Graphological and semantic foregrounding as affecting gaze and speech of impulsive and reflective readers

Anna Izmalkova, Anastasia Rzheshevskaya

Graphological and semantic foregrounding as affecting gaze and speech of impulsive and reflective readers

Abstract

The study explores the effects of graphological and semantic foregrounding on speech and gaze behavior in textual information construal of subjects with higher and lower impulsivity. Eye movements of sixteen participants were recorded as they read drama texts with interdiscourse switching (semantic foregrounding), with features of typeface distinct from the surrounding text (graphological foregrounding). Discourse modification patterns were analyzed and processed in several steps: specification of participant/object/action/event/perspective modification, parametric annotation of participants' discourse responses, contrastive analysis of modification parameter activity and parameter synchronized activity. Significant distinctions were found in eye movement parameters (gaze count and initial fixation duration) in subjects with higher and lower impulsivity when reading parts of text with graphical foregrounding. Impulsive subjects tended to visit the areas more often with longer initial fixations than reflective subjects, which is explained in terms of stimulus-driven attention, associated with bottom-up processes. However, these differences in gaze behavior did not result in pronounced distinctions in discourse responses, which were only slightly mediated by impulsivity/reflectivity.

Key words: graphological foregrounding, semantic foregrounding, construal parameters, impulsivity/reflectivity, eye-tracking

1. Introduction

Foregrounding is viewed as a construal operation stimulating the process of mental structures activation in discourse interpretation realised through selected semiotic means (Verhagen 2007; Talmy 2007; Iriskhanova 2013). We observe two types of foregrounding, graphological (as a subtype of visual construal) and semantic (foregrounding in the construal of event, its participants and perspective). Graphological foregrounding is understood as a construal process which is controlled by unusual features of typeface (capitalization, italicization, etc.) and spelling that are used to make an utterance stand out from the surrounding context (Simpson, 2004). Graphological foregrounding is distinguished from visual foregrounding which is viewed as a feature of texts focusing readers' attention on visual resources – drawings, maps, photographs (Chemodurova, 2021). Semantic foregrounding is a construal process which is controlled by focal features of participants, events, and perspective (Graumann, Kallmeyer 2002, Iriskhanova 2014, Kiose 2019, 2021). Visual and semantic foregrounding have received a lot of attention in terms of their construal effects and the specifics of gaze and discourse responses, however there is scarce research on how the readers' cognitive styles modulate their gaze and speech responses to these construal effects. The current study is aimed at exploring gaze and speech of impulsive and reflective participants exposed to various patterns of graphological and semantic foregrounding. We study them in an oculographic experiment (which allows to receive gaze behavior reactions onto graphical foregrounding elements) followed by participants' responses (which allows to reveal the modifications of the semantic foregrounding elements in the stimulus text).

2. Foregrounding in cognitive psychology and cognitive linguistics

The study exploits two approaches to foregrounding developed in cognitive psychology and cognitive linguistics. The cognitive psychological approach helps identify the nature and types of attentional shifts resultant in gaze behavior contingent with graphical foregrounding. At the same time, the cognitive linguistics approach helps assess the linguistic construal of textual events, their participants and perspective in terms of semantic foregrounding.

In cognitive psychology there seems to be a consensus that eye movements in reading are modulated by both endogenous and exogenous attentional shifts (Godijn, Theeuwes, 2002; Klein, Liversedge, 2020). In line with essential distinction of top-down and bottom-up mechanisms, endogenous attentional shifts are associated with goal-directed, voluntary, top-down control (consistent with goals and expectations of the observer) and exogenous attentional shifts are associated with stimulus properties, drawing attention automatically towards a stimulus (Solso et al., 2013; Casteau, Smith, 2020). Two sources of top-down mechanisms, voluntarily driving attention to the stimuli, are distinguished: prior experience (former knowledge, activated by the task); goals and strategies actively applied by the observer to perform the task successfully (Falikman, 2014). Bottom-up mechanisms take control in presence of salient stimuli, such as sudden appearance of visual distractors, although this effect can be moderated by top-down processes (Kim, Cave, 1999). It is widely acknowledged that the interplay of top-down and bottom-up mechanisms determines what parts of the visual scene are selected.

In contemporary models of eye-movement control in reading it is assumed that eye movements are pre-programmed by top-down mechanisms, however the features of text induce bottom-up processing (Nyström, Holmqvist, 2008). However, the existing models of eye movement control in reading do not take into account the factor of the readers' cognitive styles. Provided that there is evidence of impaired exogenous selective attention in ADHD, which essential symptom is impulsivity (Mueller et al., 2017), we assumed that mild impulsive traits would nevertheless mediate endogenous and exogenous attentional shifts in reading. In the current study, we will explore the distribution of endogenous and exogenous attentional shifts which are stimulated by graphological foregrounding.

