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## **You Can Bluff but You Should Not Spoof**

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#### **Abstract**

Spoofing is the act of placing orders to buy or sell a financial contract without the intention to have those orders fulfilled in order to create the impression that there is a large demand for that contract at that price. In this article, I deny the view that spoofing in financial markets should be viewed as morally permissible analogously to the way bluffing is permissible in poker. I argue for the pro tanto moral impermissibility of spoofing and make the case that spoofing is disanalogous from bluffing in at least one important regard—speculative trading serves an important economic role, whereas poker does not.

**Keywords** Bluffing · Deception · Financial markets · Poker · Spoofing

#### **1. Introduction**

In July 2016 Michael Coscia, the former head of futures trading firm Panther Energy Trading LLC, had the dubious honor of being the first person in the US to be convicted and to receive a three-year prison sentence for spoofing, the act of placing orders to buy or sell a futures contract without the intention of having those orders fulfilled.<sup>1</sup> Should Coscia have been sent to jail? This article explores this question, ultimately answering in the affirmative. However, the focus in this article is neither Coscia himself nor the legality of spoofing. Instead, I argue against the common perception that speculative financial trading, and futures trading more narrowly, is analogous to

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<sup>1</sup> Prior to 2010 there were no explicit legal restrictions on spoofing in the US. Spoofing was only made explicitly illegal in the US in 2010 under the Dodd-Frank Wall Street Reform and Consumer Protection Act, as part of an effort that began after the financial crisis of 2008 to curtail a variety of problematic behaviors in financial futures markets (Burr 2014; Lee, Eom, and Park 2013; US Government 2010).

playing poker for money, and that just like bluffing in poker, spoofing in trading is also morally permissible.<sup>2</sup>

In poker, bluffing refers to a bet or raise when the player does not believe she has the best hand, in the hope of getting her opponent with a better hand to fold. In trading, spoofing is the act of placing orders to buy or sell a financial contract without the intention to have those orders fulfilled in order to create the impression that there is a large demand for that contract at that price. The potential analogy between speculative financial trading and online poker is too obvious to ignore. What are some upshots of drawing an analogy between poker and trading? One upshot is that we can look to poker to get insight regarding the proper way to address questions on trading. Whether spoofing is a permissible strategy is one question that has been addressed by arguing from the permissibility of bluffing in poker. On this line of reasoning, if bluffing is permissible in poker, why would we not think that the spoofing is permissible in trading? If these two strategies are analogous, then the decision to outlaw spoofing in trading would strike us as strange. After all, bluffing is an integral and permissible strategy in the game of poker, and if spoofing in trading is analogous to bluffing in poker, it too should be viewed as permissible. This is the view held by Cooper, Davis, and Van Vliet (2016), which I argue against. I make the case that spoofing is disanalogous from bluffing in at least one important regard—spoofing is harmful for speculative trading, which serves an important economic role, whereas bluffing is not similarly problematic in poker, which does not serve any important economic role.

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<sup>2</sup> Throughout this article I discuss permissibility and impermissibility. As I make clear from the start, the argument is about the pro tanto moral permissibility, rather than permissibility all things considered. Thus, the focus is not on whether spoofing is legal or illegal, or whether we as a society should sanction those who spoof, but rather on whether spoofing should be considered an act which is unethical for an individual to engage in. In the rest of the article I will simply discuss permissibility with the intention that it is understood to mean pro tanto moral permissibility.

There can be a broader implication to this argument. Spoofing in trading is one of the most charitable contexts in which one might argue that bluffing in business is permissible. Once we find a relevant disanalogy between financial trading and playing poker, we can extend the disanalogy to other areas of business. If spoofing is pro tanto morally impermissible in trading, the most charitable context for the analogy, it follows that bluffing in any business transaction that has a similar economic value to that of speculative trading is similarly pro tanto impermissible. Intentionally trying to deceive in a business transaction, even implicitly, is pro tanto impermissible.

