

Readability of Vegan Outreach Literature

Summary of Results

- The average U.S. adult has a 9th or 10th grade reading level, and 44% of adults have an 8th grade reading level or lower.
- HRC recommends developing vegan outreach materials at a 7th or 8th grade reading level in order to ensure comprehensibility for a large proportion of the target audience.
- However, all of the vegan outreach materials evaluated in the current study are written at an 11th grade reading level or higher, indicating that the vegetarian movement's most popular materials might be incomprehensible to half or more of the target audience.
- Based on six readability tests, the average readability scores ranged from a low reading level of 11th grade for PCRM's vegetarian starter kit to a high of 15th grade (beyond college level) for the Humane Myth brochure.
- Additional research including focus groups (and possibly one-on-one interviews) would allow a more comprehensive evaluation of the materials beyond basic readability. HRC recommends a collaboration to conduct additional qualitative research at a cost of \$8,000 to \$12,000.

In summary, we found that most of these pamphlets are written at three or four grade levels higher than that of average U.S. adults.

About the Humane Research Council

HRC is a nonprofit organization dedicated to maximizing the effectiveness of animal advocates by applying professional, cost-efficient, and informative consumer and market research methods.

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Project Background

Readability tests were developed in the 1920s and have been utilized, evaluated, and improved throughout the past century. They are an accepted way for educators to match reading material with their students¹ and to evaluate the understandability of health literature.² Readability is a basic measure of how difficult it is for people to understand a text. It is not an evaluation of content or style.

In September 2011, the “Vegan Soapbox” blog³ posted the results of readability tests for a small and diverse set of vegan outreach materials. The results showed that these materials generally have low readability scores – i.e., they require a high level of literacy to be read and understood. Although the author did not name the materials or provide a detailed methodology, the findings – if true – would have major implications for vegan/vegetarian outreach.

To evaluate the readability of such materials in a more robust and transparent manner, the Humane Research Council (HRC) partnered with VegFund and FARM (the study’s sponsors) to test a selection of outreach materials that are commonly used by vegan advocates. HRC evaluated a selection of eleven different vegetarian/vegan guides and brochures using six different readability tests.

The information presented in the text of vegan outreach pamphlets is often well written, thorough, and research-based. However, it is unknown whether or not these materials are written simply and clearly enough to be easily understood by a majority of people who receive them. In this paper we discuss an ideal reading level for this literature. We then examine the readability of widely used vegetarian and vegan advocacy literature using six established readability formulas.

The Importance of Readability for Animal Advocates

The ultimate goal of any animal advocacy literature is to educate and persuade. In order to educate people, the message must be understood. Having text that is written in a clear, concise manner that can be easily understood is not, by itself, sufficient for creating a persuasive argument. However, it is fundamentally necessary. If the message is not clearly conveyed through the language, then the layout, recipes, and pictures will not persuade anyone to take action.

Readability scores can be an important tool for animal advocates when assessing their literature and comparing their brochures to those of other animal protection groups. There are a number of components that influence how good something is at communicating the desired message, including legibility and layout.⁴ While animal advocacy groups regularly hire professionals to do research on the messages they present or to learn about the important visual aspects of their literature, it is not yet common to evaluate the readability of the text.

What is an Ideal Reading Level?

To determine the literacy of U.S. adults, the U.S. Department of Education conducted a study called the National Assessment of Adult Literacy (NAAL), last administered in 2003.⁵ This study tested the literacy of 19,200 U.S. adults and rated their literacy skills on a scale of 0-500 for three different types of materials—prose, documents, and quantitative materials. These scores were consolidated into four broad categories: below basic, basic, intermediate, and proficient.

The 2003 NAAL study found that the average U.S. adult has a reading score of 271-283, depending on if the text is a document, prose, or quantitative material. This places the average U.S. adult as having basic literacy skills when reading quantitative materials and intermediate literacy skills when reading documents or prose. This underscores the necessity of making the text of vegan outreach materials clear, concise, and simple.

The Young Adult Literacy Survey (YALS) of 1985 used the same methods and scoring as the NAAL and translated these scores into approximate grade levels. Understanding adult literacy skills in terms of grade levels makes the readability scores easier to apply to the evaluation of vegan outreach materials as well as animal advocacy outreach materials in general.