In cognitive linguistics, there has been multiple research on semantic foregrounding (focusing). In line with the distinction of more and less focal elements in different language levels, there are approaches studying foregrounding in participant / object, event and perspective construal. In terms of participant and object foregrounding, their multiple features are explored, among them participant actionality, singularity, animateness, personification (Dancygier, Sweetser 2015, Wårwik 2004). In terms of event foregrounding, the studies exploit the features of salient (conventional) and novel events, actional events, bounded events (Taylor 1995, Langacker 2000, Giora 2003). The studies in perspective construal were encouraged by the theories of frame semantics and discourse construal in communication (Emmot 1997, Graumann, Kallmeyer 2002). Semantic foregrounding controls the reader's ability to understand multiple perspectives present in a communicative act, to construe textual worlds incorporating time and space characteristic and the features of participants and events. The framework of a literary text forms conceptual frame of a certain mental store.

To create multiple options for graphical and semantic foregrounding and, consequently, to test their significance for impulsive and reflective readers, we have to select the stimuli which demonstrate natural (not artificially created) possibilities for both graphological and semantic foregrounding. To comply with the task, we addressed the drama texts which manifest the patterns of author's and characters' interdiscourse which is graphically marked with fonts, brackets, bold type, italics. At the same time, drama texts manifest regular interdiscourse switchings which serve as borderlines between various events (microevents) and therefore help observe the shifts in participants and perspective construal and foregrounding. Presumably, in their construal, the experiment participants will demonstrate the construal shifts (Myers-Scotton 1993) concurrent with these microevents of author's and character's interdiscourse. Foregrounding features in drama discourse construal in terms of participants', event and perspective construal were explored in multiple studies (for instance, in Piazza 1999; Rzheshevskaya 2014; Petrova 2017; Loginova 2017) which outline such foregrounding features as specifying time and space location, subjectivation, objectivation and intersubjectivation. Provided that the Impulsives might display evidence of impaired exogenous attention in ASD (Renner et al., 2006), which will be revealed in their gaze behavior, we assumed that it would

result in their different modifications of the stimulus information and that we could detect these modifications by means of contrastive analysis.

3. Methods and procedure

To explore the effects of graphological and semantic foregrounding, onto impulsive and reflective readers in terms of their gaze and discourse responses, we assess 1) the eye movement patterns of impulsive and reflective subjects in the Areas of Interest which are the areas of interdiscourse switching (from the characters' to the author's interdiscourse); 2) the patterns of discourse modification in the participants' discourse responses following the oculographic experiment. The oculographic experiment was preceded by a psychological Familiar Figures Test (MFFT) (Kagan et al., 1966) aimed at identifying "reflectivity-impulsivity" cognitive style, also referred to as conceptual tempo (Zhang, Sternberg, 2012).

Visual stimuli consisted of four pdf texts in original text formatting (spaces, bold type, intervals, font), these were the one-page extracts from modern Russian drama plays "Music Classes" by L.S. Petrushevskaya, "Biography" by L.N. Razumovskaya, "Vospominanie" by A.N. Arbuzov, and "Kvartirant" by A.V. Vampilov. The experiment was organized as a single procedure, the stimuli were incorporated into one sequence, with each stimulus appearing for 60 seconds followed by 30 seconds inter-stimuli periods with blank page pdf-stimulus appearing on the screen. The images were presented on a 21-inch monitor. All images were not photocopies but newly typed texts. There were 24 AoIs for the author's interdiscourse in four stimuli. All AoIs were visually salient, either given in bold type, in italics or in brackets.

Twenty-five students (14 female, mean age = 23.2, age range = 19-28) participated in the experiment. Participants signed the declaration of consent and were then questioned if they were acquainted with the drama plays which we adopted as stimuli. Six participants admitted they were acquainted with the plays, however three of them added they were unable to recount the narration. Since the experiment conditions required total unanimity, we did not consider the data received from these six participants. The results of two participants had to be further excluded as they failed to complete the oculographic part of the experiment and the results of one participant had to be excluded since he failed to produce relevant responses. The data from sixteen participants were processed. Since the stimuli involved twenty-four AoIs in four visual stimuli, we recorded 408 trials which were subjected to further parametric and statistical analysis.

In the following subsections we will present the procedure and results of the oculographic experiment preceded by the psychological Familiar Figures Test (MFFT) (3.1) and the procedure and results of discourse responses assessment (3.2).

