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Weld County County Court, Division 5 Hon. Michele Meyer, County Court Judge Case No. 08M2463	
PEOPLE OF THE STATE OF COLORADO, Plaintiff-Appellant, v. KEVIN RALEY, Defendant-Appellee.	
Thomas C. Goldstein Christopher M. Egleson Akin Gump Strauss Hauer & Feld LLP 1333 New Hampshire Ave., NW Washington, D.C. 20036-1564 (202) 887-4000	District Court Case No.: 09CV168 County Court Case No.: 08M2463 Division: 1
BRIEF OF POKER PLAYERS ALLIANCE AS <i>AMICUS CURIAE</i> IN SUPPORT OF APPELLEE	

THE POKER PLAYERS ALLIANCE, by and through its attorney, Thomas C. Goldstein, respectfully files this Brief as *Amicus Curiae*.

Respectfully Submitted,

/S/ THOMAS C. GOLDSTEIN
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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 works to protect the legal rights of poker players. The group's membership has a direct interest in the outcome of this case, because it may affect whether they are permitted to play poker in Colorado.

ARGUMENT

Defendant-Appellee in this case was charged with illegal gambling in violation of Sections 18-10-102(2) and 18-10-103, C.R.S.1973 for playing the game Texas Hold 'Em in an informal tournament. In defending against that charge, Appellee relied on two exceptions to § 18-10-102(2)'s general prohibition on gambling: he argued that a Texas Hold 'Em tournament is a “[b]ona fide contest[] of skill” (§ 18-10-102(2)(a)) and that his conduct was “incidental to a bona fide social relationship” (§ 18-10-102(2)(d)).

Regarding the former argument—that a Texas Hold 'Em tournament is a contest of skill—Appellee presented the testimony of Professor Robert Hannum, an expert in mathematics and statistics who has studied poker extensively. The State responded that Professor Hannum's testimony was irrelevant as a matter of law because *Charnes v. Central City Opera House Association*, 773 P.2d 546 (Colo. 1989), supposedly precluded any contention that a Texas Hold 'Em tournament falls within the contest-of-skill exception to the statute. The trial court overruled the state's objection and allowed the testimony. The jury acquitted Appellee.

The State now appeals the trial court's decision to allow Professor Hannum's testimony. But as the State concedes, there is no way to know which of the two defenses offered by Appellee was the basis for the jury's acquittal. For that reason and the others set forth in Appellee's brief, this Court need not decide the question presented by the State, and should dismiss the appeal.

Should this Court reach the question whether the trial court abused its discretion in admitting Professor Hannum’s expert testimony that a Texas Hold ’Em tournament is a contest of skill, it should reject the State’s appeal on the merits. *Amicus* presents two points for this Court’s consideration. First, *Charnes* did not preclude the jury from considering whether Appellee was engaged in a contest of skill. Second, Professor Hannum’s testimony reflects the consensus view of experts that a Texas Hold ’Em tournament is a contest of skill.

I. THE TRIAL COURT WAS WITHIN ITS DISCRETION IN ALLOWING PROFESSOR HANNUM TO TESTIFY BECAUSE THE DECISION IN *CHARNES* DID NOT REACH THE QUESTION WHETHER A TEXAS HOLD ’EM TOURNAMENT IS A CONTEST OF SKILL

One of Appellee’s two defenses is that a Texas Hold ’Em tournament does not constitute gambling under § 18-10-102 because it is a contest of skill. The trial court allowed Appellee to present expert evidence on that question. The State insists that the trial court erred because *Charnes* supposedly held that poker constitutes gambling as a matter of law. The State misreads *Charnes* in three separate respects.

First, *Charnes* did not decide whether poker is a “bona fide contest of skill.” In the relevant discussion, the Court addressed only the threshold question of “whether the card and other wagering games” at issue—including poker—“satisfied that part of section 18-10-102(2) which defines ‘gambling’ as risking a thing of value for gain contingent in whole or in part upon lot, chance, or the happening of an event over which the person taking the risk has no control.” *Id.* at 550-51. The court held that poker satisfies that element of the definition of gambling.

