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THE STATE OF SOUTH CAROLINA
IN THE SUPREME COURT

SC SUPREME COURT

APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas
The Honorable R Markley Dennis, Jr , Circuit Court Judge

C A No 2009-CP-10-001551

Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John T Willis

Respondents,

v

Town of Mount Pleasant

Appellant

INITIAL BRIEF OF APPELLANT

HENRY D McMASTER
Attorney General

JOHN W McINTOSH
Chief Deputy Attorney General

ROBERT D COOK
Deputy Attorney general

C HAVIRD JONES, JR
Senior Assistant Attorney General

MARY FRANCES JOWERS
Assistant Attorney General

P O Box 11549
Columbia, SC 29211
(803) 734-3680

ATTORNEYS FOR THE APPELLANT

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STATEMENT OF ISSUES ON APPEAL

I

Did the Circuit Court err in reversing Respondents' convictions for illegal gambling by concluding that § 16-19-40, in place for over 200 years, is inapplicable to their conduct?

II

Did the Circuit Court err in reversing Respondents' convictions for illegal gambling by concluding that § 16-19-40(a), in place for over 200 years, is unconstitutionally void-for-vagueness and overbroad?

STATEMENT OF THE CASE

Respondents were charged with illegal gaming pursuant to S C Code Ann Section 16-19-40. A bench trial was held before the Honorable J Lawrence Duffy, Municipal Judge of the Town of Mt Pleasant, on February 13, 2009. In an Order, dated February 19, 2009, Judge Duffy found the Respondents guilty of violating § 16-19-40, concluding that the statute prohibits gambling in all forms and forbids the playing of “any game with cards or dice.” Record at _____. The Court ordered Respondents “to pay the fines and assessments required by such a violation.” *Id*

Respondents appealed their convictions to the Circuit Court. In an Order, dated October 1, 2009, the Honorable R Markley Dennis, Jr., Circuit Judge for the Ninth Judicial Circuit, reversed the convictions. Judge Dennis concluded that

the conduct in which [Respondents] were engaged – the playing of Texas Hold’em in a private residence – does not violate § 16-19-40. As an alternative and independent basis for the reversal of [Respondents’] convictions, this Court concludes that § 16-19-40(a) is unconstitutionally vague and overbroad.

Record at _____

This appeal followed

STATEMENT OF FACTS

Based upon information provided by a confidential informant, the Mount Pleasant Police Department learned “of an illegal gambling operation at 1405 Glencoe Street ” The informant provided information “including details of large numbers of people from all over the Lowcountry that meet on specialized dates, prearranged dates, and gamble for money ”

Record at ____ Based upon this information, Officer Justin Hembree of the Mt Pleasant Police Department decided to initiate both stationary and mobile surveillance of the Glencoe Street residence Surveillance revealed that “large numbers of cars and people [were] coming to and from the residence” and that “there were so many cars that oftentimes they would park at the CVS store behind the residence and walk to and from the residence ” *Id*

Using this information and observation, and in consultation with his supervisor, Officer Hembree “decided to send a confidential informant in with an audio/video recording device and sufficient police funds to gamble ” *Id* Hembree testified that this video revealed the following information

there was two large tables One in the kitchen area, one in the den, large numbers of people, a variety of different age groups, anywhere from what appeared to be early 20's to possibly late 70's, early 80's I observed that there was gambling with cards for money There appeared to be a buy-in, and there appeared to be money won and money lost from what I saw Each person would expend a certain amount of money for a certain quantity of chips And some of the folks knew each other

Record at ____ The video indicated that the house was “sparsely furnished ” Record at ____

As a result of this information, the Mt Pleasant Police Department then procured a search warrant Seven officers were used to execute the warrant at the Glencoe Street House on April 12, 2006 All five of the Respondents, among approximately twenty people, were

inside. There were two green felt tables set up and a third table was also available. Record at ____ Cards were on the table and money was “in front of each player.” Record at ____ Officer Hembree, upon entry, spoke with the owner of the dwelling, Nathan Stallings. Hembree testified that he then “learned [from Stallings] that the games were found on the Internet, that often there would be large numbers of people, that he sometimes did not know the folks that were coming to and from the residence, and there was a \$20 buy-in, that he [Stallings] would make \$2 from each hand, and that this was his sole job.” Record at ____ Officer Hembree testified further that Stallings was in possession of over nineteen hundred dollars in the house. Record at ____ Hembree thus concluded that, based upon his training and experience, the results of the surveillance, the video tape and his observations inside the house on April 12, 2006, that, in his opinion, “this residence was used for the express purpose of gaming, or gambling.” Record at ____ Officer Hembree also concluded that the five Respondents were playing a game of cards for money on the evening in question. Record at ____

At trial, Nathan Stallings testified that the buy-in for the poker game varied from \$5 to \$20. Stallings further testified that at any one time, the amount on the table could be more than \$200. Record at ____ He further stated that his “rake” was 50 cents, but that he did not take a rake for every hand. His testimony was that the rake was to cover only food and beverages. Record at ____ Stallings also testified that the poker games started out being held once every week, but that a second game was subsequently added, resulting in games being conducted every Wednesday and Sunday night. These poker games always started at 7:00

p m Stallings' testimony was that if 10 people were at a table and "everybody went all in, you could win 200 bucks " Record at ____

Stallings further testified that he lived at the house at 1405 Glencoe Street with his girlfriend His testimony was that a web site on the Internet provided people desiring to participate and play with information concerning the games According to Stallings, there was no standard for who could and who could not play in the poker games and that anybody who answered the ad on the internet could come over and play He stated that "[1]f you knew someone that was already established on meetup com," and "you were a friend of a friend," participation in the games was permitted Record at ____ Mr Stallings also admitted that he had been charged with and had pled guilty to operating a "gaming house" on the night in question Record at ____

Respondent Jeremy Brestel admitted on cross examination that a person could lose a "substantial amount of money" at the games Record at ____ He also verified that the internet website served as a "meet up site " Record at ____

The defense called Mike Sexton, a commentator on the World Poker Tour, from Las Vegas Sexton testified that, in his opinion, "skill predominates over chance when it comes to playing poker " Record at ____ However, Sexton admitted that chance is an element in poker and that "if the best hand won every time there would be no game of poker " Record at ____ While Mr Sexton was of the opinion that skill was the predominant element in poker, he also admitted that a completely unskilled player could beat an accomplished poker player, depending upon the cards dealt Record at ____ Mr Sexton also testified that he "was brought here by the Poker Players Alliance," an organization "that fights for the rights

of poker players ” Record at ____ He further stated that he was paid a fee of \$5,000 to testify Record at ____

Also testifying for the defense was Professor Robert Hannum, a professor at the University of Denver The Court accepted Professor Hannum as an expert in statistics and probabilities Dr Hannum’s testimony was that skill predominates over chance in poker However, on cross-examination, Professor Hannum admitted that if two poker players possessed exactly the same skills, chance would be the deciding factor Record at ____

SUMMARY OF ARGUMENT

S C Code Ann Section 16-19-40 broadly bans gambling and makes violation of the statute a crime. In virtually identical form to the present statute, § 16-19-40 has existed for more than 200 years, and has been consistently enforced by this Court through affirmance of numerous convictions thereunder. The gambling statute plainly forbids “any house [to be] used as a place of gaming” for playing “any game with cards or dice.”

The Municipal Court convicted the Respondents for playing “Texas Hold’em” poker for money in a residence in Mt Pleasant. This residence was regularly transformed into a casino-like facility, hosting large poker games with many participants, of all ages, from young to old, who were freely allowed to play after hearing of the games via the Internet. The magnitude of the games is demonstrated by Officer Hembree’s testimony that he observed that “there were so many cars that oftentimes they would have to park at the CVS Store behind the residence and walk to and from the residence.” Record at ____ The frequency of the games was expanded from once a week to twice a week. Record at ____ The owner of the house, Mr Stallings, pled guilty to operating a gaming house, and admitted that he received a “rake” of fifty cents per hand (to cover food and beverages) for the games. Officer Hembree testified that Stallings told him that his “rake” was as much as \$2.00 per hand. Testimony was to the effect that as much as \$200.00 per hand could be lost in the games, and the figure could go higher depending upon whether players re-bought in. Record at ____ Clearly, this was no “friendly poker game” for amusement.

The Circuit Court, however, despite this wealth of evidence, and even testimony that the owner of the residence had pled guilty to operating a gambling house, reversed these

convictions. As part of that reversal, the Circuit Court struck down as void-for-vagueness and as overbroad a portion of this 200 year old statute.

It is our view that the Circuit Court erred, both in its interpretation of S.C. Code Ann. Section 16-19-40, as well as in its finding of a constitutional defect in § 16-19-40(a), where none exists. The Court's Order took into account none of this Court's many decisions regarding gaming, or those locations in which gaming is prohibited in South Carolina. Nor did the Circuit Court consider the general law of gaming in this country. Moreover, the Court's constitutional analysis was incorrect.

In the view of the Circuit Court,

Texas Hold'em is not "gaming" within the meaning of South Carolina law because skill predominates over chance. Necessarily, then, a place devoted exclusively to the playing of Texas Hold'em is not a "house used as a place of gaming" under § 16-19-40. Because Appellants were not in a prohibited location [a private residence], their convictions under § 16-19-40 must be reversed.

Record at ____ This was legal error. The Circuit Court's analysis erroneously attempts to dissect games which are prohibited by § 16-19-40, and those games which are not, depending upon whether chance or skill predominates in the play of a particular game. Moreover, the Court incorrectly determined that "Appellants were not in a prohibited location" within the terms of the gambling statute because "the playing of Texas Hold'em in a private residence does not violate § 16-19-40." Record at ____

More specifically, by injecting a "chance versus skill" analysis the use of § 16-19-40, the Circuit Court ignored the Legislature's clear mandate that the playing of "*any game with cards or dice*" in the specified locations enumerated in the statute is expressly prohibited.

(emphasis added) When enacting § 16-19-40, the General Assembly chose not to mention games of chance at all, as it did, by comparison, in enacting §12-21-2710, the gambling device forfeiture statute

Indeed, the municipal court considered the game here as one of skill, but, nevertheless, concluded that playing Texas Hold'em for money was still gambling pursuant to § 16-19-40 Over the course of two centuries, the Legislature could have expressly placed the words “chance” in the statute, but has not If the Circuit Court’s ruling stands, the statute will thus have been effectively rewritten after all these many years, and the gambling laws in this State significantly altered

One obvious reason that “chance” need not be determined with respect to a particular game for purpose of the gambling statute is that the Legislature sought to ban all “gaming” for stakes at designated locations In other words, in the General Assembly’s view, the ills resulting from games played for money does not depend upon the particular game or the nature in which it was played The many problems associated with gaming resulted from the playing of games for money, not whether the particular game is one of chance or skill

Further, it is apparent that the General Assembly considered “any game with cards or dice” necessarily to be a game of chance, and thus illegal when played in the places prohibited by the statute Thus, when the Legislature made “any game with cards or dice” played for money illegal, it recognized such games – all such games – are games of chance As the Supreme Court of Rhode Island has stated, “ games that depend on an unpredictable and uncontrollable variable, such as the case in games involving cards and dice, are, *as a matter of law*, games of chance *In re Advisory Opinion to the Governor*, 856 A 2d 320, 329

(R I 2004) Thus, it “requires no special fact-finding process to determine whether an element of chance is the dominant factor” in such games *Id*

Yet, the Circuit Court disregarded these obvious points and added the words “chance” and “skill” to its analysis of the statute, even though the Legislature chose not to insert those words. Instead, for almost two centuries, the Legislature has made “any game with cards or dice,” played for money at the designated locations, illegal. The statute has always been construed broadly by this Court, consistently rejecting any “chance versus skill” analysis, and, we respectfully submit, that is the way this Court ought to interpret it now. See, *The State v Scarlet Red*, 41 S C L (7 Rich) 8 (1853) [Court rejects “chance versus skill” delineation because to do otherwise would allow those who violate the Act to “escape punishment ”]

Moreover, the Circuit Court also erred in misconstruing the words “house used as a place of gaming” as contained in § 16-19-40. Applying the rule of lenity applicable to criminal statutes generally, the Circuit Court incorrectly determined that, because § 16-19-40 does not define the word “house” for purposes of the phrase “house used as a place of gaming,” such statute does not apply in this case because the gambling occurred in a private residence. In the Court’s opinion, it “is thus equally plausible, if not more so, that the term ‘house’ is not intended to refer to a residence at all, but rather to a place maintained for the express and sole purpose of gambling ” Record at ____ . Accordingly, the Court found that “[t]his ambiguity in the statute compels this Court to adopt the more narrow reading of the statute and conclude that a residence is not a ‘house of gaming’ simply because persons are invited there on a regular basis to play Texas Hold’em ” Record at ____ .

The Circuit Court's reasoning in this regard immunizes from our gambling statute's reach large-scale casino gambling merely based upon the fact of where that gaming occurs. Common sense dictates that a gambling house can just as easily be established in a residence as in a bar or poolhall. Certainly, that was the case here: the residence was transformed into a virtual casino, twice weekly. People of all ages freely came and went, as they pleased, learning of the games through an Internet site, in order to play Texas Hold'em poker for money. Officer Hembree testified that so many came the overflow crowds had to park at the CVS parking lot. Record at _____. In short, Section 16-19-40 does not provide the immunity from prosecution which the Circuit Court created.

The Circuit Court's error is demonstrated by the fact that the lower court ignored the wealth of authority, both in this State and elsewhere, which has found that a private residence may, depending upon the circumstances, be transformed into a "gaming house" or a "place of gaming." Indeed, in *City Council of Greenville v. Kemmis*, 58 S.C. 427, 36 S.E. 727 (1900), this Court affirmed a conviction pursuant to a municipal ordinance under these very circumstances. The ordinance prohibited a person from permitting "his, her or their enclosure or place or house to be used" as a "place for gaming with cards for money or other stake." Yet, even though the card game occurred in a private hotel room, which had been rented by the defendant, this Court, nevertheless, concluded that the ordinance at issue had been violated.¹ Rejecting the argument that a private hotel room did not constitute a "house" or "place" of "gaming," this Court stated

¹ The Court in *Kemmis* reserved judgment with respect to any interpretation of § 16-19-40. However, as will be seen below, a number of other decisions of this Court addressed the applicability of § 16-19-40.

if we were at liberty to inquire into the propriety of the means which they [the City] saw fit to adopt to suppress the pernicious vice of gaming, we would be inclined to agree with them that a very efficient means would be that which they adopted, for if persons who rent furnished rooms for lodging in a city like Greenville are permitted, with impunity, to use their rooms as places of gaming, the vice would flourish, even if every public gaming house in the city were entirely suppressed

36 S E at 729 Thus, although this Court did not construe § 16-19-40 specifically, it held that gambling is gambling, wherever it occurs, and thus one's private hotel room may be transformed into a "place for gaming " Moreover, for purposes of the Greenville ordinance, the hotel room was considered the renter's "castle" and was his "house" just as surely "as the poor man's hut in the wilderness " *Id* Finally, this Court did not attempt any analysis of whether the particular "game" being played was one of "chance" or "skill" for purposes of whether "gaming" occurred The Ordinance – very similar in language to § 16-19-40 – was violated simply by allowing a card game for money to be played in one's private residence

Further, long ago, in *State v Brice*, 2 Brev 66, 1806 WL 329 (1806), this Court rejected any argument that § 16-19-40 does not apply to a private dwelling or residence In *Brice*, the Court refused to arrest judgment on a conviction under a virtually identical predecessor to § 16-19-40 The indictment had charged the defendant Brice with permitting and encouraging in his dwelling house certain persons to play at cards, dice, etc Over the dissent of Justice Brevard, who reasoned that the statute did not intend "for a casual game being played in a man's house" to be a violation of the law, the Court denied the motion to arrest judgment Other decisions of this Court, concluding that § 16-19-40 may indeed apply to a private residence, are in accord See, *State v Faulkener*, 13 S C L (2 McCord) 438 (1823) [Court discusses the applicability of the statute to the "mansion house" and

outbuildings] This Court's decisions are, in other words, entirely consistent with the legal principle that "[a] private residence occupied by a family can become a gaming house when it is commonly resorted to for the purpose of gaming " *Sharp v State*, 93 Tex Crim 542, 247 S W 1096, 1097 (1923)

In addition, even assuming *arguendo* that the Circuit Court construed § 16-19-40 correctly, by defining a violation of the statute only if the particular game was one of chance, the Court, nevertheless, erred in finding that Texas Hold'em poker is predominately a game of skill As noted, card games are necessarily chance games As the North Carolina Court of Appeals recently recognized in *Joker Club LLC v Hardin*, 183 N C App 92, 643 S E 2d 626, 630 (2007),

[p]oker, however, presents players with different hands, making the players unequal in the same game and subject to defeat at the turn of a card Although skills such as knowledge of human psychology, bluffing, and the ability to calculate and analyze odds make it more likely for skilled players to defeat novices, novices may yet prevail with a simple run of luck No amount of skill can change a deuce into an ace

And, as this Court determined in *State v O Neal*, 210 S C 305, 42 S E 2d 523 (1947), in upholding a conviction for keeping and maintaining a gaming house, poker, as a game of cards, constitutes "gaming" This principle was confirmed on cross-examination by Dr Hannum, expert witness for the Respondents, when he acknowledged that, where two persons having exactly the same skill in playing poker compete against each other, the element of chance will determine the winner Record at ____ Thus, the Circuit Court erroneously ignored the universally understood principle that "games of cards are games of chance even though the element of skill is more or less involved, since the element of chance

predominates ” 135 A L R 104 (“what are games of chance, games of skill and mixed games of chance and skill?”) *In re Advisory Opinion to the Governor supra* [card games are, as a matter of law, games of chance]

Finally, the Circuit Court erred in finding § 16-19-40(a) to be unconstitutionally vague and overbroad That Court determined that since § 16-19-40 “provides no definition of the term ‘house used as a place of gaming’” and that the term “‘place of gaming’ must mean something more than a location where one of the subsequently enumerated games is played,” § 16-19-40(a) is void-for-vagueness in this regard Record at ____ Furthermore, in the Circuit Court’s view, “§ 16-19-40(a), as written, has the potential to make criminals of virtually every man, woman and child in the State of South Carolina” and thus § 16-19-40(a) is overbroad Record at ____

Such a parade of horrors, envisioned by the Circuit Court, is unjustified, unwarranted, and provides no basis for a determination that a provision which has been on the books and consistently enforced by decisions of this Court for over two hundred years is now deemed unconstitutional As the municipal court noted, this Court’s consistent application of § 16-19-40 strongly indicates the statute is not vague Record at ____ As the Supreme Court of Arkansas recognized in *State v Torres*, 309 Ark 422, 831 S W 2d 903 (1992) – a statute, similar to § 16-19-40(a), and which forbids a person from keeping a “gambling house or place where gambling is carried on” – is not unconstitutionally vague And, as will be seen below, a number of other decisions construing similar statutes, are in accord

The convictions in this case thus may not be set aside because our gambling statute in South Carolina is old, or because it does not define terms such as “house used as a place of gaming ” Because a statute is old, does not mean it is unclear, or void-for-vagueness Nor may the Circuit Court step into the shoes of the General Assembly by adding terms such as “chance” or “skill” when the Legislature has made clear that “any game with cards or dice,” when played for money or other consideration is forbidden See, *State v Robinson*, 40 S C 553, 18 S E 891 (1894) [playing dice for money violates § 16-19-40] So long as the game of cards is played for money or other prize and the “house” is “used as a place of gaming,” as the municipal court properly decided was the case here, § 16-19-40 prohibits such activities

If Respondents do not like the law as written, their remedy is with the General Assembly, not the courts The law cannot be changed by judicial construction or a finding of unconstitutionality where there exists on the books a perfectly valid statute, which is capable of being read and applied clearly

Thus, the Circuit Court erred and that decision should be reversed

ARGUMENT

I

Section 16-19-40 is applicable to these respondents and their convictions should be upheld

A South Carolina Possesses A Longstanding Public Policy Against Gaming

While the operation or maintenance of a gambling house was considered a nuisance at common law, 66 C J S , *Nuisances*, § 82, gambling itself was not a common law crime 38 C J S *Gaming* § 131 Nevertheless, very early in its history, and ever since, South Carolina maintained a strong public policy against gambling

The statute, now codified by Section 16-19-40, has been the centerpiece of the State's anti-gaming policy In virtually identical form, § 16-19-40 has been the law in South Carolina for two centuries Such provision states

[1]f any person shall play at any tavern, inn, store for the retailing of spirituous liquors or in any *house used as a place of gaming*, barn, kitchen, stable or other outhouse, street, highway, open wood, race field or open place at (a) any game with cards or dice, (b) any gaming table, commonly called A, B, C, or E, O, or any gaming table known or distinguished by any other letters or by any figures, (c) any roley-poley table, (d) rouge et noir, (e) any faro bank (f) any other table or bank of the same or the like kind under any denomination whatsoever or (g) any machine or device licensed pursuant to Section 12-21-2720 and used for gambling purposes, except the games of billiards, bowls, backgammon, chess, draughts, or whist when there is no betting on any such game of billiards, bowls, backgammon, chess, draughts, or whist or shall bet on the sides or hands of such as do game, upon being convicted thereof, before any magistrate, shall be imprisoned for a period of not over thirty days or fined not over one hundred dollars, and every person so keeping such tavern, inn, retail store, public place, or house used as a place for gaming or such other house shall, upon being convicted thereof, upon indictment, be imprisoned for a period not exceeding twelve months and forfeit a sum not exceeding two thousand dollars, for each and every offense

(emphasis added)

South Carolina courts have, through the years, also underscored the Legislature's efforts to prohibit and deter gambling. In *Westside Quik Shop v. Stewart*, 341 S.C. 297, 303, 534 S.E.2d 270 (2000), the Court recognized that gaming devices in general have long been recognized "as legitimately within the police power of the State" and that the Court "defers to the legislature's determination of what gaming devices must be sacrificed for the public welfare." Moreover, a federal three judge court observed in *Holliday v. Governor of South Carolina*, 78 F.Supp. 918, 924 (D.S.C. 1948), *aff'd*, 335 U.S. 803 (1948), that "[i]t is the public policy of the State of South Carolina to suppress gambling. Gambling in all forms is illegal in South Carolina." South Carolina's prohibition against gaming is thus "aimed at promoting the welfare, safety and morals of South Carolinians" and, therefore, represent a well-recognized exercise of state police power." *Casino Ventures v. Stewart*, 183 F.3d 307, 310 (4th Cir. 1999). Thus, as this Court observed in *Army Navy Bingo Garrison No. 2196 v. Plowden*, 281 S.C. 226, 228, 314 S.E.2d 339, 340 (1984), the State's power to suppress gambling is practically unrestrained." There "is no fundamental right to gamble protected by the Federal Constitution." *Id.*

B In Order to Effectuate South Carolina's Public Policy Against Gambling, This Court Has Always Interpreted § 16-19-40 Broadly

Gambling was commonplace in early South Carolina. European travelers to Charleston after the Revolution observed that "[b]etting and gambling were, with drunkenness and a passion for duelling and running in debt, the chief sins of the Carolina

gentlemen ” Chafetz, *Play the Devil A History of Gambling In the United States from 1492 to 1955* p 187 (1960)

As a leading historian of the ante-bellum South has written,

Southerners, like their Scots-Irish and English forbears, loved sports, hunting, games of chance and skill – in fact, any event that promised the excitement of deciding the inequalities of prowess among men, or among men and beasts Although Mississippi, Louisiana, and Texas were best known for the habit [of gaming], residents of the Carolinas, Georgia, Tennessee, Kentucky and Arkansas were also devoted to cards, dice, horse racing and cock fights Such diversions had to involve more than simply a chance to turn a profit The practice had to have social meaning for those participating

Wyatt-Brown, *Honor and Violence In The Old South*, pp 131-132 (1986)

With the dawning of the nineteenth century, gaming quickly became an enormous social problem in the State It has been written that “[m]ost complaints were not directed at gambling itself but to the thievery and murder which it allegedly caused ” One antebellum editor observed that gambling not only ruins the character, but also makes a person covet his neighbor’s goods Another editorial declared that gaming was “calculated to debase the human mind ” Williams, *Vogues In Villainy Crime and Retribution In Ante-Bellum South Carolina*, p 47 (1959)

Recognizing the social costs which were being imposed by gambling, very early in the nineteenth century, the General Assembly took action to curb gaming in the State Inasmuch as gambling was deemed to be “often attended with quarrels and controversies, the impoverishment of many people [and] corruption of the morals and manners of youth ,” the Legislature thus chose to make “the pernicious practice of gaming” a crime in South Carolina *State v Faulkener*, 13 S C L (2 McCord) 438 (1823) indicates that gambling was

first deemed criminal as early as 1802. In *Faulkener*, the Court described the 1802 Act (“An Additional Act For the More Effectual Prevention of Gaming”) as “the first act creating this offence.” As *Faulkener* recognized, the 1802 Act was amended in 1816, because the Legislature deemed it necessary to address “the mischief complained of as arising under the [1802] act.” Such “mischief” consisted of the fact that the 1802 Act was being circumvented by resort to gaming in “any outhouse [outbuilding], whether attached to the principal house or elsewhere.” Thus, according to the *Faulkener* Court, in order “[t]o remedy that evil,”

the act of 1816, after repeating that part of the former act, superadds the following words – “any house used as a place of gaming, or in any barn, kitchen, stable, or other out-house.”

Id. Accordingly, with passage of the 1816 amendments, the Legislature sought to close any loopholes which had previously existed in the gambling statute.

**C Section 16-19-40 Has Consistently Been Interpreted by this Court as
Being Applicable to a Dwelling or Residence. Thus, the Circuit Court’s
Exclusion of a Residence from § 16-19-40’s Reach Was Error**

The issue before the Court in *Faulkener* was whether gaming conducted at a distillery house, which was an outbuilding to the principal residence, was encompassed by and thus made illegal pursuant to what is today the virtually identical § 16-19-40. The Court concluded that, clearly, it was. Recognizing the broad sweep of § 16-19-40, and the underlying reasons for enactment of the gaming statute, the Court summarized as follows:

[n]ow what is the meaning of the words “out house?” Taken literally, they must mean any house separate and apart from the principal or mansion house

There is nothing in the act to limit their meaning to the out houses appurtenant to the mansion house. The policy of the law should lead us to extend it to out houses of every description. For its [§ 16-19-40's] professed object is to "prevent the pernicious practice of gaming." With that view, it is made to embrace high ways, open fields and race paths, kitchens, barns, stables and every other *out house*. It would have been difficult to have made use of the words more comprehensive. Both, the letter and the spirit of the act, therefore, seems to lead to the same construction. If gaming has a tendency to lead to quarrels and controversies, and to the corruption of morals, etc. when carried on in an open field, that tendency cannot be much lessened by carrying it on at a still house. And although penal laws are not to be extended by construction, yet the policy of the law is to be regarded.

There can be no doubt, therefore, that in *Faulkener*, this Court recognized that § 16-19-40 may be applied to all gaming occurring in residences or dwelling houses. In its analysis, the *Faulkener* Court used the term "mansion" or "mansion house" on at least two occasions. In its archaic form, a "mansion" or "mansion house" means simply a residence or dwelling. See thefreedictionary.com. See also, *The American Heritage College Dictionary* (3d ed.). As noted in *Black's Dictionary* (Revised 4th ed.), a "mansion" is a "dwelling-house or place of residence, including its appurtenant outbuildings."

Moreover, in *State v. Brice*, 2 Brev. 66, 1806 WL 329 (1806), this Court squarely concluded that § 16-19-40 applies to a dwelling or residence. In *Brice*, the defendant was indicted for permitting and encouraging the playing of cards, dice, etc. in his dwelling house. Over a vigorous dissent by Justice Brevard, the Court denied a motion to arrest judgment which had been made on the basis that "the offense laid was not such a one as is described by the act of 1802." According to Justice Brevard, the argument was that the indictment did not state that "the defendant kept his dwelling for gaming purposes, or that it was his practice to allow persons to game therein, but only that he encouraged and permitted certain persons

to play therein without asserting that they did actually play therein ” Without written opinion, the majority rejected the point made in Justice Brevard’s dissent that “[t]he legislature would not intend, that for a casual game being played in a man’s house, he should forfeit the penalty ”

Thus, based upon *Brice*, as well as *Faulkener*, it is clear that the Court long ago rejected the Circuit Court’s reasoning in this case that the rule of lenity requires § 16-19-40 to be construed as not encompassing a residence or dwelling house Indeed, *Faulkener* makes clear that the public policy underlying § 16-19-40 – to ban the “pernicious practice of gaming” in all forms and at all locations – mandates a broad, comprehensive construction, consistent with that policy While acknowledging the rule of lenity, *Faulkener* expressly found that such rule of construction *may not be used* to defeat the underlying legislative purpose of the statute

Accordingly, as this Court stated in *State v O Neal*, it “is the general rule that where the proprietor of a place not kept for the purpose of gaming, allows gaming to be carried on, in which he participates, or from which he in some way receives a benefit, he may be convicted as the keeper of a gaming place ” 42 S E 2d, *supra*, at 527 In other words, this Court has expressly noted that a place may be transformed into a place of gaming regardless of its principal use Therefore, a house “used as a place of gaming” may include a dwelling or residence if that is the building where, as here, the gambling occurs

This Court’s rulings in *Faulkener*, *Brice* and *O Neal* are consistent with the general law in this area It is well recognized that, pursuant to statutes allowing a “house” or “place” to be used for gaming,

one who knowingly permits property or premises under his control to be used as a place to bet and wager to gamble with cards or dice may be convicted even though the premises so employed constitute his private residence

38 Am Jur 2d *Gambling* § 136 See also 6A McQuillin, *Mun Corp* § 24 138 (3d ed) [“A common gaming house may consist of a single room rented in a house of many rooms ”]

As the North Carolina Supreme Court appropriately reasoned, “[t]he fact that the keeper [of the gaming house] has his bed, or takes his meals where the gaming is done, does not necessarily change the character of the house One might turn his dwelling house, his sleeping chamber, his office building or business house into a gaming house by allowing persons to resort thither from time to time for gaming purposes ” *State v Black*, 94 N C 809, 1886 WL 987 (1886)

And, in *Morgan v State*, 42 Tex Crim 422, 424, 60 S W 763 (1901), the Court stated that “a private residence can be made a gaming house ” There, the Court noted that “[t]he evidence further shows that one particular room, to wit, the kitchen and dining room was continuously used for the purpose [of gaming] ” See also, *Simons v State*, 56 Tex Crim 339, 120 S W 208, 210 (1909) [allowing the playing of poker in a residence on several occasions for money constituted the keeping of a gaming house, “[t]o hold otherwise, in the fact of this record, would permit the statute against gambling to be nullified on the ground that it was sheltered beneath the roof of a private residence The fact that it is a private residence, if devoted to gambling, can make no difference ”], *Nickols v State*, 111 Ala 58, 20 So 564 (1896) [“Prima facie, a dwelling is a private place, but where the evidence tends to show that it is used for other than private purposes, and as a resort to those who would

indulge in gaming, the question of its being also a ‘public place’ within the meaning of the statute, is properly left to the jury ” Thus, a back shed of a dwelling may be within gaming statute], *Thrasher v State*, 168 Ala 130, 53 So 256 (1910) [room of dwelling may, depending on facts, constitute a public place used for gaming] *City Council of Greenville v Kemmis, supra* [person’s private hotel room is a “place of gaming” pursuant to municipal ordinance]

It is also important to note that other statutes enacted by the General Assembly regarding gaming make it clear that the Legislature has not deemed § 16-19-40 to be inapplicable to residences For example, § 17-13-70 authorizes the issuance of a warrant by judicial officers of a municipality for “any of the criminal laws against gambling [being] ” violated, such warrant is to obtain entry into “*any closed door or room* within such city, *wherever* such offense is alleged to prevail ” (emphasis added) Similarly, § 22-5-10 provides that

[a]ny magistrate residing in any incorporated city or town of this State, on information by oath of any credible witness that any of the criminal laws against gambling is being violated, may grant his warrant to break open and enter any closed door or room within such city, *whenever* such offense is alleged to prevail

(emphasis added) It is evident from these statutory provisions that, contrary to the Circuit Court’s ruling, the Legislature does not consider that § 16-19-40 to offers immunity if such gambling occurs inside a residence or dwelling, these provisions authorize warrants to be issued for violation of “any of the criminal laws against gambling” [including § 16-19-40] “wherever such offense is alleged to prevail,” even if occurring in “any closed door or room ” Without doubt, such broad authority includes residences See also, *Op S C Atty Gen* , No

2188 (November 2, 1966) [“Where an officer goes to the house of another, the person dwelling therein invites the officer inside, the officer observes gambling and thereupon arrests the gamblers, it is not necessary that the officers have either a search warrant or an arrest warrant [Opinion of now Judge Goolsby]

Clearly, the evidence presented to the municipal court was overwhelming that the residence in question was a “house used as a place of gaming” within § 16-19-40. It was used twice weekly for large scale poker games by those who learned of the Texas Hold’em games through the Internet. Participants paid money to play poker and won money if they succeeded. Officer Hembree’s testimony, as well as the videos introduced, demonstrate that large numbers of people of all ages came to play poker for money, little different than had they gone to a casino to gamble. Record at ____ This was hardly a “friendly game of cards” to while away the evening.

D The Circuit Court’s Conclusion That Poker is a Game of Skill, And Thus Not “Gaming” for Purposes of § 16-19-40, Was Also Error

The Circuit Court erroneously applied the “dominant factor” test – a test which deems a game predominantly involving skill, rather than chance, as not constituting gambling – in finding that Texas Hold’em does not violate § 16-19-40.² In doing so, the lower court ignored the clear language contained in § 16-19-40(a) that “any game with cards or dice” is prohibited by the statute (with certain enumerated exceptions, not here applicable). Such unambiguous language thus does not permit the Circuit Court to segregate particular card

² The “dominant factor” test was discussed at length by Justice Burnett in his dissenting opinion in *Johnson v. Collins Entertainment Co. Inc.*, 333 S.C. 96, 111, 508 S.E.2d 575, 583 (1998) (dissenting opinion of Burnett, J.).

games – such as Texas Hold'em poker – from other games on the basis that the game is predominantly one of skill and thus not “gaming.” In essence, therefore, the Circuit Court rewrote § 16-19-40. A court may not use the rules of interpretation to alter or amend a statute. *Timmons v S C Tricentennial Comm*, 254 S C 378, 175 S E 2d 805 (1970) [where language of statute is clear and explicit, the Court cannot rewrite the statute and inject matters not in the legislative language]. The General Assembly, in enacting § 16-19-40, did not write that only those “games with cards or dice which are games of chance” are prohibited. “Any” means all. Yet, the Circuit Court failed to consider this clear, all encompassing language of the statute in its analysis. As the municipal court here determined, the Legislature has prohibited “any game with cards or dice” in the places specified. Record at ____.

It is thus clear that the Circuit Court did not need to define “gaming” for purposes of § 16-19-40, by employing the “dominant factor” test. As noted above, the plain language of § 16-19-40, itself defines “gaming” to include “(a) any game with cards or dice.” Such a comprehensive legislative determination is consistent with the general legal principle that “[e]ngaging in playing any game of cards in which money, property, or other thing of value is won or lost is gaming within the meaning of statutes prohibiting and penalizing gaming.” 38 Am Jur 2d *Gambling* § 49.

Moreover, *City of Greenville v Kemmis* *supra* rejects any conclusion that playing poker for money is not “gaming.” There, the Court upheld a conviction under a Greenville Ordinance which was similar to § 16-19-40. Such Ordinance prohibited allowing a person’s “enclosure or place or house to be used as a place of gaming with cards for money or other

stake ” The card game occurred in the defendant’s rented hotel room While the principal issue in *Kemmis* was whether a person’s hotel room constituted a “place” or “house” for gaming, there is also no doubt that the Court considered the card game, played for money (including poker chips), to be “gaming ” This Court concluded that “even though the legislature may have passed a statute in reference to the offense against the state of gaming, the municipal corporation of Greenville is not there by restricted from making further regulations upon the same subject, which, of course, have no operation except within the corporate limits of Greenville ” 36 S E at 729 Furthermore, the *Kemmis* Court found that the City’s power to further regulate “gaming,” which, in that instance, involved the playing of cards for money, was justified

if we were at liberty to inquire into the propriety of the means which they [City of Greenville] saw fit to adopt to suppress the pernicious vice of gaming, we would be inclined to agree with them that in order to effect the laudable purpose of a very efficient means would be that which they adopted, for if persons who rent furnished rooms for lodging in a city like Greenville are permitted, with impunity to use their rooms as places for gaming, the vice would flourish, even if every public gaming house in the city were entirely suppressed

Id

It is important to stress that the *Kemmis* Court did not deem it necessary to determine whether the particular card game which was played in that case was a game of chance or skill Pursuant to the Ordinance reviewed in *Kemmis* – as in the case with § 16-19-40 – *any game played with cards or dice for money* was considered “gaming ” Such analysis, the Circuit Court did not, in this instance, undertake Instead, the Circuit Court essentially

rewrote § 16-19-40, by limiting those games prohibited by § 16-19-40 to games of chance, even though the Legislature long ago used the language “any games with cards or dice ”

State v Laney, 38 S C L (4 Rich) 193 (1850) is also instructive In *Laney*, an indictment charged that the defendant “wilfully and unlawfully” did “game” with a slave and bet on the said game, in violation of a statute to that effect Motions for arrest of judgment and for a new trial were made by the defendant This Court noted that, pursuant to the 1816 statute prohibiting gambling (§ 16-19-40), “[e]very playing at cards is not prohibited by that statute, it is only criminal when done at particular places, the place, therefore must be alleged, because that enters into the definition of the offense ”

Most importantly, for purposes here, this Court tellingly rejected defendant’s argument that the indictment failed to allege the specific game involved in the charge, and thus was defective By way of analogy, the Court expressed its view as to how the term “game” or “gaming” as used in §16-19-40 should be construed Rejecting the defendant’s argument that “gaming” encompassed only “some unlawful game,” and not all games, the *Laney* Court stated

[t]he indictment is framed in the words of the statute, and that according to the general rule would be sufficient But [defendant’s] reply to this is, that *game* means a sport or amusement – and taking the whole clause, it is manifest the Legislature meant by the word game some unlawful game, and this ought to be set out, that the Court may know whether the game is one prohibited by the law Assuming that, by the word ‘game,’ the Legislature meant playing at some unlawful or prohibited game, *it is immaterial what the game was It would be equally within the prohibition whether played with cards or dice or at any gaming table such as are described in the Act of 1816 or by whatever name it may be called* (emphasis added) According to the principles above stated, the kind or name of the game is no part of the offence, any more than whether there was betting, which in *Nates*’s case was held to be an unnecessary allegation There is nothing in the English cases

which sheds much light on this subject but there are some American cases very much if not exactly like the one under consideration. *The State vs Dole* (3 Blackf 294) was an indictment against a grocer for suffering gaming in his shop. The indictment was quashed on the Circuit, because it did not set out the particular game played. But in the Supreme Court it was held to be sufficient, because *all games* (emphasis added) were unlawful in *such* places (emphasis in original). *The State v Bougher* (3 Blackf 307,) was an indictment for gaming at a tavern. The words of the Indiana statute are, “Any person who shall play at game,” etc. The indictment charged the offence in the words of the statute, without stating what game was played. It was held sufficient, because the words were general, and *included all games* (emphasis added).³

Thus, this Court in *Laney* has construed § 16-19-40 and similar statutes as prohibiting *all games played ‘with cards or dice for money in the designated places* set forth in the statute. Accordingly, whether a particular game of cards is one of chance or skill is irrelevant for purposes of whether that activity is “gaming” pursuant to the gambling statute. All games *with cards or dice* constitute “gaming” for purposes of § 16-19-40.

If there were any remaining doubt concerning the breadth of § 16-19-40, or that the Legislature did not intend a delineation of games into those of “chance” and those of “skill” for purposes of whether the statute is violated, this Court’s decision in *The State v Scarlet Red supra* leaves no doubt about the issue. In *Scarlet Red* the defendant was convicted for gaming in Spartanburg under the 1816 statute, now codified at § 16-19-40. Defendant’s game was Thimble, or Thimbles and Balls, which historians have labeled a “granddaddy of

³ *Laney* references *Nates s* case [*State v William Nates*, 21 S C L (3 Hill) 200, 1836 WL 1511 (1836)] as indicating that betting is an unnecessary element for purposes of § 16-19-40. However, the later cases of *Scarlet Red supra* and *State v Robinson, supra* indicate that betting is required. In *State v Robinson*, this Court defined “what [is] and what [is] not gambling.” The Court upheld the trial court’s charge to the jury that mere throwing of dice for amusement, where there is no betting or wager, is not illegal, while dice games, accompanied by betting, violate § 16-19-40.

the shell game ” Chafetz, *supra* at 42 On appeal, the defendant argued that § 16-19-40 provided him an exception to the effect that games of skill were not covered Defendant claimed to be a “juggler” and sufficiently skilled, in terms of his dexterity, that he regularly beat those who gambled against him

This Court, however, rejected the distinction between “chance” and “skill” for purposes of whether or not the statute has been violated What was important to the Court was not whether the game was “skill” or “chance,” but whether a wager depended upon the success or failure of the “juggler ” Noting that the 1816 statute was “so well calculated” to deter “vice, misery and crime,” this Court, more than a century and a half ago, set forth the proper interpretation of § 16-19-40

[n]or can the defendant evade the law under the pretence that he was a juggler, and that the alleged game was an exhibition of his dexterity, because he kept a bank, and a wager depended on his success or failure

If the prohibited games be confined to those alone in which the stake is won or lost by chance, the result would follow, that the gambler who relied on the practiced legerdemain of a juggler, whilst he professed that the stake depended on fortune, will escape punishment by playing falsely

The Court’s analysis in these cases is clear that, for purposes of § 16-19-40’s reach, “gaming” does not depend upon whether the particular game must be deemed predominantly one of chance Moreover, the Court’s decisions are entirely consistent with the well settled rule that

[g]ambling has been defined as the act of playing or gaming for money or other stakes as the payment of consideration for the chance to win a prize, as the practice of playing or following up *any game, particularly a game of hazards such as cards dice etc*

38 C J S , *Gaming* § 5 (emphasis added) *See also, State v O'Neal supra* [court upheld conviction for maintaining a “gaming house” by allowing poker to be played for money in the Five O’Clock club] Thus, the Circuit Court disregarded the words used by the Legislature, and thus was wrong to conclude that playing Texas Hold’em for money is not “gaming” for purposes of § 16-19-40 For purposes of § 16-19-40, the particular card game being played is irrelevant, all card games are considered by the Legislature as “gaming” and prohibited in the places specified *State v Laney supra, The State v Scarlet Red supra* To evade § 16-19-40's reach by claiming skill as an exemption is not what the Legislature intended and it is not what this Court has consistently held

In short, the Legislature has chosen to sweep broadly for purposes of violation of the gambling statute As *The State v Scarlet Red* indicates, the intent of the General Assembly, was to attack the crime, vice and other social problems associated with gambling Thus evasion of the statute, based upon any “chance versus skill,” distinction is prevented by use of the words “*any game with cards or dice*” (emphasis added) Unlike § 12-21-2710, which expressly specifies that devices “pertaining to games of chance” are illegal *per se*, see, *Allendale Co Sheriff's Office v Two Chess Challenge II*, 361 S C 581, 606 S E 2d 471 (2004), § 16-19-40 deems the playing of any game with cards or dice for money in the designated locations, including a house “used as a place of gaming,” to constitute a violation of § 16-19-40 As discussed above, the evidence in this case that the residence in question was a house “used as a place for gaming” and that the game played was one “with cards” for money was overwhelming

**E Even Assuming *Arguendo* That the Circuit Court Correctly Construed
§ 16-19-40, That Court Erred in Concluding That Texas Hold'em Is
Predominantly a Game of Skill**

It is true, as the Circuit Court held, that one of the essential elements of gaming is that the game is one of chance. As this Court recognized in *Johnson v. Collins Entertainment Co.*, a lottery is “a species of gaming, which may be defined as a scheme for the distribution of prizes of things of value by lot or chance among persons who have paid, or agreed to pay, a valuable consideration for a chance to win a prize.” 333 S.C., *supra* at 103, 508 S.E.2d *supra* at 579 (quoting *Darlington Theatres, Inc. v. Coker*, 190 S.C. 282, 2 S.E.2d 782 (1939)). See also *Alexander v. Martin*, 192 S.C. 176, 6 S.E.2d 20, 24 (1939) [quoting *Myers v. City of Cincinnati*, 128 Ohio St. 235, 190 N.E. 569, 570 (1934) for the point that the “three elements of gambling [are] chance, prize and a price”].

In addition, there can be no doubt that in *Johnson v. Collins Entertainment Co.*, in a dissenting opinion authored by Justice Burnett and concurred in by Justice Toal, there were indications from those two Justices that South Carolina would adopt the “dominant factor” test relating to chance. Rejecting the British Rule or pure chance doctrine, Justice Burnett instead concluded that the “American Rule” or “dominant factor test governed. Under the dominant factor doctrine, “a scheme constitutes a lottery where chance dominates the distribution of prizes, even though such a distribution is affected to some degree by the exercise of skill or judgment.” 508 S.E.2d at 583 (quoting *Morrow v. State*, 511 P.2d 127, 129 (Alaska 1973)). Justice Burnett thus stated that

where the dominant factor in a participant's success or failure in a particular scheme is beyond his control, the scheme is a lottery, even though the participant exercises some degree of skill or judgment

333 S C , *supra* at 113, 508 S E 2d, *supra* at 584 ⁴

However, the Circuit Court's conclusion that *Texas Hold em* is predominantly a game of skill was also error, even assuming *arguendo* that such analysis of "chance versus skill" is appropriate for purposes of § 16-19-40 While it is true that Respondents offered testimony that poker is a game in which skill predominates, Record at ___, the overwhelming majority of courts have, nevertheless, concluded that poker, *being a card game*, is predominantly a game of chance *as a matter of law*, notwithstanding that certain skills may be involved The dissenting opinions of Justices Burnett and Toal in *Johnson v Collins supra* indeed made it clear that the legal test is not whether skill is an element in the particular game, but whether *the ultimate outcome* is determined predominantly by skill or chance Applying this test, poker is indeed predominantly a game of chance Thus, the decision of the Circuit Court must be reversed for that reason as well

As Justice Burnett noted in *Johnson v Collins supra*, in determining whether chance or skill predominates with respect to a particular game, the question is not whether one player might possess skill superior to another player, such that the superior player usually wins Instead, the test is as follows

skill should be defined in terms of the ability to obtain the desired outcome – a certain card – rather than the ability of one player to play more judiciously than another [A] video poker player is unable to control the random

⁴ The full Court has yet to address the applicability of the "dominant factor" test in South Carolina and we do not concede that this is the test a majority of the Court would apply

selection of cards, in spite of his skill, knowledge or experience. Since the player cannot improve the likelihood he will obtain a certain card, I conclude chance dominates over skill in the operation of the Type III video game machines.

333 S C , *supra* at 119, 508 S E 2d, *supra* at 587. Such analysis applies here as well.

There is no question that poker, including Texas Hold'em, possesses an element of skill, as almost any card game does, certain players will win more often when playing against novice or inferior players. However, whether there is an element of skill present in Texas Hold'em poker, or whether the better player may more often win, is not the controlling question in this case. The Supreme Court of North Carolina in *State v. Taylor*, 111 N C 680, 16 S E 168 (1892) well stated the correct analysis in that Court's recognition that

[i]t is a matter of universal knowledge that no game played with ordinary playing cards is unattended with risk, whatever may be the skill, experience, or intelligence of the gamblers engaging in it. From the very nature of such games, where cards must be drawn by and dealt out to players, who cannot anticipate what ones may be received by each, the order in which they will be placed, or the effect of a given play or mode of playing, there must be unavoidable uncertainty as to the results.

See also, *Darlington Theaters* 2 S E 2d *supra* at 785 ["various forms of gambling" include games "in which chips, tickets, or other devices are used in connection with card games "].

Accordingly, based upon this analysis, numerous decisions from other jurisdictions have concluded that poker – including Texas Hold'em poker – is predominantly a game of chance. See, *People v. Dubinsky*, 31 N Y S 2d 234 (1941) [stud poker is a game of chance], *Joker Club LLC v. Hardin* *supra* [notwithstanding considerable testimony that poker is a game of skill, Court concludes that "[n]o amount of skill can change a deuce into an ace" and thus poker is predominantly a game of chance], *Lavick v. Nitzberg*, 83 Cal App 2d 381, 188

P 2d 758 (1948) [draw poker is “assuredly a game of chance”], *Garrett v State*, 963 So 2d 700 (Ala 2007) (unpublished) Texas Hold’em is a game of chance, concurring opinion refers to Texas Hold-em poker as “fundamentally a game of chance, in that the outcome of the game ultimately depends on a random draw of the cards ”], *People v Turner*, 165 Misc 2d 222, 629 N Y S 2d 661 (1995) [poker and blackjack “are as much games of chance as (a lottery) since the outcome depends to a material degree upon the random distribution of the cards The skill of the player may increase the odds in the players favor, but cannot determine the outcome regardless of the degree of skill employed ”] See also, *Loggins v Southern Ry* , 64 S C 321, 42 S E 163 (1902) [cites § 2174 of Railroad Act, allowing removal from train of any passenger for playing “any game of cards or other game of chance for money ”] These cases thus found that the results of *any card game* – including poker – depend upon the luck of the draw Therefore, all games “involving cards and dice, are, as a matter of law, games of chance ” Accordingly, testimony regarding the game of poker – whether skill or chance – is irrelevant *Id In re Advisory Opinion to the Governor supra* In our view, the General Assembly recognized this long ago when it broadly declared “any game with cards or dice” to be gaming in § 16-19-40 Thus, as one commentator recently stated, “there has been no judicial victory for poker players who had hoped that a court might conclude poker is a game that is exempt from gambling laws ” 11 *Gaming Law Review* 190, 201 (June 2007)

Moreover, even assuming *arguendo* that testimony regarding poker was proper, it is important to note that Dr Hannum, one of Respondents’ witnesses at trial, acknowledged that if two poker players possessed exactly the same skill, chance would determine the

outcome Record at ____ Further, Michael Sexton, another of Respondents' witnesses, conceded that a completely unskilled player could beat an accomplished player, depending upon the cards dealt Record at ____ Thus, even Respondents' own witnesses admitted that chance was a significant element in poker Accordingly, even assuming *arguendo*, that it was appropriate for the Circuit Court to engage in any "chance/skill" analysis here, which we certainly do not concede, nevertheless, the Court wrongly determined that poker is a game of skill Poker, including Texas Hold'em, is predominantly a game of chance as a matter of law

II

The Circuit Court erred in concluding that § 16-19-40(a) is unconstitutionally vague and overbroad

Finally, the Circuit Court erred in concluding that § 16-19-40(a) is constitutionally defective According to the Circuit Court, "in the absence of the dominant factor test," § 16-19-40(a) "cannot be applied to Appellants consistent with the principles of due process " Record at ____ The Court concluded that

S C Code Ann § 16-19-40 provides no definition of the term "house used as a place of gaming " Simple logic dictates that "place of gaming" must mean something more than a location where one of the subsequently enumerated games is played, otherwise, the two elements required for conviction become one But, because the statute does not articulate what is meant by a "place of gaming," there is no way for people to know when they are in violation of the statute Because it is not possible to discern what conduct is criminal, § 16-19-40(a) is unconstitutionally vague

Record at ____ Moreover, the Circuit Court found that § 16-19-40(a) is unconstitutionally overbroad because “[i]t criminalizes a variety of games played with cards or dice regardless of whether the dominant factor in a particular game is skill or chance ” Record at ____

The Circuit Court was again in error The constitutionality of § 16-19-40(a) does not hinge upon the applicability of the dominant factor test In our view, the statute needs no definitions of terms, nor is it unclear to an ordinary citizen such that he would not understand that playing poker for money in a residence, essentially operating as a casino, is illegal under § 16-19-40 Thus, the Court erroneously declared invalid a statute, pursuant to which this Court has affirmed many convictions over the course of two centuries

At the outset, we note that this Court recently held in *State v Neuman*, 384 S C 395, 401, 683 S E 2d 268, 271 (2009) that use of “overbreadth” doctrine is inappropriate except in certain limited circumstances where First Amendment rights are involved The Court explained as follows

[f]irst, Neuman’s counsel’s use of the term “overbroad” is not necessarily dispositive Clearly, a challenge to § 24-13-450 would not have been based upon the overbreadth doctrine This statute could not conceivably suppress protected speech or conduct Without a First Amendment concern, the overbreadth doctrine would not have been an appropriate ground to challenge the statute See *In re Amir X S*, 371 S C 380, 384, 639 S E 2d 144, 146 (2006) (noting a person raising a First Amendment overbreadth doctrine challenge to a statute must demonstrate that the statute could cause someone to refrain from constitutionally-protected expression), *State v Bouye*, 325 S C 260, 265, 484 S E 2d 461, 464 (1997) (“The overbreadth doctrine applies only to First Amendment cases where the challenged law would have a ‘chilling effect’ on constitutionally protected forms of speech ”)

As the United States Supreme Court has recognized, gambling “implicates no constitutionally protected right, rather, it falls into a category of ‘vice’ activity that could be,

and frequently has been banned altogether” *U S v Edge Broadcasting Co* , 509 U S 418, 426 (1993) See also, *Posadas de Puerto Rico Associates v Tourism Co of Puerto Rico*, 478 U S 328 (1986) Certainly, no First Amendment rights could have been, and indeed were not, asserted below The Circuit Court’s order does not mention the First Amendment in its very brief overbreadth analysis Thus, the employment of such analysis was legally incorrect See, *State v Burkhart*, 58 S W 3d 694, 700 (Tenn 2001) [because gambling or possessing a gambling device “is not constitutionally protected conduct ,” the overbreadth challenge to the Tennessee gambling statute was without merit as “the statutes do not reach a substantial amount of constitutionally protected conduct ”] See also, *Village of Hoffman Estates v Flipside Hoffman Estates Inc* , 455 U S 489, 494 (1982) [statute must reach First Amendment’s protection for overbreadth to apply]

With respect to the Circuit Court’s conclusion concerning vagueness, this Court set forth the governing principles for a finding of void-for-vagueness in *State v Neuman supra* Quoting from its earlier decision in *Curtis v State*, 345 S C 557, 569, 549 S E 2d 591, 597 (2001), the Court stated

“This Court has a limited scope of review in cases involving a constitutional challenge to a statute because all statutes are presumed constitutional and, if possible, will be construed to render them valid ” *Curtis v State*, 345 S C 557, 569, 549 S E 2d 591, 597 (2001) “A ‘legislative act will not be declared unconstitutional unless its repugnance to the constitution is clear and beyond a reasonable doubt ’ ” *In re Treatment and Care of Luckabaugh*, 351 S C 122, 134-35, 568 S E 2d 338, 344 (2002) (quoting *Joytime Distribs & Amusement Co v State*, 338 S C 634, 640, 528 S E 2d 647, 650 (1999)) “A possible constitutional construction must prevail over an unconstitutional interpretation ” *Curtis*, 345 S C at 569-70, 549 S E 2d at 597

“The void-for-vagueness doctrine rests on the constitutional principle that procedural due process requires fair notice and proper standards for

adjudication ” *State v Houey*, 375 S C 106, 113, 651 S E 2d 314, 318 (2007) “The constitutional standard for vagueness is whether the law gives fair notice to those persons to whom the law applies ” *In re Amir X S* , 371 S C at 391-92, 639 S E 2d at 150 “A statute is not unconstitutionally vague if a person of ordinary intelligence seeking to obey the law will know, and is sufficiently warned of, the conduct the statute makes criminal ” *State v Curtis*, 356 S C 622, 629, 591 S E 2d 600, 603 (2004) This concept has been explained as follows, “[a] law is unconstitutionally vague if it forbids or requires the doing of an act in terms so vague that a person of common intelligence must necessarily guess as to its meaning and differ as to its application ” *Curtis v State*, 345 S C at 572, 549 S E 2d at 598 “One to whose conduct the law clearly applies does not have standing to challenge it for vagueness ” *Id*

Similarly, as the United States Supreme Court has repeatedly recognized, ,”the void-for-vagueness doctrine requires that a penal statute define the criminal offense with sufficient definiteness that ordinary people can understand what conduct is prohibited and in a manner that does not encourage arbitrary and discriminatory enforcement ”” *Gonzales v Carhart*, 550 U S 124, 149 (2007), quoting *Kolender v Lawson*, 461 U S 352, 357 (1983)

However, due process does not require that every word in a statute be defined *Johnson v Collins Entertainment Co* , 349 S C 613, 627, 564 S E 2d 653, 660 (2002) Moreover, this Court has also recognized that a statute will not be deemed void-for-vagueness when the terms of the statute have been further defined by judicial decisions As the Court determined in *State v Avery*, 255 S C 570, 571, 180 S E 2d 190, 191 (1971), in rejecting the argument that the term “riot” was not defined by statute, and was thus unconstitutionally vague,

[r]iot is a common law offense in this State and the definition of the crime, as adopted in *State v Connolly*, 3 Rich 337, has been consistently followed in our decisions

See also, *Johnson v Collins supra* [prior judicial decisions may fairly disclose statute's scope]

Here, as discussed above, in addition to § 16-19-40 being clear on its face, this Court has carefully determined the meaning of this statute over the many years it has been on the books since enactment in 1802 and clarification in 1816. As we have emphasized, *State v Faulkener, supra* made clear that the words “any house used as a place of gaming” were added by the 1816 statutory amendments to leave no doubt that all outbuildings were included within the statute’s reach in addition to “the principal or mansion house.” Thus, since time immemorial, this Court has recognized that § 16-19-40 is applicable to a “mansion house” or residence. Moreover, *State v Brice* applied the statute in its original form to a dwelling house, where that house was transformed into use for the purpose of gaming. Further, the general law is clear that a house used for gaming may include a dwelling or residence.

And, *State v Laney, supra* further clarified that it does not matter, for purposes of § 16-19-40, what the particular game being played might be, instead “all games” are included within the designated places prohibited. Finally, *The State v Scarlet Red* makes clear that any delineation of “chance versus skill” is irrelevant to § 16-19-40's application. What is important, according to *Scarlet Red*, is that there be a wager based upon a certain outcome of success.

Accordingly, this Court has left no doubt as to how § 16-19-40 is to be applied. Thus, both of the Circuit Court’s grounds for constitutional infirmity—overbreadth and void-for-vagueness—are without merit. The ordinary citizen is sufficiently aware of what a

“house used as a place of gaming” is, and he or she is certainly deemed to know that the phrase “any game with cards or dice” means exactly what it says and includes Texas Hold’em poker

Courts elsewhere have concluded that statutes similar to § 16-19-40 are not unconstitutionally vague or overly broad. For example, in *State v. Torres supra*, the Arkansas Supreme Court addressed the question of whether a statute making it unlawful to operate “any gambling house or place where gambling is carried on ” was void-for-vagueness. The Court rejected such argument, even though the statute provided no definition of “gambling” or “gaming house ”. The *Torres* Court concluded

[t]his court has said that whenever the definition of general words in a criminal statute, passed pursuant to police power, may be adequately determined through reference to judicial decisions construing the statute, it is not void-for-vagueness. *Carter v. State*, 255 Ark. 225, 500 S.W.2d 368 (1973). Uncertainty may also be cured by judicial construction discoverable by search of legal precedent other than decisions construing the statute in question. See 3 Sutherland, *Statutory Construction* § 58.02 (1986 and Supp. 1992), J. Jeffries, *Legality, Vagueness and The Construction of Penal Statutes*, 71 Va. L. Rev. 189, 207-208 (1985).

831 S.W.2d at 905. In the Court’s view, the appellees “who operated bingo establishments where money and risk were plainly involved, had fair warning that their actions were prohibited ” *Id.*

Further, in *Bellamy v. State*, 347 So.2d 419 (Fla. 1977), the Supreme Court of Florida upheld a conviction for operation of a gambling house, notwithstanding arguments by the defendant that the statute under which the conviction was obtained was unconstitutionally vague and overbroad. The statute prohibited the keeping of a gaming table or room or “other place for the purpose of gaming,” etc. Bellamy was convicted of permitting a dice game

played for money in his pool hall. He argued that the statute “is vague and overbroad because it would appear to outlaw games considered by reasonable men to be innocent.” *Id.* at 420. However, the Court found that the words “gaming” and “game” are “synonymous with gambling and the wording of the statute would not mislead a person of ordinary intelligence into thinking that professional games mentioned by Bellamy are prohibited.” *Id.*

Likewise, in *State v. Taylor*, 805 S.W.2d 440 (Tex. Crim. App. 1991) (en banc), the Court held that a statute prohibiting the keeping of a gambling place was not void-for-vagueness. Notwithstanding defendant’s argument that the statute allowed conviction “merely by showing that appellee received bets at a certain building,” the Court held that the statute required that the building in question had become “the location for the purpose of receiving bets.” *Id.* at 442. Thus, the statute was not unconstitutionally vague. *See also*, 38 C.J.S., *Gaming*, § 21 [generally, the statutes prohibiting gaming have been upheld against vagueness and overbreadth challenges], *State v. DeAngelis*, 257 S.C. 44, 183 S.E.2d 906 (1971) [statute making unlawful the operation of gambling devices not void-for-vagueness].

In addition, it is well understood that “gaming” is “the practice of staking property, beyond the purpose of mere sport on the hazards of cards or dice.” *State v. Lark*, 4 Ohio Dec. 241, 1896 WL 1523 (1896). Moreover, in *State v. Schlein*, 253 Kan. 205, 218, 854 P.2d 296, 305 (1993), the Kansas Supreme Court stated that the phrase “gambling place” possesses a well-defined meaning, such that

if one advertises and invites the public to a poker tournament in his or her home, in a school, in a church, in a monastery, or in a nursing home, charges each contestant an entry fee, provides the contestant with the rules of the

tournament, and provides prizes – each of those places would be converted into a gambling place and an individual who enters the premises where gambling is occurring, with the intent to participate in a poker tournament, has entered into a gambling place

And, in *State v Chase*, 117 N C App 686, 691, 453 S E 2d 195, 199 (1995), the North Carolina Court of Appeals quoted with approval the language from *State v Morgan*, 133 N C 743, 744-5, 45 S E 1033 (1903), which had concluded that “[i]t was not necessary to charge in the indictment that the games played at the gaming-house were games of chance. That is sufficiently implied in charging that the defendant kept a common gaming-house, the word ‘gaming’ having a definite meaning in law, i e gambling, the act of playing games for stakes or wagers.” As the Supreme Court of Georgia stated in *Woody v State*, 113 Ga 927, 39 S E 297 (1901) “[i]t was not essential that the accusation should minutely describe the games played, or the manner of playing them. The accused was sufficiently informed of the nature of the charge preferred against him.” There, the charge against defendant simply recited the words of the gaming statute which did not distinguish games of chance from those of skill. In the words of the Missouri Court of Appeals, in *State v Luther Maupin*, 71 Mo App 54, 1897 WL 2117 (1897), “cards and dice are singled out in the statute, wherein it is declared that if one plays any game whatsoever with cards or dice for money, he shall be punished. The state need not allege or prove that cards and dice thus specifically mentioned are a device which may be adapted to or used in play a game of chance.” Moreover, *The State v Scarlet Red supra* clearly rejects any delineation required by § 16-19-40 as to whether the game is a game of skill or chance.

Further, this Court in *State v Lane*, 82 S C 144, 63 S E 612 (1909) affirmed a conviction for keeping a gambling house. In *Lane*, the Court had no problem with the certainty of the statute. Rejecting defendant's argument that the charge was unwarranted, the Court stated

[t]he next question for consideration is whether there was error on the part of his honor, the presiding judge, in refusing the motion of the defendant's attorney to direct a verdict of not guilty, on the ground that, in order to convict a person of keeping and maintaining a gaming house, it is necessary to prove that the gambling was carried on more than one time. The fact that a person is caught gambling one time in a place mentioned in the statute is simply to be weighed by the jury, in connection with all surrounding circumstances, in determining the character of the house. If the proposition for which the appellant's attorney contends should be sustained, it would have the effect of practically eliminating from the consideration of the jury all the surrounding circumstances, except the fact that there was gambling on one occasion in such house.

And, as referenced above, this Court has perceived no difficulty construing an ordinance prohibiting a "house to be used as a place of gaming with cards for money or other stakes" to apply to a private hotel room. *Kemmis supra*

In short, a person of ordinary intelligence would undoubtedly know that "any game of cards for stakes is technically gambling" and in violation of § 16-19-40. *In re Fischer*, 231 A D 193, 247 N Y S 168 (1930). As the Supreme Court of North Carolina said as long ago as in 1848, it is universally accepted that the most obvious examples of games of chance are "the games with dice, which are determined by throwing only, and those in which the throw of the dice regulates the play or the hand at cards depends upon a dealing with the face down." *State v Gupton*, 30 N C 271, 1848 WL 1289 (1848). And, as the New York Court noted in *People v Todd*, 4 N Y S 25, 28 (1889), "the word 'game' is defined by

Webster ‘to play for a stake or purse, to use cards, dice, billiards, or other instruments, according to certain rules, with a view to win money or other thing waged upon the issue of the contest ’” The ordinary person is fully aware that “as long as cards have to be shuffled in any game before being dealt out, it is the element of chance that becomes master of the situation [E]very card game [thus] is game of chance and if played for money” constitutes gaming *People v. Welti*, 37 N Y S 2d 552, 555 (1942)

Section 16-19-40, extant for two centuries, accordingly needs no further definition in order to satisfy due process The Constitution certainly does not require that the statute delineate “games of chance” expressly in order to pass constitutional muster The playing of poker for stakes in a house “used as a place of gaming,” as was the case here – where there were regular poker games for money, luring many players through internet advertisements – certainly would put these Respondents on sufficient notice that the gambling laws were being violated Indeed, Mr Stallings pled guilty to the operation of a gambling house in this very case Record at ____ Thus, there can be no doubt that § 16-19-40 does not misinform or mislead the ordinary person – a residence repeatedly used to conduct large scale poker games for money, games open to the public, is a “house used as a place of gaming” to play a “game with cards or dice ”

The words of the Pennsylvania Court are particularly instructive in this case’s resolution In *Commonwealth v. Hubbard*, 69 Pa D & C 2d 571, 574, 1974 WL 15856 (1974), the question before the Court was whether there had been established the keeping of gaming house where, as here, the “place” involved was a private residence which was being

used as the “house” or “premises” for gaming. While Pennsylvania law had some differences with South Carolina, the Court’s language is particularly helpful.

[t]he words of the statute, the evil sought to be controlled and common sense all point to defendant’s guilt. The code makes it illegal for one to allow persons to assemble for the purpose of playing at “any game at which money or other valuable things may or shall be played for, or staked, or bet upon.” It is obvious from the testimony that this is not a situation where a few of the boys drop in for a Friday night social game of poker. Considering the number of persons on the premises, the fact that the dining area had been converted into a bar and the material found in the home, we conclude that defendant was involved with a gaming house as the words are used in the statute. Defendant relies on the rule of strict construction of penal statutes but there is a complementary principle that strict construction does not require the words of a criminal statute be given their narrowest meaning or that the lawmakers’ intent be disregarded. We continually exhort juries to use their common sense in evaluating evidence, courts should do likewise in interpreting statutes.

For centuries, courts everywhere, including this Court, have applied statutes similar to § 16-19-40. Vagueness has not been a problem in these statutes’ enforcement. The Circuit Court thus erroneously concluded that § 16-19-40(a) was void-for-vagueness and overbroad.

In short, Respondents’ issue, in reality, is not with the wording of the law, or its application, or its vagueness or overbreadth. If they wish the law not to be applied to their gaming activities, they should seek relief in the State House, not the courthouse.

CONCLUSION

The decision of the Circuit Court should be reversed and the convictions reinstated

Respectfully submitted,

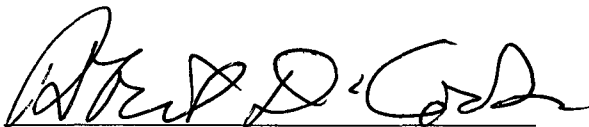
HENRY D McMASTER
Attorney General

JOHN W McINTOSH
Chief Deputy Attorney General

ROBERT D COOK
Deputy Attorney General

C HAVIRD JONES, JR
Senior Assistant Attorney General

MARY FRANCES JOWERS
Assistant Attorney General

By 
ROBERT D COOK

P O Box 11549
Columbia, SC 29211
(803) 734-3680

ATTORNEYS FOR THE APPELLANT

December 22, 2009

THE STATE OF SOUTH CAROLINA
IN THE SUPREME COURT

RECEIVED

DEC 22 2009

APPEAL FROM CHARLESTON COUNTY SC SUPREME COURT
Court of Common Pleas
The Honorable R Markley Dennis, Jr , Circuit Court Judge

C A No 2009-CP-10-001551

Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John T Willis

Respondents,

v

Town of Mount Pleasant

Appellant

**DESIGNATION OF MATTER
TO BE INCLUDED IN THE RECORD ON APPEAL**

Appellant proposes the following to be included in the Record on Appeal

- 1 Order of the Honorable R Markley Dennis, Jr , dated October 1, 2009
- 2 Order of the Honorable J Lawrence Duffy filed February 19, 2009
- 3 Transcript of Hearing held August 4, 2009, Circuit Court
- 4 Transcript of Hearing held February 13, 2009, Mount Pleasant Municipal
Court
- 5 Notice of Intent to Appeal filed March 13, 2009
- 6 Return to Notice of Intent to Appeal dated March 23, 2009, prepared by the
Honorable J Lawrence Duffy
- 7 State's Exhibit 1 from Municipal Court hearing 1 audio CD and 4 video CDs

- 8 State's Exhibit 3 from Municipal Court hearing VCR tape
- 9 State's Exhibit 4 from Municipal Court hearing Nathan Stallings sentencing sheet
- 10 Court's Exhibit 1 Warrant Affidavit dated May 1, 2006, for Nathan Stallings

I certify that this designation contains no matter which is irrelevant to this appeal

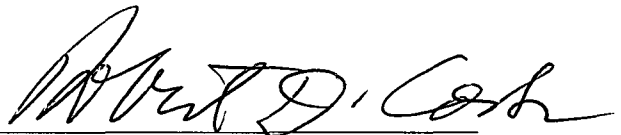
HENRY D McMASTER
Attorney General

JOHN W McINTOSH
Chief Deputy Attorney General

ROBERT D COOK
Deputy Attorney General

C HAVIRD JONES, JR
Senior Assistant Attorney General

MARY FRANCES JOWERS
Assistant Attorney General

By 
ROBERT D COOK

P O Box 11549
Columbia, SC 29211
(803) 734-3680

ATTORNEYS FOR THE APPELLANT

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Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John T Willis

Respondents,

VS

Town of Mount Pleasant

Appellant

INITIAL BRIEF OF RESPONDENTS

Jeffrey A Phillips
PHILLIPS LAW FIRM
1425 Augusta Street
Greenville, South Carolina 29605
PHONE 864 233 7373
AttyJeff@Bellsouth net

William W Wilkins
Kirsten E Small
NEXSEN PRUET, LLC
55 East Camperdown Way (29601)
Post Office Drawer 10648
Greenville, South Carolina 29603-0648
PHONE 864 370 2211
BWilkins@Nexsenpruet com

ATTORNEYS FOR RESPONDENTS

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STATEMENT OF ISSUES ON APPEAL

- 1 DID THE CIRCUIT COURT CORRECTLY HOLD THAT PLAYING TEXAS HOLD'EM IN A PRIVATE RESIDENCE DOES NOT, BY ITSELF, TRANSFORM THAT RESIDENCE INTO A "HOUSE USED AS A PLACE OF GAMING?"
- 2 DID THE CIRCUIT COURT CORRECTLY HOLD THAT THE TERM "HOUSE USED AS A PLACE OF GAMING" IS UNCONSTITUTIONALLY VAGUE?

STATEMENT OF THE CASE

On April 12, 2006, Robert L. Chimento, Scott Richards, Michael Williamson, Jeremy Brestel, and John T. Willis (collectively, “Respondents”) were charged with playing a game of cards in a house used as a place of gaming, in violation of S.C. Code Ann. § 16-19-40. At the time of their arrests, Respondents were playing “Texas Hold’em” at the home of Nathan Stallings. Respondents pleaded not guilty and the case was tried before Municipal Court Judge J. Lawrence Duffy, Jr. on February 13, 2009. Judge Duffy issued an order on February 19, 2009, finding that Texas Hold’em is predominantly a game of skill, Order at 3, but stating that he was “compelled” to convict Respondents in light of the absence of a “clear guideline from the Legislature or from the majority of this Supreme Court” as to whether South Carolina courts should follow the “dominant factor” test in determining whether an activity is gaming. Order at 4.

Respondents appealed to the Circuit Court. *See* S.C. Code Ann. § 14-25-95 (Supp. 2009) (authorizing appeal to circuit court from municipal court conviction). That court conducted a hearing on August 4, 2009. Thereafter, on October 1, 2009, the court reversed Respondents’ convictions. The court (1) concluded that the South Carolina Supreme Court would adopt the dominant factor test to determine whether an activity could be considered “gaming,” Order at 7-10, (2) affirmed the finding of the municipal court that Texas Hold’em is predominantly a game of skill, Order at 10 & n.1, (3) held that because Texas Hold’em is not “gaming” under the dominant factor test, Stallings’ residence could not have been a “house used as a place of gaming” within the meaning of § 16-19-40, Order at 11, and (4) reversed Respondents’ convictions, Order at 10-11. Alternatively, the court concluded that the statute was unconstitutionally vague and overbroad. Order at 13-15. The State timely noted an appeal.

STATEMENT OF FACTS

In its Statement of Facts, the State repeatedly ignores the factual findings of the Municipal Court and mischaracterizes the evidence presented at trial. Respondents therefore set out their own statement of the relevant facts.

A Facts Regarding Respondents' Conduct

On April 12, 2006, approximately seventeen individuals, including Respondents, gathered at the home of Nathan Stallings to play Texas Hold'em, a game with cards.¹ The "buy-in"² for the game was between \$5.00 and \$20.00, the "blinds"³ were 25¢ and 50¢, and the average pot size was between \$5.00 and \$10.00. Trial Tr. p. 93, lines 9-13, p. 98, line 10 – p. 99, line 1.⁴ The players came together once or twice a week to play Texas Hold'em. Trial Tr. p. 97, line 17 – p. 98, line 3. Stallings testified without

¹ The circuit court opinion explains how Texas Hold'em is played. Order at 1-2.

² A "buy-in" is the initial purchase of chips by the individual players.

³ The "blinds" are required bets posted by the two players to the left of the dealer button. The "small blind" (which is posted by the player to the left of the dealer button) is equal to half of the minimum bet (25¢ in this case) and the big blind (which is posted by the player to the left of the person sitting in the small blind) is equal to the minimum bet (50¢ in this case).

⁴ The State claims that "Stallings testified that at any one time, the amount on the table could be more than \$200." Br. of Appellant at 4. This is a gross misstatement of Stallings' testimony, which actually was as follows:

Q What was the average pot[?]

A It's hard to give an average because there's a forced bet, which is a blind [a]nd no one has to call after that. So it could have been 75 cents up to anywhere from 20 to 30 bucks.

Q That'd be a maximum for a hand?

A Probably. I mean, if you had 10 people at a table, you have \$200. If everybody went all in, you could win 200 bucks.

Q But did everybody ever go all in on 10 people?

A No. [O]ur average pot was between 5 and \$10."

Trial Tr. p. 98, line 11 – p. 99, line 1.

contradiction that the meetings at his residence were not open to the general public Trial Tr p 113, lines 6-21 While information about the games was available on a social networking website called “meetup com,”⁵ one had to be a member of the networking group, or be invited by a member, to attend the games Trial Tr p 111, line 25 – p 113, line 21

Stallings made no profit from the playing of the game Trial Tr p 93, lines 6-8 (“Q Did you make any money running this poker game? A No ”) The municipal court found as a fact that Stallings merely “took a rake out of the pot to cover food and drink provided ” Order at 3, *see* Trial Tr p 93, line 16 – p 94, line 9 Often, these “rakes” were insufficient to cover the actual cost of food and beverage consumed by the players, in which case one of the players contributed or Stallings paid out of his own pocket Trial Tr p 94, lines 6-9 ⁶

⁵ “Meetup com” is

an online social networking portal that facilitates offline group meetings in various localities around the world Meetup allows members to find and join groups unified by a common interest, such as politics, books, games, movies, health, pets, careers or hobbies Users enter their ZIP code (or their city outside the United States) and the topic they want to meet about, and the website helps them arrange a place and time to meet

<http://en.wikipedia.org/wiki/Meetup.com> (last visited Feb 22, 2010)

⁶ Ignoring the factual findings of the municipal court, the State quotes arresting officer Justin Hembree, who claimed that Stallings told him “that he would make \$2 from each hand ” Trial Tr p 27, lines 6-7 Officer Hembree’s testimony on this point was thoroughly discredited by other trial testimony Trial Tr p 131, line 18 – p 132, line 12 (Respondent Jeremy Brestel, testifying that a \$2-per-hand rake in a 25-50 cent game “would eat up all the cash on the table” in a very short period of time), Trial Tr p 176, lines 12-22 (expert witness Michael Sexton, stating the same), *see also* Trial Tr p 74, line 10 – p 76, line 1 (Officer Hembree acknowledging that his affidavit in support of the arrest warrant does not mention the alleged \$2-per-hand rake)

The State makes repeated and inflammatory attempts to characterize Stallings' home as a "casino-like facility." Br. of Appellant at 7, *id.* at 11 ("large-scale casino gambling," "a virtual casino"), *id.* at 24 ("little different than a casino"), *id.* at 36 ("essentially operating as a casino"). These assertions are ludicrous in light of the evidence presented at trial.⁷ State's Exhibit 4 is a video taken on the night of Respondents' arrest. The video shows a total of approximately 15 people seated at two makeshift poker tables (at 00:48, one can see the ragged edges of a hole made for a beverage container). See Trial Tr. p. 96, line 23 – p. 97, line 4 (describing one table as "a plastic table bought from Costco" to which had been affixed "a piece of cardboard and a piece of plywood cut into a circle with some fabric on it so the cards wouldn't slide").

⁷ Testimony at the preliminary hearing likewise demonstrates that Stallings' private residence bore no resemblance to a casino.

Mr. Phillips: You said that this house was set up in a casino style. Have you ever been in a casino?

Cpl. Hembree: Yes, sir.

Mr. Phillips: Were there any slot machines in this house?

Cpl. Hembree: No, sir.

Mr. Phillips: Were there any black jack tables?

Cpl. Hembree: I wouldn't know a black jack table if I was sitting in front of it.

Mr. Phillips: Have you ever seen a roulette wheel?

Cpl. Hembree: Yes, I have.

Mr. Phillips: Was there one there?

Cpl. Hembree: No, sir.

Mr. Phillips: Was there a craps table?

Cpl. Hembree: I'm not sure what that looks like.

Preliminary Hearing Tr. p. 12, line 19 – p. 13, line 12

Seating at both tables consisted of a motley assortment of folding chairs, desk chairs, recliners, and couches. There were no house odds, no house dealer, and door charge or surcharge to play.

B Facts Regarding Whether Texas Hold'em Is A Game Of Skill

Respondents presented testimony from two expert witnesses regarding the role of skill in Texas Hold'em. The first expert was Michael T. Sexton, who has been playing Texas Hold'em professionally since 1977. Trial Tr. p. 141, lines 16-19. Mr. Sexton has won numerous major Texas Hold'em tournaments, including the European Poker Championship and the World Series of Poker Tournament of Champions. Trial Tr. p. 146, line 19 – p. 147, line 4. He writes articles commenting on poker hands, instructs at seminars and “boot camps,” and has written a best-selling book about Texas Hold'em. Trial Tr. p. 145, line 9 – p. 146, line 6.