3.1. Graphological foregrounding and its effect onto gaze behavior
Experiment Design

SMI Red-x eye tracker was used for eye movement data collection (binocular system, sample rate = 60 Hz, accuracy = 0.4°, head movement 40x20 cm, operating distance = 60-80 cm). We set the minimum fixation duration at 100 msec, in accordance with previous research (Sharmin, Špakov, Räihä, 2012).

Eye movement events data were collected for parts of the text, marked as Areas of Interest (AOIs) in BeGaze 3.0 software. We regarded AOIs with graphical foregrounding, following P. Simpson's notes on graphical foregrounding (Simpson, 2004), with accentuated features of typeface (bold, italics, caps). Measures included AOI glances count and AOI initial fixation duration.

Before the eye tracking experiment, the participants were subjected to psychological Familiar Figures Test (MFFT) (Kagan et al., 1966). The test is aimed at measuring "reflectivity-impulsivity" cognitive style, also referred to as conceptual tempo (Zhang, Sternberg, 2012). The two test measures are 1) latency (time taken to respond) and 2) accuracy (number of errors). Based on the latency and accuracy score related to the median of the sample, a subject's result is attributed to either "reflective" (long latency, high accuracy) or "impulsive" group (short latency,

low accuracy). Impulsivity is viewed as the tendency to respond without sufficient forethought; reflectivity is regarded as the tendency to reflect on alternative variants of the task solution. The construct "impulsivity-reflectivity", along with other cognitive styles, is used in the field of learning ability (Ehrman, Leaver, 2003). In visual perception studies eye movement patterns of impulsive and reflective subjects have been distinguished: reflective subjects tend to demonstrate linear patterns of visual search (distinct search pattern, few changes of saccade direction), while impulsive subjects showed non-linear patterns (indistinct search pattern, frequent changes of saccade direction) (Blinnikova, Izmalkova, 2017).

SMI BeGaze 3.0 software was used for raw data processing, and IBM SPSS Statistics 20 was used for data analysis.

Results

We used K-means cluster analysis to define two groups with more "impulsive" and more "reflective" cognitive style, based on two MFFT measures — latency (time taken to respond) and accuracy (number of errors). In line with studies on impulsivity/reflectivity (Kholodnaya et al., 2013) a 4-cluster solution was applied to determine whether all possible variants would be manifested in the sample: long latency/high accuracy, short latency/low accuracy, long latency/low accuracy, short latency/high accuracy. However, only the first two groups were present, which resulted in dividing the sample into two clusters: 9 "impulsive" subjects (fast and erratic answers) and 7 "reflective" subjects (slow and correct answers). The 2-cluster solution is given in details below (see Table 1).

Table 1: 2-cluster solution of MMFT results

Data	Latency (s)	Accuracy (n mistakes)
"Impulsive"	370.33	10.67
"Reflective"	756.7	4.9

Significant distinctions were found in eye movement characteristics of Impulsives and Reflectives when graphological foregrounding was concerned. We marked AOIs with graphological foregrounding, based on features of typeface (bold, italics, caps), following P. Simpson's notes on graphological foregrounding (Simpson, 2004). The AOIs for this purpose were selected based on salient features of typeface.

Impulsive subjects tended to visit the highlighted text fragments more often than reflective subjects, as confirmed by Mann–Whitney U test for Glances count ($z = -3,95$, $p < 0,01$). Impulsive subjects showed significantly more AOI glances count (Mdn = 1.00), as compared to AOI glances count of reflective subjects (Mdn = 0.00). Impulsive subjects also tended to make longer initial fixations on AOIs (Mdn = 165 ms), than reflective subjects (Mdn = 128 ms), as confirmed by Mann–Whitney U test for AOI first fixation duration on AOIs ($z = -2,82$, $p < 0,01$).

This effect was also found in case graphological foregrounding, set with typeface, was accompanied with spatial features of the AOI, if AOIs were situated on a separate line. Impulsive subjects tended to make longer initial fixation duration on the AOIs (Mdn = 178 ms), and visit the AOIs more often (Mdn = 1.00), as compared with reflective subjects (Mdn = 139 ms for fixation duration and Mdn = 0.00 for AOI glances count), as confirmed by Mann–Whitney U test for AOI first fixation duration ($z = -2,38$, $p < 0,05$) and Mann–Whitney U test for AOI glances count ($z = -3,6$, $p < 0,01$).

3.2. Semantic Foregrounding and its effect onto discourse responses
Experiment Design

The experiment testing modifications in discourse construal within the two participants' groups, the Impulsives and the Reflectives, was preceded by the elaboration of the system assessing their modifications (of the stimuli) in speech. Since we considered three basic groups of semantic foregrounding parameters, the construal of participants (also objects and actions), event and perspective, the developed parameter system specified these three groups (Wårwik 2004, Iriskhanova 2014, Kiose 2021). We then applied it to contrast the semantic patterns of foregrounding participants, events and perspective in stimuli texts and the participants' discourse responses to detect the construal differences.