Under the statute, an activity that satisfies the element of the definition at issue in *Charnes*—*i.e.*, an activity that is based “*in part* upon . . . chance” (emphasis added)—is lawful if it nonetheless falls within one of the statutory exceptions. *See* § 18-10-102(2)(a)-(d). *Charnes* itself makes clear that the application of the *exceptions* to the statutory definition of gambling

remains a separate question. *See id.* at 552-55 (examining whether the activity at issue satisfied the social activity exception). The question of whether poker is a contest of skill under § 18-10-102(2)(a) was not at issue in *Charnes*.

Nor is there a substantial argument that the court in *Charnes* implicitly held that poker does not fall within the exception for a contest of skill. The question in *Charnes* was whether a fundraising event that included numerous games—including roulette, which is an obvious game of chance—violated § 18-10-102. There would therefore have been no reason for the court to address whether some other games that were played at the event—such as poker—were “bona fide contest[s] of skill” under the (2)(a) exception.

In this case, unlike *Charnes*, the expert testimony addressed a question unresolved in *Charnes*: whether the form of poker in which Appellee engaged satisfied the exception the statute makes for bona fide contests of skill. *See* § 18-10-102(2)(a). The State’s contention that *Charnes* resolves this case by deciding that poker is decided “in part upon . . . chance” *without regard* to whether it was a bona fide contest of skill impermissibly reads that exception out of the statute. It also would radically expand the scope of the statutory prohibition on gambling in a way that the Legislature could not have imagined because almost every contest imaginable has *some* element of chance.¹

Second, even if *Charnes* had decided that a simple “poker game for money” (*id.* at 552) does not qualify under the contest-of-skill exception, that ruling would not extend to the conduct in which Appellee engaged: *tournament* poker. For example, the Federal Communications Commission has repeatedly recognized the distinction between some poker tournaments and

¹ The State’s interpretation would also violate the principle of lenity that courts must “resolve ambiguities in a penal code in favor of a defendant’s liberty interests.” *Frazier v. People*, 90 P.3d 807, 811 (Colo. 2004).

other forms of the poker. *See* FCC Letter, Hualapai Broads., Inc., Nos. 8210-BH *et al.*, 7 F.C.C. R. 6261, 1992 WL 12014063 (Sept. 24, 1992) (“Commission staff has previously ruled that where a poker tournament involves a closed-ended arrangement in which all players start with an equal amount of money and play in a ‘winner-take-all’ elimination contest, without limit as to time, the contest is a game of skill.”); FCC Letter, Calnevar Broad., Inc., No. DA 92-1720, 8 F.C.C. R. 32, 1992 WL 691132 (Dec. 30, 1992) (same). As described in § II.B, *infra*, tournament poker involves a demonstrable set of additional skills that were not involved in *Charnes*.

There is no merit to the State’s contrary argument, *see* Appellant’s Br. 10, that the definition of “poker” in § 12-47.1-103(22)(a) renders irrelevant as a matter of law whether particular forms of the game—such as a Texas Hold ’Em tournament—are uniquely contests of skill. That definition applies only to the Limited Gaming Act, not the criminal code’s provisions on gambling. That definition says nothing relevant about the amount of skill in various forms of poker. In any event, even the definition cited by the State does not in fact encompass tournament poker because it is limited to games whose “object” is to win an individual hand; in tournament poker, the object is to finish the tournament with the most chips rather than to win any individual hand. *See* § II.B, *infra*.