I begin by explaining in the next section what spoofing in financial markets is. Then, in §3, I examine arguments that trading is analogous to playing poker, and consequently that spoofing is an integral part of trading just like bluffing is an integral part of poker. I focus in particular on Cooper et al.'s arguments regarding traders' consent and parity between traders. In §4 I argue that an important disanalogy arises since speculative trading serves a broader economic purpose that poker does not. Contrary to Cooper et al., I maintain that spoofing hinders markets' ability from serving this economic purpose. Lastly, in §5 I conclude and make the case that this line of argument can perhaps be expanded to argue against the permissibility of bluffing in business in general.

## **2. What is Spoofing?**

According to the Dodd-Frank Wall Street Reform and Consumer Protection Act, spoofing constitutes “bidding or offering with the intent to cancel the bid or offer before execution” (US Government, 2010, p. 1739).<sup>3</sup> At its most basic, spoofing is an attempt to disseminate

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<sup>3</sup> As there was disagreement about what precisely constitutes spoofing, it was clarified by Commodity Futures Trading Commission in the Federal Register, Volume 76 Issue 53 in March 2011:

misinformation about the current state of the market by placing orders to buy (sell) a financial contract without the intention of having those orders fulfilled. The reason to do this is to create the false impression that there is a large demand for that contract at that price, hopefully causing others to be more willing to buy (sell) at that or a higher (lower) price. Alternatively, placing such an order and letting it remain for some period of time, only to later cancel it, in the hope that others will think that the demand has dropped (risen), and they will then be willing to sell (buy) at a lower (higher) price. Not everyone understands spoofing similarly, and different names and different taxonomies might be used. For example, ‘layering’ refers to putting a large amount of orders on one side (either buy or sell) at several *different* price levels, whereas ‘order stuffing’ refers to placing large orders, but only at one price level. Nevertheless, the differences between these strategies do not bear on the argument made here and they will be categorized as different sub-types of spoofing.<sup>4</sup>

There are legitimate reasons to cancel orders in ways that are almost entirely behaviorally similar to spoofing. Traders might change their minds about a given trading strategy or they might simply be reacting to changes in market conditions. Since the difference between a

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“Spoofing” also includes, but is not limited to: (i) Submitting or cancelling bids or offers to overload the quotation system of a registered entity, (ii) submitting or cancelling bids or offers to delay another person’s execution of trades; and (iii) submitting or cancelling multiple bids or offers to create an appearance of false market depth. (US Government, 2011, p. 14947)

Two years later, in May 2013, this interpretation was amended in Federal Register Vol. 78, No. 102 and four nonexclusive examples of possible situations for when market participants are engaged in “spoofing” behavior were provided:

including: (i) Submitting or cancelling bids or offers to overload the quotation system of a registered entity, (ii) submitting or cancelling bids or offers to delay another person’s execution of trades, (iii) submitting or cancelling multiple bids or offers to create an appearance of false market depth, and (iv) submitting or canceling bids or offers with intent to create artificial price movements upwards or downwards.(US Government, 2013, p. 31896)

<sup>4</sup> There also are other forms of potentially problematic behavior, such as pinging and fluttering. Pinging is the practice of placing orders in the market to find out price limits on orders that are not publicly visible, and fluttering refers to the practice by high frequency traders of placing large volumes of orders and immediately cancel them in order to capture the few orders that are beyond the bid-ask spread (Burr 2014). Both of these strategies differ from the spoofing ‘family’ in that they are ways of capturing trades or gathering information, rather than a way of disseminating misinformation.

spoofing order and a legitimate order that ends up getting canceled is mostly one of intention, estimating the amount of spoofing actually occurring is quite difficult.<sup>5</sup> One clearly discernable fact regards the ratio between orders placed and orders fulfilled. According to the US Securities and Exchange Commission, the trade-to-order volume ratio for Exchange Traded Products (ETPs) averaged around 0.2%, meaning that the overwhelming majority of orders placed were not fulfilled.<sup>6</sup> Yet what percentage of those unfulfilled orders were legitimate and what percentage were spoofs is difficult to determine with confidence. Because distinguishing between spoofing and legitimate behavior is so challenging, effectively prohibiting spoofing without barring other legitimate trading practices is very difficult. In fact, even though Coscia was found guilty, there have been several other high publicity cases in which traders and trading firms charged with spoofing were found not guilty (CFTC v. Wilson), or settled out of court (CFTC v. Oystacher).

