). Both storyteller and recipient share numerous unstated assumptions concerning causal relationships between events, concepts of class, gender, age, social roles, etc., cultural knowledge, various action scripts, and so on.

3. A Pilot Study: Pictorial Narrativity, Picture Titles, and Eye Scan Patterns

The question whether narrative should be regarded as an exclusively verbal or verbally based (i.e. presupposing the receivers' previous knowledge of verbally transmitted plots) phenomenon has of course been discussed within narratological research (e.g. by Kafalenos 2005, Ryan 2011, Ranta 2011, Steiner 2004). Still, these approaches have usually been more or less on a theoretical level. As to studies on language, cognition, and mental imagery, since the 1990's something like a boom of empirical and neurological research has emerged, making use of e.g. neuroimaging technologies such as PET or fMRI. Similar approaches could as well afford deeper insights into the nature of narrativity, which would undoubtedly could give additional support to (or put into question) suggestions made within traditional narratology. On the other hand, we must of course be prepared to admit that empirical inquiries presuppose some kind of theoretical/conceptual framework, and there are surely numerous fundamental issues which demand theoretical consideration. Thus, with regard to the former, we need some preliminary hypotheses as to which objects, which properties, and which effects empirical studies should focus upon. Traditional methods of narratological analysis may detect ambiguities and inconsistencies, they may make explicit concealed premises and assumptions, and they may of course help to clarify relevant concepts. Nevertheless, empirical and psychological research may shed some light on these issues, and it seems that narratologists - compared to other branches of philosophy, most notably perhaps philosophy of mind – have tended to

dismiss such prospects. However, Prince himself, one of the most prominent narratologists, has quite recently pointed to the necessity of empirical studies concerning narrative, but relatively few seem to have been done so far (Prince 1999). This is particularly true for other semiotic resources than verbal language.

As to mental imagery in general, other methodologies apart from those mentioned above have been developed and refined, such as various eye-tracking techniques. It has frequently been hypothesized that the time spent gazing at objects reflects the time of concurrent cognitive processes related to the object in question. Moreover, task goals and the contents of working memory seem to influence eye movements (e.g. Yarbus 1967; Altman 2006; Rayner 2009; Griffin & Davison 2011).

In the light of these considerations, I have set up and carried out a series of exploratory eye-tracking experiments in order to test how pictures might tell stories, that is, empirically investigate the narrative potential in static pictures and picture sequences. Is it possible that pictures are capable of telling stories or of generating narrative (sequential) mental representations comparable to those caused by verbal media (written or oral)? To which extent, if that indeed is the case, does "picture reading" have the same interpersonal determinacy or consistency as "text reading"? And to which extent does the former presuppose acquaintance, directly or indirectly, with the latter, i.e. verbally told stories or other external clues, such as picture titles (which at least sometimes are used to reinforce, disambiguate, or focus upon particular meaning aspects of pictures; cf. Fisher 1984; Levinson 1985)?

Numerous studies seem to have corroborated that eye movements are strongly synchronized with and indicative of cognitive processes going on during spoken or written word recognition, sentence processing and picture or visual scene encoding – and mental imagery in general. Whereas some general studies have been carried out in order to investigate the nature of picture as well as real-world scene perception (cf. Henderson 2003; Laeng & Teodorescu 2002), others have specifically focused upon the relationship between eye movements elicited by pictures and spoken scene descriptions compared to those occurring when visualizing them from memory. Thus, for example, a series of studies carried out by Johansson, Holsanova & Holmqvist (2006) indicate that there is a strong correlation between viewers' spatial pattern of eye movements and the spatial arrangement of visual stimuli. Thus

eye movements seem to reflect the positions of objects while listening to spoken descriptions or those of previously seen pictures. However, eye-tracking studies explicitly focusing upon the *narrative potential* of pictures vs. verbal media (in contradistinction to *scene or object descriptions*) have to our knowledge rarely been done. Additionally, these differences and overlaps could be registered in form of verbal reports made by the beholders. Basically, it will be hypothesized that simultaneous saccadic movements and fixations, reflecting attention and underlying cognitive processing, might be correlated with the narrative structuring of pictorial stimuli. Now, as to the study of narrativity, which certainly is a quite complex, heterogeneous phenomenon, it would seem fruitful to focus upon some of its constituents which - according to common usage within narratological research - appear to belong to its core structure. I suggest, without any claims of being exhaustive in this respect, that the following ones fruitfully could be considered within an experimental approach:

(i) Chronological ordering

(ii) The establishment of causal agency and effects

(iii) The establishment of goal-related agency and intended effects

(iv) The establishment of breaks or deviations from/within canonical scripts or schemas

In the present tentative exploration, the primary focus has been restricted to study solely the impact of external interpretation clues (in this case *picture titles*) on narrative picture encoding.

