

Abiding Chance: Online Poker and the Software of Self-Discipline

Natasha Dow Schüll

A man sits before a large desktop monitor station, the double screen divided into twenty-four rectangles of equal size, each containing the green oval of a poker table with positions for nine players. The man is virtually “seated” at all twenty-four tables, along with other players from around the world. He quickly navigates his mouse across the screen, settling for moments at a time on flashing windows where his input is needed to advance play at a given table. His rapid-fire responses are enabled by boxed panels of colored numbers and letters that float above opponents’ names; the letters are acronyms for behavioral tendencies relevant to poker play, and the numbers are statistical scores identifying where each player falls in a range for those tendencies. Taken together, the letters and numbers supply the man with enough information to act strategically at a rate of hundreds of hands per hour.

Postsession, the man opens his play-tracking database to make sure the software has successfully imported the few thousand hands he has just played. After quickly scrolling through to ensure that they are all there, he recalls some particularly challenging hands he would like to review and checks a number

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of filters to reveal for further analysis only hands that match these criteria. While replaying the hands forward in simulations to see how different actions might have played out, he runs a statistical analysis to determine whether his performance for the session matched performance expectations for the cards he was dealt and, if not, whether the deviation has to do with skill or luck. He consults a graph of his “aggression factor” to convince himself that he hasn’t been playing as timidly as he used to and, finally, makes some notes in an Excel spreadsheet on minor behavioral adjustments to apply during his next session. Satisfied that he has taken adequate inventory of his game performance that day, he closes the program without once checking to see how much he won or lost; now is not the time to be misled by short-term data.

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“I wish I was a robot,” the much-admired live-poker player Jennifer Harman once confessed to a journalist, explaining how hard it was to act, in any given moment, according to the statistical laws that she knew, rationally speaking, she should trust (Glass 2001). What Harman fears is “tilt,” a term deriving from pinball that gamblers use to describe the shaken emotional state they are liable to enter during the course of a game.¹ When on tilt, gamblers inflate the significance of short-term events and lose sight of the long-term horizon, along with the ability to make decisions wisely—that is, in accordance with the law of large numbers. To keep their destructive in-game passions at bay, poker devotees like Harman resort to various rules, techniques, and codes of conduct.

Those who play poker online are in special need of tilt-avoidance tools, for the likelihood of tilting increases, as do its costs: if players tilt in a live game, they can sit out a couple of hands to clear their heads without great consequence, but if they tilt online, the effects quickly bleed over to the other tables they are simultaneously playing at, linking the tables in a dangerous cascade of emotional reactivity.² With the rise of online poker has come an impressive array of digital tools designed to help players maintain equilibrium. Unlike tools for tilt avoidance in live play, these rely on continuous data-gathering and microcomputational analytic algorithms, offering gamblers “digital insight” (Hansen 2014: 24) into

1. When a pinball player shook a machine too roughly (to move the ball where he or she wished it to go), its tilt sign would light up and the game would end.

2. “Each hand interlock[s] with the next,” wrote the author of a 2006 profile of online poker addiction (Schwartz 2006: 55). “Time slows down to a continuous present, an unending series of build-ups and climaxes. The gains and losses begin to feel the same” (ibid.). For an extended account of how digital media contributes to the experience of gambling addiction, see Schüll 2012.

the unfolding dynamics of play. They have become such an integral part of online poker play that it is a near requirement for serious players to use them.

The anthropologist Thomas M. Malaby (2003: 147) has described gambling as “a semibounded refraction of the precarious nature of everyday experience, a kind of distillation of a chanceful life into a seemingly more apprehensible form.” Online poker, I argue, performs this work of refraction, distilling certain features of “chanceful life” into a computational format that players can interact with, experiment with, and, sometimes, learn to abide. Drawing on interviews with gamblers, observations of online poker play, and discussion threads from poker forum archives, this article explores how the game offers players a training ground in how to act decisively in a world where “contingency, risk and indeterminacy have become predominant” (Arnoldi 2004: 36; Luhmann 1998: 95).

Numerous contemporary theorists have recognized choice making under conditions of uncertainty as a defining predicament of the present. “Everyday risks present us with the necessity of making a seemingly never-ending set of choices,” writes Alan Hunt (2003: 169). “Modern individuals are not merely ‘free to choose,’” elaborates Nikolas Rose (1999: 87), following Anthony Giddens (1991), “but obliged to be free, to understand and enact their lives in terms of choice.” Alberto Melucci (1996: 44), in *The Playing Self*, similarly describes choosing as “the inescapable fate of our time.” I approach online poker as an arena in which players grapple with this fate, examining how they engage an array of digital media—including real-time data tracking, dynamic numerical displays, statistical visualizations and retrospective simulations, analytic algorithms, and chat forums—to render the field of uncertainty apprehensible, available, and actionable.

The uncertainties that arise in the course of play are multiple, each unfolding from the next in an ever-complicating cascade: *What cards are others holding? How might they play those cards? What cards do they suspect you of having and how do they believe you are likely to play them? Are they tracking you as you are tracking them? If so, how will the actions you take affect their statistical models of your behavior?* As one might gather from the scene recounted above, the apparent purpose of poker tracking and analysis tools is to reduce and even neutralize such uncertainties, and yet, from another perspective, these tools can be seen to multiply and galvanize uncertainty by continuously tracking the data of chance events, filtering that data through rapid-fire statistical algorithms, and transmitting it back to the gambler in distilled, digestible form—just in time for the next action. In this way, they seek to game chance rather than to tame it.³

3. In *The Taming of Chance*, Ian Hacking (1990) shows how the notion of pure randomness that had emerged from experiments with games of chance in the seventeenth century was tempered

The propagation and digital rendering of aleatory events in online poker also performs a less obvious, less strategic function, which is my focus in this article. Namely, it affords gamblers the opportunity to cultivate—through the use of its chance-distilling features and the development of personal routines of self-inventory and self-adjustment—an attitude of subjective equanimity in the face of uncertainty. Practiced exposure to a digitally mediated stream of chance lowers their risk of becoming emotionally swept up in the volatile unfolding of game events and falling into the dreaded state of tilt. As we will see, the composure toward events-in-time that gamblers cultivate online carries over to life off-line, lending them a subjective “readiness” for living with uncertainty. In this sense, the digital tools available to online poker players can be understood as technologies of the self, famously described by Michel Foucault (1997: 225) as those “which permit individuals to effect by their own means or with the help of others a certain number of operations on their own bodies and souls, thoughts, conduct, and way of being, so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality.” Although digital media is often associated with effects such as choice paralysis and the disappearance of the subject, the case of online poker demonstrates that it can also serve as a vehicle for self-fashioning.

To explore this aspect of the game, I entertain the possibility of certain affinities—some of them unlikely, on first consideration—between the practices of online poker players and those found in a range of ascetic traditions including the self-vigilant monitoring of the Greco-Roman Stoics, the Christian monastic arts of world renunciation and self-purification, the elaborate spiritual accounting exercises of the Jesuits, the self-scrutinizing journals of the Puritans, and the Eastern arts of meditation and yoga. My intent in drawing on this array of diverse examples is not to flatten the significant differences among their respective cosmological visions, moral strictures, and spiritual aims—or to suggest that the secularized self-exercises of online poker amount to a modern-day asceticism (except in the etymological sense of *askesis* as “training”). Rather, it is to gain perspective on the methodical self-regulative experiments, protocol-following behaviors, and

by the rise of statistics in the nineteenth century. As worldly phenomena came to be understood as governed by statistical laws, chance was “tamed”—not in the sense that it could be controlled but in the sense that it could be subjected to calculation and converted into knowable, manageable risks. While gamblers certainly use statistics in online poker, for them uncertainty is less a liability to reduce, mitigate, or control than it is a resource to invite, play with, and exploit, following the distinction made in 1921 by Frank H. Knight (2006 [1921]) between risk and uncertainty. Recently, scholars have explored the generative, untamed aspects of uncertainty in domains such as financial derivatives (Appadurai 2011, 2012), day-trading (Martin 2002), and futures trading (Zaloom 2006).

striving for equipoise and indifference-to-outcome that figure so prominently in the practices of poker players. What these practices share with the prayers, rituals, and codes of conduct employed by ascetics, monks, and stoics is the struggle to perform as an acting self in a field of contingencies, uncertain outcomes, and laws beyond human grasp. Considering them together makes salient not only the continuities but also the discontinuities—technical and subjective—that digital media introduce to this existential and ethical struggle; it also makes salient the particular form that the project of chance abiding takes in the heavily financialized landscape of twenty-first-century America.