The study involved the following steps.

1. Specification of participant / object / action, event and perspective modifications (and parameter coding).

2. Annotating the participants' discourse responses (16 participants' responses were annotated, approx. 32 min.).

3. Contrastive analysis of modification parameter activity and parameter synchronized activity in the discourse responses of the Impulsives and the Reflectives.

The modification parameter system of participant / object / action construal included 9 parameters for participants, for instance, giving full participant's name (101), participant's name (102), modified participant's name (103), 3 parameters for objects, exact object naming (201), modified object naming (202), lack of object mentioning (203), and 4 parameters for action, exact action mentioning (301), generalized action mentioning (302), lack of action mentioning (303), additional characteristics of action (304). The modification system for event construal included 5 subgroups assessing event mentioning on the whole (401-405), event characteristics mentioning (501-506), event reporting by author and participants (601-604), time construal (701-702), space construal (801-802). The system for perspective construal included subjectivation (901), objectivation (902), and intersubjectivation (903).

The total number of modification parameters applied for discourse modification assessment in the participants' responses was 38.

Since there were 24 Areas of Interest corresponding to the zones of author's interdiscourse, there were 24 zones of author's and characters' interdiscourse or the units of analysis which manifested the change of participants and objects, change of time and location, change of type of relations among participants (Labov, Waletsky 1967; Labov 2013). Below we will show the example of annotating the discourse modifications in 6 participants' responses.

Stimulus:
Софья Васильевна. Но ведь в шляпе. В шляпе – заметьте! Отец семейства сорока пяти лет!
Sofja Vasiljevna. But in a hat. In a hat – notice! Father of the family of forty-five years old!

Experiment participant:
Другие сочли это смешным нелепым в том смысле, что человеку-то уже сорок…за сорок и это очень странно с его стороны;
Others found it funny ridiculous in a sense that a person is forty…over forty and it's very odd for him.

We may notice the use of the following modifications: 1) generalization in participant's construal (104): *a person, others*; 2) generalization in characteristics (503): a person is *forty…over forty*; *it's very odd for him*. 3) objectivation (802): *others* found it <…>, *a person* is <…>, it's very odd *for him*.

Experiment participant:
Потом добавляют, что снова, да и заметьте в шляпе отец семейства сорока пяти лет;
Then they add that again and yes notice in a hat head of the family of forty-five years old.

The fragment displays the following modifications: 1) exact characteristics (501): *in a hat*; 2) objectivation (902): *they add*; 3) reporting the event in the present (601); 4) indirect event reporting (603): *yes notice in a hat head of the family of forty-five years old.*

Experiment participant:
Главу семейства там, ему около сорока пяти лет;
Head of the family well… he is around forty-five.

Here the modifications are: 1) modification of characteristics (502): *head of the family; around forty-five*; 2) objectivation (902); 3) reporting the event in the present (601).

Experiment participant:
Рассказывает за столом об отце семейства.
At the table talks about father of the family.

The modifications include: 1) exact characteristics (501): *father of the family*; 2) space location (801): *at the table*; 3) objectivation (902); 4) reporting the event in the present (601).

Experiment participant:
Мужчину сорока пяти лет крайне странного эксцентричного поведения.
A man of forty-five of extremely odd eccentric behaviour.

We may notice here: 1) generalization in participant's construal (104): *a man*; 2) exact characteristics (501): *forty-five*; 3) generalized characteristics (503): *extremely eccentric behaviour*; 4) objectivation (902).

Experiment participant:
Ему сорок пять лет и для его возраста вообще довольно странное поведение;
He is forty-five and for his age in general this is rather odd behaviour.

The modifications include: 1) exact characteristics (501): *forty-five*; 2) generalised characteristics (502): *for his age in general this is rather odd behaviour*; 4) objectivation (902): *for his age <…>*; 5) reporting the event in the present (601).

The given examples of stimulus modifications manifest common features for the participants, for instance mentioning exact characteristics (*father of the family*, *forty-five years old*, *in a hat*), generalized information about event (*others found it funny ridiculous*, *it's very odd for him, a man of extremely odd eccentric behaviour*), and objectivation (*he is forty-five and for his age <…>*, *talks about father of the family, then they add*). The differences appear in the use of generalization in participant's construal (*a person, a man*), modification of the characteristics (*head of the family*), not exact characteristics (*over forty*, *around forty-five*). Contrastive analysis was then held applying R-Pearson to test the contingency between the relative modification values in two groups. The modifying parameters variance was then tested with One-Sample T-Test.