4. Method

a) Participants

The participants were 33 students and teachers from Lund University (15 female, 18 male; age range 22 to 60 years; mean age 27 years). Five or six participants were assigned to each of the six task groups described below. All of the participants were native Swedish speakers and were naïve as to the purpose of the experiment. All of the participants had either normal or corrected-to-normal vision.

b) Technical Equipment

The experiment was run on an IBM-compatible desktop computer built by SensoMotoric Instruments (SMI). The stimuli were presented on an LCD monitor and the presentation of stimuli was controlled by Experiment Center (SMI). The viewing distance was approximately 70 cm. The participants' eye movements (fixations and saccades) were recorded by means of a remote eye tracker (SMI iView X RED250, infrared pupil and corneal reflex imaging system, sampling frequency of 250 Hz). The positions of the participants' eyes were established by means of an initial 5-point calibration.

c) Procedure and Material

(i) In the first part of the experiment, a control group was shown six figurative pictures selected for their narrative potential (rather than abstract, non-figurative configurations or those lacking eventfulness, such as portraits or still lifes). Each picture was presented separately for a duration of 7 seconds. During exposure to the pictures, the participants' eye movements (fixations and saccades) were recorded under free viewing conditions.

(ii) In the second part of the experiment, two test groups were shown the same pictorial material, following additional slides with either accurate or non-accurate titles (in Swedish) respectively.

(iii) After the viewing tasks, the participants were asked to fill in a written form (including small reproductions of the pictures) and to answer the following questions: a) "What do you think is happening in the picture?"; b) "What do you think has happened before?"; c) "What do you think will happen afterwards?"; d)

[not the control group] "Do you think that the title corresponds to the picture's actual content?"

(iv) Stages (i)-(iii) were repeated with each of the previously used pictures mirror-reversed.

d) Analysis

The analysis software BeGaze 3.0 (SMI) was used in order to visualize all trial data as scanpaths (fixations and saccades), heat maps (showing fixation hits using a color scale from blue [= least hits] to red [= most hits]), and gridded AOIs (showing the dwell time within automatically defined, rectangular grids of AOIs overlaid on the stimulus). Individual trial data and visualizations were also, within each group, merged into composite visualizations.
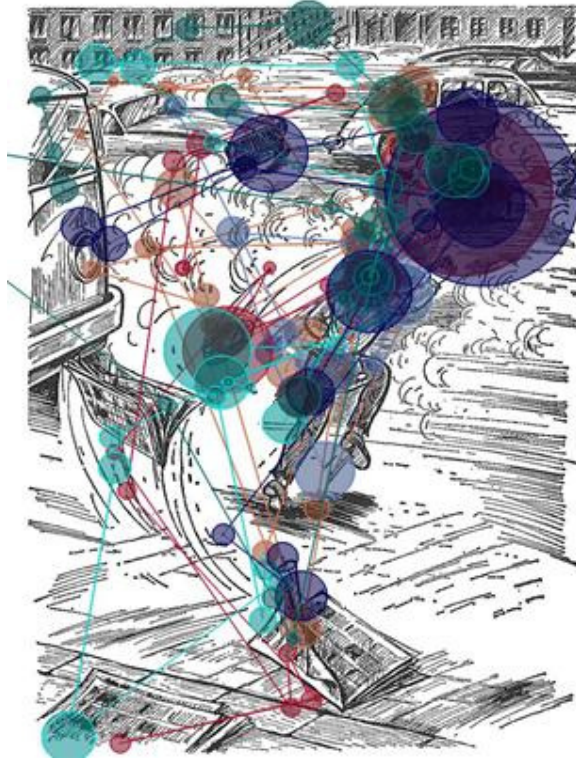
Figure 1: (Free-viewing)
save a cat"