I have chosen to focus on the experience of three gamblers, each differently located in this landscape: Justin, a successful online poker professional; Emil, a day trader who plays to relax; and Winslow, a graduate student in engineering who finds the game analytically fascinating.⁴ What they have in common is a driving desire to heighten their capacities to abide volatility and cope with erratic downturns (in life, labor, and love) in the near term.

The Rise of Online Gambling

The first real-money online poker game was dealt on New Year's Day in 1998; ten years later, annual revenue from online poker had grown to \$6 billion. Despite heavy legal restrictions on the activity in the United States, more Americans play than any other national group: some 10 million in 2010 (Skolnik 2011: 117).⁵ At the close of 2011, the US Department of Justice reversed its stance on the legality of Internet gambling, permitting individual states to institute online gambling. Since then the gambling industry has quickly mobilized, with Nevada, New Jersey, and Delaware in the lead. Restrictions on online gambling are likely to be further rolled back as all levels of government look for new consumer activities to regulate and tax (see Skolnick 2011; Schüll 2012).

Online poker sites commonly offer Texas Hold'em (the most popular), Omaha, seven-card stud, and other popular versions of the game. Since the game of poker

4. I have used pseudonyms for all three online poker players. I conducted and recorded an in-depth interview with Justin in May 2013, at an international conference in Amsterdam, and with Winslow in July 2013 in Boston; my graduate student research assistant, Lauren Kapsalakis, conducted, recorded, and transcribed the interview with Emil, also in July 2013 in Boston.

5. The 2006 Unlawful Internet Gambling Enforcement Act (UIGEA) criminalized the transfer of funds from financial institutions to online gambling sites, making banks largely responsible for preventing their American clients from gambling. The law, however, did not make it illegal—or impossible—for Americans to place bets online; nor did it take full effect until 2010, by which point anti-UIGEA legislators were making headway with their agenda.

pits gamblers against one another rather than against the house, the house makes its money by collecting a “rake” (or percentage commission) on each cash game played or from entrance fees for tournaments. Online purveyors stand to collect far more rake than their land-based casino counterparts because players can gamble at multiple tables simultaneously when online—an activity called “multitabling.” Skilled players also stand to make more money when multitabling, for instead of the twenty to thirty hands they might play in an hour of live poker, they play as many as two thousand—a rate at which they can increase their exposure to hands worth betting on.⁶ In its speediest form, when players are gambling at upwards of ten tables (and sometimes as many as thirty), play is referred to as “grinding.”⁷ Although grinders greatly increase their exposure to risk, they do so in a way that reduces overall volatility. “In theory,” says Emil, a twenty-six-year-old day trader and former recreational poker player, “the more hands you play, *the more the variance will even out.*”

Phenomenologically speaking, the experience of online multitabling is significantly different from live poker—in which gamblers sit at a table and attend to a single event stream, sometimes playing their cards but more often folding and waiting. Online, players are “present,” virtually speaking, at many tables at once, their attention distributed across a vast portfolio of games and events; there is no waiting, just constant action. Given the quickened pace of play, the time they can devote to each game decision is reduced. Monetary stakes, like time and attention, are spread across multiple games, thinning a sense of investment in the unfolding action narrative of any one table. Winnings, too, are diluted—for while profits go up overall when multitabling, “with each additional table that you play, your winnings per table will drop,” a poker website explains (TournamentTerminator.com 2013). This is due to missing turns at one table while taking action at another or to bad decisions made in haste. To optimize returns, multitablers must deter-

6. To view a video of multitabling, see Thurman 2011. Poker sites offer tips on how to arrange the tables on one’s screen for optimal play: “If you play only a small number of tables simultaneously, it makes sense to arrange them in a tiled fashion all next to each other so that you can follow the action at all tables. If you multitable eight, twelve or even more tables, you should switch to a ‘cascading’ or ‘stacked’ table arrangement” (TournamentTerminator.com 2013). Most professional multitablers invest in a second monitor.

7. The term *grinding* in online poker has a different connotation than in online video games like *World of Warcraft* or in live land-based gambling where “grind joints” are mocked as places for the poor and unwise. Online multitablers go as far as to boast of their grinding powers, some even claiming the title in their online name, for example, “grinder007.” While Edward LiPuma and Benjamin Lee (2012) rightly point out that live poker has become morally and culturally valorized for its high risk and volatility, online poker has valorized a low-volatility, seemingly unheroic mode of play.

mine the maximum number of tables at which they can play *well enough*. “When you’re playing in real life, you’re playing every hand the best you can,” comments Winslow, a theoretical computer scientist and specialist in algorithmic problem solving currently working toward his doctorate at the Massachusetts Institute of Technology. “Online, you’re weighing optimal play per hand against the optimal number of hands you can play in time.”

In all these respects—temporal, attentional, financial—online poker would appear to be a “shallow” rather than a “deep” form of play, in contradistinction to the anthropologist Clifford Geertz’s (1973) famous description of gambling as a profoundly meaningful encounter between subjects in which players’ social status and very existence is at stake.⁸ Erving Goffman’s (1967) sociological account similarly depicted gambling as a focused, existentially freighted affair in which card-playing heroes engaged in “character contests” that allowed them to demonstrate courage, integrity, and composure in the face of contingency. By contrast, online multitablers who methodically click their way through thousands of hands per session while consulting statistical indexes to guide their actions are decidedly unheroic figures. Like other anticharismatic figures of contemporary finance—online day traders (Martin 2002), the so-called gold farmers of video games (Dibbell 2007), the clickworkers of Mechanical Turk (Irani 2013)—the multitabler measures success not in the form of sudden, singular windfalls but, rather, as an after-the-fact sum total of tiny increments.

Yet no matter how multiple the tables, how micro the stakes, and how fleeting each moment of play, online players cannot avoid the linear temporality of human decision making: they must, ultimately, act from a single position in time without knowing what the outcome will be; uncertainty cannot, in the moment of action, be circumvented. Luhmann (1993) defines risk as the problem of making decisions at the limit of knowledge, on the border between present and future. Risk, adds Randy Martin (2002: 106), “presents not only the limit to what can be known in the present, but also the burden of acting as if one could know.” Poker tracking software and its evolving array of features and functions alleviate this burden by enabling players to act confidently yet *without* pretending to know what will happen next; it provides them with “a sort of sixth sense, a datasense” (Kang and Cuff 2005: 110) that helps to make up the epistemological shortfall of human cognition. It equips them, that is, to better abide uncertainty—and, potentially, to profit from it.

8. The concept of “deep play” was first elaborated by Jeremy Bentham to describe play in which financial stakes run “irrationally” high despite the fact that chance will determine the outcome (Geertz 1973: 431).

PokerTracker, Hold'em Manager, and other online tracking software depend on the continuous tracking and recording of play-by-play game information, as it transpires: what cards the player was holding, what plays he or she made, what plays his or her opponents made, and, if the information gets revealed, what cards they were holding.⁹ These data are collected from the “chat log” that appears

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Dealer: Player2 checks
Dealer: Player3, it's your turn. You have 8 seconds to act
Dealer: Player3 checks
Dealer: Dealing River: [7d]
Dealer: Player1 raises $1.40
Dealer: Player2 you have 8 seconds to act
Dealer: Player2 has requested TIME
Dealer: Player2 folds
Dealer: Player3 calls $1.40
Dealer: Player3 shows two pair [6d6c 7d7h]
Dealer: Player1 shows two pair [7d7c KhKs]
Dealer: Hand #29246313 Player 1 wins pot ($5.20)
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Figure 1 Play-by-play event data in an online poker chat log (created by author)

below every table. Putatively there to give otherwise anonymous players a space to socialize as they might during live play, the log also automatically records all game events as they occur (see fig. 1). Tracking software draws this information into a database of “hand histories” that becomes the raw material for the analytic tools alluded to in the opening scene. In what follows I examine these, moving from in-game tools designed to facilitate rapid decision making to retrospective tools designed to prepare players for future sessions.

The aim is to help gamblers act, in their encounters with chance, from the vantage of an infinite temporal field in which probabilistic values can be trusted to bear out.