The YALS evaluated a score of 250 at a 7th grade reading level, 300 at a 12th grade level, and 350 at the level of a college degree.⁶ The average literacy score of U.S. adults is between 271 and 283, which is a high school reading level, or about 10th grade. Almost half (44%) of all U.S. adults have no college experience⁷ and people in this education bracket have an average literacy score of 262. **As such, if vegan/vegetarian outreach materials are targeted toward the general population, they should be written at a 7th or 8th grade reading level.**

Much vegan advocacy is aimed at individuals in specific demographic groups, namely high school and college students. The average literacy score for those with some high school education is 268, so this literature should be written at a 7th to 9th grade level. More flexibility on the upper readability scores is acceptable for literature geared toward college students. The average literacy score for a college graduate is a little over a 12th grade reading level. However, it is important to recognize that, even though college *graduates* can be expected to have at least a 12th grade reading level, those who are still attending college range from those who have just graduated high school to those who are almost finished. Therefore, a 10th grade reading level is an appropriate upper bound.

Materials and Methods

Pamphlets

HRC and VegFund worked together to identify a diverse selection of major pamphlets and booklets used by the animal protection movement to encourage a vegetarian or vegan diet. We identified and evaluated 11 pamphlets in total, representing nine different organizations; we evaluated three pamphlets from Vegan Outreach to compare and contrast those materials, which are used extensively by vegan advocates. The list of materials evaluated appears on the following page:

- Compassion Over Killing (COK), *Vegetarian Starter Kit*
- Farm Animal Rights Movement (FARM), *Live Vegan*
- Friends of Animals (FOA), *Vegan Starter Guide*
- Humane Myth (HM), *Don't Buy the Myth*
- Humane Society of the United States (HSUS), *The Guide to Meat-free Meals*
- Mercy for Animals (MFA), *Vegetarian Starter Kit*
- People for the Ethical Treatment of Animals (PETA), *Go Vegetarian! Go Vegan!*
- Physicians Committee for Responsible Medicine (PCRM), *Vegetarian Starter Kit*
- Vegan Outreach (VO), *Compassionate Choices*
- Vegan Outreach (VO), *Even If You Like Meat*
- Vegan Outreach (VO), *Why Vegan?*

Readability Tests

HRC evaluated the readability of each of these pamphlets according to six different readability tests: Automated Readability Index, Coleman-Liau Index, Flesh-Kincaid Reading Ease Score, Flesch-Kincaid Grade Level, Gunning Fog Index, and SMOG Index. These tests represent a variety of readability scores, utilizing various criteria, which have been reviewed and accepted as valid measures of readability. Each score includes one or more of the following criteria: sentence length, syllables, polysyllables (i.e., words with three or more syllables), and/ or number of characters. See Appendix A for the formulas of each readability test.

With the exception of the Flesch-Kincaid reading ease score, all of the scores directly correspond to a grade level. In other words, if a block of text receives a score of 6.3 it is at the sixth grade reading level, a score of 10.8 indicates a 10th or 11th grade reading level, etc. The Flesch-Kincaid reading ease score is presented as a number between 0 and 100, such that the closer the score is to 100, the easier it is to read. A score of 90-100 is considered to be at the fifth grade reading level, 70-90 is at the junior high school level and a score between 50-70 is at the high school level.⁸

Measuring Readability

Manual calculation of the readability scores was not feasible due to the length of the pamphlets, time considerations, and the increased chance of errors. A number of online tools exist to calculate readability scores. To determine which tools are accurate, we evaluated them by hand-calculating each score for a 30-sentence sample page of text and comparing our scores to the various online tools (see Appendix A for the full results of this review). We found the web-based tool Edit Central⁹ to be the most accurate and used this to compute the readability scores for all the pamphlets. See Appendix B for further information regarding how we evaluated the online readability tools.

Only the text of each pamphlet was evaluated; all images, recipes, advertisements, and photo captions were removed, as were any block quotes that repeated text already in the body of the literature. Block quotes that were not present elsewhere in the text are included in the analysis.

Some of the pamphlets that HRC evaluated use the word “vegetarian,” while others use the word “vegan.” This distinction is an important one that may impact the effectiveness of the literature. However, this distinction can also greatly influence the readability scores. All but the Coleman-Liau Index rely on counts of syllables, using either the average number of syllables or the proportion of polysyllables. This poses a unique challenge for comparing pamphlets that use the word *vegetarian* and those that use the word “vegan.” “Vegetarian” has more than twice as many syllables as “vegan” and the former is a polysyllable, while the latter is not.