Figure 2: Accurate title: "The boy wants to

e) Preliminary Results

The purpose of this experiment was to explore the inherent narrative potential of individual, static pictures both with and without explicit verbal information (such as picture titles directing narrative interpretations). The results seem to reveal that the influence of various, contradictory titles, compared to free-viewing conditions, on eye scan patterns and verbal picture/action descriptions is greater for pictures showing unidirectional transactions
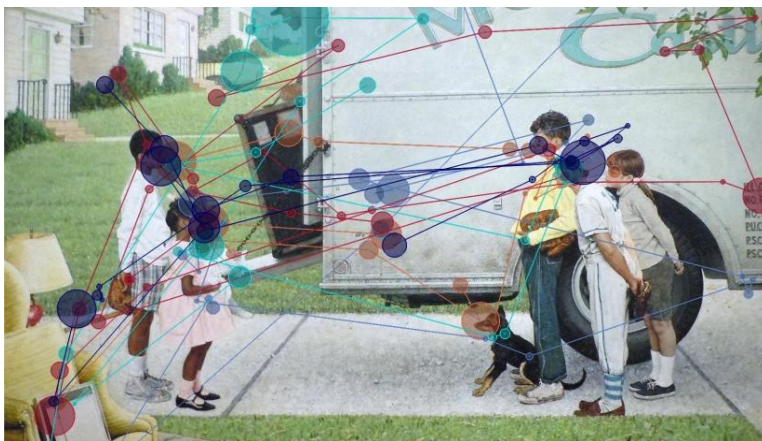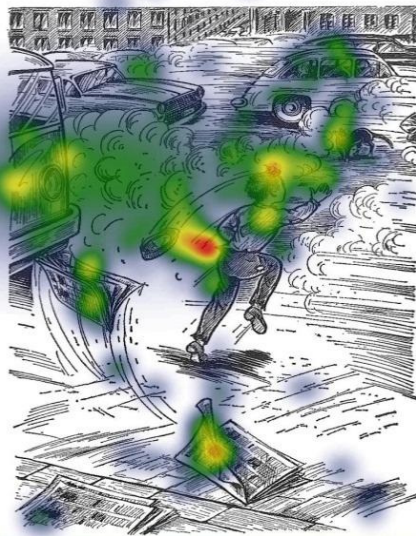

Figure 3: Inaccurate title: "The boy jumps away from the oncoming bus" - Figure 4: Inaccurate title: "Moving abroad" (accurate title: "Newcomers")

(cf. Kress & van Leeuwen 2006), consisting of an 'Actor' and a 'Goal' (e.g. composite Figures 1-3) than for pictures showing bidirectional or reciprocal transactions, where actors are mutually reacting to each other (e.g. composite Figure 4). The impact of titles appears also to be reliant on compositional aspects (such as horizontal vs. diagonal; symmetrical vs. asymmetrical) or the saliency of pictorial features (such as size or position). Scan patterns during free-viewing conditions and with accurate titles appeared, independently from these transactional features, to a remarkable extent similar. However, in one case (Pieter Bruegel the Elder's "Landscape with the Fall of Icarus"), eye scan patterns were remarkably influenced by a title (composite Figures 5 and 6). Despite its original title, Icarus himself has a clearly insignificant appearance in the right, lower corner of the painting, where just his helplessly thrashing legs can be seen in the water; instead, a plowing peasant dominates the scene. Interestingly, this detail (Figure 7) seems to draw immediate attention, notwithstanding its lack of salience, given an accurate (slightly modified) title, compared to free-viewing conditions.

The comprehension of mirror-reversed pictures, used to explore the impact of Western participants' left-to-right reading habits, show similar results and do not seem to deviate from the correct ones, except to some extent for rather unidirectional pictures. However, the *fixation order* was so far not examined.