Nevertheless, spoofing was explicitly banned in 2010. While the moral standing of spoofing (or any other activity) need not rest on its legal standing, often (though not always) activities that are illegal are also considered unethical. Consequently, we might ask why would we have reason to think that spoofing is a morally impermissible trading strategy. The rest of this article is devoted to answering this question. In the next section I criticize the argument that it is a morally permissible strategy in trading—the argument from the analogy to poker, and in §4 I provide a positive argument for the impermissibility of spoofing in trading—spoofing hinders market effectiveness.

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<sup>5</sup>Lee, Eom, and Park (2013) define spoofing orders behaviorally as a “bid/ask with a size at least twice the previous day’s average order size and with an order price at least 6 ticks away from the market price, followed by an order on the opposite side of the market, and subsequently followed by the withdrawal of the first order” (232). Lee et al. found that in the Korea Exchange about 0.81% of the total orders fit their definition of spoofing.

<sup>6</sup> <https://www.sec.gov/marketstructure/research/highlight-2013-01.html#.V35sZzWeA2y>

### 3. The analogy between bluffing and spoofing

A basketball player faking a shot attempt to get his defender to jump, thus enabling the player to drive to the hoop unopposed is deceptive, but the player who executes it well is considered a skillful player. Similarly, a soccer player that creates the impression that she is about to kick the ball to the goal only to set her teammate up for an easy header is being deceptive in a laudable way. There would seem to be nothing morally wrong in being deceptive in a game as long as it is within the rules (or the unwritten norms) of the game.<sup>7</sup> Carr (1968) famously draws the analogy between business and games, and argues that both demand special strategy and a special ethics, different from those that rule personal life (144).<sup>8</sup> There is much to be said in defense of the analogy between business and games. Both are often competitive endeavors, both can have winners and loser, and both operate under a mixture of formal and informal rules.

While some of these arguments focus both on games more generally and on business more generally, I narrow the scope in this discussion to one type of game—poker—and one type of business practice—speculative trading. This focus avoids some of the problems a more general analogy might face. Koehn (1997) raises many disanalogies (nine in total) between games and business, yet her approach does not sufficiently take into account the fact that both ‘games’ and ‘business’ are broad categories (recall Wittgenstein’s (2009) famous use of ‘game’ as his example for family resemblance), and there are a variety of examples of games and

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<sup>7</sup> Many forms of deception are either explicitly forbidden or frowned upon (e.g. playing with a marked deck in poker or “diving” in soccer). I do not go into detail trying to differentiate between permissible and impermissible deception in games because the focus of this article is trading and business more generally.

<sup>8</sup> According to Carr, in business, as in poker, bluffing, as long as it is in compliance with the law, is a permissible business strategy (153). Carr’s argument is unconvincing because, among other reasons, it merely reduces morality to law. See (Carson 1993; Allhoff 2003) for detailed critiques of Carr’s argument.

businesses that do not fit nicely into Koehn's categories of traits.<sup>9</sup> Furthermore, what matters is not whether disanalogies can be drawn between two things, as in the case of games and business, but rather whether these disanalogies are relevant for the argument one wishes to make.<sup>10</sup> Since our focus here is on the moral permissibility of spoofing, we must focus on those analogies and disanalogies between the practices of bluffing in online poker and spoofing in trading in financial markets that might be relevant to the question of whether spoofing in trading is permissible analogously to bluffing in poker.

In both online poker and trading there is no outright communication between players or traders, in neither are any verbal statements made, and no explicit falsehoods can be uttered.<sup>11</sup> In neither poker nor trading do the players or traders see the other players or traders, and so cannot interpret any information from body language or facial expressions. The only cues regarding intent are the size of the bet a player places in poker and the size of the orders a trader places in the market. The information available to players and traders about others' intentions are highly limited since both are usually conducted anonymously, online, at a distance, with no verbal or non-verbal interpersonal cues. Since information available to poker players and financial traders is so limited, their revealed behavior in placing bets and orders counts for so much. Because the analogy between poker and trading, and between bluffing and spoofing, seems so apt, it provides the strongest case study for the more general claim that bluffing in business is just as permissible as bluffing in games.