Sexton identified ten separate skills that are critical to winning at Texas Hold'em.⁸

1. *Putting a Player On Hand*. To put a player “on hand” is to deduce that player’s hole cards, “probably the top skill” in Texas Hold'em. Trial Tr. p. 153, lines 1-4. A skilled player will observe other players’ “betting action, and their style of play, their body language, *et cetera*.” Trial Tr. p. 153, lines 14-16.
2. *Betting behavior*. As Sexton explained, betting strategically is an important skill. “you have purpose every time you’re betting.” Trial Tr. p. 155, lines 12-13. For example, a player may induce an opponent to call by making a smaller bet, or may push another player to fold by making a larger bet. Trial Tr. p. 155, lines 13-18. Betting changes the dynamics of the game. Trial Tr. p. 164, line 17. “[T]he more skilled players

⁸ The State claims that Sexton “admitted that a completely unskilled player could beat an accomplished player, depending upon the cards dealt.” Br. of Appellant at 5. That is not what Sexton said. Sexton’s actual testimony was that a novice might prevail in a single hand, or possibly a single game, but that the odds were “a million to one” against a novice consistently beating a skilled player. Trial Tr. p. 178, lines 18-19.

understand the power of betting, when to bet, when not to bet, and it gives them an edge ” Trial Tr p 164, lines 18-20

- 3 *Math Knowledge* A skilled player of Texas Hold'em will employ a basic knowledge of probabilities and arithmetic to estimate whether an “investment” in the pot (i.e., a bet) will provide a worthwhile return Trial Tr p 155, line 25 – p 160, line 8 Sexton explained this principle using a hypothetical hand in which the player calculates his odds of winning at 4 5 to 1 If the player will receive a return on his or her money of greater than 4 5 to 1, he should call, if not, he should fold and save his money for another hand
- 4 *Folding* “[V]ery simply in poker, money saved is money earned ” Trial Tr p 160, lines 13-14 In many situations, the “best play possible” is to fold, limiting losses and conserving funds for later rounds Trial Tr p 160, line 15
- 5 *Bluffing* A player who bluffs successfully will win the hand without having the best cards Trial Tr p 161, lines 3-4 Having the skill to bluff, and the courage to do it, are key skills Trial Tr p 162, line 17 – p 163, line 1
- 6 *Changing Gears* As Sexton explained, predictable players are losing players Trial Tr p 165, lines 19-23 (“You don’t want to be a predictable poker player because in truth the more skilled players will just pick you off like a lion looks at a limping gazelle”) Thus, the ability to change one’s style of play “and camouflag[e] the strength of your hand will definitely make you a better poker player ” Trial Tr p 165, lines 16-19
- 7 *Patience and discipline* The ability to wait out a run of bad cards is a hallmark of experienced players “[T]he biggest mistake that amateur players make is they play too many hands, and they call their money off too much ” Trial Tr page 168, lines 12-14 Better players will wait for better cards rather than trying to “force the action ” Trial Tr p 168, line 20
- 8 *Self-control* In any game of Texas Hold'em, the likelihood is that a player is going to lose a large pot When this happens, as it does to even the most experienced player, the ability to maintain one’s composure and continue to play strategically is an important skill Trial Tr p 168, line 25 – p 169, line 20
- 9 *Playing Position* During a game of Texas Hold'em the blinds move around the table, meaning that each player will at some point be the “butt[on],” the last player in the round of betting for that hand Trial Tr p 171, lines 11-16 A skilled player will capitalize on the opportunity to observe the behavior of those who bet before him and respond

accordingly Trial Tr p 171, line 17 – p 173, line 3 (explaining how players can take strategic advantage of their playing position)

- 10 *Continuing Study* One becomes a better poker player the same way one becomes a better golfer or chess player through practice and study Trial Tr p 173, lines 22-24 (“[I]n truth poker is not like/unlike anything else in the world Those that prepare to win do better than those who don’t ”)

Respondents also presented the testimony of Robert Hannum, Ph D , an expert in statistics and probability related to gaming Trial Tr p 195, lines 18-20 Dr Hannum testified about two studies he conducted that evaluated the impact of strategy in Texas Hold’em The first study determined what the outcome would be if a player who employed strategy played against one who did not The player employing strategy prevailed 97 percent of the time Trial Tr p 196, lines 21-25 Another study, which pitted “bots” (computer programs capable of playing Texas Hold’em) of varying skill levels against each other, “showed that the highly skilled players convincingly defeat the players with little to no skill ” Trial Tr p 197, lines 7-14 Based on these studies, Dr Hannum concluded “[t]hat skill is a predominant factor” in Texas Hold’em Trial Tr p 198, lines 11-12

Dr Hannum also recounted a study that compared top Texas Hold’em players to top golfers The data demonstrated that “the skill differences among poker players [are] similar to the skill differences among top professional golfers,” *i e* , future success could be predicted by past performance Trial Tr p 199, line 19 – p 201, line 1 Necessarily, then, skill was predominant in both activities Trial Tr p 201, lines 5-7 (“[S]kill needs to be a dominant enough factor in order to be able to predict future success from past finishes ”) Another study revealed that out of 103 million hands of Texas Hold’em, 76 percent were resolved by all but one player folding before the showdown, and the best hand won only *half* of the remaining 24 percent Trial Tr p 206, lines 6-24 Thus, the

skill of the winning player was the determining factor in 88 percent of those 103 million hands Trial Tr p 207, lines 3-7

Dr Hannum explicitly distinguished the greater skill involved in Texas Hold'em as opposed to typical casino games

The major difference between – maybe I'll call it card room poker, Texas Hold'em as opposed to say games like Caribbean Stud Poker, Let It Ride Poker, those table games that are more or less along the lines of a black-jack type in the sense that I'm describing now [Texas Hold'em] is a game where you are playing against the other players Other games such as blackjack, the Caribbean Stud, the Let It Ride, roulette, slots, you're playing against the house There's a fixed advantage on those games, and you're up against them

In card room poker, you're playing against the other players, and if you're a better player, if you're more skilled, then you can win at card room poker

Trial Tr p 203, line 19 – p 204, line 9⁹

The State neither objected to this testimony nor presented any evidence of its own to prove that Texas Hold'em is predominantly a game of chance rather than skill

⁹ The State ignores all of the above evidence from Dr Hannum, reducing his testimony to the elementary truth that as between players of absolutely equal skill, the winner will be determined by the luck of the draw Of course, as the State acknowledged, such conditions do not exist outside of a computer lab Trial Tr p 211, lines 6-14 The same is true of other games of skill, such as golf—it is never the case that two players of exactly the same skill face each other

SUMMARY OF ARGUMENT

Texas Hold'em is an enormously popular pastime for millions of Americans. Texas Hold'em and other forms of poker have been played throughout this country's history by presidents, generals, and Supreme Court justices. Texas Hold'em tournaments are broadcast to huge television audiences, books on game strategy abound, and hands are analyzed in the same way as hands of bridge.

What is true of the country as a whole is true in South Carolina, where every day ordinary, law-abiding citizens gather to play a game involving strategy, psychology, and mathematics. In late 2009, Catholic priest Andrew Trapp outplayed 9,999 others to win \$100,000 and a chance to play for \$1 million against poker great Daniel Negreanu. *See* Seanna Adcox, "SC Priest Wins \$100,000 for Church in Poker Game," Associated Press (Dec. 22, 2009). The ultimate winner of the tournament, retired NYPD officer Mike Kosowski, was a first responder on 9/11. *See* "9/11 Hero Wins \$1,000,000 for Beating Negreanu," www.bluffeurope.com (Dec. 21, 2009). Officer Kosowski donated part of his winnings to the Families of Freedom 9/11 Scholarship Fund, another part of the money will pay for his daughter's wedding. *See id.* For his part, Father Trapp hoped that his participation in the tournament would, in addition to adding to the church's building fund, "demystify" the priesthood by "show[ing] the world that priests are human beings like every one of us." Adcox, *supra*.

This case is about the right of the citizens of this state to play Texas Hold'em in their own homes, free of the fear that a SWAT team will suddenly burst into the residence to arrest the players. This case is not about casinos, or professional gambling, or any of the other specters the State raises in its brief. The right to play Texas Hold'em

at home is overwhelmingly supported by South Carolinians, as shown by a recent online poll by the *Charleston Post and Courier*, in which 86 percent of those voting believed that a home poker game should be legal. See http://www.postandcourier.com/polls/2008/apr/poker_poll (last visited Feb. 22, 2010). What is all the more perplexing about this prosecution is that Respondents' conduct is no different in principle from the conduct of the players in a small-stakes bridge game, which the State believes is legal. Appeal Tr. p. 26, line 6 – p. 27, line 5.

The State charged Respondents with a criminal offense for playing a small-stakes game of Texas Hold'em in a private residence. According to the State, Respondents were guilty of playing cards in a "house used as a place of gaming" in violation of S.C. Code Ann. § 16-19-40. Since Texas Hold'em is indisputably a "game with cards," Respondents' guilt or innocence turns on whether Stallings' residence was a "house used as a place of gaming" on the night of Respondents' arrests.¹⁰ The statute does not define this term, nor has this Court explained its meaning.

In ordinary usage, the synonymous terms "gaming" and "gambling" refer to games of chance, not to games of skill. This definition is confirmed by the plain language of § 16-19-40 and by the South Carolina Constitution. Accordingly, a finding that a private residence is a "house used as a place of gaming" requires proof that a game of chance was being played therein—that there was gaming going on. Since the only game being played in Stallings' residence on the night of April 12, 2006 was Texas

¹⁰ The State repeatedly mentions that Stallings pleaded guilty to keeping a house of gaming, as though this fact were somehow relevant to the legal questions before this Court. It is not. Moreover, Stallings testified that he pleaded guilty in exchange for the dropping of charges against his fiancée, who had recently been admitted to medical school. Trial Tr. p. 124, lines 5-11.

Hold'em, the question becomes whether Texas Hold'em is a game of skill or a game of chance. For the purposes of deciding that question, this Court should—consistent with its own previous decisions and the well-reasoned views of virtually every other United States jurisdiction—adopt the “dominant factor” test.

Employing that test, the municipal court has already determined, as a question of fact and based on the overwhelming evidence, that Texas Hold'em is predominantly a game of skill. The circuit court has affirmed that finding as being supported by the evidence. The State's belated attempt to challenge this conclusion is waived, and in any event is without merit. Because Texas Hold'em is predominantly a game of skill, it is not “gaming,” and therefore Stallings' home could not have been a “house used as a place of gaming.”

As an alternative to their argument that Texas Hold'em is not gaming, Respondents maintain that the record contains no evidence that Stallings' residence bore any recognized hallmark of a “place of gaming.” If Texas Hold'em is gaming (which Respondents deny), this Court must identify some other way for prosecutors and trial judges to distinguish a private residence—where gaming is allowed under the statute—from a public “house used as a place of gaming.”¹¹ The two-element structure of § 16-19-40 demands that the determination of whether a residence is a “house used as a place of gaming” be made without reference to the specific activity being carried on inside. Just as a tavern is a tavern regardless of whether anyone ever plays a game with cards at the bar, whether a private residence has become a “house used as a place of gaming” must be determined independently of the turn of the card. The record here, however,

¹¹ The statute does not prohibit playing games with cards or dice in a private residence,

contains no such other evidence Stallings charged no entry fee, took no profit, and did not allow the public at large to enter his residence

A proper construction of § 16-19-40 allows the citizens of South Carolina to play cards and other games in their homes but absolutely prohibits public gaming, as the Legislature clearly intended In the absence of the common-sense limiting construction offered by Respondents, § 16-19-40 is vague and overbroad, encouraging arbitrary and discriminatory enforcement and thereby violating the Due Process Clause

The ruling of the circuit court should be affirmed

nor does it prohibit betting on such games *See infra*

ARGUMENT

I S C CODE ANN § 16-19-40 DOES NOT REACH RESPONDENTS' CONDUCT BECAUSE NATHAN STALLINGS' RESIDENCE WAS NOT "A HOUSE USED AS A PLACE OF GAMING "

This case turns on a question of statutory construction what is the meaning of the term "house used as a place of gaming" as it appears in S C Code Ann § 16-19-40? In answering this question, the "primary function" of the court "is to ascertain the intent of the legislature " *Whitner v State*, 328 S C 1, 6, 492 S E 2d 777, 779 (1997) To the extent the statute is clear and unambiguous, it should be applied according to its terms *See First South Sav Bank Inc v Gold Coast Assocs Inc* , 301 S C 158, 160, 390 S E 2d 486, 487 (Ct App 1990) Additionally, "when a statute is penal in nature, it must be construed strictly against the State and in favor of the defendant " *State v Blackmon*, 304 S C 270, 273, 403 S E 2d 660, 662 (1991) This Court recognized that the rule of strict construction of penal statutes applies to § 16-19-40 in *Darlington Theatres v Coker*, 190 S C 282, 2 S E 2d 782, 786 (1939)

A The plain statutory language does not prohibit card playing in a private residence

S C Code Ann § 16-19-40 provides

If any person shall play at any tavern, inn, store for the retailing of spirituous liquors or in any house used as a place of gaming, barn, kitchen, stable or other outhouse, street, highway, open wood, race field or open place at (a) any game with cards or dice, (b) any gaming table, commonly called A, B, C, or E, O, or any gaming table known or distinguished by any other letters or by any figures, (c) any roley-poley table, (d) rouge et noir, (e) any faro bank (f) any other table or bank of the same or the like kind under any denomination whatsoever or (g) any machine or device licensed pursuant to Section 12-21-2720 and used for gambling purposes, except the games of billiards, bowls, backgammon, chess, draughts, or whist when there is no betting on any such game of billiards, bowls, backgammon, chess, draughts, or whist or shall bet on the sides or hands of such as do game, upon being convicted thereof, before any magistrate, shall be imprisoned for a period of not over thirty days or fined not over

one hundred dollars, and every person so keeping such tavern, inn, retail store, public place, or house used as a place for gaming or such other house shall, upon being convicted thereof, upon indictment, be imprisoned for a period not exceeding twelve months and forfeit a sum not exceeding two thousand dollars, for each and every offense¹²

There is no dispute that conviction under the statute requires proof beyond a reasonable doubt of two elements that the defendant (1) engaged in a listed activity, (2) in a listed place¹³ See *State v Laney*, 38 S C L (4 Rich) 193 (1850) (“Every playing of cards is not prohibited by [§ 16-19-40], it is only criminal when done at particular places, the place, therefore, must be alleged, because that enters into the definition of the offense ”)

The activity relevant here is playing at “any game with cards” except whist,¹⁴ whist is subject to prohibition only when the participants bet on the game Engaging in a listed activity is not by itself illegal, there is no *per se* prohibition on playing blackjack or roulette, for example These games are illegal *only* when conducted in one of the enumerated locations hotels and motels (“any inn”), businesses that sell alcohol (“any tavern [or] store for the retailing of spirituous liquors”), “any house used as a place of gaming”, buildings *associated* with a residence (“any barn, kitchen, stable or other outhouse”),¹⁵ and “any street, highway, open wood, race field or open place ”

¹² The statutory language has existed without material change since 1816, although it has been codified at various locations in the South Carolina Code For the sake of simplicity, Respondents will refer to the post-1816 statutory language as § 16-19-40, regardless of its actual codification at any given time

¹³ Alternatively, one may be convicted of being the keeper of a place where the prohibited activity is being carried out or of betting on a game when not a player Neither of these provisions is at issue here

¹⁴ Whist is a card game that is a precursor to bridge www.dictionary.reference.com/browse/whist

¹⁵ In the early 19th century, when § 16-19-40 was enacted, the “kitchen” was not a part of the residence but rather was a separate, detached structure See “Plantation Kitchens,” available at www.hushpuppynation.com/plantation-kitchens/ (last visited Feb 22, 2010), “Kitchen,” available at <http://en.wikipedia.org/wiki/Kitchen> (last visited Feb 22, 2010) (“In the south, the kitchen was often relegated to an outhouse, separate from the

The plain language of the statute therefore establishes the following

- With the exception of whist, one can *never* play “any game with cards,” in any hotel, business that sells alcohol, “house of gaming,” residential outbuilding, or open place,
- A game with cards (other than whist) in one of these locations is illegal regardless of whether the players bet on the game,
- One may play whist in a hotel, business that sells alcohol, “house of gaming,” residential outbuilding, or open place so long as the players do not bet on the game,
- The statute imposes no prohibition on playing any game of cards in a private residence, *even if the players bet on the game*

In light of the State’s arguments, certain aspects of the statutory language bear further discussion

1 By its terms § 16-19-40 does not apply to residences

The State contends “that § 16-19-40 may be applied to all gaming occurring in residences or dwelling houses ” Br of Appellant at 20 This argument is contrary to the plain language of § 16-19-40, which nowhere mentions “residences or dwelling houses ” The cases relied on by the State to prove that playing cards at home is illegal do not actually support this claim The State first contends that in *State v Faulkener*, 13 S C L (12 McCord) 438 (1823), “this Court recognized that § 16-19-40 may be applied to all gaming occurring in residences or dwelling houses ” Br of Appellant at 20 *Faulkener* holds nothing of the sort, as even a cursory reading of the case establishes Defendant Faulkener challenged his conviction under § 16-19-40 on the basis that his particular location—a distillery—“was not such an out house as was contemplated by the act against gaming ” *Faulkener*, 13 S C L 438 The Court rejected this argument In so

mansion, [because] the kitchen was operated by slaves, and their working place had to be separated from the living area of the masters by the social standards of the time ”)

doing, the Court noted that as originally enacted in 1802, the statute prohibited playing “any game” at “any tavern, inn, store for the retailing of any spirituous liquors, or in any other public house, or in any street, high way, or in any open wood, race field, or open place” *Id* (internal quotation marks omitted) Because the listing of certain places “necessarily exclude[d] all others from the operation of the act,” the prohibition was being defeated by playing in various outbuildings *Id* Therefore, in 1816 the Legislature added the words “any house used as a place of gaming, or in any barn, kitchen, stable or other out-house” *Id* (internal quotation marks omitted) Based on this legislative history, the Court concluded that the statute prohibited the playing of games in any residential outbuilding regardless of type, including a distillery *Faulkener* thus establishes that § 16-19-40 applies to residential outbuildings *but not the residence itself*—exactly the opposite of the proposition for which the State cites it

Neither does *State v Brice*, 4 S C L (2 Brev) 66 (1806) support the State’s argument Defendant Brice challenged the sufficiency of an indictment under the 1802 version of the statute *Brice* thus tells us nothing about the meaning of “house used as a place of gaming” or “outhouse” because those terms were not then part of the statutory language Additionally, the majority issued no opinion The only legal analysis is found in Justice Brevard’s dissent, and under his analysis, Respondents are innocent Noting that the statute was directed toward “keepers of taverns, &c ,” Justice Brevard concluded that “[t]he legislature could not intend, that for a casual game being played in a man’s house, he should forfeit the penalty ” *Brice*, 4 S C L 66 (Brevard, J , dissenting)

In short, it is plain from the statutory language and applicable decisions of this Court that § 16-19-40 does not include a private residence within the list of places where

card playing is prohibited. This view is reinforced by *City of Greenville v Kemmis*, 58 S C 427, 36 S E 727 (1900). There, Kemmis appealed his conviction for violating a municipal ordinance that forbade “any person or persons to permit his, her or their enclosure or place or house to be used as a place for gaming with cards for money or other stake.” *Id.*, 36 S E at 729 (internal quotation marks omitted). Kemmis argued that the City of Greenville could not make illegal conduct (playing cards for money in a residence) that was not prohibited under § 16-19-40. *See id.*, 36 S E at 728. It thus appears that the City of Greenville (which presumably enacted the ordinance to fill a gap left by the statute) did not believe that § 16-19-40 prohibited card playing, even for money, in a private residence. This Court in *Kemmis* did not find otherwise, even though a holding that the prohibitions of the ordinance were duplicative of the prohibitions of the statute would surely have simplified the Court’s analysis.

Further, adoption of the State’s position that any “gaming”—which it defines as playing any game of cards or dice for money—in a private residence is illegal would make criminals of parents and their teenagers playing penny-a-point gin rummy at home on family game night, the residents of a retirement home playing in a small-stakes bridge tournament, and countless others. Such an absurd reading of the statute cannot be accepted. *See Davis v Sch Dist of Greenville County*, 374 S C 39, 45, 647 S E 2d 219, 222 (2007) (holding that proper statutory construction must “prevent an interpretation that would lead to a result that is plainly absurd”). It is no answer to suggest, as the State did in the circuit court, that § 16-19-40 would not be enforced against such violations. Appeal Tr p 26, line 16 – p 27, line 5, *id.* p 29, lines 3-8. Selecting among which violations of a statute to prosecute based the arresting officer’s subjective views (the

weekly bridge game advertised on meetup.com is allowed, but the weekly Texas Hold'em game advertised in the same way is not) is the height of arbitrariness. See *Grayned v. City of Rockford*, 408 U.S. 104, 108-09 (1972) (holding that a law is unconstitutional when it “impermissibly delegates basic policy matters to policemen, judges, and juries for resolution on an ad hoc and subjective basis, with the attendant dangers of arbitrary and discriminatory application”).

2 *Section 16-19-40 does not prohibit all card games played for money*

While the State insists upon inserting the words “for money” following the phrase “any game with cards or dice,” this qualification is absent from the statute, which makes clear that betting is relevant only to the question of whether whist may be played in one of the enumerated locations. Neither *State v. Scarlet Red*, 41 S.C.L. (7 Rich.) 8 (Ct. App. 1853), nor *State v. Robinson*, 40 S.C. 553, 18 S.E. 891 (1894), is to the contrary. While these cases contain language indicating that betting renders illegal the playing of a game “with cards or dice,” in both cases the statements were *dicta* because the defendant was admittedly playing for stakes, so the question of whether a conviction would be proper in the absence of betting was not before the court. This Court should disregard *dictum* that is contrary to the plain language of the statute, which states—as Respondents have acknowledged all along—that playing cards in one of the enumerated locations is illegal *regardless* of whether the players bet on the game.

B This Court should adopt the “dominant factor” test to determine whether a game is one of skill or chance

For the reasons set forth above, § 16-19-40 does not prohibit playing cards in a private residence. The State maintains, however, that Stallings’ home was not a private residence, it was a public “house used as a place of gaming.” Respondents now turn to

the issue of how this term is to be defined and why, under a proper definition of “gaming,” Stallings’ private residence was not a “house used as a place of gaming.”

1 An activity is gaming or gambling only if it is a game of chance

The first and most basic question is, “What constitutes gaming?” In answering this question, this Court must look to the natural and ordinary meaning of the word. See *Sloan v S C Bd of Physical Therapy Examiners*, 370 S C 452, 469, 636 S E 2d 598, 607 (2006). The parties agree that “gaming” and “gambling” are synonymous terms. Accord BLACK’S LAW DICTIONARY 468-69 (6th ed. 1991). The term “gambling” is defined as “play[ing] a game of chance for stakes.” WEBSTER’S II NEW COLL. DICTIONARY 459 (1999).

Black’s Law Dictionary defines both “gambling” and “gaming” in terms of chance. “Gambling” is defined as involving

not only chance, but a hope of gaining something beyond the amount played. Gambling consists of a consideration, an element of chance, and a reward. The elements of gambling are payment of a price for a chance to win a reward.

BLACK’S LAW DICTIONARY 468. “Gaming” is

[t]he practice or act of gambling. An agreement between two or more persons to play together at a game of chance for a stake or wager. The elements of gaming are the presence of price or consideration, chance, and prize or reward.

Id. at 469, see *People v Hua*, 885 N Y S 2d 380, 383 (N Y Crim Ct 2009) (holding that “wagering on the outcome of a game of skill is not gambling”), *Town of Centerville v Burns*, 126 S W 2d 322, 322-23 (Tenn 1939) (using terms “gambling” and “gaming” interchangeably and holding that an activity is not gaming unless “chance is the controlling factor” (internal quotation marks omitted)). It is therefore not surprising that

Black's also defines "gambling place," a term identical in connotation to "place of gaming," in terms of chance. *See id.* at 468 (defining "gambling place" as any place for "conducting lotteries or policy games, playing games of chance for money or other property, or playing gambling devices")

South Carolina case law defines "gaming" as playing at a game of chance. *See e.g., Johnson v. Collins Entm't Co.*, 333 S.C. 96, 101, 508 S.E.2d 575, 578 (1998) (describing § 16-19-40 as "prohibiting games of chance or gambling devices"). So too does the South Carolina Constitution, which declares that "[i]t shall be unlawful for any person holding an office of honor, trust or profit to engage in gambling or betting *on games of chance*." S.C. Const. art. XVII, § 8 (emphasis added). Further, the statute itself excludes from its ambit the card game of whist, placing it in the same class as pool, bowling, backgammon (a dice game), chess, and checkers, all of which are games of skill. *See e.g., Hua*, 885 N.Y.S.2d at 383-84 (noting that "games of chess, checkers, billiards and bowling are held to be games of skill" (internal quotation marks & alteration omitted)), *Stubbs v. Dick*, 89 N.E.2d 480, 483 (Ohio Com. Pleas 1949) ("[B]ridge in any form and similar social card games are games of skill and not games of chance"). The exclusion of a skill-based card game from the coverage of the statute indicates that the Legislature was concerned only with games of chance.

Given that the term "gaming" refers specifically and exclusively to games of chance, the statutory term "place of gaming" must *necessarily* refer to a location in which games of chance are being played. *See State v. Black*, 94 N.C. 809, 1886 WL 987, at *3 (N.C. 1886) (holding that an indictment charging defendant with operating a gaming house did not need to specifically allege that the games played were games of chance,

because that was implied by the term “gaming house”) The State, however, argues that the statute itself “defines ‘gaming’ to include ‘[] any game with cards or dice ’” Br of Appellant at 25 This reading collapses the two elements of the offense into one If “any game with cards or dice” is “gaming,” then any place where a game with cards or dice is played is a “place of gaming ” This reading violates established rules of statutory construction by rendering the list of other enumerated places superfluous See *State v Smith (In re Decker)*, 322 S C 215, 219, 471 S E 2d 462, 463 (1995)

2 *Whether an activity is a game of chance should be determined according to the dominant factor test*

The courts of the United States have recognized two possible tests for determining whether an activity is a “game of chance ” Under the “dominant factor” test, an activity is a game of chance if “chance dominates the distribution of prizes, even though such a distribution is affected to some degree by skill or judgment ” *Morrow v State*, 511 P 2d 127, 129 (Alaska 1973) Under the “pure chance” doctrine, a game is one of chance only if skill plays no part at all in the outcome See *id Accord Johnson v Collins Entm t Co* , 333 S C 96, 111-12, 508 S E 2d 575, 583 (1998) (Burnett, J , dissenting) (describing both doctrines)

The overwhelming majority of United States jurisdictions have adopted the dominant factor test to determine if an activity is gambling See *Morrow*, 511 P 2d at 129, see also *Johnson*, 333 S C at 113, 508 S E 2d at 584 (Burnett, J , dissenting) Moreover, it appears that this Court has already recognized the dominant factor test in at least one case, albeit without denominating it as such In *Darlington Theatres*, this Court was asked to decide whether a promotion being operated by a movie theater was a lottery in violation of state law In answering the question, the Court defined a “lottery” as a

“species of gaming” and held that a lottery has three essential elements “(1) The giving of a prize, (2) by a method involving chance, (3) for a consideration paid by the contestant or participant” *Darlington Theatres*, 2 S E 2d at 786 (internal quotation marks omitted) As the circuit court recognized, this language “is very similar to that of the dominant factor test” Order at 7 *Accord Horner v United States*, 147 U S 449, 458 (1893) (noting that “lottery” is defined as “a distribution of prizes by lot or chance”), *Johnson v Phinney*, 218 F 2d 303, 306 (5th Cir 1955) (holding that if chance predominates over skill “the game or device is a lottery”), *Commonwealth v Plissner*, 4 N E 2d 241, 244 (Mass 1936) (“With reference to cases where [elements of skill and chance are both] present, the rule generally stated is that if the element of chance rather than that of skill predominates, the game may be found to be a lottery”)

Although this Court has not yet definitively ruled on the question, retired Justice Burnett made a persuasive case for the adoption of the dominant factor test in *Johnson* See *Johnson*, 333 S C at 105-120, 508 S E 2d at 580-88 (Burnett, J, dissenting) *Johnson* tasked this Court with determining whether certain types of video gaming machines constituted lotteries in violation of the South Carolina Constitution The majority concluded that the machines were not lotteries under the narrow constitutional definition of “lottery” because no tickets were involved *Id* at 104, 508 S E 2d at 579 In light of its holding, the majority declined to address the dominant factor test or the definition of the word “chance” *Id*

Justice Burnett, in dissent, found it necessary to define “chance” in light of his view that the constitutional prohibition against lotteries was not limited to games involving tickets In Justice Burnett’s view, the Court had defined “lottery” in *Darlington*

Theatres as “all schemes involving consideration, chance, and prize ” *Id* at 111, 508 S E 2d at 583 (Burnett, J , dissenting), *see id* at 109 & n 4, 508 S E 2d at 582 & n 4 (noting that “[t]he majority of other jurisdictions have adopted the same three element test in defining the term ‘lottery’” and citing numerous cases) Since the video gaming machines at issue clearly involved consideration and prize, the question of whether the machines were lotteries turned on the element of chance *See id* at 115, 508 S E 2d at 585

Justice Burnett concluded that whether a game was one of chance should be determined under the dominant factor test, which he noted was “supported by the majority of jurisdictions which have considered this question ” *Id* at 114 & n 9, 508 S E 2d at 584 & n 9 (citing cases) He rejected application of the pure chance doctrine because “[u]nder [it] many obviously chance-based games, such as guessing contests, would not be lotteries ” *Id* at 113, 508 S E 2d at 584 Then-Justice Toal joined Justice Burnett’s dissent and emphasized in her own opinion that “[Justice Burnett] has set forth the legal standard which should be used to define the term lottery as it appears in South Carolina’s Constitution in a manner which is faithful to our Court’s precedents and well within the mainstream of American court decisions ” *Johnson*, 333 S C at 120, 508 S E 2d at 588 (Toal, J , concurring in part and dissenting in part)

For the past 50 years, the Attorneys General of South Carolina have unanimously employed the “dominant factor” test in determining whether a game is one of skill or chance *See e g* , Op Att’y Gen , 2003 WL 21108489 (May 5, 2003) (Attorney General McMaster) (“Historically, it has been the opinion of this Office, as well as a majority of jurisdictions in this country, that a ‘game of chance’ is one in which *the element of*

chance predominates over any skill involved”), Op Att’y Gen , 2002 WL 31341815 (Aug 28, 2002) (Attorney General Condon) (“It is the opinion of this Office as well as a majority of jurisdictions in the United States that the ‘Dominant Factor’ test is the appropriate test to determine whether a game is a game of chance”), Op Att’y Gen , 1986 WL 289772 (Mar 24, 1986) (Attorney General Medlock) (opining that a golf tournament is not a lottery because “the element of chance is not dominant” in the play of golf), Op Att’y Gen , 1978 WL 22669 (Dec 5, 1978) (Attorney General McLeod) (“[S]o long as skill and judgment are non-dominant factors in winning, the coin-operated device is one of chance”) In fact, the current Attorney General, who represents the State in this litigation, has opined that this Court “would likely accept the rule ” Op Att’y Gen , 2006 WL 3522434, at *2 (Nov 1, 2006) ¹⁶

This Court should now take the next step and formally adopt the dominant factor test as the means of determining whether an activity involves chance for purposes of South Carolina law ¹⁷ There is no reason to believe that the *Johnson* majority would not have adopted the dominant factor test had it needed to reach the question

¹⁶ It is therefore ironic that the State refuses to concede that this Court would adopt the dominant factor test Br of Appellant at 32 n 4 The State’s position also begs the question of what test the State thinks the Court ought to adopt Would the State prefer that the Court adopt the pure chance doctrine?

¹⁷ The State claims that this Court rejected the dominant factor test in *Scarlet Red*, but it seriously misreads this Court’s decision There, the defendant contended that what appeared to be a prohibited game of chance—a shell game known as Thimbles and Balls—was actually a game of skill because he won through the exercise of dexterity See *Scarlet Red*, 41 S C L (7 Rich) 8 The Court refused to accept this argument because doing so would leave the defendant free to cheat competitors by falsely claiming that the game was one of chance See *id*

C Texas Hold'em is predominantly a game of skill

1 The undisputed facts demonstrate that Texas Hold'em is predominantly a game of skill

Under the dominant factor test, an activity is classified as either one of skill or chance depending on which element is dominant. *See Morrow*, 511 P 2d at 129. The mere presence of some element of chance does not make an activity a game of chance. *See e g , Stubbs*, 89 N E 2d at 482 (“[T]he real test is whether chance is the determining element in the outcome of the game, and not whether the game contains elements of chance or skill”), *D’orio v Startup Candy Co*, 266 P 1037, 1038 (Utah 1928) (same).

Four factors are commonly used to determine if skill predominates over chance:

- (1) Participants must have a distinct possibility of exercising skill and must have sufficient data upon which to calculate an informed judgment
- (2) Participants must have the opportunity to exercise the skill, and the general class of participants must possess the skill
- (3) Skill or the competitors' efforts must sufficiently govern the result
- [and] (4) The standard of skill must be known to the participants, and this standard must govern the result

Morrow, 511 P 2d at 129. Application of the dominant factor test is an inherently factual inquiry, requiring a case-specific assessment of the nature of the game and the relative roles of skill and chance in game play. *See e g , id* at 130 (holding that the defendant was “entitled to a trial on the factual issue of the predominance of chance or skill”), *Williams v Justice Court*, 40 Cal Rptr 724, 731 (Cal Dist Ct App 1964) (holding that the question of whether an activity is one of skill or chance is “largely factual”).

The extensive and uncontroverted evidence in the record demonstrates beyond question that Texas Hold'em is predominantly a game of skill. As Mike Sexton explained, “[T]he object of poker is to make correct decisions. If you make enough correct decisions, you’re going to be a winning player.” Trial Tr p 149, lines 16-19.

The ability to make correct decisions comes from the exercise of numerous and varied skills. So-called “soft skills”—the ability to “read” people and situations, for example—allow a player to make decisions such as when to fold and whether to bluff. Trial Tr p 144, line 14 (“[P]oker’s a people game”). The ultimate expression of this skill is the ability to put a player “on a hand,” *i.e.*, to correctly deduce a player’s hole cards based simply on his playing behavior. One noted authority in Texas Hold’em has declared that a skilled player should be able to win a tournament without ever looking at his own hole cards. Trial Tr p 153, line 25 – p 154, line 10. This theory was proven in 2007, when Norwegian player Annette Obrestad won an entire 180-person Texas Hold’em tournament without *ever* looking at her hole cards, save for a single “peek” early in the game. See Stig Moen, “Oh, To Be 18 Again,” *Card Player*, Nov. 13, 2007.

In addition to being able to interpret the signals of others, the skilled Texas Hold’em player must develop a “poker face” in order to conceal from the others his feelings and intentions during the game. So-called “hard skills” are also critical to success at Texas Hold’em. For example, the ability to calculate odds enables a player to make an informed judgment regarding whether the potential reward of a given hand is worth the risk.

Empirical evidence proves that the exercise of skill plays a determinative role in Texas Hold’em. Study after study has demonstrated that players with more skill will prevail over players with less skill, and that one’s skills can improve over time. The Attorney General has recognized that the ability to improve over time is a hallmark of a game in which skill predominates. See Op. Att’y Gen., 2006 WL 3522434, at *4 (Nov. 1, 2006) (concluding that a hockey puck tossing contest “clearly involves a game of skill”).

because, as in golf, “practice improves performance”) Moreover, a study of 103 million hands of Texas Hold’em revealed that the best cards *lost the hand* 88 percent of the time Experience confirms what the studies show Like professional golfers, professional Texas Hold’em Players abound, indicating that one can earn a living from playing the game In contrast, there is no such thing as a “professional” craps player, for the simple reason that in a game that is based primarily on chance and which has a built-in house edge, one cannot influence the outcome so as to be successful often enough to earn a living

In light of evidence like that presented to the municipal court, courts have treated poker as a game of skill *See e g , Harris v Missouri Gaming Comm’n*, 869 S W 2d 58, 64 (Mo 1994), *United States v 294 Various Gambling Devices*, 718 F Supp 1236, 1240, 1243 (W D Penn 1989) *Accord People v Mitchell*, 444 N E 2d 1153, 1031 (Ill App Ct 1983) (Heiple, Judge, dissenting) (“This allegation [that Texas Hold’em is a game of chance] is a canard Anyone familiar with even the barest rudiments of the game knows better”) In the recent case of *Commonwealth v Dent*, the court analyzed the evidence at length and concluded that Texas Hold’em is predominantly a game of skill *See Commonwealth v Dent*, No 733-OF-2008, slip op at 13-14 (Penn Com Pleas Jan 14, 2009)

The courts that have reached the contrary conclusion have, to the extent they offered any analysis at all, relied on the principle that “[n]o amount of skill can turn a deuce into an ace” *Joker Club LLC v Hardin*, 643 S E 2d 626, 630 (N C Ct App 2007) These courts fail to recognize that Texas Hold’em is not a single-hand game Trial Tr p 168, lines 4-8 (describing game of Texas Hold’em that lasted 7½ hours)

Whether one receives good or poor cards in a single hand is unimportant, the important thing is what one *does* with those cards. As Mike Sexton explained, “Well, it’s true. You can’t change an ace from a deuce. But you can recognize that the more skillful players will win more money when they catch an ace, and they’ll lose less money when they catch a deuce.” Trial Tr. p. 175, lines 10-14. This is precisely why folding, patience, and self-discipline are critical skills for a successful Texas Hold’em player—they are the skills that enable a player to win over time. Furthermore, the dominant factor test does not demand that the outcome be determined *solely* by skill, for an element of chance is present in virtually every competition. See *PGA Tour, Inc. v. Martin*, 532 U.S. 661, 686-87 (2001) (observing that chance is not entirely absent from the skill-based game of golf because course conditions may differ between players on the same day and because “[a] lucky bounce may save a shot or two”). “The test is not whether the game contains an element of chance or an element of skill but which of them is the dominating factor in determining the result of the game.” *In re Allen*, 377 P.2d 280, 281 (Cal. 1962), *Mitchell*, 444 N.E.2d at 1157 (Heiple, Judge, dissenting) (“There is an element of luck in everything in life. But everything that contains an element of luck is not gambling.”)

This court should affirm the municipal court’s holding that Texas Hold’em is predominantly a game of skill.

2 *The State has waived any argument that Texas Hold’em is not predominantly a game of skill.*

In both the municipal court and the circuit court, the State argued only that the question of skill or chance was *irrelevant* to Respondents’ guilt. The State did not argue to the municipal court that Texas Hold’em is a game of chance, and it did not challenge that court’s finding that Texas Hold’em is a game of skill in the circuit court. In short,

the argument presented at pages 31-35 of the State's brief has never been made, much less preserved for appellate review. This Court therefore should not consider the State's argument. *See Doe v S B M*, 327 S C 352, 356, 488 S E 2d 878, 880-81 (Ct App 1997)

D A private residence in which Texas Hold'em is played is not a "house used as a place of gaming "

Under well-established rules of statutory construction, it is plain that the terms "gaming" and "gambling" refer exclusively to games of chance. Because the dominant factor test is consistent with existing case law and is preferable as a matter of policy, this Court should adopt it as the method for determining whether an activity is a game of skill or chance. Applying that test, Texas Hold'em is a game of skill. Because Texas Hold'em was the only game played in Stallings' home, the residence could not have been a "house used as a place of gaming ." The circuit court should be affirmed.

E The State attacks straw men

1 A private residence can become a house used as a place of gaming "

The State argues at length against Respondents' supposed position that a residence can never be a "place of gaming ." Br of Appellants at 11-13, 21-24. However, Respondents have not once claimed that a residence can never be treated as a "place used as a house of gaming" under § 16-19-40. The only argument Respondents have ever made is that *Stallings* residence was not a "place used as a house of gaming" on the night of April 12, 2006, because Texas Hold'em, being a game of skill, is not "gaming" for purposes of determining whether a place is being used as a "house of gaming ."

2 *The State is wrong to claim that it is “irrelevant whether Texas Hold em is a game of skill or chance*

The State accuses the circuit court of rewriting § 16-19-40 by holding that a card game is prohibited only if it is not a game of skill. Br. of Appellant at 24-25. The State contends (and indeed, Respondents agree) that in § 16-19-40 “the Legislature has prohibited ‘any game with cards or dice’ in the places specified.” *Id.* at 25. Respondents have never disputed that Texas Hold’em is a “game with cards,” thus satisfying the second element of § 16-19-40. The only disputed question is whether Respondents were in a “house used as a place of gaming.” As to this issue, Respondents maintain that the term “gaming” encompasses only games of chance and that Texas Hold’em is predominantly a game of skill. Because Texas Hold’em, the only game being played in Stallings’ residence on April 12, 2006, is not “gaming,” Stallings’ residence necessarily could not have been a “house used as a place of gaming.”

3 *Holding that Respondents’ conduct was legal does not open the door to casinos in South Carolina*

The State claims that “[t]he Circuit Court’s reasoning immunizes from our gambling statute’s reach large-scale casino gambling merely based upon the fact of where that gaming occurs.” Br. of Appellant at 11. This contention is utterly without basis. The circuit court’s decision does nothing more than protect from criminal prosecution the simple, harmless, and common act of gathering together to play Texas Hold’em.

Even if the lower court’s decision were subject to a broader reading, the grim picture painted by the State is more fantasy than fact. Regardless of the legality of Texas Hold’em under state law, counties and municipalities are free to impose their own restrictions on the play of Texas Hold’em. *See Foothills Brewing Concern, Inc. v. City of Greenville*, 377 S.C. 355, 365-66, 660 S.E.2d 264, 269-70 (2008) (holding that a

municipality may enact an ordinance imposing civil penalties for conduct not prohibited by state law)

II ALTERNATIVELY, STALLINGS' RESIDENCE WAS NOT A "HOUSE USED AS A PLACE OF GAMING" BECAUSE HE TOOK NO PROFIT AND THE HOME WAS NOT OPEN TO THE PUBLIC

Respondents contend that the foregoing analysis is dispositive of this appeal. However, even if this Court disagrees with Respondents that Texas Hold'em is not "gaming," the circuit court should nevertheless be affirmed because the record evidence is insufficient to establish that Stallings' residence was a "house used as a place of gaming."

South Carolina is not unique in prohibiting the playing of certain games in a "place of gaming" or some similarly designated place. The purpose of such statutes is not to prohibit gaming *per se*, but rather "to prevent gaming at places which are within the observation of persons indiscriminately, because of the consequences resulting from the evil example." *Gomprecht v State*, 37 S W 734, 735 (Tex. Crim. App. 1896). If this Court were to adopt the State's position, however, South Carolina would be alone in holding that merely playing Texas Hold'em for money in a private residence makes that home a "place of gaming" and renders the players subject to prosecution.¹⁸ See *Davis v State*, 165 S W 2d 757, 758 (Tex. Civ. App. 1942) (holding that evidence that the defendants were playing poker in a hotel room for money was "no proof" that the hotel room was a gambling house). Rather, other states have concluded that a residence becomes a "place of gaming" only when certain factors are present.

For example, many courts have held that whether a location is a “place of gaming” depends upon whether the host takes a cut of the profits or charges for admission to the game. See e.g., *Village of Atwood v Otter*, 129 N E 573, 578 (Ill 1920) (holding that a purportedly private amusement club was actually a “place of public resort” when the evidence established that anyone who paid the membership fee was admitted, even if not meeting the other criteria for membership), *Simons v State*, 120 S W 208, 211 (Tex Crim App 1909) (holding that the defendant’s home was a “gaming house” in part because the defendant took a profit), *Miller v State*, 34 S W 959, 960 (Tex Crim App 1896) (defining “gaming house” as one operated “for the profits to be derived from the games there played”). This Court recognized and applied this very principle in *State v O’Neal*, 210 S C 305, 42 S E 2d 523, 527 (1947), holding that the owner of a night club was properly convicted as the keeper of a gaming house when “a certain percentage of the amount staked on each game was deducted for the benefit of the ‘house’”.

Here, the testimony established, and the municipal court specifically found, that Stallings did not take a “house profit.” He took money from the pot only to cover the expense of food and beverage, and he frequently took too little to cover those costs. Trial

¹⁸ The State cites a number of cases that it claims hold that playing cards for money is “gaming.” In each case, however, the statute or ordinance specifically identified playing cards for money as the prohibited conduct. See *Commonwealth v Hubbard*, 69 Pa D & C 2d 571 (Pa Com Pleas 1974) (statute prohibited allowing one’s premises to be used for playing games for money), *City of Greenville v Kemmis*, 58 S C 427, 36 S E 727, 728-29 (1900) (city ordinance prohibiting “gaming[] for money in the City of Greenville”), *State v Laney*, 38 S C L (4 Rich) 193 (Ct App 1850) (prohibiting “any white person” from playing “any game of chance” with “any free negro or person of color, or slave” or from betting on those playing).

Tr p 94, lines 2-9 This factor therefore does not support a conclusion that Stallings' residence was a "place of gaming "

A second factor considered by courts is whether the location is generally open to the public, at any time and without invitation In considering this factor, courts have stated that in order for a private location to become a "place of gaming," it must be open to the public in general, at any time someone might wish to enter *See e g , Toll v State*, 23 So 942, 944 (Fla 1898) (holding that a room where card games were played was a "gaming room" when it was accessed from the defendant's bar and bar patrons had free access to the room), *Cole v State*, 13 S W 859, 859 (Tex Ct App 1890) (holding that a place is a "public house" by virtue of "the occupation carried on in them or by the resort of numerous persons")

Stallings' uncontradicted testimony was that the games at his house were not open to the general public One had to be known to Stallings, or known to someone known to Stallings, to be invited The house was not "thrown open" to the public *Pugh v State*, 117 S W 817, 817 (Tex Crim App 1909) To the extent the State contends that a residence may become a public place solely on the basis of the number of people present, such a rule would be impossible to enforce That Stallings posted information about the games on a web page he controlled makes no difference South Carolina residents notify others of events and games of all types on the web site in question, www.meetup.com

In summary, even if the fact that Texas Hold'em is a game of skill is not alone sufficient to establish that Stallings' residence was not a "house used as a place of gaming," the State is required to prove something more than the mere fact that people gathered at Stallings' home to play Texas Hold'em For example, proof that Stallings

took a profit or that the general public was free to enter his home at virtually any time might justify a different result. The record is devoid of any such proof, however. The absence of such evidence is an alternative basis on which to affirm of the circuit court.

III THE TERM “HOUSE USED AS A PLACE OF GAMING” IS UNCONSTITUTIONALLY VAGUE AND OVERBROAD

As written, the prohibition on playing cards in a “house used as a place of gaming” provides no guidance whatsoever as to its proper application and is therefore unconstitutionally vague. Further, the statute is overbroad in that it criminalizes a vast array of entirely innocent conduct.

A Section 16-19-40 is vague

It is well settled that the Due Process Clauses of the state and federal Constitutions forbid this State from holding an individual “criminally responsible for conduct which he could not reasonably understand to be proscribed.” *United States v. Harriss*, 347 U.S. 612, 617 (1954). The prohibition on vagueness “rests on the constitutional principle that procedural due process requires fair notice and proper standards for adjudication.” *City of Beaufort v. Baker*, 315 S.C. 146, 152, 432 S.E.2d 470, 473 (1993), *see Grayned v. City of Rockford*, 408 U.S. 104, 108 (1972). While the Constitution does not require absolute precision, *see Rose v. Locke*, 423 U.S. 48, 49-50 (1973), “the provisions of a penal statute [must be] sufficiently definite to give reasonable notice of the prohibited conduct to those who wish to avoid its penalties and to apprise judge and jury of standards for the determination of guilt.” *Guinyard v. State*, 260 S.C. 220, 226, 195 S.E.2d 392, 394 (1973). Therefore, a law that “forbids or requires the doing of an act in terms so vague that a person of common intelligence must necessarily guess as to its meaning and differ as to its application” violates the Due Process Clause. *Curtis v. State*, 345 S.C. 557, 572, 549 S.E.2d 591, 598 (2001).

A statute may be vague on its face or as applied. A criminal statute is facially vague when it “fails to establish standards for the police and public that are sufficient to

guard against the arbitrary deprivation of liberty interests,” particularly when—as here—the statute lacks a scienter requirement. *City of Chicago v. Morales*, 527 U.S. 41, 52 (1999) (plurality opinion). When the law in question imposes criminal penalties, “the standard of certainty is higher” and therefore it may be facially invalid “even when it could conceivably have had some valid application.” *Kolender v. Lawson*, 461 U.S. 352, 358 n.8 (1983). A law is vague as applied when someone in the defendant’s position cannot reasonably discern whether his conduct is prohibited. *See Grayned*, 408 U.S. at 108.

Section 16-19-40 is unconstitutionally vague on its face and as applied to Respondents. The record of these proceedings amply demonstrates that “a person of common intelligence must necessarily guess” at the meaning of the phrase “house used as a place of gaming.” *Curtis*, 345 S.C. at 572, 549 S.E.2d at 598. At trial, Respondents’ counsel cross-examined Officer Hembree regarding his understanding of the statute as a law enforcement officer responsible for enforcing it.¹⁹ Officer Hembree initially testified that the key factor in determining whether a home game violates § 16-19-40 is whether the house is taking a profit. Trial Tr. p. 37, line 23 – p. 39, line 14. When asked to assume that there was no house profit, Officer Hembree stated that the game would nevertheless be illegal if the players met as often as once a week, regardless of the number of players. Trial Tr. p. 42, lines 5-17. After further discussion, however, Officer Hembree stated that a game where there is no house profit does not violate the statute. Trial Tr. p. 45, line 11 – p. 46, line 10.

¹⁹ The discussion that follows is not to be taken as a criticism of Officer Hembree, who unquestionably acted in good faith based on his understanding of the statute. The point, rather, is that the meaning of the term “house of gaming” is so obscure that even an

The circuit court clearly recognized the problem

THE COURT I don't know how much they played for but I know that my aunt played bridge twice a month, in a house, and they all put in some money and somebody provided food Under your theory, that's gambling

MR GROSSMAN No, it's not a gaming house

THE COURT Whoa, whoa She invited all sorts of people and sometimes they had somebody that wasn't one of the regulars

MR GROSSMAN Doesn't make a difference

THE COURT On what distinction?

MR GROSSMAN How would Your Honor define a gaming house?

THE COURT That's the problem That's precisely the problem If I can't define it, then isn't there something wrong? Isn't there something wrong if I can't give you a definition?

MR GROSSMAN I think that the definition of it is, if you go by Black's Law Dictionary "Gambling is the active risk of something of value, especially money, for a chance to win a prize "

Now, they [have] a definition for "gambling place "
"Any location where gambling occurs "

Now, so under your definition –

THE COURT No Under that definition then my aunt's house was a gambling house

MR GROSSMAN Technically

THE COURT Technically? There's no technically about it

experienced law enforcement officer, such as Officer Hembree, can only guess at it

Appeal Tr p 26, line 18 – p 29, line 8 Further, the State acknowledged the limitless discretion conferred on law enforcement officers and prosecutors when it argued, “It is not illegal, *in my reading of the statute*, for a group of friends to get together and gamble, play poker in their house ” Appeal Tr p 19, lines 4-7

The foregoing portions of the record demonstrate that neither the individuals subject to the prohibitions of the statute, nor the police officer charged with identifying violations of the statute, nor the prosecutor charged with enforcing the statute, nor the Attorney General of South Carolina (whose brief espouses several contradictory theories) understood its meaning and scope The term “house used as a place of gaming” is so vague that it provides no notice of the conduct prohibited and allows arbitrary and discriminatory enforcement As written and as applied to Respondents, it is unconstitutionally vague

B Section 16-19-40 is overbroad

Section 16-29-40 is overbroad, and violates the Due Process Clause, if it “makes criminal activities which by modern standards are normally innocent ” *Papachristou v City of Jacksonville*, 405 U S 156, 163 (1972) If, as the State contends, simply playing a “game with cards or dice” turns an otherwise private location into a “house used as a place of gaming,” Br of Appellant at 25, the reach of the statute is breathtaking, amounting to an absolute prohibition on the playing of any card game (be it Texas Hold’em or Go Fish) anywhere within the geographical boundaries of South Carolina

C The statute can be saved by limiting construction

Despite the vagueness and overbreadth of the statute, this Court need not declare it unconstitutional Before invalidating a law on constitutional grounds, the reviewing

court must consider any limiting constructions in extant case law *See Village of Hoffman Estates v Flipside Hoffman Estates Inc*, 455 U S 489, 495 n 5 (1982), *State v Avery*, 255 S C 570, 573-74, 180 S E 2d 190, 192-93 (1971) And, this Court has recognized that if possible, a statute must be construed so as to avoid a constitutional problem *See Edwards v State*, 383 S C 82, 91-92, 678 S E 2d 412, 417 (2009), *State v Neuman*, 384 S C 395, 402, 683 S E 2d 268, 271 (2009) (“[A]ll statutes are presumed constitutional and, if possible, will be construed to render them valid”) Further, when a portion of a statute is unconstitutional, the court should sever the unconstitutional portion if the rest of the statute “remains complete in itself” *Curtis*, 345 S C at 571, 549 S E 2d at 598

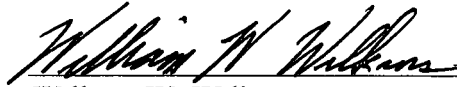
Respondents believe and suggest to this Court that the phrase “house used as a place of gaming” is not vague or overbroad if the term “gaming” is defined in its ordinary sense, as referring to games of chance, with the result that playing a game of skill, such as Texas Hold’em, in a private residence is not prohibited under the statute So construed, the statute would provide fair notice of the conduct prohibited, and its prohibitions would not have an unreasonably broad sweep Alternatively, the term “house used as a place of gaming” should be construed to apply only to locations operated as businesses—where the host takes a profit and the public is welcome to come and go at virtually any time

CONCLUSION

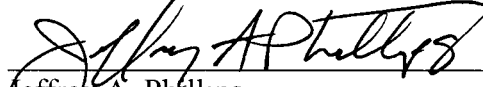
This case is not about flinging open South Carolina’s doors to Vegas-style casinos It is not about public card rooms or professional gambling, and it is certainly not about video poker Every single one of those things is absolutely prohibited under Respondents’ proposed construction of the statute This case is about the liberty of the

citizens of this state to gather together in pursuit of a common hobby Nathan Stallings hosted casual, low-stakes games of Texas Hold'em, a game in which the outcome is determined by the skill of the players, in his home He took no profit from the game and did not indiscriminately admit all comers His conduct, and that of Respondents, is identical to what occurs in bridge clubs and Bunco groups all over this State It surely cannot be the case, under any reasonable construction of § 16-19-40, that this conduct is illegal The decision of the circuit court should be affirmed

(SIGNATURES ON FOLLOWING PAGE)



William W Wilkins
Kirsten E Small
NEXSEN PRUET, LLC
55 East Camperdown Way (29601)
Post Office Drawer 10648
Greenville, South Carolina 29603-0648
PHONE 864 370 2211
BWilkins@nexsenpruet.com



Jeffrey A Phillips
PHILLIPS LAW FIRM
1425 Augusta Street
Greenville, South Carolina 29605
PHONE 864 233 7373
AttyJeff@Bellsouth.net

February 22, 2010
Greenville, South Carolina

THE STATE OF SOUTH CAROLINA
In The Supreme Court

RECEIVED

FEB 23 2010

APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas

SC SUPREME COURT

R Markley Dennis, Jr , Circuit Court Judge

Case No 2009-CP-10-001551

Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John T Willis

Respondents

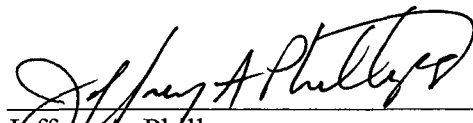
vs

Town of Mount Pleasant

Appellant

CERTIFICATE OF COMPLIANCE

The undersigned certifies that the Initial Brief of Respondents complies with
South Carolina Supreme Court's August 13, 2007 Order



Jeffrey A Phillips
PHILLIPS LAW FIRM
1425 Augusta Street
Greenville, South Carolina 29605
PHONE 864 233 7373
AttyJeff@Bellsouth net



William W Wilkins
Kirsten E Small
NEXSEN PRUET, LLC
55 East Camperdown Way (29601)
Post Office Drawer 10648
Greenville, South Carolina 29603-
0648
PHONE 864 370 2211
BWilkins@nexsenpruet com

ATTORNEYS FOR RESPONDENTS

Date February 22, 2010

THE STATE OF SOUTH CAROLINA
In The Supreme Court

APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas

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Respondents

vs

Town of Mount Pleasant

Appellant

**DESIGNATION OF MATTER TO BE INCLUDED
IN THE RECORD ON APPEAL**

Respondents propose the following to be included in the Record on Appeal

- 1 Order of the Honorable R Markley Dennis, Jr , dated October 1, 2009,
- 2 Order of the Honorable J Lawrence Duffy filed February 19, 2009,
- 3 Transcript of Hearing held August 4, 2009, Circuit Court,
- 4 Transcript of Hearing held February 13, 2009, Mount Pleasant Municipal
Court,
- 5 Transcript of Hearing held August 22, 2008, Mount Pleasant Municipal Court,
- 6 Notice of Intent to Appeal filed March 13, 2009,
- 7 Return to Notice of Intent to Appeal dated March 23, 2009, prepared by the
Honorable J Lawrence Duffy,

- 8 State's Exhibit 1 from Municipal Court hearing 1 audio CD and 4 video CDs,
- 9 State's Exhibit 3 from Municipal Court hearing VCR tape,
- 10 State's Exhibit 4 from Municipal Court hearing Nathan Stallings sentencing sheet,
- 11 Court's Exhibit 1 Warrant Affidavit dated May 1, 2006, for Nathan Stallings,
- 12 Videos which were played during the testimony of Michael T Sexton (*See* Trial Tr p 147, line 23 – p 148, line 3, p 151, lines 9-10, p 161, lines 15-16, p 162, lines 5-6 & 15-16, p 166, lines 4-5, p 167, lines 5-6 & 14-15 and p 170, lines 2-3)

I certify that this designation contains no matter which is irrelevant to this appeal



Jeffrey A Phillips
PHILLIPS LAW FIRM
1425 Augusta Street
Greenville, South Carolina 29605
PHONE 864 233 7373
AttyJeff@Bellsouth.net



William W Wilkins
Kirsten E Small
NEXSEN PRUET, LLC
55 East Camperdown Way (29601)
Post Office Drawer 10648
Greenville, South Carolina 29603-0648
PHONE 864 370 2211
BWilkins@nexsenpruet.com

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Robert L Chimento, Scott Richards, Michael Williamson,
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Respondents,

v

Town of Mount Pleasant

Appellant

INITIAL REPLY BRIEF OF APPELLANT

HENRY D McMASTER
Attorney General

JOHN W McINTOSH
Chief Deputy Attorney General

ROBERT D COOK
Deputy Attorney general

C HAVIRD JONES, JR
Senior Assistant Attorney General

MARY FRANCES JOWERS
Assistant Attorney General

P O Box 11549
Columbia, SC 29211
(803) 734-3680

ATTORNEYS FOR THE APPELLANT

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SUMMARY OF ARGUMENT

Despite Respondents' efforts to obscure, this case is straightforward and simple. The fundamental issue in this case is not, as Respondents would portray to this Court, the right of citizens to be free to play cards with friends in the privacy of their own homes. Instead, the issue here is whether S.C. Code Ann. Section 16-19-40 permits a residence to be transformed into a casino-like facility, where the public, or a large part thereof, is invited via the Internet, to play "Texas Hold'em" poker for money. And, as the Record demonstrates, large numbers came on a regular basis. As the Pennsylvania Court noted in *Commonwealth v. Hubbard*, 69 Pa. D&C2d 571, 574, 1974 WL 15856 (1974), "[i]t is obvious from the testimony that this is not a situation where a few of the boys [or girls] drop in for a Friday night social game of poker." Rather than the "friendly poker game" with a few friends, this is a situation where, as the investigating officer described it, there were so many people attending these games, held twice a week, that the CVS parking lot had to be employed to accommodate the overflow. *Record* at _____. Section 16-19-40 plainly forbids games with cards or dice for money played in a "house used as a place of gaming." The State submits that if § 16-19-40 is to have any meaning at all, its enforcement here was warranted. Thus, the Circuit Court should be reversed.

Respondents' attempts to avoid S.C. Code Ann. Section 16-19-40 are misplaced. Despite their numerous efforts to distract the Court's attention by impugning the State,¹ Respondents' argument that playing "Texas Hold'em" poker for money is not "gaming" under § 16-19-40, because it is predominantly a game of skill, not chance, completely misses

¹ We will address Respondents' multiple inaccuracies below. See n. 5, *infra*.

the mark. The statute plainly forbids the playing of “any game with cards or dice” in the places enumerated in § 16-19-40. It does not make exception for “games of skill” as Respondents would hope. The words in the statute could not have been clearer.

Erroneous also is Respondents’ contention that § 16-19-40 applies to “residential outbuildings, *but not the residence itself*.” Such an argument misses the point that the express language contained in the statute makes a “house used as a place of gaming” one of the prohibited places within the law’s reach. See, *Respondents’ Brief* at 17 (emphasis in original). Contrary to Respondents’ arguments otherwise, the house in question was made accessible to the public through an Internet web site, moreover, this was a “house used as a place of gaming,” regardless of whether Nathan Stallings made any profit or not. At the very least, he was compensated for food and drinks. Indeed, when asked on cross-examination whether “anyone could come over,” Stallings answered “Sure.” Record at _____. Many did. As the Georgia Supreme Court has stated, a “gaming house or gaming place” is simply a “place at which persons gather for the purpose of hazarding or betting money.” *Gullat v State*, 150 S.E. 825, 827 (Ga. 1929).

Respondents’ argument that § 16-19-40 is unconstitutionally vague, and should, therefore, be construed to apply only to games of chance, ignores the fact that this Court has consistently construed the statute otherwise during its more than 200 years. On the books. Games of cards, such as poker, played for money, have always been “gaming,” consistent with the literal language of § 16-19-40(a) “any game with cards or dice.” The fact that the statute is old or contains words written in the language of the 19th century does not render it unconstitutionally vague. For all these reasons, Respondents’ convictions should be upheld.

Since § 16-19-40's enactment in 1802 and its amendment in 1816, the playing of “any game with cards or dice” for money has been prohibited, if done at any of those places banned in the statute, including a “house used as a place of gaming.” Respondents freely acknowledge “Texas Hold’em” poker is played with cards and that they were playing for money at the time of their arrest. *Respondents’ Brief* at 3, 11. Such constitutes “gaming” or a “game” under § 16-19-40 as a matter of law. This is so certainly if the term “gaming” is construed in its popular sense, to include betting on any game, whether skill or chance. Such was also the contemporaneous understanding of “gaming” when § 16-19-40 was enacted. See *Berkibile v. Outen*, 311 S.C. 50, 426 S.E.2d 760 (1993) [“gaming” under the Statute of Anne included betting losses over a certain amount on all games, including all card games]. And, it is the way this Court has construed the statute, beginning in the early days of its existence.

But even assuming *arguendo*, that “gaming” includes only games of chance, as Respondents contend, there is a wealth of authority, discussed below, demonstrating that all card games are, *as a matter of law*, games of chance, because the luck of the draw determines the outcome, no matter how skilled the player may be. Recognizing this fundamental truth, the framers of § 16-19-40 specified that “any game with cards or dice” is prohibited when played in the prohibited location, such as here, in a “house used as a place of gaming.”

Moreover, Respondents’ arguments that § 16-19-40 applies to residential outbuildings, but not to residences, is, frankly, both illogical and inconsistent with the legislative purpose to combat “the pernicious practice of gaming.” As the municipal court correctly determined, and as the Record amply demonstrates, the “house” in question was

“used as a place of gaming ” The was hardly a game of poker with a few friends, or a gathering of a few citizens in their friend’s home for a card game as Respondents attempt to portray Moreover, as we discussed in our principal Brief, see *Appellant s Brief* at 19-24, the early decisions rendered by this Court found the statute applicable to a “dwelling” house which was being used as a gaming house See, *State v Brice*, 4 S C L (2 Brevard) 66 (1806) Indeed, in *State v Faulkener*, 13 S C L (2 McCord) 438 (1823), this Court noted that § 16-19-40 had been amended in 1816 because of the “mischief that the penalty might be eluded and the object of the Legislature entirely defeated by going into an outhouse (outbuilding), whether attached to the principal house or elsewhere ” (emphasis added) The *Faulkener* Court’s choice of words hardly supports Respondents’ argument that § 16-19-40 applies only to outbuildings, but not the residence Such a reading defies common sense, especially given that the *Faulkener* Court construed the “outhouse” provision as all encompassing in order to avoid the statute’s circumvention It is difficult to imagine how the statute could be more “eluded” than by Respondents’ construction If § 16-19-40 is applicable only to a residence’s outbuildings – but not the residence itself – gambling would run amok simply by resorting to the residence as a “safe haven” for gaming

Likewise, Respondents’ argument that portions of § 16-19-40 are void-for-vagueness and overbroad are equally without merit Because Respondents deem § 16-19-40 constitutionally defective, they argue that construction of the statute must be narrowed to define “gaming” as limited to games of chance, hoping that the Court will deem “Texas Hold’em” as predominantly a game of skill

Such an approach is, we believe, futile, and we strongly disagree with this non-sequitur argument. Neither the Act, nor particularly the phrase “house used as a place of gaming” is void-for-vagueness. Nor does it punish innocent conduct. In *State v. Torres*, 831 S.W.2d 903 (Ark. 1992), the Arkansas Supreme Court addressed a similar question. The statute at issue, like § 16-19-40 also a 19th century enactment, forbade the keeping of a “gaming house” or place of gambling. Similarly, “gaming” was not defined in that statute. The defendant attacked the statute as void-for-vagueness, but the Arkansas Supreme Court rejected the argument, noting that previous judicial decisions had construed the term. Quoting one of those decisions, *Portis v. State*, 27 Ark. 360 (1872), *Torres* concluded that gaming constituted

“the risking of money, between two or more persons on a contest or chance of any kind where one must be *loser* and the other *gainer*. Some games depend altogether on skill, others upon chance, and others are a mixed nature. Billiards are an example of the first, lotteries of the second and backgammon of the last.” This definition, previously set forth by the court, which comports with the common understanding of the term “gambling” prevents the statutes in question from being void-for-vagueness.

27 Ark. at 362 (emphasis in *Torres*). Giving the statute its popular meaning, *Torres* found no void-for-vagueness problem.

Likewise, the South Carolina cases construing § 16-19-40 have sufficiently defined “gaming” under the statute so that there is no constitutional vagueness issue present here. Moreover, these decisions have not, by any means, limited the statute’s reference to “gaming” to games of chance. *State v. Scarlet Red*, 41 S.C.L. (7 Rich.) 8 (1853) provides a good example. In that case, the defendant, as his defense, argued that, as a juggler, he possessed greater skill in the shell game at issue than those who played against him, in

essence arguing that § 16-19-40 only applied to games of chance. This Court noted that the object of § 16-19-40 was to “check, by severe penalties, the practice of gaming, which in the language of the preamble, tends to vice, misery and crime.” Accordingly, the Court, recognizing the statute’s broad purpose, rejected defendant’s argument that § 16-19-40 was limited to games of chance only. This Court concluded

[n]or can the defendant evade the law under the pretence that he was a juggler and that the alleged game was an exhibition of his dexterity, *because he kept a bank and a wager depended upon his success or failure*

If the prohibited games be confined to those alone in which the stake is won or lost by chance, the result would follow, that the gambler who relied on the practiced legerdemain of a juggler, whilst he professed that he depended on fortune, will escape punishment by playing freely

(emphasis added) Thus, the *Scarlet Red* Court emphasized that “the words used [in § 16-19-40] are sufficiently explicit” and that “gaming” is not “confined” to games of chance “alone.” “Gaming” as used here simply means any wager dependent upon the player’s success or failure in playing the game, – whether the game is one of chance or skill is thus not controlling. As in *Torres*, “gaming” is construed in its common and ordinary sense to include betting on contests of skill. Accordingly, § 16-19-40, enforced by this Court for more than two hundred years, is not constitutionally defective.²

² The issue of overbreadth is fully addressed in our earlier Brief. *See, Appellant’s Brief* at 36-37.

ARGUMENT

I

Public Policy Underlying § 16-19-40

This Court has repeatedly emphasized that “[t]he primary rule of statutory construction is to ascertain and give effect to the intent of the legislature ” *Mikell v County of Charleston*, 386 S C 153, 687 S E 2d 326, 330 (2009) The determination of legislative intent is a matter of law *Id* Words used in a statute should ordinarily be given their common and ordinary meaning rather than any “technical, legal meaning ” Thus, words should ordinarily be construed in their “popular sense ” *Johnson v Collins Entertainment*, 333 S C 96, 508 S E 2d 575 (1998)

Moreover, a statute should be construed as a whole and in such a way that no word, clause, sentence, provision or part is rendered surplusage or superfluous *In re Decker*, 322 S C 215, 219, 471 S E 2d 462, 463 (1995) And, courts will reject a statutory interpretation which would tend to a result so plainly absurd that it could not have been intended by the Legislature or would defeat the plain legislative intention *Unisun Ins Co v Schmidt*, 339 S C 362, 368, 529 S E 2d 280, 283 (2000) A contemporaneous construction will prevail over the more technical import of the words used *Weeks v Ruff*, 164 S C 398, 162 S E 450, 452 (1932), quoting *Rogers v Goodwin*, 2 Mass 475 (1807)

The policy underlying the enactment and later amendment of § 16-19-40 is fully set forth in *State v Faulkener supra* *Faulkener* noted that “[t]he object of the act is expressed in the title, ‘– the more effectually to prevent the pernicious practice of gaming ’” According to the Court, gaming “is often attended with quarrels and controversies, the

impoverishment of many people, [and] corruption of the morals and manners of youth ”

Thus, “by looking at the evil here complained of, and the remedy intended , we should be lead to the true construction of this act ” *Id*

Faulkener noted that the anti-gaming law which ultimately became § 16-19-40 was enacted in 1802 and “was the first act creating this offence ” Further,

[t]he title and preamble of that act are in substance, and nearly in words, the same as that of 1816 The enacting clause makes it penal in any person to “play at any tavern, inn, store for the retailing of spirituous liquors, or in any other public house, or in any street, highway, or in any open wood, race field, or open place at any game or games, etc In this clause – houses of particular description are enumerated, which necessarily excludes all others from the operation of the act The mischief therefore complained of as arising under the act was that the penalty might be eluded, and the object of the Legislature entirely defeated by going into an outhouse [outbuilding], whether attached to the principal house or elsewhere To remedy that evil, the act of 1816, after repeating that part of the former Act, superadds the following words – “any house used as a place of gaming, or in any barn, kitchen, stable or other out-house

Clearly, this Court in *Faulkener* emphasized that even though the statute is penal in nature, it must be deemed comprehensive, and thus broadly construed so as not to be avoided or, in the words of the Court, “eluded ”

II

A Private Residence May Constitute A “House Used as a Place of Gaming”

Pursuant to Section 16-19-40

Faulkener thus makes it clear that § 16-19-40 may apply to residences or dwelling houses if the house is “used as a place of gaming ” Contrary to Respondents’ argument that the statute applies only to outbuildings of a dwelling, but not the dwelling itself, this Court deemed residences not to be excluded from § 16-19-40's reach If the Act would be “eluded”

– as *Faulkener* says it would be – by gaming in the outbuildings, then, most certainly, if § 16-19-40 were inapplicable to the “principal or mansion house,” even if it had been transformed into a “house used as a place of gaming,” the purpose of the Act would be turned on its head and virtually eviscerated. *Faulkener*’s recognition that § 16-19-40 applies to the “mansion house” is entirely consistent with cases decided in other jurisdictions which conclude that a residence may be transformed into a “gaming house” or “house of gaming” or a “public place” for purposes of the applicable gambling statute. See, *Appellant’s Brief* at 21-24.³

Also, contrary to Respondents’ view, see *Respondent’s Brief* at 17, *State v. Brice* *supra* holds that a dwelling may constitute one of the places where gaming may not occur

³ See, 38 Am Jur *Gambling*, § 136 [“one who knowingly permits property or premises under his control to be used as a place to bet and wager to gamble with cards or dice may be convicted (for operating a gaming house) even though the premises so employed constitute his private residence ”], *State v. Black*, 94 N C 809, 1886 WL 987 (1886) [dwelling house may be turned “into a gaming house by allowing persons to resort thither from time to time for gaming purposes ”], *Simons v. State*, 56 Tex Crim 339, 120 S W 208, 210 (1909) [allowing the playing of poker for money in a residence on several occasions constituted the keeping of a gaming house], *Nickols v. State*, 111 Ala 58, 20 So 564 (1896) [private residence may, depending on the facts, become a ‘public place’ for gaming], *Thrasher v. State*, 168 Ala 130, 53 So 256 (1910) [room of a dwelling may, depending on the facts, constitute a “public place” used for gaming] See also, 6A McQuillin *Mun. Corp.*, § 24 138 [“A common gaming house may consist of a single room rented in a house of many rooms, and it need not necessarily be open to the whole public in common ”]

Respondents argue that Appellant’s reference in its earlier *Brief* to the fact that Nathan Stallings pled guilty to the operation of a gaming house is irrelevant. *Respondents’ Brief* at 11, n 10. We strongly disagree. If Stallings pled guilty to this crime, regardless of the motive for doing so, it is an admission by the occupier of the residence that the dwelling had become a gaming house. That admission is highly relevant to and indeed telling in support of the application of § 16-19-40 to these Respondents with respect to whether or not the residence in question had become a “house used as a place of gaming.” Certainly, Stallings admitted that he was operating a house of gaming. This fact was noted in the Order of the Municipal Court who obviously found that the residence had become a “house used as a place of gaming.” *Record* at ____

pursuant to § 16-19-40 The indictment charged Brice with permitting and encouraging in his dwelling house certain persons to play at cards, dice etc This Court sustained the charge Even though *Brice* was indeed decided prior to the statute's amendment in 1816, adding the words "house used as a place of gaming," *Faulkener* notes that the words "other public house" were present when *Brice* was decided Clearly, the *Brice* Court determined that gaming in the "dwelling house" violated the statute Thus, it is fair to assume that *Brice* – like the Alabama Court in *Thrasher* and *Nickols supra* – found the residence in question had been transformed into a "public place" or a "public house " Regardless, however, *Brice* clearly held that a dwelling was one of the locations where gaming was prohibited in certain circumstances Those circumstances, – where the "house" is a "public house" or is "used as a place of gaming" – are applicable here

Likewise, *State v Yoe*, 76 S C 46, 56 S E 2d 542 (1907) also involved a residence used as a gaming house In *Yoe*, the syllabus accompanying the reported case, states that the defendant "did unlawfully keep and maintain a home used for purposes of gaming " The Court concluded that the indictment charged a valid offense under § 16-19-40 *See also, City Council of Greenville v Kemmis*, 58 S C 427, 36 S E 727 (1900) [private hotel room served as a "place of gaming with cards for money or other stake" under Greenville municipal ordinance], *State v O Neal*, 210 S C 305, 42 S E 2d 523, 527 (1947) [it "is the general rule that where the proprietor of a place not kept for the purpose of gaming, allows gaming to be carried on, in which he participates, or from which in some way receives benefit he may be convicted as the keeper of a gaming place "]

III

“Texas Hold’em” Poker Constitutes “Gaming” Pursuant to Section 16-19-40 As

A Matter of Law

When applying the well recognized rules of statutory construction, referenced above, as well as the public policy underlying § 16-19-40's passage, it is difficult to escape the conclusion that the Legislature, in enacting the statute, did not intend to limit “gaming” only to games of chance, as Respondents argue. Instead, the General Assembly, consistent with its broad purpose, sought to punish the wagering upon *any game*, whether a contest or chance which occurs in a residence which has been transformed into a “house used as a place of gaming.”

We note that nothing contained in § 16-19-40 itself indicates or suggests that “gaming” under the statute is limited only to games of chance. Indeed, § 16-19-40 makes only a few games inapplicable, these are primarily games of skill, such as billiards or chess – typically played in the home at that time. However, even the playing of these few games of skill is not protected when betting or wagering upon them is involved. The exclusion of these few specific games of skill from the statute’s reach – and then, only where no betting on those games is involved – *strongly indicates that all other games of skill are prohibited particularly where betting accompanies the playing of such games.* See, *Riverwoods LLC v. County of Charleston*, 349 S. C. 378, 384, 563 S. E. 2d 651, 655 (2002) [“The enumeration of exclusions from the operation of a statute indicates that the statute should apply to all things not specifically excluded”].

Such a reading is consistent with the popular or ordinary meaning of the term

“gaming ” The leading dictionary definition of “gaming” or “gambling” is simply “[t]o bet on an uncertain outcome, as of a contest ” *American Heritage College Dictionary* (3d ed) Moreover, the Arkansas Supreme Court stated the following in *Mace v State*, 58 Ark 79, 22 S W 1108, 1108-9 (1893)

[w]e deem it unnecessary to enumerate the reasons for the enactment of the various statutes upon the offense of gaming, and think we may safely say, as did the leading commentator upon the English law, that the legislature has been careful to prevent the destructive vice, and that our laws against gaming are not deficient In the case of *Tatman v Strader*, 23 Ill 439, under a statute which prohibits betting on games, the court says The word “game” in our language has a very broad and comprehensive signification That illustrations innumerable might be given to show that the ordinary and popular understanding of the word “gaming” includes feats of physical power and skill, as a game of quoits, ball, etc In the case of *State v Miller*, 53 Iowa 154, 4 N W Rep 900, under a statute which prohibits the playing of any game for any other money or other property of any value, the court holds that billiards is a game within the inhibition In the case of *People v Weuthoff*, 51 Mich 203, 16 N W Rep 442, it was held that the betting on a game of baseball was prohibited under a statute prohibiting the betting upon any game of skill or chance The court said (Cooley, J) that baseball was a game in the strict sense

Similarly, in *Adams v Antonio*, 88 S W 503, 505 (Tex 1935), the Texas Court of Appeals stated

[1]n passing on the question here involved, we have not found it necessary to determine whether the game played on the machines here under consideration is one of skill or one of chance for the reason that the statute makes no such distinction, but applies alike to all such tables exhibited for the purpose of gaming, regardless of the character of the game played thereon

Other decisions elsewhere are in accord *Callison v State*, 172 S W 2d 772 (Tex 1942)

[“Our code does not define game or gaming, nor does the statute make any distinction between games of chance and games of skill Texas courts have made no such distinction ”]

McBride v State, 39 Fla 442, 22 So 711, 713 (1897) [the “wagering, betting or laying of

money or other thing of value upon the transpiring of any event whatsoever, whether it be upon the result of a game chance, or upon a contest of skill, strength, speed or endurance, whereby one party gains and the other loses something for nothing, whether the parties betting be the actors in the event upon which the wager is laid or not, is gaming or gambling within the meaning of these acts ”], *State v Lawrence*, 9 Okla Crim 16, 130 P 508 (1913) (“Gaming has always been an offense at common law A wager laid upon the result of any contest of chance, skill, or strength between men or beasts or men and beasts constitutes gaming ”], *Commonwealth v Gourdier*, 14 Gray 390, 80 Mass 390 (1860) [“To play at any game of chance or skill on the issue of which money or property having any value depends is illegal gaming ”], *In re Opinion of the Justices*, 73 N H 625, 63 A 505, 507 (1860) [“Game is defined in the Century Dictionary as ‘a contest for success or superiority in a trial of chance, skill or endurance ’”]

It thus defies imagination that the framers of § 16-19-40, who sought to cast the broadest possible net in the prohibition of the “pernicious practice of gaming, would have intended to limit such “gaming” to games of chance only This Court’s decisions are faithful to that legislative intent, applying the broad, popular meaning to the word “gaming” to include all games, not just those which are predominantly chance-based

For example, in *State v Laney*, 38 S C L (4 Rich) 193 (1850), the Court addressed the question of the sufficiency of an indictment for “gaming” with a slave This Court held that the word “game” is construed in its broadest sense, and thus the type of game involved is irrelevant The Court explained that

[t]he indictment is framed by the words of the statute, and that according to

the general rule, would be sufficient. But the reply to this is, that game means sport or amusement – and taking the whole clause, it is manifest the Legislature meant by the word game some unlawful game, and this ought to be set out, that the Court may know whether the game is prohibited by law. Assuming by the word ‘game,’ the Legislature meant playing at some unlawful or prohibited game, it is immaterial what the game was. It would be equally within the prohibition whether played with cards or dice, or at any gaming table, such as are described in the Act of 1816, or by whatever name it may be called. According to the principles above stated, the kind or name of the game is no part of the offence. [t]here are some American cases very much, if not exactly, like the one under consideration. *The State vs Dole* (3 Blackf 294,) was an indictment against a grocer for suffering gaming in his shop. The indictment was quashed on the Circuit, because it did not set out the particular game played. But in the Supreme Court it was held to be sufficient, because all games were unlawful in *such* places. *The State vs Bougher* (3 Blackf 307,) was an indictment for gaming at a tavern. The words of the Indiana statute are, “Any person who shall play at any game,” &c. The indictment charged the offence in the words of the statute, without stating what game was played. It was held sufficient, because the words were general, and included all games.

