Chapter 1: Metaphysics of the Pool Table

I start in a context that excludes contamination of thought by romanticized concepts seeping in from a culture of glorified, mythologized creativity. A perfectly objective, almost, I would say, scientific basis of inspiration, is my point of departure, a context where we can observe inspiration as "a fundamental mode of human experience" (W. James) and we can see the laws it is based on functioning "independent of any historical developments."

The game of pool, also known as pocket billiards, originated among and was played by aristocracy historically, but has become a popular sport. It has its own professional organizations, organized competitions and formal sets of rules, but is still associated in the popular imagination with questionable characters spending time in dubious places.

It is a sport with no culture of theory and discussion. If someone writes about it, it is to convey skill, technique and strategy. It has a culture of competition. At a high level of talent and accomplishment the game has an etiquette and a heroism all its own. At its best, it is much more than mere entertainment. Betting and gambling are a part of that culture. It goes hand in hand with the development of great skill.

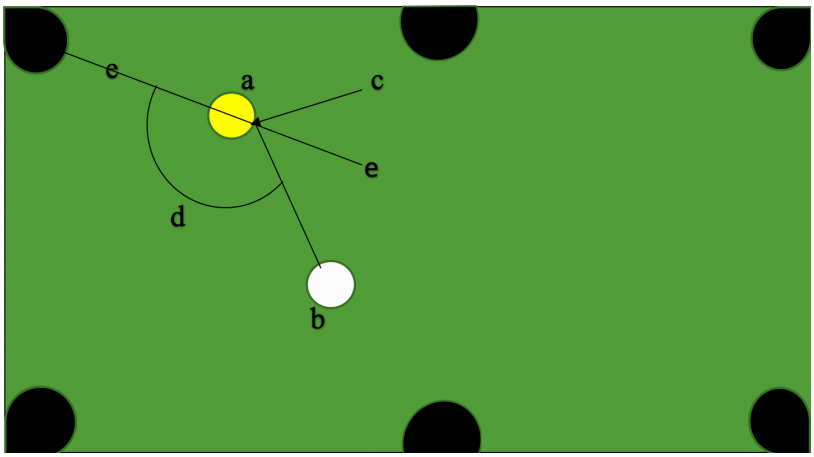
What is striking about the game itself is its geometry. At a high level of skill, it has the rationality, precision, and predictability of laws of geometry or physics. It is the opposite of dice, which is completely random. Dice defies all efforts of the players and bettors to discover and enter into the rules which govern the fall of the dice, to predict the outcome of the throw. "A roll of the dice," is proverbial for complete random unpredictability in an outcome.

Billiards and pool are the opposite. They are based on laws of thrust, motion and angle. The table must be perfectly level, the surface smooth and flat, its four sides perfectly straight, forming a rectangle of 4 ½' by 9' in competition play. The balls must be perfectly round and smooth with no variation in weight among the balls. When these conditions are met, the laws on which the game operates can come into effect.

Physics and geometry

In pocket billiards the player uses a long, straight "cue" stick to drive a white "cue" ball towards colored and numbered balls, which he tries to knock into six pockets placed at the four corners and in the middle of the two long sides. The player is the only unpredictable element in the game. He has to make hundreds of judgments for each shot and translate them into the action of arm, stick and cue ball. He sights up the lie of the balls, decides which ball to hit with what thrust and at what angle. Knowing which angle is required is just a matter of calculation. There is a simple way to sight up the shot: you imagine a straight line (e) that passes through the dead center of the object ball (a) and points directly to the pocket. If the cue ball (b) can hit the object ball just at the point (c) where that imaginary line emerges at the back of the object ball, then, with the certainty of a natural law, the object ball will be driven directly into the pocket. If the thrust is right, the ball will fall into the pocket and the point will be scored. Here is an illustration:

a —object ball
b —cue ball



If you have the angle (d), you have the shot; if you see that ideal spot (c) on the object ball and can make the cue ball hit it, the object ball will go in.

