

Testing Reader Ethical Judgments over the Course of a Narrative*

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Abstract

We present a web-based environment – an *Ethics Workbench* – which allows a reader's ethical judgments to be solicited while reading a narrative. Preliminary results show generally consistent scores across subjects and test conditions, and suggest that it is possible to measure how individual readers respond to texts in terms of ethical judgments, how the linearity inherent in narrative plays a role in affecting ethical judgments, and how readers appear to synthesize judgments over the course of a text. Applications of the model include the empirical analysis of the ethical aspects of reading, the more detailed study of ethical issues, the potential for eliciting ethical discussions, and a means of dynamically planning texts to achieve maximum effect with respect to reader judgments.

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1 Background

It would be difficult to find two broader fields than narrative and ethics. Each has given rise to an enormous range and depth of research, in literary studies, philosophy, ethnology, and so on. Their intersection has led to work on the evolutionary advantages of narrative as a model of ethical and other choices [3], a means of 'improving' readers on the ethical dimension [2], and as one of the principles which structures narrative [7]. Ethical phenomena in narrative have been studied in broader fields like film [8] and women's studies [4], applied to the analysis of personality traits such as empathy [6], and used in training of medical practitioners [5]. As a complement to these various approaches, it would be of value to have a means of determining readers' ethical judgments over the course of a narrative, to determine how these are influenced by narrative structures and content. We present here an environment designed to achieve these goals and we discuss some of our preliminary findings.

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2 Testing reader reactions

To test reader reactions incrementally, we constructed a web page which presents a story one element at a time. At various points in the story, the reader is asked to respond to a certain number of ethical questions before moving on to the next story element. Reader judgments are expressed by moving a slider, where movement to the left indicates a progressively greater negative judgment, while movement to the right indicates a progressively more positive ethical judgment.¹ Each slider represents a linear scale, with 0 at the midpoint and -10 and +10 as endpoints. The slider is set initially at the midpoint of the scale. Once a reader judgment has been entered, the slider disappears, thereby preventing explicit comparison with previous judgments. The test framework is based on the Aesop's Fable *The Ant and the Grasshopper*. Although the protagonists are insects, the fable was designed to present a moral principle, and we have found that the strong human tendency to anthropomorphize animals leads to treating the two characters as if they were humans. Two test scenarios were developed, differing at only one point, as shown below in item (c), where the reason for the grasshopper's lack of work is presented either as age and illness, or as a desire to sing and mock the ant. The framework for both scenarios is shown below, where sections beginning with letters indicate items of the story as told, and bolded and italicized sections beginning with digits indicate requests for judgment on the part of the reader.

- (a) Once upon a time there was an ant and a grasshopper. They both lived in a large field. All summer long, the ant worked hard to collect food for the winter.
- (b) The grasshopper did no work and collected no food.
- (1) **Evaluate the grasshopper's behaviour.**
- (c) Either: He was old and ill. Or: He sang in the sun and mocked the ant for its laborious behaviour.
- (2) **In light of this new information, evaluate the grasshopper's behaviour.**
- (d) At the end of the summer, the ant had a lot of food stored away, but the grasshopper had none. When the first frost came, the grasshopper approached the ant and asked for food.
- (e) The ant told the grasshopper that since he hadn't worked, he deserved no food.
- (3) **How much do you agree with this decision?**
- (f) The grasshopper slowly starved to death.
- (4) **How appropriate is this outcome?**
- (5) **In light of the whole story, evaluate the ant's behaviour.**