Moreover, as we have already discussed, *Scarlet Red, supra* rejects the argument that “the prohibited games [of § 16-19-40] be confined to those alone in which the stake is won or lost by chance.” Instead, this Court made clear that the test was whether “a wager depended on [the] success or failure” of a contest or event.

Further, in *Atchison v Gee*, 15 S C L (4 McCord) 211 (1827) the Court considered the question of “gaming” in the context of the statute of 9 Anne c 14, which had been made of force by the reception statute of 1712. The issue in *Atchison* was whether a bet on a horse race (a game of skill)⁴ in excess of the minimum amount designated by the Statute of Anne (L 10) was “other gaming.” While horse racing was not explicitly mentioned in the statute

⁴ See, e.g. *Rohan v Detroit Racing Assn*, 314 Mich 326, 22 N W 2d 433, 440 (1946) [“Horse racing, like foot racing, boat racing, football and baseball, is a game of skill and judgment and not a game of chance.”]

(as it was wagering on card games), nevertheless, the bet constituted “gaming” under the statute. Clearly, bets upon games of skill have constituted gaming in South Carolina since 1712. *See also, Colley v Berry*, 1 Bail 593, 1830 WL 1283 (1830) [reaffirming *Atchison v Gee supra*, contract to wager \$200 on a horse race is void], *Berkebile v Outen supra* [“gaming” under the Statute of Anne includes legal, as well as illegal games.]

In short, this is not a situation where the three elements of gambling or a lottery – prize, chance, consideration – must be involved, as Respondents argue.⁵ *See Johnson v Collins Entertainment supra, Darlington Theatres Inc v Coker*, 190 S C 282, 25 S E 2d 782 (1939). Here, we are confronted with a longstanding anti-gaming statute, one with clear

⁵ In addition, Respondents’ efforts throughout their *Brief* to impugn the State are disappointing. For example, Respondents characterize as a “gross misstatement” of Stallings’ testimony that there was more than \$200 on the table at one time. *Respondents Brief* at 3, n. 4. Yet, Respondents inaccurately reference testimony to which Appellant was not referring when it made that statement. The actual testimony to which we were referring is located on p. 100 of the Transcript, not on p. 98, as Respondents contend. *Record* at _____. There, Stallings answered “yes” to the simple question of whether there was ever more than \$200 on the table. He then explained how he arrived at that figure. *Id.*

Moreover, Respondents repeatedly criticize as “inflammatory” the State’s repeated references to the residence being a “casino like facility.” *Respondents Brief* at 5. However, the simple dictionary definition of a “casino” is a public room or building for gambling and other entertainment. *See, American Heritage College Dictionary* (3d ed.). Thus, to use the phrase “casino like facility” is hardly “inflammatory.” This Court is not a jury. And, use of the dictionary definition of a “casino” is apt here, based upon the Record, and the conclusion of the Municipal Court that the residence served as a “house used as a place of gaming.”

Finally the Respondents’ contention that “[i]n its Statement of Facts, the State repeatedly ignores the factual findings of the Municipal Court and mischaracterizes evidence at trial,” *Respondents Brief* at 3, is also entirely misplaced. SCACR Rule 208(b)(1)(D) provides that “a party may also include a separate statement of facts relevant to the issues presented for review, with reference to the record on appeal, which may include contested matters and summarize the party’s contentions.” Appellant’s treatment of the Statement of Facts was a fair summary of the testimony before the Municipal Court and completely within the above-referenced Rule.

legislative intent as well as with decisions of this Court construing the word “gaming” according to its popular meaning, rather than in a technical legal sense, where the three elements of gambling are involved. That popular meaning should be applied here as well.

Finally, a more recent case, *State v. O Neal* *supra*, is particularly instructive. In *O Neal*, the defendants were convicted of keeping and maintaining a gaming house. The State contended that a portion of the Five O’Clock Club had been transformed into a gaming house in violation of what is now § 16-19-40. There, a small poker game, in which the stakes were increased from twenty-five cents to a dollar was being held in a room in the Five O’Clock Club. In each game, a certain percentage of the amount stated was deducted for the “house.” This Court affirmed the conviction, citing the general rule that where the proprietor of a place not kept for the purpose of gaming allows the game to be carried on and in some way receives a benefit, he may “be convicted as the keeper of a gaming place.” 42 S.E.2d at 527.

O Neal is significant for two reasons: first in a factual scenario, not unlike here (except that the establishment was not a residence), a “gaming place” was found by this Court. Indeed, the number of participants in *O Neal* was smaller than in this case, and the stakes were similar. Moreover, the *O Neal* Court deemed the playing of poker as “gaming” under the statute. The Court did not find it necessary to engage in any analysis as to whether poker is a game of chance or skill. The playing of poker for money was deemed “gaming” *per se*. Thus, based upon the holding in *O Neal*, it is difficult to escape the conclusion that the residence in question here, where poker was being played by a larger number of participants than even in *O Neal*, was a “place” of gaming for purposes of § 16-19-40.

Further, the playing of poker for money is “gaming” *pers se*, thus, any further analysis of skill versus chance is unnecessary

However, even assuming *arguendo* that the Court determines that “gaming,” for purposes of § 16-19-40, is limited to games of chance only, still, *all card games*, including “Texas Hold’em” poker, are, as a matter of law, games of chance In *Annotation*, “Games of Chance or Skill,” 135 A L R 104 (1941), it is written that “games of cards are games of chance even though the element of skill is more or less involved, since the element of chance predominates ” Moreover, in *State v Taylor*, 111 N C 680, 16 S E 168 (1892), the North Carolina Supreme Court found as follows

It is a matter of universal knowledge that no game played with ordinary playing cards is unattended with risk, whatever may be the skill, experience, or intelligence of the gamesters engaging in it From the very nature of such games, where cards must be drawn by and dealt out to players, who cannot anticipate what ones may be received by each, the order in which they will be placed, or the effect of a given play or mode of playing, there must be unavoidable uncertainty as to the results

And, in *In re Advisory Opinion to Governor*, 856 A 2d 320, 329 (R I 2004), the Supreme Court of Rhode Island stated that “games that depend on an unpredictable and uncontrollable variable, such as the case in games involving cards and dice, are as a matter of law, games of chance ” *See also, Joker Club LLC v Hardin*, 183 NC App 92, 643 S E 2d 626, 630 (2007) [poker is “subject to defeat at the turn of the card ”]

Thus, even though both the municipal court and the circuit court agreed that “Texas Hold’em” poker is, based upon the facts, a game predominantly of skill, and this Court may not reopen that question, see *Allendale Co Sheriff s Office v Two Chess Challenge II*, 361 S C 581, 606 S E 2d 471 (2004), such a conclusion is not relevant here The State certainly

did not “waive” (as Respondents’ contend) any argument that as a matter of law, “any game of cards or dice” played for money in a “house used as a place of gaming” violates § 16-19-40. This is a question of law, not one of fact surrounding the particular card game. Based upon the foregoing authorities, we believe that any game played with cards or dice, including “Texas Hold’em” is, as a matter of law a game of chance. See, *Johnson v Collins Entertainment Co*, 333 S C, *supra* at 119, 508 S E 2d, *supra* at 586 (Burnett, J, dissenting) [“Since the player cannot improve the likelihood he will obtain a certain card, I conclude chance dominates over skill in the operation of the Type III video game machines ”] For that reason, the Legislature made “any game with cards or dice” illegal at the places prohibited in § 16-19-40.

IV

Section 16-19-40 Is Neither Void-For-Vagueness, Nor Is It Overbroad

In *Rose v Locke*, 423 U S 48, 50 (1975), the United States Supreme Court articulated the following test with respect to void-for-vagueness under the Due Process Clause

[I]t is settled that the fair-warning requirement embodied in the Due Process Clause prohibits the States from holding an individual “criminally responsible for conduct which he could not reasonably understand to be proscribed.” *United States v Harriss*, 347 U S 612, 617, 74 S Ct 808, 812, 98 L Ed 989 (1954), see *Wainwright v Stone*, 414 U S 21, 22, 94 S Ct 190, 38 L Ed 2d 179 (1973). But this prohibition against excessive vagueness does not invalidate every statute which a reviewing court believes could have been drafted with greater precision. Many statutes will have some inherent vagueness, for “(i)n most English words and phrases there lurk uncertainties.” *Robinson v United States*, 324 U S 282, 286, 65 S Ct 666, 668, 89 L Ed 944 (1945). Even trained lawyers may find it necessary to consult legal dictionaries, treatises, and judicial opinions before they may say with any certainty what some statutes may compel or forbid. All the Due Process Clause requires is that the law give sufficient warning that men may conduct themselves so as to avoid that which is forbidden.

Based upon this standard, the Court in *Rose* found that the phrase “crimes against nature” is “no more vague than many other terms used to describe criminal offenses at common law and now codified in state and federal penal codes ” Moreover, added the Court,

[t]he phrase [“crimes against nature”] has been used among English-speaking people for many centuries, see 4 W Blackstone, *Commentaries* 216, and a substantial number of jurisdictions in this country continue to utilize it Anyone who cared to do so could certainly determine what particular acts have been considered crimes against nature, and there can be no contention were ones never before considered as such

Id

Here, Respondents focus much of their attention regarding their void-for-vagueness claim upon Officer Hembree’s uncertainty in answering their questions on cross-examination about § 16-19-40 They also center upon the colloquy between Mr Grossman (the prosecutor) and the Circuit Court See, *Respondents Brief* at 38-40 Even if Officer Hembree was uncertain regarding the finer points of § 16-19-40's reach, such is by no means dispositive here As the United States Supreme Court emphasized in *Rose*, a statute may well create confusion, absent resort to legal dictionaries or judicial decisions or even the full text of the statute itself Yet, the Due Process Clause is still not violated Consulting the text of § 16-19-40 or a dictionary or this Court’s decisions concerning “gaming,” such as *Scarlet Red*, would easily clarify any question about what constitutes “gaming” for purposes of § 16-19-40

Moreover, *Torres* applies these constitutional principles in the specific context of a statute prohibiting “gaming” In *Torres*, the Arkansas Supreme Court noted that “ whenever the definition of general words in a criminal statute, passed pursuant to police

power, may be adequately determined through reference to judicial decisions construing the statute, it is not void-for-vagueness ” 831 S W 2d *supra* at 905 As stated, the common and ordinary definition of “gaming,” as articulated in the decisions of this Court as well as other jurisdictions readily defeats any argument of void-for-vagueness in § 16-19-40 In addition to *Scarlet Red*, *Faulkener*, *Laney*, *Yoe*, *Kemmis* and *Brice*, as well as the statute itself, *State v Robinson*, 40 S C 553, 18 S E 891 (1894), expressly states that “[t]he acts of our general assembly do certainly denounce betting on the throwing of dice as an offense ” In *Robinson* no mention of chance is referenced because § 16-19-40 denounces “any game with cards or dice” as “gaming” under the statute According, contrary to Respondents’ arguments, § 16-19-40 is not void-for-vagueness

In summary, despite Respondents’ efforts at misdirection, this is a simple case Respondents were playing cards, “Texas Hold’em” poker, for money, in what had become a “house used as a place of gaming ” As the Record demonstrates, and the Municipal Court determined, the residence had been transformed into a gaming house Players learned of the poker games, which were held on a regular basis, over the Internet Numerous players attended and participated in these games If this scenario does not violate § 16-19-40, few would

CONCLUSION

The decision of the Circuit Court should be reversed and the convictions reinstated

Respectfully submitted,

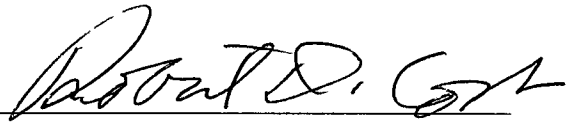
HENRY D McMASTER
Attorney General

JOHN W McINTOSH
Chief Deputy Attorney General

ROBERT D COOK
Deputy Attorney General

C HAVIRD JONES, JR
Senior Assistant Attorney General

MARY FRANCES JOWERS
Assistant Attorney General

By 
ROBERT D COOK

P O Box 11549
Columbia, SC 29211
(803) 734-3680

ATTORNEYS FOR THE APPELLANT

March 15, 2010

THE STATE OF SOUTH CAROLINA
IN THE SUPREME COURT

APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas
The Honorable R Markley Dennis, Jr , Circuit Court Judge

RECEIVED

MAY 2010

C A No 2009-CP-10-001551

SC SUPREME COURT

Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John Taylor Willis

Respondents,

v

Town of Mount Pleasant

Appellant

**BRIEF OF AMICUS CURIAE
THE POKER PLAYERS ALLIANCE
IN SUPPORT OF RESPONDENTS**

James W Sheedy
Driscoll Sheedy, P A
222 E Main St , Suite 204
Rock Hill, South Carolina 29730
(803) 327-4472

Thomas C Goldstein
Christopher M Egleson
Jonathan H Eisenman
Akin Gump Strauss Hauer & Feld LLP
1333 New Hampshire Ave , NW
Washington, D C 20036-1564
(202) 887-4000

Attorneys for Amicus Curiae

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STATEMENT OF INTEREST

Amicus curiae the Poker Players Alliance is a nonprofit organization whose members are poker players and enthusiasts from around the United States. The Alliance, which works to protect the legal rights of poker players including many thousands of ordinary South Carolinians who play poker, was involved in these proceedings in both of the lower courts. The group's membership has a direct interest in the outcome of this case, because it will determine whether they are permitted to play Texas Hold'em poker in South Carolina or instead will be branded as criminals. *Amicus* appears in order to address issues not otherwise fully briefed by the parties themselves.

ARGUMENT

The State's appeal to this Court presents a narrow legal question: to resolve the case in Respondents' favor, this Court need only rule that a home game of poker does not violate S.C. Code Ann. § 16-19-40 (2003). Respondents were charged with playing cards in a "house used as a place of gaming" in violation of that statute. As the State and Respondents have agreed, "gaming" in the statute means "gambling." *Amicus* agrees with Respondents that, under South Carolina law, Texas Hold'em is not "gambling" because the outcome is determined predominantly by skill rather than chance. *See* Br. of Respondents ("Resp. Br.") at 20–25. In this brief, *amicus* explains why the question under the statute is whether skill predominates over chance in Texas Hold'em, why skill does in fact predominate over chance in Texas Hold'em, and why Respondents' particular conduct here therefore does not violate the statute. This brief further explains why the State's proffered interpretation of the statute should be rejected, because it would criminalize the casual and harmless games of poker enjoyed by so many of this State's citizens.

I South Carolina Law Does Not Prohibit Gaming Unless Chance Predominates Over Skill

Respondents were charged with violating Section 16-19-40 by playing poker in a private home. To show that playing poker in such a setting violated the statute in this criminal case, the State had to prove beyond a reasonable doubt that poker is a game in which the outcome is determined predominantly by chance rather than skill. That is true because Section 16-19-40 prohibits playing “any game with cards or dice” in “any house used as a place of gaming.” It necessarily follows that the State could only show that the house in question was being “used as a place of gaming” if there was “gaming” taking place at the house.

As an initial matter, “gaming” in Section 16-19-40 means “gambling,” as both parties here have agreed since the inception of this case. This Court has consistently treated the terms as equivalents, as in *State v. Lane*, 82 S.C. 144, 144, 63 S.E. 612, 613 (1909), and *Video Gaming Consultants Inc. v. Dep’t of Revenue*, 342 S.C. 34, 44, 535 S.E.2d 642, 648 (2000), in which the Court used them interchangeably. See also *Rorrer v. P.J. Club Inc.*, 347 S.C. 560, 566, 556 S.E.2d 726, 729 (Ct. App. 2001) (purpose of statute allowing “right to recover excessive gambling losses” is to “punish excessive gaming”). It is thus common ground that this appeal turns on whether Texas Hold’em poker is gambling.

The generally accepted test for whether an activity is “gambling”—so well accepted that it is known as “American rule”—is the so-called “dominant factor” test, which provides that an activity is not gambling if skill predominates over chance in determining the outcome of the activity. That test has been adopted by the highest courts of numerous states, including Nebraska, California, Nevada, North Carolina, Utah, Mis-

souri, and Alaska See e g , *Indoor Recreation Enters Inc v Douglas*, 235 N W 2d 398, 400 (Neb 1975), *In re Allen*, 377 P 2d 280 (Cal 1962), *Las Vegas Hacienda Inc v Gibson*, 359 P 2d 85, 87 (Nev 1961), *State v Stroupe*, 76 S E 2d 313, 316–17 (N C 1953), *D Orio v Startup Candy Co* , 266 P 1037, 1038 (Utah 1928), *Harris v Missouri Gaming Comm n*, 869 S W 2d 58, 62 (Mo 1994), *Morrow v State*, 511 P 2d 127, 129 (Alaska 1973)

The court below correctly recognized that the courts of a number of states follow the dominant factor test (R p 6), and concluded that the test would be the law in this State as well It based its conclusion on this Court’s decision in *Darlington Theatres v Coker*, 190 S C 282, 2 S E 2d 782 (1939), and on the opinions of Justice Burnett and Chief Justice (then Justice) Toal in *Johnson v Collins Entertainment Co* , 333 S C 96, 508 S E 2d 575 (1998) The court below noted in particular Chief Justice Toal’s conclusion that Justice Burnett’s opinion approving the dominant factor test “set forth the legal standard which should be used to define the term lottery as it appears in South Carolina’s Constitution in a manner which is faithful to our Court’s precedents and well within the mainstream of American court decisions ” R p 9 (quoting *Johnson*, 333 S C at 120, 508 S E 2d at 588 (Toal, J , concurring and dissenting))

In *Johnson*, the question was whether video gaming machines constituted a “lottery” under the South Carolina Constitution The majority decided that the machines were not a lottery, establishing a principle that the term “lottery” in particular is to be narrowly construed *Id* at 102 The majority opinion, therefore, did not reach the more general question of what constitutes gambling Justice Burnett in dissent, however, read the term “lottery” more broadly, finding support in *Darlington Theatres* Under that case,

Justice Burnett’s opinion understood the term lottery to describe any game involving “(1) [t]he giving of a prize, (2) by a method involving chance, (3) for a consideration paid by the contestant or participant,” *Johnson*, 333 S C at 108–09, 508 S E 2d at 581–82, thus reading the term “lottery” to be expansive enough to cover gambling in general.¹ From there, Justice Burnett’s opinion (unlike that of the majority) had to determine what degree of chance is required to satisfy the second prong of the test. Justice Burnett’s opinion reasoned that the American rule should apply (as it does in a majority of jurisdictions—by court ruling), and concluded that “where the dominant factor in a participant’s success or failure in a particular scheme is beyond his control, the scheme is a lottery.” *Id.* at 113, 584.²

The logic of Justice Burnett’s opinion, approved in the separate opinion of Chief Justice Toal, is convincing, and this Court should confirm that it states the law in South Carolina. The wealth of authority that Justice Burnett’s opinion collects demonstrates that the overwhelming majority view in American law in cases of this sort is that the dominant factor test states the proper question. *See id.* at 114, 584 n 10 (collecting cases). As the court below noted, Justice Burnett’s view is bolstered significantly by the fact that the Attorney General previously had “consistently stated that the test of whether

¹ Chance, consideration and prize are widely recognized as the three elements of gambling. *See e.g. Midwestern Enters. Inc. v. Stenehjem*, 625 N.W.2d 234, 237 (N.D. 2001) (“The three elements of gambling are generally recognized as consideration, prize, and chance.”) *Monte Carlo Parties Ltd. v. Webb*, 322 S.E.2d 246, 248 (Ga. 1984) (“The crime of gambling in Georgia consists of three elements: consideration, chance, and prize.”) *Pennsylvania v. Irwin*, 636 A.2d 1106, 1107 (Pa. 1993) (“The three elements of gambling are (1) consideration, (2) a result determined by chance rather than skill, and (3) reward.”) *Kraus v. City of Cleveland*, 19 N.E.2d 159, 161 (Ohio 1939) (“there is involved in the game three elements of gambling: namely, chance, price, and a prize.”)

² As Justice Burnett noted, under the alternative common law rule—the British rule—a game requiring any amount of skill at all would be outside the ambit of gambling. *See id.* at 112–13, 583–85.

a particular game is a game of chance or skill is governed by the so-called ‘predominance’ test” S C Att’y Gen Op dated Jan 22, 2004 (*citing* S C Att’y Gen Ops dated Aug 2, 2001, Sept 5, 1995, Dec 5, 1978)³ The statute appropriately is understood to incorporate this common law rule, given the presumption that the Legislature acts against the background of, and in accordance with, the common law *E g*, *Nuckolls v Great Atl & Pac Tea Co*, 192 S C 156, 161, 5 S E 2d 862, 864 (1939), *see e g*, *City of Myrtle Beach v Juel P Corp*, 344 S C 43, 48, 543 S E 2d 538, 540 (2001) (applying the common law timeframe for “abandonment” when an ordinance using the term failed to otherwise define it)

Any other rule, including the position now advocated by the Attorney General—that South Carolina suppresses gambling by suppressing *all* card and dice games (Br of Appellant (“App Br”) at 25)—would mean that Section 16-19-40 would suppress a game of bridge or Monopoly That cannot be the law It is true that the text of the Section *could* be read to prohibit “any game with cards or dice,” but that definition cuts too broadly to be sustained⁴ “However plain the ordinary meaning of the words used in a statute may be,” this Court will “reject that meaning when to accept it would lead to a

³ In the opinion cited the Attorney General was correct in its assessment of the law *ie* that the dominant factor test applies He erred however in his determination that card games, such as poker are generally games of chance S C Att’y Gen Op, 2004 WL 235411 (Jan 22 2004) For the reasons explained in the text and as the court below found (R p 10) Texas Hold Em is a game of skill not of chance

⁴ *Amicus* is aware that the Legislature recently failed to act on several bills, including one that would have clarified the applicability of § 16-19-40 *See* H 4267 118th Gen Assem, 1st Sess (S C 2009) That the Legislature ran out of time to take up a bill is not tantamount to its endorsement of the existing vague statute *See Langley v Boyter* 284 S C 162 178, 325 S E 2d 550 559 (S C Ct App 1984) *rev’d on other grounds* 286 S C 85 (observing that it would be wrong to conclude that courts should be guided by legislative inaction) Nor should legislative inaction preclude this Court from clarifying that the common law background against which the original legislation must be read incorporates the predominance test Interpreting the law especially the common law is the role of the courts *Cf Marbury v Madison*, 5 U S (1 Cranch) 137, 177 (1803)

result so plainly absurd that it could not possibly have been intended by the Legislature

” *Broadhurst v City of Myrtle Beach Election Commission*, 342 S C 373, 380, 537 S E 2d 543, 546 (2000)

But here, it is not necessary to resort to the absurd results, because the State’s proffered interpretation is simply not the better reading of the statutory text. The statute qualifies its prohibition on “any game with cards or dice” by specifying that the game must also be played in a “house used as a place of gaming.” As Respondents observe, the State’s reading would eliminate the requirement that the house be “used as a place of gaming” from the statute, and would result in an interpretation that would sweep in an enormous amount of innocent play. Resp. Br. at 18. That is an absurd result that a proper interpretation of the law must avoid. Otherwise, what would prevent a SWAT team from hauling a group of retirees away from a penny-ante game of bridge, also a game of skill,⁵ as Respondents were hauled away from their low-stakes Texas Hold’em game? This absurdity can be avoided by reading Section 16-19-40 in conjunction with the dominant factor test.

The State raises the specter of judicial activism in claiming that “by injecting a ‘chance versus skill’ analysis, [into] the use of § 16-19-40, the Circuit Court ignored the Legislature’s clear mandate that the playing of ‘*any game* with cards or dice’ in the specified locations enumerated in the statute is expressly prohibited.” App. Br. at 8 (emphasis added in App. Br.). However, the State cannot even bring itself to seriously apply the “plain language” of § 16-19-40, which would forbid playing *all* games with cards or dice

⁵ See e.g. Benedict Carey, *At the Bridge Table Clues to a Lucid Old Age* N.Y. Times May 22 2009 available at <http://www.nytimes.com/2009/05/22/health/research/22brain.html> (discussing the men

in South Carolina. Instead, the State qualifies its position by contending that “any game with cards or dice *for money* [is] considered ‘gaming.’” App. Br. at 26 (emphasis added). The limitation that the game be played for money is not, however, in the text of the statute to which the State would otherwise adhere, but comes from dicta in this Court’s opinion in *State v. Robinson*, 40 S.C. 553, 18 S.E. 891 (1894). While the State holds § 16-19-40 forth as a clear and explicit statute, it does not acknowledge that applying the words on the page—“any game with cards or dice”—leads to results so nonsensical that the State too must turn to the courts to make sense of the statute. It is not “activism” for a court to construe an otherwise vague statute as needed to make its scope reasonable.

The State errs in asserting that this Court has already considered the dominant factor test in *State v. Red*, 41 S.C.L. (7 Rich.) 8 (1853), and refused to apply it. The defendant there argued that his “thimbles” game was actually an “exhibition of his dexterity” and so was not an illegal shell game. The Court held that the game could be prohibited even though as played by the defendant, who used slight of hand to win, it was not “won or lost by chance.” This was because any other conclusion would allow the defendant to cheat players who believed the game was in fact a game of chance. *Id.* The holding in *Red* says nothing about how the dominant factor test may be applied to evaluate the legality of a game that is played according to its rules.

Indeed, the dominant factor test exists in order to encourage games of skill. That is why lotteries, the epitomic games of chance, are regulated with the force of constitutional restrictions in some states, *see e.g.*, Wash. Const. art. II, § 24, but no one thinks that participation in certain beneficial contests is illegal, or even immoral. Participants on

tal challenge inherent in playing bridge: the skill necessary to play and the positive mental effect of being

the game show Jeopardy! have no control over which categories are on the board on any given night, that is a factor of chance that people accept when it is clear that the dominant factor in determining the winner is her intelligence. See generally Anthony N. Cabot *et al.*, Alex Rodriguez: A Monkey and the Game of Scrabble, *The Hazard of Using Illogic to Define the Legality of Games of Mixed Skill and Chance*, 57 Drake L. Rev. 383, 388–90 (2009). It is a particular game’s attendant benefits—or lack thereof—that drive its regulation. That is why early American gambling laws, particularly those in the South, were directed only at gaming habits that had negative collateral consequences. See National Institute for Law Enforcement and Criminal Justice, *Development of the Law of Gambling 1776–1976* 244 (1977) (“To the degree that the law [in the Southern colonies] concerned itself with gambling issues of public order and the maintenance of economic stability were of paramount concern.”) Those Southern laws “did not threaten poker” among individuals, and instead sought to prohibit “gaming in taverns and other public places.” *Id.* at 248 (discussing South Carolina’s 1802 “blanket ban on casino-type gambling”) (emphasis added). It is for that reason that in a case challenging the sufficiency of the allegations in an indictment under a predecessor to § 16-19-40, the only legal analysis offered by any member of this Court was the observation that “[t]he legislature could not intend, that for a casual game being played in a man’s house, he should forfeit the penalty.” *State v. Brice*, 4 S.C.L. (2 Brev.) 66 (1806) (Brevard, J. dissenting).

Justice Brevard’s 204-year-old observation rings true today. Did the legislature intend to prohibit casual poker games played in a man’s house? As Respondents observe, the text of § 16-19-40—nearly identical to that of a statute passed some 14 years *after*

engrossed in some mental activities like cards.)

Brice—makes clear that the legislature only intended to prohibit the vice of gaming in certain public places, including houses of gaming where owners took a profit or opened their doors to all passers-by. Here, a group of people played poker for small stakes in a private house. The owner of the residence who purchased refreshments for these gatherings often did so without full reimbursement for that expense. The Circuit Court, the prosecution, and the arresting officer all had difficulty offering an interpretation of § 16-19-40 that would reach Respondents' conduct and not simultaneously reach, *e.g.*, a judge's aunt's twice-a-month bridge game—an outcome that all parties agree is absurd. The difficulty in finding a construction of the statute that reaches Respondents' conduct without criminalizing other innocent, casual gaming, points to the conclusion that the statute simply is not meant to criminalize the kind of game that Respondents were arrested for playing.

Thus, at a minimum, the court below was correct to apply the rule of lenity in construing the statute. As this Court has consistently held, “when a statute is penal in nature, it must be construed strictly against the State and in favor of the defendant.” *State v Blackmon*, 304 S C 270, 273, 403 S E 2d 660, 662 (1991), *see also State v Cutler*, 274 S C 376, 378, 264 S E 2d 420–21 (1980) (same), *see generally United States v Santos*, 128 S Ct 2020, 2025 (2008) (“[t]he rule of lenity requires ambiguous criminal laws to be interpreted in favor of the defendants subjected to them”) (collecting cases). Even the trial court here was of the view that it lacked “clear guidance” on the meaning of the statute at issue here. If the trial court acknowledged that it lacked the “guidance” necessary to interpret the statute, Respondents certainly lacked that guidance as well, and the court was correct to construe the statute to permit Respondents' behavior.

II **Poker Matches Are Contests of Skill**

Under the dominant factor test, poker is not gambling. As the trial court held here, “the evidence and studies are overwhelming” that “Texas Hold-em is a game of skill.” R. p. 19. Indeed, at trial, the Town of Mount Pleasant did not dispute that poker is a game of skill, and the trial court’s holding that poker is in fact a game of skill is not at issue. An understanding of poker and how it differs from games of chance nevertheless constitutes important background in this case. For the Court’s convenience, therefore, *amicus* presents below an account of the skill involved in playing poker, drawing upon the trial transcript, academic studies, and *amicus*’s own experience with the game.

As is true for similar games like golf, billiards, and bridge, when good poker players play against bad players, the good players consistently and routinely prevail. Players who enter golf and bridge tournaments pay a fee to enter, and earn a cash reward if they win, but these are not games of chance because their outcome is determined principally by skill. See *Pennsylvania v. Two Elec. Poker Game Machines*, 465 A.2d 973, 977 (Pa. 1983) (“[i]t cannot be disputed that football, baseball and golf require substantial skill, training and finesse” even though “the result of each game turns in part upon luck or chance”), *In re Allen*, 377 P.2d at 281 (bridge requires skill and is not a “game of chance”). The same is true for poker. To be sure, there is some accumulation of luck over the course of a poker match that will affect how individual players perform. But as *amicus* explains below, skill is nonetheless dominant in poker play. The fact that every hand of poker involves multiple decision points (at each of the multiple rounds of betting), multiple decisions at each decision point (bet, call, raise, or fold), and innumerable factors that call for skill to evaluate each of those decisions (for example, the player’s own cards, the odds of his hand improving, his sense of the strength of the other player’s

hand, his sense of the other players' perception of him), establishes that poker is a contest of skill

Two general methods of determining the role of chance in an activity have developed in state courts to analyze whether a game is one of skill or chance. The first method is to evaluate the game's structure and rules. If the structure and rules allow sufficient room for a player's exercise of skill to overcome the chance element in the game, the game is one of skill and the gambling laws do not apply. See e.g., *In re Allen*, 377 P.2d at 281–82 (holding the card game of bridge to be one predominantly of skill). A second approach, which the scientific community favors, is an empirical approach that examines the actual play of the game. Using the well-accepted premise that in a game predominated by skill the more skillful players will consistently perform better, see e.g., Patrick Larkey et al., *Skill in Games*, 43 Management Science 596 (May 1997) (attached as Ex A), this approach looks for specific instances over repeated trials to see if in fact the “more skillful players tend to score better than less skillful players.” Each method independently—and certainly both methods when taken together—confirms that the game of poker is a game of skill.

**A Making Correct Decisions In Poker Requires A Diverse Array Of
Sophisticated Skills That Games Of Chance Do Not**

The essence of poker is correct decision making. Each time it is a player's turn to act, he must choose among several decisions, typically whether to bet, raise, or fold. During the course of a single session, a player will have to make hundreds of those decisions. In order to make the optimal decision the player must take into account a variety of factors. The importance of decision making in poker cannot be understated. In a recent statistical analysis of millions of actual poker hands, the players' decisions alone rather

than the cards dealt accounted for the result in 76% of all the hands played. See Paco Hope & Sean McCulloch, *Statistical Analysis of Texas Hold Em* at 5 (March 4, 2009) ⁶ In other words, in those 76% of hands, all but one player folded, making the remaining player the hand's winner, and the actual cards were never revealed. Moreover, according to this report, in roughly 50% of hands that do play to a showdown,⁷ a player who would have won had he stayed in will have folded. This means that in only 12% of hands—that is, half of the 24% that play to showdown—does the player who was dealt the “luckiest” hand win. With player decisions deciding close to 90% of all poker hands, the players who consistently make good decisions will consistently win. Those who do not will generally lose. In all, as expert witness and champion professional poker player Michael R. Sexton testified at trial, “[t]he object of poker is to make correct decisions.” R. p. 213, lines 16–17. The “luck of the cards” has little to do with one’s decision-making skills.

To make the right decisions consistently, poker players must employ a range of skills. And by skill, we do not mean simply a sophisticated knowledge of odds. Knowledge of the odds is simply a prerequisite to competent poker play. See Kyle Siler, *Social and Psychological Challenges of Poker*, *Journal of Gambling Studies* (Dec. 25, 2009) (observing that imperfect information in poker makes it impossible to formulate correct strategies via objective decision-frames). To be skilled at poker, players must develop an ability to directly influence the way an individual hand turns out—who collects the pot at the end, and how much is in the pot. See generally R. p. 218 (describing skills involved

⁶ http://www.cigital.com/resources/gaming/poker/100M_Hand_AnalysisReport.pdf (last accessed July 23, 2009).

⁷ A showdown is when all of the cards have been dealt and the players still in the hand expose their hole cards and the best hand wins the pot. It is only at the showdown where the winner is determined by the fall of the cards rather than by which players have folded in response to the moves of other players.

in deducing what other players are holding), R pp 228–29 (describing how a player exploits how other players perceive him)

It is true that individual moves in poker are called “bets.” But that vocabulary is misleading. The “bet” is not a wager on a chance event. True wagers, unlike poker “bets,” do not alter the outcome of the event wagered upon. A bet on the Super Bowl does not change the score, bets on roulette wheels are placed before the ball is dropped. Bets at a poker table are different. What is called a “bet” in poker is really a “move” like a move in any other game: it is a strategic maneuver designed to provoke a desired reaction from an opponent.

The importance of these moves is heightened because, in typical complex poker games, a player must contend with a large number of decision-making stages and a variety of possible courses of action at each stage. In each hand of Texas Hold 'Em, a player has four principal decision-making opportunities: the first after he receives his down cards, and the next three as each common card is turned over in three stages. At each stage the player has available to him many courses of action. The focus of each decision is how worthwhile it is to risk additional chips relative to the possibility of winning all the chips in the pot in that hand. These decision-making stages reduce the element of chance in the game, since logical decision-making at each of these stages allows the player to control whether, and how much, he wins or loses.

To make optimal moves at each of these stages, players must be mathematicians, observers of human nature, and capable deceivers. Poker players use their “bets” principally to communicate with, manipulate, and intimidate their opponents. Even in the 24% of hands that do go to a showdown, the players typically are not “betting” on the outcome

of a chance event. For example, when a poker player bets as a bluff, he is not hoping that his cards will prove to be better than his opponents' cards. Instead, the player hopes to win the pot by convincing his opponent to fold the best hand. As noted above, in roughly 50% of hands that do play to a showdown, the player who would have won had he stayed in will have folded, meaning that in 88% of hands the player who eventually won the hand did so by "convincing" his competitor to fold. That fact attests to the skill required of the winning player in bluffing his competitor into folding. See Hope, *Statistical Analysis* at 5. Of course, a player trying to chase another player out may get called and lose. But what he was betting on was not what cards his opponents held—the essence of gambling. He was betting to influence what his opponents would do—the essence of strategy.

Skeptics claim that "[n]o amount of skill can change a deuce into an ace." *Joker Club LLC v Hardin*, 643 S.E.2d 626, 630 (N.C. Ct. App. 2007). It is true that skill cannot change the cards. But a player can fold rather than play the deuce, or use her skill at poker to make her opponent believe she has an ace, causing the opponent to fold a hand that would otherwise have won the pot. As noted, more than 76% of all hands are won when one player bets and all remaining players fold in response. See Hope *et al.* at 5, see also Howard Lederer, *Why Poker Is a Game of Skill* (May 6, 2008) (unpublished manuscript, attached as Ex. B). In some of these hands, a player with a bad hand will have bluffed out a player with a better hand, overcoming the luck of the draw. Further, as Respondents note, Texas Hold'em is not played in one-hand increments. Over the course of an actual game, the skilled player will consistently prevail, regardless of an occasional unlucky turn of a card. Resp. Br. at 29–30.

Further, that the winner of a small percentage of hands will in fact be determined to some extent by the luck of the draw is not sufficient to refute the conclusion that poker is a game predominately of skill. Many games have a chance element, and it is easy to say, after the fact, that the chance element was dispositive in any particular instance of play. For example, when playing golf on a windy day, there is always the chance that the wind will blow the ball off target, causing a player to lose a few strokes, and possibly the game. See e.g., *PGA Tour Inc v Martin*, 532 U.S. 661, 686–87 (2001) (“[G]olf is a game in which it is impossible to guarantee that an individual’s ability will be the sole determinant of the outcome”). Thus a chance element, out of the golfer’s control, may play a dispositive role in deciding the outcome of what is generally acknowledged to be a game of skill. See e.g., *S.C. Att’y Gen. Op.*, 1986 WL 289772 (Mar. 24, 1986) (observing that a golf tournament appears to be a game of skill).

To appreciate the role that chance plays in almost every game, it is important to keep in mind just how few games exist in which luck plays no role at all. Chess is the prototypical example of a game of pure skill, because both players have perfect information regarding the other’s pieces and all that matters is how skillfully a player deploys them. But such games of pure skill are exceedingly rare, at least some degree of luck plays a role in almost every game people play. In fact, between two equally matched chess players, the coin flip to determine who plays black or white may have an effect on the outcome. See e.g., Jonathan Rowson, *Chess for Zebras: Thinking Differently About Black and White* at 193 (Gambit Publications 2005) (“[T]he conventional wisdom is that White begins the game with a small advantage and, holding all other factors constant, scores approximately 56% to Black’s 44%”).

Additionally, consider Scrabble, another game where chance plays a role. As in poker, skill largely determines the outcome in Scrabble, even though one could say of that game too that no amount of skill can turn a “Q” into an “E.” The outcome of a game of Scrabble may in some cases turn on the draw of the tiles just as in some cases the outcome of a round of poker may turn on the draw of the cards, but that does not make either game one of chance.

Furthermore, the outcome of a hand of poker is not only who wins and who loses, but how much each player wins or loses. A player’s assessment of his own cards and what cards the other players are holding will affect whether and how much the player bets, meaning that even in the 12% of hands that reach a showdown and in which the best hand dealt wins the pot, the players’ skill will determine how much is won and how much is lost. Skill thus means that a good player will lose less with a deuce and win more with an ace than a bad one. See R. p. 239, lines 7–22.

The importance of skill in poker is further demonstrated by the fact that a novice poker player can improve his talents and raise the level of his game through study and accumulating game experience. See R. p. 213, line 22–p. 214, line 13. After only a short time, a player can acquire basic game skills, such as learning when to fold and how to make the basic calculations. The more a person continues to practice and learn, the more his skills will improve, something that is also true for chess, golf, and bridge players.⁸

⁸ A significant body of literature is available to help the novice player develop. See e.g. Gus Hansen *Every Hand Revealed* (2008); Daniel Negreanu, *Power Hold em Strategy* (2008); David Apostolico, *Machiavellian Poker Strategy: How to Play Like a Prince and Rule the Poker Table* (2005); Dan Harrington *Harrington on Hold Em: Expert Strategy for No Limit Tournaments* (2005); Eric Lindgren *World Poker Tour: Making the Final Table* (2005); Blair Rodman & Lee Nelson, *Kill Phil: The Fast Track to Success in No-Limit Hold Em Poker Tournaments* (2005); Doyle Brunson, *Doyle Brunson’s Super System: A Course in Power Poker* (2002); David Sklansky *Tournament Poker for Advanced Players* (2002); David Sklansky *The Theory of Poker* (1994).

Together, the specific skills required to play poker, the demonstrated fact that poker hands are won by maneuvering rather than in a showdown the vast majority of the time, and the fact that in every hand the players' skill determines the amounts won and lost by each player, show that skill is required to be a winning poker player

B Skilled Players Beat Less-Skilled Players at Poker

Several recent studies have demonstrated definitively that a player must be skilled in order to win at poker. Indeed, every single study to examine this issue has reached the very same conclusion: poker turns on skill. Until quite recently, any rigorous analysis of whether skill or chance predominated in poker could involve only an assessment of the rules of play themselves, because no research had assembled a statistical assessment of the role of skill in poker. The subject has now received considerable academic attention, and the studies uniformly conclude that skill overwhelmingly determines the outcome in poker games. This reflects an evolving understanding, and popularization, of the sophistication of the game of poker.

In one recent game-theoretical study, for example, the author used a computer simulation to prove that a combination of the skills discussed above is required in order to win consistently at poker. *See Larkey, supra*. For his 2001 paper on "Skill in Games," Professor Larkey built a computer model of a simplified version of poker. *See id*. The "general behaviors mandated for player success" at this simplified game were: (a) observation, (b) memory, (c) computation, (d) knowledge of the random device, (e) misleading opponents about the actual strength of your position, and (f) correct interpretation and forecasts of opponents' behaviors. *Id.* at 597. To evaluate the relative importance of these areas of skill, singly and in combination, the authors programmed twelve different

robot players who would compete against one another. Each was programmed to use a different combination of strategies. *Id*

The simplest robot only knew the rules of the game—when to bet and how much it was allowed to bet—but aside from that essentially played randomly and without regard to its hand. A second robot understood the relative values of the hands. It would bet aggressively when it was dealt a good hand, and hold back when it got a bad hand. It ignored its opponents, while three other similar robots made conservative or aggressive assumptions about what the other players' hands contained. Another robot bluffed aggressively. The more sophisticated robots watched their opponents' betting patterns and made deductions about what those opponents were likely to be holding. Some of these robots would bluff by playing randomly a small percentage of the time in order to confuse other opponents capable of watching and learning.

The authors ran a tournament that pitted each robot player against each other player in 100 one-on-one games. Over the course of the tournament, the random-play robot won only 0.4% of its games. The four robots that dominated the contest were the ones capable of sophisticated calculations about their odds of winning. The robot that could only calculate odds came in fourth. The robot that could calculate odds and that also bluffed occasionally came in third. But the two most successful robots were those that most closely emulated real poker players. The robot that not only calculated odds but also observed fellow players and adjusted its style of play came in second. The first-place robot calculated odds, changed its play based upon what it learned about its opponents, and bluffed occasionally in order to throw its competitors off track.

Even in the simplified game of poker designed for the study, with simple hands and only two rounds of betting, the winning robot was the robot with the essential skills that every poker player learns, practices, and tries to master. It calculated the odds it was playing against, which was essential to its success. But it outperformed the others by deceiving its competitors with strategic bluffs while learning about and adjusting to its competitors' style of play. It won 89% of the hands it played. See Larkey at 601 tbl. 2.

A substantial number of other studies—including every study ever to have addressed the issue—reach the same conclusion as Professor Larkey:

- Noga Alon, *Poker: Chance and Skill*. Professor Alon provides a detailed analysis of several simplified models of poker in order to allow a precise mathematical analysis. Though simplified, these models capture many of the main properties of sophisticated poker play. The article concludes that skill is the major component in deciding the results of a long sequence of hands because knowledge of hand probabilities is a learned skill fundamental to determining and implementing an advanced strategy and an advanced strategy will earn more than a strategy of an unskilled player in the long run. As the common practice is to play many hands, the conclusion is that poker is predominantly a game of skill. (Attached as Ex. C)
- Laure Elie & Romauld Elie, *Chance and Strategy in Poker* (Sept. 2007) (unpublished manuscript). The Elie study expands on Professor Alon's work by testing its hypothesis not on a simplified version of poker, but on games with 2 or 4 players (up from Alon's two-player model), with or without blind betting, and with constant or variable stakes. Using computer simulation, Elie & Elie confirmed that the quality of a player's strategy—the skill with which the player plays the game—has the overriding influence over the game's outcome. (Attached as Ex. D)
- Abraham J. Wyner, *Chance and Skill in Poker* (Apr. 2008) (unpublished manuscript). Reviewing the Alon and Elie & Elie studies, Professor Wyner concludes that both studies accurately described a salient fact about the game of poker: a skilled player who can calculate the odds and bet and bluff on that basis has a substantial advantage over players who lack these skills. (Attached as Ex. E)
- Peter Borm & Ben van der Genugten, *On a Measure of Skill for Games with Chance Elements* (1996). In order for laws restricting games of chance to be sensibly applied, Borm and van der Genugten argue that some threshold level of skill must be established beyond which games cease to be games of chance and become games of skill. They developed a scale by which a game of pure chance

ranks “0” and one of pure skill ranks “1,” and then sought to rank a series of games on that scale. For a “0” game, the odds of a beginner winning are the same as those of the most advanced player winning, in a “1” game, the most optimal player can always win. Blackjack, considered a game of chance, is ranked 0.16. Based on their mathematical model, the authors conclude that an extremely simplified “poker” game, with three players playing with only four cards, valued at 10, 20, 30, and 40, has a skill level more than *double* that of blackjack. (Attached as Ex. F)

- Rachael Croson, Peter Fishman & Devin G. Pope, *Poker Superstars: Skills or Luck?* 21 Chance, No. 4, 25-28 (2008). The authors compared data from 81 poker tournaments and 48 Professional Golfers’ Association Tournaments in an effort to determine whether the success achieved by the elite poker players—individuals who have finished in the top 18 of at least one high-stakes Texas Hold’em tournament—is due to skill or luck. Analysis of the data led the authors to conclude that poker seems to involve a significant amount of skill because success in a given tournament can be predicted based on past success in tournament play. The authors also found that there are quantifiable skill differentials between elite poker players which are similar to skill differentials between comparably elite golfers. (Attached as Ex. G)
- Gerard Cohen, Consultation on Professor Alon’s *Poker: Chance and Skill*. Professor Cohen confirms the validity of Professor Alon’s conclusions. According to Cohen, players must adapt their strategies to the number of players (by betting less often and with a hand that is stronger as this number increases). Moreover, the skilled player must take into account in his or her strategy the position and the order of players around the table. The importance of using these skills in real poker play, which is even more complex than in Alon’s case studies, leads him to the conclusion that skill is predominant in determining poker outcomes. (Attached as Ex. H)
- Zvi Gilula, Expert Opinion. Professor Gilula concludes that winning a poker tournament depends significantly more on the participants’ strategic capabilities and understanding than on luck. He notes that a player must learn to evaluate, within a predetermined interval of time, the strength of the hand that he holds in each stage of the game, mask his own strategy, evaluate his opponents’ strategies, and translate the insights which arise from using these other abilities into a rational decision making policy. The effect of these abilities is that the probability for an insightful player with strategic skills to win a poker tournament, when playing against a player who does not have these skills, is much higher than 50%. (Attached as Ex. I)
- Paco Hope (Cigital Inc.) & Sean McCulloch, *Statistical Analysis of Texas Hold Em* (Mar. 4, 2009). Hope and McCulloch examine 103 million hands of a particular poker variant—Texas Hold’em—played on PokerStars. For each hand analyzed, they ask whether the hand ended in a showdown, and if so, whether the player with the best two cards won the hand. They conclude that in

the majority of cases—75.7% of the time—the game’s outcome is determined with no player seeing more than his or her own cards and some or all of the community cards. In those hands, all players folded to a single remaining player, who took the pot. In the remaining 24.3% of hands that go to a show-down, where cards are revealed to determine a winner, only 50% are won by the player who, had everyone stayed in the game, would have held the winning hand. The remaining hands are won by a player with an inferior hand, because the player with the best hand folded. From this, the authors determine that the winner in a majority of games is determined by something other than randomly drawn cards.

- Kyle Siler, *Social and Psychological Challenges of Poker*, [VOL] Journal of Gambling Studies (Dec. 25, 2009). After discussing the challenges of poker, Siler observes the effects of various strategies on win rates, and concludes that certain strategies work with varying degrees of success depending on the skill of other players in a game and the stakes played for. Siler also observes that a high rate of hands won correlates *negatively* with the amount of money a player wins, particularly in lower stakes games, because the players in those games tend to “overweight frequent small gains vis-a-vis occasional large losses.” Siler’s research at least implicitly—and indeed, fairly explicitly—reveals something similar to the other studies cited here: different strategies can produce substantially different outcomes, something that would be relatively surprising in a game dependent heavily on chance. (Attached as Ex. J)

The number of identifiable skills required to excel at poker and the simulations and studies just discussed all predict that, in real life, the more skilled players will win. In fact, that is what actual poker play makes clear. The best poker players beat other poker players as often as the best golfers beat other golfers, if not more often. It is true that poker has a “random device” (see Larkey at 597) that introduces short term uncertainty into each hand, but over time the randomness of the cards evens out and all players eventually get the same share of good and bad hands. Their results differ based on how skillfully they play those hands.

A striking example of the limited role that the cards play in determining the outcome of poker matches may be found in the recent story of Annette Obrestad, a 19-year-old poker prodigy who beat 179 other players—without looking at her own cards (except one peek on one hand). See Shawn Patrick Green, *Online Poker Interview With Annette*

'Annette_15 Obrestad, CardPlayer.com (Aug 12, 2007)⁹ Obrestad's feat shows it is the player's skill rather than the deal of the cards that determines the outcome of poker play¹⁰

The same result is demonstrated by comparing the results of recent golf and poker tournaments. In the 25-year period beginning with 1976 and ending in 2000, 21 different players won the World Series of Poker. One player won three times in that span (Stu Ungar), and three more players won twice (Johnny Moss, Doyle Brunson and Johnny Chan). Three of these repeat winners won back-to-back wins in consecutive years (Brunson, Ungar and Chan). Fourteen of the twenty-one were "repeat finalists" who finished among the top ten in one or more of the other tournaments.

In the same period, there were twenty-two different winners of the PGA Championship, and three multiple winners. Only one player won back-to-back titles. Fifteen of the twenty-two champions made it into the top ten in another Championship. These numbers confirm that poker requires as much skill as golf to win consistently. *Accord* Croson, Fishman & Pope, *supra*, at 14 (Ex. G at 3–4). Two recent legal analyses reached the same conclusion. See Anthony Cabot & Robert Hannum, *Poker: Public Policy, Law, Mathematics, and the Future of an American Tradition*, 22 T.M. Cooley L. Rev. 443 (2005) (conducting Texas Hold 'Em simulations to determine that skilled opponents beat unskilled ones), Michael A. Tselnik, *Check, Raise, or Fold: Poker and the Unlawful Internet Gambling Enforcement Act*, 35 Hofstra L. Rev. 1617, 1664–65 (Spring 2007).

⁹ Available at <http://www.cardplayer.com/poker/news/2536> online poker interview-with annette 39 annette_15 39-obrestad (last accessed May 7, 2010).

¹⁰ This example also refutes the conclusion that the chance of what a player is dealt as initial hole cards has a substantial effect on outcome: it cannot affect someone who never looks at them.

As expert witness Professor Hannum testified at trial, “the consensus” view among members of the scientific community “is in agreement with my opinion that skill is the predominant factor in poker” R p 208, lines 2–4 The State did not offer testimony rebutting or contradicting Professor Hannum

It is precisely because poker requires roughly the same amount of skill as golf that poker tournaments now rival golf tournaments in popularity on television The only people who watch anyone play roulette on television are casino security guards People only watch lottery drawings to see if they have won But poker matches are spectator events because, as in any game that people tune in to watch, it is entertaining to watch good players get beaten by even better players Like golf, poker is a game won and lost predominately on the basis of the skills of the players Respondents in this case were playing a game of skill They were not engaged in unlawful gambling

C Recent Cases in Which Courts and Juries Have Considered the Scientific Literature on Poker, and Venerable Caselaw Considering Other Games, Support the Conclusion That Poker Is A Game of Skill

Courts that have considered the evidence described above have found, in light of the consensus in the scientific literature, that poker is a game of skill This is consistent with older caselaw, from before sophisticated computer models allowed rigorous analysis of complex games, that nevertheless recognized that an element of chance in a card game does not simply turn that game into a game of chance

In *In re Allen*, 377 P2d 280, 281 (Cal 1962), the California Supreme Court granted a writ of habeas corpus to a defendant who was convicted of playing bridge for money under an ordinance that prohibited “any game of chance played with cards” *Id* at 281 Looking to the rules of the game and scholarly descriptions of how it is actually played—as well as “a large amount of literature designed to increase the player’s skill”—

the *In re Allen* Court concluded that bridge players, though engaged in a game in which “there is of course an element of chance resulting from the deal of the cards,” nevertheless are playing a game of skill *Id.* at 281–82

Most importantly, in this case, the trial judge, best positioned to judge the evidence of skill, concluded, “Texas Hold’em is a game of skill. The evidence and studies are overwhelming that this is so.” R. p. 19

These courts have all been correct in concluding that Texas Hold’em is a game of skill. The State’s contention to the contrary that under the dominant factor test Texas Hold’em is a game of chance as a matter of law is not supported by the cases that it cites.

The State relies repeatedly on an advisory opinion of the Rhode Island Supreme Court to support its argument. In that matter, the court was asked whether the establishment of a privately-owned casino would violate the state’s constitutional prohibition on non-state operated lotteries. *In re Advisory Opinion to Governor*, 856 A.2d 320, 322 (R.I. 2004). At the outset, the court noted that “we are unable to exercise the fact-finding power of the Court,” and that its “opinion is not an exercise of judicial power, is not binding and ‘it carries no mandate.’” *Id.* at 323 (internal citation omitted). It then went on to consider whether a casino would be a lottery, by applying “the ‘dominant factor’ doctrine.” *Id.* at 328. The parties seeking to build the casino admitted that “roulette, craps and slot machines specifically ‘amount to nothing more than chance.’” *Id.* The court agreed, but went on to add that poker is also a game of chance. It concluded its discussion of the dominant factor test by noting that

Although a certain level of fact-finding would be helpful to determine the exact role that skill or judgment play in a particular game, games that depend on an unpredictable and uncontrollable variable, such as the case in games involving cards and dice, are, as a matter of law, games of chance.

Id. at 329. But see e.g. *In re Allen*, 377 P.2d at 281–82 (holding that the card game bridge is a game of skill).

Unlike the Rhode Island Supreme Court, this Court has the benefit of the trial court’s fact-finding and reasoned analysis of the evidence. The trial court found that, if the dominant factor test applied, Texas Hold’em would surely be a game of skill. R. p. 19. The Circuit Court agreed. R. p. 10. This Court must rely on the record and fact-finding in this case. See e.g., *McGill v Moore*, 381 S.C. 179, 185, 672 S.E.2d 571, 574 (2009) (“In an action at law, tried without a jury, the trial court’s findings of fact will not be disturbed unless found to be without evidence which reasonably supports the court’s findings.”)

Nor does *People v Dubinsky*, 31 N.Y.S.2d 234 (N.Y. Ct. Spec. Sess. 1941), on which the State also relies, support the proposition that Texas Hold’em is a game of chance. *Dubinsky* found that “playing ‘stud’ poker”—a simpler game than Texas Hold’em—“for money is a game of chance,” but specifically noted that “the Courts have not gone so far in this State as to say that every game of cards for money in and of itself constitutes gambling.” *Id.* at 236–37. And the State’s suggestion that all card games are gambling in California under *Lavick v Nitzberg*, 188 P.2d 758 (Cal. Dist. Ct. App. 1948), is contradicted by the California Supreme Court’s holding in *In re Allen* that bridge is a game of skill, 377 P.2d at 281–82, and further undermined by the subsequent holding of an intermediate appellate court that recognized poker as a game of skill, see *Bell Gardens Bicycle Club v Dep’t of Justice*, 36 Cal. App. 4th 717, 747–48 (Cal. Ct. App. 1995). In contrast, the *Lavick* Court was only considering whether a debt incurred in a game of

draw poker was enforceable as a contract, and specifically disclaimed to be interpreting a penal law *Lavick*, 188 P 2d at 759

In sum, the relevant caselaw supports the view that poker is a game of skill. The most important cases are the recent decisions considering the evidence on the skill involved in poker, which concluded that poker is a game of skill. The State cites cases that it contends show that poker is gambling as a matter of law, but its interpretation of those cases is wrong. Poker is a game of skill.

III The State's Position Would Render Illegal a Game With a Long History in This Country and One Which Is Enormously Popular in This State and Elsewhere

For the reasons discussed above, a ruling that a home game of poker is not illegal gambling is compelled under the law. It would also be a good ruling, fair to the people of this State, because poker is an immensely popular and widely played game. Every day, millions of Americans play poker. Television networks scramble to broadcast the biggest American tournaments. The biggest American winners have fan clubs and endorsement contracts, and donate substantial amounts of their wealth to charity.

The game has been an American pastime for over a century. Warren G. Harding assembled his "poker cabinet" for friendly games twice a week.¹¹ Franklin D. Roosevelt loved to play,¹² and Harry Truman preferred poker to the more fashionable bridge and mah-jongg—it was, he said, "my favorite form of paper work."¹³ During Truman's first

¹¹ John Whitcomb & Claire Whitcomb *Real Life at the White House: 200 Years of Daily Life at America's Most Famous Residence* 268 (2000).

¹² *Id.* at 309.

¹³ David McCullough *Truman* 142–611 (1993).

term, Richard Nixon launched his run for the U S House of Representatives with money he won playing poker¹⁴

Poker is also a favorite within the federal judiciary. In 1972, Washington attorney Bob Bennett invited the newly appointed Associate Justice William H. Rehnquist to join his monthly poker game.¹⁵ For the remaining thirty-three years of his life, Justice Rehnquist rarely missed a game.¹⁶ Over the years, other players in that game have included Associate Justice Antonin Scalia along with Judges Robert Bork, David Sentelle, Thomas Hogan, and Royce Lamberth of the U S Court of Appeals for the District of Columbia Circuit and the U S District Court for the District of Columbia.¹⁷

Around the same time the late Chief Justice joined his monthly game, modern tournament play started to catch on. Binion's Horseshoe hosted the first World Series of Poker in 1970, which has remained the largest event to this day. In 2007, the grand prize went to Jerry Yang, a Laotian refugee who held off 6,357 competitors to win the coveted title, and the Main Event in 2008 drew 6,844 players. ESPN has been broadcasting the World Series of Poker for decades now.

The World Series of Poker includes multiple events every year. In 2008, the Series consisted of fifty-five different tournaments held in the summer. In addition to the summer Series, the World Series of Poker hosts "circuit" events throughout the year.

¹⁴ Steven Lubet, *Lawyer s Poker* 211 (2006).

¹⁵ Jeffrey Toobin, *The Nine* 115 (2007).

¹⁶ *Id.* at 115–16.

¹⁷ *Id.*

Players also frequently compete on the “World Poker Tour,” a global set of tournaments televised on the Travel Channel

Tournament poker also raises substantial amounts of money for charity. The most successful participant in a televised “Celebrity Poker Showdown,” actor Jason Alexander, won three of his four matches and earned more than half a million dollars for charity. An “Ante Up For Africa” event at the 2007 World Series of Poker raised \$700,000 to spread awareness of the crisis in Darfur. One successful player famously donates all of his tournament winnings to children’s charities, a total of over \$5 million to date. See Barry Greenstein—Professional Poker Player Profile, Pokerpages¹⁸. And small-money charity poker tournaments are also common, as Texas Hold’em replaces bingo as a way to generate revenue for fire houses, churches, schools, and other charitable organizations.

But one need not look to presidents, judges, celebrities or even nationwide trends to gauge the popularity of poker in South Carolina. This past autumn, a Catholic priest in Garden City made international headlines when he won \$100,000 for his church in a Texas Hold’em tournament¹⁹. The priest, Rev. Andrew Trapp, originally from Aiken, learned to play poker at family gatherings growing up, and learned Texas Hold’em while in seminary. *Id.* When the final round of the tournament in which he had previously won the \$100,000 prize was televised, over 200 people showed up at Rev. Trapp’s church in Garden City to watch. Janelle Frost, *Parishioners Show Pride for Myrtle Beach Area Priest*, The Sun News (Myrtle Beach), Dec. 28, 2009, at C1. Of course, 200 spectators is

¹⁸ www.pokerpages.com/players/profiles/55033/barry_greenstein.htm (last accessed May 10, 2010).

¹⁹ See e.g. *Poker Playing Priest Misses Top Prize but Wins \$100,000 for Church*, Guelph Mercury (Guelph, Ont.) Dec. 22, 2009, at § 6.

a small number compared to the number of individuals who tried to qualify for the tournament, Rev Trapp finished in the top 10 of a 10,000 person field to qualify That is *ten thousand* players competing to enter just *one* tournament

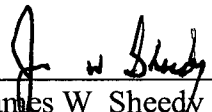
In light of Texas Hold'em's extraordinary popularity in this country and this State, a ruling that a home game of Texas Hold'em is illegal gambling would be oppressive Since the statute does not call for that interpretation, this Court should avoid it

CONCLUSION

For the foregoing reasons, the Court should affirm the decision of the Circuit Court and hold that S C Code Ann § 16-19-40 does not prohibit playing Texas Hold'em in a private home

Respectfully submitted this 11th day of May, 2010

By


James W. Sheedy
Driscoll Sheedy, P A
222 E Main St , Suite 204
Rock Hill, South Carolina 29730
(803) 327-4472 (telephone)


Thomas C. Goldstein
Christopher M. Egleson
Jonathan H. Eisenman
Akin Gump Strauss Hauer & Feld LLP
1333 New Hampshire Ave , NW
Washington, D C 20036-1564
(202) 887-4000 (telephone)
(202) 887-4288 (facsimile)

**THE STATE OF SOUTH CAROLINA
IN THE SUPREME COURT**

**APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas
The Honorable R Markley Dennis, Jr , Circuit Court Judge**

C A No 2009-CP-10-001551

Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John Taylor Willis

Respondents,

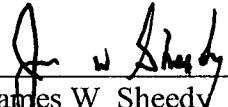
v

Town of Mount Pleasant

Appellant

CERTIFICATE OF COMPLIANCE

The undersigned certify that the foregoing brief complies with Rule 211(b),
SCACR, as well as this Court's August 13, 2007 Order



James W Sheedy
Driscoll Sheedy, P A
222 E Main St , Suite 204
Rock Hill, South Carolina 29730
(803) 327-4472 (telephone)



Thomas C Goldstein
Christopher M Egleson
Jonathan H Eisenman
Akin Gump Strauss Hauer & Feld LLP
1333 New Hampshire Ave , NW
Washington, D C 20036-1564
(202) 887-4000 (telephone)
(202) 887-4288 (facsimile)

**THE STATE OF SOUTH CAROLINA
IN THE SUPREME COURT**

**APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas
The Honorable R Markley Dennis, Jr , Circuit Court Judge**

C A No 2009-CP-10-001551

Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John Taylor Willis

Respondents,

v

Town of Mount Pleasant

Appellant

**EXHIBITS (SOURCES) ACCOMPANYING
BRIEF OF AMICUS CURIAE THE POKER PLAYERS ALLIANCE**

James W Sheedy
Driscoll Sheedy, P A
222 E Main St
Suite 204
Rock Hill, S C 29730
(803) 327-4472 (telephone)

Thomas C Goldstein
Christopher M Egleson
Jonathan H Eisenman
Akin Gump Strauss Hauer & Feld LLP
1333 New Hampshire Ave , NW
Washington, D C 20036-1564
(202) 887-4000

Attorneys for Amicus Curiae

EXHIBIT A

Skill in Games

Patrick Larkey • Joseph B Kadane • Robert Austin • Shmuel Zamir

H J Heinz III School of Public Policy and Management, Carnegie Mellon University, Pittsburgh Pennsylvania 15213

Department of Statistics, Carnegie Mellon University, Pittsburgh, Pennsylvania 15213

Harvard Business School, Cambridge, Massachusetts 02139

Department of Statistics, Hebrew University, Jerusalem, Israel

Differences in players' skill are important determinants of relative player success in most *real games* such as poker, chess, basketball, business, and politics. Yet conventional game theory has concentrated primarily on games with no skill differences among players. This paper uses a simplified version of stud poker to better understand the concept of differential player skill in games. Players with very different strategies for playing this game are modeled algorithmically and pitted against one another in simulation tournaments.
(*Bayesian Game Theory, Game Theory, Poker, Simulation, Strategy*)

1 Introduction

Skill is the extent to which a player, properly motivated, can perform the mandated cognitive and/or physical behaviors for success in a specific game. More skillful players tend to score better than less skillful players. The skills essential to success tend to be game specific; success in basketball requires a somewhat different set of skills than success in chess, business, or politics.

Skill differences among players are important to most real games' outcomes. Clearly theories that aspire to predict outcomes or to advise players on how to improve their play—two of the more obviously useful potential "applications" of a theory of games—require some explicit representation of differential player skills. The mathematical theory of games as it has evolved over nearly a half century since the seminal work of John von Neumann and Oskar Morgenstern (1944) has not, however, with a few exceptions, explicitly incorporated skill differences among players as an important feature of the games studied. Conventional theories of games focus on equilibria and other "solution concepts" resulting from unboundedly rational players utilizing optimal or equilibrium strategies. Differences in game structures and in player endowments in information and resources have been featured in theories of games.

The theory of games has been primarily concerned with limiting cases in which skill differences among

players are not important. The theoretical assumption about skill, usually implicit, is that all players have incentives to play optimally and that they will figure out how to do so, at least in the long run. The cognitive or physical difficulties for players in devising and executing strategies for playing particular games are essentially assumed away.

While there is venerable work on the topic of boundedly rational game players (Simon 1957), the issue has only recently garnered much interest in modern decision theory, game theory, and economics; Kalai (1990) reviews a growing body of work on bounded rationality, memory, and complexity. Camerer (1990) explores the basis for a "behavioral game theory" in more descriptively adequate assumptions about player behavior. Binmore (1990) provides a sweeping, critical review of game theory and concludes that "an attempt must be made to model players' thinking processes explicitly." Binmore echoes Herbert Simon who has been providing procedural representations of human reasoning and arguing cogently on their behalf for forty years (Simon 1955, 1959, 1976, 1983, and 1991). Axelrod and Hamilton (1981) and Axelrod (1984) found important skill differences among players in a computer-based Prisoners' Dilemma tournament. Leifer (1991) analyzes chess and the relationship between skill and the

social relationships among players. Beasley (1990) explores the mathematics of games of varying skill.

This paper seeks to understand the concept of skill in games as an initial step toward building theories of real games capable of both predicting outcomes and advising play. The analytic core of the paper is a detailed analysis of a game of skill, Sum Poker. We posit players in the form of alternative strategies for play that differ in the information they use and in how they use it. The general behaviors mandated for player success in Sum Poker—observation, memory, computation, knowledge of the random device, misleading opponents about the actual strength of your position, and correct interpretation and forecasts of opponents' behaviors—are common to many "real games." The levels of skill and relative success of the different strategies are explored in computerized experiments.

2 A Skill Typology of Games

Game theorists categorize games on several different dimensions. Games are cooperative or noncooperative and one-stage or multi-stage, games have payoffs that are zero-sum or nonzero-sum and involve 2 to n players, the information available to players in a game is complete or incomplete and then, symmetric or asymmetric. When experts on game playing and gambling (Scarne 1980, Jacoby 1963, Thackrey 1971, Morehead 1967, and Livingston 1971) categorize games, they completely ignore the usual game-theoretic dimensions and focus on another dimension, skill. The critical aspect of games for these experts is the extent to which outcomes depend on player skill rather than luck. Their books are primarily about acquiring skill. Another significant difference between game theorists and game-playing experts is in the scope of what constitutes a game. Game theorists' restrictively define a game as the full description of its rules. The game playing experts include in their definition of game, always implicit and informal in their discussions, many factors beyond the formal rules including the decisions on which games to play and information on the past performance of opponents. The experts' notion is roughly equivalent to the game theorists' notion of a repeated game or supergame but with an ill-defined *beginning* and *horizon*.

There are three types of games in terms of skill. (1) In Pure Chance games such as lotteries, Keno, Matching

Pennies, War, and Show Down Poker players compete against a random device that cannot be influenced, the probability of a particular player winning is simply a function of the game's random device. Other games such as Roulette, Craps, and Chuk-a-Luck are essentially Pure Chance games but often have wagering rules appended that introduce elements of skill, more skillful players can lose their money at slower rates, (2) Skill-Chance games such as Poker, Backgammon, Rubber Bridge, and Gin Rummy have both a random device—cards or dice—and significant elements of skill (see Kadane (1986) on electronic draw poker), (3) Pure Skill games such as Tic-Tac-Toe, Go Moku, Checkers, and Chess have no external chance elements. The probability of a particular player winning is essentially a function of that player's skill relative to the other players.

2.1 The Skill Concept

Players face three critical actions with respect to games of all kinds. First, they can usually choose the games in which they will participate, there are usually many more games available than a player has the resources, time, and money, to play. Second, given a decision to play, players must plan a strategy for play. Third, given the decision to play and a strategy, players must execute their planned strategy.

Each of these three actions entails a different type of skill. (a) **Strategic Skill** is the ability to decide what games to play. The boundedly rational player selects games in which his skills (i.e., those associated with choosing and executing strategies during a game) relative to other players' skills yield positive expected utility, including utility from both the process of playing games and expected payoffs. The more accurate the judgments about relative levels of game skill, the greater the strategic skill. Strategic skill is roughly analogous to skill in the play of a *supergame*, (b) **Planning Skill** is the ability to formulate strategies relative to specific opposition in a specific game. Formulating strategies is largely the cognitive activity of creating a planned course of action for conduct in the game. Two key components of planning skill are self and opposition assessment, (c) **Execution Skill** is the ability to execute a planned strategy. It may be much easier to conceive a strategy that entails remembering all of the cards played and a detailed record of opponents' past behaviors to

be used in predicting their future behaviors than it is to accomplish these feats of memory (and subsequent analysis) in "real time" with no external memory aids

In games with a random device (e.g., dice, cards, economic climate, etc.) these three skills only partially determine levels of success in a particular game. The relative importance of each action and of the random device in determining outcomes depends on the details of the game. These skills interact in their effects. Choosing a game in which you are overmatched and, regardless of how well you strategize and play, you will probably lose. Choose a game where you are undermatched, can make victory likely, if not certain. Assessing your skills relative to prospective opponents in choosing games to play usually involves some planning skills; you must imagine your strategy and predict both the opponent's strategy and the likely outcomes to do the assessment. Many games are played with little or no conscious planning; the strategy is implicit and adaptive in the play.

2.2. Representing Skill

There are two fundamentally different ways of representing the skill of a particular individual with respect to a particular game. **Process representations** describe players by their method of play. For poker, the method of play includes the informational and decisional procedures—what is noticed and remembered and the set of rules used to choose an action at each juncture in the game. For example, two players might be identical in all process respects except one remembers all of the cards that have been played while the other forgets about half of them. **Performance representations** characterize players by outcomes. For example, in a regular weekly six-hand poker game one player is \$10,000 behind and another player is \$10,000 ahead over the last year. In real situations there is usually some information on both types of representation. Process representations tend to be more useful in advising play, while performance representations are more useful in predicting game outcomes.

Both types of skill representation have problems as theoretical tools for the study and play of games. **Process representations** are positive theories of player behavior that can, in principle, provide normative information about playing by comparing more- and less-successful players utilizing different methods. Coherent,

valid, normative theories of playing methods that lead to success, much less optimal, in most real games rarely exist because (1) the methods of great players are hard to describe and emulate, (2) the strategy space for real games tends to be too large and complex to describe, and (3) optimal play can only be defined conditional on the characteristics of opponents. Extant theories of play tend to be neither necessary nor sufficient to success. A poker player who forgets about half of the cards that have been played should be less successful over time than an otherwise comparable player who remembers them all. But as the analysis of simulated games below shows, faulty memory can be indistinguishable from bluffing, and players with this flaw may defeat a nonbluffing player who remembers everything.

Players with the higher frequency of successful outcomes in an adequate sample of play are, *ceteris paribus*, more skillful. Unfortunately, *ceteris non paribus* in virtually all real games and performance representations are rarely straightforward. One pandemic problem is that play outcomes only have meaning relative to the competition. For example, losing a game of chess in 20 moves to Gary Kasparov is surely a much more impressive performance accomplishment than winning a game in 20 moves over an eight-year-old who has just learned what constitutes a legal move for each piece. But how much more? To construct a proper performance record for a player requires adjustment for the strength of the competition, but there is no demonstrably correct method of adjustment because there is no ultimate source of correct skill rankings that can be used to assess the adjustment method.¹ Sampling also becomes an issue because most real games are skill-chance games and observed outcomes confound skill and chance. In principle, skill and chance can be separated statistically with an appropriate set of experiments, *viz.*, identical, independent repetitions. In practice, the experiments arising in the course of play of real games are far from ideal and pose significant challenges to inferential learning.

¹ See Larkey (1991) for adjustments to compare professional golfers, Caulkins et al. (1993) for adjustments for comparing airlines on time performance, and Larkey and Caulkins (1992) for adjustments to grade point averages.

3. Sum Poker

Sum poker, a simplified form of stud poker, preserves the essential elements of poker—memory, bluffing, and observing the play of others. The simplifications, fewer cards and a less complicated ranking of hands, are insignificant departures from real poker. Sum poker has the following sequence of play: (1) everyone antes the amount of the minimum bet, (2) two cards are dealt to each player, one down and one up, (3) a round of betting ensues, (4) another card is dealt up, (5) another round of betting follows, and (6) hands are scored by the sum of the three cards, face cards count ten, aces one, and all other cards receive face value. The highest sum wins.

During a betting round, a player may, depending on position, open, raise, call, fold, or check. To open means to initiate the betting round with a positive bet. To raise means to bet an amount above a pending bet from another player; other players are obliged to either match the bet or concede the hand. To call means to bet exactly the amount of a pending bet from another player (or players in the case of a raise), thereby staying in the hand. To fold is to concede the hand to the opponent. To check—remaining in the hand without betting or folding—is an option only when there is no prior bet in the round.

The opening bettor in each round is chosen at random. No more than three raises are allowed in a betting round. There is a maximum and minimum betting amount, \$5 and \$10 respectively, unless otherwise indicated. The game is played repeatedly, in some cases tens of thousands of hands, until only one player remains who is not ruined, viz., out of money.

3.1 Players

In our game simulations, we posit and test 12 different strategies for playing Sum Poker. The 12 players briefly described² are:

1 **Simple [S]** is a baseline strategy that plays randomly without regard to any of the possibly relevant information about the deck, own hand, or opponents'

cards and behavior. Beyond knowing the legal moves in the game, this player arguably has no skill.

2 **AvgHand [AH]** compares cards with an average hand [13.08 in the first round (two cards) and 19.62 in the second round (three cards)] and bets accordingly. Where AvgHand's cards are much better than average, she bets very aggressively. AvgHand completely ignores opponents' cards.

3, 4, and 5 **Loose, Middle, and Tight [L, M, T]** are three closely related strategies. They make different assumptions about the opponent's down card. Loose is very aggressive and always assumes that the opponent's down card is a 1. Middle assumes a 5. Tight assumes a 10. The strategies then consist of rules conditioned on a comparison of own and opponent's hands given the assumption.

6 **BluffsLots [BL]** bluffs a lot. Any time that BluffsLots' up cards are greater than the opponents' up cards or a simple calculation of probable advantage is in his favor, he raises the maximum amount. BluffsLots uses information about the deck, about cards played, about his own hand, and about his opponents' hands.

7 **CalcMuch [CM]** is a nonbluffing strategy that does not learn about the opponent and uses a relatively simple set of calculations. The strategy uses knowledge of what cards have been played to compute the probability of winning in the cards against a specific opponent. There is no consideration of money.

8 **PlayerCalc [PC]** is a learning version of CalcMuch. The strategy observes and remembers for each opponent for each possible difference in up cards what the lowest value of a down card has been that the opponent has ever been willing to bet on. There is no bluffing and no consideration of money. PlayerCalc reverts to CalcMuch when an opponent's bluffing successfully counters its learning mechanism.

9 **MixedCalc [MC]** is a complex strategy that plays as CalcMuch with probability 0.94 and as Simple with probability 0.06.

10 **PlayerCalcB [PCB]** is a complex strategy which plays as PlayerCalc with probability 0.94 and as Simple with probability 0.06.

11 **ExpVal [EV]** computes expected values and plays accordingly. The probability portion of the expectation is the same as PlayerCalc. The value portion is based upon the difference between an estimate of what

² The appendix provides a fuller technical description of the conditions and actions constituting each strategy. The PASCAL code is available from the authors.

the final pot will be if neither player folds and an estimated cost of staying in the hand. There is no bluffing.

12. **ExpValB [EVB]** is a bluffing version of **ExpVal**. It plays as **ExpVal** with probability 0.94 and as **Simple** with probability 0.06.

3.2. Process Representation of Strategies

Table 1 shows process characteristics of the strategies on several dimensions. The **knowledge** dimension is the amount of information in the game environment that the strategy can use. **Computation** summarizes the computational ability required to execute the most complex rules in the rule set. **Algorithm length** is measured in lines of code as a rough proxy for the size of rule sets. **Conservatism** refers to how certain of victory a strategy must be to bet. **Learning** and **Bluffing** simply indicate whether those abilities are built into the strategy intentionally.

The *strategy space* for playing Sum Poker is huge. We cannot know analytically that our twelve strategies include the strategy that will perform best on average against all other possible strategies or best against any particular strategy. The strategies used in the simula-

tions were not, however, posited randomly, but systematically cover (1) the potential information available to play (from no information to full—including all past—information about the deck, current cards, and opponents), (2) the potential modes of computation (from none to computations well beyond human capacities), (3) the risk propensity (from very aggressive to very cautious), and (4) the extent of attempts to conceal patterns of play from opponents. The purpose of these strategies is to explore the concept of skill in games, not to simulate the behavior of actual subjects playing sum poker.

3.3. Performance Representation of Strategies

Each strategy was matched against each of the others in a simulated tournament. A game in a tournament consisted of the hands sufficient for one player to ruin the opponent. Each pair of players was simulated in 100 games.