The sinking of balls is as easy as that. For a player who understands and masters those simple principles, one shot is as easy as another. It is the dilettant and beginner who imagines that a straight-on shot, where the angle (d) is 180 degrees is easier than the shot shown above, where the angle is about 120 degrees. It is only when the angle approaches 90 degrees and you have to "knife" the ball, produce a slice shot, that the spot (c) becomes less accessible and the shot harder. But that point is small, and only bad luck or bad planning will force a shot like that on a player.

English

So much for the purely mechanical elements of the game. There are also techniques of finesse vital to the game that players develop with a great deal of time and practice. One of these is called "english." The cue and object balls travel according to predictable laws as long as the cue ball is struck dead center with the tip of the cue stick. But strike it a quarter of an inch to the

right side, and the cue ball will move forward spinning counter-clockwise; a quarter inch to the left, and the spin will be clock-wise. If the cue ball hits the object ball spinning, the object ball does not travel along the same path it would take if it were struck with no spin, because the sideways thrust of the cue ball's spin is added to its forward thrust. Counter-clockwise spin pushes the object ball off to the left of perfect angle and vice-versa. Strike the cue ball on the right, and the object ball tends to the left of true path, and vice-versa. The cue ball spinning at the will of the player might make the path of the object ball seem less predictable, but in fact here also laws are in effect. The distance off-center and the force of the spin vary with the set-up and thrust of the player. If you calculate the amount of spin and force of the stroke, the amount of variation in path will also be perfectly calculable. This is "english" in one mode.

Another, more important, use of spin is to control the trajectory of the cue ball after it strikes the object ball. Top spin (hitting high on the cue ball above its equator) makes the cue ball "follow," extends the forward motion in the direction of travel beyond what would have been its progress if struck dead center. Striking the cue ball below the equator "draws" it, pulls it on a course the reverse of the path it would have followed with no spin. By overspin and backspin, the player controls the lay of the ball after hitting the object ball in such a way as to set up the following shot. In straight pool, the player continues to play as long as he sinks balls. It is impossible to maintain continuity without controlling the cue ball's path post-stroke. With one stroke, the player must both sink the object ball and set up the next shot. To manage the spin of the cue ball is therefore just as important as to see the angle and sink the object ball.

The game of choice in serious competitive play is "straight pool" or "call shot." This game pretty much eliminates the element of chance. At least chance doesn't play a part in

winning. You have to call every shot. The ball you choose as object ball must go in the pocket you predict it will go in, and only what you predict scores points. Miss the shot you call, and no matter how many other balls fall, you hand over play to the opponent. It requires a gentle touch and foresight, because you don't want to hit anything harder than necessary; it might spread the balls around the table, break the game open and give your opponent a big advantage. Slamming about and waiting to see what falls has no place. To hit harder than necessary is to show contempt for the opponent. Ideally you want to move only three balls on each shot: the cue ball hits the object ball into the pocket you call, and continues its roll to line up the next shot, or to hit the packed balls in the center, or any other ball, and ease one of them into position for the next shot. Ideally one shot will sink the object ball, line up the next shot, and leave the other balls bunched in the center.

So we still have an "objective", law-governed game, a purely mechanistic system, just complicated somewhat by an element of skill beyond and more complex than the primary skill of seeing rules of angle and thrust and making the balls obey them. As in other sports, there is a natural talent for playing pool. Some can master the game; others never will. It takes talent (a good eye, a gentle, sensitive touch, steady nerves, and good concentration) and lots of practice, and to that extent is like any other physical sport. The development of skill in pool can extend into what appears to ordinary observers as the miraculous (as can shooting baskets or hitting home runs).

Character and psychology

The subjective element in the game is the character of the player. This only counts in serious play at a high level of skill. In family billiard parlors and bowling alleys, or in bars where the game starts when you put four quarters in a slot and ends when the balls are run out after one game, it is not ordinarily a factor, in fact it could only detract from the game as entertainment. I mentioned at the outcome that there is a heroism and an etiquette of the game. Part of that etiquette is that a player does not show emotion. He does not rejoice over a good shot or curse a bad one. He does not complain when he loses or smirk when he wins. The best expression of restrained satisfaction is to take the shot and walk away before the balls stop their roll; go straight to the position of the next shot while the balls are still rolling from the shot just taken. The message is, you don't need to see the balls work out the details of the course you've planned for them; you know the outcome without looking. That certainty intimidates the opponent.