Acting in Real Time: The Heads-Up Display

During a game session, the heads-up display (HUD) is the most important poker software feature at a player's disposal.¹⁰ The HUD continuously queries a player's database to provide up-to-date information on opponents' behavioral patterns, presented in panels of letters and numbers that hover over the players' names (see fig. 2). The figures on display, which may shift as real-time actions and events are fed into the database of hand histories, can be read as virtual “tells”; instead of looking at one's opponents across the table and trying to sense them out in real time from behind sunglasses as in live poker, an online player consults the HUD's

9. PokerTracker, originally developed in 2001 and today in its fourth iteration, is credited with bringing information technology solutions to online poker. Today Hold'em Manager is the leading poker software product. For a detailed history of the evolution of poker software, see “Stranger than Fiction” 2009.

10. HUDs are a common feature of other online gaming interfaces such as *World of Warcraft*, in which they hover over other players' avatars, communicating information about their status, their strengths, their historical record, and the like (e.g., see Galloway 2012).

summary of historical data with a quick glance. “If I see that a player typically never raises after he checks and is deviating from that behavior,” explains Justin, “I can make certain deductions about how strong his cards might be.”

“You can create profiles of people in a way you could never do off-line,” says Emil. “In live poker you have to sit and watch and try to remember what a person does to get a sense of how they play; you have to keep track of everything in your head. Online, you don’t have to waste your energy remembering things—you have all these statistics overlaid on the screen.” Justin comments: “I don’t know of anyone who can actually remember *this player has been at the table for exactly eighty-seven hands and has raised preflop* [before any communal cards are dealt] *exactly eleven times*; it’s more intuitive, like *this player has been raising a lot in the last few hours*.” When betting at multiple tables online, memory becomes even less reliable than in live poker, and intuition less available. The software works as an “external memory,” as Justin puts it. “You trust the information more than your own memory, and you feel more comfortable taking action and doing it faster,” says Emil. “The numbers make the whole decision-making process easier, less agonizing . . . it becomes much more of a binary yes-no process.”

HUD numbers may help players feel more confident in their decision-making process, yet they do not pretend to pin down opponents’ behavior or predict what they will do next; they do not, in other words, eliminate uncertainty. Rather, they draw on continuously accruing historical information to gauge emergent behavioral tendencies; they serve as a means for what Luhmann (1998: 69–70) calls “provisional foresight,” allowing actors to adjust their responses to real-time conditions. “The numbers in the display tell you, *This player has certain tendencies*,” says Winslow, “and you can take that information into account right before you make a decision about a hand.” HUD numbers amount to a kind of statistical divination in which game data (rather than a supernatural agency) are queried for the insights they might offer into a situation at hand. We might also think of the HUD as a digital seer that functions as a conduit not to God but to knowledge and temporalities beyond the grasp of human cognition and consciousness, granting players “indirect human access” to this realm so that it might inform their future actions (Hansen 2014: 30).¹¹ Like the stock market index, the informational scrim of the HUD holds the status of an interpretation rather than a truth, speculation

11. In *Feed-Forward*, Mark Hansen (2014) argues that twenty-first-century microcomputational media give humans access to knowledge that would otherwise exceed their grasp, such that they may “feed it forward” into future actions. In this way humans act as supervisors or modulators of action rather than as transcendent agents, on the one hand, or robots, on the other.

rather than prediction; online poker players consult its screen to modulate their actions rather than to robotically follow its dictates.

The latest versions of poker tracking software allow players to customize their HUD windows to show whatever mix of behavioral statistics they wish. Always included up front, however, is a set of numbers thought to capture the core style of any player, as measured by the percentage of hands an opponent chooses to play (voluntary put in pot, or VPIP); the frequency of his or her betting during the first of four rounds of a hand (preflop raise, or PRF); and how likely he or she is to keep betting during the last three rounds of a game (aggression factor, or AF), summed up by the shorthand VPIP/PFR/AF. A consensus has formed around the optimal ranges for this so-called holy trinity of game statistics; values that fall outside of these ranges “imply predictability” and therefore “can be exploited by observant players,” a poker website explains (“Hold’em Poker Statistical Jargon Explained”

2013). Such players can glance at an opponent represented as “64/29/3” or “19/14/1.7” (as in fig. 2) and instantly know whether they are up against a seasoned professional or an inexperienced newcomer, whether he or she is a pushover or a heavy bluffer, and where he or she falls on the timid-to-aggressive spectrum.

The majority of players rely on a standard array of ten to twenty statistics in their HUD displays, swapping suggested configurations on message boards and trying out modifications in simulations before bringing them into live play. The most dedicated of

players tinker with the software until they arrive at a personalized set of filters that suits them. “I use over 150 stats,” says Justin. “I select whatever outputs I want to see on the screen and filter by them.” His current display shows forty figures in a specific order. While a player might theoretically benefit from knowing how an opponent plays along a hundred different dimensions, HUD windows showing that many numerical values would be cognitively draining, if not unassimilable, and would potentially overwhelm the aesthetic experience of play itself—especially with multiple tables open on the screen.

A secondary, more granular set of statistics pops up when a player hovers his or her mouse over any given figure in the primary HUD. “Behind every stat is another set of stats,” says Justin. Consulting these deeper statistics takes time; it is done strategically. As *PokerNews.com* (2009), a website dedicated to discussion of emerging tools for online poker, recommends:

OPPONENT: 19 / 14 / 1.7 LC:70 / H:1.5k
VP_SB:73 / BB_VP:52 / 3B:6 (0 / 25 / 13)
4B:0 / C:37 / F:45 / T:52 / R:66
Ft3B:63 / Ft4B:45 / CB:70 / FCB:64
TCB:87 / RCB:67 / AF_F:2 / AF_T:2
ST:32 (40 / 60) / SQ:10 / XC:36 / XR:8

Figure 2 Heads-up display (HUD) for an opponent in which the first three numbers designate VPIP/PFR/AF and the rest indicate statistical scores for a variety of other behavioral tendencies (created by author)

It can be very useful to commit one afternoon to customizing these pop-up screens until they show the information you want them to show. Make sure that only the helpful information per statistic is shown. Especially when playing numerous tables it can be very important to quickly find the information you are looking for . . . you will need to invest some time to optimize the pop-ups to make them more efficient and save yourself time when having to make a decision.

To further ease the decision-making process, poker players can configure the software to change the color of a given indicator when it passes certain statistical ranges. Color changes not only break up the monotony of a wall of numbers but also alert players, via intuitive visual triggers, to opponents' exploitable behavioral patterns as they emerge. While basic values like AF are readily legible without color to a moderately skilled player, more complex behavioral values—especially those composed of numerous different statistics—are hard to detect without color even for a player of Justin's caliber. His advanced statistical dashboard is coded to provide him with color cues in such cases. "Certain stats are indicators of what to do in certain situations," explains Justin. "So if I look at the HUD and see that they're all green, I know I should play aggressively."

Software developers constantly expand the orbit of potentially significant data that can be automatically tracked and legibly displayed in the HUD. The capacity to take "notes" on particular scenarios or game occurrences, for instance, was recently added to the HUD's repertoire. Formerly, players were urged to keep Excel spreadsheets open during a play session, record memorable moments as they happened, and review them periodically to find patterns. Such a system left it up to players to decide, in real time, that something noteworthy had happened and to take the time to note it. Automated note taking, programmed to detect and record the incidence of prespecified behaviors or "note definitions" (such as how many seconds an opponent takes to make a decision, which might be correlated with bluffing), releases players from this task and frees up time for more game play. Like statistical parameters, note definitions are "entirely customizable and there are millions upon millions of combinations," reports an online review of a note-taking program (Aus_pokergirl 2010). Once a note definition has been created, that note will flash in the HUD whenever an opponent's behavior fits the definition in question.

It is important to reiterate that the HUD is not an actuarial instrument that predicts outcomes and dictates player actions but a reserve of tendential indicators that offers clues to the directions events could potentially take. *Tendencies*, writes Brian Massumi (2002: 30), can be understood as "pastnesses opening directly

onto a future”; they pertain to “the intermediate space between what has occurred and what is about to occur,” as Limor Samimian-Darash (2013: 3) has defined the field of “potential uncertainty.” The HUD provides players with a compass to navigate this field—that is, to more quickly detect what might be happening in any given moment and where they might gain an edge. It is no surprise that they spend so much time calibrating, recalibrating, and tuning this instrument of detection. “I put quite a lot of effort into configuring how I use the software, knowing what data to use and to combine and what you can extract from it,” says Justin.