Table 2 summarizes the results of the tournament. The number in each cell tells the number of times in 100 games that the player at the left beat the player at the top. The **Total** column contains a simple sum of the

Table 1 Characteristics of Strategies

	Knowledge	Computation	Algorithm Length	Conservatism	Learning	Bluffing
Simple [S]	0	0	0.43	2	No	No
AvgHand [AH]	1	1	0.61	2	No	No
Loose [L]	2	2	0.79	1	No	No
Middle [M]	2	2	0.96	2	No	No
Tight [T]	2	2	0.96	3	No	No
BluffsLots [BL]	3	3	0.87	1	No	Yes
CalcMuch [CM]	3	3	1.54	2	No	No
MixedCalc [MC]	3	3	1.96	2	No	Yes
PlayerCalc [PC]	4	3	2.46	2	Yes	No
PlayerCalcB [PCB]	4	3	2.89	2	Yes	Yes
ExpVal [EV]	4	4	3.57	2	Yes	No
ExpValB [EVB]	4	4	4	2	Yes	Yes

Knowledge	Computation	Conservatism
0 = knows nothing	0 = none	
1 = knows own cards	1 = counting and comparing	1 = aggressive
2 = knows others' cards	2 = adding and subtracting	2 = moderate
3 = knows distribution of cards in deck	3 = multiplying and dividing	3 = conservative
4 = knows history of play	4 = beyond human abilities	

Table 2 Tournament Results

	PCB	PC	MC	CM	EV	M	EVB	AH	T	BL	L	S	Total	\$s
PCB		81	48	79	92	91	96	99	99	98	99	100	982	432K
PC	19		61	93	90	100	87	100	100	100	100	100	950	400K
MC	52	39		38	96	92	93	97	100	96	98	100	901	351K
CM	21	7	62		82	100	86	100	100	99	100	100	857	307K
EV	8	10	4	18		34	60	38	100	93	97	100	562	12K
M	9	0	8	0	66		73	58	9	90	98	100	511	-39K
EVB	4	13	7	14	40	27		36	98	83	88	100	510	-40K
AH	1	0	3	0	62	42	64		20	88	98	100	478	-72K
T	1	0	0	0	0	91	2	80		5	100	100	379	-171K
BL	2	0	4	1	7	10	17	12	95		74	99	321	-229K
L	1	0	2	0	3	2	12	2	0	26		97	145	-405K
S	0	0	0	0	0	0	0	0	0	1	3		4	-546K

number of games won by each player during the tournament and the net winnings is the amount won or lost by the strategy during the tournament

Relating the process and performance representations would be simpler if performance relationships between strategies were transitive. That is, if player *A* is better than *B*, and *B* is better than *C*, then *A* should be better than *C*. Only where performance relationships are transitive can there be a single measure of skill that is predictive of outcomes when any two strategies are matched.

A strict, predictive rank ordering of players by performance is not possible. Tight beats Middle 91 of 100 times. Middle is 90 percent victorious against Bluffs-Lots. Yet Bluffs-Lots wins against Tight 95 percent of the time. Tight, AvgHand, and Bluffs-Lots form another intransitive trio. The intransitivities are not surprising. There is no theoretical reason to expect the rule sets qua players to interact in ways that yield overall summary performance measures. It is a commonly observed phenomenon in real games that players and teams "match up differently."³

Intransitivities are neither numerous nor do they span huge differences in total victories or net winnings. While strategies using similar processes (i.e., number and type of rules, etc.) may perform intransitively, adding a significant degree of capability, assuming it is used

appropriately, can make a strategy strictly better than another. For example, giving CalcMuch the ability to calculate a probability of winning makes it much better than any of the strategies that do not have this ability. Only learning versions of CalcMuch—ProbCalc and ProbCalcB—beat CalcMuch.

3.4 Execution Skill—Processes, Capabilities, and Performance

There is an imperfect relationship between performance measured as total or net winnings and the internal characteristics—knowledge, computation, algorithm length, learning ability, bluffing ability—our proxy for capabilities in playing Sum Poker. Simple, the least capable strategy is the worst performer and PlayerCalcB, one of the most capable, is the strongest performer. A strategy's ability to use information, compute, and adapt to a greater variety of specific situations seem to place a ceiling on how good a player can be. Increasing a strategy's capabilities does not, however, guarantee improved performance. For example, the most "capable" strategies in terms of process, ExpVal and ExpValB, are not particularly strong performers. Conversely, CalcMuch, a nonlearning, nonbluffing strategy with a relatively short algorithm, plays very well.

3.5 Planning Skill—Conservative vs Aggressive Choices

One important dimension of a strategy is *conservatism*—how aggressively will a strategy bet in particular game situations? An important determinant of *conservatism* is

³ See Gardner (1974) for a discussion of the implications of intransitivities in a variety of real games.

how optimistic or pessimistic a player is about the value of an opponent's hole card. The most conservative strategy, **Tight**, assumes the worst: the opponent has a ten down. The least conservative (most aggressive) strategy, **Loose**, assumes the best: the opponent has a one down. The other strategies, including **Middle**, which assumes that the opponent has a five in the hole, fall between **Tight** and **Loose**. More conservative strategies are, *ceteris paribus*, less likely to bet in particular game situations, they bluff less and require more pronounced advantages in the cards before raising or initiating betting.

In the Table 2 results, **Tight** beats **Middle** which beats **Loose**. This suggests that, *ceteris paribus*, conservative strategies may be superior performers because they risk less on each play of the game. Closer scrutiny, however, yields a qualification. Table 3 shows that **Tight's** performance falls off dramatically as the maximum bet in the game decreases relative to the minimum bet. The decrease in maximum bet lowers the amount **Tight** wins when it wins, without changing the amount of the ante (minimum bet). In effect, the ante becomes more expensive relative to prospective winnings. The superiority of conservative actions depends on their costlessness relative to prospective winnings.

Comparison of the relative conservatism (Table 1) of all nonlearning strategies with their performance (Table 2) reveals that the strategies that perform best overall—**CalcMuch**, **Middle** and **AvgHand**—are moderate. Conservative is not always better, even with the cost qualification. The desired degree of aggressiveness of particular actions depends on the particular context. A more skilled player should *learn* about both the game and the opponent.

3.6 Learning

Learning can occur in several ways. One type of learning adjusts a strategy's parameters. For example, a strategy may keep a conservatism index on each opponent.

When the opponent acts on a particular hand, the learning player observes the aggressiveness of the act and updates the parameter for this opponent in the appropriate direction. A second type of learning involves choosing among already known rules. For example, as a strategy learns about a particular opponent, it may change the proportions with which the elementary strategies in a complex strategy are played. A third type of learning involves the creation of new rules or the elaboration or elimination of old rules. This is the most difficult sort of learning to simulate or incorporate into models because it requires a model that somehow "understands" the game's domain and contains mechanisms for generating new strategies. We briefly examine only the first two types of learning. In the first type of learning, parameters within rules are adjusted to improve performance. **PlayerCalc**, for example, keeps historical data on its opponents and uses it to adjust rule parameters. **PlayerCalc** observes things like "whenever player #77 has bet in the past, he has had at least a ten-point advantage over what he sees in my up cards." This information is then used to refine winning probability estimates and improve performance. However, players like **PlayerCalc**, who watch the play of the opponent and try to draw conclusions about the value of the opponent's down card are vulnerable to bluffing in a way that, for example, **CalcMuch** is not.

Should a player play against players or play only against cards? There are advantages both ways. Clearly, playing against players makes **PlayerCalc** a formidable strategy against consistent players. **PlayerCalc** can spot consistency and use it to advantage. However, **PlayerCalc**, because it plays against players, can be misdirected. Table 4 restates the tournament results between **PlayerCalc** and **MixedCalc**. **MixedCalc** is the same strategy as **CalcMuch**, except that **MixedCalc** plays the random strategy **Simple** about 6 times in every 100. This small amount of bluffing confuses **PlayerCalc** to the point where it plays no better than **CalcMuch** against **MixedCalc**.

There is a cost to bluffing.⁴ The "confused" **PlayerCalc** still beats **MixedCalc**, although not as badly as it

Table 3 Tight's Sensitivity to Maxbet/minbet Ratio

	T	M	L	T	M	L	T	M	L
T	—	91	99	—	70	100	—	5	100
M	9	—	96	30	—	98	95	—	100
L	1	4	—	0	2	—	0	0	—
max/min	10/5			8/5			6/5		

⁴ By 'bluffing' we here mean something different than in the context of the strategy **BluffsLots**. Bluffing here means adding randomness to

Table 4 The Effects of Bluffing

	PC	CM	MC
PC	—	93	61
CM	7	—	62
MC	39	38	—

beats CalcMuch. MixedCalc loses to CalcMuch because they are the same strategy except that MixedCalc plays as a much less-skilled strategy 6 percent of the time.

Game theorists have long puzzled on how much bluffing is a good (optimal) amount. Clearly a strategy that takes only random actions in order not to reveal any information to the opponent will not be a good strategy. Simple's poor performance is a good illustration. Just as clearly, a strategy that never bluffs will be beaten by a learning strategy capable of recognizing and exploiting patterns in play. The question of the optimal amount of bluffing has meaning only in a specific game against specific opposition.

Strategies like CalcMuch that play only against cards cannot be bluffed because they ignore opponents' actions. In competition where there is inept bluffing that might be discovered and exploited, ignoring opponents is costly. However, in competitions where there is effective bluffing, the level of the best play-against-cards strategy may be very close to the best that can be achieved. If there is so much noise that inference becomes infeasible given realistic constraints on player capabilities, then playing only against cards may be an excellent strategy. The overall strength of PlayerCalcB, the bluffing version of PlayerCalc, supports this contention. PlayerCalcB bluffs while observing the opponent's play to decide whether or not to play against cards or the opponent. If the opponent is bluffing effectively, PlayerCalcB reverts to playing against cards. Note that when PlayerCalcB is bluffed, it reverts to a bluffing ver-

a player's behavior to thwart other players' learning schemes. BluffsLots, in contrast, behaves consistently in a way that has been characterized as bluffing (e.g., betting aggressively when up cards are strong) by poker players. However, because BluffsLots plays consistently thus conveying a pattern of play to opponents with learning ability, it is a naive bluffer.

sion of CalcMuch—it becomes MixedCalc. As nearly equivalent strategies, PlayerCalcB and MixedCalc play each other somewhat evenly in the tournament.

The second type of learning, choosing a strategy from among known rules, can be represented (and studied) by creating complex strategies that play each of their simple strategies with some probability adjusted on experience in play. A complex strategy, Tight-Middle-BluffsLots (TMB), can beat each of the three simple strategies comprising it individually. The TMB strategy begins by playing each of the three simple strategies with equal probability, then it adjusts the probabilities to reflect success in play. For example, if the opponent is Middle, then Tight (usually) becomes the predominant simple strategy played by TMB. Creating a mechanism which allows the simulated TMB strategy to converge to the appropriate simple strategy (e.g., Tight against the opponent Middle) is nontrivial. Convergence difficulties are relevant to real game outcomes. For example, if TMB plays against Middle and is "unlucky" in its first several instances of playing Tight against the opponent (if Middle has particularly good cards on those occasions, for instance), then TMB may adjust probabilities so that it rarely plays as Tight. Thus, it may learn to play Tight against Middle too slowly to avoid ruin.

The random device in skill-chance games greatly complicates learning about one's opponent. Learning strategies must reflect sampling, among other things, to be effective. There is a tradeoff between responsiveness and sensitivity to noise. Fast-learning strategies tend to over-react to spurious data in the form of insufficient samples while slow-learning strategies under-react. When data come from an opponent who may well be sending inaccurate signals in the presence of the random device, learning is often very difficult. Another sampling issue is, "How much history is relevant to learning when playing against a skillful opponent? A skillful opponent is likely to make adjustments as you do, so history that seemed relevant when you were playing differently may no longer be relevant. Imagine a PlayerCalc-MixedCalc-CardMuch (PMC) playing against PlayerCalc. If the convergence mechanism works correctly, PMC will play predominantly as MixedCalc at first against a PlayerCalc opponent. When PlayerCalc is bluffed to the point where it has

reverted to playing as CalcMuch, then PMC will switch to playing predominantly PlayerCalc, which should soundly defeat the bluffed PlayerCalc. Interestingly, what this means is that PlayerCalc would be better against PMC if it could randomly *forget* its experiences a small percentage of the time

The obstacles to learning are often overwhelming in many real games with human players. In a game with a stochastic component and a task of any complexity, the number of independent variables that might be tracked quickly exceeds human capacity, even if adequate induction methods are assumed. A shrewd playing-against-cards strategy may, as we saw above in modestly complex, two-person Sum Poker, be among the best possible strategies.

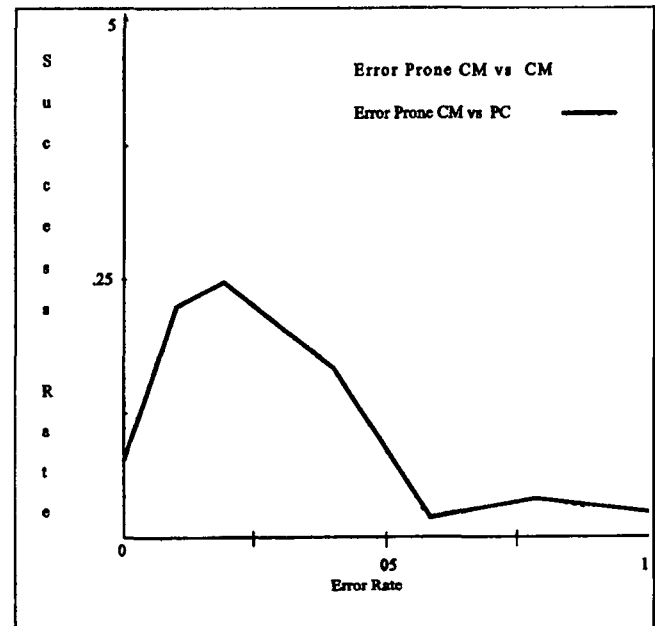
3.7 Execution Skill—Reliability

Unreliable execution of rules or actions recommended by rules should impair performance. The simulation tournament confirmed this with an interesting twist. Unintentional inconsistencies in play, highly likely with human players, are as important as planned inconsistencies in making the opponent's inferences in the game environment more difficult. Figure 1 shows that introducing a small probability that CalcMuch will miscalculate its probability of winning actually improves its performance against PlayerCalc. The reason is clear upon reflection—errors are externally identical to bluffs. The scenario summarized in Figure 1 (where the vertical axis is the success rate of the error prone CM, and the horizontal axis is the rate of errors) is very similar to the scenario in Table 4 where MixedCalc improves against PlayerCalc by bluffing. In both cases, bluffing/errors with any frequency hurt the strategy against errorless and bluff-proof CalcMuch.

There is an optimal level of inconsistency in a strategy that depends on the learning mechanism of the opponent. Error rates that are too high begin to work against CalcMuch when it plays PlayerCalc. For example, if a 10 percent error rate is introduced into CalcMuch, the effects of the bluffing are overwhelmed by the force of the mistakes and error-prone CalcMuch becomes worse than flawless CalcMuch against PlayerCalc.⁵

⁵ There is a growing literature on learning models in game theory (Roth and Erev 1995; Mailath et al. 1992) that discusses related issues.

Figure 1 Mistakes and Bluffing



3.8 Strategic Skill

Strategies thus far have been required to play in every game in the tournament. For many games and situations modeled as games (e.g., business competitions) this is unrealistic. What happens if strategies have the option of not playing against certain opponents?

Table 5 shows the outcome of a pairwise three-player contest in which players could choose, at any time after 10 games were played, not to play the remaining games against the opponent. For purposes of the simulation, all three strategies were given the same strategic skill criterion, namely, that they would refuse to play if their percentage of games won dipped below 10 percent.

Compare the winning percentage column (Pct) to the net winnings column (\$). Although PlayerCalc had the highest winning percentage, CalcMuch made the most money. This is because ExpVal is willing to play against CalcMuch, but not against PlayerCalc. PlayerCalc is, in a sense, too good, so good that it cannot find as many games in which to play. A version of PlayerCalc that knew that other strategies would quit if it won more than 90 percent of the time would benefit from arranging to win exactly 90-ε percent of the time. This aspect of strategic skill, inducing other players, through decep-

Table 5 Strategic Skill Tournament

	PC	CM	EV	Pct	\$ s
PC		10	10	0.95	9.5K
CM	0		77	0.7	22K
EV	1	23		0.22	-31.5K

tion or appeal to ego, to enter games where their game skills are inadequate deserves future study as "the art of the hustle"

3.9 Human Skill and Rational Strategies

None of the twelve strategies analyzed is a perfectly rational strategy for playing sum poker by maximizing expected value. While finding a best response strategy to a particular strategy known to be used by the opponent is conceivable, there is no reason to suppose that such a strategy is robust against mistaking the opponent's strategy. As Borel (1924, Trans. 1953, p. 115) put it: "The player who does not observe the psychology of his partner and does not modify his manner of playing must necessarily lose against an adversary whose mind is sufficiently flexible to vary his play while taking account of the adversary." There is no doubt that if the player follows strictly all the rules of an excellent treatise, and if his adversary knows it, that adversary can win by appropriately modifying his manner of play."

A Bayesian scheme would require a model of the opponent to generate likelihoods. The complexity of the strategies imaginable in this game makes this task quite difficult. As play proceeds and data about the opponent are gathered, various hypotheses concerning the "type" of the opponent might emerge from the data. Notice, however, that this calls on the bettor to have a means of generating as well as evaluating hypotheses on the basis of gathered data. In gathering data, the bettor might also need to have a plan for making his own decisions in the tree in such a way as to cause the opponent to make choices that convey information. Thus, the view of Kadane and Larkey (1982) is difficult to implement here.

The strategies ExpVal and ExpValB are extremely rough approximations. They do not involve an explicit model of the opponent. They use a very simple historical summary based on the smallest down card on

which the opponent has ever bet and an historical estimate of the pot. Given these limitations, it is not too surprising that those strategies do not do very well.

Obviously, human players do not perform such elaborate data gathering and computation when they play poker. Nevertheless, some manage to be very good players, at least relative to their competition. It is beyond the scope here to study the play of human subjects and we will not speculate on what strategies humans might discover and how they might perform against the computer strategies.

4 Conclusion

The primary purpose of this exploratory paper is to understand the concept of skill in games as an initial step toward building theories of real games capable of both predicting outcomes and advising play. The paper explores aspects of the concept of skill in games with a moderately complex game, Sum Poker, for which strategies were created in the form of computer programs. The strategies are exercised in tournaments to examine the concepts of skill in games and skill differences among strategies in some detail. The mode of analysis has had much more in common with cognitive science and artificial intelligence than with mathematical game theory.

The two major premises of this work are (1) skill and skill differences among players are important features of real games, and (2) theories of real games that aspire to predict outcomes or to aid in play must represent skill and skill differences among players explicitly. Both premises seem obviously true. It is difficult to think of any "real game" in which there are not important, persistent skill differences among players. It is difficult to imagine how one could predict outcomes or aid play without representing player skill. Representing player skill, even for a relatively simple game such as Sum Poker, is a messy task. Process representations of skill, describing players in terms of their method of play, require both a thorough understanding of the game and a detailed procedural description of the strategies employed. Performance representations of skill, characterizing players in terms of game outcomes in a history of play, require a thorough understanding of game contexts, random devices, and player behaviors as deter-

minants of success. When players' skills are represented, the resulting "game" is not obviously amenable to the usual modes of game theoretic analyses. How can skill concepts be incorporated in game theory?

4.1 Skill and Game Theory

The analysis of skill is a natural complement to the methodology offered by game theory. Combining these nominally disparate approaches is challenging but promises much more useful theories of real games.

An adequate representation necessitates, at minimum, modeling the possibility that the players are uncertain about each other's skill level and about the strategies the other is more likely to use. This naturally calls for the theory of games of incomplete information: each player is of a certain type which is, in this case, a strategy or a mixture of strategies. Each player knows his own type but has only some subjective beliefs on the type of his opponent—the now widely used model of incomplete information games proposed by Harsanyi (1967–1968). Recalling that the situation consists of multistage interactions, the even more appropriate setup is that of repeated games of incomplete information [see Aumann and Maschler (1995), Mertens (1987), Mertens, Sornin, and Zamir (1995), and many others]. Such a game provides a useful paradigm to model and study mutual beliefs about types and the evolution of these beliefs as the game proceeds. The updating of beliefs takes place in view of new information gathered mainly by observing the moves of the opponent. In such models one can speak of the optimal rate of releasing information about your type and the optimal rate of gathering information about your opponent's type, such information is usually costly, and the tradeoff is between immediate cost and future benefit.

Analyses of player skill such as for the game of Sum Poker may provide a manageable set of types (or strategies) for any specific game. The types can then be incorporated into game theoretic models to study their interactions in a given environment. For instance, if one can derive a relatively small set of skill and behavior types in a specific business activity, it might be very interesting and relevant to study various game theoretic models involving the interaction of those types. Such a combination of approaches may well lead to useful predictions and recommended behaviors.

4.2 Extensions

In addition to the development and use of player types in more traditional game theoretic models, there are many possible extensions of this work to more fully understand the concept of skill in games. One direction is to explore the Sum Poker domain more thoroughly. It will be interesting to have human subjects play against other human subjects and against the various computer strategies. The strategies utilized in this paper were not taken directly from playing experience, but were initially deduced and then adapted through preliminary experiments. Human subjects may find different and, perhaps, better strategies for playing Sum Poker. Also, for finding better strategies, it may be useful to run a tournament along the lines of Axelrod's work on iterative prisoner's dilemma.

We have explored only a handful of strategies in a limited number of competitive situations. Simple extensions to the existing framework include exploring 3- to n -player versions of Sum Poker and varying such factors as seating order and other tournament conditions.

There is a large amount of work ahead in understanding what skill is and how it can be represented in many different types of games. First, there is a large number of real games, including politics and business, where differential player skill is important but where skill is neither understood nor explicitly represented in models of these games. Some real games such as Chess, Go, tennis, golf, and bowling explicitly measure skill and acknowledge differences among players, in a few games such as golf there is elaborate "handicapping" to create fair contests among unequally skilled players. These games utilizing handicaps are particularly interesting for study because of the explicit performance measures of differential player skill.

Second, there is a large number of contrived games that have been thoroughly studied by game theorists without reference to explicit skill differences. There is a large amount of potentially useful theoretical work in adding skill to these more traditional, well-studied games and in understanding how the introduction of skill differences among players changes the analysis.

Appendix: Technical Descriptions of Sum Poker Players

This appendix describes the 12 players used in this study in terms of their condition-action rules. Rules are numbered in order of prece-

dence Nine of the strategies are simple Players 9, 10 and 12, *MixedCalc*, *PlayerCalcB*, and *ExpValB*, are complex strategies In order to investigate certain specific issues the paper uses simple combinations of the basic strategies to make more complex strategies

The following shorthand notation will be used in describing rules

CARDTOT = the deciding player's card total,

UPTOT = the deciding player's up card total,

DOWN = the deciding player's down card

OPUPTOT = the opponent's up card total and

CARDVAL_i = face value of card,

Player 1 Simple

Flip a coin once at beginning of hand

- (1) If heads, then raise (or call after three raises),
- (2) otherwise fold (or check if that is an option)

Player 2. AvgHand

- (1) If CARDTOT > 1.2 × an average hand, then raise,
- (2) If 1.2 × an average hand ≥ CARDTOT ≥ an average hand, then call,
- (3) otherwise fold (or check if that is an option)

An average hand is 13.08 in the first round (two cards) and 19.62 in the second round (three cards)

Players 3, 4, & 5 Loose, Middle, and Tight⁶

Compute opponent's hand total by assuming the down card is a 1, 5, or 10 for Loose, Middle, and Tight, respectively (1) if CARDTOT > opponent's total, then raise, (2) if CARDTOT = opponent's total, then call, (3) otherwise fold (or check if that is an option)

Player 6 BluffsLots

Compute $C = (UPTOT - OPUPTOT) + (DOWN - AvgLiveCard - 1)$ where

$$AvgLiveCard = \left(\sum_{deck} (CARDVAL_i \times I_{[card \text{ still in deck}]}) \right) / \# \text{ cards still in deck}$$

- (1) if UPTOT ≥ OPUPTOT then raise,

- (2) if $C > 0$ then raise,

- (3) otherwise fold (or check if that is an option)

$I_{[card \text{ still in deck}]}$ is an indicator function equal to 0 if the card is showing in the hand, 1 if it is still in the deck

Player 7 CalcMuch

Compute Tiecard = CARDTOT – OPUPTOT

Compute # of winning cards still in deck = $\sum_{deck} I_{[card \text{ still in deck, } CARDVAL_i < Tiecard]}$

Compute Pr(win) = # winning cards still in deck / # cards still in deck,⁷

- (1) If Pr(win) > 0.75 then raise,
- (2) If $0.75 \geq \text{prob}(\text{win}) \geq 0.5$ then call,
- (3) Otherwise fold (or check if that is an option)

Player 8 PlayerCalc

Recall from historical data the lowest value of down card that the opponent has ever been willing to bet on given the current differences in up cards—call this LOWDOWN LOWDOWN is set = 11 until the opponent bets, then it takes on the historical value

Compute Tiecard = CARDTOT – OPUPTOT

Compute # winning cards still in deck = $\sum_{deck} I_{[card \text{ still in deck, } card < Tiecard \text{ card} > LOWDOWN]}$

Compute # Tiecards still in deck = $\sum_{deck} I_{[card \text{ still in deck, } card = Tiecard \text{ card} > LOWDOWN]}$

Compute Pr(win) = # winning cards still in deck / # cards still in deck

Compute Pr(tie) = # Tiecards still in deck / # cards still in deck.

Compute Pr(loss) = 1 – Pr(win) – Pr(tie)

- (1) If prob(win) > 0.75, then raise,
- (2) If $0.75 \geq \text{prob}(\text{win}) \geq 0.5$, then call,
- (3) Otherwise fold (or check if that is an option)

Player 9 MixedCalc

This player plays as CalcMuch with probability 0.94 and as Simple with probability 0.06

Player 10 PlayerCalcB

This player plays as PlayerCalc with probability 0.94 and as Simple with probability 0.06

⁶ Players 4 through 10 check to see if they are 'iced out' at the beginning of the second betting round (after the last card is dealt) A player is iced out when any opponent's up cards sum to more than the player's hand total. The player in question then recognizes that he cannot win and folds at the first opportunity

⁷ CalcMuch only approximates winning probability in first round by assuming that the first round is the last round and computing winning probability accordingly Unlike the more exact first round probability this approximation could conceivably be calculated by a human player

Player 11 ExpVal

Recall from historical data the average amount the opponent can be expected to contribute to pot for the remainder of the hand given the current difference in up cards—call this MATCH AMT. Compute Final Pot = $2 \times \text{MATCH AMT}$ if neither player folds.

Compute Cost of Staying = $\max\{\text{MATCH AMT} - \text{amount already contributed}, 0\}$

Recall from historical data the lowest value of down card that the opponent has ever been willing to bet on given the current differences in up cards—call this LOWDOWN. LOWDOWN is set = 11 until the opponent bets, then it takes on the historical value.

Compute TieCard, # winning cards still in deck, # of tie cards still in deck, $\text{Pr}(\text{win})$, $\text{Pr}(\text{tie})$, $\text{Pr}(\text{loss})$, exactly as in PlayerCalc strategy.

Compute

$$\begin{aligned} EV = & [\text{Pr}(\text{win}) \\ & \times (\text{FinalPot} + \text{amount already contributed})] \\ & + [\text{Pr}(\text{tie}) \times ((0.5 \times \text{FinalPot}) \\ & \quad + \text{amount already contributed})] \\ & - [\text{Pr}(\text{loss}) \times \text{Cost of Staying}] \end{aligned}$$

Define AvgUp as 6.5 in first betting round, 13.0 in second.

- 1) If $EV > 0$ and $\text{UPTOT} > \text{AvgUp}$, then raise,
- 2) If $EV > 0$ and $\text{UPTOT} \geq \text{AvgUp}$, then bet,
- 3) Otherwise fold (or pass if that is an option).

Player 12. ExpValB

This player plays as ExpVal with probability 0.94 and as Simple with probability 0.06.

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EXHIBIT B

WHY POKER IS A GAME OF SKILL

Introduction The Highest Stakes Game

The vast majority of players who visit public cardrooms, private clubs, or play online recognize that it is a game of skill. Poker rewards smart play. Losing players can learn to play better and win. The very best players can even make poker their livelihood.

But any game involving a deck of cards – any *honest* game – contains an element of chance. Poker players and defenders of the game have struggled mightily to explain poker's reliance on skill to non-players and those opposed to gambling. We struggle at our peril, however, because whether poker is a game of skill determines the passage of laws and regulations and, more important, their enforcement. The future of poker depends on our ability to explain in a clear, consistent fashion what we instinctively know: that poker is a game of skill.

In the absence of state laws specifically allowing or prohibiting poker, enforcers and courts look to the state's general gambling laws. These laws usually prohibit "games of chance." (They may also prohibit "lotteries," which tend to include all games of chance.) For example, Florida makes it a crime to "set up, promote or play at any game of chance by lot or with dice, cards, numbers, hazards or any other gambling device." Fla. Stat. Ch. 849.11. In Delaware, a person is guilty of a crime who "keeps or exhibits a gaming table at which cards, dice or any other game of chance is played." 11 Del. Code § 1406. Connecticut defines "gambling" as "risking any thing of value for gain contingent in whole or in part upon lot, chance or the operation of a gambling device but does not include legal contests of skill, speed, strength or

endurance in which awards are made only to entrants or the owners of entries ” 11 Gen Stat Ct § 53-278a

These are typical of state laws that could concern poker. In fact, Senator Jon Kyl, co-sponsor of the UIGEA, admitted that if poker was proven to be a game of skill rather than a game of chance, it would be exempt from the law. He wrote, “If poker gambling enthusiasts truly believe it is a ‘game of skill,’ they can gain an ‘exemption’ by proving that to a court. Under most definitions of ‘gambling’ in state laws, games of skill are not ‘gambling’ even if there is an entry fee and a prize to be won.”

The Test Whether Skill Predominates Over Chance

The legal test in most states is simple but ambiguous: a game is considered to be a skill game if skill predominates over chance in determining the outcome of the game. *See State ex el Tyson v Ted's Game Ent*, 893 So 2d 355 (Ala App 2002) (“the issue is whether the nature of the game is such that the role of chance in determining the outcome is thwarted by the skill involved, or whether chance meaningfully alters the outcome and thereby predominates over skill”), *Harris v Missouri Gaming Commission*, 869 S.W.2d 58 (Mo 1994) (“a game escapes the Constitutional bar against lotteries if skill is predominant”), *Contact Inc v State*, 212 Neb 584, 324 N.W.2d 804 (1982) (“a game of chance is one in which the winner is determined by mere luck and not skill, the predominant nature of the game, i.e., skill or chance, determines its classification”), *In re Allen*, 27 Cal Rptr 168, 59 Cal 2d 5, 377 P 2d 280 (1962) (“It is the character of the game rather than a particular player's skill or lack of it that determines whether the game is one of chance or skill. The test is not whether the game contains an element of

chance or an element of skill but which of them is the dominating factor in determining the result of the game”) *cf Horner v U S*, 147 U S 449 (1893) (“where skill does not destroy the dominant effect of chance, the scheme is a lottery”)

The question of whether a game is predominantly a matter of skill or chance is a question of fact, not a question of law *See e g Bell Gardens Bicycle Club v Dep t of Justice*, 36 Cal App 4th 717, 42 Cal Rptr 130 (1995) In *Bicycle Club*, the defendants, operators of California poker rooms, argued for the legality of awarding jackpots to losers of certain lowball hands The Court of Appeal followed the California Supreme Court in *Allen*, stating “[I]t is the character of the game as revealed by its rules that the courts look to in determining whether the elements of skill or chance predominate in determining the winner” Even though the parties agreed that poker was a game of skill, the court rejected the argument that because lowball was a game of skill, lowball with a jackpot was also therefore a game of skill The court listened to testimony from experts by both sides specific to how the jackpot operated and how it changed the character of the game, concluding that the jackpot aspect – not lowball poker with or without the jackpot feature – was not predominantly a test of skill

This means every time a case is brought, the judge or jury will have to consider the facts and the record of that case to make the determination Past cases have no precedential value, which is important because some of the cases deciding whether poker was a game of skill did not consider the facts developed in this paper (Happily, we have the upper hand in this controversy While past adverse decisions don’t foreclose us from bringing our winning arguments, it is likely once we score some victories – using our reasoning, our facts, our data, and our experts – the legal challenges to poker as a game of skill will cease Lawyers don’t like to lose, and politicians

don't like to back losing causes, especially as eighty million or more American poker players increasingly make their voices heard)

Defining Terms
What's Predominant?
What's Skill?
What's Chance?
What's a Game?
What's an Outcome?
What Determines an Outcome?

Nearly all the terms in this test are subject to interpretation and need to be defined

Predominant – If some elements of poker are “skill” and others are “chance,” the term “predominant” requires evaluating the relative amounts of skill and chance. Essentially, “predominant” means more than 50%. Courts use dictionary definitions of the term. The Massachusetts Court of Appeals recently, in *In re May's Case*, 67 Mass. App. 209, 852 N.E.2d 1120 (2006), offered the following definitions of predominant. “In *Webster's Third New International Dictionary of the English Language Unabridged* 1786 (1993), ‘predominant’ is defined as ‘having superior strength, influence, authority, or position.’ Similarly, in the *American Heritage Dictionary of the English Language* 1427 (3d ed. 1996), ‘predominant’ is defined as ‘having greatest ascendancy, importance, influence, authority, or force.’” The court, in a footnote, added the following definitions. In the *Oxford Pocket American Dictionary of Current English* 620 (2002), ‘predominant’ is defined as ‘being the strongest or main element.’ See also *Black's Law Dictionary* 1177 (6th ed. 1990), where ‘predominant’ is defined as ‘[s]omething greater or superior in power and influence to others with which it is connected or compared.’”

In other contexts, courts use fifty-percent-plus as the standard for predominance. *See e.g., HCPI Ind LLC v Hamilton Cty Prop Tax Assessment Bd of Appeals*, 867 N E 2d 713 (Ind Tax Ct 2007) (“HCPI did not present any evidence showing that [the facility] was used more than 50% of the time (*i.e.*, predominantly) to educate medical students or to provide charitable health care”), *Concentric Network Corp v Commonwealth*, 877 A 2d 542, 549-50 (Pa Commw Ct 2005) (concluding that telecommunications carriers and cable networks have the “burden of proving the lines are predominately used (more than 50%) directly in the exempt activity in order to qualify for the tax exclusion”).

Because there are just two elements under consideration – skill and chance – the one that is more than 50% responsible in determining the outcomes is the predominant element

Game – What constitutes a game of poker? Instinctively, most players would define a game as one session or one tournament. But because a player, no matter how skilled, can’t win every tournament or every session, players define success over a far longer period – months, years, a career. Moderate advantages over short periods of time repeated night after night will add up to an unbeatable edge. Remember, casinos have an edge of just 1-2% on each bet, yet over the course of weeks, months, and years, their profits are huge and guaranteed, able to support some of the world’s largest businesses and build its largest buildings.

Focusing on the long run, however reasonable it may be, in arguing whether skill or chance is predominant, is a trap. Opponents note that the best player in the world can lose a hand or two – or even an entire session – to a clearly inferior player, suggesting that if such a thing is possible, chance predominates over skill.

A few recent courts that ruled poker was not a game of skill measured the game as one hand. “[I]n poker, a skilled player may give himself a statistical advantage but is always subject

to defeat at the turn of a card, an instrumentality beyond his control ” *Joker Club LLC v Hardin*, 643 S E 2d 626 (N C App 2007), *see also Garrett v State*, No CR-05-1058 (Ala Crim App 2007) (“‘Texas Hold’em’ poker is fundamentally a game of chance, in that the outcome of the game ultimately depends on a random draw of the cards ”) (concurring opinion)

Therefore, even though we should not concede that a poker game consists of a single hand, we should gear our arguments to the elements of skill and chance that exist in every hand of poker Even under this restrictive and somewhat unreasonable definition, the skill element of poker predominates over the chance element Of course, we are not referring literally to one hand But if we look at a large number of single-hand events and compile the data, we can see how the skill element accounts for the outcomes of most hands

Skill – Definitions of ‘skill,’ according to *Merriam-Webster’s Collegiate Dictionary* (11th ed 2005), include ‘the ability to use one’s knowledge effectively and readily in execution and performance’ and ‘a learned power of doing something ’ Courts and administrative agencies have had the opportunity to define ‘skill’ in various contexts and it always involves the same concepts learning, experience, improvement, judgment

For instance, in disability cases involving the Social Security Administration, the skill level of the person applying for disability payments is frequently at issue The SSA has defined “skill” as “knowledge of a work activity which requires the exercise of significant judgment that goes beyond the carrying out of simple job duties and is acquired through performance of an occupation which is above the unskilled level ” *Fines v Apfel*, 149 F 3d 893, 896 (8th Cir 1998) (quoting Social Security Ruling 82-41) Another federal court earlier quoted another part of an SSA ruling describing a skill as ‘practical and familiar knowledge of the principles and

processes of an art, science, or trade, combined with the ability to apply them in practice in a proper and approved manner” *Tom v Heckler*, 779 F 2d 1250 (7th Cir 1985)

Under federal sentencing guidelines, judges are supposed to give harsher sentences to defendants who use a “special skill” in committing or concealing a crime U S Sentencing Guidelines § 3B1.3 The comments to the Guidelines define a special skill as “a skill not possessed by members of the general public and usually requiring substantial education, training or licensing” An important element of skill in this context is that it be *acquired* According to the U S Court of Appeals for the First Circuit, ‘We have held that a defendant need not necessarily have formal education or training in order to be found to possess a special skill A special skill may also be acquired through experience or self-tutelage” *US v Prochner*, 417 F 3d 54 (1st Cir 2005)

The *skill* element in poker is the betting (Betting is defined here in its broadest sense, including folding, checking calling, raising, and, in games where the limits are not fixed, the amount bet) Though there are arguably many different skills necessary to be a good poker player, like patience ability to read one’s opponents aggression, courage, and emotional stability, all of those skills are expressed through the betting For example, a player may detect a tell in his opponent that means he is bluffing Though the player’s skill at reading leads to knowledge of the bluff, it will be the great call he makes that will actually win the pot If you were to, later, look at that particular hand history, there would be no record of the read, only a call with a weaker than normal hand that won the hand

The skill element of betting is determined solely by free will and the players’ own actions “The word ‘skill’ speaks to the ability, through the application of human physical or mental capacity, to actually cause a desired outcome of a game when the game is played” *State*

ex rel Tyson v Ted's Game Enterprises, 893 So 2d 355 (Ala Civ App 2002) "Skill increases the probability of 'winning' In skill games, one person can be a better player than others" *Harris v Missouri Gaming Commission*, 869 S W 2d 58 (Mo 1994)

The betting element of poker contains all the elements associated with skill Players can learn about betting, either through experience or by instruction Certain players do better over statistically significant periods of time, primarily through increasing the amount they win on their winning hands and reducing the amount they lose on losing hands Losing players, with experience, can and do become winning players, through the same means

For years, poker players have made the fundamental mistake of confusing "skill" with "advantage" We know that certain poker players apply the skill of the game better than others This leads to an advantage, which leads to profit over reasonable periods of time But how does one's advantage determine the outcome of a poker hand? It is hard to say, and as long as we make this error, we will be doomed to losing this argument in court In fact, the very nature of how you lose when you have an advantage – chance, the luck of the draw – proves our opponents' argument An Alabama court expressed the oft-stated belief that 'A player may be 'skilled' at 'playing the odds,' but he is still playing the odds'" *State ex rel Tyson v Ted's Game Enterprises*, 893 So 2d 355 (Ala Civ App 2002)

Furthermore, the fact that poker is a game of skill should not rest on whether or not the participants in a particular game are good players To better understand this, let's look at a game like golf that everyone can agree is a game of skill Golf itself does not change its character merely because of the level of skill of the particular players When a golfer hits his drive 50 yards into the water, his skill (or lack of skill) did that There is chance in golf (e.g., imperfections on the green, gusts of wind), but this particular swing was all about a lack of skill

leading to a bad result. The skill elements in golf are the elements that are completely in the control of the players: swing, club selection, aim. Skill elements don't have to be applied skillfully to be skill elements. They simply must be the part of any game to which the players try to apply their skill. It would be absurd to say that Tiger Woods is playing a skill game but a duffer playing at the country club is not. Tiger Woods is simply better at applying the skill elements of the game than the duffer.

Watching how a skilled poker player operates demonstrates how mastery of the skill element leads to success, but the choice to play the game skillfully does not make the game any less a contest of skill. "It is the character of the game rather than a particular player's skill or lack of it that determines whether the game is one of chance or skill." In re *Allen*, 277 Cal. Rptr. 168, 59 Cal.2d 5, 377 P.2d 280 (1962).

Chance – The California Court of Appeal has approved of the following jury instruction defining skill and chance:

Skill is defined as the knowledge or the means or methods of accomplishing a task, the ability to use one's knowledge effectively and readily in execution or performance, dexterity or coordination in the execution of learned physical or mental tasks, a learned power of doing a thing competently, a developed or acquired aptitude or ability, a coordinated set of actions which become smooth and integrated through practice. Chance is defined as something that happens unpredictably without any discernable human intention or direction and in dissociation from any observable pattern.

People v. Shira, 62 Cal. App. 3d 442, 133 Cal. Rptr. 94 n. 12 (1976) (quoting from *Webster's Third New International Dictionary*).

The *chance* element in poker is the random distribution of the cards due to the shuffle. This element determines which cards each player receives and in what order they receive them. In community-card games, this includes the make-up of the community cards and the order in

which they appear. Chance, by definition, is evenly distributed over time to all participants in a game and can't be predicted based on past results. If the cards were the sole determiner of poker outcomes, poker results would be evenly distributed (completely random) among all poker players. And a player's past performance would have no predictive value on future results.

Outcome – Defining the outcome of a hand of poker (or the more amorphously defined “game” of poker) as simply as who wins or loses is incomplete. In fact, defining the outcome of a hand as who wins the pot tilts the outcome strongly in favor of someone who wants to ascribe the outcome entirely to the luck of the draw. If betting is the skill element in poker, then the decision to bet or not bet (or, in certain games, how much to bet) has an effect not just on who wins the hand but on how much is won. A player who folds a losing hand earlier, at a smaller loss – or even at no loss – has exercised skill to minimize his loss.

If poker was a game where the result of the hand was simply who won it and all hands were equal, the player who won the most hands would be the most successful. Actually, the opposite is true. The better a player becomes at poker, the more selective that player becomes in choosing which hands to play. Winning poker players tend to play fewer hands, but they win a greater percentage of the hands in which they make a significant investment. More skilled players also win bigger pots when they win a hand, because they exercise skill in their betting decisions.

However, you will see we can still prove that skill predominates over chance in poker allowing for the narrowest definition of “outcome”— simply, the winner of the pot.

Determining – Nearly all statutes that define the test of whether a game is one of skill or chance involve the word “determine.” How do you figure out what “determine” means when used in phrases like “determines the outcome” or “the winner is determined”?

The word “determine” is a common one and courts generally use its common-sense meaning. See *Mayall v Peabody Coal Co*, 7 F 3d 570 (7th Cir 1993). According to *Merriam-Webster’s Collegiate Dictionary* (11th ed 2005), the applicable definition of determine is “to fix the form, position, or character beforehand. ORDAIN <two points determine a straight line>, to bring about as a result <demand determines the price>.” The definition of determine in the *Random House Dictionary of the English Language* (2d ed 1987) includes “to cause, affect, or control, fix or decide causally.” Similarly, *The American Heritage Dictionary of the English Language* (4th ed 2006) defines this usage of determine as “to be the cause of, regulate.”

In employment discrimination cases, where the “determining factor” of an employee’s termination is usually an issue, the courts have long considered “determine” as synonymous with “but for” or “causative” or “deciding.” See e.g., *McDonald v Santa Fe Transportation Co*, 427 U.S. 272, 282 n.10 (1979) (“no more is required to be shown than that race was a ‘but for’ cause”), *Loeb v Textron Inc*, 600 F.2d 1003 (1st Cir 1979) (“determining factor” means “but for his employers’ motive to discriminate against him because of his age, he would not have been discharged”), *Pannell v Food Services of America*, 61 Wash. App. 418, 810 P.2d 952 (1991) (approving the employers’ argument that ‘determining factor’ is a term with a commonly understood dictionary meaning of ‘causal’ or ‘deciding’”).

How Skill Predominates Over Chance in Poker No-Show Hands

There are two ways you can win a hand of poker: you can have the best hand of the remaining hands at a showdown, or you can be the last player in the hand after everyone else has folded. It is worth examining showdown hands and no-show hands separately, to understand the

roles of skill and chance in each. Although skill predominates over chance in showdown hands, the chance element in a showdown has drawn so much attention that it has obscured two overwhelmingly important facts: (1) most hands are not shown down, and (2) in no-show hands, the cause of the outcome is skill and chance plays practically no role.

Too often, non-players look at poker and see a random distribution of cards and a big-money showdown, where the player with pocket aces was lucky because he had pocket aces and his opponent was unlucky enough to have pocket kings. Or he was unlucky enough to have pocket aces and his opponent with pocket kings caught a lucky king on the river. Courts fall back on clichés like “A player may be skilled” at “playing the odds,” but he is still “playing the odds.”” *State ex rel. Tyson v. Ted’s Game Enterprises*, 893 So.2d 355 (Ala. Civ. App. 2002). In the recent *Joker Club* case in North Carolina, the state’s sole witness testified “he had seen a television poker tournament in which a hand with a 91% chance to win lost to a hand with only a 9% chance to win.” *Joker Club LLC v. Hardin*, 643 S.E.2d 626 (N.C. App. 2007) (*i.e.*, somebody hit their inside straight draw on the river). Even poker players and defenders of the game fall into this trap, acknowledging that chance can determine the result over the “short term” but skill predominates over the “long term.”

This is completely false. Even over the short term – a single hand of poker – the skill element, the free will of the participants expressed by their betting decisions, determines the outcome far more often than chance possibly could. Looking at millions of hands, encompassing Limit and No-Limit Hold ‘Em, tournaments and cash games, low limits and high limits, and players at all levels of skill, it turns out that in only 18% of the hands is there a showdown where the cards are revealed (all of the percentages quoted here are taken from a random sample of 16 million hands of nine-handed hold ‘em taken from a leading online poker site, these hands

include no-limit, pot-limit, limit, and tournament hands in all of these variations. All hands were counted equally, with no bias towards larger or smaller games. In fact, over 60% of the hands counted were played at micro-limits. This seems to dispel the myth that though high-limit players are playing skillfully and folding a lot, amateurs don't)

The showdown is the anomaly, 82% of the time the betting alone determines the outcome. In these no-showdown instances, the chance element, the random distribution of the cards, had no role in determining the outcome. According to the rules of poker, when there is only one player left and no one will call that player's bet, that player wins the pot. The cards still to come have no role. In fact, the cards the players have received have no role. Whether the best hand (defined as either the best hand to that point or the best hand after all the cards are dealt out) wins a no-showdown hand is both incidental and irrelevant to the outcome.

Can the cards influence the betting? Certainly. But it is the betting itself that actually *determines* the outcome. The players choose how they want to bet, and they may or may not take their cards into account. In fact, players often intentionally ignore the value of their cards when deciding to bluff at a pot. Likewise, all the other players in the hand who eventually fold may consider the value of their cards to varying degrees. The *cause* of one player winning a no-showdown pot was not the cards he or any of his opponents held. It was his action in betting and their actions in folding.

In this respect, what determines the outcome of a no-show poker hand is similar to what determines the outcome of a hole of golf. What determines the winner of a golf hole is which player put the ball in the hole in the fewest strokes. Changes in the wind, bounces and lies, spike marks on the green – they play a role but the winner is determined by who put the ball in the hole first. Golf is a game of skill regardless of the influence of chance on the way to the goal. Poker

hands, likewise, when there is no showdown, are resolved through the actions of the participants. The outcomes of 82% of poker hands are not *determined*, as that word is defined, by the random distribution of the cards.

The beauty of poker is any hand can win under the right circumstances. This is a clear distinction from other casino games or betting on sports. In those other forms of gambling, a definitive result is always produced (e.g., the banker won, the underdog covered the spread, the ball landed on black) and the winner is determined by who correctly predicted that outcome. In 82% of poker hands, that is not the case. There is no definitive outcome outside the control of the players. Their betting actions alone cause the result.

How Skill Predominates Over Chance in Poker Showdown Hands

In the 18% of poker hands where the cards are consulted at showdown and the chance element has an opportunity to significantly influence the outcome, skill still predominates. The betting determines the outcome more often, and to a greater degree, than the random distribution of the cards even when there is a showdown. The overwhelming effect of the players' betting actions on showdowns manifests itself in two ways: (1) getting the "luckiest hand" to fold before the showdown, and (2) controlling the amounts won and lost.

Getting the "luckiest hand" to fold, Texas Hold 'Em v Luck Hold 'Em – If there was no skill element in poker, the outcome would be set as soon as the dealer completed the shuffle. The hole cards and community cards would already be ordained and it would simply be a matter

of moving forward to the showdown to determine the winner. Even opponents of poker recognize that there is some free will exercised by the players – the betting– between the conclusion of the shuffle and the showdown. But, how much does the betting affect the determination of the winner in these showdown hands?

By constructing a game called “Luck Hold ‘Em,” we can demonstrate the difference between Texas Hold ‘Em, with its elements of skill and chance in showdown hands, and a game *like* Texas Hold ‘Em but with all the skill elements removed.

Luck Hold ‘Em is played very much like casino games such as Baccarat or Casino War or Roulette. Nine players sit down at the table and bet an equal amount, say \$1. Once the betting is complete, the dealer will deal each player a two-card hold ‘em hand. It doesn’t matter whether these cards are dealt up or down as there will be no skill element applied to determining the winner. The dealer will, like in Texas Hold ‘Em, produce a three-card flop, followed by a fourth card and a fifth card. After dealing all the cards, the dealer will look at all nine hands and determine, using standard poker hand rankings, who wins the pot. In any single hand of Luck Hold ‘Em, the players receive the same hole cards and community cards they would have received if the hand had been played as a normal hand of Texas Hold ‘Em, only there is no betting.

Clearly, Luck Hold ‘Em is a game of pure chance. The only thing that determines the outcome is the cards. And there can be no skill elements applied to influencing either the cards or the outcomes they produce – no checking, calling, raising, or folding.

In Luck Hold ‘Em, the best hand, what we will call the “luckiest hand” after all the cards are dealt, wins 100% of the time. How similar are the results of Luck Hold ‘Em hands to regular Texas Hold ‘Em hands? Hardly similar at all. The data over millions of hands show that the

“luckiest hand” wins a showdown hand in Texas Hold ‘Em only 7% of the time. The other 93% of the time, the hand that would have won in Luck Hold ‘Em folded before the showdown or all the other players folded, awarding the “luckiest hand” the pot without a showdown. This means that in 60% of showdown hands (remember, we only have a showdown hand 18% of the time), the “luckiest hand” folded, allowing another player to win. The only explanation is that the intervening skill elements (the betting) were responsible for the drastic change in the results. If the “luckiest hand” had not folded, he would have won. Therefore, it can be argued it was his fold that determined a different winner—the outcome.

For example, chance would determine that a player dealt 8-4 would win a particular Luck Hold ‘Em hand, because with community cards of 5-J-A-7-6, that player would end up with a straight. In the same hand, the player with A-A would be destined to lose. That would be the result in Luck Hold ‘Em but it is an extremely unlikely outcome in Texas Hold ‘Em. The players, using their skill in making betting decisions, would end up with an outcome where the A-A stays in and wins, while the 8-4 would fold.

That’s not to say 8-4 doesn’t *ever* beat A-A. 7% of the time the “luckiest hand” wins showdown hands, and a tiny number of those could be 8-4 beating A-A. Even in this circumstance, however, it is hard to ignore the element of skill. Maybe the player with 8-4 was so enamored with the possibilities of chance that he kept calling bets hoping fate was somehow on his side. But it seems more likely that the player with A-A made a conscious decision to not bet his strong hand and allowed the player with 8-4 to make that lucky hand.

At most, chance predominates in 7% of Texas Hold ‘Em hands. These would be the hands where there is a showdown *and* the “luckiest hand” wins. It could be argued, however, that

even in these hands, *but for* (remember the definition of ‘determine’) the player who was dealt the “luckiest hand” using his free will to stay in the hand, he would not have won

Skill and the Amount Won or Lost, the Neglected Skill of the Fold – As described in the definitions section, the “outcome” of a hand of poker should include not just who won the hand but also how much was won by the winner and how much was lost by each of the losers of the hand. Each hand of poker is not equal. If the players agreed to give some prize to the player who won the most pots at the end of a session, then winning pots would be important and, assuming the prize was substantial, the size of the pots would be secondary. But that’s not the case in tournaments or cash games. There is a big difference between winning the blinds and antes by betting and having everyone fold vs. winning a big multiplayer pot. Likewise, the players who don’t win the pot can, over the course of a hand, lose between zero and everything they have in front of them.

The betting actions of the players determine the size of the pot. Even if chance plays a role in who wins a showdown, the players’ betting decisions alone determine its size.

The size of the pot is actually more important than the identity of the winner or loser. Strategies like slow-playing, check-raising, bluffing, and semi-bluffing are all designed to profoundly influence the size of the pot by manipulating the betting decisions of opponents. The data collected from millions of hands show that the most skillful players lose more pots but win a higher percentage of the pots in which they make a significant investment. Since a skilled player tends to lose little to nothing on the pots he loses, this strategy is very effective.

The most important thing players can do to reduce the amount they lose in losing hands is to fold early. In a nine-player game with a two-player showdown, think about what happened with the other seven players. Their decisions to fold were acts of free will in an attempt to play

skillfully The moment they folded their hands, they removed the element of chance from having any impact on their fortunes Each of those seven players didn't win the hand But more important, they either broke even because they folded before contributing to the pot, lost relatively nominal blinds or antes, or lost a substantial amount depending on how and when they folded And, the timing of their fold was completely under their own control

Overall, the impact of folding has been ignored by opponents of poker in their focus on the players in the showdown There is no question that the decision to fold is an exercise of skill and not chance But what impact does it have on the outcome of a hand of poker? Is it the null event poker's opponents presume by ignoring it?

The data show that the decision to fold may be the most important skill in poker The results of millions of hands by thousands of players at all levels consistently show that the players who fold the most are among the most profitable So even if, in a particular hand, chance played a significant role in determining who of the remaining two players won a pot at showdown, the betting actions of those two players along with the equally important folding actions of the other seven players were predominant in determining the size of the pot and, therefore, the outcome of the hand

And this is not an elusive skill that can be mastered only through years of experience or by knowledge hoarded by top professionals To the contrary, learning to fold is almost universally regarded as the first skill new poker players develop In fact, the strongest relationship between most hands folded and profitability is typically found in the lowest-stakes games

Long-Term Results

Prove That Betting is a Skill -- And It Matters'

Poker players engaging in the argument over whether poker is predominantly a game of skill or chance fall into a trap by saying, "It's a game of skill over the long term but luck plays a major role in the short run." As previously described, this is a dangerous and inaccurate concession. Consequently, the analysis to this point has ignored "the long term." Long term results, however, confirm that the skill element of betting is a skill that can be used to create good outcomes over time.

If the skillful use of betting did not lead to favorable outcomes, poker results, over the long term, would be evenly distributed. In poker, since the cards are subject to the shuffle (either physical or virtual), they can be shown to be a chance element in the game. Since some chance does exist in poker, unless there was a skill element in the game, we would see the long term results of poker players distribute evenly over time, just like the cards. A player's history would have no value in predicting their future results.

But poker outcomes are not evenly distributed. There are people (too many to be explained by mere chance) who derive regular income from their results at poker. The federal government has long recognized that poker players are engaged in a "trade or business" and, for tax purposes, their income is "earned income." See *Baxter v. U.S.*, 633 F. Supp. 912 (D. Nev. 1986). In *Baxter*, the court noted that "Plaintiff William Baxter is a professional gambler. He has been gambling since age 14 and has never had any other occupation. During the years at issue, poker was Baxter's primary gambling activity." In determining that Baxter's income was "earned income" and not like a lottery payout, the court concluded "Clearly, Baxter's \$1.2 million gaming income for the years at issue was not derived from his passive investment of capital in a series of risky ventures. Baxter expended substantial time and energy playing poker."

Baxter consistently won at poker because he possesses extraordinary poker skills. Any argument that Baxter's gaming income is not based on his personal expenditure of time, energy, and skill is meritless."

Courts should take judicial notice, or proof could easily be furnished, to confirm this. There are men and women – their names are known where they play and sometimes throughout poker – who play regularly in cash games who have won money every year for a decade or more. Most of them have rarely had a losing month. In tournament poker, even though 90% of the field typically receives nothing for playing and most of the prize pool is distributed among just the top few finishers, there are players who have consistently shown a profit for more than a decade.

Not only do we see incontrovertible evidence that winning players tend to continue winning, but losing players tend to lose less over time, and some even become winners (see the Case Western of skill in poker for recent proof of this). This suggests that there is something being learned at the poker table. The core element of skill is that it can be learned. But what could this skill be? The only logical conclusion is the betting. The data from millions of hands confirm it: results are not random, winners tend to win, some losers learn to win, and the skill at betting (expressed not by simply winning more hands, but by increasing profits on winning hands and reducing losses on losing hands) is the reason. Though a poker pro may have hundreds of skills, all of those skills are ultimately expressed through their betting. And their ability to make betting decisions more skillfully than their opponents is the reason for their success.

The existence of the poker publishing industry also demonstrates that poker has a huge skill component. Mason Malmuth's Two Plus Two Publishing has sold over a million copies of books on poker strategy. David Sklansky, who has written several books for Two Plus Two, has had more books at one time in the Top 100 on Amazon.com than any other author except J.K.

Rowling Doyle Brunson's pair of *SuperSystem* books have each sold over a hundred thousand copies. Dan Harrington's *Harrington on Hold 'Em* trilogy has also sold hundreds of thousands of copies. Granted, there are books on how to win the lottery, but how many of them have sold hundreds of thousands of copies? How many have sold copies year after year for decades? How many authors of those books are themselves consistent winners, as Doyle Brunson, Dan Harrington, David Sklansky, and Mason Malmuth are at poker? How many authors of "roulette strategy" books are sufficiently in demand to write successful follow-up books?

Furthermore, the content of these books focuses on how to improve at the skill element, the betting. Success and failure in poker are all about the sum of a player's betting decisions. Dan Harrington emphasizes in the introduction of his first book that "The no-limit form of hold 'em poker is very advantageous to good players for a simple reason. By making superior deductions about the hands their opponents hold, *they can make bets that offer their opponents more chances to make errors*." D. Harrington, 1 *Harrington on Hold 'Em* 14 (2004) (emphasis in original).

David Sklansky's *The Theory of Poker*, one of the best-selling strategy books on any game, emphasizes in an early chapter that the goal is to win big pots. Betting is required to win those pots without a showdown and to improve a player's chance of winning a showdown. "When the pot is big, you want to win it right away. To try to win it right away, you should bet and raise as much as possible, hoping to drive everybody out, but at least reducing the opposition." D. Sklansky, *The Theory of Poker* 77 (4th ed. 2002).

In fact, if you glance through Sklansky's book, the main strategies all concern methods of betting. Betting strategy, he repeatedly explains, defeats luck by getting the "luckiest hand" to fold. Knowing the right situations in which to bet also allows players to win with inferior hands.

(*i.e.*, bluffing) and, by skill, improves their ability to “get lucky” by keeping opponents from betting them off their drawing hands and increasing the size of the win when their draw hits (*i.e.*, semi-bluffing, betting to get free cards) Simply looking at the headings under “Chapter Thirteen – Raising” shows how the betting decisions are the skill element and how the betting dominates the outcomes

- Raising to Get More Money in the Pot
- Getting More Money in the Pot by Not Raising
- Raising to Drive Out Opponents
- Raising as a Means of Cutting Down Opponents’ Odds
- Raising to Bluff or Semi-Bluff
- Raising to Get a Free Card
- Raising to Gain Information
- Raising to Drive out Worse Hands When Your Own May be Second-Best
- Raising to Drive out Better Hands When a Come Hand Bets
- Raising Versus Folding or Calling

The people reading the millions of copies of poker strategy books written and edited by winning players have themselves become better players. It is possible to get better at poker, which could not happen if chance was the only significant element. Has anyone ever scientifically proven that it is possible to get better at keno or baccarat or roulette? The data show that poker players improve with experience and losing players can become winning players. Furthermore, the evidence ties this to the betting. Players win more as they become more skilled at folding and they win more as they win more big pots. The number of pots won – the emphasis

of opponents of poker, especially the number of showdowns won – has almost no bearing on success or failure at poker, in fact it is a contra-indicator of success

There are a number of studies that show that making correct decisions in poker will lead to insurmountable edges over time. Poker is not a game where the better player wins every hand or every night. But, the best players win almost every month and will certainly win every year. It takes patience, guts, psychology, and a keen understanding of math to succeed at the game.

Poker is a true meritocracy. Young and old, male and female, white and black -- they all have an equal chance to win. The player does not have to try to overcome an unbeatable house edge to win from a huge publicly-traded corporation as when they play casino games. We all know that almost never happens.

Instead, all they have to do is use their skill better than the players they are playing against. What could be fairer?

EXHIBIT C

Poker, Chance and Skill

Noga Alon *

1 Introduction

The question if poker is a game of skill or a game of chance received a considerable amount of attention mainly because of its potential legal implications. See, for example, [3] and its many references. Most of the material dealing with the subject focuses on legal issues, and only briefly touches the question from a purely scientific point of view. In the present article we address the question as a scientific one. To do so, we provide a detailed analysis of several simplified models of poker, which can be viewed as toy models of Texas Hold'em, the most popular variant of poker. The advantage of considering these simplified models is that unlike the real game they are simple enough to allow a precise mathematical analysis, and yet there is every reason to believe that this analysis captures many of the main properties of the far more complicated real game, and enables us to estimate the advantage of skilled players over less skilled ones. The analysis suggests that skill plays an important role in poker. As explained in the second half of the article, this fact, together with the Central Limit Theorem, imply that skill is the major component in deciding the results of a long sequence of hands. As the common practice is to play many hands, the conclusion is that poker is predominantly a game of skill.

The article is organized as follows. In Section 2 we describe the rules of Texas Hold'em which is probably the most popular poker game played in casinos and card-rooms throughout the world as well as in online poker sites. Section 3 contains the basic probabilistic information regarding the odds of the main possibilities in the game. In Section 4 we give a detailed analysis of several simplified versions of poker. Section 5 contains a discussion of

Schools of Mathematics and Computer Science, Tel Aviv University, Tel Aviv 69978, Israel. Email: noga@tau.ac.il

the relevance of the Law of Large Numbers or more specifically the Central Limit Theorem, to the determination of the success of skilled and less skilled players in a sequence of games. This is illustrated by considering the simplified versions introduced in Section 4. A summary and concluding remarks appear in the final section 6.

2 The Game

There are many versions of poker, here we focus on Texas Hold'em (often called Hold'em, for short). The game is usually played with at most 10 (and at least 2) players. This is the most popular member of a class of poker games known as community card games, which all bear some similarity to each other. Like most variants of poker, the objective in hold'em is to win pots, where a pot is the sum of the money bet by all players in a hand. A pot is won either at the showdown by forming the best five card poker hand out of the seven cards available, or by betting to cause other players to fold and abandon their claim to the pot. The objective of a player is not to win the maximum number of individual pots, but rather to make mathematically correct decisions in order to maximize the expected net amount won in the long run.

Here is a rough brief description of the game. Each player is dealt two cards and this is followed by a round of betting. Then the dealer spreads three cards face up (called the flop) in the middle, and this is followed by a second round of betting. The dealer places a fourth card (called the turn) face up and another round of betting follows. Finally, the dealer places a fifth card (called the river) face up and the last round of betting takes place. Each player who has not folded during the betting rounds gets the best hand of five cards among his own two cards plus the five community cards in the center.

A more detailed account follows. See, e.g., [9] for several variants and further details. Hold'em is often played using small and big blind bets. A dealer button is used to represent the player in the dealer position, the dealer button rotates clockwise after each hand, changing the position of the dealer and blinds. The small blind is posted by the player to the left of the dealer and is usually equal to half of the big blind. The big blind, posted by the player to the left of the small blind, is equal to the minimum bet.

There are several variations on the betting structure, here we describe limit hold'em. In this version bets and raises during the first two rounds of betting (pre-flop and flop) must

be equal to the big blind, this amount is called the small bet. In the next two rounds of betting (turn and river), bets and raises must be equal to twice the big blind, this amount is called the big bet.

A play of a hand begins with each player being dealt two cards face down from a standard deck of 52 cards. These cards are the player's hole or pocket cards, they are the only cards each player will receive individually, and they will only (possibly) be revealed at the showdown, making hold'em a closed poker game. After the pocket cards are dealt, there is a "pre-flop" betting round, beginning with the player to the left of the big blind (or the player to the left of the dealer, if no blinds are used) and continuing clockwise. A round of betting continues until every player has either folded, put in all of their chips, or matched the amount put in by each other active player.

After the pre-flop betting round, assuming there remain at least two players taking part in the hand, the dealer deals a flop, three face-up community cards. The flop is followed by a second betting round. This and all subsequent betting rounds begin with the player to the dealer's left and continue clockwise.

After the flop betting round ends a single community card (called the turn) is dealt, followed by a third betting round. A final single community card (called the river) is then dealt followed by a fourth betting round and the showdown, if necessary.

If a player bets and all other players fold, then the remaining player is awarded the pot and is not required to show his hole cards. If two or more players remain after the final betting round, a showdown occurs. On the showdown, each player plays the best five-card hand he can make from the seven cards comprising his two pocket cards and the five community cards. A player may use both of his own two pocket cards, only one or none at all, to form his final five-card hand. If the five community cards form the player's best hand then the player is said to be playing the board and can only hope to split the pot since each other active player can also use the same five cards to construct the same hand.

If the best hand is shared by more than one player, then the pot is split equally among them. The best hand is determined according to the ranking described below. If the significant part of the hand involves fewer than five cards, (such as two pair or three of a kind), then the additional cards (called kickers) are used to settle ties. Note that only the card's numerical rank matters, suit values are irrelevant in Hold'em.

The ranking of the hands is as follows

- Royal Flush (the top hand) The five highest cards, the 10 through the Ace, all five of the same suit. A royal flush is also an ace-high straight flush.
- Straight Flush Any five cards of the same suit in consecutive numerical order.
- Four of a Kind Four cards of the same denomination.
- Full House Any three cards of the same denomination plus any pair of a different denomination. Ties are broken first by the three of a kind, then the pair.
- Flush Any five non-consecutive cards of the same suit.
- Straight Any five consecutive cards of mixed suits. Ace can be high or low.
- Three of a Kind Three cards of the same denomination.
- Two Pair Any two cards of the same denomination, plus any other two cards of the same denomination. If both hands have the same high pair, the second pair wins. If both pairs tie, the high (fifth) card wins.
- Pair Any two cards of the same denomination. In a tie, the high card wins.
- High Card If no other hand is achieved, the highest card held wins.

Texas hold'em (usually with a no-limit betting structure) is played as the main event in many of the famous tournaments, including the World Series of Poker's Main Event. Traditionally, a poker tournament is played with chips that represent a player's stake in the tournament. Standard play allows all entrants to "buy-in" a fixed amount and all players begin with an equal value of chips. Play proceeds until one player has accumulated all the chips in play. The money pool from the players "buy-ins" are redistributed to the players in relation to the place they finished in the tournament. Usually only a small percentage of the players receive any money, with the majority receiving nothing. As a result the strategy in poker tournaments can be different from that in a cash game.

3 Odds and Probabilities

Some familiarity with the odds of the various possible combinations in poker is necessary, though certainly not sufficient for skilled poker play. The ranking of hands in poker is determined according to their frequencies as 5-card poker hands. These frequencies can be easily computed. There are $\binom{52}{5} = 2,598,960$ different poker hands. Among these 4 are Royal Flush and 36 are non-royal Straight Flush. These and the numbers of the other hands are given below.

The numbers of 5-card poker hands

- Royal Flush $\binom{4}{1} = 4$
- Straight (non-royal) Flush $\binom{9}{1}\binom{4}{1} = 36$
- Four of a Kind $\binom{13}{1}\binom{4}{4}\binom{48}{1} = 624$
- Full House $\binom{13}{1}\binom{4}{3}\binom{12}{1}\binom{4}{2} = 3,744$
- Flush $\binom{13}{5}\binom{4}{1} - 40 = 5,108$
- Straight $\binom{10}{1}\binom{4}{1}^5 - 40 = 10,200$
- Three of a Kind $\binom{13}{1}\binom{4}{3}\binom{12}{2}\binom{4}{1}^2 = 54,912$
- Two Pair $\binom{13}{2}\binom{4}{2}^2\binom{11}{1}\binom{4}{1} = 123,552$
- Pair $\binom{13}{1}\binom{4}{2}\binom{12}{3}\binom{4}{1}^3 = 1,098,240$
- High Card $[\binom{13}{5} - 10](4^5 - 4) = 1,302,540$

Thus, for example, a fraction of $\frac{123,552}{2,598,960} = 0.047539$ of all 5 card hands form a Two Pair.

More relevant to Hold'em is the corresponding information for 7-card hands. Their total number is $\binom{52}{7} = 133,784,560$. The number of hands for each possibility of the best 5 card subset is also not difficult to compute. This is done in [1], and appears below, together with the probability of each possibility in a random 7-card hand.

The numbers and frequencies of 7-card poker hands

Royal Flush	4,324	0000323
Straight (non-royal) Flush	37,260	000278
Four of a Kind	224,848	0017
Full House	3,473,184	026
Flush	4,047,644	030
Straight	6,180,020	046
Three of a Kind	6,461,620	048
Two Pair	31,433,400	235
Pair	58,627,800	438
High Card	23,294,460	174

Hence, when playing Hold'em a player should expect to get Three of a Kind or higher once in about 20 hands, and Four of a Kind once in about 600 hands

During the game, a player should be capable of estimating the probability of improving his hand when the turn or river community cards will be dealt. If, for example, the player holds two diamonds, and the flop contains two other diamonds, then there are 9 additional diamonds in the deck, implying that the probability that the next community card will be a diamond is $9/47$, and in case it will not, the probability that the last community card will be a diamond is $9/46$. A player should also always be aware of the expected winning amount in a game, in general one should bet when the expected value of the gain (which is the amount in the pot after the bet, times the probability of winning) is greater than the wager. Of course, even if the player knows the precise probability, this should be modified from time to time in order not to reveal the strategy of the player, bluffing is a crucial part of the game as will be clear from the analysis of the simplified versions considered in the next section.

4 Simple Variants

There is a significant amount of literature on various toy models of poker, starting with the variants discussed in the classical book of Von Neumann and Morgenstern [8]. See, for

example, [7], [5], [6]. In most of these articles, however, the authors try to find the best strategy of the players assuming they play optimally. Our treatment here is different, as the main intention is to assess the significance of skill in the game. We therefore investigate the case in which one player is more skilled than the other(s). Although the models we suggest are vast simplifications of the real game, they do seem to capture many of the properties of real poker.

4.1 The Basic Variant

Consider a version of Hold'em in which each player gets two face down pocket cards, the flop, turn and river community cards are spread face up in the middle and only then there is one round of betting. Suppose, further, that in this round each player is allowed to either fold, or bet 1 chip, and these decisions are made simultaneously by all players. If all players fold then nothing happens, if at least one player bets, then the active player with the highest hand wins the pot. Given the 5 community cards, there are $m = \binom{47}{2} = 1081$ possibilities for the two pocket cards of each player, and ignoring equalities, there is a linear order among them. Therefore, a perfect player that sees the community cards and his hole cards, knows precisely the rank of his hole cards among the 1081 possibilities, and hence can compute in principle, the precise probability that his hand is the highest among all hands of the participants. It is worth noting that knowing these precise probabilities in all cases is not an easy matter, and is probably beyond the ability of a human being, as this requires to memorize a huge table of ranks representing all possible values of the community cards and the player's hole cards. Yet it seems that skilled poker players can estimate well the probability in each case. Ignoring the (rather negligible) effect of the fact that the pairs forming the pocket cards of all players should be disjoint, one can model this situation by a game in which the players are dealt random distinct numbers between $m = 1081$ (the strongest possibility for the pocket cards given the community cards) and 1 (the weakest possibility). As m is a large number this can be further simplified by considering the case in which each player is dealt his hole number, a uniformly chosen random real number in the unit interval $[0, 1]$, where a higher number is considered better than a lower one. In what follows we refer to this game as the *basic game*.

We start with the simplest case, in which there are two players, A (Alice) and B (Bob). In this case, Alice gets a uniform random number $x_A \in [0, 1]$, and Bob gets a uniform

random number $x_B \in [0, 1]$, where the choices of x_A, x_B are independent. Each player knows his/her own number, but not the one of the other player, and they have to choose between folding and betting 1 chip.

Suppose that Bob is an unskilled player, who plays randomly. That is, for any value of x_B , Bob decides to fold with probability $1/2$, and decides to bet with probability $1/2$. Alice, who is a skilled player, suspects that this is Bob's strategy, and chooses her strategy in order to ensure maximum expected gain in the game against Bob. To determine the strategy of Alice, let us consider how she should behave when her pocket number is $x_A = x$. If she decides to bet, then the expected number of chips she wins (including her own chip) is

$$\frac{1}{2}1 + \frac{1}{2}x2$$

Indeed, with probability $1/2$ Bob will fold, and in this case Alice will win her single chip, giving the first term above. With probability $1/2$ Bob will decide to bet, in this case with probability x his number x_B lies in $[0, x)$ and is thus smaller than Alice's number, and if so Alice will win two chips. This gives the second term. Alice should bet if and only if her expected win exceeds her cost, which is the 1 chip she bets. Thus, she should choose to bet if and only if $\frac{1}{2}1 + \frac{1}{2}x2 \geq 1$, that is, if her hole number $x = x_A$ is at least $1/2$.

If, indeed, Bob and Alice follow the above strategies, then at least one of them folds with probability $1 - \frac{1}{2} - \frac{1}{2} = 3/4$, and thus, with probability $3/4$ the expected net gain of Alice is 0. The probability that Alice's net gain is 1 is

$$\frac{1}{2} \int_{1/2}^1 x dx = \frac{3}{16},$$

and the probability that Alice's net gain is -1 is

$$\frac{1}{2} \int_{1/2}^1 (1 - x) dx = \frac{1}{16}$$

Altogether, in a single hand, the expected value of the random variable X describing Alice's net gain is

$$E(X) = \frac{3}{16} \cdot 1 + \frac{1}{16} \cdot (-1) = \frac{1}{8},$$

and its variance is

$$Var[X] = E(X^2) - (E(X))^2 = \frac{3}{16} + \frac{1}{16} - \left(\frac{1}{8}\right)^2 = \frac{15}{64}$$

We have thus proved the following where here and in what follows we refer to the player playing randomly as the unskilled player

Proposition 4 1 *In a single hand of the basic game with two players a skilled one and an unskilled one, the expected value of the net gain of the skilled player is $1/8$ and the variance of this net gain is $15/64$*

Note that, not surprisingly, the skilled player has a significant advantage over the unskilled one

4 2 The Importance of Being Unpredictable

Suppose that Bob and Alice play a sequence of hands of the the basic game described above Bob is likely to realize that Alice's strategy is better than his random one, and he is also likely to observe that she is betting if and only if her hole number x_A is at least $1/2$ He can thus decide to adopt Alice's winning strategy, and bet if and only if his number x_B is at least $1/2$ However, when he starts doing so, Alice, who is more skilled, realizes that this is the case She can thus adjust her strategy and choose the optimal response to the new strategy of Bob It is not difficult to modify the previous computation to this case Observe first, that if $x_A < 1/2$ then Alice should not bet, as with the new strategy of Bob this can never lead to any winning If Alice's hole number is $x \geq 1/2$, and she decides to bet, then the expected amount she wins is

$$\frac{1}{2} \cdot 1 + (x - \frac{1}{2})2 = 2x - \frac{1}{2}$$

Indeed, with probability $\frac{1}{2}$ Bob's number x_B will lie in $[0, 1/2]$, he will not bet, and Alice will get her chip back Similarly, with probability $x - \frac{1}{2}$ Bob's number will lie in $[\frac{1}{2}, x)$ and in this case Alice's win will be 2 Therefore, Alice should bet if and only if $2x - \frac{1}{2} \geq 1$, that is, if $x \geq \frac{3}{4}$ In case Bob and Alice play according to these new strategies, then the random variable describing Alice's net gain is 0 with probability $1 - \frac{1}{2} \cdot \frac{1}{4} = \frac{7}{8}$, it is +1 with probability $\int_{3/4}^1 (x - \frac{1}{2})dx = \frac{3}{32}$ and it is -1 with probability $\int_{3/4}^1 (1 - x)dx = \frac{1}{32}$ This gives the following

Proposition 4 2 *In a single play of the basic game with two players A and B, where A bets if and only if $x_A \geq 3/4$ and B bets if and only if $x_B \geq 1/2$, the expected value of the net gain of A is $1/16$ and the variance of this net gain is $31/256$*

Note that here the losing player is using exactly the same strategy used by the winning player in the previous subsection. This shows that already in this simplified version of the game, a winning player should adjust her strategy to those of the other players. It also shows the importance of bluffing, once your strategy is revealed, the other players can exploit it. These principles hold (in a far more sophisticated way) in real poker, it is crucial for a winning player to stay unpredictable, and to take into account the strategy of the other players.

4.3 More Players

In real poker the number of players is often larger than 2. Consider the basic game in which there are $n + 1$ players denoted by $P_0, P_1, \dots, P_n$. As our objective is to measure the significance of skill, assume that the first player, P_0 , is skilled, and all other players are unskilled and play randomly. Therefore, the players are dealt $n + 1$ uniform, independent random numbers in $[0, 1]$, where x_i is the hole number of P_i , then each of them decides to fold or bet one chip, where all these decisions are taken simultaneously, and finally the active player with the largest number wins the pot. Let us compute the optimal strategy for P_0 , assuming all other players play randomly. If $x_0 = x$ and P_0 decides to bet, then the expected amount of chips he wins is

$$\frac{1}{2^n} \sum_{k=0}^n (k+1) \binom{n}{k} x^k$$

Indeed, the probability that exactly k players among the n unskilled ones decide to bet is

$$\frac{\binom{n}{k}}{2^n}$$

If so, then the probability that all their hole numbers will lie in $[0, x]$ is x^k , and in this case P_0 will win the pot, whose size will be $k + 1$. Therefore, P_0 should bet if and only if

$$\frac{1}{2^n} \sum_{k=0}^n (k+1) \binom{n}{k} x^k \geq 1$$

Since

$$\sum_{k=0}^n (k+1) \binom{n}{k} x^k = \frac{d}{dx} (x(1+x)^n) = (1+x)^n + nx(1+x)^{n-1},$$

it follows that P_0 should bet when $x_0 = x$ if and only if

$$(1+x)^n + nx(1+x)^{n-1} \geq 2^n$$

In particular, for $n = 1$ (two players, one skilled and one unskilled), the skilled player should bet if and only if $(1+x) + x \geq 2$, that is, if and only if $x \geq 1/2$, as we have already seen in subsection 4.1. If $n = 2$ (three players), the skilled player should bet if and only if $(1+x)^2 + 2x(1+x) \geq 4$, that is if and only if $x \geq \frac{\sqrt{13}-2}{3} = 0.535$, and if $n = 9$ (10 players, 9 of whom are unskilled), the skilled player should bet if and only if his hole number x satisfies $(1+x)^8(10x+1) \geq 512$ that is, whenever x exceeds 0.685.

Here, too, the mathematical analysis of the simplified model reveals a crucial feature of real poker: a skilled player should adjust his strategy to the number of players. In general, when this number grows, the player should fold more often and bet mostly with stronger hands.

