**INTRODUCTION**

Imagine you are heading to Christie's to bid on a Monet oil painting, which experts believe will sell for $5 million based on its medium, artist, and so forth. You're unaware of that, and so when you learn that a very similar oil painting by Van Gogh (a peer of Monet) fetched $10 million just the week before, $8 or $9 million for the Monet seems like a bargain – even if that reflects more of the Van Gogh than the Monet.

You’ve experienced the *anchoring effect* - a well-known cognitive bias in which the first number you hear (the “anchor”) can shape your perception of what is normal. This was demonstrated in a landmark experiment by Tversky & Kahneman[[1]](#footnote-1), where participants were given only 5 seconds to calculate the product of numbers 1 through 8, shown either in increasing or decreasing order. It was found those who saw the lower numbers first gave a median estimate of 512, whereas those who saw higher numbers first gave a median estimate of 2250 – a huge difference due to first impressions.

This cognitive bias appears in the fine art auction market, which in 2014 enjoyed a sales volume of £5.1 billion (approximately $7.35 billion in today’s exchange rate)[[2]](#footnote-2) [[3]](#footnote-3).

The primary work on anchoring in art auctions is conducted by Beggs & Graddy (2009), who study this bias across multiple sales of Impressionist and Contemporary art pieces[[4]](#footnote-4). The main idea is that past sale(s) of a painting should serve to bias its current sale, and the authors do indeed find evidence of these anchoring effects, particularly for Impressionist art. In other words, if a Monet sells for an unexpectedly high price at time due to bidding excitement or other unobserved inputs, then at time buyers will internalize that past price as a starting point, thus artificially driving up price for that same Monet.

However, as they note, it is very difficult to identify multiple sales of the same art piece, which is required for their regression model. Beggs & Graddy use only 1-2% of their original data on all painting sales. This research generalizes the model of Beggs & Graddy to capture anchoring effects across similar art pieces (substitutes), i.e. anchoring cross-effects. This is important not only because of the dearth of resale data, but because understanding how similarity across art pieces affects prices allows one to more accurately appraise artwork in light of precedent sales. As we describe later, this issue is of great commercial interest to auction houses, who must continually estimate the value of pieces that are new or have never been brought to auction before.

This research draws upon the original data of Beggs & Graddy (2009), a new dataset of recent assorted art sale constructed specifically to explore anchoring, and insights from our conversations with specialists in the field. We manage to replicate, to some extent, the original work of Beggs & Graddy which tests for anchoring in the context of resale. We propose two different measures of substitution to quantitatively assess similarity across art pieces. With these measures, we find preliminary evidence of anchoring cross-effects in both the data of Beggs & Graddy as well as in our collected data.

This thesis proceeds as follows. In Section I, we give a brief overview of the art auction system and process, followed by a deeper discussion on anchoring and its role in this market. Section II surveys the relevant literature on anchoring in the art market, and shows how our research fits in. Section III describes our methodology, which includes the original regressions of Beggs & Graddy, our expanded regression models, and our measures of substitution. Section IV is a description of the original data of Beggs & Graddy, and explains the motivation behind and nature of our new dataset. Section V gives our results. This includes our replication of the anchoring work of Beggs & Graddy and our overall findings pertaining to anchoring cross-effects. The section also includes three empirical experiments we conducted on known pairs of “similar” artists, recommended by one of the experts we talked with. Section VI discusses directions for future work. Finally, Section VII concludes with a summary of our findings.

1. Tversky, Amos, and Daniel Kahneman. "Judgment under uncertainty: Heuristics and biases." *science* 185.4157 (1974): 1124-1131. [↑](#footnote-ref-1)
2. http://www.christies.com/about/press-center/releases/pressrelease.aspx?pressreleaseid=7712 [↑](#footnote-ref-2)
3. <http://www.xe.com/currencyconverter/convert/?From=GBP&To=USD> accessed 2/20/2015 [↑](#footnote-ref-3)
4. Beggs, Alan, and Kathryn Graddy. "Anchoring effects: Evidence from art auctions." *The American Economic Review* 99.3 (2009): 1027-1039. [↑](#footnote-ref-4)