For this reason, each pamphlet was evaluated twice—first in its original form and then with every instance of “vegetarian” and “vegan” changed to just the abbreviation “veg.” This has the impact of lowering the score (i.e., increasing the readability) for all pamphlets because “veg” has fewer syllables than either vegan or vegetarian. However, this is the ideal way to evaluate the text as it provides a way for the readability to be compared across pamphlets without a bias based on the decision to promote vegetarianism versus veganism.

Although HRC calculated both scores – with and without replacing the terms with “veg” – for the sake of clarity, the body of this report includes only the readability scores using the term “veg.” The full results of both analyses are provided in Appendix C.

Results

The average readability scores placed these materials in the range of the 11th grade reading level or higher, which is three to four grade levels higher than the average U.S. adult. See the table on the following page for the results of all tests for all pamphlets.

SUMMARY OF READABILITY TESTS FOR ALL MATERIALS

	COK	FOA	HSUS	Humane Myth	Live Vegan	MFA	PCRM	PETA	VO, Com-passionate Choices	VO, Even If...	VO, Why Vegan
Flesch-Kincaid Reading Ease	62	60	59.7	50.1	55.4	59.4	65	63.1	61.4	63	65
Automated Readability index	10.4	10.9	12.2	14.8	12.6	13.1	10	11.6	12.3	11.5	10.4
Flesch-Kincaid Grade Level	8.9	9.4	10	12.5	10.6	10.8	8.4	9.6	10.1	9.5	8.7
Coleman-Liau Index	11.4	11.6	12.1	12.5	12.5	11.6	11.2	11.2	11.3	11.2	10.9
Gunning Fog Index	12.5	13.1	13.8	16.7	14.1	14.2	11.5	12.8	13.6	12.8	12.3
SMOG Index	11.5	11.9	12.3	14.2	12.6	12.3	10.8	11.4	11.9	11.5	11.2
Range of Grade Levels	8.9 - 12.5	9.4 - 13.1	10 - 13.8	12.5 - 16.7	10.6 - 14.1	10.8 - 14.2	8.4 - 11.5	9.6 - 12.8	10.1 - 13.6	9.5 - 12.8	8.7 - 12.3
Median Grade Level	11.45	11.75	12.25	14.5	12.6	12.7	11	11.5	12.1	11.5	11.05

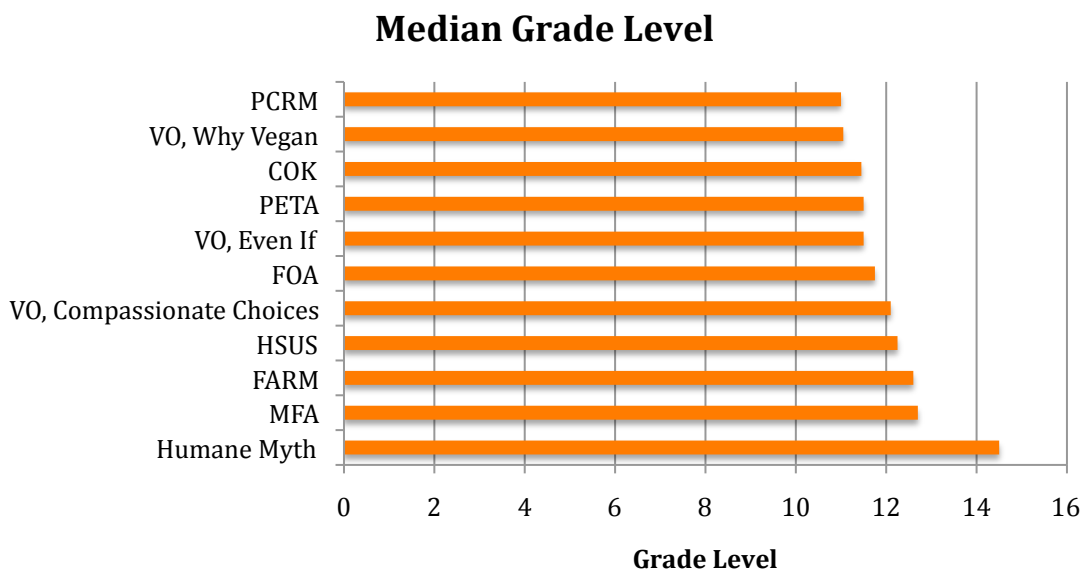
Readability formulas that rely on the proportion of difficult words, which is defined as words with three or more syllables, consistently rated the reading level higher than those that relied on overall syllable counts. The Flesch-Kincaid tests consistently provided the lowest grade level ranking and the Gunning Fog Index was the highest in all cases.