4.4 Blinds and Position

In the basic model considered in subsection 4.1, there is no nontrivial optimal strategy in the sense of Game Theory, that is, if both players play optimally, then their best (mixed) strategy is to keep folding and never bet. Indeed, as a uniformly chosen random number in $[0, 1]$ is strictly smaller than 1 with probability 1, one can show that for any nontrivial betting policy of one of the players, there is a strategy that beats it. The reason for this is that this simplified version of the game ignores the cost of playing and, more crucially, contains no forced bets (called blinds, or ante in real poker) which are necessary to create an initial stake for the players to contest. We thus discuss here a slightly more realistic model of the game, containing a forced blind bet. In order to enable a rigorous analysis, this model is still far from the real game, and yet its analysis illustrates nicely the fact that in real poker the strategy has to be adjusted to the position and the order in which players have to act. Consider thus a model in which there are two players. The game starts with a blind bet of 1 chip by the first player, then the 5 community cards as well as the two pocket cards of each player are dealt. The second player can now either fold or bet 3 chips, and the first player can also either fold or raise his bet to 3, where both players make their decisions simultaneously. If both players fold nothing happens, if one player folds and the other bets, then the active player wins the pot and if both players bet, the higher hand wins the pot. The choice of the numbers 1 and 3 here is arbitrary, and the analysis can be carried out for different numbers in a similar manner. By the discussion in subsection 4.1, assuming the players can memorize a substantial table of possibilities, the game is well approximated

by a version in which the first player makes a blind bet of 1, then the players get uniform, independent, random pocket numbers in $[0, 1]$, and then the second player either folds or bets 3, and the first either folds or increases his bet to 3. The blind bet alternates between the players, as obviously having to start with it is a disadvantage. We call this version of the game the *basic game with a blind bet*, and analyze it as in subsection 4.1 for two players, a skilled one (Alice) and an unskilled one playing randomly (Bob). There are two cases to consider, depending on the identity of the player posting the blind bet.

Assume, first, that Alice is making the blind bet. If her number is x and she decides to bet, then her expected win is $\frac{1}{2} \cdot 3 + \frac{1}{2}x \cdot 6 = \frac{3}{2} + 3x$. Indeed, with probability $1/2$ Bob folds and then Alice gets back her 3 chips, and with probability $\frac{1}{2}x$ Bob bets and his number is smaller than x , and if so Alice wins 6 chips. Alice should bet if and only if she expects to win at least the cost of increasing her bet. As this cost is 2, she should bet if and only if $\frac{3}{2} + 3x \geq 2$, that is, if and only if $x \geq \frac{1}{6}$. If she uses this strategy, then her net gain is -3 with probability $\frac{1}{2} \int_{1/6}^1 (1-x)dx = \frac{25}{144}$. It is -1 with probability $\frac{1}{2} \cdot \frac{1}{6} = \frac{1}{12}$, 0 with probability $1/2$, and $+3$ with probability $\frac{1}{2} \int_{1/6}^1 xdx = \frac{35}{144}$.

A similar analysis shows that when Bob is posting the blind bet Alice should bet if and only if her number $x = x_A$ satisfies $\frac{1}{2} \cdot 4 + \frac{1}{2}x \cdot 6 = 2 + 3x \geq 3$, that is, if and only if $x \geq 1/3$. With this strategy the expected net gain of Alice is -3 with probability $\frac{1}{2} \int_{1/3}^1 (1-x)dx = \frac{1}{9}$, it is 0 with probability $1/3$, it is $+1$ with probability $\frac{1}{2} \cdot \frac{2}{3} = \frac{1}{3}$, and it is $+3$ with probability $\frac{1}{2} \int_{1/3}^1 xdx = \frac{2}{9}$. We summarize these facts in the following

Proposition 4.3 *Suppose a skilled player is playing one basic game with a blind bet against an unskilled player*

(i) *If the skilled player posts the blind bet, then her expected net gain is*

$$\frac{25}{144} \cdot (-3) + \frac{1}{12} \cdot (-1) + \frac{35}{144} \cdot 3 = \frac{1}{8}$$

and the variance is

$$\frac{25}{144} \cdot (-3)^2 + \frac{1}{12} \cdot 1^2 + \frac{35}{144} \cdot 3^2 - \left(\frac{1}{8}\right)^2 = \frac{733}{192}$$

(ii) *If the unskilled player posts the blind bet, then the expected gain of the skilled player is*

$$\frac{1}{9} \cdot (-3) + \frac{1}{3} \cdot 1 + \frac{2}{9} \cdot 3 = \frac{2}{3}$$

with variance

$$\frac{1}{9} \cdot (-3)^2 + \frac{1}{3} \cdot 1^2 + \frac{2}{9} \cdot 3^2 - \left(\frac{2}{3}\right)^2 = \frac{26}{9}$$

Note that the skilled player has to use one strategy when posting the blind bet and another one when the second player is posting the blind bet. Indeed, in real poker the strategy has to take the position into account.

5 The Effect of the Central Limit Theorem

The analysis of the simplified models of poker discussed in the previous section shows that skilled players have a rather significant advantage over unskilled ones, this advantage becomes more and more prominent as the number of hands played increases. Intuitively that's a clear fact, as in the long run the cards dealt to all players are similar on average. A rigorous explanation with precise quantitative estimates can be given using the Central Limit Theorem.

By (a special case of) the Central Limit Theorem (see, e.g., [4]), the normalized sum of independent uniformly bounded random variables is converging to a normal distribution. A precise version follows.

Theorem 5.1 *Let M be a positive real and let $X_1, X_2, \dots$ be a sequence of independent random variables, where each X_i satisfies $|X_i| \leq M$, the expectation of X_i is μ_i and its variance is σ_i^2 . Define*

$$Z_n = \frac{\sum_{i=1}^n X_i - \sum_{i=1}^n \mu_i}{\sqrt{\sum_{i=1}^n \sigma_i^2}}$$

Then, for every real z

$$\lim_{n \rightarrow \infty} \text{Prob}[Z_n \leq z] = \Phi(z)$$

where

$$\Phi(z) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^z e^{-t^2/2} dt, \quad (1)$$

is the cumulative distribution function of a standard Normal Random Variable

Applying this theorem to the basic game between a skilled and an unskilled player in the basic game discussed in subsection 4.1, we get the following

Proposition 5.2 *In a sequence of n hands of the basic game between a skilled and an unskilled player, the probability that the skilled player will not lead at the end is approximately $\Phi(-\sqrt{n/15})$ where $\Phi(z)$ is given in (1)*

The proof is simple. For each i , $1 \leq i \leq n$, let X_i denote the net gain of the skilled player in the i -th hand. By Proposition 4.1 the expected value of each X_i is $\mu_i = \frac{1}{8}$ and its variance is $\sigma_i^2 = 15/64$. Using the notation of Theorem 5.1, put

$$Z_n = \frac{\sum_{i=1}^n X_i - n/8}{\sqrt{15n/64}}$$

Since the random variables X_i are independent (and bounded), the theorem applies and shows that for large n , the probability that $\sum_{i=1}^n X_i$ is at most some real number y , which is precisely the probability that

$$Z_n \leq \frac{y - n/8}{\sqrt{15n/64}}$$

is approximately

$$\Phi\left(\frac{y - n/8}{\sqrt{15n/64}}\right)$$

As $\sum_{i=1}^n X_i$ is the total net gain of the skilled player, the probability he will not lead at the end is precisely the probability that $\sum_{i=1}^n X_i \leq 0$. The desired result follows by substituting $y = 0$ in the last displayed equation.

The above approximation is very accurate already for modest values of n , and certainly for all $n > 50$. Taking the values of the function Φ from a table of Normal Distribution we conclude that, for example, for $n = 60$ this probability is $\Phi(-2) = 0.0227$ and for $n = 240$ the probability is $\Phi(-4) = 0.00003167$, that is, smaller than $1/30,000$. For $n = 350$ the probability the unskilled player wins is already smaller than one in a million. Note that by the same reasoning one can bound the probability that after n games the skilled player will have a net gain of at most y chips. Thus, for example, the probability that after $n = 240$ hands the skilled player will have a net gain of at most $n/16 = 15$ chips is roughly $\Phi((15 - 30)/\sqrt{15 \cdot 240/64}) = \Phi(-2) = 0.0227$.

A similar computation for the case of the simple game with a blind bet can be carried out using Proposition 4.3.

Proposition 5.3 *Suppose a skilled and an unskilled player are playing $2n$ hands of the basic game with a blind bet, where each player posts the blind bet n times. Then the probability that the skilled player will not lead at the end is approximately*

$$\Phi\left(-\frac{19\sqrt{n}}{\sqrt{3863}}\right)$$

We omit the detailed computation and only give two examples. If $n = 90$ then the probability that at the end the skilled player will not be ahead is about $\Phi(-19\sqrt{90}/\sqrt{3863}) = 0.00187$. For $n = 140$ this probability drops down to less than 0.00016.

The discussion above shows that the skill component in poker (at least in the simplified models considered here) which gives some advantage in a single hand, provides a major advantage in a sequence of games. In fact, when the sequence becomes long, as is usually the case in poker games, a skilled player wins against an unskilled one with overwhelming probability. It is instructive to compare the situation here to other games, without restricting the discussion to card games. Consider, for example, tennis. There is certainly an important skill component in tennis, but there is surely also some influence of chance in the game, arising from the impact of lots of random elements, like the wind, the sun, balls hitting hidden bumps in the court, etc. Indeed, without these, a stronger player would beat a weaker one in every point (while serving, say), and this is certainly not the case. In reality, a top-ten player probably wins about 55% of the points in a match against a player ranked 100, that is, the stronger player has an advantage of about 0.1 in a single point. However, since a match consists of 3, 4 or 5 sets, each set consists of at least 6 (and usually more) games, and each game consists of at least 4 points, in a typical match there are at least 72 points, and often at least twice that number. The Central Limit Theorem thus kicks in and implies that even a relatively small advantage in a single point becomes a major factor in deciding the final result of the game. The situation in poker is similar. Indeed, poker is different than tennis as it has an inherent element of chance in it, but the influence of this is not necessarily larger, and in fact appears to be smaller, than the influence of chance elements in tennis. The repeated nature of the game reduces considerably the effect of chance, making poker almost entirely a game of skill.

6 Summary and Concluding Remarks

By analyzing simplified versions of poker we have seen that although like in essentially almost any other game there is some influence of chance in poker, the game is predominantly a game of skill. Indeed, the discussion in Section 4 shows that in the simplified one-round version of the game, a good player should first be able to master the probabilities in the game sufficiently well in order to be able to translate his pocket cards and the community

cards to an accurate rank of his cards among the available possibilities. He should then be able to use this information to estimate the probability of winning. We have seen that the strategy of a winning player should be adjusted to that of the other players, as a strategy that is winning against some player may well be losing against another. The number of players and the position at the table should also be taken into account, and bluffing is important in order not to reveal one's strategy. Therefore, a significant amount of skill is required to play well any of the simplified versions of the game discussed in Section 4. The real game, is, of course, far more complicated, and there is every reason to believe that skill plays a dominant role in the real version as well.

The Central Limit Theorem discussed in Section 5 implies that the significance of skill increases dramatically as the number of hands played grows. As usually the number of hands played is rather large, this fact implies that the end result in a long sequence of hands is determined with near certainty by the skill of the players.

The real game is far more complicated than the simplified versions analyzed here and playing it well requires a lot of skill. A skilled player should be able to assess the strength of his hand as a function of his hole cards, the community cards, the number of players still in the game, then betting strategy and the position at the table. He should be able to assess the model of play of the other players, estimate the probability of improving his hand once the next community cards are revealed, and should be able to hide his strategy by bluffing and leaving his behavior unpredictable. It is not surprising that there is no software that plays poker as well as a good human player, although, for comparison, there are computer programs that play chess at least as well as the very best human chess players. Indeed, in many ways poker requires more human skill than chess, as an optimal strategy depends so crucially on the behavior of the opponents. The challenges of poker have been investigated in papers in Game Theory like [8], [7], [6] and in Artificial Intelligence (see, e.g., [2]), and there are still many intriguing questions concerning the analysis of optimal strategies for the game.

In almost every existing game there is an element of skill and an element of chance. As a matter of fact, the principles of Statistical Physics and Quantum Mechanics imply that some influence of chance appears in essentially every phenomenon in our life, not only in games. Despite the inherent element of chance in poker, our analysis of the simplified models suggests that the result of a soccer match, and probably even that of a tennis match, are

influenced by chance more than the results in poker played over a long sequence of hands. The main reason some people may feel otherwise is psychological- one tends to associate randomness with cards or dice more than with weather- wind or bumps in a court, even when the latter have a greater effect on the end result. The fact that a significant number of players excel repeatedly in poker tournaments is a further indication that poker is mainly a game of skill.

Practice and study do help to improve in poker, and although luck may well play an essential role in a single hand, we believe that skill is the major component, by far, in deciding the results of a long sequence of hands. As the common practice is to play many hands- this strongly supports the conclusion that skill is far more dominant than luck, and that poker is predominantly a game of skill.

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EXHIBIT D

Chance and strategy in Poker

Laure Elie Romuald Elie[†]

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Summary

The aim of this analysis is to quantify the impact of chance versus strategy in the game of *Texas Hold'em Poker*. It thereby complements N. Alon's [1] work on this subject by broadening the game model considered. The results were obtained with a theoretical study carried out by digital simulations of virtual poker games. We concluded that for a sufficiently high number of consecutive games, it is clear that strategy rather than chance is the overriding factor in the outcome of a *Texas Hold'em Poker* game.

Key words *Texas Hold'em Poker* chance strategy Monte Carlo simulations

* Professeur Université Paris Diderot Laboratoire de Probabilités et Modèles aléatoires UMR CNRS 7599 elie@math.jussieu.fr

[†] Maître de conférence ENSAE & Université Paris Dauphine elie@ensae.fr

1 Introduction

Poker being a game increasingly practised a question with important legal consequences has come to the fore over the last few years *Is poker a game where strategy prevails over chance?* This study endeavours to give an answer which is mathematically rigorous to the question detailed from a legal point of view in [7]

Of course a very large number of studies suggest various poker strategies (see [3] for example) but very few deal with the question of chance in games results They are mainly focused on game theory problematics searching for strategic balance between players or artificial intelligence allowing a progressive adaptation to opponents behaviour The only study which seems to answer this question satisfactorily is N Alon's [1] Studying a simplified version of a game of poker his analysis concludes that Poker is essentially a game of strategy Indeed thanks to the Central Limit Theorem a powerful tool in the theory of probability he shows that the strategy employed is a determining factor in the result of a sufficiently large number of games

In this study we first validate N Alon's findings and we then generalise them Indeed N Alon considers a simplified version of the game of poker taking into account only the last round of the game where all the community cards are known He studies mainly games between two players Alice who has a well-defined strategy and Bob who plays in a random manner He assumes that Alice has an intimate knowledge of the way Bob plays which gives her a considerable advantage We put ourselves in a real game of *Texas Hold em poker* model in following the pattern of the various stages of the game Preflop Flop Turn River In this more general model even if we only consider two players the analytical calculations carried out by N Alon can not be done so we have used digital simulations In other words we have performed a digital simulation of virtual poker games between Bob who plays in a random manner and Alice who follows a well thought-out strategy and we have analysed the results

In this model which is very close to reality we draw conclusions that are very similar to N Alon's **for a sufficiently high number of games, the strategy employed is a determining factor in the outcome of a game of *Texas Hold em Poker***

This study is organised as follows first we present the rules and we describe the course of a *Texas Hold em Poker* game Then we study N Alon's results and we suggest a more general game model for which we specify interesting strategies Finally with the assistance of virtual games digital simulations we estimate the probability of winning using these strategies The strategies selected are not necessarily the best ones in the end but they have the advantage of defining simple and realistic decision criteria for a poker player who is able to assess his own skills These criteria can also be simply adapted to multi-player games As we will see the strategies are sufficient to ensure very high probabilities of winning

2 The game of Texas Hold'em Poker

We will attempt in this study to consider a type of poker game as close as possible to that of the *Texas Hold'em no limit* as it is officially described in [6] and the principles of which are laid out in this section

2.1 The game rounds

Texas Hold'em Poker is played with a standard 52-card deck and each game is punctuated by an alternation of card dealing and rounds of betting. There are 4 of these phases and card dealing takes place in the following order

Preflop Each player is dealt 2 pocket cards face down

Flop Three community cards (the flop) are now dealt face up

Turn A fourth community card (the turn) is revealed

River A fifth community card (the river) is revealed

At the end of each phase of card dealing a betting round starts. Players place their bets one after the other and if a player wishes to stay in the game he or she must at least match the biggest stake. This round of betting stops when all the players who are still in the game have bet the same number of chips. All the bets make up what is called **the pot**. Finally two scenarios are possible either there is only one player left in the game and he or she wins the pot or there are several players left and the game moves to the next stage.

If after the last round of betting following the river several players are still in the game they are rewarded according to the value of their hand. Each player can then make use of his or her 2 pocket cards and the 5 community cards to make the best 5-card hand possible out of the 7 available. The player with the best hand then wins the pot and in the event of two or more hands being worth the same the players concerned split the pot. The various possible poker hands are described in the following section.

A game of poker is made up of a succession of rounds of this type: rounds where players take it in turns to bet first. At the beginning players have the same amount of chips available to them and they fold when they have no chips left. In order to encourage players to bet compulsory stakes are added at the first round of betting (**blind** or **ante**) for certain players on the table.

2.2 Hand ranking

At the end of a poker game, each player still in the game must reveal his or her cards and the strength of his or her cards is determined by the best 5-card hand he or she can assemble out of the 7 available to him or her. In a 52-card deck, there are 2 598 960 5-card unordered hands possible and all these combinations of cards are separated in ten categories according to their probability of appearing.

Royal Flush Ace King Queen Jack and Ten of the same suit

Straight Flush Any straight with all 5 cards of the same suit

Four of a kind 4 cards of the same rank

Full house 3 cards of the same rank together with any 2 cards of the same rank

Flush 5 cards of the same suit which are not consecutive

Straight 5 consecutive cards of different suits

Three of a kind 3 cards of the same rank

Two-pair 2 cards of the same rank together with another two cards of the same rank

One-Pair 2 cards of the same rank

High card Any hand that does not make up any of the above-mentioned hands

The rarer a 5-card hand is, the more it is worth. Within each category, hands are ranked according to how high the cards are. All 5-card hands can therefore be ranked amongst each other, with sometimes the possibility of a draw. Let us now consider combinations of 7 cards where the best 5-card hand out of the 7 possible is kept. There are then 133 784 560 possible combinations of 7 unordered cards. The following table shows [1] and [9] for each hand category, the number of 5 and 7-card possible combinations and their probability to occur.

	5-card combination		7-card combination	
	Number	Probability in %	Number	Probability in %
Royal Flush	4	1.5 · 10 ⁻⁴	4324	3.2 · 10 ⁻³
Straight Flush	36	1.4 · 10 ⁻³	37 260	2.8 · 10 ⁻²
Four of a kind	624	2.4 · 10 ⁻²	224 848	0.17
Full house	3 744	0.15	3 473 184	2.60
Flush	5 108	0.20	4 047 644	3.03
Straight	10 200	0.39	6 180 020	4.62
Three of a kind	54 912	2.11	6 461 620	4.83
Two-pair	123 552	4.75	31 433 400	23.5
One-Pair	1 098 240	42.3	58 627 800	43.8
High card	1 302 540	50.11	23 294 460	17.4

3 Analysis of N Alon's article

3.1 Structure of the analysis

In his analysis [1] N Alon considers a variant of poker game suggested by Von Neumann and Morgenstern [5]. He considers a game with two players Alice and Bob which works as follows

- 1 Each player is dealt a random number drawn in even interval $[0, 1]$. This number represents the value of their cards and is represented with an x_A for Alice and x_B for Bob
- 2 Both players then decide simultaneously to bet 1 chip or to fold
- 3 If one of the two players has folded the game stops and there is no exchange of money. If both players have bet the player whose cards have the highest value wins the amount wagered by the other i.e. 1 chip

This simple game variant captures the essence of the last round of a poker game well when all the community cards are revealed. Indeed there are then $C_{52}^2 = 1081$ possible combinations of two cards for each player. Disregarding the draws and superpositions between the various combinations these combinations can be ordered. Each player is therefore dealt cards with a value ranging from 1 to 1081. This range divided by 1081 resembles the values of the card combinations x_A and x_B considered in the variant. At the end of the game, if both players have bet the player with the highest range wins the pot. The benefit of considering such a simplified game is that it allows us to perform analytical calculations in an explicit manner and to calculate the players expected winnings.

N Alon mainly considers a two-player game where Bob plays in a random manner and Alice plays in a more strategic way by adapting to Bob's game. Bob's random behaviour can be represented with the following pattern: he bets 1 chip with a probability of $p = 1/2$ and folds therefore with a probability of $1 - p = 1/2$. Alice knows Bob's strategy and seeks to adapt her strategy to his behaviour.

3.2 The Results

N Alon then demonstrates that the optimal strategy for Alice consists in betting if and only if the value of her cards is above $1/2$. He then shows that her winning odds are $1/8$ at each game and that the associated variance is $15/64$. In other words Alice's average winning odds at each game are $1/8$ and the manner in which they fluctuate is characterised by a variance of $15/64$.

Thanks to the Central Limit Theorem he can then estimate the probability of Alice losing following a sufficiently high number n of consecutive games. The results are very convincing: after for example 350 games he observes that the number of times Alice loses is less than 1 in a million. He thus naturally comes to the conclusion that for a sufficiently high number of games strategy is a determining factor in the outcome of a game.

He also broadens these results by adding compulsory bets (blinds) in each game and he briefly analyses the instance of a game with more than 2 players

3.3 The main limitations

The results presented in N. Alon's article are absolutely valid and pertinent but it is nevertheless regrettable that the analysis should be restricted to a simplified version of poker game which only takes the last round of the game into account. It is true that the analytical calculations proposed would be difficult to apply to the complete version of the game. We will therefore broaden N. Alon's findings to a real poker game model by replacing the analytical calculations with digital simulations.

In the same way, the fact that Alice knows Bob's strategy (in other words the probability p with which he bets one chip) is a problem. Indeed, it is rather surprising that she would be able to identify her opponent's strategy that easily. Here, we will aim to construct reasonable strategies which seem adapted to Bob's various random ways of playing.

4 The model considered

We will therefore use a similar approach to that of N. Alon but with a game very close to the real rules of *Texas Hold'em Poker*. In the first instance, in order to better understand the required strategies, we will limit ourselves to games with 2 players.

4.1 The game

We will consider that two players, Alice and Bob, are sat around a table of poker.

4.1.1 Stages of the game

The game progresses in 4 rounds.

Preflop Alice and Bob are dealt 2 cards each. They simultaneously decide to bet 0 or 1 chip. If both players bet the same amount, the game continues.

Flop the first three community cards are dealt face up. They simultaneously decide to bet 0 or 1 chip. If both players bet the same amount, the game continues.

Turn the fourth community card is revealed. They simultaneously decide to bet 0 or 1 chip. If both players bet the same amount, the game continues.

River the fifth community card is revealed. They simultaneously decide to bet 0 or 1 chip. If both players bet the same amount, they compare hands. The player with the best hand wins the pot or, in the event of a draw, the two players share it.

Note that the main differences between a real *Texas Hold'em Poker* game and this version are as follows:

- There is no compulsory bet or blind.
- The amounts wagered at each round are fixed and equal to 1.
- At each round the players decide simultaneously whether they want to bet.
- It's a 2-player game.

We will include in section 4.3 some variants of the game described here and they will take the following differences into account: blind, variable bets, several players.

4.1.2 The players

Just like in N. Alon's article, we consider that 2 people play against each other:

- Bob who has a random strategy with a probability p of betting and $(1-p)$ to fold at each round of the game.

- Alice who aims to adapt her strategy to Bob's. She suspects that Bob's strategy is random but she does not know the probability p which governs his decisions. She makes her decisions by estimating what his pocket cards might be.

4.2 Alice's optimal strategy

Because Alice does not know the probability p characterising Bob's behaviour, she will devise a strategy not dependent on p . She observes however that at the last round where the pot was not nil, the situation most favourable to Bob is if he never folds, i.e. $p=1$. To define her strategy, she therefore considers the case where Bob never folds. It is this strategy which she will use later even when p is different from 1.

4 2 1 The optimal strategy during the River

Alice's optimal strategy during the river is easy to determine. Let us assume that the pot is worth P and that Alice has cards which mean that the probability that she will win is X . Knowing that Bob does not fold and discarding the possibilities of a draw, if Alice bets, her chance of winning is $X(P + 2) - 1$. Her chance of winning being nil if she folds, we can deduce that

$$\text{Alice must bet at the river if and only if } X \geq \frac{1}{P + 2}$$

The interpretation of this boundary is clear and can be read in the following manner: as she wagers one chip in the hope of winning $P + 2$, it is in her interest to play if and only if her probability of winning is greater than $1/(P + 2)$. Note that the more there is in the pot, the least important it is for Alice to have good cards in order to bet.

To estimate her probability of winning X , all Alice has to do is count the number of hands she could beat amongst the $C_{46}^2 = 990$ other possible hands. This calculation, easily performed by a computer, is of course impossible for a human brain. However, for experienced players, it is not difficult to estimate X relatively precisely. In order to adapt to the reality of a player who estimates his or her probability X of winning with possibly one error, we will present in section 5.2.4 the results of digital games where we have artificially added a random measuring error on the estimation of X .

4 2 2 The optimal strategy during the Turn

Let us assume that Alice uses in the last round the strategy previously described. Let us then work out what her strategy should be at the previous round. Note that P is the amount in the pot and X is the random variable equal to Alice's winning odds at the last round of the game. The variable X is random in the sense that it is not yet known; it can indeed have 46 different values depending on the last community card. If Alice decides to bet in this round, her odds of winning are

$$E[(X(P + 4) - 1)1_{X \geq 1/(P+4)} - 1]$$

Accordingly as she would win nothing by folding it is in Alice's interest to bet if and only if

$$E[X1_{X \geq 1/(P+4)}] \geq \frac{1 + P[X \geq 1/(P+4)]}{P+4}$$

This time Alice's strategy which when analysed appears more complex is in fact also very intuitive. The principle is the following: There is no point in Alice betting at this round if she does not bet at the following one. Therefore she hopes to win $P+4$ by betting 1 at this round and 1 at the following. She is testing whether her odds of winning by betting at the last round are greater than the total she has wagered divided by her winnings. Calling R the event where Alice bets during the river

$$\text{Alice must bet during the Turn if and only if } E[X1_R] \geq \frac{1 + P[R]}{P+4}$$

4.2.3 Optimal strategy during the Flop

The same type of rationale can be applied to the flop if a strategy has been defined thereafter. Calling T the event where Alice bets during the turn and $T \cap R$ the event where Alice bets both during the turn and during the river, Alice's odds of winning pot P are the following

$$E[(X(P+6) - 1)1_{T \cap R} - 1_T - 1]$$

One can see that Alice will have to bet if and only if her winning probability is greater than the ratio between the potential amount she has wagered and the total pot

$$\text{Alice must bet during the Flop if and only if } E[X1_{T \cap R}] \geq \frac{1 + P[T \cap R] + P[R]}{P+6}$$

4.2.4 Optimal strategy during the Preflop

Obviously the same rationale always applies when none of the community cards are yet available. Calling F the event where "Alice bets during the Flop" we know that

$$\text{Alice must bet during the Preflop if and only if } E[X1_{F \cap T \cap R}] \geq \frac{1 + P[F \cap T \cap R] + P[T \cap R] + P[R]}{8}$$

4.2.5 Optimal strategy when the stakes vary

So far we have assumed that the amount wagered at each round equalled 1 chip. Of course in reality stakes vary. Taking into account the variability of these stakes renders the previous analysis much more complex. Indeed in this instance the criterion used whereby the odds of winning are maximised does not seem very appropriate. However the results previously obtained can be easily extended to the scenario where the stakes at each round are different but determine or vary according to the pot. Empirically in a poker game the closer the river is the more the stakes go up.

Let us call m_P , m_F , m_T and m_R the stakes for each player respectively during the preflop, during the flop, during the turn and during the river. We deduce that the optimal criteria which Alice must consider at each round of the game for a pot of P are the following

$$\text{River} \quad X \geq \frac{m_R}{P+2 m_R}$$

$$\text{Turn} \quad E[X|_R] \geq \frac{m_T + m_R \tilde{P}[R]}{P+2*(m_T + m_R)}$$

$$\text{Flop} \quad \tilde{E}[X|_{T \cap R}] \geq \frac{m_F + m_T \tilde{P}[T \cap R] + m_R \tilde{P}[R]}{P+2*(m_F + m_T + m_R)}$$

$$\text{Preflop} \quad \tilde{E}[X|_{F \cap T \cap R}] \geq \frac{m_P + m_F \tilde{P}[F \cap T \cap R] + m_T \tilde{P}[T \cap R] + m_R \tilde{P}[R]}{P+2*(m_P + m_F + m_T + m_R)}$$

4 3 The strategies put into action

In order to make this analysis more realistic and more reader-friendly we will simplify the criteria taken into account in Alice's decision making process. We will therefore not use the optimal strategy which Alice has available to her. Here we will consider only strategies that are merely based on Alice's hand odds of winning versus another hand. In other words, in each round Alice knows $E[X]$ where X represents her probability of winning at the last round of the game. Of course $\tilde{E}[X]$ is recalculated at each round of the game by taking into account the new community cards. For an experienced player, it is easy to know the potential of one's hand and to see how it evolves as the flop, the turn and the river unfold.

4 3 1 The reference strategy

We will consider strategies where, at each round of the game, **Alice bets if and only if $\tilde{E}[X] > x(P)$** where P is the value of the pot and x a decision function. We still have to specify the functions x_P, x_F, x_T et x_R corresponding to each round of the game: preflop, flop, turn and river. To simplify the presentation, we will assume that the stakes at each round are equal to one chip.

First of all, during the river, X is no longer random as all the cards are known and the criteria of optimal strategy can be applied:

$$X \geq \frac{1}{P+2} \quad \text{namely} \quad x_R(P) = \frac{1}{P+2}$$

Let us now consider the other rounds of the game. The previous optimal criteria can not be applied but they give a good idea of the threshold function x_P, x_F et x_T that is reasonable to use. Let us assume that at each round of the game, Alice decides to bet thinking that she will not fold at any of the following rounds. Then her decision criteria during the river, the flop and the preflop become respectively:

$$\tilde{E}[X] \geq \frac{2}{P+4} \quad \tilde{E}[X] \geq \frac{3}{P+6} \quad \text{and} \quad \tilde{E}[X] \geq \frac{4}{P+8}$$

The criteria therefore have the desired make up and will be the ones we adopt. Note also that the pot is inevitably empty when the players are at the preflop so $x_P = x_P(0) = 1/2$. Given that the pot has a value of P we will in fact use Alice's following decision criteria

$$\text{Preflop} \quad E[X] \geq x_P = \frac{1}{2}$$

$$\text{Flop} \quad E[X] \geq x_F(P) = \frac{3}{P+6}$$

$$\text{Turn} \quad E[X] \geq x_T(P) = \frac{2}{P+4}$$

$$\text{River} \quad X \geq x_R(P) = \frac{1}{P+6}$$

We will now deal with the distinct variants of the game allowing us to better take into account the *Texas Hold'em Poker* game specifics. We provide strategies when the stakes are varied when a blind is added or when there are more than 2 players

4.3.2 Strategy with increasing stakes

In a game of Poker, stakes empirically appear to increase with each round of the game. We have already presented the optimal strategy with varied stakes in section 4.2.5. Let us call m_P , m_F , m_T and m_R the stakes at preflop, flop, turn and at the river respectively. These stakes are known in advance as being dependent on the pot. By adapting the rationale described in the previous section for a pot that is worth a given value of P , the following criteria are easily obtained

$$\text{Preflop} \quad E[X] \geq x_P = \frac{1}{2}$$

$$\text{Flop} \quad E[X] \geq x_F(P) = \frac{m_F + m_T + m_R}{P + 2 * (m_F + m_T + m_R)}$$

$$\text{Turn} \quad E[X] \geq x_T(P) = \frac{m_T + m_R}{P + 2 * (m_T + m_R)},$$

$$\text{River} \quad X \geq x_R(P) = \frac{m_R}{P + 2 * m_R}$$

Alice's strategy is rather cautious. Intending to play until the last round, Alice chooses a relatively high level of cards to bet.

4.3.3 Strategy with a blind

In the game considered so far, players decide simultaneously whether they want to bet or not and they do not have a forced bet (blind). Let us consider a game where each player is forced to wager 1 chip at preflop every other game. This way, folding has an additional cost and the 2

player's roles are asymmetrical So we isolate 2 cases depending on whether it is Bob or Alice who pays the blind

1 Bob pays the blind then Alice's strategy which is based on the fact that Bob will in any case bet will not change

2 Alice pays the blind in this case Alice is forced to bet at the preflop She then applies her strategy simply from the flop

To conclude Alice's strategy remains unchanged apart from the fact that every other time she has no choice but to bet at the preflop

4 3 4 Strategy for a game with n players

We consider here a game where Alice has n opponents who have the same strategy as Bob These n players bet with a probability of p and fold with a probability of $1-p$ Because she does not know p Alice seeks a strategy based on the assumption that the other players always bet All the same we assume that she will adapt her strategy to the number of players still in the game at each round

Let us say that we are at the river with a pot of a value of P and a number n of players still in the game Alice knows X the probability of her hand beating another hand given the five community cards Accordingly discarding cards superposition her probability of beating all n other players equates to X^n As she wagers 1 chip in the hope of winning $P + n + 1$ her criterion of choice is obtained by the operation $X^n \geq 1/(P + n + 1)$

The same type of rationale can be applied to the various rounds of the game The probability X of winning at the last round can simply be replaced by X^n and in the event of winning the winnings can be adapted to the number of players n still in the game Calling the different stakes at each round m_P m_F m_T and m_R one obtains for a pot of a value of P and n players still in the game the following criteria

$$\text{Preflop} \quad E[X^n] \geq x_P = \frac{1}{2}$$

$$\text{Flop} \quad E[X^n] \geq x_F(P) = \frac{m_F + m_T + m_R}{P + (n + 1) * (m_F + m_T + m_R)}$$

$$\text{Turn} \quad E[X^n] \geq x_T(P) = \frac{m_T + m_R}{P + (n + 1) * (m_T + m_R)}$$

$$\text{River} \quad X^n \geq x_R(P) = \frac{m_R}{P + (n + 1) * m_R}$$

5 Digital tests

In his analysis N. Alon calculates in a theoretical manner Alice's winning odds and the variance Y at each game where she uses her strategy. With these odds and variance he deduces from the Central Limit Theorem the odds of Alice losing after any random sufficiently high number n of games. In our more general game model we cannot exactly calculate the odds and variance of this random variable Y . We have therefore chosen to perform digital simulations of virtual games in order to estimate them. These estimation techniques called the Monte Carlo methods are represented in section 5.1.2.

In order to implement Alice's strategy in a computer environment we had to, at each round of the game, calculate her probability of winning $E[X]$. In order to calculate it at the river, at the turn and at the flop we have simulated all the possible combinations of cards being revealed so that this probability can be calculated precisely. On the other hand, in order to calculate it during the preflop when Alice only knows her two pocket cards, we have used tables of already calculated probabilities. These tables depend of course on the number of players and have been taken from [2] and [8]. In order to make Alice's strategy more realistic we also present digital results where errors on the calculation of $E[X]$ have been artificially introduced.

In this section we first tackle the mathematical theoretical justifications underlying our approach then we present the digital results obtained.

5.1 Theoretical justification

5.1.1 The Central Limit Theorem

We lay out the manner in which, from Alice's winning odds and variance over a game, we can work out her odds of losing after a given number n of games. The result expressed had already been noticed and used by N. Alon [1].

We start by presenting (a version of) the central limit theorem.

Theorem 5.1 *Be M a real positive number and $Y_1, Y_2, \dots$ a suit of random variables independent of such laws in such a way that each Y_i satisfies $|Y_i| \leq M$. Calling μ et σ^2 the odds and the variance of each X_i , then*

$$\lim_{n \rightarrow \infty} \frac{1}{n} \sum_{i=1}^n Y_i = \mu \quad \mathbb{P} \text{ - a.s.}$$

In addition we have

$$\lim_{n \rightarrow \infty} \mathbb{P} \left[\frac{\sum_{i=1}^n Y_i - n\mu}{\sigma\sqrt{n}} \leq x \right] = \Phi(x) \quad (5.1)$$

where Φ is the distribution function of normal law defined by

$$\Phi(x) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^x e^{-t^2/2} dt$$

Let us assume that Y_i represents Alice winning at the i^{th} game. Then, $\sum_{i=1}^n Y_i$ is the sum of Alice's winnings over the first n games. Accordingly, Alice will be losing after n games if and only if $\sum_{i=1}^n Y_i < 0$. As the random variables Y_i are independent and of the same law we can apply the previous theorem and deduce the following result.

Proposition 5.1 *Let μ and σ^2 be Alice's winning odds and variance at each game. The odds of Alice losing after a sufficiently high number n of games is in the order of $\Phi(-\mu\sqrt{n}/\sigma)$.*

In his analysis, N. Alon manages to calculate Alice's winning odds and variance at each game perfectly. In our more general game model, we cannot do this so we will obtain a digital approximation thanks to the Monte Carlo method.

5.1.2 The Monte Carlo methods

Given a specific strategy for Alice, we are seeking to estimate the odds μ and the variance σ^2 of her winning Y at each game. The Monte Carlo methods are based on the Central Limit Theorem stated above. Let us consider a pool of n games where Alice's winnings Y_i are available to us. Then, according to (5.1) in the theorem 5.1, we can estimate μ with

$$\mu_N = \frac{1}{N} \sum_{i=1}^N Y_i$$

Note that a standard estimator of Y 's variance is given by

$$\sigma_N^2 = \frac{1}{N-1} \sum_{i=1}^N \left(Y_i - \frac{1}{N} \sum_{i=1}^N Y_i \right)^2$$

The idea is to use μ_N and σ_N^2 instead of μ and σ^2 . We can demonstrate that the results stated in theorem 5.1 stay true when the variance σ^2 is replaced by its estimation σ_N^2 (see [4] for example). From this we conclude the following result:

Proposition 5.2 *Let us consider a pool of N poker games where, for each $i \leq N$, Y_i represents Alice's winnings at the i^{th} game. Then, the possibility of Alice losing after a sufficiently high number n of games is in the order of $\Phi(-\mu_N \sqrt{n}/\sigma_N)$, with*

$$\mu_N = \frac{1}{N} \sum_{i=1}^N Y_i \quad \text{et} \quad \sigma_N^2 = \frac{1}{N-1} \sum_{i=1}^N \left(Y_i - \frac{1}{N} \sum_{i=1}^N Y_i \right)^2$$

5.2 Digital results

Here we present the digital results obtained in simulations of a pool of 30 000 poker games played between Alice and one or several random players. The strategies employed are those detailed in section 4.3. They were elaborated in the context of the opponent betting at all the rounds but we will test them in the context of the opponent betting randomly with a probability of p .

Alice's winning odds and variance are unknown and are therefore estimated with the Monte Carlo methods previously described. There is therefore a measuring error on the magnitude of these numbers which is absolutely controllable. The values provided below are not absolutely exact but the important thing is that their order of magnitude are completely valid.

In each variant of the game, the conclusion remains the same: for a sufficiently high number of games, strategy is a deciding factor in the outcome of a game.

5.2.1 The reference game

Let us consider first of all the reference game for which Alice's strategy has been presented in section 4.3.1 with a stake of 1 chip at each round. The following table provides Alice's estimated winning odds and variance at each game for various values of p . With proposition 5.2, we also calculate the odds of Alice losing after 50, 100 and 500 games.

P		1	0.9	0.8	0.7	0.6	0.5
Odds		0.32	0.35	0.36	0.36	0.33	0.30
Variance		6.7	5.2	3.9	2.8	2.0	1.4
% of chance for Alice to not be leading the game after	50 games	18.7	15.7	12.2	8.7	5.3	2.5
	100 games	10.5	7.7	5.0	2.7	$2 \cdot 10^{-2}$	$2 \cdot 10^{-3}$
	500 games	0.25	0.07	0.02	$9 \cdot 10^{-4}$	$2 \cdot 10^{-5}$	$3 \cdot 10^{-8}$

It's very clear that Alice's strategy gives her a considerable advantage. Figure 1, representing for various values of p the odds of Alice having lost money after n games, is also very telling. In the most unfavourable case where $p = 1$, the number of times when Alice is in a losing position is 1 in 10 after 100 games, less than 3 in a thousand after 500 games, and less than 4 in 100,000 after 1,000 games.

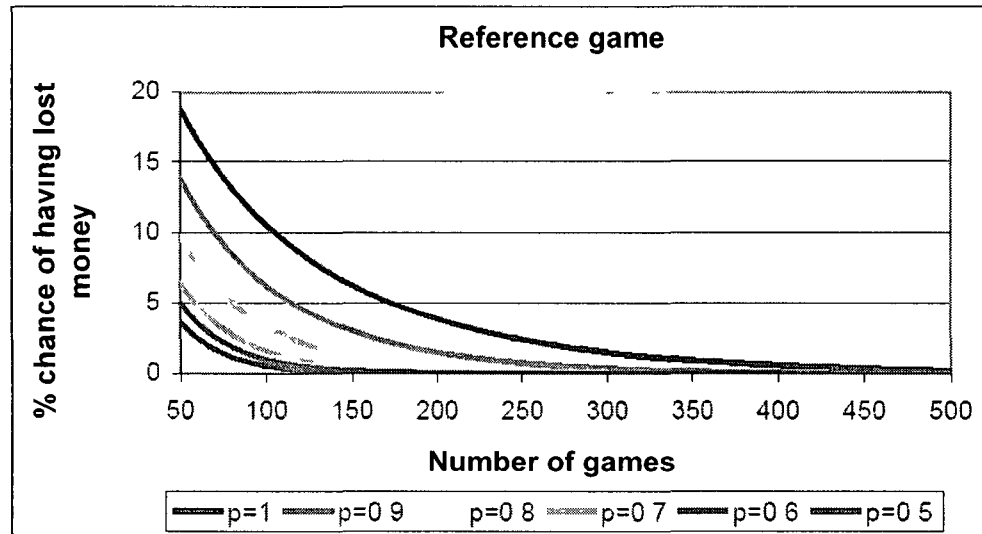


FIG 1 - % chance for Alice to be in deficit vs the number of games

In a game of poker, each player has available to him or her the same initial number of chips and gets knocked-out when he or she has no chips left. So in order to get knocked-out, a significant number of games have to be lost without winning too many of them. In this reference game, there are exchanges of at most 4 chips at each round. After grading Alice's winnings distribution for a game, we have also estimated the odds of Alice losing given a specific initial number of chips. In the worst case scenario where $p = 1$, the results shown in the following table are very convincing. The higher the initial number of chips is, the more games Alice has to lose in order to be knocked-out. Therefore, Alice gets knocked-out less often. We can observe, for example, that the number of times Alice loses is only 6 out of 1,000 with a fairly reasonable initial number of 50 chips.

Initial number of chips	10	25	50	100
Odds of Alice being knocked-out	24%	7%	0.6%	0.005%

5.2.2 Increase of stakes

Let us now consider the extended scenario where the stakes increase at each round of the game. Alice's strategy in this case is presented in 4.3.2. We are still making the assumption that

Bob bets with probability p and we present the digital results for cases where the stake is 1 at preflop 2 at the flop 4 at the turn and 8 at the river. The digital results are presented in the following table and in Figure 2

P		1	0.9	0.8	0.7	0.6	0.5
Odds		1.5	1.3	1.1	1	0.8	0.7
Variance		61	50	41	33	25	19
% of chance for Alice to not be leading the game after	50 games	8.9	9.9	10.8	11.2	11.8	12.0
	100 games	2.9	3.4	4.0	4.2	4.7	4.9
	500 games	10^{-3}	$2 \cdot 10^{-3}$	$4 \cdot 10^{-3}$	$6 \cdot 10^{-3}$	$9 \cdot 10^{-3}$	10^{-2}

In this version of the game Alice has again a considerable advantage over her opponent. However, her winning variance is high because as many as 30 chips can be wagered in this game. Note that the winning odds decrease with p . Indeed Alice has a rather cautious strategy and the more often Bob folds, the less lucrative the games are for her, inasmuch as the important stakes are at the end of a game. Even in the most unfavourable case analysed here, Alice's odds of losing are less than in the previous reference game. In the case where $p = 1$, the number of times when Alice is in a losing position is 3 in 100 after 100 games, 1 in 100,000 after 500 games, and less than 1 in a million after 650 games.

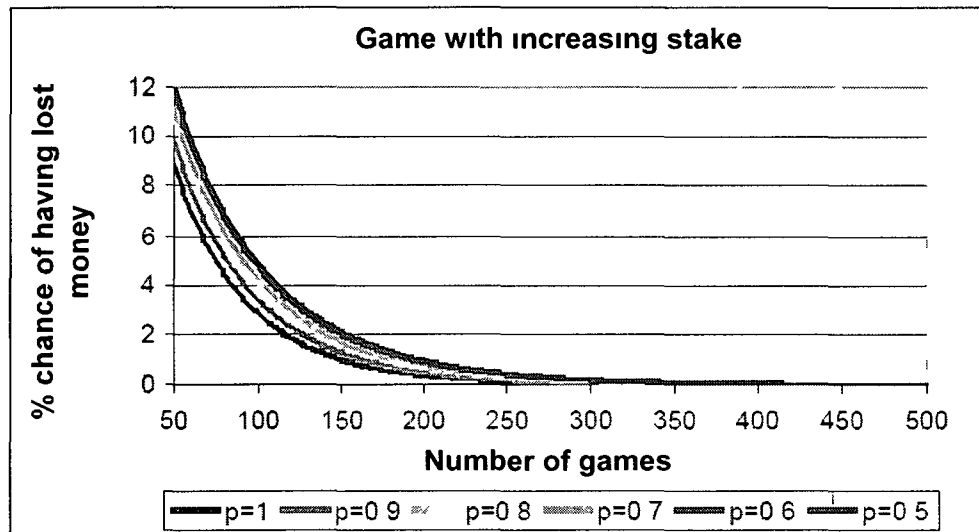


FIG 2 - % chance for Alice to be in deficit vs number of games

5.2.3 Blind added

An important component in the rules of *Texas Hold'em Poker* is the use of forced stakes, a.k.a. the blind. They force players to wager and put emphasis on their position around the table. Considering games with a forced stake alternating between the two players of 1 chip at the preflop, we have carried out a digital test of the strategy presented in section 4.3.3. In the following table we show Alice's estimated winning odds and variance. As previously, the results are complemented by the odds of Alice not leading after n games, see Figure 3.

P	1	0.9	0.8	0.7	0.6	0.5
Odds	0.28	0.32	0.36	0.36	0.39	0.38

Variance		8 4	6 7	5 2	4 0	2 9	2 1
% of chance for Alice to not be leading the game after	50 games	24 9	18 7	13 2	8 5	5 4	3 2
	100 games	16 9	10 4	5 7	2 6	1 1	0 4
	500 games	1 6	0 24	2 10 ²	7 10 ⁴	2 10 ⁵	2 10 ⁷

Unsurprisingly Alice's performance is not as good in this game model as she sometimes has to wait for the second round of the game before she can fold despite the fact that she may have a bad hand. Like in the previous two games, strategy is nevertheless still the overriding factor in the outcome of a game. Indeed, in the most unfavourable case where $p = 1$, the number of times that Alice is in a losing position is 17 in 100 after 100 games, less than 2 in 100 after 500 games and less than 1 in a thousand after 1 000 games.

In order to compare this game with the reference game, we have also graded Alice's winnings distribution for a game and estimated the odds of Alice losing given an initial number of chips. In the worst case scenario where $p = 1$, the results are shown in the following table. We can observe for example that the number of times Alice loses in this instance is 3 in 100 for an initial number of 50 chips.

Initial number of chips	10	25	50	100
Odds of Alice being knocked-out	32%	15%	3%	0.01%

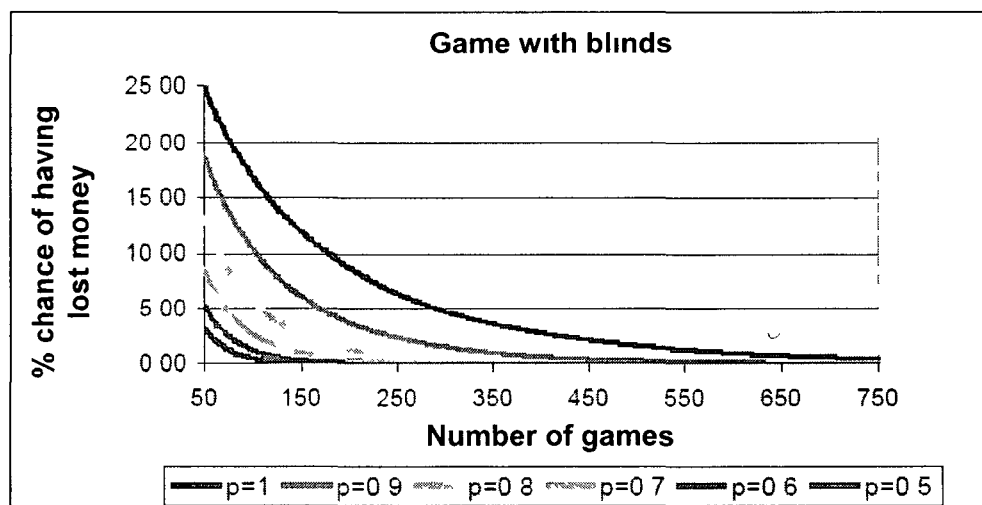


FIG. 3 - % chance for Alice to be in deficit vs number of games

Game where Alice does not have the precision of a computer

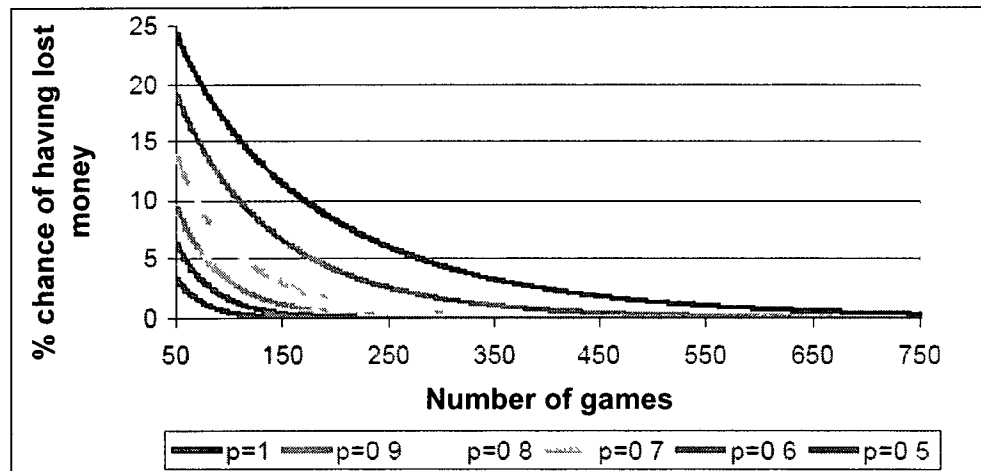


FIG 4 - % chance for Alice to be in deficit vs number of games

5 2 4 Alice does not have the precision of a computer

In all the strategies employed until now we always assume that Alice knows how to perfectly evaluate her hand. An experienced player certainly always has a precise idea of his or her hand in the pocket potential, however it does not seem reasonable to expect a player to be able to evaluate his or her hand in such a precise manner. In order to make this analysis more realistic we have artificially added a random error on the evaluation that Alice makes of her hand. We have mathematically added the odds of winning $E[X]$ calculated by Alice with an independent centered normal law with a variance of 10^{-2} . In other words Alice now estimates her odds of winning and her approximation has a precision of 0.2, 95 times out of 100. For example, if Alice's odds of winning are 0.6, she will estimate them between 0.4 and 0.8 and will adapt her strategy to her estimation. The results obtained in this way are laid out in the following table and in Figure 4.

P		1	0.9	0.8	0.7	0.6	0.5
Odds		0.23	0.27	0.30	0.33	0.35	0.36
Variance		5.5	4.7	3.9	3.2	2.6	2.1
% of chance for Alice to not be leading the game after	50 games	24.4	19.3	13.8	9.5	6.5	3.5
	100 games	16.3	11.0	6.2	3.2	1.7	0.5
	500 games	1.4	0.3	$2 \cdot 10^{-2}$	$3 \cdot 10^{-3}$	$9 \cdot 10^{-5}$	$5 \cdot 10^{-7}$

We arrive to the same conclusions as previously: even if Alice wins less often because she badly estimates her hand potential, her strategy remains dominant over that of her opponent. This way, in the most unfavourable case where $p = 1$, the number of times when Alice is in a losing position is 16 in 100 after 100 games, less than 2 in 100 after 500 games, and less than 1 in 1 000 after 1 000 games.

In this game model, we have also estimated Alice's odds of losing given an initial number of chips. In the worst case scenario where $p = 1$, the results are shown in the following table. In this instance, the number of times that Alice loses is 1 in 100 for an initial number of 50 chips.

Initial number of chips	10	25	50	100
Odds of Alice being knocked-out	28%	10%	1.3%	0.02%

5 2 5 A 4-player game

We now consider a 4-player game where Alice plays against 3 players who have a random strategy characterised by p . Alice uses the strategy laid out in section 4.3.4. We have performed a digital estimation of Alice's winning odds and variance. In a game of 4 players, proposition 5.2 allows the calculation of Alice's odds of losing money after n games. The results obtained for various values of p are laid out in the following table and in Figure 5.

P		1	0.9	0.8	0.7	0.6	0.5
Odds		0.60	0.88	0.89	0.86	0.82	0.69
Variance		20	17	12	8	6	4
% of chance for Alice to not be leading the game after	50 games	17.2	6.4	3.5	1.8	0.8	0.5
	100 games	9.1	1.5	0.5	0.2	$3 \cdot 10^{-2}$	10^{-2}
	500 games	0.1	$7 \cdot 10^{-5}$	$5 \cdot 10^{-7}$	$2 \cdot 10^{-9}$	$7 \cdot 10^{-13}$	$2 \cdot 10^{-14}$

Once again, the conclusion is similar: for a sufficiently high number of games played, the players' results are very clearly correlated with their respective strategies. Thus, in the most unfavourable case where $p = 1$, the number of times that Alice loses money is around 9 in 100 after 100 games, 1 in a thousand after 500 games, and 1 in 100,000 after 1,000 games.

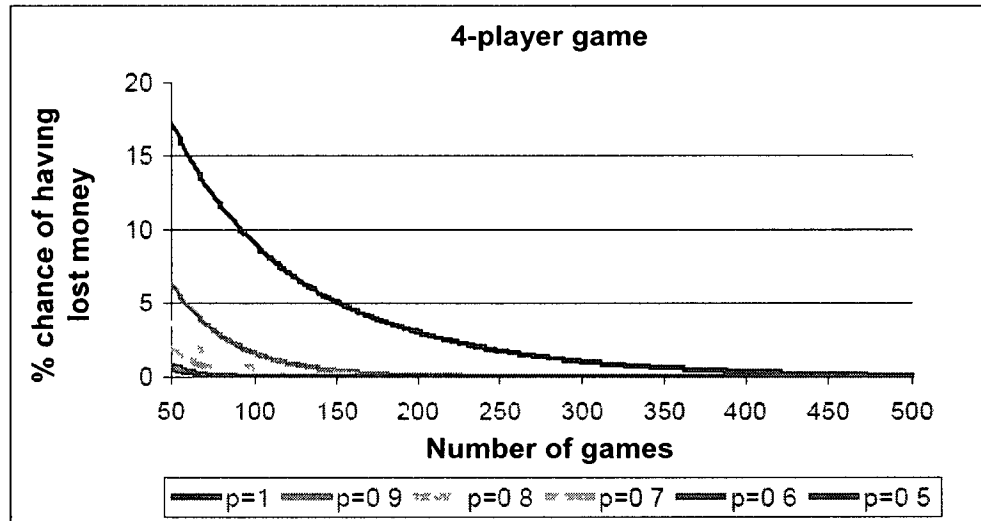


FIG. 5 - % chance for Alice to be in deficit Vs Number of games

Conclusions

Here we have analysed the influence of chance on the outcome of poker games between several players, one player having a dominant strategy over the others. In order to determine this dominant strategy we have assumed that the other players were playing randomly and we have carried out a theoretical analysis over the expected winnings of a strategical player. Stemming from this analysis, we opted for a strategy which was not optimal but which was easy to understand.

In order to quantify the performances of a strategic player versus his opponents we have performed a computer simulation of a pool of virtual poker games. This has enabled us to evaluate the winning odds and variance of a strategic player and to work out his or her chances of winning. We have considered game cases with 2 or 4 players, with or without blind, with constant or variable stakes. We also studied the case where the strategic player estimates his or her hand potential with little precision.

In all the game variants the conclusion remains the same: for a sufficiently high number of consecutive games of *Texas Hold em Poker* the quality of the strategy employed has an overriding influence over the outcome of the game. Our conclusions are therefore similar to N. Alon's [1] but we have also dealt with broader game models. Furthermore these conclusions are completely consistent with the empirical observation that it is usually the same professional players who reach the final phases of Poker tournaments.

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2

EXHIBIT E

3

4

Chance and Skill in Poker

Professor Abraham J Wyner
April 17th 2008

I Biography of the Author

Professor Abraham (Adi) Wyner is Associate Professor of Statistics at the Wharton School of Business. He came to Wharton in 1999, from the University of California at Berkeley, where he was an Assistant Professor and a NSF Post-Doctoral Fellow. Dr. Wyner did his B.S. in Mathematics at Yale University where he won the Stanley Prize for excellence in Mathematics, heading west to complete his doctorate in Statistics on the West Coast, at Stanford University.

Professor Wyner's principle focus at Wharton has been research in Applied Probability, Information Theory and Statistical Learning. He has published more than 20 articles in leading journals in many different fields, including Statistics, Probability, Information Theory, Computer Science and Bio-Informatics. He has received many grants from the NSF, NIH and private industry. Professor Wyner has participated in numerous consulting projects in various businesses.

He was one of the earliest consultants for TiVo, Inc, where he helped to develop personalization software. Dr. Wyner created some of the first on-line data summarization tools, while acting as CTO for Surfnote, Inc. More recently, he has developed statistical analyses for banks and marketing research firms and has served as consultant to several law firms in Philadelphia, New York and Washington, D.C. In addition, he has served as statistical faculty advisor for the University of Pennsylvania Law School. His interest in sports statistics has led to an ongoing collaboration with ESPN.com and "ESPN the Magazine" where Dr. Wyner is the PI on the ESPN funded MLB player evaluation research project. He has served as faculty advisor to the Wharton Quant Club, numerous MBA cohorts and the Wharton Gaming club. For several years he taught an undergraduate course in Gaming that was so popular that over 1000 students competed for only 12 slots.

II Is Poker predominantly a game of Skill?

In this consultation, I will address the question of whether poker (and more specifically Texas Hold'em Poker) is a game whose outcome is dependent more on skill than on chance, by evaluating two scientific articles where the issue has been analyzed in detail. One is an article by Professor Noga Alon, of Tel Aviv University (which is attached to this opinion as Annex A) and a second is essentially a follow up to Alon's article, written by Laure Elie and Romuald Elie of the University of Paris (which is attached to this opinion as Annex B). They have applied mathematical techniques to provide scientific evidence to the fact that poker is a game wherein winning is more dependent on skill than on chance.

III *Poker, Chance and Skill*, by Professor Noga Alon

Noga Alon considers the game of “Texas Hold’Em” for which he provides a detailed and accurate description. Then he calculates probabilities for each type of hand and explains how knowledge of these probabilities is necessary in order to wager in a way that will maximize the expected winnings. This is his first intimation that a skilled player, who is able to calculate probabilities and use those calculations, will have an advantage over a player who cannot. One course of action, rejected by Alon, is to attempt to mathematically quantify the level of skill in a game. Instead, Alon constructs a simplified game of Texas Hold ‘Em poker which he uses as a model. The basic argument is that of *a fortiori*

if it is possible to demonstrate that Skill predominates in simplified Texas Hold Em then all the more so it will dominate for the actual game

Alon constructs several different single-betting-round games based on a “basic game” constructed to depend on the ranking property of poker. The games are as follows:

- 1 A two player game involving a beginner “Bob” who plays randomly against an advanced “Alice,” who plays optimally
- 2 An extension of the previous involving an “Improved” Bob against “Adapted” Alice, who adapts her advanced strategy to counter Bob
- 3 A multiple player extension with Advanced Alice against multiple beginners in a ring game

Alon shows that it is possible in these simple games to calculate exactly the strategy that Alice should play in order to maximize her expected winnings per round. Alon finds such a strategy for all three versions and then he calculates Alice’s expected winnings per round and the variance of her winnings. He then applies the Central Limit Theorem for repeated independent events to calculate (for version 1) the approximate chance that Alice does not have more money than Bob after n rounds of play. As an added twist, he calculates the same probability with a blind bet instead.

For the simplest version, Alon shows that Alice’s skill will dominate Bob’s luck based approach. In fact, we have that

- Although 7 out of 8 games end in a draw, if there is a winner, then Advanced Alice is 3 times more likely to win than Beginner Bob
- After 15 rounds of play, the chance that Alice is ahead is about 84%
- After 150 rounds, the chance that Alice is ahead is about 99.9%

To summarize, Alon accurately argues that

- Knowledge of hand probabilities is a learned skill fundamental to determining and implementing an advanced strategy
- An advanced strategy will earn more than a strategy of an unskilled player with high probability in the short run
- An advanced strategy will earn more than a strategy of an unskilled player in the long run, with certainty

So it is abundantly clear that in a simple game which pits an expert against a novice¹, the skilled player will dominate quickly **Skill is the deciding and dominant factor**

IV Limitations and Extensions *Chance and Strategy in Poker* By Laure Elie and Romuald Elie

The Alon analysis is of course limited to a basic simplified one round game of pseudo-poker. To conclude that poker itself is predominantly skill, one has to accept that the intricacies of actual poker will necessarily favor the skill factor from which it follows, *a fortiori*, that real poker is predominantly skill. The argument is a heuristic, but it is compelling.

A second limitation is Alon's choice of players where Bob, who plays with basically no skill at all, challenges advanced player Alice. A more convincing argument would show that skill dominates the outcome of a game involving a highly skilled opponent against a player of modest abilities.

This challenge is met by the analysis in the article "*Chance and Strategy in Poker*" of Laure Elie and Romuald Elie, of the University of Paris. They build upon Alon's analysis extending the basic game to multiple round play, with pre-Flop, Flop, Turn, and River rounds, which follows the format of Texas Hold Em itself. They also consider challengers who employ a range of strategies. Much of their article is devoted to developing the multiple-round game and calculating the optimal strategy for Alice. Since the game is too complex to calculate the expectation and variance of the each player's winnings, they instead simulate millions of rounds using the computer. This method, appropriately called "Monte Carlo" in the statistics literature, is an extremely effective way to approximate (to a desired level of accuracy) difficult to calculate probabilities, averages and variances.

The analysis presented in this article examines poker games involving blinds, increasing stakes and tournaments (i.e. "knock-out" games). In each, the optimal (or nearly optimal) player Alice is challenged by a range of opponents indexed by their probability p of calling/betting in a given round. The main conclusions are as follows:

¹ *On the other hand, when two equally skilled players challenge each other the outcome is determined predominantly due to chance. This is true for all games including athletic competitions. This is why a poker match involving the world's best players seems to be often decided by chance.*

- In the basic game, after only 50 rounds of play Alice has at worst less than a 20% chance of being behind even the most skilled challenger ($p=1$) After 500 rounds, this chance is less about $\frac{1}{4}$ of 1%
- In a game with increasing stakes, Alice has at worst a 12% chance of behind after 50 rounds even against her most skilled challenger ($p=\frac{1}{2}$) After 100 rounds the chance is less than 5%
- In tournament style play, Alice has less than a $\frac{1}{100}$ of 1% chance of being knocked out when each player starts with 100 chips That chance increases to at most 32% when the starting stakes are only 10 chips
- In a 4 player game, Alice has less than 20% chance of being behind after only 50 games even against 3 modestly skilled opponents ($p=1$) After 500 plays that chance is less than $\frac{1}{10}$ of 1%

The conclusion is very obvious A skilled player will trounce lesser skilled opponents not only in the long-run, but also, with high probability, after what amounts to a session of only a couple of hours Furthermore, in tournament play, where the number of rounds is not fixed, the skilled player has a decisive advantage even with modest initial stakes **Skill is the dominant and decisive factor**

V Summary and Conclusion

Poker while simple enough to learn and play with only a short lesson, is extremely intricate and complex A skilled player who is able to calculate correctly the probabilities of different hand configurations and is able to use that knowledge to bet and bluff appropriately has a substantial advantage over players without these skills The two papers evaluated here ably demonstrate using mathematical analysis and computer simulation exactly how decisive that advantage is The player who just “hopes to get the cards” will get them from time to time, but even after a single evening of play against a top player, he will be decisively beaten **Skill dominates chance in poker**

EXHIBIT F

On a measure of skill for games with chance elements¹

Peter Boim² and Ben van der Genugten²

Abstract

In various countries, including the Netherlands and Austria, legislation is such¹ that the question whether a specific game should be considered as a game of chance² or as a game of skill is predominant in the exploitation decision of private casinos. This paper aims for an objective and operational criterium to quantify the level of skill of casino games in order to establish a mutual ranking. The various concepts are illustrated by means of variations of Poker.

Keywords: games, skill, chance elements, learnminimax strategy, Poker

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²Department of Econometrics, Tilburg University, P.O. Box 90153, 5000 LE Tilburg, The Netherlands

1 Introduction

The commercial exploitation of games with chance elements is a lucrative affair from the point of view of the proprietor. In the Netherlands the exploitation of such games is controlled by means of legislation as reflected in the law "Wet op de kansspelen (WKS)"

- a) *it is not allowed to exploit games with monetary prizes if the participants in general do not have a dominant influence on the probability to win, unless in compliance to this act, a license is granted*

In practice, the government only grants such a license to the Holland Casino's foundation. In more countries (e.g. Austria) a similar type of legislation is operative and the questions we address below therefore will arise in some way in other countries than the Netherlands as well.

So, though our analysis will be focussed primarily on the Dutch situation, practical applications certainly will reach further than that. Moreover, from a theoretical point of view our analysis will offer a general method to measure skill in a broad class of games.

In the remainder we call a game that is covered by the WKS a *game of chance*. A game which is not a game of chance will be called a *game of skill*. So, in particular, to commercialize games of skill no license within the meaning of the WKS is needed. This opens the way for private casinos to compete with the games of chance that are exploited in the Holland Casino's.

Of course the proprietor of a game and the legislator can have different views on how to qualify a game since such a judgement about the role of chance is rather subjective and the financial stakes are high. If it would be possible to rank a broad class of games with chance elements by means of an operational and objective criterium which quantifies the level of skill, e.g. on a scale from zero to one, the legislator would be able to decide on a certain bound on the level of skill, below which a game should be considered as a game of chance. In this article we propose a specific definition to measure skill and provide approximations for various casino games. The analysis is partly based on the results in van der Genugten and Borm (1991, 1994). The various concepts will be illustrated in some detail by means of simple variations of the game of Poker. Some general references on specific (computational) aspects on Poker are Epstein (1977), Scarne (1990) and Tamburin (1993).

The paper is organized in the following way

Section 2 discusses the qualitative requirements we think should be satisfied by a suitable measure of skill based on the existing Dutch jurisprudence

Then in Section 3, we propose a definition of the level of skill for so-called "basic" games with a relatively simple structure. This structure enables us to highlight the essential features of the definition. Since basic games hardly occur in reality this section is of a didactic nature. In the subsequent sections the definition of the level of skill is generalized to more sophisticated games. The generalization for one person games like Roulette, Blackjack and Golden Ten is discussed in section 4, for two-person zero sum games like Chess, Schnapsen and two person Poker in section 5, and, finally, for general n -person zero-sum games in section 6.

At this stage some general remarks about the differences in complexity between the various classes of games should be made. Casino games typically can be classified as zero-sum games: apart from possible admission fees money is reallocated among the participants (including the casino). Further, in a one-person game like Roulette each player's betting strategy is all-decisive upon the possible expected gains: these gains do not depend on the behaviour of other players. In a more-person game like Poker it is typically the case that a player's gains also depend on the opponents' behaviour. So, in particular, strategic aspects come in. For three or more person games also the feature of possible cooperation between subgroups of players should be taken into account. These aspects will be considered in detail in the various sections.

A numerical two-person variation of Poker will be used to illustrate the underlying concepts in section 5, a three-person variation in section 6. With respect to the computational aspects concerning optimal strategies, we will make use of a modification of the learning-procedure as initially proposed by Brown (1949) and Robinson (1950) (cf. Shapiro (1958) and Karlin (1959)). This modification is discussed to some extent in section 5. Section 7 concludes with a discussion of implications of our measure of skill together with some ideas on future research.

2 Some qualitative criteria for skill

In our analysis we will restrict attention to games which, in principle, can be repeated under the same conditions. This assumption guarantees an objective quantification of uncertainty in terms of probability. This does not mean that such a quantification is impossible beforehand for games of a different kind but that it necessarily will be of a more subjective nature.

We formulate three requirements which in our opinion summarize the basic ideas underlying the Dutch legislation concerning the exploitation of games with chance elements:

- R1 The WKS applies exclusively to situations which involve the exploitation of games with monetary prizes. For this reason we only consider games in which the "game result" of a player can be expressed in some way in terms of a certain gain (or loss) of money.
- R2 The skill of a player should be measured as his gain in the long run, i.e. in terms of expected gains. Necessary for a game of skill is that these expected gains vary among players.
- R3 The fact that there is a difference between players with respect to their expected gains, does not immediately imply that the underlying game is a game of skill. Sufficient for a game of skill is that the chance elements involved do not prohibit these differences to be substantial.

⁴ In van der Genugten and Borm (1994, 1996) each of these requirements is discussed in detail in the light of the Dutch jurisprudence on specific games as Saturne, Blackjack, Roulette and Golden Ten. Implicitly these cases make clear that one should distinguish between three types of players:

- (1) a beginner who plays the game in the naive way of somebody who has just mastered the rules of the game
- (2) an average player who can be thought to represent the vast majority of players
- (3) an advanced player who uses skill at the highest possible level and who sets an example for other players

One may conclude that the WKS is concerned with the difference between a beginner

and an average player. Therefore, we call the means of the difference in expected monetary gains (R1) between those two types of players (R2) the *learning* effect. This effect should be judged substantial in relation with the restrictive possibilities within the game set by the chance elements (R3) (e.g. with restrictions on the occurrence of maximal gains). In this judgement the advanced player has no direct role.

The aim of this paper is to define, for games within a broad class, the level of skill as a number S in the interval $[0,1]$. This number describes to which amount possible differences in expected gains between players are restricted by the chance elements within the game.

A *pure game of chance* will be a game for which S equals 0; a *pure game of skill* a game with S equal to 1.

A qualification of a specific game as a game of chance or as a game of skill in the context of the WKS, will then depend on the bound the legislator sets within the interval $[0,1]$, below which a game should be classified as a game of chance.

3 Basic games

In a basic game all participants face the same opponent which is called the bank. There is no strategic interaction between the players and the bank follows a predescribed and fixed strategy. Moreover, for each player the outcome of a basic game is one of the following two: either losing the stake-money or gaining a fixed multiple of the stake-money. According to the qualitative discussion of section 2 the following data should be sufficient to decide about the level of skill of a basic game:

p_0	the probability that a beginner wins
p_a	the probability that an average player wins
W_l	gains in case of a loss (i.e. minus the stake-money)
W_u	gains in case of a win (a multiple of the stake-money)

The difference $p_a - p_0$ provides information about the difference in skill between a beginner and an average player but does not reflect the consequences w.r.t. the monetary results as required by R2. Therefore we will take the average gains W_0 and W_a of a beginner and an average player, respectively, as a base for our analysis. Here, for a basic game,

$$W_0 = (1 - p_0)W_l + p_0W_u \quad (3.1)$$

and

$$W_a = (1 - p_a)W_l + p_aW_u \quad (3.2)$$

Clearly,

$$W_l \leq W_0 \leq W_a \leq W_u \quad (3.3)$$

A relative measure for the difference in skill can be obtained by dividing the difference $W_a - W_0$ by $W_a - W_l$ which measures the difference in skill between an average player and a fictitious worst³ player who, in a basic game, would always succeed in losing the stake-money. This leads to the quotient

³For a precise definition we refer to section 4

$$Q_a = \frac{W_a - W_0}{W_a - W_l} \quad (3.4)$$

This quotient satisfies the requirements R1 and R2, but it does not express the restrictive role of the chance elements as required by R3

For this reason we will compare Q_a with a similar quotient Q_u in which the role of the average player is taken over by a fictitious best player who, in a basic game, would always succeed in winning

$$Q_u = \frac{W_u - W_0}{W_u - W_l} \quad (3.5)$$

In particular, due to the restrictive role of the chance elements an average player can only realize W_a instead of W_u . Hence, a comparison between the relative measures Q_a and Q_u for the difference in skill w.r.t. a beginner does also justice to the requirement R3. This leads to the following definition of the level of skill S_a

$$S_a = \frac{Q_a}{Q_u} \quad (3.6)$$

In theory, expression (3.6) provides a method to rank basic games with respect to skill. This formula registers in a strictly defined way how the learning effect (R2) is restricted (R3) by the chance elements present in the game (roughly speaking in comparison to maximal gains and maximal losses). The choice for the expression given in (3.6) may seem rather arbitrary but this is not quite true since a definition of the level of skill has to fulfil several logical requirements. Some of these requirements are loosely formulated below

- * A level of skill should not be dependent on the unity of money (e.g. dollars or pounds) in which gains and losses are expressed
- * In comparing two games with about the same maximal gains/losses, the game with the higher learning effect should get the higher level of skill
- * In comparing two games with about the same learning effect, the game with the higher maximal gains/losses should get the lower level of skill
- * A small change in the rules of the game should result in only a small change in the level of skill

The formula given in (3.6) will not be the only one satisfying the requirements above and possibly a modification will be necessary if one asks for additional requirements. This, however, does not constitute a problem regarding the purpose for which this formula was developed.

In practice, however, difficulties will arise in determining W_0 and W_a since this requires specific assumptions on the behaviour of a beginner and an average player. Perhaps the less difficult problem of the two is how to characterize of a beginner. For example, in games with a structure like Roulette, choosing a purely random outcome seems a rather natural line of play for a beginner. Further, for games which are exploited in practice one can gain insight in how beginners behave just by means of observation. Moreover, a skilled analysis of the rules of the game might help from a normative point of view. In any case, for basic games, an exact specification of p_0 is not that important since the impact on the level of skill of a small change in p_0 is rather small. A more exact specification of p_a , however, is desirable.

How to determine the behaviour of an average player? A statistical approximation of p_a will be difficult to find since a precise definition of the population of average players is difficult to provide. Any particular choice of definition will be necessarily subjective and further, practical implementation will be time consuming and therefore costly. Moreover, for games which are not exploited (yet) a statistical approach is impossible.

To solve this problem we choose a relatively simple and pragmatic approach. It is a fact that (for finite zero-sum games) the expected gains of an *optimal*, i.e. most advanced, player are fully determined by the rules and structure of the game. So, in particular, these gains can be measured in an objective way.

Replacing the gains W_a of an average player by the gains W_m of an optimal player in expression (3.4) and subsequently also in (3.6) one obtains an objective and, in principle, operational criterium to determine the level of skill of a basic game.

More specifically, for a basic game, we define p_m as the probability that an optimal player wins and

$$W_m = (1 - p_m)W_l + p_m W_u \quad (3.7)$$

as the average gain of an optimal player.

Clearly it holds that

$$W_l \leq W_0 \leq W_a \leq W_m \leq W_u \quad (3.8)$$

Further we define

$$Q_m = \frac{W_m - W_0}{W_m - W_l} \quad (3.9)$$

as a relative measure for the difference in skill between an optimal player and a beginner, and

$$S = \frac{Q_m}{Q_u} \quad (3.10)$$

as the level of skill of the underlying game

Note that S is well-defined if the game is such that

$$W_l < W_m \text{ and } W_0 < W_u \quad (3.11)$$

which is an assumption only violated by trivial non-interesting games

Since $\frac{W-W_0}{W-W_l}$ is increasing in W we have that $S \in [0,1]$ and also that $S \geq S_a$. This means that in going from S_a to S there is an upward shift in the level of skill. Since this is the case for *each* game separately, one may expect that replacing W_a by W_m will have little effect on the mutual ranking of games with the level of skill. However, one should take this upward shift into account when determining an absolute bound on the level of skill below which a game should be considered as a game of chance.

Let us now consider the two extreme cases for the level of skill S . The case $S = 0$ boils down to $W_0 = W_m$ or, equivalently, to $p_0 = p_m$. This means that the probability of winning is the same for a beginner and a most advanced player. Consequently, the players can not exercise any influence on their chances. For this reason a basic game with $S = 0$ is called a pure game of chance. Analogously, a basic game with $S = 1$ is called a pure game of skill since this is equivalent to $W_m = W_u$ or, to $p_m = 1$. This means that the chance mechanism has no effect in the sense that an optimal player can always win.

As a numerical illustration we consider the following example

Example 3 1

Consider the two basic games determined by the following data

	game I	game II
p_0	0 050	0 45
p_m	0 054	0 47
W_l	-10	-100
W_u	180	100

table 3 1

For game I the probabilities of winning are low but the relative gains of winning (18 times the stake-money) are high. For game II in some sense the opposite holds: the probabilities of winning are high but the relative gains are low.

Our analysis w r t skill leads to results of table 3 2

	game I	game II
W_l	-10	-100
W_0	-0 5	-10
W_m	0 26	-6
W_u	180	100
Q_m	0 07	0 04
Q_u	0 95	0 55
S	0 07	0 07

Table 3 2

So, in spite of the seemingly different structure of the two games, game I and II have about the same level of skill if one expresses the qualitative requirements (R1), (R2) and (R3) in a formal way.

4 One-person games

In this section we extend the definition of the level of skill from basic games towards one person games like Roulette and Blackjack. In fact, basic games form a subclass of the one person games: the bank follows a fixed and predescribed strategy and there is no interaction with the other participants in the game. However, basic games are restrictive in the sense that they allow only two outcomes: losing the stake money or gaining a multiple of it.

In practice, even for relatively simple casino games a player (or team) has to choose between various actions, possibly all with different monetary implications. For this reason the analysis of one-person games can not be based on the probabilities of winning for a beginner and an optimal player and on the gains in case of a loss and win, simply because these concepts can not be defined in an unambiguous way.

Instead we will start out directly from the following four notions of expected gains:

W_l	expected gains of a fictitious worst player
W_0	expected gains of a beginner
W_m	expected gains of an optimal player
W_u	expected gains of a fictitious best player

Here, a fictitious worst (best) player must be thought of as a player who gets to know the outcome of the chance elements before actually playing and tries to lose (gain) as much as possible.

Due to the rules of a basic game a fictitious worst (best) player will always succeed in losing (winning) and thus the notions of W_l and W_u indeed generalize the corresponding notions for basic games.

The expected gains W_0 and W_m are fully determined by a description of the strategy of a beginner and an optimal player, respectively.

For one-person games with

$$W_l < W_m \text{ and } W_0 < W_u \quad (4.1)$$

we define, in a similar way as for basic games, the quotients Q_m and Q_u by

$$Q_m = \frac{W_m - W_0}{W_m - W_l}, \quad Q_u = \frac{W_u - W_0}{W_u - W_l} \quad (4.2)$$

and the level of skill by

$$S = \frac{Q_m}{Q_u} \quad (4.3)$$

We also adopt the same terminology: a one person game with $S = 0$ is called a pure game of chance, with $S = 1$ a pure game of skill.

Example 4.1 (American Roulette)

In American Roulette a player can choose between a great variety of actions. The main choice however is between "simple" (e.g. rouge/noir, pair/impair) or not (e.g. plein, cheval, carre). For precise details also on the calculations below, we refer to van der Genugten and Boim (1994).

Suppose one chooses not to play 'simple'. Then no matter what the precise action is, one's expected gains are $-\frac{1}{37}$, if we normalize the stake-money to 1.

Now suppose one chooses to play 'simple'. Then the winning outcomes never include "0", but if the outcome of a game is "0", one gets half of the stake money back. This leads to the expected gains of $-\frac{1}{74}$.

Consequently, an optimal player will choose "simple". Hence, $W_l = -1$ (a fictitious worst player will always succeed in losing the stake-money), $W_u = 35$ (knowing the outcome a fictitious best player will choose plein on this outcome) and $W_m = -\frac{1}{74}$.

