

## A NOSE BY ANY OTHER NAME: DESCRIPTORS AS SIGNALS FOR WINE PRICE

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Because consumers are able to make wine purchasing decisions without having tasted the product itself, external features such as label design, review verbiage, and price serve as important signals for the wine's quality and value. Previous studies have examined the impact of a wine's price on a consumer's derived pleasure<sup>1</sup>, the signals of label design and content<sup>2</sup>, and the ability of wine drinkers to distinguish inexpensive from pricey wines<sup>3</sup>.

Here, I use data from descriptions of more than 3500 wines from recent vintage years, ranging from \$4.99 to \$137.99 in retail price, to find those words that best predict the price category of a bottle. I train a Bayesian filter using price information as classes and individual words as features, and select and sort those words that most strongly predict one class over the other: words common to both sets of descriptors (such as *has, the, of, wine*) were thereby excluded. I then test the model on a reserved set of descriptor data.

My findings indicate that wines priced in the highest category exhibit the following features in high proportion relative to cheap wines: expensive wines are described in terms indicating authenticity or exclusivity (versus accessibility), fullness of flavor (rather than lightness), and with specificity (versus generality). For example, *old, elegant, and cuvee* best predict expensive wines, while *pleasing, refreshing, value* and *enjoy* are associated with the cheapest wines. "Dark" words such as *intense, supple, velvety, and smoky* are highly correlated with expensive wine; *bright, light, fresh, tropical, and pink* predict cheap wines. Expensive bottles see more specific descriptors, including a higher percentage of single fruits and flavors such as *tobacco* or *chocolate*, while inexpensive wines are described in more generic terms: *fruity, good, clean, tasty, juicy*.

In addition, words with the same meaning are preferentially used for expensive over cheap wines: for example, *vintage* is six times more likely to describe an expensive wine; *harvest* is used for cheap wines. While pairing suggestions for expensive wines include *steak* and *shellfish*, inexpensive wines are thought to go better with *chicken*.

The above research has implications for wine pricing and labeling. Causality, of course, is unclear: is it that more expensive (elite, specific, dark) flavors command higher prices, or that expensive wines are described with a verbiage discrete from that used for cheap or "value" wines?

The classifier uncovers, however, two nearly discrete vocabularies for cheap and expensive wines. Indeed, about 65% of commonly occurring words are non-overlapping.

Future work will also consider rating points as a class, and empirically test whether buyers are willing to pay more for wines described with a certain vocabulary.

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<sup>1</sup> Plassmann, H et al, *Marketing actions can modulate neural representations of experienced pleasantness*, 2008

<sup>2</sup> Boudreaux, C and Palmer, S. *A charming little Cabernet: Effects of wine label design on purchase intent and brand personality*, 2007

<sup>3</sup> Goldstein, R. et al, *Do More Expensive Wines Taste Better? Evidence from a Large Sample of Blind Tastings*, 2008