Results
R-Pearson of relative modification values of the Impulsives' and the Reflectives' responses is very high (r(36)=0.96), which suffices to claim that in general the modifications are similar.

The discourse profiles of relative mean values of modifications of the Impulsives and Reflectives are given in Figure 1.
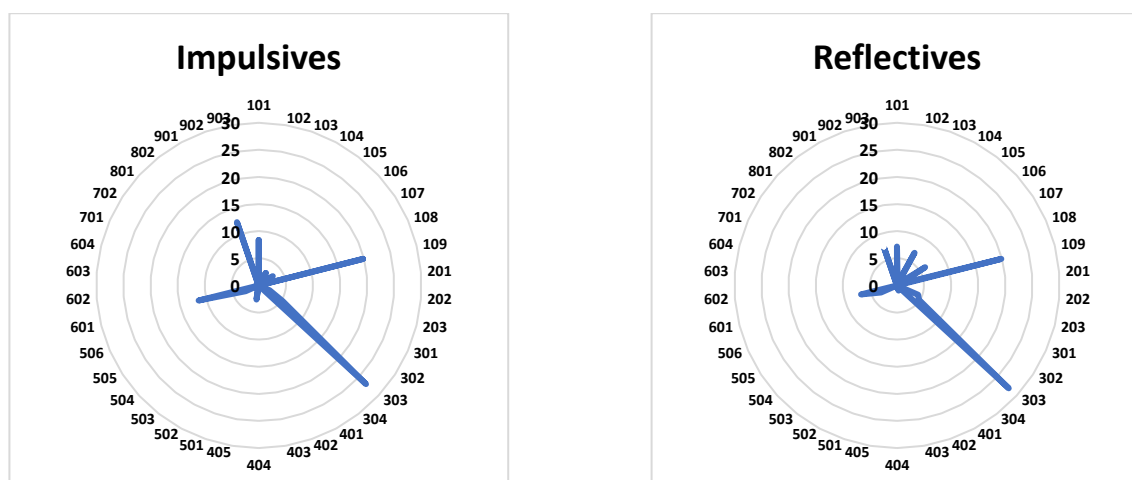
Figure.1. Discourse modifications in the responses of two groups of respondents

One Sample T-test has revealed the modifications displaying similarity in both groups (with $p<0.5$). Thus, the almost identical data between the two groups of the respondents are found in the following modifications: giving full participant's name (101) with $t(36, 1)=12.9$ at $p=0.049$, not mentioning the participant (109) with $t(36, 1)=864.44$ at $p<0.001$; generalized information of action (302) with $t(36, 1)=25.41$ at $p=0.025$, not mentioning the action (303) with $t(36, 1)=48.11$ at $p=0.013$. Several common modifications typical of the Impulsives and Reflectives can be demonstrated in the following example:

Stimulus:
Софья Васильевна. Я обомлела, когда вошла.
Все смеются ещё сильнее.
Sofia Vasilievna. I was dumbfounded when I entered.
Everybody is laughing more gaily.

Experiment participant (impulsive):
Все смеются. Вызывает у них смех.
Everybody is laughing. Causes their laughter.

Experiment participant (reflective):
Все смеются над этой ситуацией. Они обсуждают его странное поведение.
Everybody is laughing at this situation. They are discussing his strange behaviour.

Both discourse fragments are similar in manifesting generalized information of action (302), since they both omit its repeated or rather continuous state in *еще сильнее*.

The following example displays the responses both giving full participant's name (101) and generalized information of action (302):

Stimulus:
МАТЬ. (задумчиво). Да, пожалела… Его я пожалела. Правда, потом я всю жизнь проклинала себя за тогдашнюю свою жалость.
Пауза.
MOTHER. (thoughtfully). Yes, felt pity…felt pity for him. But afterwards I blamed myself for that pity the reast of my life.

Experiment participant (impulsive):
Мать заканчивает этот диалог говорит, что да раскаивается.
Mother finishes the dialogue, says yes she feels pity.

Experiment participant (reflective):
Мать говорит, что пожалела, да.

7

Mother says she felt pity, yes.

The variance the participants displayed was not statistically verified, however we may demonstrate some modifications which are more typical of either group. For instance, the differences are observed in the use of generalization in participant's construal (104), character specification (107), and generalized characteristics (503), which are both present more frequently in the Reflectives' speech. These observations seem interesting, since they display opposite construal processes, generalization and specification. However, they are manifested towards different event components. We may notice that the Reflectives give more specific characteristics about the participants and events, at the same time they also cope with making conclusions and providing generalizations. As for the Impulsives, they demonstrate more frequent use of lack of event mentioning (405), event construal in the present (601), and objectivation (902). These results suffice to claim that when the Impulsives construe the event they more often do not relate the contingent events following the main event line, make the event more dynamic by recounting it in the present, seldom present their personal opinion on the event as a whole.