The State also relies on the proposition that because *Berckefelt v. Hammer*, 616 P.2d 183 (Colo. Ct. App. 1980), held that golf is not gambling, it “would never be argued” that any form of golf is not a contest of skill. Appellant’s Br. 6. Preliminarily, that is not necessarily true: if some derivative golf game were identified in which random forces predominated over the amount of skill involved, it might well be argued that wagering on that form of golf was prohibited. But the State’s logic is in any event flawed: even if a sweeping holding that golf is a game of “skill” precludes a contrary argument about a variant of that game, a narrow holding that a

particular form of poker (a “cash game”) is gambling does not illogically preclude consideration whether a different variant (a tournament) is instead a contest of skill. Indeed, to the extent that *Berckefelt* is relevant at all, it strongly suggests that Appellee was not engaged in gambling: as discussed below, studies show that poker and golf require about the same amount of skill to win.

Third, even on the ambitious assumption that *Charnes* did implicitly decide that poker was not a game of skill, at most it decided that fact-bound question on the record developed in that case. And indeed the *Charnes* court noted that the “game of chance” issue of was not contested in the case, saying “There is no dispute here over the fact that the card games and other games of chance at the Gala were contingent in whole or in part upon lot or chance or the happening or outcome of an event over which the person taking the risk had no control.” *Charnes*, 773 P2d 551. The record in that case does not control this one, particularly given a defendant’s right in a criminal case to present his defense. Indeed, the fact that *Charnes* was a civil case decided under the standard of proof in such cases, while in this criminal case the State was required to prove the elements of the offense under the higher standard required in criminal cases, further shows that any factual determination in *Charnes* could not possibly control here.

Futhermore, contrary to the suggestion of the State, there is no countervailing consensus that poker is a game of chance. While this is the first case in which the Colorado courts have compiled an evidentiary record on the question whether Texas Hold ’Em is a game of skill, a Pennsylvania court recently decided that issue in almost identical circumstances. *See Pennsylvania v. Dent*, No. 2008-733, slip op. at 14-15 (Pa. Ct. Com. Pl. Jan. 14, 2009) (attached for the Court’s convenience as Ex. A). *Dent* is the first case to address whether poker outcomes are determined by skill or instead by chance that has been decided in the wake of a newly developed array of mathematical and scientific evidence demonstrating that poker is a game of skill. In

Dent, the court concluded that the defendants were not engaged in unlawful gambling activity because Texas Hold 'Em is a game in which skill predominates over chance.

Taking the careful opinion of the *Dent* court into account alongside the other material that *amicus* presents here, this Court should hold that the trial court was well within its discretion in permitting Appellee to present expert evidence that a Texas Hold 'Em tournament is a contest of skill. A trial court's in limine evidentiary ruling is owed deference and will be reversed only if it is manifestly arbitrary, unreasonable, or unfair. *Beauprez v. Avalos*, 42 P.3d 642, 652 (Colo. 2002). *Charnes* cannot fairly be read so expansively that it precludes the jury from making a factually correct finding that a Texas Hold 'Em tournament constitutes a bona fide contest of skill.

For the foregoing reasons, there is no merit to the State's contention that the trial court erred as a matter of law in admitting the expert testimony of Professor Hannum.

II. A POKER MATCH IS A CONTEST OF SKILL

In assessing the trial court's decision, this Court may find useful some background information about the question on which Professor Hannum testified, namely, the skill required to win at poker in general and in tournament poker in particular. For the convenience of the Court, therefore, *amicus* provides below a description of the role of skill in poker play. *Amicus* notes, however, that while familiarity with this material may inform the Court's decision, it is not necessary to that decision: the trial court's decision to allow Professor Hannum's testimony should stand for the reasons stated above, none of which depend on what the testimony itself was to establish.

Unlike the simple games that casinos invent to maximize their profits—like roulette, blackjack, and the slots—poker matches have no “house edge.” Players compete against one another, and the casinos make money only by collecting a fee to cover the costs of providing the

dealers and space. Poker resembles games like golf, chess, billiards, and bridge. *Cf. In re Allen*, 377 P.2d 280, 281 (Cal. 1962) (bridge requires skill and is not a “game of chance”). Each involves *some* element of chance, but in each, when good players play against bad players, they consistently beat them. Players who enter golf and chess tournaments pay a fee to enter, and earn a cash reward if they win, but these games are contests of skill because their outcome is determined principally by skill. So too with poker.

