Eye Movements in Reading the Texts of Different Functional Styles: Evidence from Russian

Tatiana Petrova

Abstract This study is one of the first eye-tracking experiment on Russian language material, checking out if the functional text style is among the readability categories and if it influences the effect of reading perspective. In Experiment participants (30 native speakers of Russian) read three texts on different topics each written in a different functional style. Questionnaires and retelling the texts were additionally used to collect data on text comprehension and accessibility. We suggest that the following eye-tracking data can be informative when we need to evaluate text readability: amplitude of saccades, number of regressions, fixation duration while searching for an answer in the text. The results indicate that the text on the same topic is easier read if it is written in a publicistic style than in a scientific style. There were no significant differences in eye-tracking data between texts written in publicistic style and colloquial style.

Keywords Text · Functional style · Readability · Eye-tracking · Process of comprehension

1 Introduction

Mechanisms of understanding of a text, which are the basis of text processing while reading, are among the main problems of modern psycholinguistics. Large number of experiments has shown that the understanding of the text (written or oral) is a complicated and multi-step process. Thus, understanding of a written text includes a plurality of additional variables, such as, recognition of letters, drawings and structural components. In modern linguistics, the question of an influence of a text type on text perception and comprehension has been studied extensively [1–6].

T. Petrova (✉)
St. Petersburg State University, Universitetskaya emb., 11,
199034 Saint Petersburg, Russia
e-mail: tatianapetrova4386@gmail.com

M-A.Laane identifies the following variables affecting the "readability" of the text: content (abstracts, organization, coordination), style (semantic and syntactic elements), the format (design, layout, illustrations), organization (paragraphs, structure, headings) [3]. William H. DuBay notes that the text style can be experimentally verified. According to his opinion in the study of different texts there are following indicators of readability: the average length of sentences (in words), the percentage of "simple" words, the number of different "complicated" words, the number of pronouns (1, 2 and 3 person), the minimum length of a sentence (in syllables), the maximum length of a sentence (in syllables), the average sentence length (in syllables), the percentage of monosyllabic words, the percentage of polysyllabic words [4].

Mortimer Adler in his work "How to Read Books" made a very important conclusion, saying that reading is an active process [7]. At first glance, you may divide all speech activity on two processes—active and passive. In such opposition it is quite obvious, that speech production (writing and speaking) is an active process, and reception (reading and listening) is a passive process. But it is impossible to assert that while processing a text (written or oral) the communicant is passive and doesn't act. Communicant makes a number of actions while reading or listening a text: receives information, decodes it, interprets and comprehends it in a particular way. Reading it is not an easy task, as we naively believe. It consists of different stages, on each of these stages you can improve and hone your skills [7]. Thus, reading it is an active verbal and cogitative process consisting of several stages. The text is a complex and multifaceted object of perception, "it can be more or less understood holistically, from a minimum of assimilation to the full disclosure of the author's intention." The degree of integrity of text comprehension, respectively, depends on the degree of activity and involvement of a reader in the reading process. However, the type of a text will also affect the level of reading comprehension. There are two types of reading: "for information" and "for understanding" as M. Adler suggests. While reading for information we look for the facts in the text, get some knowledge and accept it. While reading for understanding we look for the meanings, concepts and implications and try to combine them with our own worldview. Reading for information is a necessary stage of studying at the starter levels, when demonstration of language units and their functioning is a subject of training and is a main goal of using of the text. However, when, skills are developed and the language material is acquired, the teacher should pay more attention to motivation of students to understand the text, but not just to extract the information from it. Thus, differentiating process of reading on two types, we can also speak about two types of the texts: that don't demand long processing and efforts for understanding and which main content lies on a surface, and also that which are acquired not at once and demand more time for perception and comprehension [7].

2 Research

2.1 Hypothesis

Detection the features of processing and understanding of texts of different functional styles in reading process was the purpose of the experiment described in this article. The hypothesis is based on the assumption that the processes of perception, including reading, processing and reproduction, in texts of different functional styles are different.