Verbal reports, as registered in the written forms filled in by the participants, appear to some extent to be in accordance with these findings.
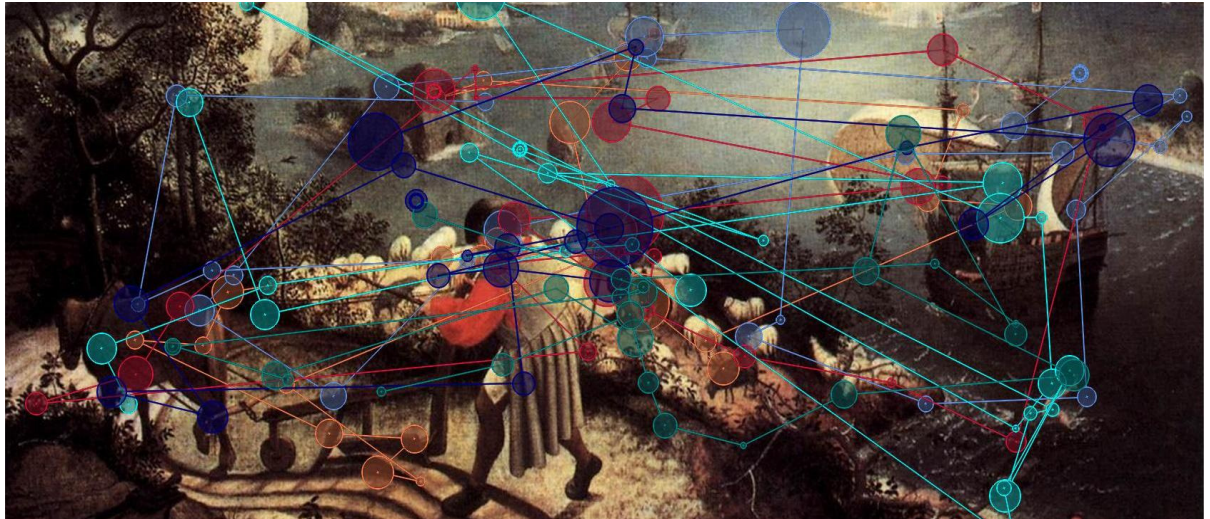
Figure 5: (Free-viewing)
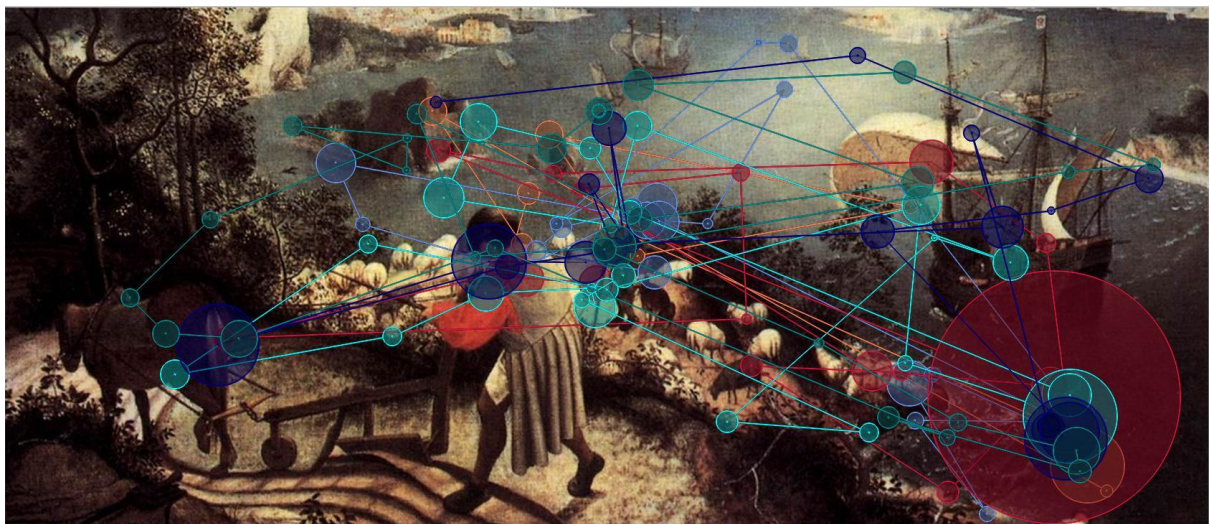
Figure 6: Accurate title: "Icarus has fallen into the sea"

Figure 7: Detail (Icarus' legs)

Tables 1–6 show a preliminary attempt to systematize these reports. On an admittedly somewhat subjective basis, the participants' identification of the pictures' narrative content was judged to be correct, incorrect or – in a few cases – ambiguous (e.g. due to the vagueness of the descriptions). Additionally, as to the groups with picture titles, the participants' estimates of the title correctness were judged in a similar way.

One of the most notable examples, where contradictory titles seem to have had a considerable impact on the registered eye scan patterns as well as the verbal reports, was the asymmetric, transactional, and quite detailed picture, as shown in Figures 1-3.