The pamphlet that had the highest readability score was Humane Myth's *Don't Buy the Myth* tri-fold flyer. The Gunning Fog Index rated it at 16.7, which is above the level of college graduates. Its lowest score was the Flesch-Kincaid reading ease score. This score was a 50.1, which roughly translates to a 10th grade reading level. All other tests evaluated this text as being at the reading level of a high school graduate with at least some college education. Again, however, it is important to note that those with some college education typically have a 10th-12th grade reading level.

While this pamphlet is short, it has many complex, long sentences and larger words. This makes it less readable for a number of reasons. Take, for example, this sentence that is indicative of the text:

“Currently, both the animal-using industry and many national organizations that presumably exist for the benefit of animals are propagating the idea that it is possible to use and kill animals in a manner that can be fairly described as respectful or compassionate or humane.”

This sentence contains a number of difficult words –e.g. “presumably,” “propagating” –and requires focus to fully comprehend its meaning. Difficult words are less likely to be recognized by people with less reading experience. Longer, more complex sentences can also lead to an inability to follow the argument being presented, increasing readers’ likelihood of skipping over sentences or not understanding the point of the author.



The most readable of the evaluated texts is PCRM's *Vegetarian Starter Guide*. This pamphlet received a low score of an 8th grade reading level and a high score of being at a grade level of 11.5. While this is still higher than the 7th grade reading level that HRC recommends, the PCRM pamphlet does a good job of conveying information in a clear, simple manner. Rather than creating complex sentences, this vegetarian starter kit opts instead for multiple short sentences. This is ideal because it does not require the reader to process a lot of information for each sentence.

Overall, there was not much variability in the texts, with the exception of *Don't Buy the Myth*. The median grade levels of the other ten pamphlets ranged from 11- 12.7, all being at about the reading level of a high school graduate.

HRC evaluated three pamphlets from Vegan Outreach and all of them shared much of the same text, yet their scores still varied within the range of one grade level. The two that shared the most identical text in the body of the pamphlet, *Even If You Like Meat* and *Why Vegan?*, differed by half of a grade level. This highlights that all text, even small inserts and quotations from experts, should be carefully selected while keeping in mind the goal of clear, effective communication.

Along with Vegan Outreach's *Even if You Like Meat*, COK's and PETA's vegan/vegetarian starter guides were evaluated as having a median grade level of about 11.5. All of these are longer pamphlets that cover a variety of topics, including animal cruelty, health, and food. They each present most content in short sections of just a few paragraphs, which may also help to keep sentences short and concise. However, larger words crop up in all of these materials. For example, PETA's *Go Vegetarian! Go Vegan!* discusses the issue of fish:

"When they are dragged from the ocean depths, fish undergo excruciating decompression—the rapid pressure change often ruptures their swimbladders, pops out their eyes, and pushes their stomachs through their mouths."

Although this one sentence clearly conveys the agony and problem of fishing, an average reader may not understand the full gravity of the situation. "Excruciating decompression" is a key phrase for this sentence, but both are words that will require a strong vocabulary to understand. The phrase is quickly clarified, but there is no guarantee that by this point the reader has not chosen to skim over the section because she or he assumed the sentence was too complicated. The sentence could be stated more simply to improve readability: "Fish go through a rapid pressure change when they are dragged from the ocean depths. This is extremely painful and often ruptures their swimbladders, pops out their eyes, and pushes their stomachs through their mouths."

Friends of Animals' *Vegan Starter Guide* has a median readability score at the upper bound of the 11th grade reading level, receiving a range of scores from 9.4 to 13.1 (with a score of 60 for the Flesch-Kincaid reading ease score). Vegan Outreach's *Compassionate Choices* and HSUS's *Guide to Meat-Free Meals* received similar ranges of scores (10.1 to 13.6 and 10 to 13.8, respectively), with slightly higher median scores of 12.1 and 12.25, respectively.

Toward the upper bound are MFA's *Vegetarian Starter Guide* and FARM's *Live Vegan*. MFA's starter guide received a median grade level of 12.7, with scores ranging from 10.8 to 14.2, with a Flesch-Kincaid reading ease score of 59.4. *Live Vegan*'s Flesch-Kincaid reading ease score was lower (55.4), although the median grade level (12.6) and range of scores (10.6- 14.1) were almost the identical. *Live Vegan* is a short, tri-fold pamphlet, as is the pamphlet with the highest score, *Don't Buy the Myth*. It is probable that having such little space to convey a lot of information encourages the use of longer, more complex sentences that utilize more difficult vocabulary words since the format does not encourage the use of many shorter sentences.