2.2 Material

For a pilot study three functional styles were chosen: scientific, publicistic and colloquial, as representing the greatest interest as a material at the lessons of Russian language and Russian for foreigners. Thus, in order that ease or complexity of the text wasn't caused by thematic features, and also to output some average result on functional style, but not on concrete unit, 9 texts on three different topics were taken, and each topic was presented by three texts of different functional styles. The choice of a subject was caused by existence of texts of these topics in all selected functional styles, and also by a potential possibility of using these texts at lessons of Russian and Russian as a foreign language. 3 topics connected with daily human life were chosen: thunder-storm, relations of children and parents, cars. Thus, the material of the research contained 9 texts:

- 3 texts about a thunder-storm (scientific, publicistic and colloquial);
- 3 texts about the relations between parents and children (scientific, publicistic and colloquial);
- 3 texts about cars (scientific, publicistic and colloquial).

The functional styles of these texts were defined by experts (Table 1). Seven respondents (4 women, 3 men)—teachers of Russian language and literature—were

Table 1 Results of an expert evaluation of a functional style of the texts

Text expert	Text 1[a]	Text 2	Text 3	Text 4	Text 5	Text 6	Text 7	Text 8	Text 9
1	scient	publ	publ	scient	publ	publ	publ	publ	coll
2	scient	publ	coll	scient	publ	coll	scient	publ	coll
3	scient	publ	coll	scient	publ	coll	scient	publ	coll
4	scient	publ	coll	scient	publ	coll	scient	publ	coll
5	scient	publ	coll	scient	publ	publ	scient	publ	coll
6	scient	publ	coll	scient	publ	coll	scient	publ	coll
7	scienti	publ	coll	scient	publ	publ	scient	publ	coll

[a]Experimental texts can be found in the Appendix 1

asked to define to which of the functional styles (scientific/publicistic/colloquial) this or that text belonged.

There was a unanimous expert decision in determining a functional style for six of nine texts. The greatest interest is the results in an assessment of text 6. Two experts defined this text as belonging to a publicistic style, four of seven—to scientific, one of experts dropped a hint of doubt, choosing between these two styles, but as a result stopped on the publicistic. This text represents an article from the encyclopedic dictionary, respectively, if to judge on a resource, the text is scientific.

For the further analysis of the texts Text Internet project was used [http://ru.readability.io]. This allowed us to calculate a number of indicators of the texts (are presented in Table 2, from the line "number of signs"), and also on their basis to calculate indexes of readability for each text (on the formulas adapted for Russian).

It is possible to notice that indicators in each group (scientific, publicistic and colloquial) are different. The texts considerably differ from each other according to quantitative characteristics.

The analysis of readability parameters of the texts revealed that scientific texts are allocated against texts of publicistic and colloquial style from the formal point of view. Their peculiarities are the following:

- contain bigger number of the "compound words" demanding bigger amount of time for text processing;
- contain less number of sentences at an equal number of words in the text, that indicates the complexity of syntax used in scientific texts;
- are focused on more adult (from the point of view of education) audience—students, whereas texts of two other styles can be apprehended by children.

However, it should be noted that these indicators of "readability" are especially formal and consider only quantitative characteristics, ignoring the qualitative.

The main objective of the research was a checkout if the functional text style is among the readability categories and if it influences the effect of reading perspective. This technique gives an opportunity to see the processes of thinking and language behavior of the person in their interaction and is the most exact for research of reading processes as it allows not only to identify difficulties when reading, but also to find when and where specifically these difficulties arise and are resolved by the reader [8]. Today it is one of the main methods of the simultaneous analysis of a large number of dependent variables for language handling research.

2.3 Subjects

30 native speakers of Russian aged from 17 to 30 years participated in eye-tracking experiment. All subjects had the higher or incomplete higher education.