In terms of what one can extract from the HUD, the technology is an informational guide not simply to opponents’ tendencies but to one’s *own* tendencies—for in addition to statistically sussing out other players, the HUD can show a player how he or she appears to others. “It’s also important to keep an eye on your own stats, as tracking software has become so popular that it’s likely other winning players at your table will be using it and looking to exploit you in the same way,” an online tutorial suggests to novices (PokerPlayer.com 2010). Justin notes: “You never know for sure if they are tracking you, so before assuming that, I try to gauge what information they might have on me. I do this by looking at their behavior toward me and also at the speed of their play against me. Based on that, I can guess how aware they are of how I typically behave and can adjust my behavior accordingly.” Although online poker removes the palpable social and self-performative aspect of live play, both persist in digitally mediated fashion; the technology provides a window through which gamblers may evaluate the actions of others and also evaluate and adjust their own behavior. (While in the Buddhist tradition it is by seeing one’s own actions from the same detached perspective as others’ that one attains a state of compassionate detachment, here it affords gamblers a strategic, competitive foothold.)

One way Justin adjusts his behavior is to frequently change his play style when playing against the same opponent—for example, he might alternately loosen and tighten his range of starting hands. He thus uses HUD technology both to compose a statistical profile of his opponents that can help him decide how to act in relation to them and to figure out what kind of profile they might be composing of him and how he might scramble the data he generates to keep them guessing about his play style. The best profile to have is one that gives off no signals or “tells” that might be exploited by discerning opponents (and their algorithms). Another way players adjust their behavior to eliminate the communication of behavioral tendencies is to always take the exact same number of seconds to make a decision, even if they know immediately what they will do; some players are known to always let their timer run down to one second before taking an action. A completely neutral

profile is ideal precisely because it remains in the sphere of uncertainty. Thus, while the HUD can be a tool of uncertainty reduction when used to gauge the potential behavior of others, when used reflexively it becomes a tool of uncertainty *cultivation*: the key is to methodically extinguish all signs of passion—desire, fear, weakness—from one’s data stream, in order to seem as purely unpredictable and uninterested as possible.

Retrospection: Postsession Analytics

While the HUD dashboard helps players dial down their passions in the heat of the game, a different set of poker software tools helps them prepare for dispassionate play through retrospective exercises. In between games, when players are not caught up in the rapid-fire stream of decisions that online poker demands, they are invited to turn to their hand-history database and attempt to discern what patterns and habits might be revealed there. A range of queries can be put to the data: *Am I overvaluing or badly playing certain hand combinations? Am I playing too many hands from a certain position? Do I become aggressive or timid in certain situations?* To the extent that poker software encourages players to reflect upon their past action so as to shore up “leaks” in their game and better comport themselves in future play, it can be understood as a device for self-examination, self-discipline, and self-fashioning.

One way players can perform this self-work is through a post hoc analysis in which they revisit the game scenarios they suspect they played suboptimally—perhaps all hands in which they held an ace or in which they were the first to act—and “replay” them in the form of simulations that show “how they could have gone differently,” as Winslow puts it. By keeping the known information constant (i.e., the cards in one’s hand and those shown on the table) while varying the unknown information (i.e., the cards held by one’s opponents), explains Justin, “you can logically try to reason out the other lines you could have taken, see what you would have won on the preflop, and on the flop, and on the turn and on the river [different stages in a round of betting]—what the chances of winning *would have been* if you had made any number of different choices.”

Giving an inverse twist to the Stoical practice in which individuals, in moments of quiet before or after acting, meditated on imagined challenges so that they could think through all the different ways they might act and thus prepare themselves for actual situations (Foucault 1997: 239), retrospective poker-hand simulations convert actual events back into a virtual field of potential actualities. By returning players to a point in the past and confronting them with the branching

diversity of outcomes that might have emerged from it, the simulations prepare them to more easily “see through” the singularity of any given decision moment and recognize the multiple futures it carries. “In the moment, the right decision is not clear,” says Emil, “*but in the aggregate, you can see how it makes sense to act*; certain things come up over and over again and start to make sense.” The Bayesian vantage he gains through simulations lightens the consequential load of individual game decisions and facilitates the decisive, speedy flow of multitableting. The subjective stance sought here is one of equanimity in the face of uncertainty and outcome variance.

Another postsession digital tool that helps players foster such a stance is the all-in expected value (AIEV) calculator. Looking back on a session, the calculator assesses the odds a player had of winning those hands in which he or she went “all in” against another player. (While all-in bets are relatively rare in live play, they occur often in online multitableting due to the sheer volume of hands players encounter.) “I can look back and say, *Today I got into ten 50/50s and five 20/80s and four 40/60s and six 70/30s*,” reports Winslow. In other words, he made ten all-in bets with a 50 percent chance of winning, five with a 20 percent chance, and so on. Also called pot equity, AIEV calculates what a player theoretically “owned” of a pot. “Basically, if you have a 40 percent chance of winning, you can think of that in the long run as owning 40 percent of it,” Justin explains, “because *if you played the hand out an infinite number of times, that’s how it would work out*. So that’s your expectation.” In actuality, a tie notwithstanding, one player will walk away with the entire pot and the other with nothing. Thus the AIEV calculator cannot be described as a predictive technology, even in the retroactive sense, for it is concerned not with how a specific hand will *turn out* but rather with what a player can *statistically expect* from it. “Your expectation is based on the long term, and that’s what should tell you how to act in the short term,” says Emil. The point is to base one’s expectations and one’s actions in an infinite rather than a finite register.

To that end, poker players like the one described at the start of this article are emphatically encouraged to disregard (and, indeed, to renounce) their *actual* all-in winnings—for they might have won every all-in wager they made during a session of play, but only out of luck. Instead of calling up winnings after a session of play, they should call up their AIEV scores. Furthermore, they are advised to do so only after a statistically significant number of sessions have been played, since only a large number can be trusted to render an honest assessment of their performance. “Once we have played enough hands to make our sample size meaningful, *the data will be more honest than our own impressions* of how we stack up,” writes one player on his personal poker blog (Chris 2011; emphasis added). If players

find their scores to be in the negative range, they know they have been playing too loose (e.g., betting on too many 20/80s and not enough 80/20s); if they find their scores favorable, then they should feel good about their performance—regardless of actual game outcomes. “If you’re playing well,” says Emil, “you should feel just as good whether you’re losing or winning.” Financial traders, Caitlin Zaloom (2006: 128) reports, are similarly invested in “dismantling narratives of success or failure.” She describes how managers at one trading firm claimed that they did not care if traders made or lost money as long as they practiced discipline: “The trader’s responsibility was to his technique of self-regulation, not to the profit and loss figure at the end of the day” (ibid.: 129).

As in financial trading and other activities involving short-term volatility, to play online poker well one must strive to renounce the pleasure of immediate worldly gains; pleasure should come not from the outcome of a given moment but from consistently following the rules of practice—in this case, the rule of large numbers. “What you care about is the long haul, and you learn to rise above the moment,” says Winslow. “In practice, when I play it’s just a rationality exercise where I enjoy the feeling of making a bunch of correct decisions throughout the day.” Justin describes his own renunciation of game outcomes:

I never look at what I won; I just rate my play performance. I don’t care how much money I made—it’s totally irrelevant, there’s almost no value to it. . . . I guess knowing that might influence my happiness in the moment, but that itself is ridiculous since I should be happy or not based on *how well I played*. I want *that* to be an emotional trigger; I don’t want any emotions connected with using or winning money, because it’s totally useless. Some days I win, some days I lose.

While a losing player in a live game of poker might take small comfort in the knowledge that he or she “played correctly” (i.e., according to statistical laws), in the context of online multitabling where he or she plays tens of thousands of hands every month, such knowledge grants a sense of ontological security. The ontology at stake is that not of a self whose value is determined in moments of winning or losing but, rather, of a self whose value accretes through many tiny actions over time.¹² To optimize his or her value potential, such a self must respect the law of large numbers at every decision point.

In keeping with this respect, skilled online players resist the temptation to retrospectively query or consult their tracked data too frequently. Winslow explains:

12. Elsewhere I discuss how users of tracking technology come to regard themselves as “time-series selves” (Schüll 2016).

“A lot of novice players get impatient and make the mistake of overvaluing their data—they get biased by short-term information and ultimately make poorer decisions. You have to have a lot of data points for anything you detect to be statistically significant—otherwise you can’t confidently conclude that a pattern is real.” He depicts himself as a dynamic database whose “real” value is emergent and impossible to assess without sufficient temporal resolution. Justin echoes his point: “It’s important not to look at the data too often, because you need to have a fairly large number of hands not to be fooled by randomness. You have to safeguard yourself against that.”