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<sup>9</sup> For example, as Koehn herself mentions, there are some games that are not adversarial, which is according to her a trait of games but not of business. Koehn provides the example of a treasure hunt, but another example might be the board game "Pandemic" which is representative of a cooperative board game genre in which players aim to achieve some joint goal.

<sup>10</sup> For an in-depth discussion see (Unger 1996).

<sup>11</sup> While there still exists some exchanges in which some trading is conducted as an open outcry system (e.g. NYSE) where traders are able to talk with one another, the vast majority of trading is now conducted electronically.

Since Carr's (1968) famous inference from bluffing in games to bluffing in business, several others have made a more convincing use of the analogy. Carson (Carson, Wokutch, and Murrmann 1982; Carson 1993), for example, argues that bluffing is permissible in games because there is no warrant of truth. Carson draws an analogy between the game context and cases of negotiations between what he calls "hardened" negotiators, for which it is commonly understood that in statements regarding such things as reservation prices (though not about, for example, the existence of other offers) there is no warrant of truth among the negotiators.<sup>12</sup> According to Allhoff (2003), bluffing in games is permissible because "players involved in the game actually *endorse* the practice of bluffing" [emphasis in original], and similarly participants in business endorse the practice of bluffing in business (286-7). In the context of games, it is possible to accept both Carson's warrant claim and Allhoff's endorsement claim. However, neither seem very compelling in the trading context. Since traders do not make any explicit claims, that traders warrant the truth of their claims is irrelevant, and as Carson (2005) makes clear in his response to Allhoff, to think that *all* participants endorse bluffing in business is clearly mistaken.<sup>13</sup>

The way Cooper, Davis, and Van Vliet (2016) draw their analogy between poker and trading in the particular domain of high frequency trading, or algorithmic trading, is the most relevant for the purposes of the argument made here.<sup>14</sup> This domain is sufficiently close to that of

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<sup>12</sup> Carson has another line of reasoning, that of self-defense. I discuss this line of reasoning in the context of iceberg trading.

<sup>13</sup> Carson (2005) offers three additional criticisms of Allhoff's (2003) argument as well.

<sup>14</sup> The way Cooper et al. frame their discussion makes it seem as though the issue at hand is whether it is unethical to generally engage in High Frequency Trading (HFT). Since the permissibility of non-deceptive algorithmic trading strategies is not being challenged, framing the debate as addressing the ethics of high-frequency trading in general is somewhat misleading. What is being challenged is spoofing in particular, which is open to trading algorithms and human traders alike.



speculative trading more generally, which includes both algorithmic trading and human traders, that their arguments mostly apply to both.

According to Cooper et al., in poker some competitive practices are considered fair and some unfair. Elaborating on this Cooper et al. write:

The rationale for this distinction in poker is pretty clear. Bluffing is hard to regulate and adds to the excitement of the game. In contrast, playing against a marked deck takes much of the fun out of poker, an important consideration for those of us, perhaps the great majority of poker players, for whom fun is the chief reason to play... A game is fair if, and only if, all participants, knowing its rules, would choose to play. To cheat (to act unfairly) is to act contrary to the rules of a fair practice (whether a game or other cooperative activity) (Gert 2005, 196-197). Bluffing in poker is not cheating because the rules of poker allow bluffing. (2)

Cooper et al. agree that there is an ethical presumption against deception in general and that, all else being, equal high-frequency traders should not intentionally mislead low-frequency traders (13). Nevertheless, they present three reasons to all-things-considered “treat many deceptive practices of high-frequency traders as we treat bluffing in poker” (13): traders’ consent, the invisible hand, and parity between traders.<sup>15</sup>

Cooper et al.’s first argument is that traders in financial markets enter the market knowing that deception occurs, and so implicitly consent to be subjected to this deception.<sup>16</sup>

This is a similar defense to their necessary and sufficient conditions for fairness in games: “A game is fair if, and only if, all participants, knowing its rules, would choose to play” (2).