Table 2 The analysis of texts on the category of "readability"

Text Index	Scientific			Publicistic			Colloquial		
	Storm Text 1	Car Text 6	Children Text 7	Storm Text 5	Car Text 8	Children Text 2	Storm Text 9	Car Text 3	Children Text 4
Flesch-Kincaid	18.99	17.5 6	22.21	6.34	8.93	10.31	7.44	5.44	3.17
Coleman-Liau	17.22	16.0 7	22.14	7.56	10	10.7	6.67	5.21	2.63
Dale-Chale	14.41	13.0 6	20.75	5.1	7.84	10.16	7.42	5.28	4.37
ARI	19.05	17.1 4	24.02	7.48	10.1 7	11.02	6.72	4.81	2.47
Audience	4–6 grade	1–3 grade	postgraduate students	7–9 grade	7–9 grade	10–11 grade	4–6 grade	4–6 grade	7–9 grade
Number of signs	1104	1119	1265	1014	1015	1054	939	895	883
Number of gaps	142	143	143	148	151	146	152	143	144
Number of letters	961	975	1122	863	862	906	787	751	739
Number of words	143	144	144	149	152	147	153	144	145
Number of phrases	7	9	9	10	11	12	16	10	7
Number of more than 4-syllabic words	22	23	41	11	12	18	6	6	7
Number of less than 4-syllabic words	121	121	103	138	140	129	147	138	138
Average number of words in a phrase	18.57	16	16	14.9	13.8	12.25	9.5	14.4	20.7
Percentage of compound words from the total number of words	15.3	15.9	28.4	7.2	7.8	12.2	3.9	4.1	4.8

2.4   Procedure

After the calibration procedure each subject received the following instruction: "Hello, dear participant! Thanks for readiness to take part in experiment. Please, attentively study the text for further retelling". Then the record of experiment began. Participants of experiment weren't limited in time and could study each text as much as they wanted for adequate perception of the text with its further reproduction. Eye movements were monitored with an SR Eyelink 1000 plus eye tracker (SR Research Ltd., Kanata, Ontario, Canada) sampling at 250 Hz. The system was configured in 'desktop mode' and equipped with a chin rest. While subjects read binocularly, only one eye (the right eye by default) was tracked. Viewing distance was approximately 60 cm. Approximately 2.4 characters were encompassed by 1° of visual angle. We used a 22' LCD monitor (HP Compaq LA2205 wg) with a refresh rate of 60 Hz (screen resolution 1680 × 1050). When the subject reported about end of this stage of experiment, he (or she) was asked to retell the text. All the retellings were recorded on a dictophone. After each retelling the subject was asked to answer 7 questions checking the degree of text comprehension. Each subject read three texts, according to the number of texts in the protocol (Appendix 2). Each protocol contained three different texts of three different styles. So, if the subject read a text "Car" written in scientific style, on the second step the same subject read text "Children" written in colloquial style, and the third step—the text "Storm" in publicistic style. The texts were randomised among the subjects. We used drift correction each time next text was presented. And we recalibrated in case we saw that it was necessary. It took about 20 min for each subject to participate in the experiment.

3   Results and Discussion

As a result of experiment 90 records of eye movements during reading the texts were made. The averaged values for each text type are in Appendix 3.

In the analysis of the results the following indicators in each text were considered: an average duration of fixations, an average amplitude of saccades, a number of fixations, a quantity of saccades, a reading time, a percentage of regressions (returns to the earlier read fragment) to the total number of saccades.

