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**Updating Processes Following Contradictory
Information in a Narrative Text: The Degree of
Reader's Access to Previous Information**

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Abstract

The narrative text has a defined formational structure – the narrative schema that influences text comprehension, since it helps the reader to form a mental representation of the text and to update it according to information added in the text. The narrative schema usually includes an introduction in which the main character is presented, and information about him/her including unique traits such as his/her characteristics and attitudes. With the help of the information presented to the reader in the introduction, he/she builds an initial mental representation of the character in his memory, and based on this representation, he/she predicts what is going to happen in the text. During reading, each time the reader encounters new information about the main character, an Updating Process is created in which integration is effected of the new information into the character's initial mental representation the reader has constructed in his/her memory. When the new information does not conform properly to the reader's mental representation, his ability to carry out the updating process successfully is undermined.

When readers are required to carry out a new updating process that contradicts the initial representation they have formed regarding the main character, their reading speed is lowered (Albrecht & O'Brien, 1993). Since in many narrative texts new information does not fit the character's initial representation, among other things, in order to create suspense and interest among readers, the degree of access to previous information needs to be limited, since otherwise the reader will not manage to update the mental representation properly, and his/her comprehension of the text will be damaged (Rapp, 2008). Studies have also shown that when information contradicting the character's representation is provided gradually, i.e., refuting or weakening information is presented first, the reader succeeds in updating the contradictory information more efficiently (Gueraud, Harmon, & Peracchi, 2005; Kendeou, Smith, & O'Brien, 2013; Rapp & Kendeou, 2007). Nevertheless, it has yet to be determined whether the intensity of previous information, namely, the reasons leading to constructing an initial mental representation of the character, influences the ability to update this representation following presentation of contradictory information later on.

In light of the above, the first goal of the present study is to test, if in the text's introduction a trait of the character is presented to the reader (in this study: vegetarianism), and then the reason for this trait as well, whether the reader's ability to update the character's initial representation due to contradictory information (in this study: the character eats meat) will be influenced by the reason presented in the introduction. The underlying assumption was that the more powerful the reason for the initial characterization of the character, its 'echo value' will be greater, and therefore will make it harder for the reader to update the initial mental representation following information that contradicts the previous information.

The second goal of this study is to examine the extent of influence of presentation of weakening information prior to the contradictory information. In other words, to examine whether the intensity of previous information, meaning the reasons that led to constructing the character's initial mental representation, will be influenced by presentation of weakening information, and thus the reasons will not affect the updating ability of the initial representation following presentation of contradictory information. This goal stems from studies in which it was found that weakening information could limit the reader's degree of access to previous information (Kendeou, et al., 2013).

The third goal of this study is to test whether the ability to identify the contradiction between the character's initial representation and the information that contradicts this representation is affected by the intensity of the reason given to portray the character in the introduction and by the presence of weakening information.

For the purpose of carrying out this research, use was made of 8 narrative texts which were divided up into two sets. Set A included four versions of a similar narrative text, that required the reader to execute a mental updating of initial information following contradictory information. In all texts at the beginning of the story, the character is presented as a vegetarian, after which in three texts the reader is presented with the reason why the character chose to be vegetarian, whereas in the fourth text no reason is presented for being vegetarian. At the end of each text, information is presented to the reader that contradicts the character's presentation as a vegetarian: the character orders a hamburger at a restaurant. Set B included the same narrative texts that

appeared in Set A, with one difference: in each text, prior to appearance of the contradictory information, weakening information whose purpose was to undermine the character's presentation as a vegetarian, by explaining why it's possible that the character as presented at the beginning of the story, is no longer valid.

168 seventh graders participated in this study. All the students were tested with linguistic background tests (vocabulary, morphological awareness, syntax knowledge and cloze completion tests), the purpose of which was to assure that the variance between research groups on the text comprehension task did not originate from differences in linguistic abilities. Furthermore, each subject performed the central task of the study – reading one of the eight texts. The ability to update the text's mental representation following contradictory information was measured by two indices: the reading times for the contradictory information, and comprehension questions that tested whether the subject, after completing the reading, identified the contradiction appearing in the text.

Regarding the first research goal, the study findings indicated that the different reasons offered for the character's vegetarianism in the introduction had varying influence on the ability to update mental representation of the text following information that contradicted the character's initial mental representation as a vegetarian. The reading times for contradictory information in the texts in Set A, in which the initial character was presented to participants as having chosen to be vegetarian due to friendship or diet, was longer than for texts in which the initial character decided to become vegetarian due to faith or when no reason was presented for being vegetarian. These findings show that when reading contradictory information, the degree of the reader's access to previous information and its return to the reader's mind are affected by the extent of attention the previous information received upon initial reading, so that information receiving greater attention when read merits a higher echo value. Therefore, the degree of the reader's access to it later on in the reading is greater.

Regarding the second research goal, it was found that among readers who had read the text in Set B, in which weakening information was provided whose purpose was to undermine the character's representation as a

vegetarian before the appearance of contradictory information, no differences were found in reading times of the contradictory information. Thus, the study's findings reinforce previous studies which determined that presentation of weakening information prior to contradictory information influences the extent of the reader's access to earlier information.

As to the third research goal, no differences were found in the degree of identification of contradiction in the text between subjects that read the different texts, neither among the groups that read a text without weakening (Set A), nor among the groups that read a text with weakening (Set B), so that in the two groups the majority of subjects identified the contradiction in the text when asked about it. This finding indicates that earlier information about the character's initial representation remains in the reader's mind throughout the entire reading, despite the presence of weakening information.

In order to test which factors influence the degree of identification of contradiction in the text, it was decided to examine whether there is any connection between this measure and achievements on the linguistic background tests. It was found that the linguistic background tests constituted a very reliable measure of the degree of identification of contradiction in the text, so that the higher the achievements on the linguistic background tests, the degree of contradiction identification in the text was also higher.

The uniqueness of this study is that it reveals that the strength of information presented to the reader about the traits of the main character in the introduction to a narrative text influences the ability to update the initial mental representation of the text following information that contradicts the character's initial representation. This variable had not been tested in earlier studies. This study indicates that the degree of the reader's access to earlier information regarding the character is derived from the degree of attention paid by the reader during initial reading of the text. In order to deepen the findings received in the present study, it is recommended to examine whether contradictory information also slows reading speed in texts that have several conversational units after the contradictory information, and to carry out a comparison between reading times of the portion before the contradictory information and reading times for the section following it.