As Koehn (1997) argues, even if in games everyone knows all the rules and when they consent to playing such consent can be seen as informed, the same cannot be said about business. There are many instances in which people do not know the tacit rules that stipulate that deception

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<sup>15</sup> Cooper et al.’s second argument in favor of treating spoofing in trading like bluffing in poker relies on their argument that it tends to promote market effectiveness, which will be discussed in detail in the next section.

<sup>16</sup> Cooper et al. correctly claim that deception that utilizes dark pools is unethical (p. 10). However, if we were to accept Cooper et. al.’s claim that people entering markets knowing that spoofing exist are treated fairly, with the proof being that people enter such markets (p. 13), then the same can be said about dark pools. Traders supposedly enter markets knowing that there are dark pools to which they have no access to.

is permissible in this domain. This is clearly true for any novice trader who begins trading, and does not learn until they gain sufficient experience that many of the orders they see in the books are merely spoofs. Even veteran traders have only a general sense that much of the orders they see are spoofs. Yet even if they are aware of the spoofing, this does not imply that they condone it.

Even if we knowingly and voluntarily choose to play a game or trade in the market, this does not necessarily mean we accept all the injustices and unfairness in the system as legitimate. Participating in an activity does not entail full and voluntary consent to the rules governing that activity. We might have reasons to participate even though we acknowledge that the activity is fundamentally unfair. In the context of games, the requirement that participants choose to play only if they know the rules seems a good necessary condition for fairness. But it is not sufficient. In the context of games, imagine a younger sibling who is allowed to play with G.I. Joe's with their older brother, but only under the condition that they only play with Cobra (the bad guys). The younger sibling knows full well that this entails that they must always lose (the good guys *always* win). Nevertheless, the younger sibling voluntarily enters the game knowing the rules, because if they want to play at all, they have to play a game they know is unfair.<sup>17</sup>

Outside of games, a person might move into a neighborhood knowing that it is in an area with a high level of crime, because it is the only residential area within commuting distance from their job that the person can afford. This does not mean they consent to being subject to crime. They might, once they move there, lobby the police to conduct better enforcement, initiate a neighborhood watch, or get a dog for security purposes. Those traders who voluntarily enter a market with deception need not condone it. They might simply accept that all financial markets

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<sup>17</sup> This example is based on personal experience.

involve deception and as long as they need financial markets, they must accept these conditions. They might try to change them, by lobbying to Congress to make it illegal, getting the exchange to regulate its members, or invest resources to generate tools that help detect and guard against such behavior.

Cooper et al.'s third argument focuses on the importance of parity among traders that is similar to the parity that we expect to be inherent in the rules of a game. In games we wouldn't usually accept players being subject to different rules. Permitting some players but not others to play with a marked deck in poker is a clear lack of parity and contrary to the spirit of poker. They draw an interesting parallel between spoofing and iceberging (breaking up a large order into smaller orders that are entered into the market over some period of time), and argue that they are equally deceptive. In what is intended as a *reductio ad absurdum*, they argue that if spoofing is impermissible, iceberging should be impermissible as well.

Because we can distinguish between private and public information, and defensive versus offensive deception, we have reason to deny this equivocation.<sup>18</sup> In iceberging the relevant information regarding the overall size of the order a trader wishes to place is the trader's private information to dispense as she sees fit. That the trader breaks up her orders can indeed be considered deceptive. However, it ought to be considered defensive deception that merely protects the trader's interests regarding information that she is not under any obligation to divulge. In the case of spoofing, the relevant information is public. All traders have access to the bid and ask quantities in the market. When a spoofer tries to distort the information regarding bid and ask quantities by placing orders that they have no intention of having fulfilled, they are trying to manipulate something that is in the public domain. This is not their information, and

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<sup>18</sup> For a more in-depth discussion of these distinctions, see (Strudler 1995, 2005, 2010; Carson 1993, 2010).

they have no claim of ownership. This ought to be considered offensive deception, since the trader is trying to benefit himself by harming others through distorting the public information he has no claim to. Those that rely on such information have a legitimate grievance.