For statistical data processing Mann-Whitney's U-criterion was used from SPSS Statistics. Statistically significant difference between indicators of reading of the text was revealed for texts "Storm" and "Children", namely: reading time, number of saccades and fixations was significantly higher in the texts of scientific style than in texts of colloquial and publicistic styles; and also in reading scientific text about the Storm the percentage of regressions was higher than in colloquial and publicistic texts (See Tables 3, 4 and 5). Bold print in the tables indicates statistically significant differences. We connect the lack of a significant difference in indicators

Table 3 Results of comparison of eye-movement indicators while reading the texts of different functional styles on the topic "Car" (p-level)

	Colloquial ⇔ Scientific	Scientific ⇔ Publicistic	Colloquial ⇔ Publicistic
Duration of fixations	0.436	0.28	0.739
Amplitude of saccades	0.631	0.353	0.912
Reading time	0.123	0.853	0.19
Number of fixations	0.165	0.971	0.218
Quantity of saccades	0.165	0.971	0.218
Percentage of regressions to the total number of saccades	0.684	0.353	0.075

Table 4 Results of comparison of eye-movement indicators while reading the texts of different functional styles on the topic "Storm" (p-level)

	Colloquial ⇔ Scientific	Scientific ⇔ Publicistic	Colloquial ⇔ Publicistic
Duration of fixations	0.971	0.971	0.912
Amplitude of saccades	0.393	0.912	0.481
Reading time	**0.043**	**0.011**	0.353
Number of fixations	**0.043**	**0.019**	0.436
Quantity of saccades	**0.043**	**0.019**	0.436
Percentage of regressions to the total number of saccades	**0.003**	**0.05**	0.579

Table 5 Results of comparison of eye-movement indicators while reading the texts of different functional styles on the topic "Children" (p-level)

	Colloquial ⇔ Scientific	Scientific ⇔ Publicistic	Colloquial ⇔ Publicistic
Duration of fixations	0.315	0.971	0.739
Amplitude of saccades	0.853	0.796	0.796
Reading time	**0.002**	**0.002**	0.971
Number of fixations	**0.004**	**0.001**	0.912
Quantity of saccades	**0.004**	**0.001**	0.912
Percentage of regressions to the total number of saccades	0.853	0.28	0.218

of reading the text about cars with features of Text 6 which is intermediate (see an expert assessment of the text style).

The analysis revealed that the process of reading the texts of scientific style opposes the process of reading the publicistic and colloquial texts. There were significant differences in the processing of publicistic and colloquial texts.

The analysis of answers to the questions after each text allowed to conclude that subjects are capable to apprehend the main ideas of the texts of different functional styles, but the degree of understanding is different.

Texts of scientific style were more difficult for comprehension. There were significantly more mistakes in the answers after scientific text reading in comparison with the answers after publicistic or colloquial texts. Texts of scientific style demand more time for comprehension and we suppose that degree of their comprehension directly depends on the volume of working memory of a subject. Whereas texts of publicistic and colloquial style stimulate the reader to create his own text and to identify himself with the author of the text [9].

The mistakes made in answers to the questions on comprehension of such texts are connected first of all with a replacement of the read information by an actual information from the reader's background (Table 6).

The analysis of retellings confirms the conclusions drawn above (Table 7).

Texts of colloquial and publicistic style are reproduced easier: subjects make less mistakes at a statement of the main content of a text, they generalize the received information a little, draw conclusions on its basis and transform, "personalize" the text.

Some retellings contained subject's comments such as: *"as I understand", "to my mind", "I think so", "It seems to me"* etc. (Table 8).

Table 6 Percentage of correct answers after the text questions

	Storm (%)	Children (%)	Car (%)
Scientific	81	89	73
Publicistic	83	90	87
Colloqiual	89	79	83

Table 7 Percentage of retellings that contain factual mistakes in comparison with the original text

	Storm (%)	Children (%)	Car (%)
Scientific	37.5	20	67
Publicistic	37.5	0	20
Colloqiual	30	12.5	0

Table 8 Percentage of retellings containing subject's comments

	Storm (%)	Children (%)	Car (%)
Scientific	75	40	67
Publicistic	37.5	17	30
Colloqiual	0	25	44

4   Conclusion

Generalizing all received results, it is possible to conclude that strategies of reading texts of different functional styles are different.

We suggest that the following eye-tracking data can be informative when we need to evaluate text readability: amplitude of saccades, number of regressions, fixation duration while searching for an answer in the text. The readability level of the text influences the effect of reading perspective. The results of checking the texts by readability formulas (Table 2) are correlated with eye tracking data and retellings.

