

Word Clouds and Dendrograms⁵: Results from open-ended questions are usually categorized based on the interpretation of a coder. Different coders may produce different results depending on the complexity of the descriptions and the inherent bias of the coders. In the case of Venus Divine, where a shaving product’s “moisture strips” were at issue, it was critical to count the number of times a moisturizing benefit was expressed. Since this benefit could be expressed in different ways, it was not surprising that the advertiser and challenger had different counts. NAD staff conducted their own count and found a number different from both of them.

Although text analysis tools cannot fully resolve this issue without human intervention, at least some text analysis software can provide statistical information on the frequency of occurrence of words or word combinations much more quickly, and for much larger datasets than humans can evaluate, leaving more time for judgment issues to be made by the human interpreter. This can improve the quality and efficiency of open-ended response reports. Examples of these analyses include word clouds and dendrograms. Improvements due to the development of natural language processing in which word context is considered, will improve the automatic analysis of open-ended responses further².

Text Analysis of the Herbicide/Fertilizer Survey: Figures 1a and 1b shows word clouds for the two matched samples of homeowners. The size of the text in the word cloud displays the frequency with which a word or word combination is expressed. What you find remarkable about these word clouds is how seldom the six-month benefit is mentioned and how similar the word clouds are for the two conditions. Numerically, only 8.6% of respondents mentioned the six-month benefit after viewing the original label and only 10.3% mentioned this benefit with the modified label where the six-month benefit was clearly associated with prevention. These results imply that the six-month benefit did not resonate with consumers and that the particular placement of the benefit was not consequential.

Dendrograms of text show the degree of association among the words used and provide clusters of these associations. Figures 2a and 2b show dendrograms for the words used in the open-ends for both the original label and the modified label acting as a control. The six-month benefit falls into a different group for both surveys than two of the three main benefits (weeding and feeding) and for both conditions it is associated with prevention. Once again, the two conditions appear to be quite similar.

These results mean that the message of the six-month benefit was not strong as it was hardly noticed and certainly not associated with all three of the benefits, as the challenger maintained. If anything, the open-ended associations place the six-month benefit with prevention as it falls in a major cluster with that benefit. It is possible that even if the placement of the six-month benefit was not optimal, knowledgeable home owners who purchase lawn care products or influence their purchase, are aware that contact herbicides and most fertilizers do not last for six months.

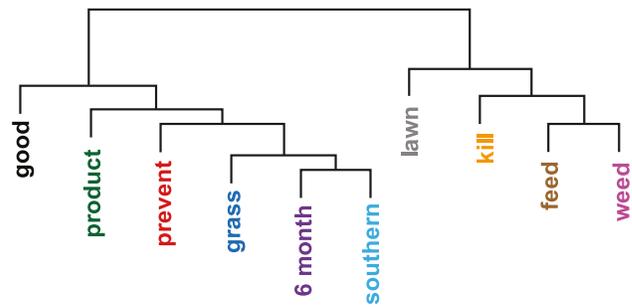


Figure 2a. Dendrogram for the original label.

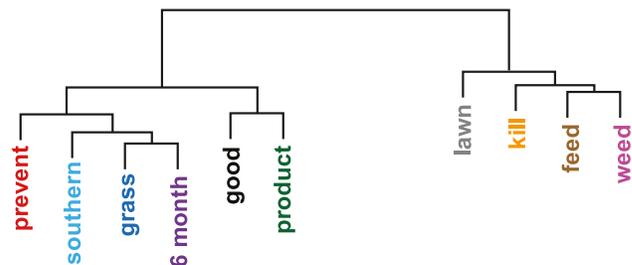


Figure 2b. Dendrogram for the control label.

Conclusion: In these analyses of the open-ended responses, you did not use pre-formed categories into which the open-ended responses were classified. This is how open-ended responses are usually analyzed. Instead, you analyzed word counts and associations and extracted meaning from these statistics using text software tools.

These results put you in somewhat of a dilemma. You agree that the label, as currently constructed, is not literally true as the six-month benefit does not apply to all three of the benefits. You could offer your survey results in defense of the label and probably prevail, but the label could mislead a naïve consumer who knows little about lawn fertilizers and herbicides, or one who scrutinizes labels more carefully and for longer than the average consumer. In the end, you decide to recommend a label change consistent with what the product does. It is not worth the risk of a possible negative NAD outcome, so you recommend conceding to the challenger’s argument, which ends the challenge, and changing the label to communicate what it should have said in the first place.

References and Notes

1. The Gillette Company (Venus Divine® Shaving System for Women) NAD Case #4305 (2005). Challenger: Schick Manufacturing Inc.
2. Pang, B. and Lee, L. (2008). Opinion mining and sentiment analysis. *Foundations and Trends® in Information Retrieval*, 2(1–2), 1-135.
3. This scenario, inspired by an NAD case⁴, is based on an actual survey funded and conducted independently of the advertiser and challenger by *The Institute for Perception and Research Now* for the purpose of method development.
4. Bayer CropScience US (Bayer Advanced 3-in-1 Weed and Feed for Southern Lawns) NAD Case #6033 (2016). Challenger: The Scotts Company, LLC.
5. The word clouds and dendrograms were created by Dr. John Ennis, formerly with *The Institute for Perception* and currently with *Aigora*.