To be sure, there is some cumulation of luck over the course of a poker match that will affect how individual players perform. That is also true, for example, of golf, where “changes in the weather may produce harder greens and more head winds for the tournament leader than for his closest pursuers” or a “lucky bounce may save a shot or two.” *PGA Tour, Inc. v. Martin*, 532 U.S. 661, 687 (2001). But, as in golf, skill is nonetheless dominant in poker play. This is because first, there are specialized skills that a player must master in order to win at poker, and second, in the long run, only skill will make somebody a winning player, not luck. 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), establish that poker is a contest of skill.

Where a game is one which contains elements of both skill and chance, such as poker, two general methods of determining the predominant element have developed. The traditional method courts have used to determine whether a game is predominantly one of skill 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 of predominantly skill). A Pennsylvania court recently took this approach in ruling that Texas Hold 'Em is a game of skill in the decision cited above. *Dent*, slip op. at 14-15. A second approach, more favored by the scientific community, is an empirical approach that examines the actual play of the game. It being well accepted 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)), 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.” *Id.* at 596. Using either method confirms that the game of poker, especially tournament poker, is a game of predominantly skill.

This section thus proceeds first with an analysis of the structure of poker (*see* § II.A), especially tournament poker (*see* § II.B) and will demonstrate the importance of making correct decisions in poker, and the degree of skill required to make those decision. It will show that how a person plays his cards is far more important to the person's winning or losing than what actual cards the person is dealt. The subsequent part of this section lays out the results of recent scientific studies based on computer simulations of poker matches and statistical analysis of actual tournament results, all of which demonstrate that more skillful players consistently outperform less skillful players. *See* § II.C.

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. Each time, in order to make the optimal decision the player must take into account a variety of known and unknown

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 of the players *alone* rather than the cards dealt accounted for the result in 76% of all the hands played. See Paco Hope, Brian Mizelle & Sean McCulloch, *Statistical Analysis of Texas Hold'Em* at 5 (Jan. 28, 2009) (attached for the Court's convenience as Ex. B).² 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. With player decisions deciding more than three-quarters of all poker hands, the players who consistently make good decisions will win. Those who do not will lose.

To make the right decisions consistently, poker players must employ a range of skills. By skill, *amicus* does not mean simply a sophisticated knowledge of odds, which is merely a prerequisite to competent poker play. 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. “Successful players must possess intellectual and psychological skills. They must know the rules and the mathematical odds. They must know how to read their opponents' ‘tells’ and styles. They must know when to hold and fold and raise. They must know how to manage their money.” *Dent*, slip op. at 14-15; see generally *id.* (concluding that these skills determine the outcome in poker and that it therefore is not gambling under Pennsylvania law).

Of course, 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. Unlike poker “bets,” true wagers do not alter the outcome of the event. A bet on the Super Bowl does not change the score; bets at a blackjack table are made before the cards are dealt; 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

² <http://www.cigital.com/resources/gaming/poker/100M-Hand-AnalysisReport.pdf>.

“move” like a move in any other game: it is a gambit designed to provoke a desired reaction from an opponent.

The importance of these moves is heightened because, in typical complex poker games like Texas Hold 'Em, 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 Hold 'Em, for example, a player has four principal decision-making opportunities: the first after he receives his two down cards, and the next three as the common cards are 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 chance 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 his “fate.”

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. Skeptics sometimes say that no amount of skill can turn a deuce into an ace. It is true that skill cannot change the cards, as a great golfer cannot change the wind. But skill allows a poker player with the deuce to make his opponent believe he has an ace, causing his opponent to fold a hand that would have won the pot. So skill also means that a good player will lose less with a deuce and win more with an ace than a bad one. Indeed, as noted, more than 75 percent 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. C); World Poker Tour Stats, Website (in World Poker Tour play, only 15% of hands go to a showdown).³

Even in that subset of hands, 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'. Instead, the player hopes to win the pot by convincing his opponent to fold the best hand. As it turns out, in roughly 50% of hands that do play to a showdown, a player who would have won had he stayed in will have folded—attesting to the skill of the winning player in scaring his competitor into folding. See Paco, *Statistical Analysis* at 5. Of course, a player trying to chase another player out may get called and may 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.