The following example demonstrates this difference.

Stimulus:
Женский голос. Открой, детка, открой. Это я.
Витя открывает дверь, долго смотрит, затем впускает соседку Анну Степановну.
Анна Степановна (Обращается к Гране.) Девочка-то спит?
Woman's voice. Open, baby, open. It's me.
Nina opens the door, looks steadily for some time, then lets the neighbour Anna Stepanovna in.
Anna Stepanovna (addresses Granya). Is the girl sleeping?

Experiment participant (impulsive):
К ним прибегает Анна Степановна.
To them runs to my mind Anna Stepanova.

Experiment participant (impulsive):
Ей открывают. Она Анна Степановна.
The door is opened for her. She is Anna Stepanovna seems to me.

Experiment participant (reflective):
К ним стучится их соседка Анна Степановна э ээ её впускает Нина, э Степановна интересуется, как дела у их ребенка, как я понял.
Their neighbour is knocking the door er er Nina lets her in er Stepanovna asks how is their baby as far as I have understood.

Experiment participant (reflective):
Соседка, работающая сторожем, пришла в семью Гавриловых, и э стала соответственно обсуждать ребёнка Гавриловых.
The neighbour working as a doorkeeper came to the family of the Gavrolovs, and er started consequently to discuss Gavrilovs' child.

Experiment participant (reflective):
Здесь происходит встреча. Соседка приходит в гости к Гавриловым, это семья…э… и они, по-моему, разговаривают о детях.
Here there happens a meeting. The neighbour comes to meet the Gavrilovs, it is a family…er… and they it sems to me are talking about children.

The responses of the Impulsives display higher objectivation (902) since they do not involve any indicators of their personal opinion (in the responses of the Reflectives we see the subjectivation *как я понял, по-моему*). We may also notice that the responses of the Reflectives involve more microevents (*это семья, работающая сторожем*).

4. Discussion

8

The gaze behavior results, and the results received from the participants' responses suffice to formulate some ideas on the effects of graphological and semantic foregrounding onto the Impulsives and the Reflectives.

In terms of the effects of graphological foregrounding onto the gaze behavior of the Impulsives and the Reflectives, we may claim that our results support the assumption that higher impulsivity leads to higher inclination for exogenous attentional shifts. Significant distinctions in eye movement characteristics of impulsive and reflective subjects in AOI initial fixation duration and AOI glances count can be attributed to the fact that graphological foregrounding induces stimulus-driven attention, associated with bottom-up processes.

Higher AOI glances count in reflective subjects seemed unobvious, especially in light of the data, that text skimming (which would be a more natural strategy for impulsive subjects) is associated with AOI skipping (Strukelj, Niehorster, 2018). However, it turned out that salient information attracts attention of the impulsive subjects, making them visit the areas of interest more often.

In terms of the effects of semantic foregrounding onto the discourse responses of the Impulsives and the Reflectives, we can state that the Impulsives and the Reflectives demonstrated multiple similar modifications, especially in terms of giving full participant's name, not mentioning the participant, generalized information of action, not mentioning the action. The contrastive analysis of their modifications (38 modification types were considered) did not reveal statistically significant results, however, it turned out that there are several differences which account for either the Impulsives' or the Reflectives' discourse responses. Among them there are specification and generalization differences, as well as objectivation and subjectivation differences, which display (not rigid) contingency on the cognitive styles. These observations seem misleading at first since we did not expect the Reflectives to display both specification and generalization modifications, however, it is noticeable that they participate in the construal of different event components, actions and characteristics (specification) and participants (generalization) which may explain the results. Participant construal is controlled by his characteristics and his activities, noticing these details leads to making generalizations about the participant himself. In case these characteristics and actions remain unobserved, hardly any generalization can be made.

5. Final Remarks

In this study, we explored the effects of foregrounding on speech and gaze behavior as presumably contingent on the participants' cognitive styles, Reflexive and Impulsive. We considered two types of foregrounding, graphological (as a subtype of visual construal) and semantic (foregrounding in the construal of event, its participants and perspective) which were observed in drama text construal with multiple interdiscourse fragments (the discourse of author and participants) demonstrating evident typefont specifics.