The results indicate that the text on the same topic is easier read if it is written in a publicistic style than in a scientific style. There were no significant differences in eye-tracking data between texts written in publicistic style and colloquial style. But the publicistic text is read, processed and reproduced better, than scientific.

These conclusions are important from the point of view of methodology of teaching languages (at least Russian). Scientific text is more difficult for reading and understanding. So, if the teacher selects it for studying in a classroom more pre-text work will be needed. It's not recommended to take scientific texts for demonstrating grammar or syntactic constructions as it will require much time for understanding the meaning of the phrase or the text, while in colloquial and publicistic texts it's easier to concentrate on studying grammar.

There are the following perspectives for further research:

- how do foreign students learning Russian language read texts of different functional styles, are there the same trends as in reading texts by native speakers;
- how does the instruction affect the reading and comprehension of a text;
- is there any difference in reading texts with pre-text work and without it;
- what types of pre-text work are better for text reading and comprehension.

Appendix

1. **Texts** (in Russian)

   Text 1 (scientific)
   Groza´ - atmosfernoye yavleniye, pri kotorom vnutri oblakov ili mezhdu oblakom i zemnoy poverkhnost'yu voznikayut elektricheskiye razryady — molnii, soprovozhdayemyye gromom. Kak pravilo, groza obrazuyetsya v moshchnykh kuchevo-dozhdevykh oblakakh i svyazana s livnevym dozhdem, gradom i

shkval'nym usileniyem vetra. Po usloviyam razvitiya grozy razdelyayutsya na vnutrimassovyye i frontal'nyye. Vnutrimassovyye grozy nad materikom voznikayut v rezul'tate mestnogo progrevaniya vozdukha ot zemnoy poverkhnosti, chto privodit k razvitiyu v nèm voskhodyashchikh tokov mestnoy konvektsii i k obrazovaniyu moshchnykh kuchevo-dozhdevykh oblakov. Poetomu vnutrimassovyye grozy nad sushey razvivayutsya preimushchestvenno v poslepoludennyye chasy. Nad morem grozy voznikayut vsledstviye razvitiya konvektsii v kholodnykh vozdushnykh massakh, kotoryye dvizhutsya v nizkiye shiroty nad tèploy vodnoy poverkhnost'yu, poetomu v dannom sluchaye nekotoryy maksimum v sutochnom khode imeyet mesto v nochnyye chasy. Pri groze sostoyaniye atmosfery neustoychivo, poetomu mozhno ozhidat' poyavleniya effektivnykh metodov upravleniya grozami, osnovannykh na regulirovanii toy ili inoy gruppy protsessov, formiruyushchikh grozy (Tables 9 and 10).

Text 2 (publicistic)

Detki rastut ochen' bystro. I vot uzhe laskovaya devochka-printsessa, obnimavshaya

mamu po 20 raz v den', nachinayet khamit', krichat' i stanovitsya skrytnoy. Ne vse mamy byvayut gotovy k takomu rezkomu izmeneniyu v lyubimykh detyakh. V otnosheniyakh mezhdu nimi voznikayet khaos, negativ i neponimaniye. Vozmozhno li sokhranit' khoroshiye otnosheniya s rebenkom-podrostkom? Osnovnoye, chto stoit ponyat' i prinyat' mame: podrostkovyy period — eto otrezok vremeni, kogda

Table 9 Distribution of texts according to the protocols

Style	Topic		
	Protocol 1	Protocol 2	Protocol 3
Scientific	Storm	Car	Children
Publicistic	Children	Storm	Car
Colloquial	Car	Children	Storm