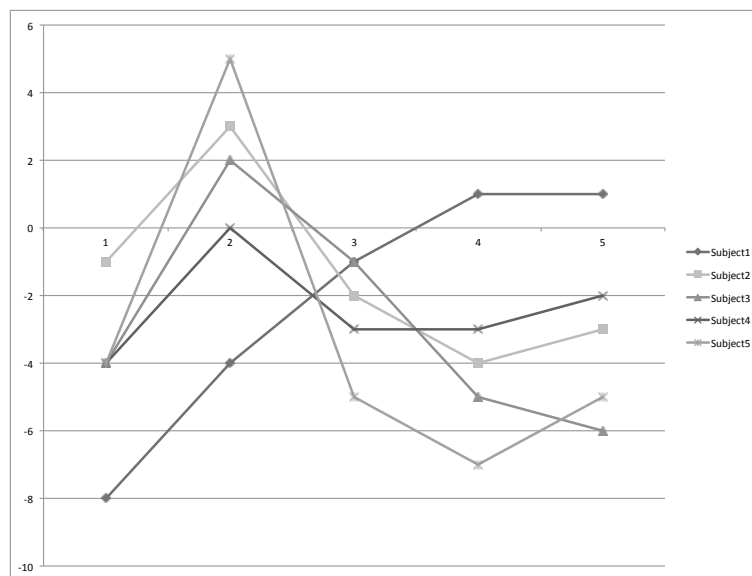
3 Some preliminary results

The scenarios were presented to 10 adult native speakers of English, 5 male and 5 female. All subjects were given as much time as required to read and to enter their judgments. Half the subjects were exposed to the *old and ill* scenario, and half to the *mocking* scenario. Assignment to a particular scenario was done at random. The object of the experiment was to consider four issues in particular: (a) Narrative is linear, and subsequent items in a test are invisible to a reader until they are reached. Given this, to what extent does exposure to new information lead to changes in ethical judgments? Questions 1 and 2 test this, by asking first for a judgment of the grasshopper's failure to work, without any background information, and

¹ See for example, Bard et al. [1] for discussion of this approach.

then asking again in light of further positive or negative information (ill-health or mocking). (b) Ethical decisions are presumably related to presented states of affairs. Question 3 tests whether, in the mind of the reader, the ant's decision not to share food is correlated with previous information. (c) Ethical decisions have consequences. In the version of the Aesop's Fable presented here, the ant's negative decision leads to the grasshopper's death. Question 4 measures the reader's reaction to this outcome. (d) By taking a decision which leads to the grasshopper's death, the ant becomes an ethical agent whose actions may be judged. Question 5 tests the reader's evaluation of the ant.

Figures 1 and 2 show the results of the tests.² The left hand axis represents the slider value at each point, the various lines labeled Subject1 to Subject10 represent the trajectory of judgments for each test subject, and the digits from 1 to 5 across the middle of the graph represent each of the five ethical evaluations expressed using sliders.



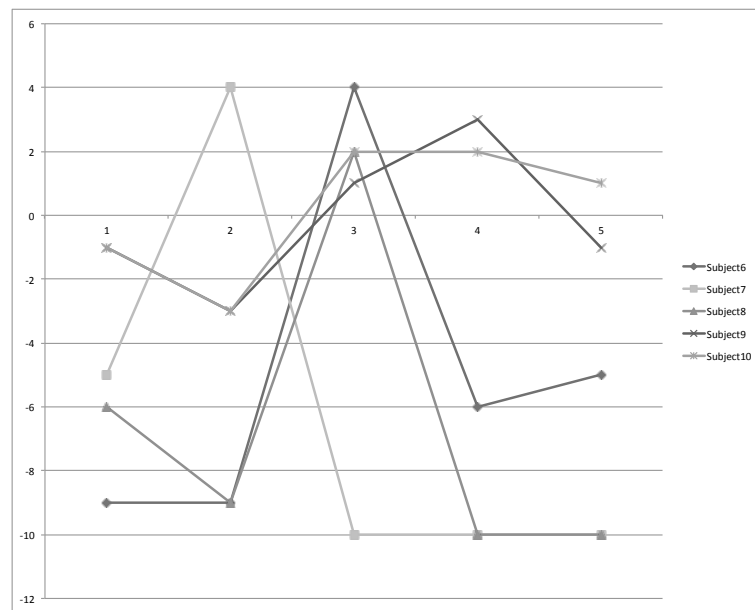
■ **Figure 1** Subject testing results for *old and ill* scenario.

3.1 Narrative order and inflection of ethical judgments

Examination of Figure 1 shows that in the *old and ill* scenario, the subsequent explanation of the grasshopper's inactivity causes all judgments to be inflected in a positive direction (see results for questions 1 and 2). On the other hand, as Figure 2 shows, 4 of 5 subjects inflect their evaluation of the grasshopper in a negative direction when learning of his singing in the sun and mocking the ant.³ Taken together, this data provides at least *prima facie* evidence that reader judgments follow the ordered presentation of information in a narrative.