Table 1: Identification of narrative content
(C = correct; I = incorrect; ? =ambiguous)

Free-viewing	NX-1	NX-2	NX-3	NX-4	NX-5	NX6		C (total)
Picture 1	C	C	C	C	C	C	6xC	**100%**
Picture 2 *(fig. 1)*	C	I	I	C	I	C	3xC	**50%**
Picture 3	C	C	C	C	C	C	6xC	**100%**
Picture 4	C	I	C	C	?	C	4xC	**≈ 67%**
Picture 5	C	C	C	C	C	C	6xC	**100%**
Picture 6	I	I	I	?	I	I	0xC	**0%**

Table 2: Identification of narrative content/Estimated title correctness
(C = correct; I = incorrect; ? =ambiguous)

Accurate title	NA-1	NA-2	NA-3	NA-4	NA-5		C (total)
Picture 1	C/C	C/C	C/C	C/C	C/C	5xC/5xC	**100%/100%**
Picture 2 *(fig. 2)*	C/C	C/C	C/C	C/C	C/C	5xC/5xC	**100%/100%**
Picture 3	C/C	C/C	C/C	C/C	C/C	5xC/5xC	**100%/100%**
Picture 4	C/C	C/C	C/C	C/C	C/C	5xC/5xC	**100%/100%**
Picture 5	C/C	C/C	C/C	C/C	C/C	5xC/5xC	**100%/100%**
Picture 6	C/C	I/I	C/C	I/I	I/I	2xC/2xC	**40%/40%**

Table 3: Identification of narrative content/Estimated title correctness
(C = correct; I = incorrect; ? =ambiguous)

Inaccurate title	NB-1	NB-2	NB-3	NB-4	NB-5		C/C (total)
Picture 1	C/I	C/I	C/?	C/I	C/I	5xC/0xC	100%/0%
Picture 2 (fig. 3)	C/I	I/C	C/?	?/I	C/I	3xC/2xC	60%/20%
Picture 3 (fig. 4)	C/I	I/?	C/I	?/?	I/C	2xC/1xC	40%/20%
Picture 4	I/I	I/I	I/C	I/?	I/C	0xC/2xC	0%/40%
Picture 5	I/I	C/?	C/I	?/I	C/I	3xC/0xC	60%/0%
Picture 6	I/I	I/C	I/I	I/?	I/C	0xC/2xC	0%/40%

MIRROR-REVERSED VIEW:

Table 4: Identification of narrative content
(C = correct; I = incorrect; ? =ambiguous)

Free-viewing	N(S)X-1	N(S)X-2	N(S)X-4	N(S)X-5	N(S)X-6	N(S)X7		C (total)
Picture 1	C	C	C	C	C	C	6xC	100%
Picture 2	I	C	C	C	C	C	5xC	≈83%
Picture 3	C	C	C	C	C	C	6xC	100%
Picture 4	I	C	C	I	C	C	4xC	≈67%
Picture 5	C	C	C	C	C	C	6xC	100%
Picture 6	I	I	I	I	I	I	0xC	0%

Table 5: Identification of narrative content/Estimated title correctness
(C= correct; I= incorrect; ?=ambiguous)

Accurate title	N(S)A-1	N(S)A-2	N(S)A-3	N(S)A-4	N(S)A-5		C/C (total)
Picture 1	C/?	C/C	C/C	C/C	C/C	5xC/4xC	100%/80%
Picture 2	C/C	C/C	C/C	C/C	C/C	5xC/5xC	100%/100%
Picture 3	C/C	C/C	C/C	C/C	C/C	5xC/5xC	100%/100%
Picture 4	C/C	C/C	C/C	C/I	C/C	5xC/4xC	100%/100%
Picture 5	C/C	C/C	C/C	C/C	C/C	5xC/5xC	100%/100%
Picture 6	I/I	C/C	I/I	?/I	I/I	1xC/1xC	20%/20%

Table 6: *Identification of narrative content/Estimated title correctness (C= correct; I= incorrect; ?=ambiguous)*

Inaccurate title	N(S)B-1	N(S)B-2	N(S)B-3	N(S)B-4	N(S)B-5	N(S)B-6		C/C (total)
Picture 1	C/I	C/?	C/I	C/I	C/I	C/I	6xC/0xC	100%/0%
Picture 2	C/I	I/I	I/I	I/I	I/?	I/I	1xC/0xC	≈17%/0%
Picture 3	C/I	I/I	I/?	I/?	I/I	C/?	2xC/0xC	≈33%/0%
Picture 4	C/I	C/C	CI/?	I/I	C/?	C/?	5xC/1xC	≈83%/≈17%
Picture 5	C/I	C/?	C/I	C/I	C/I	C/I	6xC/0xC	100%/0%
Picture 6	C/I	I/I	I/I	I/I	I/I	I/?	1xC/0xC	≈17%/0%