Win or lose, you remain polite, or at least restrained. You treat the money involved, if any, as if it were of no importance. To the casual observer it looks like courtesy and sportsmanlike conduct. But it is also the psychology and the strategy of the game at work. It is like chess in this respect. Pool is to the eyes, muscles and nerves what chess is to the mind, a game in which through skill and practice you master complex laws and compete to make those laws govern the outcome to your advantage and to the disadvantage of the opponent. Both require intense concentration and reflection to operate within those laws. Both entail a talent for visualizing the shot or move prior to taking it and foresee several shots or moves in advance that will result from the immediate one. In each you plot the success of the immediate action and at the same time you project future ones. The skilled pool player controls with each shot the

disposition of the balls on the table. As long as he sinks a ball on each shot, he continues play, and continued play is only possible if with each shot he sets up the next and future shots. A skilled player can plan to four and five shots ahead of the immediate shot. At best, he never needs to yield the action to his opponent, because he preplans and commands the positions of all the balls on the table with each shot, just as an expert chess player foresees the action of the game to four, five, or more, moves in advance.

Play chess at a high level, and a loss is painful, even traumatic; it is a failure of mind in the most direct competition with the opponent's mind. Something like that is at work in pool. The intensity of competition is heated like in no other physical sport. In tennis or baseball, missed shots, throws, lost games are always explainable, even for the best players. In pool and chess there are no explanations for missing or miscalculating: all other things are always equal. All mistakes are yours alone, and since you're an excellent player, they are also foolish. The only explanation for defeat is, that the other player is better. This quality of chess and pool produces a will to win and a quiet intensity in play unlike any other game. Both are blood sports, but the blood of the loser flows only inwardly. Daniel Johnson characterized this quality of chess competition in a passage which applies well to pool also:

> The euphoric sense of triumph and relief that chess can vouchsafe comes at a price: the controlled but occasionally terrifying aggression that is required to win. Emanuel Lasker, Einstein's friend and the most intellectually gifted of world champions, said of his defeated rival Siegbert Tarrasch: "He lacked the passion that whips the blood". Whip is the right metaphor here: the Furies unleashed in "chess for blood" are sadomasochistic in

> their cruelty. Chess…is the ultimate wargame, a cerebral duel in which chance plays no part… The fragile ego is exposed to crushing humiliation. (TLS 12/5/20

Clearly these sports play outside of what's known as "sportsmanship." It would be absurd for a serious player to think, "It doesn't matter whether you win or lose; just how you play the game." This expansive, gentlemanly attitude would mean a slackening of the will that would virtually guarantee defeat. In pool what matters is playing the game (and behaving) in such a way that you win. The entire character solidifies around the will to win, and it requires a concentration and immersion in the play of extraordinary intensity. That concentration is where skill and ethics collaborate. Nothing external or internal must distract the player from play. He must become "an unmoved center"[1] and show it in every aspect of his performance, technical and theatrical.

The narrative

Pool is an apparently senseless, completely non-referential, goal-free play of sending balls caroming around a table. In chess there is at least an element of referentiality, however insignificant to the dynamics of the game, in the narrative of kings, queens, and a feudal society with apportionment of powers among the pieces. In pool there is none. I believe that pool originated in, but has lost, a "narrative" of spheres spinning and moving in predictable courses, but will get to that later.

Putting aside betting and winning money, there is something at stake psychologically that drives the game but that is hard to explain. Let's call it, dominance in the wisdom of the game. It has two parts: physics and ethics. The physics are the laws of the motion of balls governed by

thrust, friction, gravity and angle. The ethics are self-control. Politeness in pool is self-control at work. Nervousness and irritability are ruinous to play. They both hinder concentration and they telegraph loss of self-confidence to the opponent. Composure and elegance of play, even an appearance of physical artistry, a sense of rhythm in a player's motions shooting and moving between shots, project wisdom in the sense just suggested. Mastery of the game will always derive from that wisdom.