Another safeguard against the overvaluing of online poker data is the practice of sharing that data—one’s HUD configurations, hand histories and simulations, AIEV graphs, and the like—with other players. Evoking the face-to-face conversations and epistolary correspondence that played such a critical role in the ethical self-work of Greco-Roman citizens, online-poker peers engage each other in collective dialogue via Internet forums, chat threads, and message boards. “Share your experiences with those who can relate,” reads a post to an online forum. “After I review my hand histories and I am not able to find my mistake, or I did, but find myself struggling with a particular bet, call, street, etc, I talk it over with several other poker players and see if a consensus appears. I also post my hand for review. Doing this has been extremely helpful to my game and in identifying leaks. Be prepared though—the truth sometimes hurts” (StormRaven 2009). Placing oneself under the gaze of others, Foucault (1997: 221) observes, is “a matter of bringing into congruence the gaze of the other and that gaze which one aims at oneself when one measures one’s everyday actions according to the rules of a technique of living.” Like the Stoics, for whom offering commentary on others’ self-reports was as important as receiving it, online poker players do not simply upload and solicit feedback on their own data but also evaluate and respond to the data that others post. “The opinions that one gives to others in a pressing situation,” notes Foucault, “are a way of preparing oneself for a similar eventuality” (ibid.). Although digital media may dampen the social dimension of game play as well as players’ sense of self, between game sessions it affords a space for communal exchange and self-fashioning.

Combating Tilt

Each of the software tools I have considered thus far, whether in-game or retrospective, individual or communal, is designed to help online poker players ward off the dreaded state of tilt and attain dispassionate conduct in the face of chance.

The challenge they face—to act in worldly time without being affected by event outcomes—is akin to the challenge that online financial traders face as they move in and out of trades in a matter of seconds, striving all the while to “treat each trade as if it has no effect on the next” and to “ignore a sense of continuity” between past, present, and future trades (Zaloom 2006: 133–34; see also Knorr-Cetina and Bruegger 2000, 2002; Zwick 2005, 2012).

Some gamblers use software designed specifically to protect against tilt—like Tilt Breaker, which features take-a-break reminders; “automated lockdowns” triggered by big wins, a certain number of hands played, or a certain amount of time played; and a Rage Quit button for moments of “super tilt.” Other gamblers prefer to focus on self-discipline—“preparing and disposing [the] soul to rid itself of all its disordered affections,” as the Jesuits characterize the spiritual battle they face (quoted in Quattrone 2015: 423). As poker’s “law of least tilt” dictates, “between two players of equal skill, the player with the most discipline will prevail over the long run” (Forte 2015: 136).

In a poker-forum thread titled “The Many Faces of Poker Tilt,” one member composed a long post advising his peers on how they might track, manage, and ultimately avoid tilt (SitandGoPlanet.com 2011). He began by distinguishing between the main forms of tilt: *angry tilt*, in which losses despite statistically correct play tip players into overly loose and aggressive play; *frustrated tilt*, in which mounting exasperation at being dealt bad cards and having to fold for long periods triggers impulsive, sloppy play in games that players should exit; *fearful tilt*, in which the trauma of past losses results in overly tight and passive play; and, finally, *despondent tilt*, in which others’ luck leaves players feeling they are bound to lose, a form of resignation that negatively affects their play and threatens to become a self-fulfilling prophecy. “Beware of your really ‘giddy or euphoric’ feelings too!” warned another poster (Maid Marian 2009); “the strong emotions aroused by winning can be just as mind-clouding as any form of poker despair,” echoed the author of another online post on managing tilt (Connors 2013). The point is to practice indifference to events as they unfold, calling to mind the aims of Eastern meditation and echoing the highest virtue put forth in the Jesuits’ *Spiritual Exercises*: “I ought to find myself indifferent . . . to such an extent that I am not more inclined or emotionally disposed toward taking the matter proposed rather than letting go of it” (quoted in Quattrone 2015: 428).

The author of “The Many Faces of Poker Tilt” went on to urge his fellow players to “set up a tilt management plan” with ready-at-hand techniques for identifying and combating tilt in its various guises (“Poker Tilt—The Many Faces of Poker Tilt” 2011). He recommended that they perform “self-checks” every thirty minutes

by taking inventory of any feelings of frustration, revenge, anger, or despondency that might be creeping into their game, rate the severity of those feelings, and apply counteractive measures. One might “walk away from the computer immediately,” for instance, and stay away for ten minutes, if sufficient to “un-tilt” oneself, or for twenty-four hours, if necessary; the important thing is to “ensure that you stay away long enough to rationalize the cause(s) of your tilt” (ibid.).

The work of rationalizing the causes of a tilt episode could involve “spending some time re-tooling your game” (ibid.) by way of retrospective investigation (“I recommend reviewing hands after each session, unless you are on tilt or too tired—then save it for the next day” [StormRaven 2009]); self-education on blogs or from poker-strategy books and websites (“thou shalt understand probability and variance” reads an article on rules to avoid tilt [“How to Avoid Tilt” 2010]); or posting data from one’s tilted session on poker forums and message boards so as to receive feedback and advice. In one online discussion, a gambler describes how he writes down every “automatic negative thought” that crosses his mind during play and afterward writes out a “rational response” to each in an effort to banish them from future play (negtv capability 2001). His method recalls the Stoic practice of constantly screening thoughts to approve or disprove them, to verify and ensure that one remains in control; it likewise recalls the early Christian practice of writing down thoughts and actions as a safeguard against sinning. In the secularized context of online poker, gamblers understand themselves to be at a similar moral crossroads: instead of being pulled between God and Lucifer they are pulled between rational indifference and the passion of tilt.

Justin has developed a particularly elaborate system of self-regulation to manage his reactions to in-game events and protect himself against tilt. Directly before a session he consults his “warm-up checklist” (see fig. 3), a document he regularly revises. Simple items—such as making sure that his desk is clutter-free and that he has a glass of water and has eaten enough food to sustain him through a session of play—are accompanied by larger goals, notes on how to raise motivation (e.g., do some push-ups or study poker), and categories such as “mental focus points.” This last item includes the only entry he has underlined: “Take the time for decisions. Count out loud.” Directly beneath this line is a sublist of “reasons to take time before clicking / making a decision,” the first of which reads: “I click less from emotion.” Justin reflects:

You’re making so many decisions that a lot of them will just happen intuitively. In most cases that’s fine, but when I enter that gray area where it’s not certain what I should do, I want to make sure I don’t rely only on

<p>TO DO:</p> <ul style="list-style-type: none"> - Office clean-up - Good music / good software - Skype off - Sufficient food / drink <p>GOALS:</p> <ul style="list-style-type: none"> - 100% focus on poker - Optimize mental game - Improve game (Make notes during play) <p>MENTAL FOCUS POINTS:</p> <ul style="list-style-type: none"> - Only focus on poker - <u>Take time for decisions. Count out loud.</u> <p>REASONS TO TAKE TIME BEFORE CLICKING / MAKING A DECISION:</p> <ul style="list-style-type: none"> - I click less from emotion - I have time to change my mind, change my bet sizes, etc. - So far this has always worked well - I do not give off time-related tells to opponents - It is annoying for opponents - I win more money - I feel more professional - I play more often when I do this - It's frustrating when I don't do it - It forces me to think about every situation rather than mindless clicking - It helps me with one of my "mental" goals this year: making more mindful decisions 	<p>GAME CHOICE:</p> <ul style="list-style-type: none"> - 4 to 9 tables (sometimes 12, but watch out) - If less than 6 people at tables, don't play <p>LOW MOTIVATION:</p> <ul style="list-style-type: none"> - View motivation points - Do some pushups - Take short breaks - Study poker
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Figure 3 Justin's "warm-up" checklist (anonymously shared with author)

my own intuitions. What I do is pause every time I'm facing a difficult decision. I try to count down in my head, *three, two, one* . . . I breathe in and out and try to override my intuition. Recently, I ordered a metronome to see if it might help with that process and prevent me from making decisions too quickly. My thinking is that if I have a metronome, it will give me some sort of external rhythm. I plan to experiment with that.