Nevertheless, the focus here is on spoofing, and if it turns out that iceberging is unethical as well, then one person's *modus ponens* can be another's *modus tollens*. If both strategies are ethically on par, we have a prima facie reason to treat them the same. Just as we might wish to make both legal, we might wish to make both illegal. Of course, if there are other pragmatic factors involved, it might make it the case that it is appropriate to ban one and not the other.

The arguments that trading in financial markets is analogous to poker, and consequently that spoofing is permissible in trading analogously to bluffing's permissibility in poker are not very compelling. Even if bluffing is permissible in poker because all players endorse the practice, because no player expects the other to warrant the truth of their claims, because players consent to being exposed to bluffing, or because bluffing maintains parity among players, none of these arguments convincingly carry over to the context of speculative financial trading. In the next section, I turn to argue that an importantly relevant disanalogy between poker and speculative trading exists—the latter provides an important economic service, while the former does not. Consequently, even if bluffing is permissible in poker, spoofing is impermissible in trading.

#### **4. Spoofing and market effectiveness**

If financial speculative trading seems more analogous to poker than business in general, then narrowing our focus even more, futures trading is commonly considered (incorrectly) a

quintessential gambling market.<sup>19</sup> In futures trading no actual commodity is being bought or sold and prices are derivative from those in the commodity markets. Yet even such detached and derivative markets, which seem to many who do not understand them like nothing more than sophisticated gambling arenas, have an important economic role. According to the ‘traditional price-insurance’ theory, futures markets allow dealers in commodities to secure a future price for the commodity they intend to either buy or sell, thus acting as a form of price insurance. This view goes back to the first days of the Chicago Board of Trade, the first to list a futures contract in 1868. As Levy (2012) writes:

Corporations like the Chicago Board of Trade thus centralized, systematized, and socialized risk. This was a new argument [at the time]. Organized commodities futures exchanges first mounted an explicit social defense of financial speculation. Speculation was risk management. (249)

There are several competing theories as to why futures markets serve an important economic role (Working 1953; Johnson 1960; Stein 1961; Ederington 1979; Telser and Higinbotham 1977; Telser 1981). Nevertheless, they all agree that futures markets enable traders to either increase or decrease their exposure to risk in an organized setting. To perform this function effectively future markets require two ideal types of traders—hedgers and speculators. When hedgers enter the market to offset a purchase (sale) of a commodity in the cash market by selling (buying) a similar contract in the futures market, they reduce their exposure to risk. Hedgers create a ‘spread’ between the current and futures price of a commodity, which is less volatile than holding each contract outright, “for the express purpose of being relieved from estimating future price movements” (Hawtrey 1940, 203). While prices do not and need not

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<sup>19</sup> This can be seen in newspaper articles such as “Trading vs. Gambling: The Age Old Question” in the Huffington Post ([https://www.huffingtonpost.com/daniel-p-collins/trading-vs-gambling-the-a\\_b\\_3685418.html](https://www.huffingtonpost.com/daniel-p-collins/trading-vs-gambling-the-a_b_3685418.html)) or “What’s the Difference Between Gambling and Trading Again?” in the Atlantic (<https://www.theatlantic.com/business/archive/2013/03/intrade-shuts-down/317532/>).

move in perfect unison, their comparative volatility is less than each contract's outright volatility on its own. By contrast, when speculators enter the market in order to attempt to buy (sell) a futures contract when the price is low (high) and sell (buy) it when the price rises (drops), they increase their exposure to risk. According to Hawtrey, "[t]he speculator need not be particular as to what future date he deals in. And he need not make any estimate of the extent of the rise or fall, except that it will be considerable enough to be worth his while" (203-4).

A futures market without hedgers would result in a zero-sum game among speculators (Stout 1995). In such a market a dollar a speculator gains is a dollar another speculator loses. Such a market would need a constant infusion of new speculator money (either from existing losing speculators or 'fresh fish') for some speculators to make a profit (Working 1953, 319-20). But more importantly, a speculator-only market plays no role from a broader economic perspective, or at least no role (if any) beyond that which poker games provide.