So, pool is an objective game. Play develops according to a set of laws and outcomes are predictable on the basis of those laws; it operates on a causality as strict as any Newton could have conceived. The game has served writers as a metaphor for a mechanistic world-view. Morris Berman in *The Reenchantment of the World,*[2] regularly refers to the Newtonian cosmology as a "billiard ball" conception of nature. That suggests, no subjective elements at work—which is far from true in billiards and pool. The game can only be played perfectly by a combination of talent, will, and self-control. The outcome of a game is determined by hundreds of private, individual decisions and messages between eye, mind and hand, and a psychology that has to cooperate with the player's skill in order to make the game work optimally. It is a functioning, closed system, in which subject and object interact in a highly refined and complex way to no practical end. Its only end is to be better than the opponent.

Metaphysics

There is a third element, which I haven't yet mentioned, let's call it metaphysics. It's part of my experience of the game, and that's what I'll draw on for a few pages.

I had played since high school. But when I was a graduate student at Berkeley, I played regularly. It began as an escape from work. There was a period of about two years when I was preparing for my PhD exams and beginning work on my dissertation, when I came to campus around 9 in the morning and ordinarily went straight to the pool room in the student center. I would spend two or three hours of the morning playing. I never told my professors or fellow students about this obsession.

It happened sometimes when the game was well along, after an hour or more, that my perceptions of the balls, the table, the whole game changed. It is not easy to describe this change and the feeling associated with it. The balls, the stick and the table become less real. What is real is the angles. You see angles and feel them. They become sharply perceptible, palpable. The balls and their position on the table are just a reminder, a pointer, a visible symbol of the angle that you need to follow to make the shot. They tell one infallible story: this angle leads to the pocket. The angles themselves become troughs of true path, invisible but very real, at your disposal, guiding your aim. A quick glance at the balls identifies the angle, enough to determine the presence of a trough, no more than it would take to identify quantity behind the visible character representing a number. When this happens the element of skill no longer plays a part. You shed effort like a stage of a rocket that has gotten you outside the pull of gravity, and now you are free to float. Play becomes automatic. You know with certainty that the ball is going to go in as foreseen even before you hit it. And in this state it always does.

It is a state of mind that comes over you when you are going to win. It virtually guarantees it. It is as though you suddenly entered into an agreement with the table that it would do whatever you say. Or the other way around: that what you do is what the table requires in

order to get an object ball in the right pocket and organize the others for the next shot. You do whatever the table tells you to do; or rather you read its mind. You enter into its laws altogether. The two of you think and feel together. But in a sense you don't think at all. All the thoughts are already thought, and you just activate them. There is only one course to take within any given arrangement of balls, and you both see and agree on following that course. Everything is inevitable, necessary, certain. You "know all the angles." Or rather, you do not know them, because you are not separate from them. You are all the angles. It is hard to convey the quality of this kind of interaction because the vocabulary at my disposal is the vocabulary of subject and object. The only statement I can make about the experience has to consist of subject and object joined by verb: I play the game, the game plays me; I control the balls; the balls control me. But what happens in this state of mind is that you and the table become the same thing. [3] To distinguish them breaks the logic at work, as if you wanted to divide up the functioning of your body into you and your parts by saying, "my heart beats me," or "I beat my heart"; "I breathe my lungs," or "my lungs breathe me." The logic of the action of a unified being makes this an absurdity. And this kind of logic prevails when the pool player enters this relationship with the pool table. The truer description would be intransitive: the game plays.

In this state there are no cognitive crises and there is no epistemological uncertainty. You overcome the epistemological problem that all knowledge of outside objects is mediated by the senses, hence inevitably filtered and distorted. The outer perceptions strike on the mind as if unmediated. At least the distorting effect of the mediating senses is minimal. This experience confirms the reality of the external world. The idea that objects, the ball and the table, are my creation—solipsism—reveals itself as an illusion, a hoax, one that could only make sense as long

as it goes uncontradicted by the kind of unmediated contact with reality you are experiencing. And in comparison with this sense of mutual control and cooperation of inner and outer world, that earlier, normal feeling of encapsulation within the senses seems like the vision of fish who image that the universe ends at the glass of their bowl and everything beyond it is unreal or an illusion.

