"Low Quality as a Signal of High Quality"
Response to Referee Report 1
Matthew Clements

I thank the referee for the thoughtful comments. My numbered responses below correspond to the referee's numbered comments.

1. Whenever consumers are hypothesized to behave irrationally, my instinct is to try to do one of two things: either specify the exact nature of the irrationality and work from there, or look for a reason why a consumer's instinctive behavior might actually be rational. If consumers (mistakenly) believe that the traditional packaging for wine preserves the wine better than the box, I would have to ask why consumers hold this belief, and more importantly, why the belief would persist over time. More generally, I would certainly agree that consumers instinctively associate traditional wine packaging with high-quality wine. This paper provides a rational basis for that instinct. If we consider why a high-quality wine producer does not package wine in a box, I think it is easy to imagine that consumers would not think that the wine in the box was high quality. But it is more difficult to imagine that consumers would base this assessment on a belief that the traditional packaging preserves the wine better, and that quality attributes tend to be positively correlated; rather, they would tend to associate traditional packaging with high-quality wine because that is what they have observed in the past. Moreover, it is possible to educate consumers about the quality of the packaging, and the segment of consumers that buy wine in a box are certainly aware of the advantages of the packaging. I think that the more significant hurdle that the high-quality wine producer faces is getting uninformed consumers to believe that the wine itself is high quality, not getting consumers to believe that there is an objective sense in which non-traditional packaging is better. This argument is stronger in the case of beer. The convenience of twist-off caps is obvious to the consumer, and the twist-off cap itself is not unappealing to the consumer in any way; but it still tends to be associated with lower quality beer. I also agree with the referee's comment that it is more natural to expect positive correlation between the WTPs for quality in the two dimensions, but there are notable exceptions, and those are what this paper tries to explain.

2. I agree with the referee that this is quite a strong assumption. It is definitely not possible to obtain results using the true distribution. As it is, the model is tractable, but just barely. Specifying a model in such a way as to be able to derive any results at all was a major challenge. It is true that the upper and lower bounds of the distribution do not change when the two WTPs are uncorrelated; but there is more mass near the middle of the distribution than in the tails (it is actually a triangle). The specification of the distribution of WTP for the bundle of high qualities in both dimensions preserves the characteristic that, as the correlation changes from 1 to -1, mass shifts toward the middle of the distribution from the tails. This is the key characteristic that makes the proofs go through. It seems intuitive that the results would still have to hold for the true distribution, although the math becomes intractable.

3. I have included a numerical example in the paper that corresponds to negative correlation. It is possible to find an example for zero or small positive correlation that works also. Much of the discussion is in terms of negative correlation because it is easiest to discuss, but the intuition is the same. As the correlation goes from strongly positive to strongly negative, the price distortion from price-only signaling increases. Depending on other parameters, price-quality signaling may be more profitable at some point, and that point doesn't have to be at a negative correlation.

4. This is a misstatement. The sentence beginning "This is only true if…" should read "This is not true if…," although I think it might be better if I rephrased the whole paragraph.

5. I assume the referee is referring to footnote 6 at the bottom of p. 6. In this model, q_u is exogenous. In the footnote, I am just discussing briefly what would be at issue if this assumption were relaxed, or if this model were embedded in a larger model where the firm chooses q_u.

6. I would be happy to clarify the notation in a revised version of the paper.