Discussion

Using a number of accepted readability tests, HRC evaluated the readability and grade levels of the text in 11 widely circulated vegan outreach pamphlets. The goal of these outreach materials is to educate audiences about the production of meat as well as the health benefits of veganism. The ability of a pamphlet to convey this information in a convincing manner is dependent on a variety of factors such as the strength of the argument being made, the images presented, the layout, and the support provided (follow-up websites, recipes, etc.). Readability is only one part of the overall effectiveness of a pamphlet, but it is a necessary and foundational component. A pamphlet cannot educate or persuade if its message is not understood.

HRC recommends that these vegan outreach pamphlets be created at a 7th to 10th grade reading level, depending on the target audience. For audiences with less formal education (e.g., a junior high school class), readability should be closer to the 7th grade level (or lower); for audiences with more formal education (e.g., a graduate course), a 10th grade reading level would be more appropriate. Outreach materials should always be designed with the "lowest common denominator" in mind – that is, the materials must be understandable by those members of the target audience who have the least formal education and/or ability to comprehend the content.

All of the pamphlets evaluated in this study can benefit from being written in more simple and concise language. This means that sentences should be short, clear, concise, and avoid any difficult vocabulary words. Many of these pamphlets also rely heavily on block quotes from experts and famous personalities. These must also be selected carefully to simply and clearly convey the intended message.

Next Steps

Improving readability is a first step to improving the effectiveness of vegan outreach literature. Future evaluation of the effectiveness of the text in vegan promotional materials should also review comprehension (how well readers understand a message), which will surely be improved with better readability. In addition, the persuasive aspect of the various arguments must be understood — an unpersuasive argument will not work no matter how clearly and simply it is written. A fruitful follow-up to the present analysis would be focus groups to understand how people interpret, understand, and feel about the messages in these pamphlets.

HRC has conducted limited research on this topic, including focus groups in which we gauged reactions to *Why Vegan* and PETA's Vegetarian Starter Kit. As a next step, we recommend building on this past research by conducting a mix of focus groups and in-depth personal interviews to further evaluate a variety of vegan outreach materials. For instance, conducting a set of eight focus groups with college students would allow us to assess reactions to approximately 16 different pieces of literatures (or, potentially, brief video segments). The feedback would go beyond basic readability to show how the target audience responds to the content, graphics, and arguments presented.

Because understanding how to make effective materials is both important and applicable to a broad group of advocates, HRC recommends a collaborative approach to any follow-up research. By involving multiple vegan outreach groups, the study would benefit from sharing research costs and incorporating the perspectives of a wide range of advocates in the research design. A modest project involving eight focus groups would cost approximately \$8,000 to \$12,000, depending on the actual number of participants, size of the incentive, type of meeting space, etc. This cost assumes HRC would manage the project and moderate the focus groups at a discounted fee.

If interested in conducting focus groups or other research to more closely evaluate the effectiveness of vegan outreach materials, please contact Che Green at the Humane Research Council: cgreen@humanereseach.org or 206-905-9887.

References:

¹ DuBay. William H. (2004). *The Principles of Readability*. Impact Information, Costa Mesa, CA.

² E.g. Friedman, Daniela B. & Laurie Hoffman-Goetz. (2006). "A Systematic Review of Readability and Comprehension Instruments Used for Print and Web-Based Cancer Information," *Health Education and Behavior*. 33 (3): 352-373.

³ <http://www.vegansoapbox.com/readability-rights/>

⁴ DuBay, p. 18

⁵ White, Sheida, Mark Kutner, Elizabeth Greenberg, Ying Jin, Bridget Boyle, Yung-chen Hsu & Eric Dunleavy. (2007). *Literacy in Everyday Life: Results From the 2003 National Assessment of Adult Literacy*. National Center for Education Statistics, U.S. Department of Education. NCES 2007-480. <http://nces.ed.gov/Pubs2007/2007480.pdf>

⁶ DuBay. (2004), pg. 8

⁷ U.S. Census Bureau, CPS Data on Educational Attainment, "Table 2. Educational Attainment of the Population 25 Years and Over, by Selected Characteristics: 2009." Accessed on 12/22/2011. <http://www.census.gov/hhes/socdemo/education/data/cps/2009/tables.html>

⁸ See DuBay. (2004), p. 22.

⁹ <http://www.editcentral.com/gwt1/EditCentral.html>