It is not a sudden intensification of your skill. Skill, as I've said, is jettisoned. Everything becomes automatic, done almost without looking and calculating. As children put square blocks into square holes and round blocks into round holes, you make the balls go along those big, true paths. They are like grooved alleys, and you would have to be clumsy not to be able to make the balls roll down them, as clumsy as a child who could not make the square peg fit into the square hole.

But to the observer it looks like you are exercising skill, lots of it. The audience sees the balls roll unerringly towards the pockets, behaving as if they had a will of their own, an internal motor and navigating system, and he imagines that the player makes it all happen. It looks to him as if the subject-object dualism is firmly in effect, and perhaps also master-slave: the player controls the balls, the balls obey the player—and the observer marvels at your skill. But you know better. You know that laws are playing themselves out in the balls, and that you activate those laws as part of a larger mechanism or organism.

Abnormal, or extraordinary as the state is, it is not a failing of consciousness, not some distortion or hallucination. It is a heightened state of awareness. You see everything connected with the game much more clearly than normal, with more precision of thought and of feeling, more accuracy of touch.

What guarantees the "authenticity" of the state is that in it you win games. It works. The sense that you and the table conspire together to play perfectly and attain every angle just as ideal play requires, is a true and accurate sense, measurable by the number of balls that fall, by the length of time you monopolize play and shut your opponent out, and by the outcome. If I lost a game, it was not in this state. If I was in this state, it had to leave before I could lose. If it stayed, I won.

It is a good feeling. Not exactly ecstasy, but something like it, a serene form of it—heightened enthusiasm. If I try to approximate the feeling with a religious metaphor and say that it was like experiencing Grace, the reader will realize that I am grasping for comparisons. It is exhilarating. The hindering effects of thought and calculation, the weight of lethargy and physical inability, were all shed, and one is in an extraordinary state that few people experience in everyday reality.

Pool and the Marionette-theater

The German writer Heinrich von Kleist tried to characterize something like this state in his essay on the Marionette Theater. The marionette can dance with a grace and charm beyond anything a human being can attain. It just follows mechanical laws of motion, and if the strings are moved up and down along the "center of gravity" of the puppet, then its legs and arms fall automatically into curving motions that are a pleasing dance. The marionettist requires only one skill to make the puppets dance: he needs to find where the "soul" of the doll sits along the line of center of gravity, and orient all his own movements around this point. But that is easy, much easier than a dancer mastering the moves of a dance. The effort of the puppet-master is incommensurate with the work of art it yields. Repetitive motion of the fingers produce a grace

of motion in the marionette that no human dancer could attain, because in the living dancer consciousness and reflection intrude; the human dancer can never become identical with the dance, because she has to approximate by conscious effort ideal lines of motion, abstract conceptions of where the leg must be in relation to the head at any moment, which muscles must be tensed to produce a given leap, and performance will always lag behind conception. The result of conscious effort by the human dancer, says Kleist, is always affectation.

In pool, the player, table and balls are the marionettes; the puppet master is the game. Just as the dancer and the dance become one, so also player, balls and table become one: the dance dances, using puppeteer and marionette; the game plays, using player and table. Kleist thought such a state was unattainable for humans caught in the condition of original sin and banished from Eden into a state of half-awareness and half-knowledge. Either the full consciousness of gods, or the total unconsciousness of animals or non-living artifacts like the marionette could attain it. Man would have either to retrace his steps backwards into the paradise of pre-conscious grace, or move forward into the state of full consciousness that follows redemption. In any case, it is not attainable for men trapped in the human condition.

Dead stroke

But every day in pool rooms something like the state of "grace" in which the marionette dances is attained by players who play "automatically." The experience is well-known, called "dead stroke," that is, "deadly," unerring aim—for every shot a victim.