Table 10 Eye movement averaged values of the texts

Text style	Topic	Duration of fixations	Amplitude of saccade	Reading time (ms)	Number of fixations	Percentage of regressions
Scient	Car	242.954	4.993	121650	427	30.3
	Storm	230.005	5.004	174641	615	33.8
	Children	225.616	5.07	211772	752	28
Publ	Car	224.324	4.834	119419	415	27.4
	Storm	230.613	4.835	92871	337	27.1
	Children	225.665	5.163	86702	300	32
Coll	Car	228.636	4.88	82688	293	32.8
	Storm	233.21	4.67	108284	375	25.7
	Children	233.711	4.86	87617	319	27.8

rebenok nachinayet vzroslet', no vzroslym yeshche ne yavlyayetsya. I, kak lyuboy drugoy promezhutok vremeni, on zakonchitsya i proydet bezvozvratno. V po-drostkovyy period yest' svoi polozhitel'nyye momenty. Eto vremya, kogda mozhno nauchit' svoikh detey byt' vzroslymi: v povedenii, myshlenii, vospriyatii okruz-hayushchey deystvitel'nosti. Da, oni soprotivlyayutsya nravoucheniyam, no zato khorosho berut primer so svoikh roditeley. Kak nikogda, dlya vzroslykh stanovitsya aktual'nym sovet: « Ne vospityvayte detey, vospityvayte sebya. Vse ravno oni budut pokhozhimi na vas » . Samokontrol' i samodistsiplina — vot o chem, v pervuyu ochered', dolzhna pozabotit'sya mama.

Text 3 (colloquial)

Avtomobil' - eto chlen sem'i. Yego nuzhno kormit', poit', obuvat', odevat', myt', ukhazhivat', lechit', sledit', okhranyat' i t.d., i t.p. A on, kak lyubimoye domash-neye zhivotnoye, budet sluzhit' vam veroy i pravdoy, poka vy yego ne prodadite ili ne razob'yete. Funtsionala u avto tozhe massa: i tebe vnedorozhnik, legkovushka bol'shaya i malen'kaya, moshchnaya i ne ochen', sportivnyye i dazhe raketa "zemlya-vozdukh". YA inogda assotsiiruyu raznyye avtomobili s porodami sobak. Tak vot, inogda mashina i byvayet skoreye dvornyagoy, no ona gotova otklikat'sya na lyuboy tvoy impul's nastol'ko, naskol'ko mozhno ot neè etogo ozhidat'. A by-vayet, chto samyy dorogoy i « porodistyy » chetyrekhkolesyy drug sdykhayet na pervoy yame. YA v silu vozrasta i temperamenta vybral Opel' Astra OPS, dlya goroda - vpolne. Vizhu yeye i nikak naradovat'sya ne mogu, kak rebenok na lyubimuyu igrushku. A dlya derevni - u otchima Patriot, svoyu zhalko po etim dorogam dolbit'.

Text 4 (colloquial)

Ya rodila syna, kogda mne bylo 24 goda. Ya schitayu, chto toropit'sya ne stoit, mozhno pozhit' dlya sebya, razvlekat'sya, letom otdykhat' na more - yesli poz-volyayut finansy. Za neskol'ko let mozhno nakopit' opredelennuyu summu na prilichnoye pridannoye rebenku, vozmozhno, platnyye rody i platnoye nablyu-deniye rebenka do goda - ne nado begat' v polikliniku i stoyat' v ocheredyakh, vrach sam priyedet na dom: polovinu infektsiy, v tom chisle i takuyu., chto my chut' ne popali v bol'nitsu, poluchili v poliklinike. Chto kasayetsya ucheby, ya by vnachale zakonchila institut, zachem sozdavat' sebe problemy - a vdrug gestoz ili yeshche kakiye-to problemy, i kak uchit'sya? Da i kogda roditsya rebenok, problem men'she ne budet. A tak, zakonchite institut, ustroites' na rabotu, porabotayete, a tam mozhno i v dekret ukhodit'. Vazhny yeshche i otnosheniya s Vashim drugom, ya vnachale by raspisalas', a uzhe potom beremenela, zachem potom nuzhny problemy.