While the HUD serves as an "external memory" for Justin, a metronome, he hopes, could function as an "external rhythm" to bring him out of the affective intensity of uncertain moments and restore him to the realm of rational reflection, presence, and equanimity. His plan to deploy the metronome as a tool for self-modulation brings to mind the use of chants, breathing exercises, body rock-

Focus		Technique	
1	Extremely poor focus, tilted	1	Played extremely poorly, felt mega-tilted
2	Extremely poor focus	2	Played very poorly, felt tilted
3	Very poor focus		Played poorly, made many mistakes
4	Very distracted	4	Played moderately, no special plays, a lot of mistakes
5	Distracted but not really unhappy	5	Average play, few special plays, some mistakes
6	Distracted 2-3 times	6	No special plays, a few mistakes
7	Fine focus, few distractions	7	Played well, made only a few mistakes
8	Very good focus, very few distractions	8	Played very well, barely any mistakes, felt good while at play
9	Extremely good focus, hardly any distraction	9	Very happy with game, made no mistakes, almost all the time focused
10	Best focus, no distractions	10	Maximal game-time spent focused extremely pleased with session

Figure 4 Justin’s “cooldown” checklist (anonymously shared with author)

ing, and other rhythmical techniques used in meditation and prayer. The Jesuits’ *Spiritual Exercises*, for instance, explicitly directs subjects to pray “according to rhythmic measures” (quoted in Quattrone 2014: 426). As Ignatius writes, “I should find myself in the middle, like the pointer of a balance” (quoted in Quattrone 2004: 660).

After every session of poker, Justin assesses his equilibrium performance by means of a “cooldown checklist” (see fig. 4), recording the time of day he played (morning, midday, or evening), the amount of time elapsed, the total number of hands played, and scores for focus and technique based on customized rating criteria that range from “mega-tilted” to “maximal game-time spent focused.” Finally, he records comments on areas for self-improvement. One entry reads: “Evening, 120 minutes, 1,305 hands played, Focus 7, Technique 7. *Think it went ok. Next time: better focus, tighter play, fold preflop when in doubt.*” “I use the information to try to adjust my behavior in the next session,” he says. “I have a whole working document with a long list of things I could adjust. I am constantly revising it.”

Justin’s tilt-assessment checklists are not unlike the self-scrutinizing, self-doubting diaries of the Puritans, in which they took rigorous inventory of their passions in an effort to renounce them. The checklists bear a particular resemblance to the moral accounting system of Benjamin Franklin (2003 [1791]), which bound him to the daily marking up of an ivory slate containing thirteen rows of virtues and columns for each day of the week (see also Paden 1988; Weber 1958

[1905]).¹³ In an earlier system of similar design, Jesuits kept records of their daily sins:

For each sin committed from the moment of rising until the first examination, the exercitant was required to enter a dot on the upper line of the first [day]. This step was followed by “one’s resolution to do better during the time until the second examination,” which was made that night after supper. At that time other dots were placed on the lower line of the [day] and the figure examined to see if the situation had improved or worsened over the course of the day. This examination was to be repeated each day of the week. (Quattrone 2004: 657)¹⁴

The routinized record keeping of sin served to allow monks “to remain indifferent and unfettered while formally disciplined,” writes Paolo Quattrone (2014: 36). The point was to subject themselves to a methodical regimen of self-accounting to identify and weed out passion, desire, and attachment, facilitating equipoise and rational conduct. The ethical subject figured here—as in digitally facilitated online poker—is one whose actions, in a field of uncertainty, derive from internal equanimity.

Lessons for Life

Software-assisted online poker and its technological mediations, I argued above, help gamblers develop a subjective readiness for their encounters with chance within the game. As they see it, the readiness-toward-chance that they practice online carries over to life off-line. Winslow reflects:

You’re tougher when things don’t go your way in life because you’re used to making the right decisions and not having things go your way in poker. When you play a lot online, at multiple tables, you can very visibly see the *swings*—you learn that in the short term there will be lots of variance, even if you’re making all the right decisions. You get a very good sense of

13. Writes Franklin (2003 [1791]: 152): “I should have, (I hoped) the encouraging Pleasure of seeing on my Pages the Progress I made in Virtue, by clearing successively my Lines of their Spots, till in the end by a Number of Courses, I should be happy in viewing a clean Book after a thirteen Weeks daily Examination.”

14. As this passage attests, the division of the self into minute bits whose value can be “added up” is not specific to the digital era. Paolo Quattrone (2014: 26), probing the links between Jesuit spiritual exercises and their methods of record keeping and financial accounting, finds that both followed a logic in which “an entity, be it the self of the Jesuit member or the wealth of the college, could be divided into its smallest constituent parts via detailed analytical schema and then aggregated up into a description of the whole.” Accounting, he concluded, is a method “that begins with making an inventory, be it of the self or of assets and liabilities, and ends with salvation” (ibid.: 27).

the degree to which luck is at work, how much it matters. And you realize that it's no different in life: sometimes you do the interview very well and you still don't get the job. *Thinking this way helps you stop connecting particular outcomes to your performance.* This type of mentality really helps me when I fail at something in life and, by the same token, when I succeed—because even if you win, it could have been due to luck, not because you made the optimal decision at every turn. *You can kind of see through a bad or a good outcome to all the other ways it could have gone.*

Life events, the game of poker trains its players to see, are meaningful only as part of a pattern, and that pattern is revealed only over time. As Puritans live under the mercy of a God whose will cannot be discerned or influenced, poker players live under the mercy of chance; their only recourse is to abide short-term variance and place their faith in the long game; divine providence is replaced by the providence of probability.

The analogy comes across in a quotation from a software developer who designs programs to help players resist the tendency to become tilted by the “injustice of the game.” In his blog post “How to Avoid Tilt” appears rule 9, titled “The Poker Gods Knoweth No Justice”: “There really is no justice to this game, at least not until the *very, very long run of things*, but it's really just a microcosm of life isn't it? You will have horrible, gut-wrenching downswings where nothing goes right and nothing is fair; *but you must persevere*” (“How to Avoid Tilt” 2010; emphasis added). As followers of Calvin had no way to intercede in God's decisions about who would be saved and could only be humble, self-vigilant, and methodical in their daily dealings, poker players have no way to influence chance and can only play as much, as fast, and as well as they can. The post's injunction to “persevere” recalls the comportment protocol of the Puritan, who engages in what Arjun Appadurai (2015: 6) characterizes as “a continuous wagering of oneself in the routines of methodical moneymaking”—not to assure salvation but as a sign of faith despite radical uncertainty.¹⁵

15. Contemporary financial actors, writes Appadurai (2011: 524), use “intuitions, experiences, and sense of the moment to outplay other players who might be excessively dominated by their tools for handling risk alone.” He explains: “We might say that while some actors in the field of finance do know what they don't know, and perhaps also what they would like to know, they certainly have no good way to measure what they don't know, and even more, they do not know how to measure it probabilistically. Thus uncertainty remains outside all financial devices and models” (ibid.). An important reference for Appadurai is the classic work of Knight (2006 [1921]) on uncertainty, which went against the grain of economic thinking by arguing that profit can arise from absolute unpredictability, not only sober methodicality.

And yet a small but important difference in the attitude and mode of subjection of the online gambler is revealed in the very next line of the post: “*Create your own justice; continuously push forward until the numbers inevitably yield in your favor*” (“How to Avoid Tilt” 2010). On the one hand, to “create one’s own justice” is similar to Puritan perseverance: it is not a recipe for mastering chance but, instead, involves mastering an attitude of indifference to the outcomes chance deals, so that one can act more gracefully in relation to it. On the other hand, the post promises that acting in this way *will* yield profits in the end. “In the long run,” explains Winslow, “if you make right decisions—the statistically correct decisions—you’re likely to reach your optimal statistical potential and come out ahead.” While this form of statistical salvation is not assured, a certain promise attaches to “correct decisions,” as for Christian ascetics and Jesuits alike, whose exercises, writes Quattrone (2015: 427), “began with the realization of being in perdition and eventually ended with *the possibility of making the right choice*, of finding salvation and realizing a vision of truth” (emphasis mine). The perdition of poker players is that of nonstatistical thinking, and the vision of truth that becomes manifest in their databases and self-accounting logs is that not of God but of probability. “It’s one long session,” writes a poker blogger (Connors 2013); “We are taught to focus on the quality of our decisions, and if we make enough of them, we will win in the long run,” writes another (Tag 2011). Online poker software enhances “the quality of decisions” that gamblers make by helping them come to trust that variance will yield to smooth gains in time, as long as they cultivate indifference to outcome, tend to leaks in their game, and “persevere.”