² Since this is preliminary work and the number of subjects is small, no statistical tests were done on the data presented here. The focus is rather on broad tendencies found in the data, as well as an indication of whether the environment used can work in practice.

³ In the case of Subject 7 in the *mocking* scenario, the test subject noted that the evaluation chosen was based on the grasshopper's singing, which was seen as a good thing. This illustrates the importance of carefully linking ethical choices to well-defined aspects of the narrative.



■ **Figure 2** Subject testing results for *mocking* scenario.

3.2 Ethical situations and ethical decisions

Both scenarios provide background and then ask the reader to pronounce on his or her agreement with the ant's decision. Analysis of Figures 1 and 2 shows that in the case of the old and ill grasshopper, all five subjects disagreed more or less strongly with the ant's decision, as shown by the negative values for Question 3. However, in the case of the mocking scenario, four of the five test subjects agreed with the ant's decision. This would suggest that previous information is being used to evaluate not just the players in this drama, but also the decisions being made.⁴

3.3 Ethical decisions and their consequences

The test environment spells out explicitly the fatal consequences for the grasshopper of the ant's ethical judgment. In the case of Figure 2, we can see a sharp divergence between three subjects who saw the mocking grasshopper's death as quite inappropriate (with scores of -6 to -10) and two subjects who saw the death as at least somewhat appropriate (with scores of +2 and +3). We find a similar divergence in Figure 1, where four subjects see the old and ill grasshopper's death as inappropriate, while one (Subject 1), sees the death as at least marginally appropriate, with a score of +1.⁵ In general, though, the data presented appears to show that the gravity of the consequences of some act has a measurable effect on reader judgments.

⁴ Note that once again, Subject 7 runs counter to the other four test subjects, perhaps in light of this subject's previous positive evaluation of the grasshopper. This is a case where more 'think-aloud' data would be of value.

⁵ Note that this subject has also given the grasshopper the lowest initial score and that the curve of this subject's judgments never diminishes over the course of the scenario. The notion of the 'arc of ethical judgment' merits more attention.

3.4 From ethical paragon to ethical agent

The ant is at least partially responsible for the grasshopper's death from starvation. In light of this, it is possible to ask how the ant itself is judged. Consideration of the two Figures shows that in all cases but one (Subject 9, whose evaluation of the grasshopper's demise was positive but of the ant negative) subjects who considered the grasshopper's demise to be inappropriate judged the ant's behaviour negatively, while those who saw the grasshopper's death to be appropriate judged the ant's behaviour to be positive. Thus, in the *old and ill* scenario, Subject 1 is consistent in answering Questions 4 and 5, as is Subject 10 in the *mocking* scenario, by evaluating both the demise and the ant's decision as positive. This consistency would suggest that readers are capable of focusing on particular players in a scenario as they become involved with ethical decisions.

4 Applications of an Ethics Workbench

Clearly, the framework here is still very simple and the number of subjects tested small. Further research will apply the framework to other, human-based contexts, more test subjects, and richer narrative models. It will also be important to solicit initial ethical positions before texts are read. That being said, we believe that the framework presented here has potential applications in several areas, as: (i) a means of studying, in more detail than we have done here, the interplay of narrative and reader judgments in areas like the duration of ethical judgments over a narrative, and the role of repeated behaviours; (ii) a locus of discussion for dealing with ethical issues, for example in Philosophy or Sociology classes,⁶ by instantiating preset principles in stories and examining outcomes, or by studying reader reactions to developing scenarios as a stimulus to ethical self-examination; (iii) a means of 'crowdsourcing' reader judgments, by the capture of evaluations across many readers, as in [9], or by 'shopping' political or even marketing narratives among target groups; (iv) to the extent that reader judgments are allowed to inflect evolving narratives, as one element of a dynamic narrative structure, a sort of 'choose your own narrative' with an ethical dimension.

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⁶ We are indebted to Paul O'Marra for raising this point.

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