Text 5 (publicistic)

Prezhde chem otpravit'sya na progulku za gorod, uznayte prognoz pogody. Yesli, soglasno etomu prognozu, ozhidayetsya groza, voz'mite s soboy zont ili plashch iz nepromokayemogo materiala. Dukhota — eto vernyy priznak priblizhayushcheysya grozy. Samoye opasnoye v grozu — nakhodit'sya ryadom s metallicheskimi ogradami, na smotrovykh bashnyakh i okhotnich'ikh vyshkakh. Vo vremya grozy

ni v koyem sluchaye ne prikasaytes' k lyubym metallicheskim predmetam i ne lozhites' na zemlyu! Pri pervykh priznakakh nachinayushcheysya grozy post-araytes' spryatat'sya v mashine ili v lyubom ukrytii: palatke, shalashe, izbe, zdanii s molniyeotvodom. Yesli takoy vozmozhnosti u vas net, i vy vynuzhdeny ostavat'sya na otkrytoy mestnosti, spryach'tes' v kanave ili lozhbine, skrestiv nogi. Izbav'tes' ot lyubykh metallicheskikh predmetov: perelozhite ikh v ryukzak i otodvin'te yego v storonu.Yesli groza zastala vas v lesu, izbegayte otdel'no stoyashchikh i ochen' vysokikh derev'yev. Luchshe vsego pryatat'sya v kustakh ili pod nevysokimi berëzami i klënami. Sosna, topol', yel' i dub — « lyubimyye » derev'ya molniy.

Text 6 (scientific)

Avtomobil' - sredstvo peredvizheniya, kotoroye vpervyye poyavilos' v XIX-m v. Pervyye avtomobili privodilis' v dvizheniye parom, no eta konstruktsiya ne imela uspekha. Po suti, vek avtomobilya nachalsya s vvedeniya v deystviye ekipazhey s benzinovymi dvigatelyami GotlibaDaymlera i Karla Bentsa (1885-86). Dvigateli vnutrennego sgoraniya dlya etikh ekipazhey byli izobreteny yeshche ran'she nes-kol'kimi inzhenerami, prezhde vsego, Nikolausom Otto (1876). Do nastoyashchego vremeni osnovnyye komponenty avtomobilya ostalis' neizmennymi. Imeyetsya korpus (rama), k kotoromu prikreplyayutsya takiye komponenty, kak dvigatel' ili istochnik energii, sistema peredach, privodyashchaya v dvizheniye kolesa, rul', tormoza, i sistema podveski, kotoryye sluzhat dlya upravleniya avtomobilem, ostanovok i podderzhki korpusa. Pervyye avtomobili sobiralis' nemnogimi znatokami-mekhanikami, no sovremennoye massovoye proizvodstvo nachalos' v nachale 1900-kh gg. s deyatel'nosti Genri Forda i R. E. Oldsa v SSHA. Na bol'shinstve sovremennykh avtomobil'nykh zavodov vse chasti konstruktsii soyedinyayutsya vmeste na sborochnykh konveyyerakh. Pered otpravkoy na pro-dazhu gotovyy avtomobil' podvergayetsya ispytaniyu.

Text 7 (scientific)