What about W_0 ? One can discuss on the behaviour of a beginner in American Roulette.

If one assumes that a beginner chooses to play simple, then $W_0 = -\frac{1}{74}$ and $S = 0$.

If one assumes that a beginner chooses not to play simple, then $W_0 = -\frac{1}{37}$.

By substitution it follows that

$$S = Q_m/Q_u = \frac{-\frac{1}{74} + \frac{1}{37}}{-\frac{1}{74} + 1} \bigg/ \frac{35 + \frac{1}{37}}{35 + 1} \approx 0.014$$

We may conclude that American Roulette approximately is a pure game of chance.

Example 4.2 (Blackjack)

Blackjack as played in the Holland Casino's is extensively studied in van der Genugten (1993). Using the technique of simulation the following numbers were derived for the

case where the maximum stake is normalized to 1 and the minimum stake is 1 percent of the maximum

$$W_l = -0.89$$

$$W_0 = -0.056$$

$$W_m = 0.002$$

$$W_u = 0.54$$

The value of W_0 corresponds to the strategy 'mimic the dealer'. The values of W_l and W_u reflect the fact that the rules of the game are such that even if one knows the outcome of the chance mechanism i.e. one knows the precise order of the cards, one can not always succeed in winning or losing.

By substitution we find that the level of skill for Blackjack equals 0.16.

The Supreme Court in the Netherlands has explicitly qualified Blackjack as a game of chance. Hence, if one uses the above measure for the notion of skill, a consistency argument implies that each game with a level of skill below 0.16 should be considered as a game of chance w.r.t. Dutch legislation.

Example 4.3 (Golden Ten)

By means of a statistical analysis of data concerning the results of actual players (for details we refer to van der Genugten and Borm (1991)) it can be concluded that the level of skill for Golden Ten is somewhere between 0.20 and 0.30 depending on specific rules of the game.

5 Two-person zero-sum games

In a two-person game it is typically the case that the expected gains of a player depend not only on his own strategy choice but also on the strategy choice of the other player. In this section we will consider strictly competitive games in the sense that the gains of one player equal the losses of the other in each instance of the game. Put differently, the players exchange an amount of money specified by the outcome corresponding to one specific strategy-combination. This type of game is called a zero-sum game because the total gains of the players equal zero. For example, a Poker game as Seven Card Stud typically can be classified as a zero-sum game: apart from an admission fee, money is reallocated among the participants.

To study skill in games we will use an objective analysis of strategic behaviour (such as bragging) based on the assumption of rational players. This approach follows the lines set out by *game theory* – a mathematical theory of conflict situations which started out from the pioneering work of von Neumann and Morgenstern (1944) and led quite recently to the Nobel prize for economics for Nash, Harsanyi and Selten in 1994.

Consider an arbitrary two person zero sum game in which both player 1 and player 2 can choose from a finite number of actions. In this game we will allow a player to choose a mixed strategy, which provides a probability distribution on the set of actions. Then this game has a uniquely determined (minimax) *value* V in the sense that player 1 can choose a mixed strategy which guarantees him an expected payoff of at least V (independent of player 2's strategy choice), and player 2 has a mixed strategy which keeps his losses down to at most V . The strategies concerned are called minimax strategies and can be interpreted as describing optimal play.

Due to these facts we are able to extend the definition of the level of skill to an arbitrary (finite) zero sum game with two players 1 and 2.

Assume we are in the role of player 1. If we fix a specific minimax strategy of player 2 in the sense that we assume that player 2 will act accordingly, the original two person game can be reduced to a one-person game because player 1 faces a fixed but probabilistic environment, and the four basic notions of section 4 of expected gains (with player 1) are well defined

$$W_l(1) \leq W_0(1) \leq W_m(1) \leq W_u(1) \quad (5.1)$$

Note that, by definition $W_m(1)$ equals the value of the game

Analogously in the role of player 2, we assume a specific minimax strategy of player 1 to be given, which reduces the situation to a one-person game. This leads to the following notions of expected gains with player 2

$$W_l(2) \leq W_0(2) \leq W_m(2) \leq W_u(2), \quad (5.2)$$

where $W_m(2)$ equals minus the value of the game

To define the overall notion of skill in the game it is reasonable to average between the role of player 1 and player 2, implicitly assuming a player of the game to take both the role of player 1 and player 2 every two instances of the game

This leads to

$$\begin{aligned} W_l &= \frac{1}{2}(W_l(1) + W_l(2)) \\ W_0 &= \frac{1}{2}(W_0(1) + W_0(2)) \\ W_m &= \frac{1}{2}(W_m(1) + W_m(2)) \\ W_u &= \frac{1}{2}(W_u(1) + W_u(2)) \end{aligned} \quad (5.3)$$

and, clearly,

$$W_l \leq W_0 \leq W_m \leq W_u \quad (5.4)$$

Further note that, since $W_m(1) = -W_m(2)$

$$W_m = 0 \quad (5.5)$$

As before, we will assume that

$$W_l < W_m \text{ and } W_0 < W_u \quad (5.6)$$

Subsequently, we define

$$Q_m = \frac{W_m - W_0}{W_m - W_l} \text{ and } Q_u = \frac{W_u - W_0}{-W_u - W_l} \quad (5.7)$$

and

$$S = \frac{Q_m}{Q_u} \quad (5.8)$$

as the level of skill

The case $S = 0$ is equivalent with $W_m(1) = W_0(1)$ and $W_m(2) = W_0(2)$ and $S = 1$ with $W_m(1) = W_u(1)$ and $W_m(2) = W_u(2)$. Accordingly, we can adopt the same terminology as before. A two person zero-sum game with $S = 0$ is called a pure game of chance, while a game with $S = 1$ is referred to as a pure game of skill.

One final remark concerning the definition of the level of skill for two-person games is that it indeed generalizes the definition for one person games.

Consider a one-person game with player 1 as its only participant who receives or pays money from or to a bankholder. This game can be viewed as a two-person zero-sum game in which the role of player 2 is taken by the bankholder. By definition of a one person game, player 2 has no freedom in his choice of action and follows a prescribed strategy. Hence, $W_l(1)$, $W_0(1)$, $W_m(1)$ and $W_u(1)$ equal the corresponding one-person notions introduced in section 4 and the level of skill in the one person framework (cf. (4.3)) is given by

$$S(1) = \frac{W_m(1) - W_0(1)}{W_m(1) - W_l(1)} \bigg/ \frac{W_u(1) - W_0(1)}{W_u(1) - W_l(1)}$$

In the two person framework we also have to analyze the role of player 2. However, for this analysis we assumed optimal behaviour of player 1 and since player 2 has no freedom of strategy choice it follows that

$$W_l(2) = W_0(2) = W_m(2) = W_u(2) = -W_m(1)$$

Hence,

$$\begin{aligned} W_l &= \frac{1}{2}(W_l(1) - W_m(1)), W_0 = \frac{1}{2}(W_0(1) - W_m(1)) \\ W_m &= 0, W_u = \frac{1}{2}(W_u(1) - W_m(1)) \end{aligned}$$

and by substitution it follows that the level of skill S for the two-person game as defined by (5.8) equals $S(1)$

Example 5.1 (Two person Mini Poker)

Two-person Mini Poker is a game of cards played by two players named player 1 and player 2, and with three cards of which only the numeric value is important. These values are 10, 20 and 30, respectively.

Before playing both players donate \$ 1 to the stakes. After (re)shuffling the deck of cards each player is dealt one card. Each player knows (the value of) his own card but not the card of this opponent. Thus, the one card which remains in the deck is not shown to either of the players.

Player 1 starts the play and has to decide between "checking" or "raising". If he decides to check, player 2 has to check too and "showdown" follows. If player 1 decides to raise, he has to add one extra dollar to the stakes. Subsequently, player 2 has to decide between "folding" or "calling". If he decides to fold, player 1 gets the stakes. If player 2 decides to raise, he also has to add one extra dollar to the stakes and "showdown" follows. If the players have decided upon "showdown" both cards are compared and the player with the highest card value gets the stakes.

In this simple game of Poker both chance (dealing cards) and skill (with a good betting strategy) play a role. We will reach the conclusion that the level of skill S equals about 0.28.

First we will describe the possible strategies of both players. For each of the three possible cards, both player 1 and player 2 have to choose between two possible actions, leading to a total of 8 combinations. The so called pure strategies are represented in table 5.1 and table 5.2.

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
10	C	C	C	C	R	R	R	R
20	C	C	R	R	C	C	R	R
30	C	R	C	R	C	R	C	R

Table 5 1 Pure strategies of player 1

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
10	F	F	F	F	C	C	C	C
20	F	F	C	C	F	F	C	C
30	F	C	F	C	F	C	F	C

Table 5 2 Pure strategies of player 2

For example, the strategy 4 of player 1 should be interpreted as

"Check with 10, Raise with 20 Raise with 30",

and strategy 6 of player 2 as

"Call with 10, Fold with 20, Call with 30",

if you are called upon to act

Allowing for mixed strategies, each player may put a probability measure on his set of pure strategies. Mixed strategies will be denoted in the following way: the strategy $(\frac{1}{2}\underline{2}, \frac{1}{2}\underline{4})$ of player 1 will indicate that player 1 will choose the pure strategy 2 with probability $\frac{1}{2}$ and the pure strategy 4 with probability $\frac{1}{2}$. In the equivalent behavioral interpretation this boils down to

"Check with 10, Raise with 30, and with 20

Check with probability $\frac{1}{2}$ and Raise with probability $\frac{1}{2}$ "

In analysing the level of skill of this game of Poker we first need the strategy of a beginner in both the role of player 1 and player 2

W r t player 1 we find it reasonable for a naive player to check with 10 and to raise with 30. How to act with 20? Probably it is wise to vary between checking and raising, and using symmetry arguments, to check and raise with equal probability. In fact, the

same reasoning applies with player 2. If he is called upon to act, we assume he folds with 10, calls with 30 and folds and calls with equal probability with 20.

Using the notation introduced above this boils down to the beginner's strategy $(\frac{1}{2}\underline{2}, \frac{1}{2}\underline{4})$ for both roles.

The next step is to determine minimax strategies for both player 1 and player 2. To this aim we first calculate the 8×8 matrix which describes the expected payoff to player 1 for each possible pure strategy combination. The result is presented in table 5.3.

player 2 player 1	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
<u>1</u>	0	0	0	0	0	0	0	0
<u>2</u>	0	0	1/6	1/6	1/6	1/6	1/3	1/3
<u>3</u>	1/3	-1/6	1/3	-1/6	1/2	0	1/2	0
<u>4</u>	1/3	-1/6	1/2	0	2/3	1/6	5/6	1/3
<u>5</u>	2/3	1/6	1/6	-1/3	2/3	1/6	1/6	-1/3
<u>6</u>	2/3	1/6	1/3	-1/6	5/6	1/3	1/2	0
<u>7</u>	1	0	1/2	-1/2	7/6	1/6	2/3	-1/3
<u>8</u>	1	0	2/3	-1/3	4/3	1/3	1	0

Table 5.3 Two-person Mini Poker as a matrix game

More specifically, in table 5.3 the result of a specific strategy combination is a fair average over the outcomes with the six possible card combinations.

By iteratively deleting dominated strategies (e.g. strategy 1 of player 1 is dominated by strategy 2), the 8×8 matrix game of table 5.3 can be reduced to the simple 2×2 matrix game represented in table 5.4.

player 1 player 2	<u>2</u>	<u>4</u>
<u>2</u>	0	1/6
<u>6</u>	1/6	-1/6

Table 5.4 The reduced game

From table 5.4 it is readily derived that the value of the game is $\frac{1}{18}$ and the minimax strategies of the players are uniquely determined

$(\frac{2}{3}\underline{2}, \frac{1}{3}\underline{6})$ for player 1 and $(\frac{2}{3}\underline{2}, \frac{1}{3}\underline{4})$ for player 2

Note that $(\frac{2}{3}\underline{2}, \frac{1}{3}\underline{6})$ indeed guarantees a payoff of $\frac{1}{18}$ because this strategy leads to an expected payoff of at least $\frac{1}{18}$ against every pure strategy of player 2 (see table 5.5) and hence also against every mixed strategy of player 2

player 2	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
player 1								
$(\frac{2}{3}\underline{2}, \frac{1}{3}\underline{6})$	4/18	1/18	4/18	1/18	7/18	4/18	7/18	4/18

Table 5.5 Payoffs resulting from the minimax strategy of player 1

Similarly, one can check that the strategy $(\frac{2}{3}\underline{2}, \frac{1}{3}\underline{4})$ of player 2 guarantees this player an expected loss of at most $\frac{1}{18}$

For determining $W_l(1)$, $W_o(1)$, $W_m(1)$ and $W_u(1)$ we assume that player 2 behaves according to his unique optimal strategy $(\frac{2}{3}\underline{2}, \frac{1}{3}\underline{4})$

Since we have chosen $(\frac{1}{2}\underline{2}, \frac{1}{2}\underline{4})$ as a beginner's strategy for player 1, it follows from table 5.3 that

$$W_o(1) = \frac{1}{2} \cdot \frac{2}{3} \cdot (0) + \frac{1}{2} \cdot \frac{1}{3} \cdot \left(\frac{1}{6}\right) + \frac{1}{2} \cdot \frac{2}{3} \cdot \left(-\frac{1}{6}\right) + \frac{1}{2} \cdot \frac{1}{3} \cdot (0) = -\frac{1}{36}$$

Further, since $W_m(1)$ equals the value of the game, we have that

$$W_m(1) = \frac{1}{18}$$

To determine $W_l(1)$ and $W_u(1)$, we have to consider a fictitious worst and a fictitious best player in the role of player 1, respectively

By assumption, a fictitious worst (best) player will know the precise card combination (C_1, C_2) , with $C_i \in \{10, 20, 30\}$, $C_1 \neq C_2$, denoting the value of the card of player i , before having to decide upon checking or raising

Moreover, since we fixed the strategy of player 2 to $(\frac{2}{3}\underline{2}, \frac{1}{3}\underline{4})$ one can calculate for each

card combination what the expected gains of the two possible actions will be. For each card combination a fictitious worst (best) player will subsequently choose the action with minimal (maximal) gains. The numbers $W_l(1)$ and $W_u(1)$ then will be the fan average of the six corresponding gains. This computation, which is illustrated in table 5.6 leads to

$$W_l(1) = -\frac{1}{3} \text{ and } W_u(1) = \frac{2}{9}$$

	player 2 $\left(\frac{2}{3}2, \frac{1}{3}4\right)$						
card comb	(10, 20)	(10, 30)	(20, 10)	(20, 30)	(30, 10)	(30, 20)	
Check	-1	-1	1	-1	1	1	
Raise	0	-2	1	-2	1	$\frac{4}{3}$	
Min	-1	-2	1	-2	1	1	$W_l(1) = -\frac{1}{3}$
Max	0	-1	1	-1	1	$\frac{4}{3}$	$W_u(1) = \frac{2}{9}$

Table 5.6 The calculation of $W_l(1)$ and $W_u(1)$

In an analogous way one derives

$$W_l(2) = -\frac{5}{9}, W_0(2) = -\frac{1}{18}, W_m(2) = -\frac{1}{18} \text{ and } W_u(2) = \frac{1}{9}$$

Hence,

$$W_l = -\frac{4}{9}, W_0 = -\frac{1}{24}, W_m = 0, W_u = \frac{1}{6}$$

and, by substitution, the level of skill equals

$$S = 0.275$$

Example 5.1 is rather special in the sense that the minimax strategies of both player 1 and player 2 are uniquely determined. If this is not the case, the analysis requires a specific choice between all possible minimax strategies of a player. The minimax strategies we select will be called *learnminimax strategies*. They have a strong intuitive appeal because they are the outcomes of (a modification of) learning procedures as initially proposed by Brown (1949) and Robinson (1950), and elaborated on by Shaprio (1958) and Karlin (1959).

The following procedure describes how the learnminimax strategy q of player 2 is determined.

Step 1

- (a) Let $p_1 = \bar{p}_1$ be the strategy of a beginner in the role of player 1.
- (b) Determine the set Y_1 of pure strategies of player 2 which are optimal (i.e. best replies) against p_1 . Let $\bar{q}_1$ be the mixed strategy of player 2 that puts equal probability on the elements of Y_1 . Define $q_1 = \bar{q}_1$ as the first step learnminimax strategy of player 2.

Step 2

- (a) Determine the set X_2 of pure strategies of player 1 which are optimal against q_1 . Let $\bar{p}_2$ be the mixed strategy of player 1 that puts equal probability on the elements of X_2 . Define $p_2 = \left(\frac{1}{2}\bar{p}_1, \frac{1}{2}\bar{p}_2\right)$, using obvious notation.
- (b) Determine the set Y_2 of pure strategies of player 2 which are optimal against p_2 . Let $\bar{q}_2$ be the mixed strategy of player 2 that puts equal probability on the elements of Y_2 . Define $q_2 = \left(\frac{1}{2}\bar{q}_1, \frac{1}{2}\bar{q}_2\right)$ as the second step learnminimax strategy of player 2.

Step n

- (a) Define the set X_n of pure strategies of player 1 which are optimal against q_{n-1} . Let $\bar{p}_n$ be the mixed strategy of player 1 that puts equal probability on the elements of X_n . Define $p_n = \left(\frac{1}{n}\bar{p}_1, \frac{1}{n}\bar{p}_2, \dots, \frac{1}{n}\bar{p}_n\right)$.
- (b) Determine the set Y_n of pure strategies of player 2 which are optimal against p_n . Let $\bar{q}_n$ be the mixed strategy of player 2 that puts equal probability on the elements of Y_n . Define $q_n = \left(\frac{1}{n}\bar{q}_1, \frac{1}{n}\bar{q}_2, \dots, \frac{1}{n}\bar{q}_n\right)$ as the n th step learnminimax strategy of player 2.

with the strategy combination (p_n, q_n) by V_n it holds that $\lim_{n \rightarrow \infty} V_n = V$ (cf. Robinson (1950))

The learnminimax strategy q of player 2 is then defined by

$$q = \lim_{n \rightarrow \infty} q_n \quad (5.9)$$

In an analogous way, starting out from the strategy of a beginner in the role of player 2 the learnminimax strategy $\hat{p}$ of player 1 can be determined

Example 5.2

Reconsider the game of example 5.1. Suppose however that the game is not played with 3 cards, with values 10, 20 and 30, but with $n \geq 4$ cards, with values 10, 20, 30, ..., $10n$ instead. Then, using the concept of learnminimax strategies, the game can be analyzed along the same lines as in example 5.1.

For $n = 4, 5, \dots, 10$ the results are given in table 5.7

n	4	5	6	7	8	9	10
S	0.22	0.09	0.16	0.16	0.16	0.19	0.20

Table 5.7 The level of skill of two-person Mini-Poker with n cards

6 n -Person Zero-Sum Games

For a two person zero-sum game the players are direct opposites in the sense that the gains of one player equal the losses of the other in each instance of the game

Although in each instance of an n -person zero-sum game with $n \geq 3$ money is reallocated among the players, two particular participants can not be viewed as direct opposites in the sense that they should act in a way to oppose each other in the strongest sense. The mutual competition is of a more indirect and complex nature. Moreover, it is conceivable that subgroups of players will (possibly implicitly) cooperate during certain stages of the game to oppose the other participants in a more effective way. Put in game theoretic terms this means that coalitions (alliances) between players are formed. The situation is even more complex since coalitions might change during one instance of the game.

Since our aim is to measure the impact of chance elements in a game, we will not analyze an n -person game in all its strategic and cooperative details. To determine the level of skill for this type of games in a consistent way we make the assumption that in each instance of the game player i evaluates the situation as if he faces only one opponent, the coalition of all other participants which coordinates actions in such a way to oppose player i in the strongest sense.

These considerations boil down to the following definitions w r t the level of skill of an arbitrary zero sum game with player set $N = \{1, 2, \dots, n\}$ with $n \geq 3$.

Assume one is in the role of player $i \in N$. By assumption we consider the two person zero sum game between player i and the coalition $N \setminus \{i\}$ in our analysis of skill. If we fix a specific minimax strategy of "player" $N \setminus \{i\}$ in this two-person game, a one person situation is obtained and the following four basic notions of expected gains of player i are well-defined

$$W_l(i) \leq W_0(i) \leq W_m(i) \leq W_u(i) \quad (6.1)$$

As before, if the minimax strategy of player $N \setminus \{i\}$ is not uniquely determined, then we will use the learnminimax strategy of player $N \setminus \{i\}$ w r t the strategy of a beginner in the role of player i .

To define the general notion of skill, we average between the possible roles a participant can have

$$W_l = \frac{1}{n} \sum_{i \in N} W_l(i), W_0 = \frac{1}{n} \sum_{i \in N} W_0(i) \quad W_m = \frac{1}{n} \sum_{i \in N} W_m(i) \quad W_u = \frac{1}{n} \sum_{i \in N} W_u(i) \quad (6.2)$$

and, clearly,

$$W_l \leq W_0 \leq W_m \leq W_u \quad (6.3)$$

As before, we will assume that

$$W_l < W_m \text{ and } W_0 < W_u \quad (6.4)$$

Subsequently, we define

$$Q_m = \frac{W_m - W_0}{W_m - W_l}, \quad Q_u = \frac{W_u - W_0}{W_u - W_l} \quad (6.5)$$

and

$$S = \frac{Q_m}{Q_u} \quad (6.6)$$

as the level of skill

Note that this definition of the level of skill also can be adopted if $n = 2$. Obviously, this renders the same definition as provided in section 5. Finally, the case $S = 0$ is equivalent with $W_m(i) = W_0(i)$ for all $i \in N$, and the case $S = 1$ with $W_m(i) = W_u(i)$ for all $i \in N$. Therefore, an n -person zero-sum game with $S = 0$ is called a pure game of chance while a game with $S = 1$ is called a pure game of skill.

Example 6.1 (Three-person Mini Poker)

Three-person Mini Poker is a game of cards played by three players 1, 2 and 3 and four cards with numerical values 10, 20, 30 and 40.

The rules are similar to the rules of two-person Mini Poker. After donating 1\$ to the stakes each player is dealt one card. Player 1 starts the play and has to decide between checking or raising. If he checks, player 2 and 3 have to check too and showdown follows.

If he raises then first player 2 has to decide between folding or calling, after which player 3 has to make the same choice. If a player raises or calls, he has to add one extra dollar to the stakes. If both player 2 and 3 fold the stakes go to player 1. Otherwise, showdown between the two or three players left follows. If showdown occurs, the player with the highest (value of his) card gets the stakes.

We will not analyze this game in all its details but only highlight some important aspects. In principle player 1 can choose between $16 = 2^4$ possible (pure) strategies. For each of his four possible cards he can choose between checking or raising. For the strategy of a beginner in the role of player 1 we take the pure strategy of Table 6.1

Card of 1	10	20	30	40
Action	C	C	R	R

Table 6.1 Player 1's strategy as a beginner
(C = Check, R = Raise)

Player 2 is only called to play if player 1 raises. In that case he has to decide between folding or calling. So, in principle, also player 2 can choose between $16 = 2^4$ possible pure strategies because his decision might depend on his card.

For a beginner in the role of player we take the choices of table 6.2

Card of 2	10	20	30	40
Action	F	F	C	C

Table 6.2 Player 2's strategy as a beginner
(F = Fold, C = Call)

For player 3 the situation is a bit more complicated in the sense that he could let his choice between folding or calling depend not only on his card but also on the action taken by player 2. This implies a total of $256 = 2^8$ pure strategies. For a beginner in the role of player/3 we take the strategy represented in table 6.3

Card of 3	10	10	20	20	30	30	40	40
Observed action of 2	F	C	F	C	F	C	F	C
Action of 3	F	F	F	F	C	C	C	C

Table 6 3 Player 3's strategy as a beginner
(F = Fold, C = Call)

Note that in the game of player 1 against the coalition $\{2, 3\}$ which we use in our analysis of skill player 1 can choose between the same 16 pure strategies, while the coalition $\{2, 3\}$ can choose between 4696 ($=16 \cdot 256$) pure strategies. For the corresponding two-person game it turns out, that the (coordinated) minimax strategy of 'player' $\{2, 3\}$ is essentially unique and given in Table 6 4 (with obvious notation)

Card of 2	10	20	30	40				
Action of 2	F	F	$(\frac{3}{4} F, \frac{1}{4} C)$	C				
Card of 3	10	10	20	20	30	30	40	40
Observed action of 2	F	C	F	C	F	C	F	C
Action of 3	F	F	F	F	$(\frac{3}{4} F, \frac{1}{4} C)$	F or C	C	C or F

Table 6 4 The minimax strategy of coalition $\{2, 3\}$

In this two person game there is also a unique minimax strategy for player 1 see table 6 5

Card of 1	10	20	30	40
Action of 1	C	C	$(\frac{3}{4} C, \frac{1}{4} R)$	R

Table 6 5 The minimax strategy of player 1

The value of this game is $\frac{1}{24}$. Following a similar analysis as in example 5.1 we find
 $W_l(1) = -0.500$, $W_0(1) = -0.125$, $W_m(1) = 0.041$ and $W_u(1) = 0.375$

Moreover, proceeding along the same lines and using learnminimax strategies (for details we refer to van der Genugten and Borm (1994))

$$W_l(2) = -0.573, \quad W_0(2) = -0.028, \quad W_m(2) = -0.028, \quad W_u(2) = 0.140$$

$$W_l(3) = -0.294, \quad W_0(3) = -0.041, \quad W_m(3) = -0.021, \quad W_u(3) = 0.063$$

and, consequently

$$W_l = -0.456, W_0 = -0.064, W_m = -0.002 \text{ and } W_u = 0.193$$

Hence for the level of skill S we find that

$$S = 0.35$$

7 A classification of games

In this section we present a global classification of some well-known round games with the level of skill. The corresponding order is partly based on the (objective) analysis introduced in this paper and partly on a (more subjective) comparison between the various possibilities of exercising skill in the underlying games.

The main results are summarized in the following overview.

Pure games of chance [0]

Roulette, Craps, Tiente et Quarante [0 0]

Blackjack [0 16]

Golden Ten [0 20]

Schnapsen

Draw Poker

Texas Hold'Em

Seven Card Stud

Bridge

Chess, Checkers

Pure games of skill [1]

The ordering between the three variants of Poker is based on the following considerations. In principle all variants allow a rational player to exercise skill in two ways:

- with knowledge on the statistical probabilities with the final hands of the players,
- with knowledge on a controlled strategy of bracing.

In Draw Poker, the second aspect is present in a prominent way but the first aspect comes forward only in the relatively simple form of evaluating the possibilities of your own hand without knowing any other cards. In both Texas Hold'Em and Seven Card Stud the aspect of bracing is less prominent but the first mentioned aspect of counting and estimating probabilities is essential (in Seven Card Stud to a larger extent than in Texas Hold'Em) to raise one's expected gains.

Interestingly, Dutch jurisprudence has classified Golden Ten as a game of chance while according to Austrian jurisprudence Schnapsen is a game of skill. If we combine these judgements, the decision bound between games of chance and games of skill should be laid between Golden Ten and Schnapsen.

Of course the classification given above should not be interpreted as the final order in which no shifts are possible. A further analysis in particular with more sophisticated variants of Poker than the ones discussed in section 5 and 6, is needed to further sharpen and quantify the classification.

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Mobile

EXHIBIT G

Poker Superstars: Skill or Luck?

Similarities between golf—thought to be a game of skill—and poker

Rachel Croson, Peter Fishman, and Devin G. Pope

“Why do you think the same five guys make it to the final table of the World Series of Poker every year? What are they, the luckiest guys in Las Vegas?”

—Mike McDermott (Matt Damon in the 1995 film *Rounders*)

The popularity of poker has exploded in recent years. The premier event—the World Series of Poker Main Event, which costs \$10,000 to enter—has increased from a field of 11 in 1971 to 839 in 2005 and to 619 in 2006. Besides slot machines, poker can frequently be found on television, with such ESPN Fox Sports the Travel Channel, and the Cartoon Network. These tournaments consistently receive high television ratings.

Poker also has garnered the attention of many influential academics. It served as a key inspiration for the historical development of game theory. John Von Neumann and Oskar Morgenstern, the authors of *The Theory of Games and Economic Behavior*, was motivated by poker. In the text, they described a card game called *crust* (poker). Other famous mathematicians (e.g., John Nash and John Harsanyi) studied and wrote about poker.

Given its popularity and academic interest, the legality of gambling is a question in particular in most countries of gambling. In the United States, and other countries, include poker. In the United States, each state has the authority to decide whether it is legal to play poker for money, and the regulations vary significantly. In Indiana, poker for money is legal only in designated casinos. In Texas, poker for money is legal only in private homes. In Utah, poker for money is not legal. But the popularity of poker for money has created some questions about the legitimacy of states to regulate its activity. A the national level, the US Department of Justice recently stated in the Federal Wire Act of 1961 that state law would make online gambling illegal. In reaction to sports betting, in 2006, the US Fifth Circuit Court of Appeals has previously ruled that interstate commerce is not a federal jurisdiction.

That said, there are federal arguments on both sides of the regulation debate. Those in favor of regulating argue that poker is a partially game of chance, such as roulette or craps, and hence should be regulated in an manner similar to those games. Those in favor of lifting regulations argue that it is primarily a game of skill, such as chess or go, and that it could not be regulated as such. So is professional poker a game of skill or luck?

Several star poker players have repeatedly performed well in high stakes poker tournaments. While this suggests skill, it is difficult to draw conclusions without

many poker tournaments have these stars participated in which they did not do well. Furthermore, even if poker is a game of skill, among top players were random, we would expect a few of these stars to do well in multiple tournaments.

We use data from high stakes poker and golf tournaments and identify the similarities which highly skilled players are likely to possess. We use golf as a comparison group, as it is an example of a game thought to be primarily skill based. If the data from golf and poker have many similarities, especially in terms of repeat winners, then data could suggest poker is equivalent to a game of skill.

Data

In a large poker tournament, individual players buy in and receive a fixed number of chips in exchange. These chips are valuable only in the context of the tournament; they cannot be used elsewhere in the casino or exchanged for money. Players are randomly assigned to tables, typically including one professional dealer. Players remain in the tournament until they lose all their chips, at which point they are eliminated. Some tournaments include a rebuy option where players can pay a second entry fee and receive more tournament chips.

Other tournaments include an add-on option where they can pay a small extra fee, often equal to the rebuy, and receive more tournament chips. At some point during the tournament, these options disappear. As players lose their chips, they are forced to receive a roughly equal distribution of players per table.

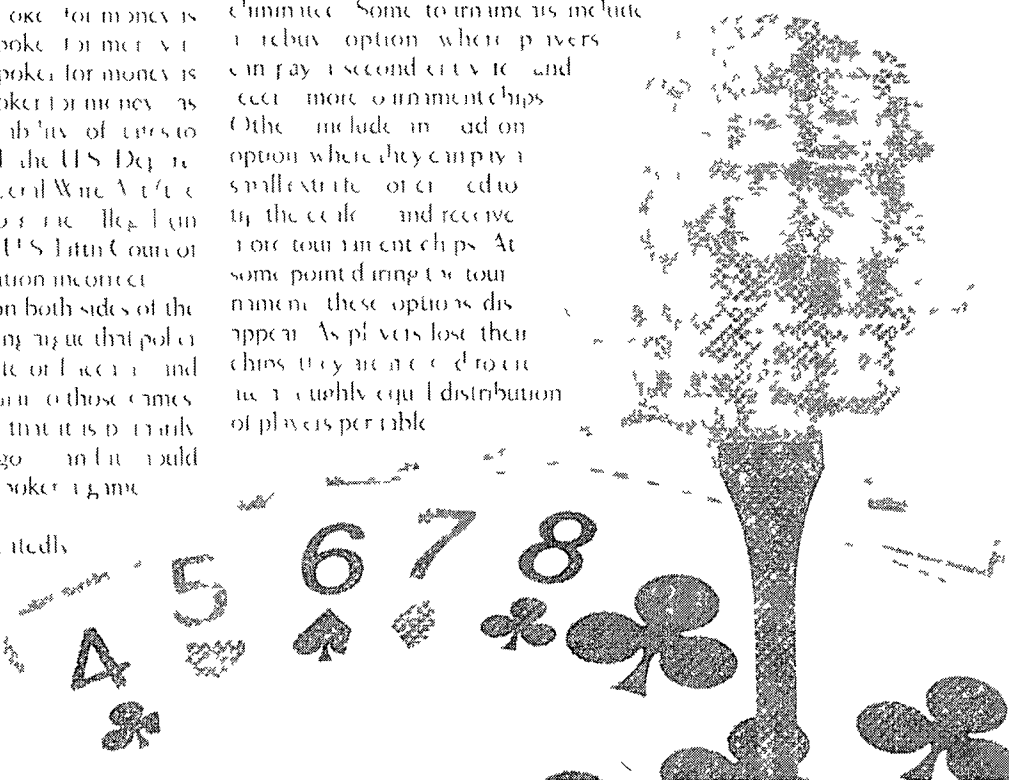


Table 1— Descriptive Statistics

	Poker	Golf
% with 1 top 18 finish	70.1	24.3
% with 2 top 18 finishes	14.7	14.7
% with 3 top 18 finishes	6.9	18.9
% with 4 or more top 18 finishes	8.3	42.2
Number of tournaments	81.0	48.0
Number of individuals	899.0	218.0

Note: Poker summary statistics represent data from all high stakes (\$500 or greater buy in limit and no limit Texas Holdem tournaments) ever offered (65) from the World Series of Poker, the World Poker Tour, or World Poker Open. The 899 players represent those who finished in the top 18 of at least one of these 81 tournaments. The golf summary statistics represent data from all Professional Golfers Association tournaments in 2005. The 218 players represent those who finished in the top 18 of at least one of the 48 tournaments.

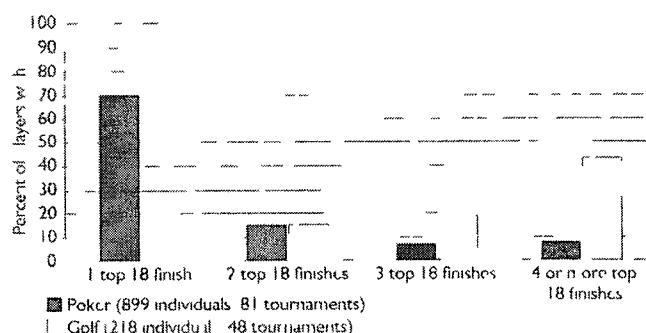


Figure 1 Descriptive statistics

Identifying skill discrepancies among top poker players is complicated by the lack of precise tournament data. The lists of entrants for large poker tournaments are not available, and outcomes are typically only recorded for players who finish in the final two or three tables. Thus, it is not possible to know the total number of tournaments for which a given player has participated. In our data, we have 899 poker players who finish in the top 18 of a high stakes tournament at least once. The average tournament has between 100 and 150 entrants. Thus, a given person has an 11%–17% chance of entering a given tournament. Due to the lack of data on tournament attendance, it is impossible to know if players who frequently show up at final tables are more skilled than other players, or if they simply play in more tournaments.

To circumvent this selection issue, we employ a strategy that focuses on individuals who finished in the top 18 in high stakes tournaments (the two final tables). As data are typically available for all players who finish in the top 18 of a given tournament, we can overcome the selection issue by focusing on just these individuals. Thus, while we are unable to identify the number of tournaments an individual has played in, we are able to identify the number of times a player has played in a tournament of 18 players. We can analyze whether certain players consistently outperform other players conditional on being in the top 18, or whether the outcomes appear to be random.

We use data from limit or no limit Texas Holdem tournaments that are part of the World Series of Poker, World Poker Tour, or World Poker Open. Texas Holdem is a variant of poker in which all players are given two personal cards, and there are five community cards that apply to all players' hands.

The goal is to make the best five-card hand from the two personal cards and the five community cards. Betting occurs after each player receives his or her cards, again after the first of the five community cards are revealed, again after the fourth community card, and finally after the fifth community card. In limit Texas Holdem, the bet amounts each round are fixed. There is no limit Texas Holdem, a player can wager as many chips as he or she wants above a set minimum wager.

Using information gleaned from *pokerpages.com*, we record outcomes for the top 18 finishers of tournaments since 2001 that had at least a \$3,000 buy-in (or a small number of tournaments after 2001, and for all tournaments prior to 2001, the top 18 finishers were not recorded or not available and thus were not included in the analysis). A total of 81 separate poker tournaments fit these criteria. Table 1 presents summary statistics for the poker players in these tournaments.

We similarly collect data for all 48 Professional Golfers Association (PGA) tournaments in 2005. We record the name and final rank of each player who finished in the top 18 in each tournament. In golf, there are often ties. We record an average rank for these situations (i.e., if two players tie for third place, each player is given a rank of 3.5). Table 1 provides summary statistics for the golf players in these tournaments.

Empirically, we are interested in using information about past performance to predict the outcome of individuals in a given tournament conditional on them being among the final 18 contestants. Our main outcome variable will be the individual's rank in this tournament of 18 (1 to 18), with lower ranks being better. If we are able to predict an individual's rank in this tournament of 18 based on their past performance, this implies that outcomes are not random. We also will compare our predictive ability between golf and poker (see Figure 1).

Methods

We fit the data using ordinary least squares regression. Thus, given standard notation, the coefficients (β) are estimated such that $\beta = (X'X)^{-1}X'y$. The variance of this estimator is $(X'X)^{-1}X'\sum \epsilon_i\epsilon_i'X^{-1}$ where $\sum = F(y - Fy)(y - Fy)'$. Typical OLS estimation assumes homoscedasticity and the independence of error terms across observations. These assumptions imply that $\sum = \sigma^2I$, thus the variance of the OLS estimator can be represented as $(X'X)^{-1}\sigma^2$.

One might worry that one or more of these assumptions will fail in our case. For example, in many cases, we have observations for the same player across different tournaments in our data set. Thus, the error terms on these observations may not be independent. While we present typical OLS coefficient estimates, we adjust the standard errors in our model to account for the possibility of heteroskedasticity and that the error terms on observations from the same player may not be independent of each other. In other words, the standard errors we present are robust and clustered at the player level. Mathematically, this implies that, instead of assuming $\sum = \sigma^2I$, we allow $\sum$ to have off-diagonal terms that are not zero and to have diagonal terms that are different from each other. These terms are simply represented by the appropriate products of the residuals $(y_i - Fy_i)(y_j - Fy_j)$ when calculating the standard errors on our OLS coefficients. The classic 2000 econometric text by Jeffrey Wooldridge applies an even more detailed description of this process.

Table 2—OLS Regressions with Robust Standard Errors Rank (1st–18th)

	Poker			Golf		
	(1)	(2)	(3)	(4)	(5)	(6)
Experience	0.781 [.278]*			-1.420 [.382]*		
Finished		0.225 [.098]*			0.222 [.089]*	
Previous Rank			0.203 [.050]*			0.033 [.056]
Constant	9.810 [.173]	9.707 [.166]*	7.189 [.490]	10.270 [.331]*	9.743 [.253]	8.566 [.595]
R Squared	0.5%	0.9%	2.8%	1.6%	1.2%	0.1%
Observations	1494	1494	595	811	811	586

[illegible]

Our baseline econometric specification is $y_{itk} = \alpha + \beta_1 x_{itk} + \epsilon_{itk}$, where Rank is the rank at the end of a tournament for player i and x_{itk} is a measure of previous tournament performance for player i . We will examine three measures of previous tournament performance to see how well they explain current ability. Our first is a player's career experience and it records whether a player has made it at least five times in the top 18 of the tournament prior to being on those ranks we are predicting. That is, x_{itk} is the value of either 0 or 1. Our second measure is called df_{itk} and it records the number of times a player has previously finished in the top 18. (Another tournament prior to the one whose result we are estimating, this variable can equal 10 for sake and 0 to 1 for all.) Our third measure is called cr_{itk} and it records the career rank of a player in all previous tournaments. That is, the player finishes in the top 18

To assess the sensitivity of results to the chosen model, the analysis is repeated using an ordered probit model regression format designed to handle situations where the dependent variable has several discrete categories ordered in some way (such as rank). In comparison with least squares, the ordered probit is more robust but also more computationally intensive. Results from the ordered probit are the same as those we find using OLS. We present OLS coefficients in this paper for purposes of clarity and ease of interpretation. Results from the ordered probit are available from the authors.

We will conduct two types of statistical tests. The first test uses only the poker data and we look for differences in poker player. We would expect the coefficient on experience, wins, and previous rank to be statistically significant. This would indicate the condition on making that claim is one that is not influenced by previous tournament performance. However if one player is more skilled than others we would expect to find statistically significant and negative coefficients to experience and finishes. In the above specifications, past experience and success should be associated with a reduction in rank. If we have to do both previous and most coefficient in previous and a higher rank in previous tournament should be associated with a higher rank in the one.

A second test we use is comparison of the skill between golf and poker tournaments. We compare the size of the coefficients of interest. If golf has statistically larger coefficients than poker in absolute value, then there is more skill in golf than in poker. If the coefficients in golf are not statistically different than the same poker, we will conclude that poker has some amount of skill and luck is not as important.

Results

Table 2 presents the results. Robust standard errors are presented in brackets below the coefficient values. Our analysis involves simply looking at the "poke" data and identifying whether previous success predicted current success or clearly it does. The coefficient on experience (whether a player has previously finished in the top 18) is significantly and negatively correlated with a player's rank in the given tournament suggesting an increase in finishing (—8 ranks per 01). The coefficient on finishes (the number of times a player has previously finished in the top 18) is significantly and negatively correlated with a player's rank in the given tournament suggesting a decrease in finishing as well (—22 ranks per 05). The coefficient on previous rank (the average rank for the player in previous tournament finishes) is significantly and positively correlated with a player's rank in the given tournament (20 rank/01). The results clearly suggest poker is at least somewhat a game of skill. But how much skill? A comparison with golf can illustrate the question. If we compare the estimated coefficients on the experience variable, we find that the coefficient is not statistically different from each other ($t = 1.5$, $p = 0.5$). Similarly, there are no statistically significant differences between the estimated coefficients on finishes ($t = 0.10$, $p = 0.5$). For the final measure of previous performance, previous rank, the coefficient for poker is statistically larger than the coefficient for golf ($t = 2.24$, $p = 0.5$).

Figures 2a and 2b show two of the eight tie ships graphically. Figure 2a depicts the average rank assigned to a tournament as a function of finishes. Figure 2b depicts the average rank in a tournament as a function of percentage of finish. Both show the average rank as well as a linear fit of the data. The figures

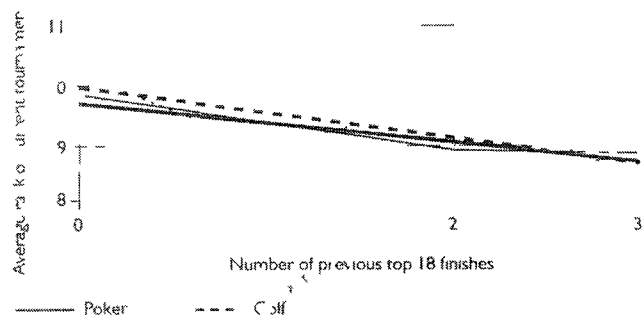


Figure 2a Relationship between rank and number of previous top 18 finishes

Note: This figure depicts the average rank for poker and golf players by the finish in the top 18 for a given poker or golf tournament. The number of previous top 18 finishes (in this analysis) is the total number of previous top 18 tournament finishes for each player in our sample (0, 1, 2, 3, or 4 or more). The straight lines indicate linear fits of the data. Note that the slope of the lines is not exactly the same as the slope from the regressions as we have simplified the x-axis to make the relationship display.

visually depict our regression results from Table 2. Both poker and golf show a significant negative relationship between current rank and finishes. Poker, but not golf, shows a significant positive relationship between current rank and previous rank.

Finally, the R^2 values for the regression we report for both poker and golf are extremely low, ranging from 1%–2.8%. This suggests that, in general, it is very difficult to predict the ordering of a given set of poker or golf players who finish in the top 18 of a given tournament. Although our measures of previous performance are statistically significant predictors of current performance, they still only explain a small amount of the overall variation that exists in poker and golf, as one might expect to be the case in many sports and games, especially those with explicit randomization such as poker.

Discussion and Conclusion

We present evidence of skill differentials among poker players finishing in one of the final two tables in high stakes poker tournaments. We show two main results. First, there appears to be a significant skill component to poker. Previous finishes in tournaments predict current finishes. Second, we find the skill differences among top poker players are similar to skill differences across top golfers.

While our analysis provides evidence for skill being a factor in poker, significant regression coefficients, the current evidence needs further support from other analyses, primarily because of the small R^2 value. Thus, this analysis should be considered a first attempt to answer this question, and we hope this article will stimulate further efforts.

A second limitation to the present study is that models do not specifically account for repeated observations from some players in the analyses and, in fact, results within a tournament for different players are correlated. The aspects of the data would impact standard errors in analyses, but perhaps not too strongly. First, most players play in just a few tournaments so they are used for many times in poker. This is especially true. Second, few pairs of players appear in the same pairs of tournaments. Thus, the amount of information that could be learned by modeling rank for pairs of players is quite limited. This is especially true in poker.

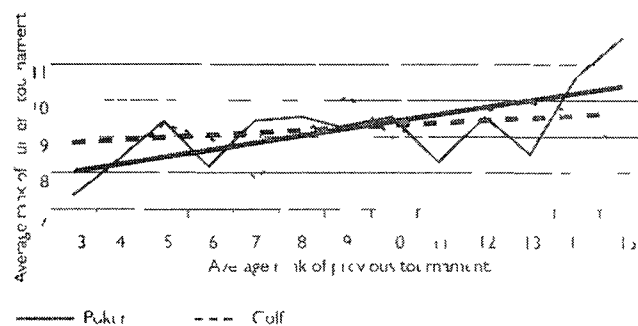


Figure 2b Relationship between rank and average previous rank

Note: This figure depicts the relationship for poker and golf players between the finish in the top 18 for a given poker or golf tournament. The average rank of previous tournament (previous rank in the analysis) is the average rank of the individuals who finish in previous tournaments in which the player finished in the top 18. The straight line indicates linear fits of the data.

While we provide evidence for the impact of skill on poker outcomes, we cannot provide insight regarding the cause of this result. We do not know, for example, if poker players are skilled because they are good at calculating pot odds and probabilities, good at reading the opponents' tells, or if physical cues that signal the strength of a player's hand, or a player's bluffing or intimidation of the rest of the table. Similarly, we cannot identify the source of skill differentials in golf. Are these due to better driving skill, better putting skills, or better strategies? Further research (with more data) is clearly needed to identify which skills are most important. However, our evidence argues that at least some portion of poker outcomes are due to skill, and we hope this will illuminate the ongoing controversy debate in the United States and elsewhere. 

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EXHIBIT H

Gerard Cohen's consultation
on the scientific validity of Professor N. ALON's consultation
"Poker, Chance and Skill"

I INTRODUCING GERARD COHEN

Gerard Cohen was born in PARIS in 1951 on the 25th of August. His full Curriculum Vitae is featured in Appendix 1.

He holds a post-graduate diploma from the National School of Telecommunication (ENST), is a state qualified doctor in Science (Mathematics) and a lecturer at the ENST.

Apart from the ENST, he taught in many institutions, in particular at the University of Paris in the 6th arrondissement to post-graduate pre-doctoral students as well as in mixed post-graduate lectures in Paris in the 6th arrondissement and in the ENST.

He heads up the 'Mathematics for IT and Networks' team comprising of 10 lecturers, researchers and 6 doctorate students.

The subjects he teaches are mainly the following:

- Theory of information and probabilities
- Encoding, Complexity and Cryptography

He's a member of various scientific societies including the French Mathematical Society, the American Mathematical Society, the Who's who in the World and he's a Senior member of the IEEE.

Gerard Cohen is the president and founder of the IEEE chapter on Information Theory.

Expert in encoding, information theory, complexity and cryptography, he is the author or co-author of 3 books, of over 100 publications in international journals and he has directed around fifteen theses.

A complete list of his work can be found in appendix 1.

The large number of industrial contracts and of consultations (SNCF, Gemplus, Canal plus, Sagem...) as well as the amount of public financing (CNRS bi-national projects) he has been entrusted with and his participation in the European Projects of Excellence (see Appendix 1) are all testimonials of his expertise in 'error detection'.

and correction' and cryptography

II THE QUESTION

The question posed is the following what is the scientific validity of the conclusions drawn in Professor N Alon's consultation on the subject of 'Poker: Chance and Skills'?

This consultation, presented in its entirety in Appendix 2 concludes in particular the following

“By analyzing simplified versions of poker we have seen that although like essentially almost any other game there is some influence of chance in poker the game is predominantly a game of skill”

III The expert's view

If Poker was a game of chance only a beginner or a computer would play just as well as a champion (i.e. there would not be any champions) There is therefore undeniably **a part** of know-how in the game

The challenge here is to show that Poker is **primarily** a game of skill

However there is no mathematical theory or even quantification of the notion of skill Professor Alon therefore has to call upon a subtle blend of theorems and arguments to support his demonstration

In particular in order to be able to formalise the problem N Alon makes use of simplified yet fairly realistic versions so that 'continuity' arguments play a role and the real problem 'inherits' the properties so obtained

The game of poker being of nil sum (what is won by some is lost by others, except for the various fees), the relevant criterion adopted is that of **the hope of positive gain**

Note however that the aim of the study differs from those of the usual Game Theory

where the best strategy is sought in the context of optimal game. Here we want to demonstrate the impact of **a player's superior skill on his expected winnings**. After a brief description of the main version of the game, a few calculations of hand probability are carried out. Already at this stage the influence of the player's ingenuity is shown: probability calculations and hand ranking, although basic, cannot be done in real time by a human being; the skill here consists in estimating one's position with a blend of estimation and intuition (as a Chess champion would). At this stage, superior calculation methods such as those done by a computer could still substitute this skill.

Then begins the demonstration itself, based on simple variations of the **importance of know-how, as opposed to not-only chance but also simple memory or the ability to make calculations**.

Initially we estimate the average advantages in rounds involving two opponents of the most skilled player 'A' over the other player 'B' (propositions 4.1 and 4.2). In this scenario, B is "one strategy behind" of A and A (Alice) is aware of it.

In the first case study, B (Bob) plays in a random manner and Alice (knowing it) maximises her winnings prospects: proposition 4.1 determines this maximum value as well as the distribution in relation to this average.

In the second case study, Bob has adapted and plays in the same way as Alice did in the previous variant: there again, Alice's optimal strategy is calculated in proposition 4.2 where the winnings average and dispersion are obtained.

However, in accordance with intuition, A's average winnings reduce as both players progress, based on the realistic assumption that Bob is always one strategy behind from Alice. In both the first two specific examples, the standard average winnings are initially worth $1/8$ (instance 4.1), then they decrease to $1/16$ (instance 4.2) in order to prevent the winnings from becoming nil. A has to **bluff**.

Later the study broadens to several opponents. The adopted model is legitimate since the purpose is to demonstrate the influence of skill, assumes that A is the only expert and that the other opponents play randomly. The analysis carried out in 4.4 shows that A's strategy must adapt to the number of players (by betting less often and with a hand that is stronger as this number increases) and it quantifies numerically this adaptation: the probability of A betting thus decreases by $1/2$ with 2 players (A and B), by 0.465 with 3 players and by 0.315 for 10 players.

Then a demonstration is made (in section 4.4) that the skilled player must take into account in his or her strategy the position and the order of players around the table. This is still the analysis of a simplified version but in which the notion of compulsory betting is integrated. In the numerical variant chosen by the author for illustration purposes, which is easily adaptable, instance 4.3 shows the hand minimum value to bet as well as the expected winnings and their distribution.

In addition making use of the Central Limit Theorem (Law of Large Numbers) Noga Alon provides an analysis much more subtle than the simple calculation of expected winnings providing a sufficient number of games is played a skilled player's winnings will follow the trend of normal law of which moments can be calculated (average, but also variance, etc) This means that expected winnings can be precisely measured thanks to the Normal law distribution function The numerical convergence based on the number of played rounds is quick, it is thus possible to estimate precisely not only A's expected winnings but also B's probability of winning, the probability of A's maximum winnings being a certain amount in n rounds etc

Finally a few observations convincingly conclude that the real game much more complex, requires even more know how

My conclusion is that I confirm the validity of Professor Alon's demonstration

Skill has a predominant part to play in Poker

Prof Gerard Cohen

IV APPENDICES

APPENDIX 1 CURRICULUM VITAE AND LIST OF GERARD COHEN'S PUBLICATIONS

APPENDIX 2 N ALON'S CONSULTATION POKER, CHANCE AND SKILL

EXHIBIT I

Expert Opinion

Expert's name Prof Zvi Gilula

I the undersigned, Prof Zvi Gilula, have been asked to express my professional expert opinion with regard to the question that has been set forth below

The details of my education and my professional experience are as follows

Details of my education and course of my academic employment

1978 Ph D in Statistics, Hebrew University of Jerusalem

1978-1980 Post-doctoral study, University of Chicago

1981-1986 Faculty member with the rank of Lecturer in Statistics Hebrew University, and Visiting Professor with the rank of Assistant Professor and Visiting Associate Professor, University of Chicago

1986-1990 Tenured faculty member with the rank of Senior Lecturer in Statistics, Hebrew University, and Visiting Professor with the rank of Full Professor, University of Chicago

1995-today Full Professor of Statistics, Hebrew University, and Adjunct Full Professor, University of Chicago

2005-today Head of the Department of Statistics, Hebrew University

Special international recognition of professional achievements

1989 Elected fellow of the American Statistical Association

1989 Elected fellow of the Royal Statistical Society

Details of my experience

1986-2007 Associate editor, *Journal of the American Statistical Association* – one of the four leading periodicals in the world of statistics

1982-today Permanent or temporary consultant to a large number of companies and projects, including medical studies in cardiology, gastroenterology, neurology, dermatology and ophthalmology, Hadassah Hospital (Jerusalem), Shaare Zedek Hospital (Jerusalem), Billings Hospital (Chicago)

Consultant to drug companies developing new drugs Hoffman La Roche, Solvay, Pfizer, Agis, Teva

Statistical consultant to various companies in the areas of marketing statistics, consumer loyalty to brands, client satisfaction TNS-Teleseker (Israel), Forteligent (USA), Navistar (USA), Midas Mufflers (USA)

Consultant to the Israel Association of Advertising Companies and Israel Association of Advertisers

Consultant to the Israel Rating Committee

Consultant to the Israel Second Authority for Television and Radio

Cardinal expert opinions in legal proceedings - Samuels v Israel Ministry of Health, Jerusalem Municipality and Rafa Ltd , Navistar v Ford

I have been asked to express my expert opinion on the following subject

Is winning in a multiple-player tournament of the Texas Hold'em card game (hereinafter "**Texas Hold'em**") more dependent on chance than on understanding or skill?

Even before presenting the assumptions which underlie my expert opinion and my complete professional analysis, I shall begin by stating that I would like to clarify that my definitive reply is that a Texas Hold'em tournament is a game wherein winning is significantly more dependent on the participants' strategic capabilities and understanding than on luck. The probability that an insightful player with strategic skills will win a Texas Hold'em tournament, in comparison with a player who does not have these skills, is much higher than 50%

Following is my expert opinion

The assumptions which I used in my expert opinion

- 1 The objective of a Texas Hold'em tournament is not to win a single hand, but to accumulate the maximum number of chips and to win the entire tournament. This is because, at the end of the tournament, the prizes are only given to the players ranked in the first places in the entire tournament. In the course of such a tournament, each player is required to play a large number of hands.
- 2 A Texas Hold'em tournament is played in the following manner
 - 2.1 Each participant in the tournament pays an identical amount as an entry fee (the "**buy-in**"), and against that amount, receives an identical quantity of chips. The participant cannot purchase additional chips during the

tournament, nor may he resign during the tournament and cash in the chips he still holds. Accordingly, a participant in the tournament does not have any additional monetary expenditure over and above the initial entry fee.

2.2 The amount of the prizes for the tournament winners is determined in advance, as a function of the player's final ranking in the tournament, relative to all the other participants.

2.3 In addition, all of the participants in the game play only against each other, and there is no involvement of an external entity (the "house") in the game.

2.4 The participants in the tournament are divided into a number of tables, at each table, the participants play against each other. A player who has lost all the chips he received at the beginning of the tournament drops out of the tournament and leaves the table. In this way, the game goes on until each table is occupied by a single winner who holds the chips of all those who dropped out. This winner goes to another table and plays against winners from other tables. This method continues until one player is left at the last table, who has accumulated all of the chips from the entire tournament. This person is the winner.

2.5 A single hand of Texas Hold'em, of which hundreds (or more) are played in the course of a tournament, is conducted as follows:

2.5.1 Up to 10 players sit around each gaming table. In each hand, the cards are dealt by another person (known as the "dealer"), so that each player, at the start of each hand, may be located in a different place relative to the dealer.

2.5.2 In every hand, the player seated at the dealer's left is required to put a predetermined number of chips into the pot (known as the "small blind"). The player seated at that player's left is also required to put in a number of chips, which is twice as high as the number put in by the first player, seated to his right (known as the "big blind").

2 5 3 In the first deal, each player is dealt two cards, face down, the identity of those cards is known only to the player who receives them (known as “**hole cards**”)

2 5 4 At the end of the first deal, each of the players sitting around the table has to decide in turn (according to his position relative to the dealer of that hand) which of the following actions he wishes to take

2 5 4 1 To bet a number of chips equal to the number bet by the player before him (“**call**”)

2 5 4 2 To announce that he is leaving the hand without risking his chips (“**fold**”)

2 5 4 3 To bet a number of chips higher than the number bet by the player before him, with no predetermined limit (“**raise**”), thereby requiring the remaining players who wish to continue playing the hand in question to bet an equal, and possibly a higher, number of chips It should be clarified that, at each stage of the hand, any player who wishes to continue playing the hand in question must bet a number of chips which is at least equal to that bet by the player who preceded him in the betting round

This procedure, consisting of a round of decision making, within which the players are required to choose one of the alternative courses of action, shall be hereafter referred to as the “**first decisions round**”

2 5 5 At the end of the first betting round, the dealer turns up three cards in the center of the table, which are common to all of the players (the “**community cards**”) and are exposed to everyone playing (these three cards are known as the “**flop**”)

2 5 6 After the flop is opened, another round of decision making (hereinafter the “**second decisions round**”) begins, in which the

players remaining in the game are again required to choose one of the same possible alternatives to decide whether they wish to withdraw and throw in their hand, in view of the bet placed by the player seated immediately before them (to fold), or to continue in the hand, thereby risking additional chips (and if so, how many)

2 5 7 At the end of the second decisions round, the dealer exposes an additional community card (the “**turn**”, this is the fourth community card), after which another round of decision making takes place (hereinafter the “**third decisions round**”), in which the players remaining in the hand are again required to choose one of the possible alternatives to withdraw (to fold), or to continue, thereby risking additional chips (and if so, how many)

2 5 8 At the end of the third decisions round, the dealer exposes an additional community card (the “**river**”, this is the fifth community card), after which another round of decision making takes place (hereinafter the “**fourth decisions round**”), in which the players remaining in the hand are required to decide whether they wish to fold and throw in their hand (if another player has made a bet in any amount), or to compete with another player or players, thereby risking additional chips, with a view to winning the hand

2 5 9 The fourth decisions round can end in one of the following two ways

- (a) After one of the players remaining in the game chooses to bet (that is, to risk additional chips), the remaining players in the game choose to throw in their cards (to fold) - in this case, the only player remaining in the game is the winner of the hand (that is, wins all of the chips in the pot), and is not required to expose his hole cards
- (b) Two or more of the players choose to remain in the game and not to fold - in this case, the players' hole cards are exposed, and the player with the best possible combination (whereby each player is required to put together the best

possible combination of five cards from among the seven cards available to him (his two hole cards and the five community cards), according to the ranking of hands customary in the game of Texas Hold'em, wins the hand (that is, wins all of the chips in the pot)

Details of the scientific analysis

3 The nature of chance in Texas Hold'em

The game of Texas Hold'em includes a single component of "chance", which is the fact that a player has no control of the cards dealt out of a deck of 52 cards, in each stage of the hand, and the identity of the cards is determined randomly

4 The components of understanding and ability in Texas Hold'em

4 1 In order to ascertain the components of understanding and ability in Texas Hold'em, we must first establish the objective of the participants in the tournament, and the central strategy (the "**optimal strategy**") which must be used in order to win a Texas Hold'em tournament

4 1 1 In order to win a Texas Hold'em tournament, a player is not required to win the highest possible number of winning hands, but rather, to cumulatively win the highest number of chips

4 1 2 Accordingly, in order to win a Texas Hold'em tournament, the game strategy to be adopted is one which will maximize the average number of chips which the player wins in the long term (the "**maximizing the expected number of won chips**", as this is known in scientific language)

4 1 3 We shall now examine these strategies and consider how the players can make use of their understanding and ability in order to implement them. We shall show that these strategies do indeed have a decisive effect on the outcome of the game (winning one of the prizes). This effect is significantly greater than that of the randomness involved in dealing the cards

Direct probability calculations¹ indicate a total of 133,784,560 possibilities for putting together a five card series out of a seven card series sampled from a parent deck of 52 cards. In order to understand the significance of this vast number of possibilities, I shall state that, if we assume that a player plays all day every day, without resting (and if we assume that about six minutes of real playing, including betting time, are necessary in order to create a series of seven cards), this player will need more than 1527 years of playing in order to ensure that he encounters a combination equal to that created in his first game! The distribution of these possibilities, according to the ranked five card combinations in poker, is as follows

Combination	Incidence	Probability (relative incidence)
Royal Flush	4,324	0000323
Straight (non-royal) Flush	37,260	000278
Four of a Kind	224,848	0017
Full House	3,473,184	026
Flush	4,047,644	030
Straight	6,180,020	046
Three of a Kind	6,461,620	048
Two Pair	31,433,400	235
Pair	58,627,800	438
High Card	23,294,460	174

This table indicates that almost 85% of the possible combinations referred to the three categories with the lowest value in poker. Any combination better than the three combinations with the highest incidence appears to be significantly rare, relative to the more common combinations (on the average, the more common combinations occur 5.67 times more often than the rare combinations).

This fact indicates that, in the absolute majority of cases, all of the participating players must cope with the fact that they hold cards of

¹ See e.g. an article by Prof. Alspach, Department of Mathematics, University of California in San Francisco (Internet link: <http://www.math.sfu.ca/alspach/comp20>)

moderate “strength” or less, and only in rare cases can a player win a hand simply because he was “lucky” enough to get an especially strong initial combination of cards

4 2 Before addressing the manner in which an intelligent, experienced player can implement an optimal game strategy, it is important to realize that, in every individual hand, throughout the entire tournament, each player is faced with four “watersheds” (these are the four rounds of decision making), at which he is required to make insightful decisions with regard to his course as the hand progresses

4 3 At the heart of this insightful decision is the question of the advisability of risking additional chips, as against the chance of winning all of the chips in the pot for the hand

4 4 What, then, are the skills which the Texas Hold’em player is required to express throughout the tournament? In order for me to explain, I shall list below the abilities which underlie those skills

4 4 1 The ability to evaluate, within a predetermined interval of time the strength of the hand that he holds in each stage of the game

4 4 2 The ability to make it difficult for his opponents to discover the game strategy which is using in various situations in the tournament

4 4 3 The ability to evaluate his opponents’ game strategies from the standpoint of probability

4 4 4 The ability to translate the insights which arise from that set forth above to a rational risk taking and decision making policy

4 5 In light of the range of skills which a player is required to implement in the course of the tournament, it is obvious that a player who relies on luck alone, whereas his opponents are expressing these skills, has a significantly lower probability of winning the tournament

4 6 Once we have ascertained the various types of skills, we shall now proceed to demonstrate how they are expressed in the course of an individual hand and throughout the entire tournament

4 7 Rational and insightful use of bluffing

4 7 1 In his article “Poker, Chance and Skill” (which is attached to this expert opinion as Appendix A) Prof Noga Alon of Tel Aviv University, who has recently been declared as the 2008 recipient of the Israel Prize in Mathematics, analyzes the importance of rational use of bluffing According to Prof Alon’s analysis (on pp 9 and 10), an insightful player who seeks to increase his winnings must try to prevent his opponents from deciphering his ordinary game strategy and must always remain unpredictable As Prof Alon sums up

“It is crucial for a winning player to stay unpredictable, and to take into account the strategy of the other players ”

4 8 Rational, insightful decision making in each round of decision making

4 8 1 It is obvious that, in order to obtain the outcome of the game, the player needs to know how to calculate probabilities At the most basic level, the player is required to calculate the rarity of the various poker combinations If we add the fact that a player is required to decide on his course of action (to bet or to leave the game) within a predetermined interval of time, the insightful player requires a calculation speed which is beyond the ability to calculate

4 8 2 However, in order to succeed in the game of Texas Hold’em, the insightful player also has to evaluate the chance that the next community cards to be exposed will significantly improve his situation relative to that of his opponents (these cards are called “outs”) According to his evaluation of that chance and according to the size of the pot, the player must decide how many chips he

wishes to risk against the chance of improving his situation and continuing to compete for the pot

4 8 3 In order to make myself clear, I shall use three different examples, in all of which the target player (the player whom we are examining), after the two face down hole cards and the first three community cards (the flop) have been dealt, holds two pair

- (a) Example 1 – in this example, the target player was dealt two hole cards which constitute a pair (two eights), and the flop consists of an additional pair and a different third card (two sixes and a four) This being the case, the target player now has two pair (eights and sixes)

The target player is now required to evaluate his chances of improving his cards and bettering his situation This improvement is possible if the next community card to be exposed (the turn) is a six or an eight, at which point the player will have a strong hand known as a full house (a pair and three of a kind)

Because there are two sixes and two eights remaining in the deck (for the purpose of calculation, the cards remaining in the deck and those held by the other players are considered to be the same), he has four possible cards which will improve his hand (that is, four outs)

It is easy to see that turning up a six creates a basis for improving the hands of the entire table, whereas turning up an eight creates a significant improvement for the target player The insightful target player must figure out (within a predetermined interval of time) the degree of risk which arises for him and for the other players, and must evaluate the size of the bet which he will offer This is a complex operation, which can apparently be optimally implemented by relatively few people On the other hand, players who are “street smart” (that is, experienced in playing Texas

Hold'em) and have a good strategic memory will find it relatively easy to make an approximate calculation at a satisfactory level of approximation

- (b) Example 2 – in this example, the target player was dealt two different hole cards (a seven and a ten), and the flop consists of exactly the same cards he holds, plus a different third card (a seven, a ten and an ace) This being the case, the target player now has two pair (sevens and tens)

The target player will have the possibility of improving his present situation in one of the following possibilities with regard to the next community card (turn)

- (1) If the turn shows a seven or a 10, the player will have a strong hand known as a full house (a pair and three of a kind)
- (2) If the turn shows an ace, the player will have a stronger hand than he had before, because two pair of tens and aces is stronger than two pair of sevens and tens

Because there are two sevens, two tens and three aces remaining in the deck (insofar as they are not held by other players), he has seven possible cards which will improve his hand (that is, seven outs)

- (c) Example 3 – in this example, the target player was dealt two different hole cards (a four and a six) and the flop consists of two nines and a six This being the case, the target player now has two pair (sixes and nines)

The target player is now required to evaluate his chances of improving his cards and bettering his situation This improvement is possible if the next community card to be exposed (the turn) is a six or a nine, at which point the player will have a strong hand known as a full house

Because there are two sixes and two nines remaining in the deck, he has four possible cards which will improve his hand (that is, four outs)

It is easy to see that turning up a nine creates a basis for improving the hands of the entire table, whereas turning up a six creates a significant improvement for the target player. The insightful target player must figure out (within a predetermined interval of time) the degree of risk which arises for him and for the other players, and must evaluate the size of the bet which he will offer.

- 4 8 4 A player who is not gifted with the target player's skills and cannot calculate these possibilities (dividing the number of outs by 47) within a predetermined interval of time will lose more chips than the target player in the long term.
- 4 8 5 It is important to emphasize that the player can make the calculations described above with regard to any combination of cards opened, after any stage, and that the situations set forth above constitute examples only.
- 4 8 6 Furthermore, the use of the abilities described above is necessary and possible in all stages of the hand. As set forth above, the player does not control the two hole cards, they are determined by chance. However, once the player has chosen to participate in the hand and thereafter, considerations of improving the series of cards held by the target player come into play in each of the remaining stages of the hand.
- 4 8 7 In addition to all of that which has been set forth above, the target player is required to decipher his opponents' game strategy (if they have one) and to conceal his own. This need does not decrease even after the "river" stage, when the game goes into the final betting round. Admittedly, it is no longer possible to improve the series of cards held by the players after this stage, nonetheless, the

considerations with respect to the advisability of risk remain in force

4 8 9 That which has been set forth above shows that the importance of the two concealed hole cards is not decisive, because the playing of the hand actually begins after they have been dealt, when each player is required to make decisions and to implement strategies in accordance with his ability to evaluate his own cards and his expectation of winning at each stage of the game

4 8 10 Intelligent readers of this document are likely to wonder – and rightly so – how often the situation described above occurs. If this situation is rare and does not represent a frequently occurring situation in Texas Hold'em, then, although it is still correct that skills are required in order to implement a good game strategy in this situation, the rarity of the situation indicates that, most of the time, the target player does not have to have such skills in order to win

In fact, a simple and immediate probability calculation, on the basis of the table given above, shows that the probability of having two pair or better in a random deal of seven cards out of 52 is 0.388. In other words, the situation described above occurs in almost 40% of games, so that the incidence of such a situation is definitely high. If we begin with an opening situation of one pair, for example, the incidence of cases in which probability calculations provide an advantage rises to more than 50%.

4 9 Rational decision making in the light of the player's location at the gaming table relative to the dealer ("position")

4 9 1 In accordance with that which has been set forth above, the game of Texas Hold'em is characterized, among other things, by the fact that the players' positions, relative to that of the dealer, change in every hand, and accordingly, their turn in the internal betting order of players changes as well. Furthermore, an additional

characteristic is that two players in each hand must make one “blind bet”²

4 9 2 The insightful target player must integrate these two unique characteristics into the decision making process, while exploiting, as optimally as possible, his ability to make decisions after all of the other players have made theirs

4 9 3 Prof Noga Alon, in his article, analyzed the significance of a player’s location relative to the blind bettors Prof Alon’s analyses (on pp 11 and 12 of his article) show that an insightful player who is not a blind bettor has a significant advantage, with regard to the chance of winning chips, over a non-insightful player who is a blind bettor (an “advantageous situation”) The average number of chips that is won by an insightful player in an advantageous situation is more than five times higher than that of an insightful player who is a blind bettor

4 9 4 In addition, the player at the “end of the table” (the last player to bet) has a clear advantage of having observed his predecessors’ bets This advantage is reflected in that player’s ability (if he is insightful) to evaluate the strength of his cards relative to all of the other players, and thereby to adopt an optimal strategy, with conditions of information which no other player has

4 10 Up to this point, my expert opinion has dealt with the existence of optimal game strategies, the necessity of use thereof and the frequency of need therefor in the course of an individual hand and throughout a Texas Hold’em tournament

4 11 The existence of optimal game strategies indicates that, in order to win a Texas Hold’em tournament, during which the player participates in

² A blind bet means that a player must risk a predetermined number of chips before the pocket cards are dealt According to the description of the game as shown above in each hand (in clockwise order) there are two players who must make a blind bet (the small blind and the big blind) The purpose of the blind bet is to create a minimum threshold of risk which – for the remaining players – constitutes a precondition for participating in the game Naturally a blind bet presents a disadvantage for the blind bettors in every hand Blind betting also helps increase the speed of the game and prevents it from going on indefinitely

hundreds of hands or more, it is necessary to have a variety of skills which express strategic ability or understanding

- 4 12 It should be noted that these skills do not require an especially high level of education, and that they can also be implemented by ordinary people. These skills can be acquired by study and experience.
- 4 13 A player who makes use of these skills and who applies the strategies that have been described above will benefit from a definitive advantage over a player who does not have these skills or does not apply the strategies described above.
- 4 14 The basic analysis performed by Prof. Alon (on pp. 12 and 13 of his article) provides some insight into the great significance of the component of skill in the game of Texas Hold'em, relative to the component of chance.
 - 4 14 1 According to Prof. Alon's calculations, in a series of 60 games played by two players, one of whom is insightful (in other words, has the skills set forth in Section 4.4 above) and the other is not (in other words, does not implement game strategies), the probability that the insightful player will lose the series is only about 2%. In a series of 240 games, this probability decreases to three-thousandths of one percent (less than 1/30,000). In a series of 350 games, this probability falls below one in a million!¹
 - 4 14 2 In typical tournaments, the player is exposed to many tens, if not hundreds, of games. In fact, if the target player is insightful and his competitors are not, it may be expected that the insightful player will win the overwhelming majority of such tournaments, relative to players who are not possessed of strategic ability and understanding skills. This indicates that the component of skill – and not the component of chance – is that which definitively settles the outcome of the game (that is, the outcome of the tournament).

5 Empirical evidence in support of the conclusion that Texas Hold'em is a game of skill

- 5 1 Empirical evidence which supports the conclusion that a Texas Hold'em tournament is a game in which the outcome (that is, the identity of the winners) is determined by the component of skill, and not by the component of chance, may be found in a research study performed by professors from the Department of Economics of the University of California, Berkeley Prof Pope and Prof Fishman (the latter currently teaches at the University of Pennsylvania, in Philadelphia, PA)
- 5 2 In their study, which is attached as Appendix B to my expert opinion, the professors examined 81 Texas Hold'em tournaments, in which the players' achievements were documented in terms of their position in the ranking of winners at the end of each tournament (hereinafter the "**ranking**")
- 5 3 The research question examined in the professors' article was whether a Texas Hold'em player's past history in tournaments can predict is reading in future tournaments
- 5 4 In their article (on pp 6, 7 and 10), the researchers found that, in fact, a Texas Hold'em player's achievements in the past provide the ability to predict his future achievements Thus, for example, it was found that a long time player will be able to improve his achievements in the future and attain a higher future ranking than in the past In addition the higher a player's past ranking, the more that player's ranking will improve in the future
- 5 5 The fact that a positive correlation was found between a Texas Hold'em player's past and future achievements clearly indicates the considerable importance of the component of skill Repeatable achievements can only be explained by the existence of non-random factors which bear a causal relationship to those achievements These non-random factors must be dependent on skill, according to the explanation set forth in Section 4 above

5 6 Accordingly, it is not remarkable that there are no lottery or bingo championships, because winning these games depends on random factors (“luck” or “chance”, in the case before us) On the other hand, chess, checkers, bridge, backgammon and Texas Hold’em championships (tournaments) are routinely held, because the outcomes of these games are decided by the player s skills, and not by chance

Summary and conclusions

In this expert opinion, I have analyzed quantitative and behavioral aspects in the game of Texas Hold’em This examination shows, beyond all doubt that there are game strategies which give their users a significant advantage over players who are not aware of those strategies and/or do not use them The need for the strategies in question is critical in determining the advantage of those who use them, in game situations where these strategies are required, they are common and frequently used

These strategies require the ability to analyze the state of the gaming table (rapid probability calculations), the ability to decipher the opponents’ strategies, the ability to conceal the target player’s strategy from his opponents, and the insightful ability to translate all of these skills into considerations to be weighed when taking a monetary risk

It is accordingly obvious that winning a Texas Hold’em tournament is predominantly based on strategic skills, rather than on chance The effect of these skills is that the probability for an insightful player with strategic skills to win a Texas Hold’em tournament, when playing against a player who does not have these skills is much higher than 50%

It should be noted that this conclusion also applies with regard to a series of Texas Hold’em hands which are not played within the formal framework of a tournament, but rather, as an independent series of hands (cash games) This is because the skills which the player is required to express in his playing are basically identical to those used in the course of a Texas Hold’em tournament

Accordingly, and in accordance with the analyses and facts that have been set forth in my expert opinion, I arrive at the definitive conclusion

A Texas Hold'em tournament is a game in which winning depends significantly more on the participants' skills (that is, their understanding and their strategic ability) than on chance

EXHIBIT J

Social and Psychological Challenges of Poker

Kyle Siler

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Abstract Poker is a competitive social game of skill and luck which presents players with numerous challenging strategic and interpersonal decisions. The adaptation of poker into a game played over the internet provides the unprecedented opportunity to quantitatively analyze extremely large numbers of hands and players. This paper analyzes roughly twenty-seven million hands played online in small stakes, medium stakes and high stakes games. Using PokerTracker software, statistics are generated to (a) gauge the types of strategies utilized by players (i.e. the strategic demography) at each level and (b) examine the various payoffs associated with different strategies at varying levels of play. The results show that competitive edges attenuate as one moves up levels, and tight aggressive strategies—which tend to be the most remunerative—become more prevalent. Further, payoffs for different combinations of cards varies between levels, showing how strategic payoffs are derived from competitive interactions. Smaller stakes players also have more difficulty appropriately weighting incentive structures with frequent small gains and occasional large losses. Consequently, the relationship between winning a large proportion of hands and profitability is *negative* and is strongest in small stakes games. These variations reveal a meta game of rationality and psychology which underlies the card game. Adopting risk neutrality to maximize expected value, aggression and appropriate mental accounting are cognitive burdens on players, and underpin the *rationality work*—reconfiguring of personal preferences and goals—players engage into to be competitive and maximize their winning and profit chances.

Keywords Poker · Gambling · Risk · Uncertainty · Competition · Behavioral economics · Strategy · Economic sociology

K. Siler (✉)
Department of Sociology, Cornell University, 323 Uris Hall, Ithaca, NY 14853, USA
e-mail: ksiler@cornell.com

Introduction

Poker is a social and strategic card game of imperfect information which is often invoked as a microcosm or metaphor for economic (von Neumann and Morgenstern 1944) existential (Hayano 1982 pp 138–140) and strategic dilemmas people face in life (Sklansky 2009). The game involves a complex tapestry of skill and luck, rationality and intuition, mathematics and psychology, fraught with uncertainty over outcomes, best practices and their relationships to success. Thus, poker provides a fertile context to observe micro level economic and social behaviors in contexts of risk and uncertainty. The advent of internet poker in the late 1990s spurred a major increase of interest in and adoption of the game due to its convenience and affordable free and small stakes niches. Reflective of the poker boom, the number of entrants in the annual \$10,000 buy in World Series of Poker Main Event increased from 512 in 2000 to a high of 8,773 in 2006 (Dalla 2009).¹ Internet poker has also enabled new and more complex understandings of poker, both when played online and in person, via the analysis of quantitative data.

With millions of players online, wagering hundreds of millions of dollars (Newsweek Nov 20, 2009), competition is fierce. Some players use poker as their sole or a partial means of income; others use it as a lucrative avocation, while others play as recreational gamblers (Matros 2005). Thus, online poker provides an ideal laboratory for observing the economic decisions people make with their money in different competitive contexts. Since information is almost always imperfect in poker, and reinforcement schedules are erratic for making correct moves, due to uncertainty, luck, or noise in the game, formulating correct strategies cannot be done through operant conditioning, or other objective decision frames alone (Tallman and Gray 1990). Given its complex and social nature, decision making in poker almost always possesses some degree of subjectivity. Tversky and Kahneman (1974) famously posited that when people are faced with making difficult decisions under conditions of uncertainty, they adopt *heuristics*—subjective rules and *strategies*—to reach a resolution. Given that poker is rife with such situations, and poker literature offers a variety of strategies for approaching the game, and numerous styles, or belief systems (Hayano 1982 p 106) have been observed throughout the history of the game (Boyd 1976; Harrington 2004).