The obtained data contribute to the research question of both eye movement patterns and speech patterns in different cognitive styles. While different effects were observed in wholistic/analytic cognitive styles (the wholistic group was characterized by fewer fixation and transition count than the analytic group) (Nitzan-Tamar et al., 2016), the fact that distinct eye movement patterns can be observed in different cognitive styles, makes it a promising area of research. The results of the current study can contribute to better understanding of the role of cognitive style in models of eye movement control in reading. A possible implication for future research is specification of the typeface features, which are more responsible for exogenous attentional shifts in impulsive and reflective subjects. At the same time, less straightforward effects were observed with the discourse responses, which evidences in favor of varied construal allowances and constraints that guide the choice of speech construal patterns.

reading comprehension" and was carried out at the Centre for SocioCognitive Discourse Studies at Moscow State Linguistic University.

References

Blinnikova, I., & Izmalkova, A. (2017). Modeling search in web environment: the analysis of eye movement measures and patterns. *Smart Innovation, Systems and Technologies*. Springer, Cham. 73, 297-307. https://doi.org/10.1007/978-3-319-59424-8_28

Casteau S., & Smith D. T. (2020) Covert attention beyond the range of eye-movements: Evidence for a dissociation between exogenous and endogenous orienting. *Cortex*, 122, 170-186. https://doi.org/10.1016/j.cortex.2018.11.007

Chemodurova Z. M. (2021) Visual foregrounding in contemporary fiction. *Issues of Cognitive Linguistics*, 2, 5-15. https://doi.org/10.20916/1812-3228-2021-2-5-15

Dancygier B., Sweetser E. (2015) (eds.). *Viewpoint in Language: A Multimodal Perspective*. Cambridge: Cambridge University Press.

Ehrman, M., & Leaver, B. L. (2003). Cognitive styles in the service of language learning. *System*, 31(3), 393-415. https://doi.org/10.1016/S0346-251X(03)00050-2

Emmot C. (1997) *Narrative comprehension: a discourse perspective*. Oxford, Oxford University Press, 344.

Falikman M. (2014) Attention and chunking in visual search among letter stimuli. *Psychology. Journal of Higher School of Economics*, 11 (2), 150-159.

Giora R. (2003) *On our mind: Salience, context, and figurative language*. Oxford, Oxford University Press.

Godijn R., & Theeuwes J. (2002) Programming of endogenous and exogenous saccades: evidence for a competitive integration model. *Journal of experimental psychology: human perception and performance*, 28 (5), 1039-1054. DOI: 10.1037//0096-1523.28.5.1039

Graumann C.F., Kallmeyer W. (2002) (eds.). *Perspective and perspectivation in discourse.* Amsterdam: John Benjamins Publishing company.

Iriskhanova O.K. (2013) On perspectivization in cognitive linguistics. *Cognitive studies of language. XV. Mechanisms of language cognition*. Moscow–Tambov: IL RAS, ID TSU G. R. Derzhavina, 43–58.

Iriskhanova O.K. (2014) *Focus play in language. Semantics, syntax and pragmatics of focusing*. M.: Jaziki slavjanskoi kulturi.

Kagan, J. (1966). Reflection-impulsivity: The generality and dynamics of conceptual tempo. *Journal of abnormal psychology*, 71(1), 17-24.

Kholodnaya, M. A., Scherbakova, O. V., Gorbunov, I. A., Golovanova, I. V., & Papovyan, M. I. (2013). Informational-energy characteristics of different types of cognitive activity. *Psikhologicheskii Zhurnal*, (5), 96-107.

http://www.scopus.com/inward/record.url?partnerID=HzOxMe3b&scp=84898464191&origin=inward

Kim, M. S., & Cave, K. R. (1999). Top-down and bottom-up attentional control: On the nature of interference from a salient distractor. *Perception & Psychophysics*, 61(6), 1009-1023.

Kiose M.I. (2019) Text parameters of salience of nondirect nominations in the Russian language. *Vestnik RUDN. Linguistics Series*. 1 (23), 116–130. https://doi.org/10.22363/2312-9182-2019-23-1-116-130

Kiose M.I. (2021) *Secrets of Text and Image Interpretation. Construal Operations and Oculographic Experiment*. M.: R. Valent.

Kiose M.I., Efremov A.A. (2020) *HETEROSTAT software*. Registered in FIPI 21.09.2020, registration number 2020661240.

Klein R. M., & Liversedge S. P. (2020) *Eye movements and visual cognition*. Bazel: MDPI.

Kubryakova E.S., Petrova N.Y. (2012) Linguistic and cultural status of drama (the new in studies of the language of drama). *In search of language essence: Cognitive studies*/In-t of linguistics RAS. M.: Znak, 128-146.