The importance of skill in poker is further demonstrated by the fact that a Texas Hold 'Em player who is a beginner can improve his talents and raise the level of his game by study and by accumulating game experience. After only a short time a player can acquire basic game skills, learning when to fold and how to make the basic calculations. But the more a person continues to practice and learn, the more his skills will improve, something which is also true for chess, golf, and bridge players.⁴

Together, the specific skills required to play poker and the demonstrated fact that poker hands are won by maneuvering rather than in a showdown between the dealt cards 75 percent of the time show that skill is required to be a winning poker player. All of this is particularly true

³ <http://www.worldpokertour.com/StatsAndTools/Landing.aspx>, last accessed Feb. 9, 2009.

⁴ A significant literature is available to help the novice player develop. In addition to the works on tournament play cited in the text *infra*, see, e.g., David Sklansky, *The Theory of Poker* (1994); Doyle Brunson, *Doyle Brunson's Super System: A Course in Power Poker* (2002); Gus Hansen, *Every Hand Revealed* (2008); David Apos-

for Texas Hold 'Em, the version of poker played by Appellee here, which is a particularly demanding form of the game and thus distinct from other forms of poker in which skill plays a lesser role. See Anthony Cabot & Robert Hannum, *Poker, Public Policy, Law, Mathematics, and the Future of an American Tradition*, 22 T.M. Cooley L. Rev. 443, 483 (skill predominates in Texas Hold 'Em; distinguishing Hold 'Em from other forms of poker); see also *Gallatin County v. D & R Music & Vending, Inc.*, 676 P.2d 779, 781 (Mont. 1984) (in poker “one player pit[s] his skills and talents against those of the other players,” distinguishing electronic poker against a machine).

B. Tournament Poker Requires Skills Distinct From Those Required To Win at “Cash Game” Poker

Commentators frequently point out that the best tournament players are not the best “cash game” players. Tournament poker is a distinct form of poker that emphasizes skill even more than cash play, and indeed entire volumes of literature have been devoted to the differences between cash play and tournament play. For example, Dan Harrington, who won the World Series main event in 1995, and later overcame record numbers of opponents to make it to the final table in 2003 and 2004, has written a three-part treatise dedicated to winning tournaments in particular. See Dan Harrington, *Harrington on Hold 'Em: Expert Strategy for No Limit Tournaments* (2005). Other titles abound. See, e.g., Blair Rodman & Lee Nelson, *Kill Phil: The Fast Track to Success in No-Limit Hold 'Em Poker Tournaments* (2005) (the title refers to Phil Hellmuth, who won a world-record 11 World Series of Poker events, and wrote the foreword to the book); Eric Lindgren, *World Poker Tour: Making the Final Table* (2005); David Sklansky, *Tournament Poker*

tolico, *Machiavellian Poker Strategy: How to Play Like a Prince and Rule the Poker Table* (2005); Daniel Negreanu, *Power Hold'em Strategy* (2008).

for Advanced Players (2002). These volumes all conclude that tournament poker is different from cash game poker, for the following reasons.

First, playing tournaments requires sophisticated decisions regarding the calculus of winning that differ from cash game poker. For example, if a professional player believes at the outset that he has a 75% chance of surviving to the late stages of a tournament, and thus earning a prize, he may conclude that he should play fewer hands and make smaller bets than he would early on in a cash game because simply outlasting other opponents, even with only a small number of chips, until the later stages of the tournament is more important to such a player than accumulating a large number of chips early on. On the other hand, a smart novice player who believes that he has only a 10% chance of lasting until the late stages of the tournament may recognize that better players will be playing more conservatively early on for precisely this reason, and so may play more aggressively than he would in a cash game. In this respect, tournament poker adds an element of self-awareness beyond that applicable in much cash game play.