Theoretical Overview

The confluence of short and long term incentives and information is another large part of the allure and challenge of poker. The long term *strategic* heuristics of poker players interact with contrasting short term *tactical* interests, as each hand and pot is contested. As participants play numerous hands and iterate interactions, their strategies become at least partially revealed through their actions in the game. Thus, a bet from a player who appears loose/aggressive, as defined via interactions in the game, acquires a very different meaning than an equivalent bet from a player employing a tight/passive strategy. In turn, impression management (Goffman 1959) in poker is as much about controlling one's own behavior in consort with one's impressions (i.e., table image, in poker parlance) as it is

¹ While the controversial UIGEA (Unlawful Internet Gambling Enforcement Act) in the United States, and similar restrictions on money flows in online commerce and poker in other jurisdictions, have tempered this growth somewhat in recent years, both online and live poker remain much larger than they were prior to the internet boom.

influencing the perceptions of others. Advantages are derived in poker from the strategic and tactical use of betting patterns, which double as information rich market signals (Spence 1973). Ideally, a player is able to control and exploit the definitions and interactions of players, including themselves. Part of the challenge of poker is not only concealing information, but also propagating bad or *lemon* (Akerlof 1970) information for one's own benefit.

The increased speed, volume of hands and relative anonymity of online poker have changed the nature and amount of information in the game. Firstly, internet poker removes in-person social interaction, so symbols or tells, like personal gestures, facial expressions, voice, tenor, braggadocio and body posture, which are famously important in live poker (Caro 2003). Secondly, the increased speed of online poker hands, in addition to the ability to play multiple games simultaneously, thus significantly increasing the number of hands a player can play in an hour. These large size increases allow players to more quickly even out effects of variance, short term luck, or statistical noise. Previously, many professionals would play live poker sessions exceeding twenty-four hours to achieve the variance reduction from large sample sizes (Craig 2005, pp. 14–36–74). Additionally, players can acquire larger sample sizes on their own play, as well as of their opponents, and have a deeper context to interpret actions and devise strategies.

In poker, information and interactions are used to make decisions regarding how to make the most competitive and profitable decisions. Knight's (1921) distinction between *risk* and *uncertainty* is particularly germane to this challenge. Risk involves uncertain outcomes, where the probabilities of those potential outcomes are known. Uncertainty also involves uncertain outcomes, but where information is less complete and perfect, and numerical probabilities cannot be precisely assigned to various potential outcomes. Both risk and uncertainty are omnipresent in poker, and part of the challenge of the game is the ability to *commensurate* (Espeland and Stevens 1998) uncertainty into risk, so precise and profitable quantitative decisions can be made. In each unique uncertain scenario, the game presents. Commensuration involves converting subjective and uncertain qualitative data (e.g., a hunch that an opponent may be bluffing, and the range of cards they might play in such a manner) converted into an objective, certain, quantitative risk, which can then be mathematically and logically weighted vis-à-vis pot odds and monetary considerations. Even without uncertainty, risk itself provides a challenge for players to manage the mathematically inevitable ups and downs of gambling intelligently and responsibly.

Since poker is an emotionally evocative game rife with uncertainty, reflective of its strategic diversity, numerous forms of mental and monetary accounting can emerge. Almost all poker strategy guides advocate that players maximize expected value in all circumstances (e.g., Brunson 1979; Sklansky and Miller 2006), thus playing in a risk-neutral manner (von Neumann and Morgenstern 1944). Since simple game theory and rational choice value calculations are rendered problematic by uncertainty (Harsanyi 1986; Tallman and Gray 1990, p. 410), a more nuanced approach is needed to understand decision making and heuristic formation in poker. Prospect theory (Kahneman and Tversky 1979) provides a lens for understanding idiosyncratic, subjective accounting processes and decisions people make under conditions of uncertainty. While humans tend to be risk-averse with gains, they tend to be risk-loving with losses. Of note is that the difference between a gain and a loss can often be a subjective matter of framing and perception. Thus, just as bets, actions and strategies in poker games can carry a diversity of genuine, obfuscated and lemon information, the social meanings of money (Zelizer 1997) in a poker game are also part of the mental accounting that players engage into handle risk and uncertainty. Whether chips represent fun, a bigger house, a status symbol, next month's rent and groceries, and/or one's self-worth, also influences

subjective framing and accounting decisions which influence perceptions of and orientations towards risk and uncertainty

This study maps out the strategic demography of poker players at different levels of play (from small stakes to high stakes) and analyzes which strategies are conducive to winning at these different levels. In turn, this sheds light on how reward structures and the strategic demography of players interact at different levels. Examining strategies helps reveal the heuristics and economic dispositions they enact in response to these challenges. These data and analyses show hierarchies of knowledge and competition and sheds light on why poker is challenging beyond the nuts and bolts of the card game.

The poker game empirically analyzed in this study is No Limit Texas Hold'em (NLHE) with six seats at the table (6Max) with at least five players at the table. Famously dubbed the 'Cadillac of poker' by poker legend Doyle Brunson, this most famous variant of poker is characterized by its simplicity of rules (and thus easy adoption) and the fact that any single hand can involve players risking their entire stack of chips. Due in part to this freedom in the game and its inherently social nature, NLHE has a significant social psychological component in addition to the technicalities of the card game. Further, subterfuge and deception in poker often trump mathematics, as encapsulated in the climactic scene of the 1962 movie *The Cincinnati Kid* where the triumphant player muses

[I]t's all about making the wrong move at the right time. Due to these frequent twists in logic and the need for responsiveness to similarly twisted moves by opponents, computer scientists have not yet been able to create a NLHE bot competitive at elite levels. This lies in contrast with checkers, which has been entirely solved, chess, where the game has been solved to the point that the best computer program has surpassed the best human player alive, and Fixed Limit Texas Hold'em, where programmers have devised bots which are very competitive with the best players in the world (Boyle 2008). Thus, No Limit Hold'em is an ideal context to study heuristics, rationality and strategy from a social psychological perspective, as the game transcends logic and mathematics. As poker legend Doyle Brunson (1979, p. 17) famously posited in his seminal strategy text *Super/System*:

Poker is a game of people. That is the most important lesson you should learn from my book. This human element further complexifies the hundreds of millions of permutations and combinations of cards that can be dealt.

Data

Data used for this study were acquired from HandHQ.com, a business which observes online poker games, then archives .txt file records of the games. Many players use these data to supplement sample sizes of hands on their opponents, so they can have more reliable statistics of the play of their opponents. The datasets used for this research are comprised of 17.25 million hands at NL50 (small stakes game), 6.79 million hands at NL200 (medium stakes game) and 2.87 million hands at NL1000 (high stakes game). The labels of these games refer to the standard buy-in, which is one hundred big blinds (e.g., NL50 has a standard buy-in of \$50, with big blinds of \$0.50). This yielded databases with 212,224 players² (NL50), 64,262 players (NL200) and 18,596 players (NL1000) respectively. All records of players were anonymized. Hands were culled from December 2008 to April 2009. Money values are in United States dollars.

² Due to computational limitations, only 120,000 of these NL50 players could be rated by PokerTracker. Regardless, this is still an enormous sample.

Methods

These data were uploaded and analyzed using PokerTracker software designed to archive and analyze data from poker hands played online. More commonly, PokerTracker is also used by many serious players to gather quantitative information on their own play as well as that of their opponents. PokerTracker coupled with the availability of txt file archives of millions of recorded hands presents the unprecedented opportunity to operationalize and quantify strategies—and in turn the economic decisions and behaviors—of tens of thousands of players.³

Information on the number of hands played, the cards dealt to players, win (or loss) rates, percentage of hands won, strategy type and overall amount won were compiled. Labeling strategies is subjective and derived from behavioral tendencies of how frequently players bet or raise at different parts of the hand. Regardless of how boundaries of strategies are demarcated and gerrymandered, what is most important is the relative performance and tendencies of the player, since poker is a contextual, interactive game. As Boyd (1976) observes, someone labeled a “tight” player in one game might be a “loose” player in another game while implementing the same strategies. The rules for assigning strategy categories yielded a fairly well dispersed population of players across all categories (See Appendix Table 13 for rating criteria). Hand categories vary by the number of pots a player enters along a continuum between “loose” and “tight” while aggression is operationalized by the propensity of players to bet or raise and put money at risk throughout the hand.

Poker sites profit by siphoning \$0.05 to \$3.00 from every pot which involves community cards being dealt. As one moves up limits, players pay more rake at an absolute level, but lesser proportion of the total money on the table; this is a small incentive for players to play higher stakes games. While beating the rake (in addition to the other players at the table) is a vital part of being a profitable poker player, adjusted big blinds/100 hands rates are reported to facilitate equivalent comparisons between levels. The adjusted rate is merely the raw BB/100 rate (i.e., win rate) plus a correction factor for the rake taken at each level. At NL50, the adjustment was +4.98 BB/100; NL200, +3.00 BB/100; and NL1000, +0.95 BB/100. Except where noted, analyses were conducted weighting by the number of hands each player participated in. For example, the results of a player who played 5,000 hands was weighted five times more heavily than a player who played 1,000.

Results

Strategic Payoff Structures and Demography

Tables 1, 2, and 3 show the payoffs for various strategies. Payoffs are operationalized by big blinds won per one hundred hands. Additionally, the tables show the strategic demographics of games at the various stakes, via the proportion of total players labeled with a given strategy at each level.

In general, tight and aggressive strategies have the best returns across all levels. Semi-loose/aggressive strategies also are relatively successful. As one moves up stakes, win rates

³ While this methodology is ideal for understanding the actual behaviors and consequences of players, from a pure poker standpoint the theoretical relationships between strategies, win rates and variance (i.e., standard deviations of win rates) would be better handled by simulation studies, which could keep player abilities, interactions, games and luck constant.

Table 1 Adjusted counts and big blind win rates for various strategies—NL1000 ($N = 1962$)

Strategy	Adjusted BB/100	SD	<i>N</i>	<i>N</i> (% of total)
Loose aggressive/aggressive	−2.59	18.44	129	6.57
Loose aggressive/passive	−10.17	20.27	110	5.61
Loose passive/aggressive	−9.12	14.48	19	0.97
Loose passive/passive	−11.55	18.45	55	2.80
Semi loose aggressive/aggressive	0.89	13.16	366	18.65
Semi loose aggressive/passive	−1.31	14.78	170	8.66
Semi loose passive/aggressive	−3.42	14.69	55	2.80
Semi loose passive/passive	−3.32	14.28	66	3.36
Tight aggressive/neutral	0.34	10.05	333	16.97
Tight aggressive/aggressive	1.62	8.97	419	21.36
Tight aggressive/passive	−0.58	10.79	96	4.89
Tight passive/aggressive	0.28	9.25	77	3.92
Tight passive/passive	−1.79	11.24	67	3.41

Minimum 750 hands played

Table 2 Adjusted counts and big blind win rates for various strategies—NL200 ($N = 5659$)

Strategy	Adjusted BB/100	SD	<i>N</i>	<i>N</i> (% of total)
Loose aggressive/aggressive	−5.19	17.87	614	10.85
Loose aggressive/passive	−7.39	15.98	371	6.56
Loose passive/aggressive	−4.32	15.01	243	4.29
Loose passive/passive	−8.32	15.73	366	6.47
Semi loose aggressive/aggressive	1.00	12.40	768	13.57
Semi loose aggressive/passive	−0.94	11.80	336	5.94
Semi loose passive/aggressive	0.07	10.55	326	5.76
Semi loose passive/passive	−3.02	11.93	355	6.27
Tight aggressive/neutral	3.09	8.28	688	12.16
Tight aggressive/aggressive	3.27	7.78	893	15.78
Tight aggressive/passive	0.24	12.07	161	2.85
Tight passive/aggressive	1.70	8.23	336	5.94
Tight passive/passive	1.47	9.20	202	3.57

Minimum 750 hands played

get smaller as games become tighter more aggressive and competitive. Profitable tight aggressive niches get more crowded and the strategy becomes less novel and remunerative. Additionally, passivity gets increasingly punished as one moves up levels.

The most obvious trend in regards to the strategic demographics of the various levels is the increased proportion of aggressive players as one moves up stakes. The tables also show that as one moves up levels to higher stakes, the number of passive players decreases. This may be linked to the fact that the win rate coefficients for passive strategies decreased at higher stakes. While the number of loose players decreases somewhat, there is a large increase in semi loose players. As a result of these trends, there is a notable convergence of players around similar tight aggressive and semi loose aggressive strategies. Since most leading poker instructional texts advocate this type of strategy (Sklansky and Miller 2006

Table 3 Adjusted counts and big blind win rates for various strategies—NL50 ($N = 9313$)

Strategy	Adjusted BB/100	SD	<i>N</i>	<i>N</i> (% of total)
Loose aggressive/aggressive	-6.24	19.49	893	9.59
Loose aggressive/passive	-9.47	18.62	507	5.44
Loose passive/aggressive	-5.03	16.35	468	5.03
Loose passive/passive	-9.38	19.29	715	7.68
Semi loose aggressive/aggressive	2.62	12.89	701	7.53
Semi loose aggressive/passive	0.07	13.31	376	4.04
Semi loose passive/aggressive	1.65	10.71	636	6.83
Semi loose passive/passive	-0.80	11.47	603	6.47
Tight aggressive/neutral	4.18	9.72	542	5.82
Tight aggressive/aggressive	4.08	10.6	1743	18.72
Tight aggressive/passive	2.92	10.91	274	2.94
Tight passive/aggressive	3.89	7.93	1433	15.39
Tight passive/passive	2.14	9.41	422	4.53

Harrington 2004) this is not a surprise. An implication of this is that as strategies become more similar this may make the game more tactical than strategic or create niches for other strategies. The attenuation of the negative coefficient at the NL1000 level for loose aggressive/aggressive strategy is particularly interesting. Although the mean coefficient for this strategy is slightly negative, the high standard deviation suggests that there are some players who play this strategy very effectively. This may be a function of this audit study where better players, capable of playing this notoriously lucrative but risky and difficult strategy (Harrington 2004, p. 42) tend not to occupy small stakes games while recreational players may emulate or utilize this same strategy with disastrous results.

Another way of understanding the incentives and payoffs associated with various strategies involves examining the characteristics of the biggest winners and losers at each level. This will be done first by win rate (big blinds/100 hands) then by overall amount won.

Getting Rich Quick or the Road to Ruin?

Tables 4, 5 and 6 show the representation of different strategies amongst the players with the highest and lowest win rates (or loss rates) at each level.

Notable is the consistent overrepresentation of loose and aggressive players amongst both the top and bottom hundred players. Such strategies are much more overrepresented amongst losing than winning players. This raises the question of to what degree these divergent values are out of skill and luck respectively. If loose aggressive strategies are more difficult to play, it stands to reason, particularly at lower levels, that such strategies would be particularly overrepresented amongst the biggest losers. However, it could also be expected that there would be a reasonable proportion of such players who have mastered the difficult and stressful strategy who also occupy the upper tail of the bell curve. This thesis would be supported by the data, as would an additional or hypothesis that it is merely luck and variance causing these outliers. Since loose aggressive strategies appear to have significantly higher standard deviations, it is inevitable that some players would be placed on the high end of the relatively wider bell curve regardless of their skill level. This dilemma illustrates the fusion of skill and luck in poker and how difficult the two entities are to parse out from one another.

Table 4 Proportions of strategies among top and bottom 100 (BB/100 hands rates) players NL1000

Strategy	Bottom 100 players			Top 100 players		
	<i>N</i> (bottom 100)	% of entire sample	Over(under) representation	<i>N</i> (top 100)	% of entire sample	Over(under) representation
Loose aggressive/aggressive	14	6.57	7.43	13	6.57	6.43
Loose aggressive/passive	19	5.61	13.39	2	5.61	-3.61
Loose passive/aggressive	2	0.97	1.03	0	0.97	-0.97
Loose passive/passive	13	2.80	10.2	2	2.80	-0.8
Semi loose aggressive/ aggressive	11	18.65	-7.65	30	18.65	11.35
Semi loose aggressive/passive	12	8.66	3.34	13	8.66	4.34
Semi loose passive/aggressive	3	2.80	0.2	3	2.80	0.2
Semi loose passive/passive	5	3.36	1.64	3	3.36	-0.36
Tight aggressive/neutral	9	16.97	-7.97	9	16.97	-7.97
Tight aggressive/aggressive	6	21.36	-15.36	14	21.36	-7.36
Tight aggressive/passive	4	4.89	-0.89	5	4.89	0.11
Tight passive/aggressive	0	3.92	-3.92	3	3.92	-0.92
Tight passive/passive	2	3.41	-1.41	3	3.41	-0.41

Table 5 Proportions of strategies among top and bottom 100 (BB/100 hands rates) players NL200

Strategy	Bottom 100 players			Top 100 players		
	<i>N</i> (bottom 100)	% of entire sample	Over(under) representation	<i>N</i> (top 100)	% of entire sample	Over(under) representation
Loose aggressive/aggressive	33	10.85	22.15	19	10.85	8.15
Loose aggressive/passive	19	6.56	12.44	7	6.56	0.44
Loose passive/aggressive	7	4.29	2.71	4	4.29	-0.29
Loose passive/passive	25	6.47	18.53	7	6.47	0.53
Semi loose aggressive/ aggressive	5	13.57	-8.57	19	13.57	5.43
Semi loose aggressive/ passive	1	5.94	-4.94	7	5.94	1.06
Semi loose passive/ aggressive	0	5.76	-5.76	6	5.76	0.24
Semi loose passive/passive	7	6.27	0.73	1	6.27	-5.27
Tight aggressive/neutral	0	12.16	-12.16	7	12.16	-5.16
Tight aggressive/aggressive	0	15.78	-15.78	12	15.78	-3.78
Tight aggressive/passive	3	2.85	0.15	2	2.85	-0.85
Tight passive/aggressive	0	5.94	-5.94	5	5.94	-0.94
Tight passive/passive	0	3.57	-3.57	4	3.57	0.43

Grinding for Gold

When one looks at the top players by actual amount won a different trend emerges. Tables 7 and 8 show summary statistics of the top twenty winners and losers at each level while Tables 9 and 10 shows the strategic demographics of those categories.

The most notable trend in the tables is that the mean win rates are relatively modest. None of the biggest winners at any of the levels were even close to being in the top hundred win rates. The average win rates in Table 7 work out to the 76th percentile of win rates for the entire population of NL50 and NL200 players and the 68th percentile for NL1000. The way these players distinguished themselves to be the biggest winners in the sample was by playing an enormous volume of hands at a moderately profitable rate. There are a number of potential explanations for this phenomenon. Firstly, players with a higher (or lower) win rate are likely to move up or down stakes and thus fall outside of the sample in the study. Secondly, big winners may be the inevitable upward outliers of a large community of players with similar skill levels playing large volumes of hands. Thirdly, some players might get stuck at a level where they are good enough to break even or marginally profit but do not feel comfortable moving up any higher where the stakes are higher and their already razor thin win rate will be eroded. Fourthly, some poker players adopt a standard tight aggressive grinding (Matros 2005, p. 69) strategy oriented towards low risk outcomes via capitalizing on occasional mistakes of others. While this strategy puts a glass ceiling on one's win rate, it is simple and low variance enough to play at a high volume, playing multiple games simultaneously online to generate these substantial winnings. Variance may be reduced but since potential win rate is constrained by conservative play, even this lower degree of variance can put skilled players in the red, especially without a large volume of hands to realize the small but stable and positive win rate over the long term.

Figure 1 shows the adjusted win rates for players with a minimum of 750 hands at NL200. While win rates can be very volatile in the short term through some combination of players moving up or down stakes (or in some cases going broke), long term win rates converge slightly above zero after the rake adjustment and the removal of players with less than 750 hands who tended to be losing players.

Patience and Pyrrhic Victories

Another cognitive challenge in online poker which differentiates winners and losers—particularly at lower stakes—is distinguishing the difference between winning hands and winning money. As Table 11 shows, a high win percentage (i.e. the percentage of total hands won by a player) is *negatively* correlated with win rate, although this value decreases at higher stakes.

This is an unusual and seemingly counterintuitive incentive structure. After all, is not the object of every hand in poker to win it? This phenomenon can be explained by the fact that players who win large proportions of hands lose money because they lose a few hands of great value. In other words, these players overweight frequent small gains vis-à-vis occasional large losses. This is an issue particularly germane to No Limit Hold'em where on any given hand all of a player's chips can be put at risk. It also appears that patience is rewarded, although the more aggressive and skilled games at NL1000 attenuates this somewhat as players presumably cannot rely on winning big pots off of mistake-prone players as often or lucratively as in lower limit games. Since one of the tenets of prospect theory (Kahneman and Tversky 1979; DeGeorge and Zeckhauser 1993, p. 1331) is that

Table 6 Proportions of strategies among top and bottom 100 (BB/100 hands rates) players NL50

Strategy	Bottom 100 players			Top 100 players		
	N	% of overall sample	Over(under) representation	N	% of overall sample	Over(under) representation
Loose aggressive/aggressive	36	9.59	26.41	19	9.59	9.41
Loose aggressive/passive	19	5.44	13.56	4	5.44	-1.44
Loose passive/aggressive	9	5.03	3.97	5	5.03	-0.03
Loose passive/passive	32	7.68	24.32	13	7.68	5.32
Semi loose aggressive/aggressive	0	7.53	-7.53	13	7.53	5.47
Semi loose aggressive/passive	1	4.04	-3.04	7	4.04	2.96
Semi loose passive/aggressive	0	6.83	-6.83	8	6.83	1.17
Semi loose passive/passive	1	6.47	-5.47	5	6.47	-1.47
Tight aggressive/neutral	0	5.82	-5.82	3	5.82	-2.82
Tight aggressive/aggressive	0	18.72	-18.72	14	18.72	-4.72
Tight aggressive/passive	1	2.94	-1.94	2	2.94	-0.94
Tight passive/aggressive	0	15.39	-15.39	5	15.39	-10.39
Tight passive/passive	0	4.53	-4.53	2	4.53	-2.53

Table 7 Summary statistics of top 20 winning players (amount won) at various stakes

Stakes	Avg hands	Min	Max	Avg amount won	Min	Max	Avg BB_100	Min	Max
NL50	76418	13632	268658	2313	1712	4172	5.33	1.21	13.99
NL200	78416	28343	199848	13586	9961	24402	5.10	2.3	9.29
NL1000	90049	30966	195516	67227	39641	188983	4.53	1.17	11.01

Table 8 Summary statistics of top 20 losing players (amount lost) at various stakes

Stakes	Avg hands	Min	Max	Avg amount lost	Min	Max	Avg BB_100	Min	Max
NL50	22152	1801	106096	2839	2052	4856	28.96	1.96	156.00
NL200	53982	5256	241193	7399	5706	24939	11.43	0.87	82.71
NL1000	32914	4224	134729	34804	21874	75935	16.82	1.12	61.73

people tend to underweight large losses and overweight small gains it makes sense that many players employ strategies influenced by this unprofitable disposition.⁴ An additional explanation for this is that money online assumes a non-material form which is easily thrown around. Studies in behavioral economics have shown that people tend to be more profligate spenders with credit cards over cash (Feinberg 1986). Thus, while winning hands

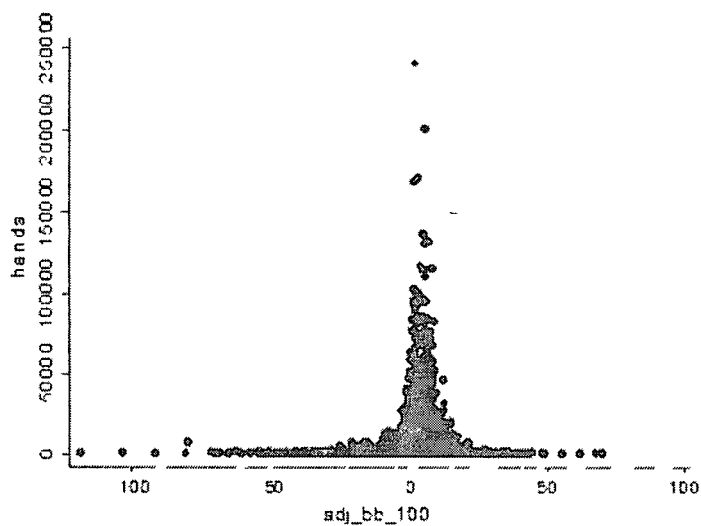
⁴ Other implications of this is that players will tend to play more tentatively and protect small wins and play more aggressively during a losing session desperately trying to get even at any risk or cost.

Table 9 Strategies of top 20 winning players (amount won) at various stakes

	NL50	NL200	NL1000
Semi loose aggressive/aggressive	1	1	4
Tight aggressive/aggressive	9	14	9
Tight aggressive/neutral	3	6	7
Tight aggressive/passive	1	0	0
Tight passive/aggressive	6	1	0

Table 10 Strategies of top 20 losing players (amount won) at various stakes

	NL50	NL200	NL1000
Loose aggressive/aggressive	5	3	1
Loose aggressive/passive	3	1	2
Loose passive/passive	4	0	2
Semi loose aggressive/aggressive	1	0	3
Semi loose aggressive/passive	2	2	1
Semi loose passive/aggressive	0	1	0
Semi loose passive/passive	2	0	1
Tight aggressive/aggressive	1	5	3
Tight aggressive/neutral	0	6	7
Tight aggressive/passive	1	1	0
Tight passive/aggressive	1	1	0

**Fig. 1** Scatterplot regression of adjusted win rate on hands played by player NL 50 ($N = 9313$)

may be cognitively satisfying and reinforces learning the occasional large loss represented similarly as flashing pixels on a computer screen does not carry a proportional cognitive social or economic accounting impact for many

Table 11 Regression of big blind win rates (per 100 hands) on win percentage at various stakes

Stakes	NL1000	NL200	NL50
Win percentage	-0.348*** (0.001)	-0.734*** (0.000)	-0.876* (0.000)
Constant	7.08*** (0.015)	14.44* (0.008)	17.20*** (0.007)
N (hands)	15520695	35948809	49521492
R	0.011	0.072	0.092

Note Numbers in parentheses are standard errors

Weighted by number of hands played per player

+ $p < 0.10$ * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$ (two tailed tests)

Poker Hands and Prospect Theory

The challenges and incentive structures in poker can be further clarified through understanding the various card combinations players are dealt in No Limit Hold'em. As per Billings et al.'s (2002) artificial intelligence model of poker, poker hands differ in the main categories of *strength*, *certainty*, and *speculativeness*. Strength entails the likelihood that a hand will be best after five random community cards are drawn. Uncertainty involves the need for additional information (via additional—and preferably all five—face up community cards to be dealt) to gauge the strength or lack thereof of the hands. For further details on the combinations of cards which yield these categories, see Appendix Table 14. Of note is that these strategic categories entail broad boundaries, and there still remains heterogeneity in strategies and tendencies of players within each category. However, the categories serve as a solid starting point to sort out the relative strategies employed by players.

No Limit Hold'em is a game defined by *implied odds* (Sklansky and Miller 2006, p. 33) which often makes chasing speculative and uncertain hands profitable, even if the chances of them succeeding are slim. Since speculative, long-shot hands have the potential for large payoffs, they can be extremely valuable. In contrast, strong hands suffer from *reverse implied odds* (p. 58) as they have fewer options for improvement as the community cards get dealt and the hand progresses. Implied odds offer the prospect of large losses in the future against small losses in the present, while reverse implied odds offer the prospect of small gains in the present against potentially large losses in the future. Thus, stronger and more certain hands provide a payoff structure more conducive to frequent small to medium wins and occasional large losses. As shown in Table 11, this incentive structure (frequent small gains, occasional large losses) is particularly dangerous for weaker players. In contrast, uncertain and weaker hands offer an incentive structure based on frequent small losses, tempered by the prospect of occasional large wins.

Big pairs are the hands with the strongest initial strength and carry high levels of certainty, as a high pair is often the winning hand, even after all of the community cards are dealt. However, like all pairs, they are relatively unlikely to improve as community cards are dealt. Further, when big pairs improve, it is often superfluous and prone to scaring off further bets, so they have little speculative value. *Medium pairs* have moderate initial strength and may end up being the winning hand unimproved. Like all pairs, its value tends to be very certain, whether the hand is improved by the community cards or not. While medium pairs are less rarely winning hands than their big pair counterparts, they do

have high speculative value. Finally, *small pairs* have low initial strength but have high certainty and high speculative value.

Similarly, *Broadway cards* are primarily oriented towards becoming pairs, so they share the characteristics of pairs of having high certainty. Since they rely on community cards to make a pair, their initial strength is moderate, and their speculative value is low.

Suited and connected cards are drawing hands oriented towards making straights and flushes, uncertain drawing hands which only become certain after all community cards are dealt. Betting patterns and incentives (which can make players fold) can often preclude all of the hands being dealt, so these hands are both uncertain and speculative. Since these include many low cards, their initial value is very low.

Suited Broadway cards simultaneously possess both of the differing incentive structures of suited connectors and offsuit Broadway cards.

Table 12 shows the distributions of different hand categories at different stakes, in addition to their payoffs. These data reveal differing incentive structures existing at each level.

The larger coefficients associated with most hand categories at NL1000 may be reflective of a greater willingness to play hands to completion, which is a consequence of the increased aggression at that level. In particular, the increased proportion of big and medium pairs shown down suggest that due to the aggressive context, higher stakes players often need to intelligently accept uncertain risks and propositions to be profitable, even though they involve the potential for large losses. Players who continually avoid risk, uncertainty, and conflict will be prone to being dominated. Another interesting finding is that the gap between the profitability of medium and small pairs widens as one moves up stakes, as does their frequency of being shown down. Notably, the value of medium pairs is *less* than small pairs at NL50, despite the fact that medium pairs are a stronger starting hand. Small pairs are speculative and acquire fairly certain values, so they are generally easy to play at all levels. Thus, the differences in payoffs and proportions played between the limits are relatively small compared to other hand categories. However, medium pairs also possess showdown value (the possibility the hand will remain a winner unimproved), which adds reverse implied odds and marginally (un)profitable bets to their incentive structure. These data suggest that on the whole, these payoff sets are difficult for the relatively less skilled players at NL50 to handle, and are increasingly mastered as one moves up stakes. Thus, lower stakes players appear to have more difficulty with ambiguous and narrowly (un)profitable payoff sets and incentives.

The results for suited connectors—weak, speculative and uncertain hands—show some of the risks and consequences of aggression at higher stakes. The progressively lower proportion of hands of this category and lower coefficients suggest at higher levels suggest that as one moves up stakes, one must take gambles with uncertain values in order to be successful. Gordon (2005, p. 245) suggests that one of the big innovations of high stakes internet players is to play uncertain or marginal hands very aggressively to capitalize on fold equity (winning the pot uncontested by making opponents fold). The increased speed and quantity of hands that online poker allows makes the absorption of the high variance of such moves and strategies possible. This strategy is in part a counter-exploitation of the scenario that players at higher skill levels are generally skilled enough to shape incentives to discourage uncertain hands from acquiring additional information by getting to see one additional card cheaply. As obvious and lucrative sources of profit are eroded by increased skill and competition in a game, riskier and marginal sources of value with greater uncertainty must be exploited. In contrast, players at NL50 are less skilled and less aggressive, and thus allow uncertain and/or speculative hands to see all of the community

Table 12 Regression of big blind win rates (per 100 hands) on hand type at various stakes

Stakes	NL1000	NL200	NL50
Hand type			
Big pair	958.31 ^{*,*} (56.77)	797.78*** (41.82)	713.53*** (36.95)
<i>N</i>	50906	83426	343102
% Total <i>N</i>	11.18	10.78	10.67
Medium pair	341.69*** (49.36)	274.23** (36.37)	274.82*** (32.13)
<i>N</i>	57957	90855	355731
% total <i>N</i>	12.73	11.73	11.07
Small pair	296.15 ^{*,*} (40.62)	260.19*** (29.93)	280.91 ^{*,*} (26.44)
<i>N</i>	50817	85405	360583
% total <i>N</i>	11.16	11.03	11.22
Suited connectors	73.48 [~] (24.50)	74.44*** (18.05)	87.72 [~] (15.95)
<i>N</i>	95358	164778	690270
% total <i>N</i>	20.95	21.28	21.47
Suited Broadway	107.23*** (35.95)	91.23** (26.49)	73.01 (23.40)
<i>N</i>	65199	108596	447924
% total <i>N</i>	14.32	14.03	13.93
Offsuit Broadway	61.13 ⁺ (31.96)	51.05* (23.55)	51.51* (20.80)
<i>N</i>	134990	241174	1017006
% total <i>N</i>	29.65	31.15	31.64
Mucked	-74.41 (97.53)	-74.07 (71.86)	-82.80 (63.49)
<i>N</i>	15480211	23986034	92013486
% total <i>N</i>	97.14	96.87	96.62
Constant	63.86 ^{*,*} (8.81)	61.60*** (6.49)	67.27 [~] (5.74)
<i>R</i> ²	0.704	0.757	0.779
Total <i>N</i> (hands)	15935438	24760268	95228102

For hand type categories % of total *N* values do not include mucked *N*

Note Numbers in parentheses are standard errors

⁺ $p < 0.10$ ^{*} $p < 0.05$

[~] $p < 0.01$ *** $p < 0.001$
(two tailed tests)

cards which allows them to acquire certainty and be shown down profitably more often hence the higher proportion and coefficient for suited connectors at NL50

The offsuit Broadway results suggest that at higher stakes players use these hands more selectively but more profitably. These moderately strong, certain and non-speculative hands are often deceptively attractive to weaker players. The lower proportion of offsuit Broadway hands suggests that at higher stakes players are more likely to fold these hands which are very conducive to reverse implied odds. As a result the profitability of these hands increases. Finally suited Broadway hands—which are comprised of both the incentives of suited connectors and Broadway hands—are more played and profitable at higher levels. This appears to speak to the ability of high stakes players to reconcile complex and complementary incentive structures.

A limitation of this audit study is that hand information is only available when hands are played to their conclusion and are not shown down and recorded in the poker site's text

files. As evidenced by the extremely large proportion of hands that were mucked (where the player did not have to reveal their cards due to folding or inducing other players to fold), such hands comprise the vast majority of the sample data.⁵ However, the propensity of players to play different hands can still be deduced by looking at the proportion of times the hand was shown down (i.e. played to completion). Comparing the proportions of hands shown down and available in the dataset provides data to suggest which hands are more prone to being mucked, and filling in these lacunae in the datasets. Even though a 0.5% difference in *N* values between stakes works out to only one hand in two hundred, this is an important difference, considering these premium hand categories only comprise roughly one in fifteen hands, and that hands are rarely shown down (as shown by the large mucked proportions). Thus, trends across limits suggest that there are subtle, but profound changes in the behaviors and incentive structures when one moves up stakes.

Implications

DiMaggio (2002) adapted Keynes' (1936) famous edict that "animal spirits" shape economic behavior and the economy, emphasizing the role of emotional buoyance in economic success. Analogously, the results in this study suggest that, on the whole, aggression is a profitable strategy in the uncertain realm of online poker. However, the heavy losses often associated with loose aggressive play suggests that there is a fine line between aggression and foolhardiness for many players. To be successful in poker, animal spirits must be stoked, but also intelligent, refined and channeled strategically. As Holden (2005) mused about Lee Jones' tight aggressive strategy suggestions, "I only hope I can summon the self-discipline to play [them]." The optimal tradeoffs between aggression and restraint can be difficult to reach, given the contradictions between the two elements. Given that animal spirits are most important under conditions of Knightian uncertainty (DiMaggio 2002, p. 80), the successful channeling and regulation of these human impulses and cognitions is key to success in poker, and beyond.

Most elite high stakes players are known for prominently employing loose aggressive strategies (Harrington 2004, pp. 42–45; Greenstein 2005). Given the high standard deviations of win rates associated with such strategies, this raises the question of to what degree extreme positive outliers enjoy their status due to luck or skill. Taleb (2004) suggested that many successful investors with suboptimal strategies can become rich, due to the fact that there are so many people in the population taking chances, and even suboptimal strategies have a modest chance of succeeding. In a population of thousands, it is conceivable, if not inevitable, that some unskilled players will sneak through. Thus, being able to distinguish random but powerful trends as caused by skill or luck (Gilovich et al. 1985) is a recurrent challenge in poker. This also explains why, unlike in pure skill games like chess, less skilled players will buy into poker games. Such players may be unable to acknowledge they have inferior chances, and the chance to win despite lacking skill helps obscure this reality.

The research suggests that competitive edges in high stakes games are relatively modest, and elite players generally play higher stakes, higher variance and more competitive games than the highest limit in this study (NL1000/6Max). Thus, it is not surprising that stories abound of wealthy and successful professional poker players who have

⁵ The only way to get information about folded hands would be to receive data directly from online poker companies themselves. Thus far, such sites have been very reluctant to release data.

gone deeply into debt (Duke 2006 p 198) or broke on numerous occasions (Greenstein 2005 p 9) throughout their careers. As Malmuth muses (1999 p 35) the difference between *good* and *great* gamblers is that the latter are willing to take high variance marginal gambles with favorable odds often with standard deviations higher than their win rate. Accordingly some great gamblers will go broke—sometimes repeatedly—in their careers. This raises the paradox and cognitive framing issue that high stakes players must treat money and their decisions with reverent strategic care yet also willing to be daring and cavalier with them. Money is simultaneously all important and worthless. Successful players tend to handle bad beats and financial swings stoically if not robotically (Hayano 1982 Browne 1989). However *alexithymia* difficulty identifying and expressing feelings is also associated with problem gambling among poker players (Mitrovic and Brown 2009). In another paradox the line between riches and ruin can be extremely precarious and volatile which presents a difficult incentive structure for risk averse humans to handle.

There are a number of cognitive challenges inherent to successful poker strategy. Coupled with the need for refined aggression profitable players must learn to not overweight high frequencies of small gains vis a vis rare large losses. However at the same time such players also benefit from a willingness to accept gambles with reverse implied odds intelligently and sometimes be willing to not swerve in risky chicken games of aggression encapsulated within the larger game of poker. Further successful loose aggressive players must accept stress and high variance in addition to mastering the technical complexities of the strategy. Players must also distinguish between skill and luck effects to learn more about the game their opponents and refine their strategies. The process of dealing with these challenges and shaping one's behaviors and preferences accordingly is dubbed *rationality work* (also see Elster 1983 Sally 2000).⁶ As prospect theory (Kahneman and Tversky 1979) suggests many of these impulses and predispositions toward risk and uncertainty are widespread amongst humans and thus it requires a concerted effort to reconfigure such preferences appropriately. Not surprisingly some successful (Hanusa 2006 Dalla and Alson 2006 Matusow et al 2009) and losing (Schwartz 2006) poker players have exhibited an inability to harness their attitudes towards risk in other contexts in their lives with disastrous consequences.

In addition to this myriad of cognitively challenging incentive structures players still must learn how to appropriately distinguish skill and luck as causal factors in the game to learn and refine strategies. As it is impossible to parse skill and luck out perfectly poker players are particularly prone to committing the *fundamental attribution error*. Heider (1958) divided internal (in this case skill) and external (luck) factors into four main attributes (Hayano 1982 p 109). Difficulty of the task and luck serve as external attributes while skill and effort function as internal attributes. Hayano (1982 p 110) found that losing players highly emphasized the role of luck in explaining their losses. While this allowed them to retain their self image as competent poker players albeit at a cost of further justifying and perpetuating their incompetence and further losses. In contrast winning players were prone to including personal responsibility and efficacy in their explanations for winning or losing. In turn poker provides the sort of context where a player can be unskilled and unaware of it (Kruger and Dunning 1999) which is a large

⁶ Poker is rife with emotion work (Hochschild 1983) as well from concealing one's true feelings about the situations they are in (i.e. keeping a poker face) and dealing with adversity and maintaining emotional control and staying off tilt where emotions cloud the ability of a player to make intelligent and optimal decisions (Browne 1989).

source of profits for skilled players. This is particularly dangerous for some weaker players as since the skill based components of poker give players some elements of control they may be unaware of the reality that their naivete has rendered this control illusory (Griffiths 1990; Mitrovic and Brown 2009). Thus, receiving and filtering feedback appropriately to facilitate learning and strategic and tactical adjustments is important and is another cognitive challenge poker presents.

Utility maximization and most poker strategy guides (Harrington 2004; Sklansky and Miller 2006) emphasize the importance of maximizing expected value for playing winning poker. This is a theory where risks and bets are taken regardless of their variance or payout structure as long as they have a positive expected value. Maximizing expected value often involves taking risks with frequent low or negative payouts as long as they are outweighed by relatively rare positive events. Risk neutrality is assumed by such a valuation frame which lies in contrast to marginal utility theory and prospect theory which have both found that humans tend towards risk aversion particularly when dealing with gains. Thus, adopting risk neutrality (or even risk loving) dispositions is part of challenge of poker and is part of the emotional and preference management poker players engage in. Given that poker is an emotionally evocative game (Browne 1989) and players often have a variety of economic, psychological, householding and social pressures hinging on the results of their play (Hanusa 2006), adopting a risk neutral orientation of maximizing expected utility can be very difficult, emotionally if not also cognitively.

Conclusion

Beneath the card game of poker is a meta level competition of rationalities and handling the burdens of different psychological stressors. As players move up stakes, competitive edges shrink and uncertainty about the strategic play of opponents and chances for profit increases, commensurating *uncertainty* into precise, quantitative *risk* becomes much more difficult. Further, to maximize profitability, players must reconfigure their preferences and behaviors in a manner which goes against normal human preferences. Going against marginal utility theory in economics, risk neutrality perceives a dollar to keep one out of poverty the same way it treats a dollar serving as tip money at a fancy restaurant. Relatedly, Gray and Tallman (1987) found that the risk and cost sensitivity characteristic of most people's preferences leads to decisions which do *not* maximize gains and minimize losses. Losing these sensitivities and adopting a risk neutral frame for decision making may maximize income potential but also requires effort to reconfigure often deeply rooted human preferences.

Poker is a very complex game and the nuts and bolts strategy of the card game takes a great deal of effort and intelligence to master. However, mastering the card game is only part of the challenge of becoming a successful poker player over the long run. Rationality work is vital as many 'best strategies' in poker implicitly involve adopting dispositions towards risk, uncertainty and accounting that often go against the normal economic preferences of most humans. When dealing with the mercurial vicissitudes of chance and luck in poker, players need to learn how to parse out correctly what they can and cannot control without attributing errors to chance or external circumstances in defense of their confidence and emotional and intellectual self control. As not all players develop these skills fully, weaknesses or 'leaks' in players' games can be psychological and sociological in nature in addition to being due to weaknesses in how they calculate odds or play the game.

The rationality work and challenges poker players face entail meta games of orientations towards risk which underlie the more visible game of cards being played. Doyle Brunson was right to say that poker is primarily a game of people. However, the biggest opponent for many players is themselves, given the challenges of optimizing one's mindset and strategies, both in the card game and the meta games of psychology, rationality and socio-economic arbitrage which hover beneath it.

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Appendix

Table 13 Rating criteria and operationalizations for various strategies

Strategy	% of hands played	% of hands raised	Aggression factor
Loose aggressive/aggressive	≥ 35	≥ 12	≥ 2.0
Loose aggressive/passive	≥ 35	≥ 12	< 2.0
Loose passive/aggressive	≥ 35	< 12	≥ 2.0
Loose passive/passive	≥ 35	< 12	< 2.0
Semi loose aggressive/aggressive	$25 < 35$	≥ 12	≥ 2.0
Semi loose aggressive/passive	$25 < 35$	≥ 12	< 2.0
Semi loose passive/aggressive	$25 < 35$	< 12	≥ 2.0
Semi loose passive/passive	$25 < 35$	< 12	< 2.0
Tight aggressive/aggressive	< 25	≥ 12	> 3.0
Tight aggressive/neutral	< 25	≥ 12	$2.0 < 3.0$
Tight aggressive/passive	< 25	≥ 12	< 2.0
Tight passive/aggressive	< 25	< 12	> 2.0
Tight passive/passive	< 25	< 12	< 2.0

The formula for aggression factor is (total times bet + total times raised)/(total times called). See PokerTracker Manual (2009).

Table 14 Poker hand classifications

Big pairs	AA, KK, QQ
Medium pairs	88, 99, TT, JJ
Small pairs	22, 33, 44, 55, 66, 77
Suited connectors	32s, 42s, 43s, 53s, 54s, 64s, 65s, 75s, 76s, 86s, 87s, 97s, 98s, AKs, AQs, J9s, JT, KJ, KQs, KT, QJ, QTs [Note: Two and three gap suited connectors (e.g., 96s, J7s) could arguably also be included, but for these purposes, a more focused sample is preferable]
Suited Broadway	AJs, ATs, AKs, AQs, JTs, KJs, KQs, KT, QJ, QTs
Offsuit Broadway	AJo, AKo, AQo, ATo, JTo, KJo, KQo, KTo, QJo, QTo

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Andrew A Mathias
Attorney

October 21, 2010

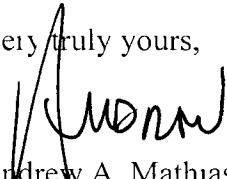
Daniel E Shearouse Clerk of Court
Supreme Court of South Carolina
Post Office Box 11330
Columbia, South Carolina 29211

Re Town of Mt Pleasant v Chimento et al

Dear Dan

Please provide a copy of the audio recording of the oral arguments in Mt Pleasant v Chimento, which was heard at 10 a.m. on October, 19, 2010. I discussed the availability of the recording with Brenda, and was told that the cost would be \$20.00. I've attached a check in that amount. Please return the tape to me. Thanks in advance.

Very truly yours,


Andrew A Mathias
Attorney

Enclosure

RECEIVED

OCT 26 2010

SC SUPREME COURT

FORM 1
MEDIA COVERAGE OF COURT PROCEEDINGS

STATE OF SOUTH CAROLINA)
COUNTY OF _____) IN THE COURT _____
Town of Mt. Pleasant)
_____)
vs _____)
Chimento _____)

Request for Electronic and Photographic Coverage
Of Judicial Proceedings

Pursuant to Rule 605, South Carolina Appellate Court Rules, the undersigned hereby requests permission to use equipment in order to record, photograph or televise all or portions of the proceedings in the above captioned case

Consistent with Rule 605, the undersigned desires to use the following equipment
Still camera

The proceedings that the undersigned desires to record, photograph or televise commence on 10-19-10

The personnel who will be responsible for the operation of this equipment are
Christine Searpelle

The undersigned hereby certifies that the operation of the equipment and the conduct of the personnel will be in conformity with Rule 605

This 19 day of October, 2010

Christie Searpelle

(Individual Signature)

WSPA-TV

(Representing/Firm)

RECEIVED APPROVED

(Position)

Date OCT 19, 2010

Geo Assembly St. Columbia, SC 29201

(Address)

803-254-2274

(Telephone Number)

Presiding Judge CHIEF JUSTICE

RECEIVED

OCT 18 2010

FORM 1
MEDIA COVERAGE OF COURT PROCEEDINGS

S C SUPREME COURT

STATE OF SOUTH CAROLINA)
COUNTY OF)

IN THE COURT Supreme Court of South
Carolina

Town of Mt Pleasant, Appellant)
)
)

vs)
)
)

Robert Chimento, et al , Respondents)

Request for Electronic and Photographic Coverage
Of Judicial Proceedings

Pursuant to Rule 605, South Carolina Appellate Court Rules, the undersigned hereby requests permission to use equipment in order to record, photograph or televise all or portions of the proceedings in the above captioned case

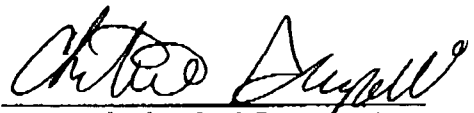
Consistent with Rule 605, the undersigned desires to use the following equipment
television camera, tripod, microphone

The proceedings that the undersigned desires to record, photograph or televise
commence on October 19, 2010

The personnel who will be responsible for the operation of this equipment are
Christine Scarpelli

The undersigned hereby certifies that the operation of the equipment and the
conduct of the personnel will be in conformity with Rule 605

This 18 day of October, 2010



(Individual Signature)

WSPA-TV 7

(Representing/Firm)

RECEIVED GRANTCO

Columbia reporter/photographer
(Position)

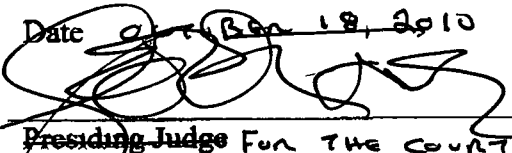
Date

Oct 18, 2010

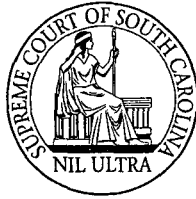
600 Assembly St., Columbia
(Address)

(803)254-2274

(Telephone Number)


Presiding Judge For The Court

Cell - 518 524-1405



The Supreme Court of South Carolina

DANIEL E. SHEAROUSE
CLERK OF COURT

BRENDA F. SHEALY
CHIEF DEPUTY CLERK

POST OFFICE BOX 11330
COLUMBIA, SOUTH CAROLINA 29211

(803) 734 1080

FAX (803) 734 1499

October 12, 2010

Senior Assistant Attorney General C. Havard Jones, Jr.
Assistant Attorney General Mary Frances Jowers
Office of the Attorney General
P O Box 11549
Columbia, SC 29211

Jeffrey Alton Phillips, Esquire
Phillips Law Firm
404 N Main St
Travelers Rest, SC 29690-1511

William W. Wilkins, Esquire
Kirsten E. Small, Esquire
Nexsen Pruet, LLC
P O Drawer 10648
Greenville, SC 29603-0648

Re: Town of Mt. Pleasant v. Chimento

Dear Counsel:

The record in the above case has been reviewed and the time allotment for oral argument for this case is as follows:

Appellant 15 minutes

Respondents 15 minutes

Appellant in Reply 5 minutes

This case is scheduled for hearing at 10:00 on Tuesday, October 19, 2010.

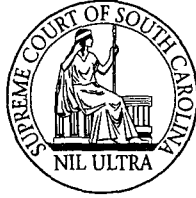
Very truly yours,

Daniel E Shearouse, Clerk

By Debbie A. Hopkins
Administrative Assistant

DES/dmh

cc James W Sheedy, Esquire
Thomas C Goldstein, Esquire



The Supreme Court of South Carolina

DANIEL E. SHEAROUSE
CLERK OF COURT

BRENDA F. SHEALY
CHIEF DEPUTY CLERK

POST OFFICE BOX 11330
COLUMBIA, SOUTH CAROLINA 29211

(803) 734 1080

FAX (803) 734 1499

September 24, 2010

Deputy Attorney General Robert D. Cook
Senior Assistant Attorney General C. Havird Jones, Jr.
Assistant Attorney General Mary Frances Jowers
Office of the Attorney General
P O Box 11549
Columbia, SC 29211

Jeffrey Alton Phillips, Esquire
Phillips Law Firm
404 N Main St
Travelers Rest, SC 29690-1511

William W. Wilkins, Esquire
Kirsten E. Small, Esquire
Nexsen Pruet, LLC
P O Drawer 10648
Greenville, SC 29603-0648

James W. Sheedy, Esquire
Driscoll Sheedy, P A
222 E Main St
Rock Hill, SC 29730-4542

Thomas C. Goldstein, Esquire
Akin, Gump, Strauss, Hauer & Feld
1333 New Hampshire Ave., NW
Washington, DC 20036

Re Town of Mt Pleasant v Chimento

Dear Counsel

This is to advise that the title in the above matter has been changed to read as follows

Town of Mount Pleasant,

Appellant,

v

Robert L Chimento, Scott Richards,
Michael Williamson, Jeremy Brestel
and John T Willis,

Respondents

All future records in this matter should be changed to reflect this title If you have any questions, please do not hesitate to contact this office

Very truly yours,

A handwritten signature in black ink, appearing to be "DES", with a long horizontal line extending to the right.

CLERK

DES/dmh

William W. Wilkins
Member
Admitted in SC

August 26, 2010

VIA U S POSTAL SERVICE

Mr Daniel E Shearouse
The South Carolina Supreme Court
PO Box 11330
Columbia, SC 29211

*Re Case 1- In Re Estate of Brown, James (Dallas)
Case 2- Chimento v Town of Mount Pleasant*

Dear Mr Shearouse

Charleston

Charlotte

Columbia

Greensboro

Greenville

Hilton Head

Myrtle Beach

Raleigh

I do not have a scheduling conflict for the October term. However, because two separate appeals (cited above) are set for argument, I would appreciate one being set on October 5, 6, or 7 and the other set for October 19 or 20.

Thank you

Sincerely,



William W. Wilkins

WWW ddw

RECEIVED

AUG 30 2010

55 East Camperdown Way
Suite 400 (29601)
PO Drawer 10648
Greenville SC 29603 0648
www.nexsenpruet.com

T 864 282 1199
F 864 477 2600
E BWilkins@nexsenpruet.com
Nexsen Pruet LLC
Attorneys and Counselors at Law



HENRY McMASTER
ATTORNEY GENERAL

August 26, 2010

The Honorable Daniel E Shearouse
Clerk
South Carolina Supreme Court
P O Box 11330
Columbia, South Carolina 29211

Re Chimento v Town of Mount Pleasant
October Preliminary List

Dear Mr Shearouse

This letter is in response to your correspondence dated August 23, 2010, concerning any conflicts that this office may have as to the arguments in the above-referenced matter being held on October 5, 6, 7, 19 and 20, 2010 Please be advised that this office has no conflict on any of those dates

Very truly yours,


C Havird Jones, Jr
Senior Assistant Attorney General

RECEIVED

AUG 27 2010

CHJ,jr/shb

SC SUPREME COURT



A PROFESSIONAL ASSOCIATION | ATTORNEYS AT LAW

James W Sheedy
Lic in SC Only
Direct: 704 341 2102
Fax: 704 341 2105
jwsheedy@driscollsheedy.com

Ballantyne 11520 N Community House Road
Suite 200 | Charlotte NC 28277
South Carolina Office 222 E Main Street
Suite 204 | Rock Hill SC 29730
www.driscollsheedy.com

August 24, 2010

Debbie Hopkins
Office of Clerk of Court
Supreme Court of South Carolina
Supreme Court Building
P O Box 11330
1231 Gervais Street
Columbia, SC 29211

Re **Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John T Willis v Town of Mount Pleasant
C/A No 2009-CP-10-001551**

Dear Debbie

Thank you for your phone call of earlier today in which you mentioned that Christopher M Egleson and Jonathan H Eisenman who were on the *amicus* brief of the Poker Players Alliance in the above referenced matter, either should be admitted *pro hac vice* or not appear in the case I left you a voice mail confirming that they would not appear in the case You may consider their names to have not been included on the *amicus* brief of the Poker Players Alliance, they will not make any appearance at oral argument and there is no need for their names to be reflected as counsel for the Alliance on any decision of the Court

If you need anything further, please let me know

With kindest regards, I remain

Respectfully,

DRISCOLL SHEEDY, P A


James W Sheedy

cc Thomas C Goldstein, Esq

RECEIVED

00094412

AUG 25 2010

SC SUPREME COURT



The South Carolina Supreme Court

DANIEL E. SHEAROUSE
CLERK OF COURT
BRENDA F. SHEALY
DEPUTY CLERK

P.O. BOX 11330
COLUMBIA, S.C. 29211
PHONE NO. 734 1080

To William W. Wilkins Esquire
Kirsten E. Small Esquire
From Daniel E. Shearouse
Date August 23, 2010
RE October Preliminary List

Pursuant to the provisions of Rule 216 of the South Carolina Appellate Court Rules, this is to advise that the following case(s) will probably be reached for hearing at the October 2010 term of the South Carolina Supreme Court. Our records indicate that you are counsel of record in one or more of these case(s).

Court will meet the days of October 5, 6, 7, 19, and 20. Please notify this office in writing prior to August 30, 2010, as to any scheduling conflicts for the October term and any changes or additions of counsel that should be made to the record for the purpose of argument. If you do have a scheduling conflict, please advise as to the specific nature of the conflict.

Chimento v. Town of Mount Pleasant



The South Carolina Supreme Court

DANIEL E. SHEAROUSE
CLERK OF COURT
BRENDA F. SHEALY
DEPUTY CLERK

P.O. BOX 11330
COLUMBIA, S.C. 29211
PHONE NO. 734 1080

To Thomas C. Goldstein Esquire
From Daniel E. Shearouse
Date August 23, 2010
RE October Preliminary List

Pursuant to the provisions of Rule 216 of the South Carolina Appellate Court Rules, this is to advise that the following case(s) will probably be reached for hearing at the October 2010 term of the South Carolina Supreme Court. Our records indicate that you are counsel of record in one or more of these case(s).

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Chimento v. Town of Mount Pleasant



The South Carolina Supreme Court

DANIEL E. SHEAROUSE
CLERK OF COURT
BRENDA F. SHEALY
DEPUTY CLERK

P.O. BOX 11330
COLUMBIA, S.C. 29211
PHONE NO. 734 1080

To Jeffrey Alton Phillips Esquire
From Daniel E. Shearouse
Date August 23, 2010
RE October Preliminary List

Pursuant to the provisions of Rule 216 of the South Carolina Appellate Court Rules, this is to advise that the following case(s) will probably be reached for hearing at the October 2010 term of the South Carolina Supreme Court. Our records indicate that you are counsel of record in one or more of these case(s).

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Chimento v. Town of Mount Pleasant



The South Carolina Supreme Court

DANIEL E. SHEAROUSE
CLERK OF COURT
BRENDA F. SHEALY
DEPUTY CLERK

P.O. BOX 11330
COLUMBIA, S.C. 29211
PHONE NO. 734 1080

To Atty Gen Henry Dargan McMaster
Chief Deputy Atty Gen John W. McIntosh
Deputy Atty Gen Robert D. Cook
Senior Assist Atty Gen C. Havird Jones Jr.
Assist Atty Gen Mary Frances Jowers

From Daniel E. Shearouse

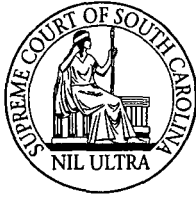
Date August 23, 2010

RE October Preliminary List

Pursuant to the provisions of Rule 216 of the South Carolina Appellate Court Rules, this is to advise that the following case(s) will probably be reached for hearing at the October 2010 term of the South Carolina Supreme Court. Our records indicate that you are counsel of record in one or more of these case(s).

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Chimento v. Town of Mount Pleasant



The Supreme Court of South Carolina

DANIEL E. SHEAROUSE
CLERK OF COURT

BRENDA F. SHEALY
CHIEF DEPUTY CLERK

POST OFFICE BOX 11330
COLUMBIA, SOUTH CAROLINA 29211

(803) 734 1080

FAX (803) 734 1499

July 22, 2010

James W. Sheedy, Esquire
Driscoll Sheedy, P.A.
222 E Main St
Rock Hill, SC 29730-4542

Re Chimento v. Town of Mount Pleasant

Dear Mr. Sheedy:

The following Order has been endorsed on your Renewed Motion to File an Amicus Curiae Brief in the above entitled case on appeal:

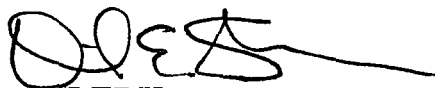
“Motion granted

s/ Jean H. Toal C.J.
For the Court

July 22, 2010”

By copy of this letter, we are advising all counsel of record that any reply to the amicus curiae brief should be served and filed within fifteen (15) days of the date of this letter.

Very truly yours,


CLERK

DES/dmh

Chimento v Town of Mount Pleasant

Page Two

July 22, 2010

cc Attorney General Henry Dargan McMaster
Chief Deputy Attorney General John W McIntosh
Deputy Attorney General Robert D Cook
Senior Assistant Attorney General C Havird Jones, Jr
Assistant Attorney General Mary Frances Jowers
Jeffrey Alton Phillips, Esquire
William W Wilkins, Esquire
Kirsten E Small, Esquire
Thomas C Goldstein, Esquire
Town of Mount Pleasant Municipal Court



A PROFESSIONAL ASSOCIATION | ATTORNEYS AT LAW

James W. Sheedy
Lic in SC Only
Direct: 704 341 2102
Fax: 704 341 2105
jimsheedy@driscollsheedy.com

Ballantyne 11520 N. Community House Road
Suite 200 | Charlotte NC 28277
South Carolina Office: 222 E. Main Street
Suite 204 | Rock Hill SC 29730
www.driscollsheedy.com

RECEIVED

JUL 13 2010
July 12, 2010

SC SUPREME COURT

RECEIVED

JUL 13 2010

SC SUPREME COURT

Via Federal Express

The Honorable Daniel E. Shearouse
Clerk of Court
South Carolina Supreme Court
P O Box 11330
Columbia, SC 29211

**Re Robert L. Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John T. Willis v. Town of Mount Pleasant
C/A No. 2009-CP-10-001551**

Dear Mr. Shearouse:

On June 25, 2010, the Court denied without prejudice the Poker Players Alliance's request for leave to file an amicus curiae brief. The Court permitted the Alliance to seek leave to file a brief "that does not reference matters that are outside the Record on Appeal." Order at 2. The Alliance has revised its brief accordingly, and with the enclosed motion renews its request for leave to file an amicus brief in the above-captioned matter.

Respectfully Submitted,


James W. Sheedy
Counsel for the Poker Players Alliance

cc

C. H. Jones, Esq. (via Federal Express)
William W. Wilkins, Esq. (via email)
Jeffrey A. Phillips, Esq. (via email)
Thomas C. Goldstein, Esq. (via email)

THE STATE OF SOUTH CAROLINA
IN THE SUPREME COURT

APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas
The Honorable R. Markley Dennis, Jr., Circuit Court Judge
C A No 2009-CP-10-001551

Robert L. Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John Taylor Willis

Respondents,

RECEIVED

JUL 12 2010

v

Town of Mount Pleasant

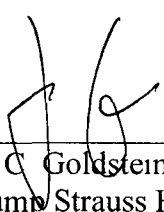
Appellant

S.C. SUPREME COURT

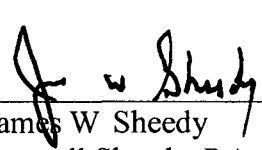
MOTION FOR LEAVE TO FILE *AMICUS CURIAE* BRIEF

On behalf of the Poker Players Alliance, James W. Sheedy and Thomas C. Goldstein respectfully request that this Court grant its leave to file the accompanying brief of the Poker Players Alliance as *amicus curiae* in support of Respondents.

Respectfully submitted,

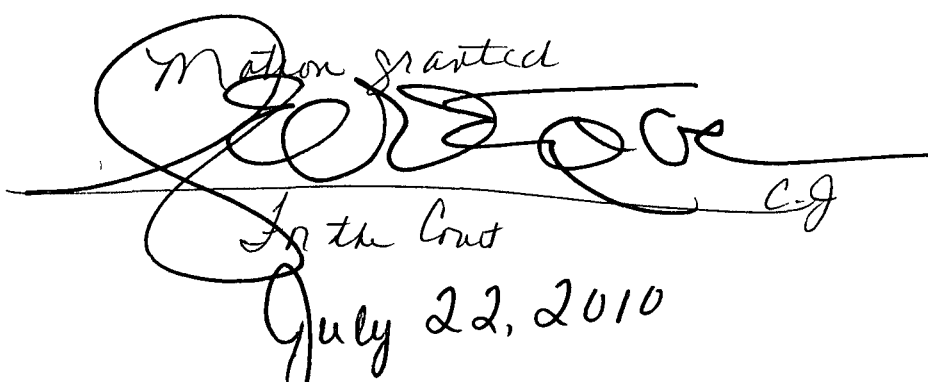


Thomas C. Goldstein
Akin Gump Strauss Hauer & Feld LLP
1333 New Hampshire Ave., NW
Washington, D.C. 20036
(202) 887-4000 (telephone)
(202) 887-4288 (facsimile)



James W. Sheedy
Driscoll Sheedy, P.A.
222 E. Main St., Suite 204
Rock Hill, South Carolina 29730
(803) 327-4472 (telephone)

Dated July 12, 2010



Motion granted
In the Court
July 22, 2010
C.J.

THE STATE OF SOUTH CAROLINA
IN THE SUPREME COURT

APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas
The Honorable R Markley Dennis, Jr , Circuit Court Judge
C A No 2009-CP-10-001551

Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John Taylor Willis

Respondents,

v

Town of Mount Pleasant

Appellant

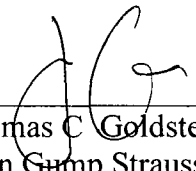
MEMORANDUM IN SUPPORT OF
MOTION FOR LEAVE TO FILE *AMICUS CURIAE* BRIEF

Pursuant to Rule 213, SCACR, James W Sheedy and Thomas C Goldstein hereby request that this Court grant the Poker Players Alliance, by and through its counsel, leave to file the accompanying brief as *amicus curiae* in support of Respondents

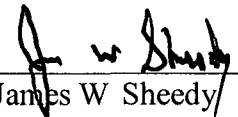
The Poker Players Alliance represents nearly 10,000 South Carolinians, all of whom have an interest in legally playing poker in the safety and comfort of private residences The Alliance has been involved in this litigation as a friend of the court virtually since the case's inception, having appeared in the trial court in support of Respondents, and subsequently filing a brief in the court below The brief that the Alliance wishes to submit will aid the Court by discussing facts and law developed in the courts below and elsewhere, supporting the conclusion that under the dominant factor test, Texas Hold'em is a game of skill

For the foregoing reasons and in accordance with Rule 213, SCACR, the Poker Players Alliance respectfully requests that this Court grant its motion for leave to file an *amicus curiae* brief in support of Respondents

Respectfully submitted,



Thomas C Goldstein
Akin Gump Strauss Hauer & Feld LLP
1333 New Hampshire Ave , NW
Washington, D C 20036
(202) 887-4000 (telephone)
(202) 887-4288 (facsimile)



James W Sheedy/
Driscoll Sheedy, P A
222 E Main St , Suite 204
Rock Hill, South Carolina 29730
(803) 327-4472 (telephone)

Dated July 12, 2010

THE STATE OF SOUTH CAROLINA
IN THE SUPREME COURT

APPEAL FROM CHARLESTON COUNTY

Court of Common Pleas

The Honorable R. Markley Dennis, Jr., Circuit Court Judge

C A No 2009-CP-10-001551

Robert L. Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John Taylor Willis

Respondents,

v

Town of Mount Pleasant

Appellant

PROOF OF SERVICE

I hereby certify that I have served this Motion for Leave to File *Amicus Curiae* Brief, and the accompanying Memorandum, on Appellant and Respondents by depositing a copy of it in the United States Mail, postage prepaid, on July 12, 2010, addressed to

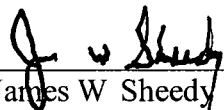
Counsel for Respondents

William W. Wilkins
Nexsen Pruet, LLC
55 East Camperdown Way (29601)
Post Office Drawer 10648
Greenville, South Carolina 29603-0648

Jeffrey A. Phillips
Phillips Law Firm
1425 Augusta St
Greenville, South Carolina 29605

Counsel for Appellant

The Honorable Henry D. McMaster
c/o Deputy Attorney General Robert D. Cook
Post Office Box 11549
Columbia, South Carolina 29211


James W. Sheedy
Driscoll Sheedy, P.A.
222 E. Main St., Suite 204
Rock Hill, South Carolina 29730
(803) 327-4472 (telephone)



The Supreme Court of South Carolina

DANIEL E. SHEAROUSE
CLERK OF COURT

BRENDA F. SHEALY
CHIEF DEPUTY CLERK

POST OFFICE BOX 11330
COLUMBIA, SOUTH CAROLINA 29211

(803) 734 1080

FAX (803) 734 1499

June 25, 2010

James W. Sheedy, Esquire
Driscoll Sheedy, P.A.
222 E Main St
Rock Hill, SC 29730-4542

Thomas C. Goldstein, Esquire
Akin, Gump, Strauss, Hauer & Feld
1333 New Hampshire Ave., NW
Washington, DC 20036

Re Chimento v. Town of Mount Pleasant

Gentlemen

Enclosed is the order issued in the above entitled matter

Very truly yours,

CHIEF DEPUTY CLERK

BFS/dmh

Enclosure

Chimento v Town of Mt Pleasant

Page Two

June 25, 2010

cc Attorney General Henry Dargan McMaster
Chief Deputy Attorney General John W McIntosh
Deputy Attorney General Robert D Cook
Senior Assistant Attorney General C Havird Jones, Jr
Assistant Attorney General Mary Frances Jowers
Jeffrey Alton Phillips, Esquire
William W Wilkins, Esquire
Kirsten E Small, Esquire

The Supreme Court of South Carolina

Robert L. Chimento, Scott
Richards, Michael Williamson,
Jeremy Brestel and John T
Willis, Respondents,

v

Town of Mount Pleasant, Appellant

The Honorable R. Markley Dennis, Jr.
Charleston County
Trial Court Case No. 2009-CP-10-01551

ORDER

The Poker Players Alliance (Alliance) has requested leave to file an amicus curiae brief. It has provided the brief it desires to file along with an appendix containing exhibits it relies on in its brief. The exhibits are scientific papers and opinions by professors and others dealing with the role of skill in poker and other games. Appellant has filed a return opposing the motion and Alliance has filed a reply.

On appeal, this Court "will not consider any fact which does not appear in the Record on Appeal" and the record on appeal may not "include

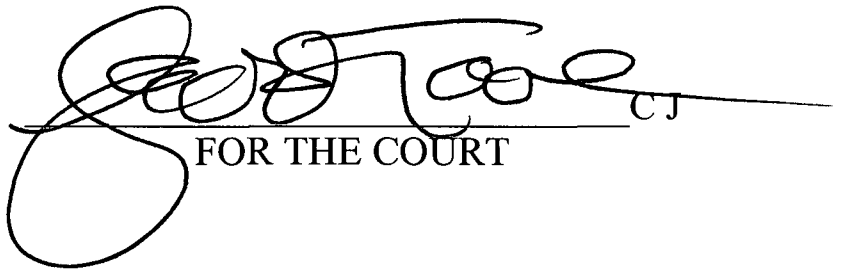
matter which was not presented to the lower court or tribunal " Rules 210(c) and (h), SCACR Further, it has been the longstanding policy of this Court not to allow an amicus curiae to supplement the Record on Appeal

In its brief, Alliance relies on scientific papers and opinion evidence that are not in the Record on Appeal, and were apparently not presented to the trial court ¹ Accordingly, the request for leave to file the amicus curiae brief is denied This denial is without prejudice to Alliance's ability to seek to file an amicus curiae brief that does not reference matters that are outside the Record on Appeal

IT IS SO ORDERED

Columbia, South Carolina

June 25, 2010



FOR THE COURT CJ

¹ During testimony before the trial judge, reference was made to various studies but none of these studies were either admitted as an exhibit or read into evidence

RECEIVED

MAY 20 2010

Driscoll SHEEDY

A PROFESSIONAL ASSOCIATION | ATTORNEYS AT LAW

SC SUPREME COURT

James W. Sheedy
Lic in SC Only
Direct 704 341 2102
Fax: 704 341 2105
jimsheedy@driscollsheedy.com

Ballantyne: 11520 N. Community House Road
Suite 200 | Charlotte NC 28277
South Carolina Office: 222 E. Main Street
Suite 204 | Rock Hill SC 29730
www.driscollsheedy.com

May 19, 2010

Via Federal Express

Honorable Daniel E. Shearouse
Clerk of Court
South Carolina Supreme Court
Supreme Court Building
1231 Gervais Street
Columbia, SC 29201

Re Robert L. Chimento, et al v Town of Mount Pleasant
C A No 09-CP-10-001551

Dear Mr. Shearouse:

I am writing regarding Appellant's letter of May 17, 2010, in which it requests that the Court deny the Poker Players Alliance's motion to file an *amicus curiae* brief, or, in the alternative, that the Court ignore the exhibits accompanying the Alliance's brief.

I respond here only to Appellant's claim that the Poker Players Alliance's exhibits, filed as a courtesy with the Alliance's brief, violate Rule 210(h), SCACR. Rule 210(h) is meant to prevent parties from asking the Court to resolve factual disputes between them based on adjudicative facts outside the record. *See e.g., Davis v Davis*, 356 S.C. 132, 137 n.1 (2003) (applying Rule 210(h), SCACR, to observe that the Court of Appeals erred in considering whether a parent seeking custody had moved, a fact outside the record). The Rule is not meant to prevent the Court from consulting secondary sources cited in a brief, as Appellant suggests, as long as the secondary sources do not contain adjudicative facts. Indeed, the Court often consults secondary sources cited by parties or revealed by its own research. *See e.g., Simmons v Mark Lift Indus., Inc.*, 366 S.C. 308, 320 (2005) (Burnett, J., dissenting) ("I have considered the numerous foreign decisions, treatises, and law review articles offered by the parties and amicus curiae, as well as authority revealed by the Court's own research"), *Adoptive Parents v Biological Parents*, 315 S.C. 535, 542 (1994) (quoting from "[a] fairly recent law review article"). The Court's ability to consider secondary sources is not affected by the fact that the Poker Players Alliance—for the convenience of the Court and of Appellant—provided the Court and Appellant with copies of the relevant secondary sources cited

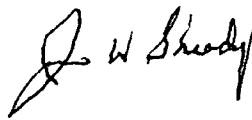
Honorable Daniel E Shearouse
May 19, 2010
Page 2

in its brief The Alliance's reference to those sources no more violates Rule 210(h) than does Appellant's reference to secondary sources outside the record in its brief, *e g* , Wyatt-Brown's *Honor and Violence in The Old South* (page 18), or *Gaming Law Review* (page 34)

With kindest regards, I remain

Respectfully,

DRISCOLL SHEEDY, P A

A handwritten signature in dark ink, appearing to read "J W Sheedy". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

James W Sheedy

Counsel for the Poker Players Alliance

cc

C H Jones, Esq (via Federal Express)
William W Wilkins, Esq (via email)
Jeffrey A Phillips, Esq (via email)
Thomas C Goldstein, Esq (via email)

HENRY McMASTER
ATTORNEY GENERAL



RECEIVED

MAY 17 2010

SC SUPREME COURT

May 17, 2010

The Honorable Daniel E Shearouse
Clerk of Court
South Carolina Supreme Court
P O Box 11330
Columbia, SC 29211

RE Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John T Willis v Town of Mount Pleasant
C/A No 2009-CP-10-001551

Dear Mr Shearouse

I am writing in response to the Motion for Leave to File *Amicus Curiae* Brief filed by the Poker Players Alliance, along with the accompanying Brief of the Poker Players Alliance as *Amicus Curiae*

The Town of Mount Pleasant respectfully asks the Court to deny the Motion of the Poker Players Alliance to file their *Amicus Curiae* Brief. The Brief includes Exhibits and Sources which is a packet of documents and other materials. These Exhibits and Sources are in violation of Rule 210(h), which explains that, except in certain limited situations not relevant here, "the appellate court will not consider any fact which does not appear in the Record on Appeal."

In the alternative, if the Court accepts the *Amicus Curiae* Brief of the Pokers Players Alliance, the Town would ask that the Court not consider the Exhibits (Sources) Accompanying the Brief.

If the Court desires a brief on this matter, I will be glad to provide one

Very truly yours,

A handwritten signature in black ink, appearing to read "CH Jones, Jr.", written in a cursive style.

C H Jones, Jr

Senior Assistant Attorney General

CHJ/mj

cc

William W Wilkins, Esquire

Jeffrey A Phillips, Esquire

Thomas C Goldstein, Esquire

James W Sheedy, ESquire

THE STATE OF SOUTH CAROLINA
IN THE SUPREME COURT

APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas
The Honorable R. Markley Dennis, Jr., Circuit Court Judge
C A No 2009-CP-10-001551

RECEIVED

MAY 13 2010

Robert L. Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John Taylor Willis

Respondents,

SC SUPREME COURT

v

Town of Mount Pleasant

Appellant

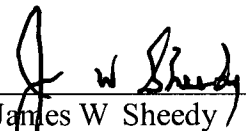
MOTION FOR LEAVE TO FILE *AMICUS CURIAE* BRIEF

On behalf of the Poker Players Alliance, James W. Sheedy and Thomas C. Goldstein respectfully request that this Court grant its leave to file the accompanying brief of the Poker Players Alliance as *amicus curiae* in support of Respondents.

Respectfully submitted,



Thomas C. Goldstein
Akin Gump Strauss Hauer & Feld LLP
1333 New Hampshire Ave., NW
Washington, D.C. 20036
(202) 887-4000 (telephone)
(202) 887-4288 (facsimile)



James W. Sheedy
Discoll Sheedy, P.A.
222 E. Main St., Suite 204
Rock Hill, South Carolina 29730
(803) 327-4472 (telephone)

Dated May 11, 2010

THE STATE OF SOUTH CAROLINA
IN THE SUPREME COURT

APPEAL FROM CHARLESTON COUNTY

Court of Common Pleas

The Honorable R. Markley Dennis, Jr., Circuit Court Judge

C A No 2009-CP-10-001551

RECEIVED

MAY 13 2010

Robert L. Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John Taylor Willis

Respondents,

SC SUPREME COURT

v

Town of Mount Pleasant

Appellant

MEMORANDUM IN SUPPORT OF
MOTION FOR LEAVE TO FILE *AMICUS CURIAE* BRIEF

Pursuant to Rule 213, SCACR, James W. Sheedy and Thomas C. Goldstein hereby request that this Court grant the Poker Players Alliance, by and through its counsel, leave to file the accompanying brief as *amicus curiae* in support of Respondents.

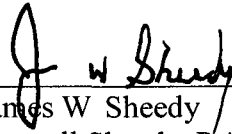
The Poker Players Alliance represents nearly 10,000 South Carolinians, all of whom have an interest in legally playing poker in the safety and comfort of private residences. The Alliance has been involved in this litigation as a friend of the court virtually since the case's inception, having appeared in the trial court in support of Respondents, and subsequently filing a brief in the court below. The brief that the Alliance wishes to submit will aid the Court by discussing the corpus of scientific study that overwhelmingly supports the conclusion that under the dominant factor test, Texas Hold'em is a game of skill, and has been enjoyed broadly and historically throughout the country.

For the foregoing reasons and in accordance with Rule 213, SCACR, the Poker Players Alliance respectfully requests that this Court grant its motion for leave to file an *amicus curiae* brief in support of Respondents

Respectfully submitted,



Thomas C Goldstein
Akin Gump Strauss Hauer & Feld LLP
1333 New Hampshire Ave , NW
Washington, D C 20036
(202) 887-4000 (telephone)
(202) 887-4288 (facsimile)



James W Sheedy
Driscoll Sheedy, P A
222 E Main St , Suite 204
Rock Hill, South Carolina 29730
(803) 327-4472 (telephone)

Dated May 11, 2010

THE STATE OF SOUTH CAROLINA
IN THE SUPREME COURT

APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas
The Honorable R Markley Dennis, Jr , Circuit Court Judge
C A No 2009-CP-10-001551

Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John Taylor Willis

Respondents,

v

Town of Mount Pleasant

Appellant

PROOF OF SERVICE

I hereby certify that I have served this Motion for Leave to File *Amicus Curiae* Brief, and
the accompanying Memorandum, on Appellant and Respondents by depositing a copy of it in the
United States Mail, postage prepaid, on May 11, 2010, addressed to

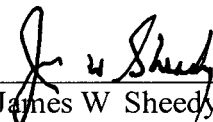
Counsel for Respondents

William W Wilkins
Nexsen Pruet, LLC
55 East Camperdown Way (29601)
Post Office Drawer 10648
Greenville, South Carolina 29603-0648

Jeffrey A Phillips
Phillips Law Firm
1425 Augusta St
Greenville, South Carolina 29605

Counsel for Appellant

The Honorable Henry D McMaster
c/o Deputy Attorney General Robert D Cook
Post Office Box 11549
Columbia, South Carolina 29211


James W Sheedy
Driscoll Sheedy, P A
222 E Main St , Suite 204
Rock Hill, South Carolina 29730
(803) 327-4472 (telephone)



A PROFESSIONAL ASSOCIATION | ATTORNEYS AT LAW

James W. Sheedy
Lic. in SC Only
Direct 704 341 2102
Fax 704 341 2105
jimsheedy@driscollsheedy.com

Ballantyne: 11520 N. Community House Road
Suite 200 | Charlotte NC 28277
South Carolina Office 222 E. Main Street
Suite 204 | Rock Hill SC 29730
www.driscollsheedy.com

May 13, 2010

RECEIVED

MAY 13 2010

SC SUPREME COURT

Via Hand-Delivery

Honorable Daniel E. Shearouse
Clerk of Supreme Court
Supreme Court Building
1231 Gervais Street
Columbia, SC 29201

Re Robert L. Chimento, et al v. Town of Mount Pleasant
C.A. No. 09-CP-10-001551

Dear Mr. Shearouse:

Enclosed please find the originals and corresponding copies of the Motion for Leave to File *Amicus Curiae* Brief, Memorandum in Support of Motion for Leave to File *Amicus Curiae* Brief and a Proof of Service in the above referenced matter. I have also enclosed a check in the amount of \$25.00 for the motion fee. These documents were lost by the U.S. Postal Service when our original package was damaged in transit.

