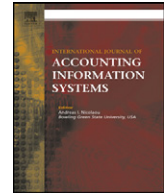




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# Shill bidding: Empirical evidence of its effectiveness and likelihood of detection in online auction systems<sup>☆</sup>



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### ABSTRACT

Auction participants, academic researchers and the popular press continue to express concerns about shill bidding in online auctions. However, the market makers (auction websites) do not behave as if they view shill bidding as a significant risk. Further, important questions about shill bidding remain unanswered: how easily sellers are able to shill bid, how readily such actions can be detected by the market maker or bidding community, whether shill bidding results in significant economic gains, and which shill strategies are most effective. We report the results of nine weeks of online auction trading. We find that a price premium of between 16% and 44% can be achieved by shill bidding. Importantly, shill bidding is quite easy to implement and neither the market maker nor bidders showed any indication that they noticed. We conclude that market makers should make a careful re-evaluation of the risks of shill bidding, since only they are in a position to take meaningful action to prevent it from occurring.

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## 1. Introduction

Anecdotal evidence from current periodicals and blogs suggests that shill bidding is a significant issue for users of online auction sites. For example, a high-profile eBay drop-off store was accused of shill bidding in a series of articles on the PurseBlog.com discussion boards (<http://www.ecommercebytes.com/C/blog/blog.pl?-/pl/2012/5/1337308248.html>, May 2012). eDrop-off sued both the person posting the accusation and PurseBlog.com in California and Illinois. The defendants responded with counter filings in both states.

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A vigorous discussion about the reality of shill bidding ensued as hundreds of responses were posted on ecommercebytes blog pages. Some of the comments, left by traders who clearly had a great deal of experience with online auctions, described their encounters with shill bidding and expressed frustration with the spread of shill bidding and the lack of action taken by the web site's management (see [Illustration 1](#)). The incident was clearly not seen as an isolated example or as unimportant by those posting comments, indicating that shill bidding is viewed as an important problem by auction website users.

The academic literature has also identified shill bidding in online auctions as an important issue. However, empirical research has been limited by the inability of researchers to unequivocally identify transactions that include shill bidding. While some methods to identify shill bidders have been proposed, each requires gathering many different types of data and involves making assumptions that not all find convincing (Kauffman and Wood, 2003; Trevathan and Read, 2006; Nikitkov and Bay, 2010; Dong et al., 2009; Engelberg and Williams, 2009; Ford et al., 2010; Xu, et al., 2010). The crux of the problem is that publically available

#### Illustration 1

Response to ecommercebytes.com blog posting (<http://www.ecommercebytes.com/C/blog/blog.pl?/pl/2012/5/1337308248.html>).

"I will preface this by saying \*\*\*THIS IS ALL MY OPINION\*\*\* BASED ON YEARS OF WORKING WITH T&S AND EXPERIENCE LOOKING AT SHILL BIDDING.

let's just take an objective look at some recent listings (SIC):

item 2210159\*\*\*\*\* (completed)

bidder a\*\*\*a - > almost 400 bids on 300 items with 92% only on this seller

bidder 8\*\*\*g - > 268 bids on 133 items, 87% WITH 51 bid retractions over the last 6 months

bidder a\*\*\*n - > 310 bids on 137 items, 97%

and the best: l\*\*\*l - > 350 bids on 105 items, 100% This bidder's name is also known, has 7 feedback ALL from the above-mentioned seller.

There are a few other bidders that are iffy, but I'm giving those the benefit of the doubt (even though they were 80-ish%).

Next item up for consideration:

item 27097555\*\*\*\*

bidder k\*\*\*c - > 121 bids on 64 items 100%

another appearance by a\*\*\*a - > 393 bids, 301 items 92%

NOW, let's take a look at some random bidders: one of the unluckiest bidders I've seen:

r\*\*\*n (4), 30-Day Summary

Total bids: 777

Items bid on: 144

Bid activity (%) with this seller: 100%

i\*\*\*r, 30-Day Summary

Total bids: 83

Items bid on: 75

Bid activity (%) with this seller: 98%

d\*\*\*a, 30-Day Summary

Total bids: 196

Items bid on: 20

Bid activity (%) with this seller: 100%

And unfortunately, this list goes on ad infinitum. You can click on ANY auction and find this kind of bidding pattern."

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