V psikhologicheskoy literature polemika vokrug problemy « materinskogo instinkta » (opyat' zhe bez analiza samogo ponyatiya « instinkt ») razgorelas' vo vtoroy polovine XX stoletiya. Odni issledovateli utverzhdali primat sotsial'nykh faktorov v formirovanii materinskogo otnosheniya, drugiye priderzhivalas' ubezhdeniya, chto materinskaya privyazannost' podchinyayetsya vo mnogom tem zhe vrozhdennym mekhanizmam, kotoryye rodnyat chelovecheskiy vid s zhivot-nymi. Rol' biologicheskikh faktorov v formirovanii materinskogo otnosheniya obsuzhdayetsya v etologicheskikh issledovaniyakh. Imprinting i privyazannost' pervonachal'no rassmatrivalis' kak prisposobitel'nyy mekhanizm vida, uvelichi-vayushchiy shansy vyzhivaniya. Deystvitel'no dlya rebenka ustanovleniye i pod-derzhaniye kontakta s mater'yu yavlyayetsya vital'noy zadachey. Issledovaniya pokazyvayut, chto psikhosomaticheskoye ravnovesiye rebenka tesno svyazano s vzaimodeystviyem rebenka i materi. Khronicheskaya nekhvatka privyazannosti privodit u rebenka k nervnoy anoreksii, rvote, bessonnitse, chastomu srygivaniyu, oslableniyu immunnoy sistemy. Naprotiv, tesnyy telesnyy kontakt sposobstvuyet chuvstvu bezopasnosti i privodit k umen'sheniyu strakha i trevogi. Dzh. Boulbi

schital privyazannost' pervichno spetsificheskoy sistemoy, smysl kotoroy v podderzhanii vzaimodeystviya mezhdu mater'yu i mladentsem.

Text 8 (publicistic)

Avtomobil'. Kakoye eto priyatnoye slovo, tak kak ono oznachayet sredstvo peredvizheniya, kotoroye uprostilo chelovecheskuyu zhizn'. A ved' mnogo let nazad takogo chuda tekhniki ne bylo dazhe v pomine. Lyudi spokoyno sebe khodili peshkom i yezdili na loshadyakh . No vot v dalekom 1885 godu GotlibDaymler izobrèl i zapatentoval dvigatel', a Karl Fridrikh Bents usovershenstvoval yego i zapatentoval avtomobil'. S tekh por zhizn' lyudey izmenilas'. S kazhdym godom razvivalos' avtomobilestroyeniye, izobretalis' vse luchshiye i luchshiye avtomobili, oni usovershenstvovalis' i dopolnyalis'. Segodnya eto uzhe ne prosto mashiny, a nastoyashchiye shedevry, kotoryye imeyut kazhdaya svoyu izyuminku v dizayne, v nachinke i tak daleye. Lyudi pokupayut sebe avto, chtoby idti v nogu so vremenem, chtoby sozdat' sebe komfort, chtoby oshchutit' sebya «belym» chelovekom. Pozvolit' sebe kupit' avtomobil' mozhet kazhdyy chelovek, glavnoye k etomu nuzhno stremit'sya. Ved' ne obyazatel'no pokupat' novuyu, doroguyu marku avto, mozhno kupit' srednyuyu, i ne obyazatel'no novuyu, no, chtoby ona byla na khodu.

Text 9 (colloquial)

Groza doma - fignya, dazhe yesli eto odnoetazhnyy derevenskiy dom. Sovershenno ne strashno, prosto krasivo. A vot groza na prirode… Vot eto real'no strashnovato: vrode kak pod bombèzhkoy, i v printsipe izvestno, chto, yesli dolbanèt v samoye blizhaysheye derevo, mozhet i ubit'. No, po moim nablyudeniyam, vsem absolyutno po figu. Boleye togo, kogda kupayus' na dache, vizhu, chto lyudi pri priblizhenii grozy nikuda osobo ne toropyatsya, i dazhe umudryayutsya perezhdat' sil'nuyu grozu pryamo na lugu. Eto uzhe prosto povedeniye kamikadze, no… lyudi u nas khrabryye… Let desyat' nazad byla u babuli v derevne. Leto, byli na senokose, tut tuchi i grom. Bystren'ko sobralis' i domoy. Po puti dozhd' nas zastal. Koroche, vbezhali domoy, tol'ko po komnatam razbrelis' pereodet'sya, tut babusya orèt: vsem stoyat', ne dvigaytes' i ne dyshite. Ya zamerla telom, a bashkoy kruchu, lyubopytno vsè-taki. Smotryu - sharovaya molniya. Koroche, pokruzhilas' ona po zalu i v pol. V obshchem, opasnoye eto delo…

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