5. Further Prospects

So far, this study has chiefly been concerned with a rather qualitative analysis

of the trial data (with to some extent subjective interpretations of scan paths, heat maps, and verbal reports). As a subsequent step, it would be fruitful to move to a more quantitative analysis which would allow tests of statistical significance such as t-tests and ANOVAs to be conducted. In the BeGaze (SMI) program, for example, it is possible to divide each image into areas of interest (AOIs). For our purposes, we could divide the images into relevant foreground and background objects; inevitably, some of these decisions might be somewhat arbitrary. Once this has been done, we might go to Event Statistics/AOI Detailed Statistics and access dependent variables such as First Fixation Duration, Fixation Time, Dwell Time, Net Dwell Time, Glance Duration, Diversion Duration, Fixation Count, and Sequence. So a concrete example would be to draw an AOI around the cat in picture 2 (see Figures 1-3) and to compare the mean Fixation Time on the cat for the title conditions (across subjects) with the mean Fixation Time on the cat for the free viewing condition (across subjects), and to then use a paired sample t-test to see if there is any significant difference between the two. An analysis of the Fixation Count variable could reveal comparable results.

Apart from using ordinary still pictures containing more or less narrative elements, as used in the present study, other kinds of pictorial narratives could of course be investigated, such as pictures containing multiple narrative sequences within one frame (sometimes called "continuous narratives" or "polyphase pictures") as well as serial sequences of pictures (e.g. storyboards or comic strips without verbal ingredients).

Moreover, instead of using prefabricated pictures, one might, as a possible alternative, consider making use of constructed pictorial stimuli which vary systematically on different dimensions corresponding to possible core criteria of narrativity as specified earlier. These aspects may further be studied as to their relative importance for narrative structuring and comprehension. The images would also be segmented into possible areas of interest (AOIs; such as faces, gestures, human figures, inanimate objects, environmental features). For each of the used stimulus sets, a control group could be shown various examples under free-viewing condition (with only temporal constraints).

In contrast, subsequent experimental groups would be given explicit instructions to look for certain narrative structures, chronological orders, and

causal/goal-related agencies. Examples of possible instructions are as follows:

• *What story do you think this picture/film is telling?*
• *What are the main events of this story?*
• *Which main events do you think have happened before the given scene and which main events do you think will happen afterwards?*
• *Who/what is the active agent for causing effects or changes in the scene? What are the goals or intentions underlying the depicted actions and events*?

During the viewing task, the participants of the control group would be told to orally describe what they think the pictures are about, i.e. which stories or event structures might have been expressed by them. Furthermore, another subject task would be to judge the pictures' "eventfulness", that is, experienced changes of state or deviations from (more or less canonical) event or action sequences (or, put in another way, incongruities, point to switches and contrasts, violations of certain orders, sudden plot switches, and so on). Thus the participants will be asked to describe the presented pictures in accordance with the viewing instructions received earlier. Recordings of the subjects' oral descriptions (verbal protocols) will in all cases be correlated with recordings of scanpaths, fixations, and fixation durations, employing a multimodal time-coded score sheet (cf. Holsanova 2011), in which several tiers of temporal data (e.g. fixation dwells and speech units) share a common timeline. Apart from the above suggestions, it might also be fruitful to considerably enlarge the participating groups (and perhaps also take personal characteristics such as age, gender, or education into consideration) in order to permit more well-founded statistical assumptions.

The approach as here outlined seems to be worth considering for basically two reasons. First, as mentioned earlier, narratological research has traditionally been focused upon verbal media and to some extent film. The focus upon pictorial narrativity in the present approach might thus contribute to an enhanced and more comprehensive understanding of narratological issues in general. Its originality resides thus in the attention paid to narratives conveyed by other means than verbal language, in particular pictures. Second, it is also innovative in extending theoretical

concerns with an empirical one, i.e. by employing advanced eye-tracking methodology. As indicated earlier, experimental approaches for investigating narratological issues, not least regarding pictorial material, have rather scarcely been employed, and this applies equally to eye-tracking research done so far. The intersemiotic character of such a project would thus certainly broaden as well as deepen previous research within narratology and perhaps human cognitive processing in general.

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