Strange Brew: European Lagers Not So DISTINCT

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Abstract:
We use a triangle test to examine whether tasters can distinguish between three European lagers that are readily available in the US. In two of three tastings, participants are no better than random at telling the lagers apart, and in the third tasting they are only marginally better than random. We conclude that when tasting blind, beer drinkers are unable to distinguish between different European lagers. Consumer loyalty to specific European lager brands is unlikely to be determined by the physical characteristics of the liquid inside the bottle.

Keywords: beer, blind tasting, brands, European lagers

JEL Classification: C90, D01, M30

I. Introduction
Consumers often display loyalty to specific brands. This may depend on differentiation in measurable intrinsic differences in the product itself but can also reflect the power of brand imaging. When it comes to big brand lagers, brand image appears to be an important factor. An experiment from 1964 by Ralph Allison and Kenneth Uhl at the Carling Beer Company shows that brand loyalty has little to do with differences in taste. Allison and Uhl selected five different beer brands that according to expert tasters contained objective perceptual differences. Next, they sent six-packs of beers to more than 300 regular beer drinkers. Each participant received two bottles of each of three different brands. If they previously had indicated that one of the five brands was their regular brand, this brand was contained in the six-pack. Participants were asked to rate the beers. Some of the six-packs had beers with labels, others were unlabeled. When labeled, participants rated the beers differentially, and as expected they rated their favorites higher than other beers. When unlabeled, however, participants showed virtually no preferences for certain beers over others. No beer was judged by its regular drinkers to be significantly better than the other samples. In fact, regular drinkers of two of the beers scored other beers significantly better.

In this paper we continue in the tradition of Allison and Uhl by reporting the results from blind tastings of beer. Instead of testing whether people can distinguish their favorite beer from another beer, as Allison and Uhl, we test whether people can tell big brand European lagers apart when not given any information about the beer in a controlled setting. We apply the triangle test introduced by Amerine et al. (1965) and applied to a number of wine studies since (e.g. Solomon 1990, Weil 2001, 2005, 2007) to three European Lagers that are readily available in the US. In some ways, a blind tasting of beer may be a more stringent test than a blind tasting of wine, since the quality and flavor of beer is considerably more reliable and consistent.

II. Data and experimental setup
The data set consists of 138 individuals who participated in three beer tastings organized by Seamus Campbell and Robin Goldstein in Portland, Oregon late 2009. The participants were unpaid volunteers between the age of 21 and 70, 61% were men, they spent on average $7.7 on a six-pack of beer, and drank from 0 to more than 8 beers a week.

Three well-known and readily European lagers were used, henceforth called beer A, B, and C. In the triangle test, two bottles are poured into four containers. Tasters are served three of these containers, thus necessarily generating a set of twins and a singleton: there are two containers with the same content – the twins - and one container with different content from the other two – the singleton. Next, tasters are asked to identify the singleton.

The triangle test compares tasters’ ability to discern different content against a random guess. With the design described above, a random guess has a 1/3 chance of being correct. Weil (2001, 2005, 2007) applies this test to different categories of wines. We apply the test to different brands within the same category of beer. The test was repeated three times, allowing us to pit each of the three lagers against the others in pairwise comparisons.

In each of the three tastings, two of the lagers were picked and poured into four containers (each beer into two containers). Tasters were then served three containers and told to pick which one was different from the other two. In tasting 1, beer A was in two containers and beer B in one container. In tasting 2, beer B was in two containers and beer C in one container, and in tasting 3, beer C was in two containers and beer A in one container. Each taster only participated in one tasting. For a more elaborate description of the beer tastings, see Campbell and Goldstein (2010).

III. Results
We analyze each tasting separately as well as jointly by pooling the three tastings. Results are presented in a similar manner to that of Weil (2001, 2005).

To test whether our tasters are better than random, we compare the share of tasters who got it right with the share who would get it right if everyone randomly guessed is indicated by the red line. Figure 1 shows that in two out of three tastings, tasters are no better than a random guess at identifying the correct singleton beer. In one of the three tastings, the rate at which tasters correctly identified the singleton is slightly better than a random guess (about 48 percent, compared to 33 percent for a random guess) but even in this setting the majority of tasters still get it wrong. When the three tastings are pooled, the overall accuracy is not significantly different from a random guess, neither statistically or in terms of the magnitude (about 37 percent versus 33 percent for a random guess). These results are supported by the results of a binomial test that tests whether the fraction of correct answers in each of the three settings separately and jointly differs significantly from a random guess. This is not
the case in two of the settings (p=0.73 and p=0.62) or the joint sample (p=0.32), but it is the case in one setting (p=0.017).

Figure 1. Fraction of correct answers in each of the three settings separately and jointly. Error bars are standard error of the mean.

IV. Discussion

Our results suggest that when tasting blind, beer drinkers are unable to distinguish between different European lagers. Consumer loyalty to specific European lager brands is thus unlikely to be grounded in the gustatory experience of the beer. A more likely explanation is that product differentiation in this market primarily reflects marketing efforts by breweries.

It is interesting to note that many producers of mass pale lager brands spend enormous amounts on advertising. According to Advertising Age, Anheuser-Busch spent more than $1.5 billion into domestic advertising, and SABMiller spent a little less than a billion dollars. This is to compare with McDonalds that spent $1.2 billion, or Nike that spent $790 million.

Beer in this sense might be an identity brand (Holt 2004), i.e. consuming a particular brand of beer is part of the identity of some people, and in this case the reason for why a person identifies with a certain beer might have little to do with the actual taste. To what extent this applies to other alcoholic products such as wine remains to be explored, but one could imagine that people drink champagne rather than sparkling wine for similar reasons.

Brand loyalty in this case has little to do with the tasting experience from a blind tasting (a bottom-up process), but rather seems to affect the tasting experience through expectations (a top-down cognitive process). Lee et al. (2006) explore how knowledge of a beer’s “secret ingredient” (vinegar) affects the tasting experience itself. By varying the timing of the information they find that the information has to be received before the actual tasting in order for it to influence the experience.

Our findings add to the growing research on blind tastings. There is an increasing number of examples of how blind tastings challenge commonly held perceptions about consumer preferences with regard to wine. Vintage year wines and reserve bottlings are typically much more expensive than regular bottlings from the same producer and year. Among those who can distinguish between reserve and regular bottlings, only half prefer the reserve, whereas the wines differ in price by an order of magnitude. Many wine drinkers may expect to enjoy more expensive wines more, but Goldstein et al. (2008) show that in large sample of blind tastings tasters on average prefer expensive wines slightly less than cheaper wines. Even experts fail to rate wines consistently: Hodgson (2008) finds that when wine judges unknowingly rate the same wine multiple times they display low within-subject correlations in their ratings.

In sum, we have shown that adult beer consumers are largely unable to distinguish between European lagers in a blind tasting. Consumer loyalty to different brands of European lager, at least the ones we tested, is unlikely to be grounded in the gustatory experience of the beer itself.

References

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Holt 2004