Second, the structure of the tournament payout also means that a player must vary her playing style at different stages of play, and depending on how many chips she has. Most tournaments pay roughly the top 10% of the field. In a tournament with 500 entrants where the top 50 get paid, tournament play gets conservative when there are 51 players left. In that situation, known as “the bubble,” 51st place gets nothing, and 50th place makes a profit. Players with few chips must decide whether to try to outlast the other short stacks by folding as much as possible in the hopes that somebody else will make a mistake. In these circumstances, the chip leaders may decide that the best strategy is to become hyper-aggressive. Fear of “missing the money” will tame their opponents, allowing the opportunistic chip leaders to steal pots.

Other variables related to the payout structure also affect proper play. For example, in many tournaments, the difference in prize money between third and second place is frequently much less than the leap between second and first. For example, first place might make \$10,000, while second would make \$4,000, and third would make \$2,500. When the tournament gets down to three players, the player with the smallest chip stack has an incentive to attack the player with the largest chip stack in order to increase his odds of unseating the chip leader and eventually winning first place. If, instead, he sits passively and allows the chip leader to defeat his other opponent, then the player will make an additional \$1,500 by guaranteeing himself second place, but will do so at the cost of surrendering all of those chips to the chip leader, and placing himself at a greater disadvantage once only the two of them are left.

Third, tournament poker requires patience and a unique set of judgments. Tournaments impose two conflicting imperatives on players. Tournament players have an incentive to stay back from the fray and allow other players to work for them. In cash play, all that matters is winning chips—it doesn't matter who loses them. But a tournament player advances when other players are eliminated, and so a good player looks for opportunities to hang back from a fight and increase his prize by simply folding. This is impossible in a cash game.

Finally, to succeed in a tournament, a player needs to develop mental toughness. Tournament play routinely runs for hours. It is exhausting. Players who cannot keep focused for that long lose their ability to do the necessary math consistently; they lose the ability to make subtle reads on their opponents; they make sloppy moves. Furthermore, because tournaments involve dozens or hundreds of hands, a player must win consistently. The role of chance is minimized as winners are sorted out over time.

This combination of skills and the need for consistency over time differentiates tournament poker from individual poker matches. A poker tournament is not a transaction in which players wager on the outcome of chance events. While chance plays some role in determining the outcome of particular hands of poker, it does not primarily determine the outcome of a tournament.

C. Skilled Players Beat Simple Players in Simulated and Real Poker Play

The conclusion that skill is required to win at poker has been further proven by several recent studies. 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 statistical assessment of the role of skill in poker had been assembled. Now the subject has received academic attention, and the studies uniformly confirm that skill determines the outcome in poker games.

In one recent game-theoretical study, for example, the author demonstrated through the use of a computer simulation that a combination of the skills discussed above is required in order to consistently win 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:

- 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.

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 player's hands contained. Another robot bluffed aggressively.

The more sophisticated robots watched their opponent's 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. It lost \$546,000. 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 of all were the robots that most closely emulated tournament poker players. A robot that not only calculated odds but also observed fellow players and adjusted its style of play came in second at \$400,000. The best robot of all calculated odds, 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 best robot was the robot with the essential skills that every tournament 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, and earned \$432,000. *See* Larkey at 601, table 2.

The Larkey study's conclusions are confirmed by several other recent works. Professor Noga Alon at Tel Aviv University created a simplified version of Texas Hold 'Em that examined some elements of basic poker strategy and concluded 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." Noga Alon, *Poker, Chance & Skill* 16–17.⁵ "Practice and study do help to improve in poker," he found, and his data supported the conclusion that "skill is far more dominant than luck, and that poker is predominantly a game of skill." *Id.* at 17. Several other scientific papers have similarly concluded that skill predominates over chance in poker play. *See* Laure Elie & Romauld Elie, *Chance and Strategy in Poker* (Sept. 2007) (unpublished manuscript, attached as Ex. D) (examining several variants of Texas Hold 'Em and concluding that skill determined the outcome in all); Abraham J. Wyner, *Chance and Skill in Poker* (Apr. 17, 2008) (unpublished manuscript, attached as Ex. E (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)).