Please file the originals of the above documents with the files of your office and return clocked copies to me with the runner who delivered them.

With kindest regards, I remain

Respectfully,

DRISCOLL SHEEDY, P.A.


James W. Sheedy



Honorable Daniel E Shearouse
May 13, 2010
Page 2

cc Thomas C Goldstein, Esq
William W Wilkins, Esq
Jeffrey A Phillips, Esq
Robert D Cook, Esq



A PROFESSIONAL ASSOCIATION | ATTORNEYS AT LAW

James W. Sheedy
Lic. in SC Only
Direct: 704.341.2102
Fax: 704.341.2105
jimsheedy@driscollsheedy.com

Ballantyne 11520 N. Community House Road
Suite 200 | Charlotte, NC 28277
South Carolina Office 222 E. Main Street
Suite 204 | Rock Hill, SC 29730
www.driscollsheedy.com

May 11, 2010

Honorable Daniel E. Shearouse
Clerk of Supreme Court
Supreme Court Building
1231 Gervais Street
Columbia, SC 29201

Re Robert L. Chimento, et al v Town of Mount Pleasant
C A No. 09-CP-10-001551

Dear Mr. Shearouse:

Enclosed please find fourteen bound Briefs of Amicus Curiae the Poker Players Alliance in Support of Respondents and the accompanying Exhibits, as well as an unbound copy of both. Also please find the originals and corresponding copies of the Motion for Leave to File *Amicus Curiae* Brief and a Proof of Service in the above referenced matter. Please file the originals with the records of your office and return clocked copies to me in the enclosed envelope. I have also enclosed a check in the amount of \$25.00 for the motion fee.

By copy of this letter, I am serving the Brief of Amicus Curiae the Poker Players Alliance in Support of Respondents and the accompanying Exhibits on all interested parties.

With kindest regards, I remain

Respectfully,

DRISCOLL SHEEDY, P.A.


James W. Sheedy



Honorable Daniel E Shearouse
May 11, 2010
Page 2

cc Thomas C Goldstem, Esq
 William W Wilkins, Esq
 Jeffrey A Phillips, Esq
 Robert D Cook, Esq

Brigid M. Jones
Paralegal

May 3, 2010

RECEIVED

MAY - 3 2010

SC SUPREME COURT

The Honorable Daniel E. Shearouse
South Carolina Supreme Court
P O Box 11330
Columbia, South Carolina 29211

Re *Robert L. Chimento, Scott Richards, Michael Williamson, Jeremy Brestel and John T. Willis v. Town of Mount Pleasant* C.A. No. 2009-CP-10-001551

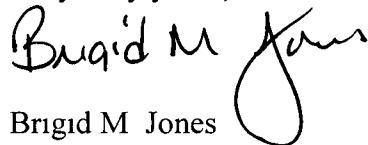
Dear Mr. Shearouse:

Enclosed for filing please find the original and sixteen copies of Final Brief of Respondents, Certificates of Compliance and Proof of Service in connection with the above-referenced matter. Please file the original and fifteen copies and return one filed, stamped copy in the enclosed self-addressed, stamped envelope.

By way of a copy of this letter, and as further evidenced by the accompanying Proof of Service, opposing counsel is being served.

Thank you for your assistance in this matter.

Very truly yours,



Brigid M. Jones

/bmj

Enc

cc: The Honorable Henry D. McMaster, care of Deputy Attorney General Robert D. Cook, Esq. (Via U.S. Mail w/ Enclosures)

Charleston
Charlotte
Columbia
Greensboro
Greenville
Hilton Head
Myrtle Beach
Raleigh



RECEIVED

APR 30 2010

SC SUPREME COURT

HENRY MCMASTER
ATTORNEY GENERAL

April 30, 2010

Jeffrey A. Phillips, Esquire
Phillips Law Firm
1425 Augusta Street
Greenville, South Carolina 29605

Thomas C. Goldstein, Esquire
Akin Gump Strauss Hauer & Feld LLP
1333 New Hampshire Ave., NW
Washington, D.C. 20036-1564

William W. Wilkins, Esquire
Nexsen Pruet, LLC
P.O. Drawer 10648
Greenville, South Carolina 29603

Re Robert L. Chimento, Scott Richards, Michael Williamson, Jeremy Brestel,
and John T. Willis v. Town of Mount Pleasant
Tracking No. 2009141846

Dear Counsel

I am enclosing two (2) copies of the Final Brief of Appellant and two (2) copies of the Final Reply Brief of Appellant along with proof of service, in the above-referenced case

Very truly yours,

Robert D. Cook
Deputy Attorney General

RDC/an
Enclosures

cc ✓ The Honorable Daniel R. Shearouse
Clerk of Court
The Supreme Court of South Carolina
Post Office Box 11330
Columbia, South Carolina 29211
(Original and 15 copies)

THE STATE OF SOUTH CAROLINA
IN THE SUPREME COURT

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APR 30 2010

APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas
The Honorable R Markley Dennis, Jr , Circuit Court Judge

S.C. SUPREME COURT

C A No 2009-CP-10-001551

Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John T Willis

Respondents,

v

Town of Mount Pleasant

Appellant

PROOF OF SERVICE

I hereby certify that I have on this day, April 30, 2010, served all counsel with two copies of pleading(s) hereinbelow specified by mailing copies of the same by United States Mail, postage prepaid, to the following address(es)

Pleadings

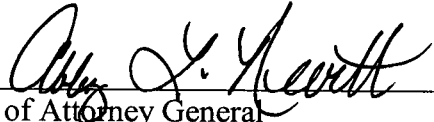
Final Brief of Appellant
Final Reply Brief of Appellant

Counsel Served

Jeffrey A Phillips, Esquire
Phillips Law Firm
1425 Augusta Street
Greenville, South Carolina 29605

William W Wilkins, Esquire
Nexsen Pruet, LLC
P O Drawer 10648
Greenville, South Carolina 29603

Thomas C Goldstein, Esquire
Akin Gump Strauss Hauer & Feld LLP
1333 New Hampshire Avenue, NW
Washington, D C 20036-1564



Office of Attorney General
Post Office Box 11549
Columbia, South Carolina 29211
(803) 734-3970



HENRY McMASTER
ATTORNEY GENERAL

RECEIVED

APR 13 2010

S.C SUPREME COURT

April 13, 2010

The Honorable Daniel E Shearouse
Clerk of Court
South Carolina Supreme Court
P O Box 11330
Columbia, SC 29211

RE Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John T Willis v Town of Mount Pleasant
C/A No 2009-CP-10-001551

Dear Mr Shearouse

Enclosed herewith for filing is the Record on Appeal in the above-referenced matter (one unbound original and fourteen copies) and the Certificate of Service Pursuant to Rule 210(a), I am serving Mr Wilkins with the Record as counsel for the Respondents and copying other counsel with this letter to let them know the Record has been filed

Very truly yours,

Mary Frances Jowers
Assistant Attorney General

Enclosures
cc (w/ enclosures as noted)
William W Wilkins, Esquire
Jeffrey A Phillips, Esquire
Thomas C Goldstein, Esquire

THE STATE OF SOUTH CAROLINA
IN THE SUPREME COURT

APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas
The Honorable R Markley Dennis, Jr , Circuit Court Judge

C A No 2009-CP-10-001551

Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John T Willis

Respondents,

v

Town of Mount Pleasant

Appellant

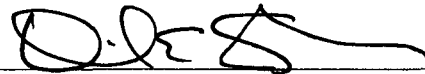
TRANSPORTATION ORDER

Pursuant to Rule 210(f) of the South Carolina Appellate Court Rules, it is ordered that the Clerk of Court for the Town of Mount Pleasant and the Town of Mount Pleasant Police Department Evidence Custodian release State's Exhibit No 1, State's Exhibit No 3, and Defense Exhibit No 2 from the Magistrate Court hearing to be transported to the South Carolina Supreme Court, by the South Carolina Office of Attorney General or his designee, for consideration in the above referenced appeal

IT IS SO ORDERED

JEAN HOEFER TOAL, CHIEF JUSTICE

By



Daniel E Shearouse, Clerk of Court

April 5, 2010

cc Town of Mount Pleasant Clerk of Court
Town of Mount Police Department Evidence Custodian
Robert Cook, Esquire
William W Wilkins, Esquire
Jeffrey A Phillips, Esquire
Thomas C Goldstein, Esquire



HENRY MCMASTER
ATTORNEY GENERAL

March 25, 2010

The Honorable Daniel E Shearouse (via e-mail)
Clerk of Court
South Carolina Supreme Court
P O Box 11330
Columbia, SC 29211

RE Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John T Willis v Town of Mount Pleasant
C/A No 2009-CP-10-001551

Dear Mr Shearouse

Following-up from our conversation of this afternoon, enclosed please find a letter from the Town of Mount Pleasant Court Administrator to the Charleston County Clerk of Court that is part of the Return in the above-referenced matter. The letter explains the Exhibits from the Municipal Court were available to the Circuit Court, but the Municipal Court provided a list of the evidence rather than the actual evidence. My understanding is that the actual evidence was not viewed by the Circuit Court. All parties are in agreement for these Exhibits to be in the Record on Appeal.

If you have any additional questions regarding this matter, please do not hesitate to contact me. My direct line is 803-734-3996.

Sincerely,

Mary Frances Jowers
Assistant Attorney General

Enclosure
cc

William W Wilkins, Esquire (via e-mail)
Jeffrey A Phillips Esquire (via e-mail)
Thomas C Goldstein, Esquire (via e-mail)

Municipal Judges

David L. Michel
Thomas H. Hesse
Anya G. Staubes
Jack Sinclair
J. Lawrence Duffy, Jr.

TOWN OF MOUNT PLEASANT



Sally F. Phipps
Court Administrator

Municipal Court
100 Ann Edwards Lane
PO Box 457
Mount Pleasant, S.C. 29465
843 884-6798 • Fax 843-856-2514

March 25, 2009

Bonnie Campbell
Clerk of Court
100 Broad Street
Suite 106
Charleston, SC 29401

RE Appeal for Robert Louis Chimento, Ticket Number 98045DB
Jeremy R. Brestel, Ticket Number 98035DB
Scott Richards, Ticket Number 98050DB
Michael W. Williamson, Ticket Number 98040DB
John Taylor Willis, Ticket Number 98043DB

Dear Ms. Campbell

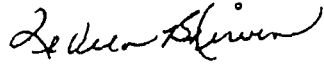
Enclosed is an appeal for Robert Louis Chimento, Jeremy R. Brestel, Scott Richards, Michael W. Williamson and John Taylor Willis, which we are required to file through your office. Please date stamp the first copy of the Return to Notice of Appeal prepared by Judge J. Lawrence Duffy and return it to the Mount Pleasant Municipal Court. I assume that since the Intent to Appeal was previously forwarded to your office and assigned the number 09-CP-10-1551, that this number will follow this case through the appeal process.

Please note that per our conversation, this Court is providing a list of the evidence rather than providing the actual evidence collected at this time. It can certainly be provided should the enclosed list not be sufficient when the case is heard.

If you should have any questions regarding this appeal, please contact this office

Sincerely Yours,

TOWN OF MOUNT PLEASANT

A handwritten signature in black ink, appearing to read "LeVica B. Kirvin". The signature is fluid and cursive, with a large initial "L" and a distinct "K".

LeVica B Kirvin
Court Administrator

LBK/mbi
Enclosure



HENRY McMASTER
ATTORNEY GENERAL

RECEIVED

MAR 18 2011

SC SUPREME COURT

March 18, 2010

The Honorable Daniel E. Shearouse
Clerk of Court
South Carolina Supreme Court
P O Box 11330
Columbia, SC 29211

RE Robert L. Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John T. Willis v. Town of Mount Pleasant
C/A No. 2009-CP-10-001551

Dear Mr. Shearouse:

Enclosed please find a proposed Transportation Order concerning the transportation of Exhibits which will be needed to complete the Record on Appeal. It has come to our attention that some of the Exhibits which were introduced in the Magistrate Court were available to the Circuit Court, but never viewed by the Circuit Court. For this reason, the Town of Mount Pleasant and the Town of Mount Pleasant Police Department Evidence Custodian have retained custody of these Exhibits, and the attached Order allows them to release these Exhibits. All parties are in agreement for these Exhibits to be in the Record on Appeal.

I would appreciate your signing the proposed order and including the Court's seal.

Sincerely,

Mary Frances Jowers
Assistant Attorney General

Enclosure
cc
William W. Wilkins, Esquire
Jeffrey A. Phillips, Esquire
Thomas C. Goldstein, Esquire



RECEIVED

MAR 15 2010

SC SUPREME COURT

HENRY McMASTER
ATTORNEY GENERAL

March 15, 2010

Jeffrey A Phillips, Esquire
Phillips Law Firm
1425 Augusta Street
Greenville, South Carolina 29605

Thomas C Goldstein, Esquire
Christopher M Egleson, Esquire
Jonathan H Eisenman, Esquire
Akin Gump Strauss Hauer & Feld LLP
1333 New Hampshire Ave , NW
Washington, D C 20036-1564

William W Wilkins, Esquire
Nexsen Pruet, LLC
P O Drawer 10648
Greenville, South Carolina 29603

Kenneth L Adams, Esquire
Adams Holcomb LLP
1875 Eye Street NW
Washington, D C 20006

Re Robert L Chimento, Scott Richards, Michael Williamson, Jeremy Brestel,
and John T Willis v Town of Mount Pleasant
Tracking No 2009141846

Dear Counsel

I am enclosing two (2) copies of the Initial Reply Brief of Appellant along with
proof of service, in the above-referenced case

Very truly yours,

Robert D Cook
Assistant Deputy Attorney General

RDC/an
Enclosures

cc The Honorable Daniel R Shearouse
Clerk of Court
The Supreme Court of South Carolina
Post Office Box 11330
Columbia, South Carolina 29211
(Original and 1 copy)

THE STATE OF SOUTH CAROLINA
IN THE SUPREME COURT

RECEIVED

MAR 15 2010

APPEAL FROM CHARLESTON COUNTY SC SUPREME COURT
Court of Common Pleas
The Honorable R Markley Dennis, Jr , Circuit Court Judge

C A No 2009-CP-10-001551

Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John T Willis

Respondents,

v

Town of Mount Pleasant

Appellant

PROOF OF SERVICE

I hereby certify that I have on this day, March 15, 2010, served all counsel with two copies of pleading(s) hereinbelow specified by mailing copies of the same by United States Mail, postage prepaid, to the following address(es)

Pleadings

Initial Reply Brief of Appellant

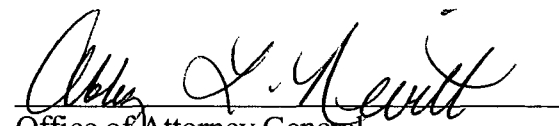
Counsel Served

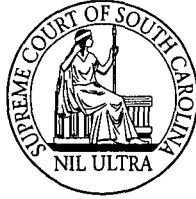
Jeffrey A Phillips, Esquire
Phillips Law Firm
1425 Augusta Street
Greenville, South Carolina 29605
*Attorney for Robert L Chimento Scott Richards Michael Williamson
Jeremy Brestel and John T Willis*

William W Wilkins, Esquire
Nexsen Pruet, LLC
P O Drawer 10648
Greenville, South Carolina 29603
*Attorney for Robert L Chimento Scott Richards Michael Williamson
Jeremy Brestel and John T Willis*

Thomas C Goldstein, Esquire
Christopher M Egleson, Esquire
Jonathan H Eisenman, Esquire
Akin Gump Strauss Hauer & Feld LLP
1333 New Hampshire Avenue, NW
Washington, D C 20036-1564
Attorneys for Amicus Curiae The Poker Players Alliance

Kenneth L Adams, Esquire
Adams Holcomb LLP
1875 Eye Street NW
Washington, D C 20006
Attorneys for Amicus Curiae The Poker Players Alliance


Office of Attorney General
Post Office Box 11549
Columbia, South Carolina 29211
(803) 734-3970



The Supreme Court of South Carolina

DANIEL E. SHEAROUSE
CLERK OF COURT

BRENDA F. SHEALY
CHIEF DEPUTY CLERK

POST OFFICE BOX 11330
COLUMBIA, SOUTH CAROLINA 29211

(803) 734 1080

FAX (803) 734 1499

March 3, 2010

James W. Sheedy, Esquire
Driscoll Sheedy, P.A.
222 E Main St
Rock Hill, SC 29730-4542

Thomas C. Goldstein, Esquire
Akin, Gump, Strauss, Hauer & Feld
1333 New Hampshire Ave., NW
Washington, DC 20036

Re Robert Chimento v. Town of Mount Pleasant

Dear Counsel:

The following Order has been endorsed on your Motion to Admit Thomas C. Goldstein Pro Hac Vice in the above entitled case on appeal:

“Granted

Jean H. Toal C.J.
For the Court

By s/ Daniel E. Shearouse
Clerk

March 3, 2010 ”

Very truly yours,

Donald E. Shearman
ES

CLERK

DES/jjp

cc Deputy Attorney General Robert D Cook
Senior Assistant Attorney General C Havird Jones, Jr
Assistant Attorney General Mary Frances Jowers
Jeffrey Alton Phillips, Esquire
William W Wilkins, Esquire



A PROFESSIONAL ASSOCIATION | ATTORNEYS AT LAW

James W. Sheedy
Lic. in SC Only
Direct: 704 341 2102
Fax: 704 341 2105
jimsheedy@driscollsheedy.com

Ballantyne 11520 N. Community House Road
Suite 200 | Charlotte NC 28277
South Carolina Office 222 E. Main Street
Suite 204 | Rock Hill SC 29730
www.driscollsheedy.com

March 1, 2010

RECEIVED

MAR 01 2010

SC SUPREME COURT

Via Hand Delivery

Honorable Daniel E. Shearouse
Clerk of Supreme Court
Supreme Court Building
1231 Gervais Street
Columbia, SC 29201

Re Robert L. Chimento, et al v Town of Mount Pleasant
C.A. No. 09-CP-10-001551

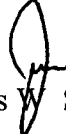
Dear Mr. Shearouse:

Enclosed please find the original and seven copies of a Motion to Admit Thomas C. Goldstein *Pro Hac Vice*, Memorandum in Support of Motion to Admit Thomas C. Goldstein *Pro Hac Vice* and Proof of Service in the above referenced matter. Please file the originals with the records of your office and return one clocked copy of each to my runner who presented the enclosures for filing. I have also enclosed a check in the amount of \$25.00 for the motion fee.

With kindest regards, I remain

Respectfully,

DRISCOLL SHEEDY, P.A.


James W. Sheedy

cc Thomas C. Goldstein, Esq.
William W. Wilkins, Esq.
Jeffrey A. Phillips, Esq.
Robert D. Cook, Esq.

THE STATE OF SOUTH CAROLINA
IN THE SUPREME COURT

APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas
The Honorable R Markley Dennis, Jr, Circuit Court Judge
C A No 2009-CP-10-001551

RECEIVED

MAR 01 2010

SC SUPREME COURT

Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John Taylor Willis

Respondents,

v

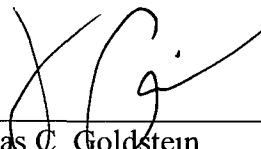
Town of Mount Pleasant

Appellant

MOTION TO ADMIT THOMAS C GOLDSTEIN *PRO HAC VICE*

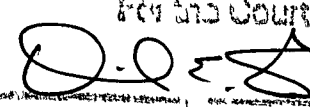
James W Sheedy and Thomas C Goldstein respectfully request that this Court admit Thomas C Goldstein *pro hac vice*, for the reasons set forth in the Memorandum in Support hereof

Respectfully Submitted,

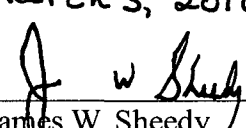


Thomas C Goldstein
AKIN GUMP STRAUSS
HAUER & FELD LLP
1333 New Hampshire Ave, NW
Washington, D C 20036
(202) 887-4000 (telephone)
(202) 887-4288 (facsimile)

GRANTED



March 3, 2010



James W Sheedy
DRISCOLL SHEEDY, P A
222 E Main St
Suite 204
Rock Hill, S C 29730
(803) 327-4472 (telephone)

Dated February 25, 2010

THE STATE OF SOUTH CAROLINA
IN THE SUPREME COURT

APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas
The Honorable R Markley Dennis, Jr, Circuit Court Judge
C A No 2009-CP-10-001551

RECEIVED

MAR 01 2010

Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John Taylor Willis

Respondents,

SC SUPREME COURT

v

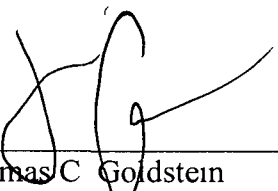
Town of Mount Pleasant

Appellant

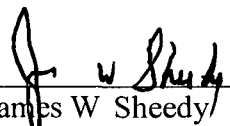
MEMORANDUM IN SUPPORT OF
MOTION TO ADMIT THOMAS C GOLDSTEIN PRO HAC VICE

Pursuant to Rule 404, SCACR, James W Sheedy and Thomas C Goldstein hereby request that this Court admit Thomas C Goldstein *pro hac vice* Mr Goldstein has submitted an application in accordance with this Rule, and is associated with local counsel of record James W Sheedy

Respectfully Submitted,



Thomas C Goldstein
AKIN GUMP STRAUSS
HAUER & FELD LLP
1333 New Hampshire Ave , NW
Washington, D C 20036
(202) 887-4000 (telephone)
(202) 887-4288 (facsimile)



James W Sheedy
DRISCOLL SHEEDY, P A
222 E Main St
Suite 204
Rock Hill, S C 29730
(803) 327-4472 (telephone)

Dated February 25, 2010

THE STATE OF SOUTH CAROLINA
IN THE SUPREME COURT

APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas
The Honorable R Markley Dennis, Jr, Circuit Court Judge
C A No 2009-CP-10-001551

Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John Taylor Willis

Respondents,

v

Town of Mount Pleasant

Appellant

RECEIVED
MAR 01 2010
SC SUPREME COURT

PROOF OF SERVICE

I hereby certify that I have served this Motion to Admit Thomas C Goldstein *Pro Hac Vice*, and the accompanying Memorandum, on Appellant and Respondents by depositing a copy of it in the United States Mail, postage prepaid, on March 1, 2010, addressed to

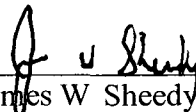
Counsel for Respondents

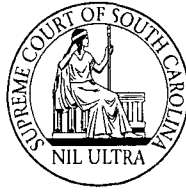
William W Wilkins
NEXSEN PRUETT, LLC
55 East Camperdown Way (29601)
Post Office Drawer 10648
Greenville, S C 29603-0648

Jeffrey A Phillips
PHILLIPS LAW FIRM
1425 Augusta St
Greenville, S C 29605

Counsel for Appellant

The Honorable Henry D McMaster
c/o Deputy Attorney General Robert D Cook
Post Office Box 11549
Columbia, S C 29211


James W Sheedy
DRISCOLL SHEEDY, P A
222 E Main St
Suite 204
Rock Hill, S C 29730
(803) 327-4472 (telephone)



The Supreme Court of South Carolina

DANIEL E. SHEAROUSE
CLERK OF COURT

BRENDA F. SHEALY
CHIEF DEPUTY CLERK

POST OFFICE BOX 11330
COLUMBIA, SOUTH CAROLINA 29211
TELEPHONE (803) 734 1080
FAX (803) 734 1499

February 24, 2010

The Honorable Daniel E. Shearouse
South Carolina Supreme Court
Post Office Box 11330
Columbia, South Carolina 29211

RE Robert L. Chimento, et al v. Town of Mount Pleasant
Civil Action No. 2009-CP-10-001551

Dear Mr. Shearouse:

I certify that the Office of Bar Admissions has received verified application requesting Thomas C. Goldstein be admitted *pro hac vice* in the above action. The \$250 filing fee for the applicant for this action has been paid.

Yours truly,

Deputy Clerk for Bar Admissions

GBW/twr



A PROFESSIONAL ASSOCIATION | ATTORNEYS AT LAW

James W Sheedy
Lic in SC Only
Direct: 704 341 2102
Fax: 704 341 2105
jwsheedy@driscollsheedy.com

Ballantyne: 11520 N Community House Road
Suite 200 | Charlotte NC 28277
South Carolina Office 222 E Main Street
Suite 204 | Rock Hill SC 29730
www.driscollsheedy.com

February 23, 2010

Honorable Daniel E Shearouse
Clerk of Supreme Court
Supreme Court Building
1231 Gervais Street
Columbia, SC 29201

Re Robert L Chimento, et al v Town of Mount Pleasant
C A No 09-CP-10-001551

Dear Mr Shearouse

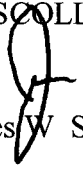
Enclosed please find the original and one copy each of a Verified Application for Admission *Pro Hac Vice* in the State of South Carolina, Certificate of Good Standing from the Court of Appeals of Maryland, Certificate of Good Standing from the District of Columbia Court of Appeals and a proposed Order granting Thomas C Goldstein admission *Pro Hac Vice*. Please file the originals with the records of your office and return a clocked copy of the Verified Application to me in the enclosed envelope.

By copy of this letter, I am providing the Office of Bar Admissions with a copy of the enclosed documents and a check in the amount of \$250.00.

With kindest regards, I remain

Respectfully,

DRISCOLL SHEEDY, P A


James W Sheedy

cc Thomas C Goldstein, Esq
Office of Bar Admissions

00093302

RECEIVED

FEB 24 2010

S.C. SUPREME COURT

**VERIFIED APPLICATION FOR ADMISSION *PRO HAC VICE*
IN THE STATE OF SOUTH CAROLINA**

Robert L Chimento et al 2009 CP-10 001551 Supreme Court
Plaintiff Respondents Case No Court
 VS

Mailing Address of Court 1231 Gervais Street
 Town of Mount Pleasant Columbia SC 29201
Defendant Appellant

Comes now Thomas C Goldstein applicant herein and respectfully represents the following

1 Applicant resides at
 3908 Rosemary Court
 Street Address
 Chevy Chase Montgomery Maryland 20815
 City County State Zip Code
 (301) 656-1851
 Telephone

2 Applicant is an attorney and a member of the law firm of (or practices law under the name of)
 Akin Gump Strauss Hauer & Feld LLP , with offices at at
 1333 New Hampshire Ave NW
 Street Address
 Washington N/A D C 20036-1564
 City County State Zip Code
 (202) 887-4060 (202) 887-4288
 Telephone Fax Number

3 Applicant has been retained personally or as a member of the above named law firm by
 The Poker Players Alliance to provide legal representation in connection with the above case now
 pending before the above named court of the State of South Carolina

4 Since 4 May of 1998 , applicant has been, and presently is, a
 member in good standing of the bar of the highest court of the District of Columbia or the State of where applicant regularly practices law Attached is a certificate of good standing

5 Applicant has been admitted to practice before the following courts (List all of the following courts applicant has been admitted to practice before United States District Courts United States Circuit Courts of Appeals, the Supreme Court of the United States and courts of other states or the District of Columbia)

Court	Date Admitted
Maryland Bar	12/12/95
U S Supreme Court	3/31/99
U S Court of Appeals for the 5th Circuit	9/5/03
U S Court of Appeals for the Federal Circuit	1/1/04
U S Court of Appeals for the 11th Circuit	6/10/04
U S Court of Appeals for the D C Circuit	8/9/04
U.S Court of Appeals for the 3rd Circuit	2/8/05
U S Court of Appeals for the 2nd Circuit	5/15/07
U S Court of Appeals for the 4th Circuit	12/1/08
U S Court of Appeals for the 6th Circuit	12/8/08

Applicant is presently a member in good standing of the bars of those courts listed above, except as listed below
(List any court named in the preceding paragraph that applicant is no longer admitted to practice before)

6 Applicant presently is not subject to any suspension or disbarment proceedings and has not been formally notified of any complaints pending before a disciplinary agency, except as provided below (give particulars e g , jurisdiction, court date)

7 Applicant never has had any application for admission *pro hac vice* in this or any other jurisdiction denied or any *pro hac vice* admission revoked, except as provided below (give particulars, e g , date, court, docket number, judge, circumstances, attach a copy of any order of denial or revocation)

8 Applicant never has had any certificate or privilege to appear and practice before any administrative body suspended or revoked, except as provided below (give particulars e g , date administrative body date of suspension and reinstatement)

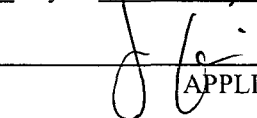
9 Local counsel of record associated with applicant in this case is James W Sheedy of the
Driscoll Sheedy law firm, which has offices at
222 E Main Street Suite 204
Street Address
Rock Hill York South Carolina 29730
City County State Zip Code
(803) 327-4472
Telephone

If applicable list all other firms/attorneys you are associated with in this matter

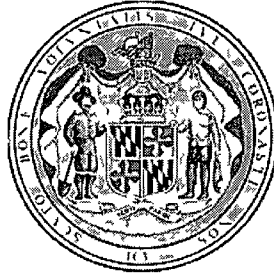
10 Applicant has previously filed an application to appear *pro hac vice* in the following South Carolina cases (give case name and status of litigation date of application, local counsel of record in each case, and state whether application is pending or was granted)

11 Applicant agrees to comply with the applicable statutes laws and rules of the State of South Carolina and will familiarize him/herself with and comply with the South Carolina Rules of Professional Conduct Applicant consents to the jurisdiction of the South Carolina courts and Commission on Lawyer Conduct

12 Applicant respectfully requests to be admitted to practice in the above named court for this case only

DATED this 22d day of February 20 10

APPLICANT

**Court of Appeals
of Maryland**
Annapolis, MD



CERTIFICATE OF GOOD STANDING

STATE OF MARYLAND, ss

*I, Bessie M Decker, Clerk of the Court of Appeals of Maryland,
do hereby certify that on the twelfth day of December, 1995,*

Thomas C. Goldstein

*having first taken and subscribed the oath prescribed by the Constitution and
Laws of this State, was admitted as an attorney of said Court, is now in good
standing, and as such is entitled to practice law in any of the Courts of said
State, subject to the Rules of Court*

In Testimony Whereof, *I have hereunto
set my hand as Clerk, and affixed the Seal
of the Court of Appeals of Maryland, this
seventeenth day of February, 2010*

Bessie M. Decker

Clerk of the Court of Appeals of Maryland

DISTRICT OF COLUMBIA

VERIFICATION

STATE OF _____)

COUNTY OF _____)

I, Thomas C Goldstein do hereby swear or affirm under penalty of perjury that I am the applicant in the above styled matter, that I have read the foregoing application and know the contents thereof, and that the contents are true of my own knowledge, except as to those matters stated on information and belief, and that as to those matters I believe them to be true

Thomas C Goldstein
APPLICANT/AFFIANT

Subscribed and sworn to before me this 22 day of February, 2010

Deborah A Johnson
Notary Public for the State of DISTRICT OF COLUMBIA

My Commission Expires May 14, 2010

My Commission Expires May 14, 2010
Notary Public District of Columbia
Deborah A Johnson

Deborah A Johnson
Notary Public District of Columbia
My Commission Expires May 14 2010

LOCAL COUNSEL CONSENT

I hereby consent, as local counsel of record to the association of applicant in this cause pursuant to Rules Governing Admission *Pro Hac Vice* to the South Carolina Bar

DATED this 23 day of Feb. 2010

John W Shundy
LOCAL COUNSEL OF RECORD

CERTIFICATE OF SERVICE

I hereby certify that I have served a copy of this application upon the South Carolina Supreme Court by mail addressed to South Carolina Supreme Court Office of Bar Admissions PO Box 11330, Columbia, SC 29211, accompanied by payment of the \$250 filing fee payable to the South Carolina Supreme Court on this 23 day of

Feb. 2010

Thomas C Goldstein
APPLICANT/AFFIANT



District of Columbia Court of Appeals
Committee on Admissions
430 F Street, N.W. — Room 123
Washington, D. C. 20001
202 / 879-2710

I, GARLAND PINKSTON, JR , Clerk of the District of Columbia
Court of Appeals, do hereby certify that

THOMAS C GOLDSTEIN

was on the 4TH day of MAY, 1998

duly qualified and admitted as an attorney and counselor and
entitled to practice before this Court and is, on the date
indicated below, an active member in good standing of this Bar

In Testimony Whereof, I have
hereunto subscribed my name
and affixed the seal of this
Court at the City of
Washington, D C , on
February 19, 2010

GARLAND PINKSTON, JR , CLERK

By *M. Charles*
Deputy Clerk

The Supreme Court of South Carolina

Robert L Chimento, et al, Respondents,

v

Town of Mt Pleasant, Appellant

2009-CP-10-001551

ORDER

IT IS ORDERED that Thomas C Goldstein, Esq , is hereby admitted *pro hac vice* as counsel for *amicus curiae* the Poker Players Alliance

Jean Hoefer Toal
Chief Justice

_____, 2010
Columbia, South Carolina

The Supreme Court of South Carolina

Robert L. Chimento, Scott
Richards, Michael Williamson,
Jeremy Brestel and John T
Willis,

Appellants,

v

Town of Mount Pleasant,

Respondent

The Honorable R. Markley Dennis, Jr.
Charleston County
Trial Court Case No. 2009-CP-10-01551

ORDER

For good cause having been shown, the time for serving and filing the Appellant's Initial Reply and Designation of Matter in the above entitled matter is hereby extended until March 15, 2010.

IT IS SO ORDERED.

JEAN H. TOAL, CHIEF JUSTICE

BY *Lorenda I. Shealy*
Chief Deputy CLERK

Columbia, South Carolina

February 25, 2010

cc Deputy Attorney General Robert D Cook
 Senior Assistant Attorney General C Havird Jones, Jr
 Assistant Attorney General Mary Frances Jowers
 Jeffrey Alton Phillips, Esquire
 William W Wilkins, Esquire



HENRY McMASTER
ATTORNEY GENERAL

RECEIVED

FEB 24 2010

SC SUPREME COURT

February 24, 2010

The Honorable Daniel E Shearouse
Clerk of Court
South Carolina Supreme Court
P O Box 11330
Columbia, SC 29211

RE Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John T Willis v Town of Mount Pleasant
C/A No 2009-CP-10-001551

Dear Mr Shearouse

Please accept this as a request for an extension of ten (10) days to complete the Reply Brief in the above-referenced matter based upon the Office workload at this time By my calculation, if the extension is granted, the Reply Brief will be due on March 15, 2010

Very truly yours,

Robert D Cook
Deputy Attorney General

cc William W Wilkins, Esquire
Jeffrey A Phillips, Esquire
Thomas C Goldstein, Esquire
Christopher M Egleson, Esquire
Jonathan H Eisenman, Esquire
Kenneth L Adams, Esquire

William W Wilkins
Member
Admitted in SC

February 22, 2010

RECEIVED

FEB 23 2010

The Honorable Daniel E Shearouse
South Carolina Supreme Court
P O Box 11330
Columbia, South Carolina 29211

SC SUPREME COURT

Re *Robert L Chimento Scott Richards Michael Williamson Jeremy Brestel, and
John T Willis v Town of Mount Pleasant* C A No 2009-CP-10-001551

Dear Mr Shearouse

Enclosed for filing please find the original and two copies of Initial Brief of Respondents, Certificate of Compliance and Proof of Service in connection with the above-referenced matter Secondly, enclosed please find the original and two copies of Respondents' Designation of Matter, Certificate of Counsel and Proof of Service Please file the originals and one copy of each, and return a filed, stamped copy of each in the enclosed self-addressed, stamped envelope

By way of a copy of this letter, and as further evidenced by the accompanying Proofs of Service, opposing counsel is being served

Thank you for your assistance in this matter

Very truly yours,



William W Wilkins
WWW/bmj
Enc

cc The Honorable Henry D McMaster, care of Deputy Attorney General Robert D Cook, Esq (Via U S Mail w Enclosures)

THE STATE OF SOUTH CAROLINA
In The Supreme Court

RECEIVED

FEB 23 2011

APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas

SC SUPREME COURT

R Markley Dennis, Jr , Circuit Court Judge

Case No 2009-CP-10-001551

Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John T Willis

Respondents

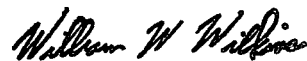
vs

Town of Mount Pleasant

Appellant

PROOF OF SERVICE

I certify that I have served Initial Brief of Respondents on Appellant by depositing a copy of it in the United States Mail, postage prepaid, on February 22, 2010, addressed to its attorney of record, The Honorable Henry McMaster, care of Deputy Attorney General, Robert D Cook, Esq , P O Box 11549, Columbia, South Carolina 29211



William W Wilkins
NEXSEN PRUET, LLC
55 East Camperdown Way (29601)
Post Office Drawer 10648
Greenville, South Carolina 29603-
0648
PHONE 864 370 2211
BWilkins@nexsenpruet.com

THE STATE OF SOUTH CAROLINA
In The Supreme Court

RECEIVED

APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas

FEB 23 2010

SC SUPREME COURT

R Markley Dennis, Jr , Circuit Court Judge

Case No 2009-CP-10-001551

Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John T Willis

Respondents

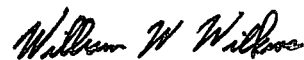
vs

Town of Mount Pleasant

Appellant

PROOF OF SERVICE

I certify that I have served Respondents' Designation of Matter to be Included in the Record on Appeal on Appellant by depositing a copy of it in the United States Mail, postage prepaid, on February 22, 2010, addressed to its attorney of record, The Honorable Henry McMaster, care of Deputy Attorney General, Robert D Cook, Esq , P O Box 11549, Columbia, South Carolina 29211



William W Wilkins
NEXSEN PRUET, LLC
55 East Camperdown Way (29601)
Post Office Drawer 10648
Greenville, South Carolina 29603-
0648
PHONE 864 370 2211
BWilkins@nexsenpruet.com

The Supreme Court of South Carolina

Robert L Chimento, Scott
Richards, Michael Williamson,
Jeremy Brestel and John T
Willis, Appellants,

v

Town of Mount Pleasant, Respondent

The Honorable R Markley Dennis, Jr
Charleston County
Trial Court Case No 2009-CP-10-01551

ORDER

For good cause having been shown, the time for serving and filing the
Respondent's Initial Brief and Designation of Matter in the above entitled
matter is hereby extended until February 22, 2010

IT IS SO ORDERED

JEAN H TOAL, CHIEF JUSTICE

BY



CLERK

Columbia, South Carolina

January 12, 2010

cc Deputy Attorney General Robert D Cook
Senior Assistant Attorney General C Havird Jones, Jr
Assistant Attorney General Mary Frances Jowers
Jeffrey Alton Phillips, Esquire
William W Wilkins, Esquire

William W Wilkins
Member
Admitted in SC

January 7, 2010

The Honorable Daniel E Shearouse
Clerk of Court, Supreme Court of South Carolina
Post Office Box 11330
Columbia, South Carolina 29211

Re Robert L Chimento et al v Town of Mount Pleasant
C/A No 2009-CP-10-001551

Dear Mr Shearouse

I am writing to respectfully request an extension of thirty (30) days to file Respondents' Initial Brief and Designation of Matter in the above referenced case Appellant's Initial Brief and Designation was served on December 22, 2009 and Respondents' Initial Brief and Designation is currently due on January 21, 2010 By my calculation, if the extension is granted, Respondents' Initial Brief and Designation would be due on February 22, 2010 due to the fact that February 20, 2010 falls on a Saturday

Very truly yours,


William W Wilkins

WWW/spe

cc Deputy Attorney General Robert D Cook
 Senior Assistant Attorney General C David Jones Jr
 Assistant Attorney General Mary Frances Jowers
 Jeffrey A Phillips, Esq

RECEIVED

JAN 11 2010

SC SUPREME COURT

55 East Camperdown Way
Suite 400 (29601)
PO Drawer 10648
Greenville SC 29603 0648
www.nexsenpruet.com

T 864 282 1199
F 864 477 2699
E BWilkins@nexsenpruet.com
Nexsen Pruet LLC
Attorneys and Counselors at Law



RECEIVED

DEC 22 2009

SC SUPREME COURT

HENRY McMASTER
ATTORNEY GENERAL

December 22, 2009

Jeffrey A Phillips, Esquire
Phillips Law Firm
1425 Augusta Street
Greenville, South Carolina 29605

Thomas C Goldstein, Esquire
Christopher M Egleson, Esquire
Jonathan H Eisenman, Esquire
Akin Gump Strauss Hauer & Feld LLP
1333 New Hampshire Ave , NW
Washington, D C 20036-1564

William W Wilkins, Esquire
Nexsen Pruet, LLC
P O Drawer 10648
Greenville, South Carolina 29603

Kenneth L Adams, Esquire
Adams Holcomb LLP
1875 Eye Street NW
Washington, D C 20006

Re Robert L Chimento, Scott Richards, Michael Williamson, Jeremy Brestel,
and John T Willis v Town of Mount Pleasant
Tracking No 2009141846

Dear Counsel

I am enclosing two (2) copies of the Initial Brief of Appellant and Designation of Matter, along with proof of service, in the above-referenced case

Very truly yours,


Robert D Cook
Assistant Deputy Attorney General

RDC/an
Enclosures

cc ✓ The Honorable Daniel R Shearouse
Clerk of Court
The Supreme Court of South Carolina
Post Office Box 11330
Columbia, South Carolina 29211
(Original and 1 copy)

RECEIVED

DEC 22 2009

SC SUPREME COURT

THE STATE OF SOUTH CAROLINA
IN THE SUPREME COURT

APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas
The Honorable R Markley Dennis, Jr , Circuit Court Judge

C A No 2009-CP-10-001551

Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John T Willis

Respondents,

v

Town of Mount Pleasant

Appellant

PROOF OF SERVICE

I hereby certify that I have on this day, December 22, 2009, served all counsel with two copies of pleading(s) hereinbelow specified by mailing copies of the same by United States Mail, postage prepaid, to the following address(es)

Pleadings

Initial Brief of Appellant

Designation of Matter To Be Included in the Record of Appeal

Counsel Served

Jeffrey A Phillips, Esquire

Phillips Law Firm

1425 Augusta Street

Greenville, South Carolina 29605

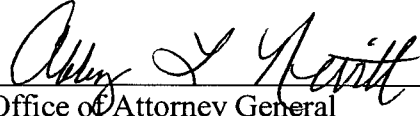
Attorney for Robert L Chimento Scott Richards Michael Williamson

Jeremy Brestel and John T Willis

William W Wilkins, Esquire
Nexsen Pruet, LLC
P O Drawer 10648
Greenville, South Carolina 29603
*Attorney for Robert L Chimento Scott Richards Michael Williamson
Jeremy Brestel and John T Willis*

Thomas C Goldstein, Esquire
Christopher M Egleson, Esquire
Jonathan H Eisenman, Esquire
Akin Gump Strauss Hauer & Feld LLP
1333 New Hampshire Avenue, NW
Washington, D C 20036-1564
Attorneys for Amicus Curiae The Poker Players Alliance

Kenneth L Adams, Esquire
Adams Holcomb LLP
1875 Eye Street NW
Washington, D C 20006
Attorneys for Amicus Curiae The Poker Players Alliance



Office of Attorney General
Post Office Box 11549
Columbia, South Carolina 29211
(803) 734-3970

The Supreme Court of South Carolina

Robert L. Chimento, Scott
Richards, Michael Williamson,
Jeremy Brestel and John T
Willis, Appellants,

v

Town of Mount Pleasant, Respondent

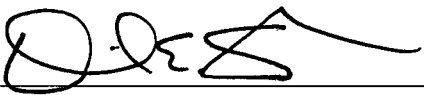
The Honorable R. Markley Dennis, Jr.
Charleston County
Trial Court Case No. 2009-CP-10-01551

ORDER

For good cause having been shown, the time for serving and filing the Appellant's Initial Brief and Designation of Matter in the above entitled matter is hereby extended until December 29, 2009.

IT IS SO ORDERED

JEAN H. TOAL, CHIEF JUSTICE

BY  _____
CLERK



Columbia, South Carolina

October 28, 2009

cc Deputy Attorney General Robert D Cook
Senior Assistant Attorney General C Havird Jones, Jr
Assistant Attorney General Mary Frances Jowers
Jeffrey Alton Phillips, Esquire
William W Wilkins, Esquire



RECEIVED

OCT 27 2009

S C SUPREME COURT

HENRY McMASTER
ATTORNEY GENERAL

October 27, 2009

The Honorable Daniel E. Shearouse
Clerk of Court
South Carolina Supreme Court
P O Box 11330
Columbia, SC 29211

RE Robert L. Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John T. Willis v. Town of Mount Pleasant
C/A No. 2009-CP-10-001551

Dear Mr. Shearouse:

I am writing to let you know that we received the transcript in the above-referenced matter on October 26, 2009. By my calculation, the Initial Brief and Designation of Matter to be Included in the Record on Appeal are due on November 25, 2009.

I respectfully request an extension of thirty (30) days to complete the Brief and Designation. By my calculation, if the extension is granted, the Initial Brief and Designation of Matter to be Included in the Record on Appeal will be due on December 29, 2009, due to the Christmas holidays.

Very truly yours,

Mary Frances Jowers
Assistant Attorney General

cc

William W. Wilkins, Esquire
Jeffrey A. Phillips, Esquire
Thomas C. Goldstein, Esquire
Christopher M. Egleson, Esquire
Jonathan H. Eisenman, Esquire
Kenneth L. Adams, Esquire



HENRY McMASTER
ATTORNEY GENERAL

October 8, 2009

Deborah Garrison
Post Office Box 901
Johns Island, SC 29457

RE Robert L Chimento Scott Richards, Michael Williamson,
Jeremy Brestel, and John T Willis v Town of Mount Pleasant
C/A No 2009-CP-10-001551

Dear Ms Garrison

On August 4, 2009, there was a hearing in the above-referenced matter before the Honorable R Markley Dennis, in Charleston County My records indicate you were the court reporter for this case

I request that you provide me with a transcript of the proceedings Please transcribe the entire record

I agree to pay the per pay charge for this transcript as provided by Rule 607, SCACR

Very truly yours,

Robert Cook
Deputy Attorney General

cc William W Wilkins, Esquire
Jeffrey A Phillips, Esquire
Thomas C Goldstein, Esquire
Christopher M Egleson, Esquire
Jonathan H Eisenman, Esquire
Kenneth L Adams, Esquire
Rosalyn Frierson, SC Court Administration
✓Clerk, South Carolina Supreme Court



HENRY McMASTER
ATTORNEY GENERAL

October 8, 2009

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OCT - 8 2009

SC SUPREME COURT

The Honorable Daniel E Shearouse
Clerk of Court
South Carolina Supreme Court
P O Box 11330
Columbia, SC 29211

RE Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John T Willis v Town of Mount Pleasant
C/A No 2009-CP-10-001551

Dear Mr Shearouse

Enclosed herewith for filing is the original Notice of Appeal in the above referenced matter Also enclosed are the following

- (1) Proof of Service of the Notice of Appeal on the Respondent,
- (2) A copy of the Order which is to be challenged on appeal,
- (3) A copy of my letter to the Charleston County Clerk of Court, and
- (4) A copy of my letter to the Court Reporter requesting the transcript

This Notice is being filed with the Supreme Court pursuant to S C Code Ann § 14-8-200 (b)(3) and Rule 203(d)(1)(A)(ii), SCACR

Very truly yours,

Robert Cook
Deputy Attorney General

Enclosure

Cc (w/ enclosures) William W Wilkins, Esquire
Jeffrey A Phillips, Esquire
Thomas C Goldstein, Esquire
Christopher M Egleson, Esquire
Jonathan H Eisenman, Esquire
Kenneth L Adams, Esquire

THE STATE OF SOUTH CAROLINA
In The Supreme Court

RECEIVED

OCT - 8 2009

APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas

SC SUPREME COURT

The Honorable R Markley Dennis, Jr , Circuit Court Judge

C A No 2009-CP-10-001551

Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John T Willis

Respondents,

v

Town of Mount Pleasant

Appellant

NOTICE OF APPEAL

The Town of Mount Pleasant appeals the Honorable R Markley Dennis' Order filed October 1, 2009, in the above-referenced matter Appellant received notice of entry of the order on October 2, 2009 A copy of the order on appeal is attached to this notice

Respectfully submitted,

HENRY D MCMASTER
Attorney General

JOHN W McINTOSH
Chief Deputy Attorney General

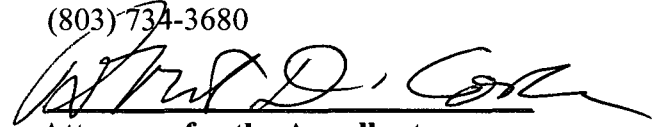
ROBERT D COOK
Deputy Attorney General

C HAVIRD JONES, JR
Senior Assistant Attorney General

MARY FRANCES JOWERS
Assistant Attorney General

P O Box 11549
Columbia, S C 29211
(803) 734-3680

By


Attorneys for the Appellant

Columbia, South Carolina
October 8, 2009

Other counsel of record

William W Wilkins, Esquire
Nexsen Pruet, LLC
P O Drawer 10648
Greenville, S C 29603

*Attorney for Robert L Chimento Scott Richards Michael Williamson
Jeremy Brestel and John T Willis*

Jeffrey A Phillips, Esquire
Phillips Law Firm
1425 Augusta St
Greenville, S C 29605

*Attorney for Robert L Chimento Scott Richards Michael Williamson
Jeremy Brestel and John T Willis*

Thomas C Goldstein, Esquire
Christopher M Egleson, Esquire
Jonathan H Eisenman, Esquire
Akin Gump Strauss Hauer & Feld LLP
1333 New Hampshire Ave , NW
Washington, D C 20036-1564

Attorneys for Amicus Curiae The Poker Players Alliance

Kenneth L Adams, Esquire
Adams Holcomb LLP
1875 Eye Street NW
Washington, D C 20006

Attorneys for Amicus Curiae The Poker Players Alliance

THE STATE OF SOUTH CAROLINA
In The Supreme Court

APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas

The Honorable R Markley Dennis, Jr , Circuit Court Judge

RECEIVED

OCT - 8 2009

SC SUPREME COURT

C A No 2009-CP-10-001551

Robert L Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John T Willis

Respondents,

v

Town of Mount Pleasant

Appellant

Proof of Service

I hereby certify that I have on this day, October 8, 2009, served all counsel with a copy of pleading(s) hereinbelow specified by mailing a copy of the same by United States Mail, postage prepaid, to the following address(es)

Pleadings

Notice of Appeal

Counsel Served

Jeffrey A Phillips, Esquire
Phillips Law Firm
1425 Augusta St
Greenville, S C 29605

*Attorney for Robert L Chimento Scott Richards Michael Williamson
Jeremy Brestel and John T Willis*

William W Wilkins, Esquire

Nexsen Pruet, LLC

P O Drawer 10648

Greenville, S C 29603

Attorney for Robert L Chimento Scott Richards Michael Williamson

Jeremy Brestel and John T Willis

Thomas C Goldstein, Esquire

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Jonathan H Eisenman, Esquire

Akin Gump Strauss Hauer & Feld LLP

1333 New Hampshire Ave , NW

Washington, D C 20036-1564

Attorneys for Amicus Curiae The Poker Players Alliance

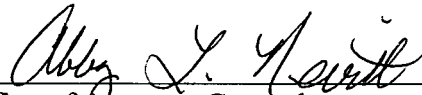
Kenneth L Adams, Esquire

Adams Holcomb LLP

1875 Eye Street NW

Washington, D C 20006

Attorneys for Amicus Curiae The Poker Players Alliance



Office of Attorney General

Post Office Box 11549

Columbia, South Carolina 29211

(803) 734-3970



HENRY McMASTER
ATTORNEY GENERAL

October 8, 2009

The Honorable Julie J. Armstrong
Clerk of Court
100 Broad St., #106
Charleston, S.C. 29401

RE Robert L. Chimento, Scott Richards, Michael Williamson,
Jeremy Brestel, and John T. Willis v. Town of Mount Pleasant
C/A No. 2009-CP-10-001551

Dear Ms. Armstrong:

Enclosed for filing is a Notice of Appeal in the above case.

Very truly yours,

Robert Cook
Deputy Attorney General

Enclosure

Cc (w/ enclosure) William W. Wilkins, Esquire
Jeffrey A. Phillips, Esquire
Thomas C. Goldstein, Esquire
Christopher M. Egleson, Esquire
Jonathan H. Eisenman, Esquire
✓ Kenneth L. Adams, Esquire
✓ Clerk, South Carolina Supreme Court

STATE OF SOUTH CAROLINA
COUNTY OF CHARLESTON

IN THE COURT OF COMMON PLEAS

Robert L Chimento, Scott Richards, Michael
Williamson, Jeremy Brestel, and John T
Willis,

Case No 2009-CP-10-001551

Appellants,

vs

Town of Mount Pleasant,

Respondent

ORDER

BY

JULIE J. HARRIS, JR.
CLERK OF COURT

2009 OCT -1 PM 2 54

FILED

This matter comes before the Court on the appeal of Robert L Chimento, Scott Richards, Michael Williamson, Jeremy Brestel, and John T Willis (collectively, "Appellants") from their convictions for violating S C Code Ann § 16-19-40 (2003) For the reasons set forth herein, Appellants' convictions are REVERSED

FACTUAL AND PROCEDURAL HISTORY

"Texas Hold'em" is a popular version of the card game poker The game is played with a standard deck of 52 cards Each hand is begun with the payment of "blinds," mandatory bets by the player to the left of the dealer (the "small blind," usually half the minimum bet), and the player to that player's left (the "big blind," equal to the minimum bet) Each player is then dealt two cards face-down ("hole cards"), following which there is a round of betting¹ The dealer then deals three cards face-up (the "flop") These are "community" cards, meaning that the cards are shared by all players There is another round of betting, following which the dealer deals the

¹ According to the uncontroverted testimony of expert witness Michael Sexton, *see infra*, betting (or checking, i e, electing not to bet) is much more than simply laying a sum of money on the table Rather, this is a key aspect of Texas Hold'em strategy and requires the exercise of skill

July 1

“turn,” a fourth community card. Another round of betting follows. Finally, the dealer deals the “river,” the fifth and final community card. Following a final round of betting, cards are shown (the “showdown”) and the player with the best hand wins the pot.²

On April 12, 2006, approximately twenty individuals, including Appellants, gathered at the home of Nathaniel Stallings to play Texas Hold'em. The players gathered once or twice a week to play the game. The buy-in for players—the initial purchase of poker chips—was between \$5.00 and \$20.00. The small blind was 25 cents, and the big blind was 50 cents, pots averaged between \$5.00 and \$10.00. Tr 93, 98-99. Periodically, 50 cents was taken from the pot at each table to reimburse Stallings for the cost of food and beverages consumed by the players. Tr 126, 131. The home was not operated as a business and no one profited from the playing of the game other than the winning players.

Approximately one hour into the game, police officers with the Town of Mount Pleasant (“Town”) entered the home and arrested the players. Those present, including Appellants, were charged with violation of § 16-19-40, which provides,

If any person shall play at any tavern, inn, store for the retailing of spirituous liquors or *in any house used as a place of gaming*, barn, kitchen, stable or other outhouse, street, highway, open wood, race field or open place at (a) *any game with cards* or dice, (b) any gaming table, commonly called A, B, C, or E, O, or any gaming table known or distinguished by any other letters or by any figures, (c) any roley-poley table, (d) rouge et noir, (e) any faro bank (f) any other table or bank of the same or the like kind under any denomination whatsoever or (g) any machine or device licensed pursuant to Section 12-21-2720 and used for gambling

developed over time. Tr 155

² During any given round of betting, a player may fold. The hand ends if all but one player folds. If the other players fold during the final round of betting, the remaining player is not required to show his hole cards. The expert testimony at trial indicated, based on an analysis of 103 million hands of Texas Hold'em, that 76 percent of hands are resolved by all but one player folding. Tr 206. Indeed, expert testimony presented below established that the player holding the best hand is frequently *not* the one who prevails because that player folds before the showdown, meaning that a player with a worse hand actually wins as a consequence of the play of the hand. Tr 161-62

Rmof2

purposes, except the games of billiards, bowls, backgammon, chess, draughts, or whist when there is no betting on any such game of billiards, bowls, backgammon, chess, draughts, or whist or shall bet on the sides or hands of such as do game, upon being convicted thereof, before any magistrate, shall be imprisoned for a period of not over thirty days or fined not over one hundred dollars, and every person so keeping such tavern, inn, retail store, public place, or house used as a place for gaming or such other house shall, upon being convicted thereof, upon indictment, be imprisoned for a period not exceeding twelve months and forfeit a sum not exceeding two thousand dollars, for each and every offense

S C Code Ann § 16-19-40 (emphasis added) The specific allegation against Appellants was that they had played a “game with cards” in a “house used as a place of gaming ” Appellants disputed the charges, arguing that because Texas Hold’em is a game in which skill, not chance, predominates, it is not “gaming” within the meaning of § 16-19-40, and they were therefore not guilty of the charged offense

Appellants urged the trial court to adopt the “dominant factor” test for the purpose of determining whether Texas Hold’em was a game of skill Under this test, if the predominant consideration in the outcome of a game is skill rather than chance, that game does not constitute “gaming ”

A bench trial was conducted in the Mount Pleasant Municipal Court before the Honorable J Lawrence Duffy, Jr on February 13, 2009 The municipal court heard testimony from Nathaniel Stallings, Appellant Jeremy Brestel, Michael Sexton, a World Poker Tour player and commentator, Robert Hannum, Ph D , a professor of statistics and probability at the University of Denver, and Justin Hembree, one of the arresting officers

Mr Sexton and Dr Hannum presented expert testimony on the question of whether Texas Hold’em is a game of skill Mr Sexton has been a professional poker player for more than 30 years, and in that time has profited every year from playing the game Tr 141, 180 Mr Sexton stated that “the object of poker is to make correct decisions If you make enough correct decisions, you’re going to be a winning player ” Tr 149 More specifically, Mr Sexton

Rme/3

testified that Texas Hold'em involves at least ten skills "putting your opponent on a hand," *id.*, discerning the hole cards of other players, Tr 152-53, determining "when and how much to bet," Tr 155, computing percentages and odds, Tr 156-58, knowing when to fold, Tr 160, bluffing, Tr 160-62, knowing when and how to change one's style of play to confuse other players, Tr 164-65, exercising patience and discipline, Tr 168-69, exercising self-control, Tr 169, "playing position," *id.*, assessing one's chances based on the betting conduct of other players, Tr 171-73, and increasing one's skills through study and practice, Tr 173-74

Dr Hannum has spent the last 10½ years studying gaming mathematics and has done studies and published papers on the role of skill in poker and other games Tr 194-94, 209 Dr Hannum testified regarding two studies he conducted to test the effect of skills on outcomes in poker One study demonstrated that when one player employs strategy and the other does not, the strategic player will win the hand approximately 97 percent of the time Tr 196-97 Another study tested the effects of varying levels of skill, and determined that more-skilled poker players consistently prevail against less-skilled players Tr 197 Dr Hannum also testified that a statistical analysis of professional poker players demonstrated that past performance was a reliable indicator of future success, establishing that the skill of the player was the predominant factor in determining wins and losses Tr 199-201 This study also concluded "that the skill differences among poker players [are] similar to the skill differences among the top professional golfers" Tr 200

Following the trial, the municipal court issued a written order That court identified the issues before it as whether Texas Hold'em is predominantly a game of skill, and if so, whether playing Texas Hold'em constituted a violation of S C Code Ann § 16-19-40 Order at 2 After considering the testimony presented at trial, the municipal court found as a matter of fact on the

Brady 4

basis of the testimony at trial that “Texas Hold’em is a game of skill. The evidence and studies are overwhelming that this is so.” Order at 3. Based on this finding, the municipal court concluded that if South Carolina applies the dominant factor test for determining whether an activity constitutes “gaming,” then playing Texas Hold’em would not be a violation of the statute. But the municipal court concluded that because neither the South Carolina Supreme Court nor the legislature had expressly adopted that standard, the court was obliged to find Appellants guilty. Order at 3-4.

Appellants subsequently noticed an appeal. This Court heard argument from the parties on August 4, 2009, and received briefs filed by Appellants and *amicus curiae* the Poker Players Alliance. This matter is now ripe for decision.

DISCUSSION

Appellants were convicted of violating S.C. Code Ann. § 16-19-40, which prohibits playing at “any game with cards or dice” while “in any house used as a place of gaming.” Appellants concede that Texas Hold’em is a game of cards, thus satisfying one of the two necessary elements for conviction. Appellants argue, however, that Stallings’ residence, where the game was being played, was not a “house of gaming” within the meaning of the statute. Appellants urge this court to uphold the finding of the municipal court that Texas Hold’em is a game of skill, and further to hold that the South Carolina Supreme Court, if faced with the question, would conclude that the term “gaming” should be defined according to the “dominant factor” test. Appellants reason that if Texas Hold’em is a game of skill, and if a game of skill is not “gaming” or “gambling,”³ then they were not “in [a] house used as a place of gaming,” and therefore cannot have violated § 16-19-40. Alternatively, Appellants maintain (1) that § 16-19-

³ The parties agree that the words “gaming” and “gambling” are synonymous and may be used interchangeably. See S.C. Jur. *Gaming* § 3 (2008) (“As legal terms, ‘gaming’ and ‘gambling’ are

40 is ambiguous and must be construed in their favor pursuant to the rule of lenity, and (2) that § 16-19-40 is unconstitutionally vague and overbroad. The Court addresses these arguments in turn.

I STANDARD OF REVIEW

On appeal from a municipal court, this Court does not conduct a trial de novo, but reviews for errors of law only. *See State v. Henderson*, 347 S.C. 455, 457, 556 S.E.2d 691, 692 (Ct. App. 2001) (citing *City of Columbia v. Felder*, 274 S.C. 12, 13, 260 S.E.2d 453, 454 (1979)). Further, a circuit court is “bound by the trial court’s factual findings unless they are clearly erroneous.” *State v. Wilson*, 345 S.C. 1, 6, 545 S.E.2d 827, 829 (2001).

II MEANING OF “HOUSE OF GAMING”

A The South Carolina Supreme Court Would Adopt The Dominant Factor Test

The dominant factor test may be simply stated. An activity is “gambling” if chance predominates over skill in determining the outcome of the contest. *See, e.g., Johnson v. Phinney*, 218 F.2d 303, 306 (5th Cir. 1955). This is the test employed by the overwhelming majority of states. *See, e.g., Opinion of the Justices*, 795 So. 2d 630, 635-36 (Ala. 2001) (citing numerous cases). Under the dominant factor test, an activity is classified as either one of skill or chance, depending upon which element is dominant. *See Morrow v. State*, 511 P.2d 127, 129 (Alaska 1973). Four factors are relevant in determining whether skill predominates over chance:

(1) Participants must have a distinct possibility of exercising skill and must have sufficient data upon which to calculate an informed judgment. The test is that without skill it would be absolutely impossible to win the game. (2) Participants must have the opportunity to exercise the skill, and the general class of participants must possess the skill. (3) Skill or the competitors’ efforts must sufficiently govern the result. Skill must control the final result, not just one part of the larger scheme. (4) The standard of skill must be known to the participants, and this standard must govern the result.

the same.”)

Rm/6

*Id*⁴

This Court agrees with Appellants that the South Carolina Supreme Court, if faced with the question, would adopt the dominant factor test for the purpose of defining the term “gaming” in § 16-19-40. To begin, the South Carolina Supreme Court has previously employed language very similar to that of the dominant factor test in deciding whether an activity was a prohibited lottery. In *Darlington Theatres v Coker*, 190 S C 282, 2 S E 2d 782 (1939), the court considered whether a “Jack Pot Night” by a local theater, in which a patron’s name was drawn out of a hat and a sum of money awarded, was a lottery. See *Darlington Theatres*, 2 S E 2d at 783. The court ruled that an activity is a prohibited lottery when three elements are present: “(1) The giving of a prize, (2) by a method involving chance, (3) for a consideration paid by the contestant or participant.” *Id* at 786. The court resolved the case on the basis that the contestants paid no consideration for the opportunity to win. Because there was no dispute that the result of the contest was entirely driven by chance, the court did not address the meaning of the phrase “by a method involving chance.”

The issue arose again in *Johnson v Collins Entertainment Co*, 333 S C 96, 508 S E 2d 575 (1998). There, the South Carolina Supreme Court was called to address the issue of whether video poker machines were “lotteries” prohibited by the state constitution. See *id*, 333 S C at 99, 508 S E 2d at 577. The majority of the Supreme Court concluded that video poker machines were not lotteries because “they do not involve a drawing and ‘tickets’ or other indicium of entitlement to a prize.” *Id*, 333 S C at 104, 508 S E 2d at 579.

Justice Burnett, joined by now-Chief Justice Toal, dissented. Justice Burnett first noted

⁴ The alternative is the so-called “English Rule,” under which “a scheme involving any skill, no matter how *de minimis*, will not be classified as a lottery.” *Id* at 635. There is no dispute here that the other activities enumerated in subsections (b) through (g) of the statute, such as roulette,

hml/7

that the test for determining whether an activity is a constitutionally prohibited lottery was long ago set forth in *Darlington Theatres* “(1) The giving of a prize, (2) by a method involving chance, (3) for a consideration paid by the contestant or participant ” *Collins Ent* , 333 S C at 108-09, 508 S E 2d at 581-82 (Burnett, J , dissenting) (quoting *Darlington Theatres*, 190 S C at 291, 2 S E 2d at 786) *Accord, e g* , *Nat’l Football League v Governor of Del* , 435 F Supp 1372, 1383 (D Del 1977) (“It is unquestioned that there are three elements necessary to a lottery prize, consideration and chance ”), *Gandolfo v Louisiana State Racing Comm’n*, 78 So 2d 504, 509 (La 1954) (“Lottery has been defined as a scheme for the distribution of prizes by lot or chance ”), *State v Coats*, 74 P 2d 1102, 1106 (Or 1938) (“Three things are necessary to constitute a lottery, viz , prize, chance, and consideration ”) In Justice Burnett’s view, the outcome of the case was controlled by the question of whether prizes in video poker were distributed by a method involving chance *See Collins Ent* , 333 S C at 111, 508 S E 2d at 583 Justice Burnett stated that he would apply the dominant factor test “If a participant's skill does not govern the result of the game, the scheme contains the requisite chance necessary to constitute a lottery On the other hand, if through the exercise of skill or judgment a participant can determine the outcome, the scheme is not a lottery My opinion is supported by the majority of jurisdictions which have considered this question ” *Id* , 333 S C at 113 & n 10, 508 S E 2d at 584 & n 10 (citing numerous cases in support of this position) Applying this definition, Justice Burnett concluded that chance predominated over skill in the video poker games at issue *See id* , 333 S C at 117, 119, 508 S E 2d at 586, 587 Then-Justice Toal agreed with Justice Burnett that the dominant factor test should govern the question of whether the outcome of a game was determined by chance *Collins Ent* , 333 S C at 120, 508 S E 2d at 588 (Toal, J , concurring and

faro, and craps are purely games of chance

RW/s

dissenting) She stated that “[Justice Burnett] has set forth the legal standard which should be used to define the term lottery as it appears in South Carolina's Constitution in a manner which is faithful to our Court’s precedents and well within the mainstream of American court decisions ”

Id

Therefore, both of the South Carolina Supreme Court justices who considered the question in *Collins Entertainment* concluded that the dominant factor test was the appropriate rule for South Carolina. Moreover, there is no reason to believe that the remaining three justices would not have adopted the dominant factor test, had they found the question presented to them. Indeed, it is worth noting that in the course of its opinion the majority described § 16-19-40 as “prohibiting *games of chance* or *gambling devices* at state and county fairs ” *Collins Ent* , 333 S C at 101, 508 S E 2d at 578 (emphasis added) The majority’s equation of the actual language of the statute—which refers to a “place of gaming”—to “games of chance” is a strong indication that the South Carolina Supreme Court, as a whole, believes that the term “gaming” in § 16-19-40 refers only to games in which the dominant factor is chance

It should also be noted that the South Carolina Attorney General has consistently applied the dominant factor test when providing opinions about whether certain activities are legal For example, in a 2004 Opinion the Attorney General stated

We have consistently stated that the test of whether a particular game is a game of chance or skill is governed by the so-called ‘predominance’ test This test was described in a recent [Attorney General’s] opinion, dated May 5, 2003 as follows [h]istorically, it has been the opinion of this Office, as well as a majority of jurisdictions in this country, that a ‘game of chance’ is one in which the element of chance predominates over any skill involved On the other hand, a ‘game of skill’ is one in which the element of skill is predominant over the element of chance See, Ops S C Atty Gen , August 2, 2001, September 5, 1995, December 5, 1978, Op No 3629, supra. While the South Carolina Supreme Court has never squarely adopted this so-called “Dominant Factor” test, the dissent in Johnson v Collins Entertainment Co indicates that the Court would accept this rule

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Op S C Atty Gen (Jan 22, 2004) (citation omitted) ⁵

In summary, for the reasons set forth above this Court concludes that if confronted with the question, the South Carolina Supreme Court would adopt the dominant factor test for determining whether an activity constitutes “gaming” or “gambling ”

B Under The Dominant Factor Test, Texas Hold'em Is Not “Gaming” Or “Gambling ”

1 Plain Language

As noted above, the municipal court found the evidence “overwhelming” that Texas Hold'em is a game of skill This Court affirms that finding The evidence presented by Appellants convincingly establishes that the outcome of a typical hand of Texas Hold'em is primarily determined by the relative skill of the players A more skilled player will consistently beat a less skilled player, and a player's skill can be improved over time through study and practice Moreover, success at a game of Texas Hold'em requires reasoning and deductive skills that belie the notion that the outcome is determined solely—or even primarily—by the cards one is dealt Accordingly, this Court holds that Texas Hold'em is a game of skill *Accord Pennsylvania v Dent*, No 733-2008, Slip Op at 13 (Pa Ct Com Pl Jan 14, 2009) (holding, under application of dominant factor test, that “it is apparent that skill predominates over chance in Texas Hold'em poker”), *In re Allen*, 377 P 2d 280, 281 (Cal 1962) (concluding, under application of the dominant factor test, that bridge is a game of skill)

As noted above, conviction under § 16-19-40 requires the state to prove two elements

⁵ The Court notes that it is not bound by the Attorney General's statement that poker is a game of chance *See Anders v S C Parole & Cmty Corr Bd*, 279 S C 206, 209-10, 305 S E 2d 229, 231 (1983) (per curiam) The Court notes that in 1986, the Attorney General concluded—without the benefit of any evidence such as that presented to the municipal court—that skill predominates over chance in golf, and thus that golf is a game of skill *See Op S C Atty Gen* (Mar 24, 1986) Uncontroverted testimony in this case established that skill plays an identical

First, that the defendant was in a prohibited location, and second, that the defendant was engaged in a prohibited activity. Proof of one without the other is insufficient to sustain a conviction. It is not illegal *per se* to play cards, nor is it illegal *per se* to be in, for example, a “tavern, inn, barn, kitchen, [or] stable.” Illegality inheres only in the simultaneous presence of both elements. Here, the Town maintains that Appellants were properly convicted because Appellants were playing cards—specifically, Texas Hold’em—in a “house used as a place of gaming.” The Town does not contend that Appellants were in any other type of prohibited place. Since there is no question that Appellants were playing a game of cards, their convictions will be sustained only if the Stallings residence was a “house used as a place of gaming.” For the reasons set forth above, this Court has concluded that Texas Hold’em is not “gaming” within the meaning of South Carolina law because skill predominates over chance. Necessarily, then, a place devoted exclusively to the playing of Texas Hold’em is not a “house used as a place of gaming” under § 16-19-40.⁶ Because Appellants were not in a prohibited location, their convictions under § 16-19-40 must be reversed.

2 Rule of Lenity

For the reasons set forth above, this Court holds that Appellants’ convictions must be reversed based upon the plain language of the statute. To the extent the statutory language is ambiguous, however, the rule of lenity provides an alternative—though no less powerful—basis for the reversal of Appellants’ convictions. Under well established law, “when a statute is penal in nature, it must be construed strictly against the State and in favor of the defendant.” *State v*

role in golf and in Texas Hold’em. Tr. 200

⁶ The Court notes that Appellants dispute whether the term “house” in § 16-19-40 refers to a residence (as the Town seems to contend), or rather to a place maintained for the specific purpose of gambling. Although the Court finds this question relevant to the ambiguity of the statute, *see infra*, resolution of this question is not necessary for consideration of this issue.

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Blackmon, 304 S C 270, 273, 403 S E 2d 660, 662 (1991) South Carolina adheres to the “rule of lenity—the principle that any ambiguity must be resolved in favor of the accused ” *Berry v State*, 381 S C 630, 633-34, 675 S E 2d 425, 426-27 (2009)

The record evidence indicates that Nathaniel Stallings, his fiancée, and a roommate resided in the home where Appellants were arrested. Similarly, although the municipal court made no specific finding on this point, it does not appear that Stallings took any more from the pots, known as a “rake”, than was necessary to reimburse him as the host for the cost of food and beverages consumed by the others present. These facts raise the question of whether a residence to which others are invited to play cards thereby becomes a “house of gaming.” The statute does not define the term. Does the term “house” mean a residence, as the Town contends? Although such a reading of the statute is possible, it does not appear from the surrounding text that the legislature used the word “house” in its present-day sense of a residential dwelling. The statutory language refers to commercial operations (taverns, inns, and stores) and outbuildings (barns, kitchens, stable, or other outhouses).⁷ It is thus equally plausible, if not more so, that the term “house” is not intended to refer to a residence at all, but rather to a place maintained for the express and sole purpose of gambling. See WEBSTER’S II NEW COLLEGE DICTIONARY 535 (1999) (defining “house” in part as a “building used for a particular purpose, as entertainment”). If a residence can become a “house used as a place of gaming” one must wonder—for surely the statute provides no clues—when and how this transformation occurs. Does it occur when non-family members are invited to play? When an invitee brings along an individual previously unknown to the host? Is the taking of a profit necessary? Does it depend upon the frequency with which the game is played, or the nature of the game itself? These questions merely scratch

⁷ As Appellants note, in 1802, when § 16-19-40 was drafted, kitchens were often detached from

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the surface of the issues that must be resolved in order to apply the statute to the playing of a game with cards or dice in a home

This ambiguity in the statute compels this Court to adopt the more narrow reading of the statute and conclude that a residence is not a “house of gaming” simply because persons are invited there on a regular basis to play Texas Hold’em

III VAGUENESS AND OVERBREADTH

As an alternative basis for reversing Appellants’ convictions, this Court concludes that S C Code Ann § 16-19-40(a) is unconstitutionally vague and overbroad ⁸

A S C Code § 16-19-40(a) Is Unconstitutionally Vague

“The void-for-vagueness doctrine rests on the constitutional principle that procedural due process requires fair notice and proper standards for adjudication ” *State v Neuman*, ___ S C ___, 2009 WL 1851310, at *3 (S C S Ct June 29, 2009) (internal quotation marks omitted) A statute is unconstitutionally vague if it does not give reasonable notice to a person of ordinary intelligence of the conduct that the statute makes criminal *See State v Curtis*, 356 S C 622, 629, 591 S E 2d 600, 603 (2004) Phrased differently, if a person of common intelligence “must necessarily guess at [the statute’s] meaning and differ as to its applicability, it is unconstitutional ” *Guinyard v State*, 260 S C 220, 226, 195 S E 2d 392, 394 (1973), *see Kolender v Lawson*, 461 U S 352, 357 (1983)

This Court concludes that S C Code Ann § 16-19-40(a) in the absence of the dominant factor test is impermissibly vague, and as such cannot be applied to Appellants consistent with principles of due process In reaching this conclusion, the Court need look no further than the

the main dwelling house to reduce the risk of fire

⁸ This portion of the Court’s analysis applies only to subsection (a) of the statute, which addresses playing at “any game of cards or dice” in the enumerated places As discussed *infra*, this Court concludes that subsection (a) is severable from the remainder of the statute

testimony of Mount Pleasant Police Officer Justin Hembree, who managed the investigation of the poker games at the Stallings residence and was present at Appellants' arrest. Throughout his testimony, Officer Hembree struggled to state exactly what it was about Appellants' conduct that rendered their activity illegal. This Court does not fault Officer Hembree in any respect, but rather concludes that his difficulty with articulating the standard for arrest under the statute is the direct consequence of the statute's vagueness.

S C Code Ann § 16-19-40 provides no definition of the term "house used as a place of gaming." Simple logic dictates that "place of gaming" must mean something more than a location where one of the subsequently enumerated games is played, otherwise, the two elements required for conviction would become one. But, because the statute does not articulate what is meant by a "place of gaming," there is no way for people to know when they are in violation of the statute. Because it is not possible to discern what conduct is criminal, § 16-19-40(a) is unconstitutionally vague.

B S C Code Ann § 16-19-40(a) Is Unconstitutionally Overbroad

This Court concludes that a significant due process concern is raised by the very broad reach of § 16-19-40(a). Section 16-19-40 sweeps within its ambit a very broad range of entirely innocent conduct. *Accord Papachristou v City of Jacksonville*, 405 U S 156, 163 (1972) (holding vagrancy statute unconstitutional in part because it "makes criminal activities which by modern standards are normally innocent"). It criminalizes a variety of games played with cards or dice regardless of whether the dominant factor in a particular game is skill or chance. As Appellants note, if § 16-19-40(a) applies to their conduct—the playing of Texas Hold'em in a private home—then it is a virtual certainty that the statute is violated on a daily basis all over the state. The circumstances the Town points to as justifying Appellants' convictions are virtually

indistinguishable from those attendant to a “Bunco Night” that might be hosted in any neighborhood in this state. The key difference is that Bunco, which involves the awarding of points for rolls of three dice, is unquestionably a game of chance. Similarly, any family that has ever played the children’s card game “Go Fish” while waiting for dinner at a restaurant where wine may be purchased has violated the statute, as has the youth group that plays a board game using dice while on a church picnic. Even a traveler playing a game of solitaire in an airport lounge is in violation of the statute. Simply put, § 16-19-40(a), as written, has the potential to make criminals of virtually every man, woman, and child in the State of South Carolina.

C Subsection (a) Is Severable

The vagueness and overbreadth of § 16-19-40(a) do not render the entire statute unconstitutional, because that provision is severable from the remainder of the statute. In South Carolina the “test for severability is whether the constitutional portion of the statute remains complete in itself, wholly independent of that which is rejected, and is of such a character that it may fairly be presumed that the legislature would have passed it independent of that which conflicts with the constitution.” *Sojourner v. Town of St. George*, 383 S.C. 171, 177, 679 S.E.2d 182, 186 (2009). This Court holds that the language of subsection (a), “any game with cards or dice” can be struck from the statute without doing violence to the remainder of the statutory text. The remaining statutory language is, as required by *Sojourner*, “wholly independent” of the stricken portion.

CONCLUSION

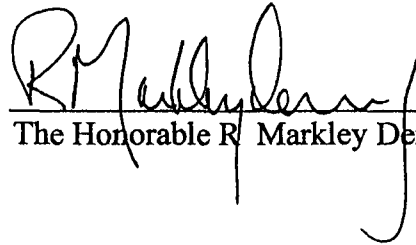
For the reasons set forth above, this Court concludes that the conduct in which Appellants were engaged—the playing of Texas Hold’em in a private residence—does not violate § 16-19-40, and Appellants’ convictions must be reversed. As an alternative and independent basis for the reversal of Appellants’ convictions, this Court concludes that § 16-19-40(a) is

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unconstitutionally vague and overbroad

AND IT IS SO ORDERED

October 1, 2009

A handwritten signature in black ink, appearing to read "R. Markley Dennis, Jr.", written over a horizontal line.

The Honorable R. Markley Dennis, Jr

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