At the same time, they worry that indifference, taken to its logical extreme, might squeeze out the possibility for decision making altogether. “If everyone uses these stats and uses them correctly,” says Emil, “then there will be no room left to have an edge—because everyone will have the same information, like we’re all bots playing each other.” When a point is reached where no uncertainty remains, he goes on, “the game will be ruined for everyone.” Online gamblers’ anxiety over the increasing automation of the game is most obvious in the shunning of poker bots—algorithms that pose as players, multitabling around the clock to collect vast quantities of data on real players that others can later purchase to access detailed informational profiles on opponents they have never before played against. This is considered “cheating” in no uncertain terms—a shameful violation of the rules of the game. Yet alongside easy denunciations of poker bots is a creeping concern among players that their own use of poker tracking tools, now a universally accepted aspect of online play, might be turning them, for all intents and purposes, into robots.

The Jesuits had a similar concern, recognizing that their spiritual exercises “needed to be channeled toward the possibility of a choice and therefore toward action” but also needed to avoid being so prescriptive that they led to “unreflective action, depriving a Jesuit member of that indifference that characterized the very essence of being a Jesuit and made him able to exert wise judgment” (Quattrone 2014: 29). In other words, they recognized that to act indifferently one needed, first, to have difference—a measure of uncertainty between choices. When digital technology is mobilized in the service of worldly action, as we have seen in online poker, this kind of difference is more quickly and thoroughly squeezed out; online poker players are drawn into streams of action so fast and hypermediated that their status as ethical subjects wavers. The equipoise they seek in decision making comes rather too automatically and perfectly, prompting the question: *How not to be a bot?*

Justin’s response to this question was to make a small but significant revision to his poker regimen, as described below. The revision, prompted not by a lack of success in poker but by the failure of a romantic relationship that had seemed to him a “perfect match” on paper, was based on his realization that to act both optimally and humanly in moments of uncertainty, he must not allow himself to become fully robotic but rather must leave himself open—just a tiny bit—to signals of an affective, qualitative, intuitive nature. He explains how this new orientation departs from his former discounting of all emotion as illusory and in need of taming:

If you imagine a scale from -5 to $+5$, I would say that I want to be at a $+1$. For a very long time I thought the best state to be in was zero—I operated that way for years. Operating at zero, you’re acting like a perfect robot. But the risk in that for me was that I almost didn’t listen to any emotional signals, because I was trying to rationalize everything. *But now I try to let in a signal* so I can then decide if I should take that signal into account in my decision-making process or not.

To get himself into the target state of $+1$, Justin takes simple measures: “One of the things in my warm-up used to be not drinking coffee—but now I always drink one cup of coffee or espresso before a session; it has become a ritual.” Music is also important: “Basically what I do is configure my playlist to get me in that emotional state of $+1$ —so some days I choose mellow music, because maybe I’m already at a 3 and I need to bring myself down, and other days I choose more activating music to bring myself up.” Justin’s advanced experiments in quantified self-regulation have led him, perhaps ironically, to conclude that too tightly bracketing

his emotions closes him off from the potential that lies in the uncertainty of the game and stifles his ability to respond decisively to that potential. He elaborates on his affective reorientation from zero to +1:

I've come to understand that if I use a rational model for everything and become more robotic, then I feel disconnected from the world and not really sure of what I want to do. . . . That's why *I try to open the interval to +1*. Before, I tried to ignore or discount my gut feeling because I thought it was never to be trusted; I didn't know what I could do with it. *Now I try to use it as a signal in those gray areas where things are uncertain.*

As Justin tells it, the interval of +1 marks the interval of uncertainty and potential passion that he recognizes he cannot do away with—and, indeed, should not—in his quest to live and act in the world as an ethical subject. Diverging from Harman's above-quoted wish to be a robot, he creates for himself a space in which the task is not to statistically assess or programmatically execute but to intuitively apprehend and exercise choice outside of algorithmic parameters.¹⁶ Justin's revised approach, however, raises a new question: Is his new protocol a break with a robotically rational paradigm, or not? The space of possibility that he opens is not, after all, open-ended; instead, it is numerically bounded and associated with a whole set of procedures. Despite his claim to move beyond reason, one might interpret the +1 system as an *even more rational* way to cope with the things he cannot know than his former zero-oriented system. In the end, his answer to the question of how not to be a bot remains ambivalent.

Justin's struggle to equip himself for making decisions under uncertainty takes part in—and offers a window onto—a more general predicament of heightened exposure to economic volatility. The circumstances of uncertainty that online poker players face and the pressure on them to adjust to these circumstances are not unique to the space of games or even to professions like financial trading; they are continuous with everyday life. As Caitlin Zaloom (2016) observes in her

16. In contemporary financial risk taking, Appadurai (2011, 2015) discerns a dispositional turn from the methodicality and self-doubt of Puritanism toward a heady, "swashbuckling" confidence. In his account, as market devices become hypermethodical, market actors become "avaricious, adventurous, exuberant, possessed, charismatic, excessive, or reckless" (Appadurai 2011: 524). Online poker players grinding methodically through poker hands in front of their multiple screens paint a rather less exuberant profile of contemporary market actors and also suggest that devices and actors are more blurred than they are divided. Their mode of uncertainty—their "uncertainty imaginary," to use Appadurai's term (*ibid.*)—is a dispositional admixture of anxious self-discipline and speculative ambition (in a dose of exactly one unit, in Justin's case) that is well captured by Pat O'Malley's (2000: 465) phrase "enterprising prudentialism."

ethnographic analysis of Christian money management, believers embrace a religiously inflected repertoire of financial tools and techniques to help them navigate economic decisions “in the face of obscure forces” (2016). Evangelical budgetary practices, she argues, illuminate the force of the ethical demand to abide volatility (in the form of market fluctuations, job insecurity, debt, credit borrowing, and the like) that citizens of the contemporary financial economy face.¹⁷ Online poker and its software offer a quantitatively sophisticated response to this demand, bringing players into intimate contact with statistical infinitude and its obscure laws. The tools, techniques, and practices of self-discipline they develop to help them act within this sphere without falling into “tilt” express the challenges and dilemmas of living and acting within the fast-moving, highly uncertain terrain of the present-day economy.

References

- Appadurai, Arjun. 2011. “The Ghost in the Financial Machine.” *Public Culture* 23, no. 3: 517–39.
- . 2012. “The Spirit of Calculation.” *Cambridge Anthropology* 30, no. 1: 3–17.
- . 2015. *Banking on Words: The Failure of Language in the Age of Derivative Finance*. Chicago: University of Chicago Press.
- Arnoldi, Jakob. 2004. “Derivatives: Virtual Values and Real Risks.” *Theory, Culture and Society* 21, no. 6: 23–42.
- Aus_pokergirl. 2010. “New Poker Tool I Love.” *Around the Tables*, November 13. auspokergirl.blogspot.com/2010/11/new-poker-tool-i-love.html.
- Chris. 2011. “AIEV 101.” *Why I Suck at Poker* (blog), January 15. whysuckatpoker.wordpress.com/2011/01/15/aiev-101/.
- Connors, Barbara. 2013. “Understanding Tilt.” *Pokerology.com*. www.pokerology.com/lessons/understanding-tilt/.
- Deville, Joe. 2015. *Lived Economies of Default: Consumer Credit, Debt Collection, and the Capture of Affect*. New York: Routledge.
- Deville, Joe, and Gregory Seigworth. 2015. Introduction, “Everyday Debt and Credit.” Special issue of *Cultural Studies*, vol. 29, nos. 5–6: 615–29.
- Dibbell, Julian. 2007. “The Life of the Chinese Gold Farmer.” *New York Times Magazine*, June 17.

17. For recent work on the precarious state of day-to-day life in advanced liberal economies, see Deville 2015; Deville and Seigworth 2015; Schüll 2012.