Pool players do not care about theory, analysis or speculation. They are usually not intellectuals. They are hardly ever paralyzed by epistemological doubts and crises. They do not

retire to coffee shops and bars to discuss angle and thrust, to talk about Zen and the art of pool, to compare themselves to the prime mover and cosmic billiard player arranging the planets in perfect order, to muse on what the experience of dead stroke means, where it comes from, why this gift is given to some players and not to others. But they take a serious interest in getting it, because those who have it, win.

There are some good descriptions of the experience in the novel *The Hustler* (1959), from which a good popular movie was made. It is a tough, mean novel. It takes place in bus stations, pool rooms and bars in dangerous parts of the city. The author, Walter S. Tevis, is not some mystic given to occult visions. He understands the cult of winning, the ethics and psychology of the game, and he understands the state of mind I have just described. Here are a couple of passages from the book in which his hero, fast Eddie Felson, experiences it. It happens several hours into his first epic game with Minnesota Fats after Eddie has lost six games of straight pool in a row: [4]

> Then Eddie started winning. He felt it start in the middle of a game, began to feel the sense he sometimes had of being part of the table and of the balls and of the cue stick. The stroke of his arm seemed to travel on oiled bearings; and each muscle of his body was alert, sensitive to the game and the movement of the balls, sharply aware of how every ball would roll, of how, exactly, every shot must be made. Fats beat him that game, but he had felt it coming and he won the next…. The balls had sharp, jeweled edges; the cue ball itself was a milk-white jewel and it was a magnificent thing to watch the balls roll and to know beforehand where they were going to roll. Nothing could be so clear or so simple or so excellent to do. And there was no limit to the shots that could be made.

> His stroking arm was like a conscious thing, and the cue stick was a living extension of it. There were nerves in the wood of it, and he could feel the tapping of the leather tip with the nerves, could feel the balls roll; and the exquisite sound that they made as they hit the bottoms of the pockets was a sound both there, on the table, and in the very center of his own soul.

After about twelve hours and a lot of whiskey, with Eddie more than fifteen thousand dollars ahead, stranger things start to happen:

> The aching and the dullness increased gradually, but these did not affect the way his body played pool. There was a strange, exhilarating feeling that he was really somewhere else in the room above the table—floating possibly, with the heavy, bodiless mass of cigarette smoke that hung below the light—watching his own body, down below, driving small colored balls into holes by poking them with a long, polished stick of wood.

I imagine that most people not initiated into the mysteries of pool who read these passages took them for mere literature, a "poetic" way of describing the action of the game. The only point where I sense something not genuinely connected with the game is in the last passage, the separation of body and mind. Some intrusion of ideas of meditation or mystical experience?

The testimony to this experience that I can bring is anecdotal or literary.[5] But the experience is real and it is not the product of an idea or the phantasm of a held belief. If any reader is curious or skeptical enough to want to confirm that claim, he can go to a pool hall and talk to the better players. He might have some trouble wording the question. Ask if the player has experienced dead stroke and would be willing to describe it. That will be understood. I once played with a young man who was the northwest collegiate champion and fifth ranked player in

the United States. [6] He said he had experienced it often, that not all players have it, but that he considers the experience itself reward enough for playing the game. He explained it as a state that comes when you can stop thinking about your play, stop calculating, give up all conscious planning. When he reaches it, he first sees in his mind the shot he is about to make, then steps up to the table, takes the shot without further sighting it up, and without exception the balls behave as foreseen. He claims to be able to see three, four, or five shots ahead (this suggests the parallel to chess again), and make them happen as foreseen. This is not planning and calculating, the mode of everyday thought. The foresight of dead stroke is a kind of empirical prophetic vision: foreseeing clearly the way the balls will behave given their present lie and the will of the game to be played perfectly.

There are excellent players who never experience this state and who play well simply by relying on conscious effort. These people are really awe-inspiring, because they win without entering any mental-physical alliance with the table. To win while the beneficiary of that alliance is easy.