The same conclusion has been reached by two recent legal analyses. Professor Robert Hannum, the expert who testified at trial, and Anthony Cabot, a leading practitioner of gaming

law, ran a sophisticated computer simulation and concluded that poker victory depends on skill. Cabot, *Poker* (conducting Texas Hold 'Em simulations to determine that skilled opponents beat unskilled ones). The author of a second recent article similarly concluded that “poker should not constitute a ‘game subject to chance.’” Michael A. Tselnik, *Check, Raise, or Fold: Poker and the Unlawful Internet Gambling Enforcement Act*, 35 Hofstra L. Rev. 1617, 1664-65 (Spring 2007).

Professor Hannum’s testimony at trial in support of Appellee expanded on the conclusion in the study just cited. Professor Hannum testified that in his opinion, poker “is a game of skill.” Hannum Testimony at 13 (attached as Ex. F). He supported his opinion by explaining the results of two of his studies. In one study, Professor Hannum pitted skilled players against players who played “haphazardly,” and discovered that the skilled players came out significantly ahead of the haphazard players “in terms of money won or win rate.” *Id.* In a second, he discovered that players instructed to make random moves lost to players making intentional moves 97% of the time. *Id.* at 14. He also described the results of another study with which he was familiar, in which the authors observed novice poker players and discovered that they improved with practice. *Id.* at 15.

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 we find. The best players beat other players as often as the best golfers beat other golfers. The fact that poker has a “random device” (*see Larkey at 597*) introduces short term uncertainty into each hand, but over time the randomness of the cards evens out and all players eventually

⁵ www.math.tau.ac.il/~nogaa/PDFS/skill4.pdf, last accessed Feb. 9, 2009.

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 tournaments 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. See Shawn Patrick Green, *Online Poker: Interview With Annette ‘Annette_15’ Obrestad*, CardPlayer.com (Aug. 12, 2007).⁶ Obrestad’s feat shows it is the player’s skill rather than the deal of the cards that determines the outcome of poker play.

The same result is demonstrated by comparing the results of recent golf and poker tournaments. In the 25-year period be-

ginning with 1976 and ending in 2000, 21 different players won the World Series of Poker. One person won three times in that span (Stu Ungar), and three more won twice

	Poker	Golf
Back-to-back winners	3	2
Number of different winners	21	22
Winners of more than 1 title	4	3
Winners with other top 10 finishes	14 of 21	15 of 22
Top 10 finishes per winner	2.48	2.96
Average number of entrants	187	156

(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 Tiger Woods won back-to-back titles. Fifteen of the twenty-two champions made it into the top ten in another Championship. These numbers confirm that

⁶ <http://www.cardplayer.com/poker-news/article/2536/online-poker-interview-with-annette-annette-15-obrestad>, last accessed Feb. 9, 2009.

poker requires as much skill as golf to win consistently. *Accord* Rachel Croson, Peter Fishman & Devin G. Pope, *Poker Superstars: Skill or Luck?* CHANCE (Vol. 21, No. 4, 2008) (concluding that golf and poker require similar amount of skill to win).

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 fun to watch good players get beaten by even better players. Like golf, tournament poker is a game won and lost predominately on the basis of the skills of the players. Appellee in this case was engaged in a contest of skill, and so was not engaged in unlawful gambling.

CONCLUSION

For the foregoing reasons, the Court should hold that § 18-10-102(2)(a) allows playing poker tournaments because they are contents of skill, and should dismiss the State's appeal.

Respectfully submitted this 20th day of May, 2009.

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CERTIFICATE OF SERVICE

I hereby certify that on this 20th day of May, 2009, a true and correct copy of the foregoing Brief of *Amicus Curiae* was sent via LEXIS-NEXIS FILE-AND-SERVE to the following:

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