Hedgers, by contrast, do not in principle need speculators, as they could hedge each other (Angel and McCabe 2013; Stout 1995). But in practice, a hedger-only market would tend to lack sufficient liquidity to play the role hedgers need it to play. Speculators provide a valuable service as market-makers and liquidity providers. By being active in the market and willing to trade, speculators assure hedgers that at any given moment there will be a market for them to hedge in. Hedgers entering a speculator-free markets will need to wait for hedgers interested in taking the opposite position. Such an illiquid market keeps the hedgers exposed to risk for longer than they wish. Consequently, according to Goss and Yamey (1976):

It is necessary that the market for the commodity is extensive enough to attract and sustain a large body of non-hedging traders (scalpers and other speculators) so that the liquidity of the market and continuity of trading can be maintained. In their absence, the cost of placing and lifting hedges and of making speculative trades is so high as to reduce the volume of hedging and speculation. The smaller the market... the wider the gap between a market trader's bid and asked prices. (45)

The benefits of futures markets also convey to society at large. Having a liquid platform to which hedgers can turn to reduce their own risk increases the incentives these hedgers have to invest in the base assets that correspond to the futures contract they use to hedge their risk. Investing more heavily in this base contract, be it in corn, steel, or interest rates, stimulates economic growth and overall societal well-being. Cooper et al. do acknowledge that financial markets differ from games like poker since financial markets, but not poker, have a useful role in the broader economy. Consequently, it seems that they themselves do not take the poker analogy as seriously as might first appear. As Cooper et al. emphasize several times, effective financial markets are in society's interest:

Society (that is, all of us, even those who do not trade or invest) should desire effective financial markets insofar as such markets tend to make life better for everyone, for example, by fostering economic growth or giving us immediate access to our savings. (6)

The role financial markets have, as Cooper et al. put it, is “to provide an effective place for investors to buy and sell financial instruments” (16). Understanding financial markets as having an important role that benefits society as a whole gives us reason to treat them differently from mere games. The question, then, is whether spoofing contributes to overall market effectiveness or hinders it. While Cooper et al. argue that prohibiting spoofing would hamper market effectiveness, I argue that the justification for financial markets makes it clear that spoofing subverts their role.

Cooper et al. claim that deceptive practices, such as spoofing, promote market effectiveness and eliminate inefficient trading strategies (read strategies that are sensitive to spoofing). They argue that spoofing is a form of what (Davis, Kumiega, and van Vliet 2013) call “quality arbitrage”—the evolutionary process in algorithmic trading (p. 11). This is a sort of continuous arms race process through which firms build better algorithmic trading strategies that spoof more effectively and are less prone to be tricked by spoofing. They argue that this

“continuous cycle of quality arbitrage is, *all else equal*, the best way to promote society’s interest” [emphasis added] (p. 11). While this might be true, not all else is equal.

Cooper et al. acknowledge that some ‘evolutionary processes’, such as hacking or burglary, are not always desirable from a societal standpoint. Nevertheless, they claim that in the case of spoofing quality arbitrage promotes society’s interest, whereas in the case of burglary or hacking, quality arbitrage does not (pp. 11-2). They offer two reasons not to allow regulations to curtail the “evolutionary process” in the case of spoofing, yet accept that similar arguments can be made in defense of hacking or burglary (12). Cooper et al.’s response is that as “long as the competitive activity of suppliers of liquidity (that is, high-frequency traders) promotes effective financial markets overall, society (and regulators) should, all else equal, not treat high-frequency traders like hackers or burglars.” (12)

But high frequency traders are not treated like hackers or burglars, and the analogy is not apt. The claim here is that those high frequency traders (and any trader) who engage in unethical (and unlawful) activities behave like other criminals who do so, e.g. hackers or burglars. The analogy should not be between high frequency traders and hackers, it would more appropriately be between high frequency traders and computer programmers. Some of the former engage in unethical spoofing and some of the later engage in unethical hacking. Thus, it would seem that Cooper et al. argument is that as long as programming benefits society overall, we should leave alone those programmers who hack. But this is clearly fallacious. We can recognize that computer programming benefits society overall, while recognizing that hacking specifically does not.