- Forte, Steve. 2015. "The Ultimate Cooler (Interview)." *Collapse: Philosophical Research and Development* 8: 107–90.
- Foucault, Michel. 1997. *Ethics: Subjectivity and Truth*. Edited by Paul Rabinow. New York: New Press.
- Franklin, Benjamin. 2003 [1791]. *The Autobiography of Benjamin Franklin*. Edited by Leonard W. Labaree et al. New Haven, CT: Yale University Press.
- Galloway, Alexander. 2012. *The Interface Effect*. Cambridge, UK: Polity.
- Geertz, Clifford. 1973. *The Interpretation of Cultures: Selected Essays*. New York: Basic Books.
- Giddens, Anthony. 1991. *Modernity and Self-Identity: Self and Society in the Late Modern Age*. Cambridge, UK: Polity.
- Glass, Ira. 2001. "Meet the Pros." *This American Life*, episode 192, originally aired August 31, 2001. www.thisamericanlife.org/radio-archives/episode/192/transcript.
- Goffman, Erving. 1967. *Where the Action Is: Three Essays*. London: Allen Lane.
- Hacking, Ian. 1990. *The Taming of Chance*. Cambridge: Cambridge University Press.
- Hansen, Mark. 2014. *Feed-Forward: On the Future of Twenty-First-Century Media*. Chicago: University of Chicago Press.
- "Hold'em Poker Statistical Jargon Explained." 2013. Learn 2 Hold'Em Online Poker Guide. www.learn2holdem.com/poker-odds/texas-holdem-poker-odds-terms.htm.
- "How to Avoid Tilt." 2010. TiltBreaker.com. tiltbreaker.com/how-to-avoid-tilt/.
- Hunt, Alan. 2003. "Risk and Moralization in Everyday Life." In *Risk and Morality*, edited by Richard V. Ericson and Aaron Doyle, 165–92. Toronto: University of Toronto Press.
- Irani, Lilly. 2013. "The Cultural Work of Microwork." *New Media and Society*, November 21. doi:10.1177/1461444813511926.
- Kang, Jerry, and Dana Cuff. 2005. "Pervasive Computing: Embedding the Public Sphere." *Washington and Lee Law Review* 65; UCLA School of Law, Law-Econ Research Paper No. 04-23; UCLA School of Law Research Paper No. 626961. Available at ssrn.com/abstract=626961.
- Knight, Frank H. 2006 [1921]. *Risk, Uncertainty, and Profit*. New York: Cosimo Classics.
- Knorr-Cetina, Karin, and Urs Bruegger. 2000. "The Market as an Object of Attachment: Exploring Post-Social Relations in Financial Markets." *Canadian Journal of Sociology* 25, no. 2: 141–68.

- . 2002. “Traders’ Engagement with Markets: A Postsocial Relationship.” *Theory, Culture and Society* 19, nos. 5–6: 161–85.
- LiPuma, Edward, and Benjamin Lee. 2012. “A Social Approach to the Financial Derivatives Markets.” *South Atlantic Quarterly* 111, no. 2: 289–316.
- Luhmann, Niklas. 1993. *Risk: A Sociological Theory*. New York: Aldine.
- . 1998. *Observations on Modernity*. Translated by William Whobrey. Stanford, CA: Stanford University Press.
- Malaby, Thomas M. 2003. *Gambling Life: Dealing in Contingency in a Greek City*. Urbana: University of Illinois Press.
- Martin, Randy. 2002. *Financialization of Daily Life*. Philadelphia: Temple University Press.
- Massumi, Brian. 2002. *Parables for the Virtual: Movement, Affect, Sensation*. Durham, NC: Duke University Press.
- Melucci, Alberto. 1996. *The Playing Self: Person and Meaning in the Planetary Society*. Cambridge: Cambridge University Press.
- negtv capability. 2011. “1000th Post: A CBT Approach to Tilt.” TwoPlusTwo.com, October 28. forumserver.twoplustwo.com/26/psychology/1000th-post-cbt-approach-tilt-1118979/.
- O’Malley, Pat. 2000. “Uncertain Subjects: Risks, Liberalism, and Contract.” *Economy and Society* 29, no. 4: 460–84.
- Paden, William E. 1988. “Theaters of Humility and Suspicion: Desert Saints and New England Puritans.” In *Technologies of the Self: A Seminar with Michel Foucault*, edited by Luther H. Martin, Huck Gutman, and Patrick H. Hutton, 64–79. Amherst: University of Massachusetts Press.
- PokerNews.com. 2009. “Positional Awareness: Position in Poker, Positional Awareness Strategy,” January 21.
- PokerPlayer.com. 2010. “Poker Tracking Software,” February 1. www.pokerplayer365.com/poker-strategy/cash-games-poker-strategy/poker-tracking-software/.
- Quattrone, Paolo. 2004. “Accounting for God: Accounting and Accountability Practices in the Society of Jesus (Italy, Sixteenth to Seventeenth Centuries).” *Accounting, Organizations and Society* 29, no. 7: 647–83.
- . 2014. “Unfolding Rationality: Visual Memory, Performative Accountability, and Order.” Paper presented at the Cass Business School Faculty of Management Research Workshop, London, February 20.
- . 2015. “Second Governing Social Orders, Unfolding Rationality, and

- Jesuit Accounting Practices: A Procedural Approach to Institutional Logics.” *Administrative Science Quarterly* 30: 411–45.
- Rose, Nikolas. 1999. *Powers of Freedom: Reframing Political Thought*. Cambridge: Cambridge University Press.
- Samimian-Darash, Limor. 2013. “Governing Future Potential Biothreats: Toward an Anthropology of Uncertainty.” *Current Anthropology* 54, no. 1: 1–22.
- Schüll, Natasha Dow. 2012. *Addiction by Design: Machine Gambling in Las Vegas*. Princeton, NJ: Princeton University Press.
- . 2016. “Tracking.” In *Experience: Culture, Cognition, and the Common Sense*, edited by Caroline Jones, David Mather, and Rebecca Uchill, 195–203. Cambridge, MA: MIT Press.
- . Forthcoming. *Keeping Track: Sensor Technology, Self-Regulation, and the Data-Driven Life*. New York: Farrar, Straus, and Giroux.
- Schwartz, Mattathias. 2006. “The Hold-’Em Holdup.” *New York Times Magazine*, June 11.
- SitandGoPlanet.com. 2011. “Poker Tilt—The Many Faces of Poker Tilt.” www.sitandgoplanet.com/multitable/poker-tilt.html
- Skolnik, Sam. 2011. *High Stakes: The Rising Cost of America’s Gambling Addiction*. Boston: Beacon.
- StormRaven. 2009. Post to discussion thread “Tips for Dealing with Tilt!” CardsChat.com, October 9. www.cardschat.com/f49/tips-dealing-tilt-162461/ (accessed October 29, 2013).
- “Stranger than Fiction: Poker Tracker, Online Poker, and PostgreSQL.” 2009. CodingtheWheel.com, July 8. www.codingthewheel.com/archives/stranger-than-fiction-story-online-poker-tracker-postgresql (accessed August 12, 2013).
- Tag, Matt. 2011. “One Long Session.” *Holdem Notebook* (blog), April 3. holdem-notebook.blogspot.com/2011/04/one-long-session.html.
- Thurman, Kevin. 2011. “PokerStars Supernova Elite Kevin ‘WizardOfAhhs’ Thurman Playing Twenty-Four Cash Tables.” YouTube video, 2:27. Posted November 11. www.youtube.com/watch?v=gwDLbceGEY4.
- TournamentTerminator.com. www.tournamentterminator.com/tournament-strategy/online-poker/tips-multitabling-effective (accessed October 30, 2013).
- Weber, Max. 1958 [1905]. *The Protestant Ethic and the Spirit of Capitalism*. Translated by Talcott Parsons. New York: Scribner.
- Zaloom, Caitlin. 2006. *Out of the Pits: Traders and Technology from Chicago to London*. Chicago: University of Chicago Press.

- . 2016. “The Evangelical Financial Ethic: Doubles Forms and the Search for God in the Economic World.” *American Ethnologist* 43, no. 2: 325–38.
- Zwick, Detlev. 2005. “Where the Action Is: Internet Stock Trading as Edgework.” *Journal of Computer-Mediated Communication* 11, no. 1: 22–43.
- . 2012. “Online Investing as Digital Virtual Consumption: The Production of the Neoliberal Subject.” In *Digital Virtual Consumption*, edited by Mike Molesworth and Janice Denegri-Knott, 129–45. New York: Routledge.

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Natasha Dow Schüll is a cultural anthropologist and associate professor in New York University’s Department of Media, Culture, and Communication. Her first book, *Addiction by Design: Machine Gambling in Las Vegas* (2012), is an ethnographic exploration of the relationship between technology design and the experience of addiction. Her forthcoming book *Keeping Track* concerns the rise of digital self-tracking technologies and the new modes of introspection and self-governance they engender.