Labov W. (2013) *The Language of Life and Death: the transformation of experience in oral narrative.* Cambridge: University of Cambridge Press, 2013.

Labov W., Waletsky J. (1967). Narrative analysis. Essays on the Verbal and Visual Art*s*, ed. J. Helm, 12-44. Seattle: University of Washington Press. Reprinted in *Journal of Narrative and Life History*, 7, 3-38.

Langacker R. (2000) *Grammar and conceptualisation*. Berlin; NY: Mouton de Gruyter.

Loginova E.G. (2017) Similarity and contrast of semiotic systems elements in multimodal discourse. *Moscow state linguistic university journal. Humanities*. M., 216–226.

Mueller, A., Hong, D. S., Shepard, S., & Moore, T. (2017). Linking ADHD to the neural circuitry of attention. *Trends in cognitive sciences*, 21(6), 474-488. https://doi.org/10.1016/j.tics.2017.03.009

Myers-Scotton C.M. (1993) Common and uncommon ground: Social and structural factors in code-switching. *Language in Society*, 22, 475–503.

Nitzan-Tamar, O., Kramarski, B., & Vakil, E. (2016). Eye movement patterns characteristic of cognitive style. *Experimental psychology*, 63(3), 159–168. DOI: 10.1027/1618-3169/a000323

Nyström, M., & Holmqvist, K. (2008). Semantic override of low-level features in image viewing-both initially and overall. *Journal of Eye Movement Research*, 2(2), 2-11.

Petrova N.Y. (2017) *Perspective setting in drama*. M.: Cultural revolution.

Piazza R. (1999) Dramatic discourse approached from a conversational analysis perspective: Catherine Hayes's Skirmishes and other contemporary play. *Journal of Pragmatics*. Vol. 31, Issue 8, 1001–1023.

Rzheshevskaia A.A. (2014) *Language means of perspective setting in conflict discourse (based on English drama)*. Dis. … PhD. M.: MSLU, 201.

Rzheshevskaya A.A. (2021) Variance assessment in the construal of contemporary drama discoruse. *Moscow state linguistic university journal. Humanities*. № 2(844), 50-59.

Sharmin, S., Špakov, O., & Räihä, K. J. (2012). The effect of different text presentation formats on eye movement metrics in reading. *Journal of Eye Movement Research*, 5(3), 1-9. DOI 10.16910/jemr.5.3.3

Simpson P. (2004) *Stylistics: A resource book for students*. London: Routledge.

Solso R. L., Maclin O. H., & Maclin M. K. 2013. *Cognitive Psychology*. 8th ed. Harlow: Pearson.

Strukelj, A., & Niehorster, D. C. (2018). One page of text: Eye movements during regular and thorough reading, skimming, and spell checking. *Journal of eye movement research*, 11(1), 10.16910/jemr.11.1.1. https://doi.org/10.16910/jemr.11.1.1

Talmy L. (2007) Attention phenomena. *The Oxford Handbook of cognitive Linguistics*. D. Geeraerts, H. Cuyckens (eds.). Oxford: Oxford University Press, 264−293.

Tannen D.; Hamilton H.E.; Schiffrin D. (2015) (eds). *The Handbook of Discourse Analysis*. London: Wiley-Blackwell.

Taylor J.R. (1995) Introduction: On construing the world. *Language and the cognitive construal of the world*. Berlin: Mouton de Gruyter, 1-21.

Van Dijk T. (2016) Sociocognitive Discourse Studies. John Richardson & John Flowerdew (Eds.). *Handbook of Discourse Analysis*. London: Routledge, 26-43.

Verhagen, A. (2007) Construal and perspectivization. *The Oxford handbook of cognitive linguistics*/Eds. D. Geeraerts, H. Cuyckens. Oxford: Oxford University Press, 48-81.

Wårvik B. (2004) What is foregrounded in narratives? Hypotheses for the cognitive basis of foregrounding. Virtanen T. (ed.) *Approaches to Cognition through Text and Discourse*. Berlin: Mouton de Gruyter, 99–122.

Wodak, R. (2009) Language and politics. In Jonathan Culpeper, Paul Kerswill, Ruth Wodak, Tony McEnery & Francis Katamba (eds.), *English Language: Description, Variation and Context*, Palgrave Macmillan, 576—593.

Zhang, L. F., & Sternberg, R. J. (2012). *The nature of intellectual styles*. London: Routledge.

Zykova I.V., Kiose M.I. (2020) Parametric annotation of language creativity in crossdiscursive aspect: cinema discourse vs. discourse of children literature. *Issues of Cognitive Linguistics*, 2, 26-40. http://doi.org/10.20916/1812-3228-2020-2-26-40