Immersion in Order

The player playing in the spell of dead stroke is a model for the experience of order. The game playing while using the player, table and balls, is a parallel to a piano player performing a piece of music "automatically," or, more virtuosic, improvising. The pianist feels one with the music, in fact that the music is merely using him to become optimally audible. That form of performance has in common with pool an admiring audience enthralled both by the music and by the player's more-than-human, at least more-than-ordinary skill. In the case of music there is also

an emotional bond between player, music and audience, which inspires both awe and enchanted participation in the audience.

It is also related to a poet receiving a poem fully worked out in her head and rushing to write it out before it fades. It is related if the poet has the feeling that the poem is out there waiting for a poet to activate it and she is the one who has found it.

Also, to a scientific researcher in the moment of discovery.

In pool, music, poetry, science and other fields, the player can trade in everyday consciousness for immersion in an external structure; he lives in that structure and enters into its laws, activates and experiences their operation in a particular project at a particular moment.

In each context there is the sense of unerring certainty; there is euphoria and automatic execution of extremely difficult operations, be they of action or thought; there is in all cases the dichotomy of effort and inspiration: what one player can accomplish in dead stroke another can accomplish by conscious will and experience. The quality of poetry one poet can write “automatically” another can achieve by conscious effort.

Of course, any experience of order presupposes a preceding course of study and discipline. The experience cannot happen until the player has immersed himself in the game so fully as to dissolve the consciousness that separates every subject from every object in everyday life. Different as these various contexts are, the experience is essentially the same. I am tempted to speak of the “dead thought” of the scientist, or the “dead composition” of the poet. But the term does not transfer out of the pool room. In sports where hitting a target by aim is central, the reckoning is regularly called dead, I suppose because it is in a sense, deadly. The effort leading to immersion is so consuming as to amount to the subject giving his life over to his chosen activity.

It does not happen by chance. It is comparable with the disciple of a Zen master losing his ego in his preparations for mastery. The book on Zen meditation by Eugen Herrigel, *Zen and the Art of Archery,* is a good parallel to the heightened state of perfect performance of the pool player. Here is how Herrigel explains that immersion:

> The necessary detachment and self-liberation, the inward-turning and intensification of life until full presence of mind is reached are not left to chance or to favorable conditions…. Before all doing and creating, before ever he begins to devote and adjust himself to his task, the artist summons forth this presence of mind and makes sure of it through practice… The pupil understands why archery cannot be a sport, a gymnastic exercise. He understands why the technically learnable part of it must be practiced to the point of repletion. If everything depends on the archer's becoming purposeless and effacing himself in the event, then its outward realization must occur automatically, in no further need of the controlling or reflecting intelligence… To get that far, for the skill to become "spiritual," a concentration of all the physical and psychic forces is needed… Sunk without purpose in what he is doing, he is brought face to face with that moment when the work, hovering before him in ideal lines, realizes itself as if of its own accord. (pp. 38-43).

For inspiration in any area of effort the experience of immersion and inspiration is essentially the same. As Herrigel spoke of a basic relatedness of art, calligraphy and archery, there is a basic affiliation among endeavors capable of inspiration: knowledge and command of the subject become absolute, accurate, "deadly." The poem or theory appears in the mind complete and finished, execution follows as if automatic. The aim of the imagination and the

word-producing faculty is unerring. What Nietzsche said of inspiration applies to all three: "Every thought presents itself as the most exact, the most correct, the simplest expression." In all areas of intense discipline, there is, mixed in among more sober, ego-directed individuals, a type who can achieve suspension between levels of consciousness.

The History of Pool

Finally, let's return to the idea of a "narrative" circumscribing the game of pool. I believe it is to be sought in the early history of the game. That history, however, seems lost to recovery. [7] The little I could find turns up references to the game but no attempt to situate it in the culture where it arose. The game surfaces in historical documents in the sixteenth century as a pastime of high aristocracy. There was good reason that it was called in the seventeenth century "the royal game." It was cultivated especially by the French monarchy, Louis XIV and his wife being among its most ardent players. Circumstances of Louis's kingship would have favored the analogy of king to billiard player. Louis ruled by divine right. He was the representative of God on Earth, and he was among other epithets "the sun king," the servants and courtiers surrounding him were satellites revolving around the "sun" of the king. The precision and pedantry of court ritual made etiquette into a kind of natural law, and a king who was so skilled in moving his nobles around the map of policy like chess pieces, may have been susceptible to similar feelings of identification as he controlled the balls on a pool table. This is the probable narrative that gave a higher sense to the game. It also created yet another parallel to chess, both mirroring structures rooted in monarchic society.