Spoofing, specifically, does not increase market efficiency. What if we did not trust the financial exchanges to accurately and truthfully report trades? What if we did not trust them to



do so in a timely manner? Spoofing undermines traders' ability to trust in the reliability of the information traders see before them. Traders who are deceived by spoofing are forced to make their trading decisions based, not on the actual state of the market, but on a distorted picture of the market that the spoofer imposes on them. The spoofed trader cannot obtain for herself the situation in which she has a more accurate picture of the market, and consequently might engage in a trade that she would avoid were she not spoofed. This is true even though traders are generally aware that spoofing behavior exists. Traders know that some orders in the market are spoofs, however they do not know which and in what quantities.

In the case of spoofing, the information sought after is public. All traders have access to the bid and ask quantities in the market. When a spoofer tries to distort the information regarding bid and ask quantities by placing orders that they have no intention of having fulfilled, they are trying to manipulate something that is in the public domain. Spoofing undermines informational parity and increases informational asymmetry in favor of the spoofer (Akerlof 1970), since the spoofer knows her bid or offer does not represent a genuine bid or offer, whereas others do not. Spoofing is meant to create the illusion of a deeper market than actually exists (in the direction that benefits the spoofer). When spoofing is prevalent the quantities of placed bids and offers in the market lose their usefulness as informational cues regarding the behavior in the market.

Spoofing takes publicly available information and reduces its reliability, moving the markets further away from a state of perfect information. Spoofing, by disseminating misinformation, reduces the markets' effectiveness as a forum in which financial instruments can be most efficiently traded. It causes traders to be misinformed about the real supply and demand of financial contracts, and by basing their decisions on false information they have no choice but to expose themselves to potential harm. There are many instances in which traders know that the

information they derive from markets is inaccurate or incomplete. However, the information spoofing distorts is different from other ways in which information is inaccurate, because it is distorted *intentionally*. An agent—the spoofer—is intentionally involved in deteriorating other traders' ability to trust the market.

If futures markets were merely a game, whether speculators are deceived would not matter much. But financial markets in general, and futures markets in particular, serve an important economic role. Within these markets, speculative traders provide the necessary liquidity that enables these markets to function efficiently. When one reduces the reliability of the information speculative traders have, one undermines their ability to provide liquidity to the markets, resulting in future markets less effectively fulfilling their economic role.

## **5. Conclusion**

Like future markets specifically, and financial markets more generally, business at large is not merely a game. All of these serve important economic functions. Perhaps it is true that some domains of business could be done away with and it would matter very little for the smooth functioning of society at large. Nevertheless, in this article I have made the case that what is considered by many as the quintessential gambling game akin to poker, is actually not analogous to poker in the relevant way. Justifications for deception in poker are that players consent to it, expect no warrant of truth, endorse the practice, or that it maintains parity among players. But analogous justifications for spoofing in markets do not work. The analogy between financial markets and poker falls apart in the context of the permissibility of spoofing and bluffing because financial markets, but not poker, serve an important economic role.

When we recognize that the analogy between poker and trading fails to legitimize spoofing, we might justify the permissibility of spoofing in markets for other reasons, as do Cooper et al. However, reducing the trustworthiness of public information reduces the effectiveness of market. If everyone refrained from spoofing financial markets in general, and futures markets in particular, would be better able to serve an important economic function of reducing transaction costs between individuals seeking mutually beneficial exchange.

If the analogy between poker and trading fails to legitimize spoofing in what should be the easiest case, then we might infer that such an analogy between bluffing in poker and bluffing in business in general will fail as well. Such a conclusion would have profound repercussions for how business ought to be conducted. Since business, contrary to games, generally serves an important economic function, bluffing in the business context should similarly be regarded as pro tanto impermissible. Claiming you have competing offers when you do not, pretending your product is of higher quality than it actually is, using deceptive marketing campaigns, all these would be pro tanto impermissible since they reduce people's ability to conduct business in a way that is socially optimal. Of course, since such behavior is so prevalent, one might be at a considerable disadvantage if they avoid all such behavior. But doing the morally right thing often puts one at a disadvantage. This does not detract from the conclusion that while it might be permissible to bluff in poker, it is pro tanto impermissible to spoof in trading, and perhaps that it is similarly impermissible to bluff in business more generally.

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