Its relatedness to cosmological thinking is evident: spheres are propelled by a conscious and controlling force in a way that is highly predictable. This character of the game and its imbedding in aristocratic society in the age of Copernicus, Galileo, Kepler, Tycho Brahe, encourage me to think that it originated, at least came to prominence favored by cosmological speculation of the period. Scientists, physicists were at work constructing and explaining a solar system with planets moving in predictable courses held in place by mysterious, invisible forces. Men expended ingenuity to create models of the solar system with spinning planets reproducing the relations in time and space of the planets relative to the sun and the stars. The outmoded Ptolemaic model of the celestial system had to be rethought and brought into harmony with the new system proposed by Copernicus and his followers. The armillary sphere was a means of making the new system both visible, comprehensible and entertaining. It made a good present to a king from a favor-seeking physicist (like Johannes Kepler). One can imagine that a pool/ billiard table likewise was a game that pleased princes in part by its law-driven mode of propulsion and controlled placement of balls. Both the cosmos and the pool game were systems in which spheres moved around governed by strict laws of nature, and the game of pool made the player into the prime-mover, or the world spirit or planetary spirits, or force of gravity, and could do with hand, eye and stick what the planetary sirens do by singing the music that moves the spheres. A clever inventor (or adapter of a traditional game) could have seen and presented his invention as a jocular answer to questions like those posed by the French poet Guy Lefèvre de la Boderie (d. 1598):

> How can the grand sphere in its voyaging and returning
>
> Be in so short a space as a single day?

Who is it who moves it, and with what instrument?

Who maintains its course, so swift and so exact?

… If it is then a ball [i.e. the sphere of the heavens]

Does it then not need a place in which it rolls? [8]

The table fits well into the set of "answers" to these questions, as does the cue stick as the instrument by which God moves the heavenly spheres, a connection not so far fetched when one considers Kepler's less elegant idea that gravity worked somewhat like a broom sweeping the heavenly spheres in front of it. [9] The essential sequence of actions in the game of pool is to chart an ideal course in the mind, then send a ball on precisely that course. The player can see himself rethinking thoughts like those in the mind of God the geometer/architect, as He laid out the universe in "number, measure and weight" and first set the heavenly spheres moving along their courses. [10] Our imaginary clever inventor of the game could present it to princes and monarchs with the claim that, playing it, they would be in the position of the Demiurge and cosmic governor, and the thought would sit well in dedicatory poems, flattering: "Just as prince so and so makes the world of his own state go around, so in this game he can feel the working of the divine prince's influence in the heavens." Or admonishing: "You who move the cosmos of your kingdom, think, when playing this game, of the power of the heavenly prince and celestial mover, and create a kingdom as well ordered as the divine prince created the universe." Billiards could easily have claimed a place in the period, along with the clock, as a symbol of the cosmos and its workings (the idea of God as a watchmaker). [11]

Pool as Experiment

Whatever its historical origins and its relevance to cosmic thought and royal representation in the Renaissance and Enlightenment, the coherence and order of the pool table stand for something essential about the external cause of inspiration whatever its product. If the argument is to have weight, the game of pool must be seen as analogous to nature and its laws—the object of scientific inquiry—and to the composed aesthetic forms created by the artist.

Pool is a game which sets laws of motion and angle into operation, incorporated in player, stick and balls, and makes those laws apprehendible. In this it has the character of a scientific experiment. The conception of the experiment in western science rests on the assumption that the physical world operates according to laws, that there is a determining code in nature and that the experimenter can, by constructing hypotheses and creating controlled circumstances to test them, make that code visible, give it voice. Experiments allow the physicist to read the "book of nature," that was written by God originally as a means both of constructing an orderly world and of instructing man in its workings—so at least every physicist in the west would have believed prior to the nineteenth/twentieth century. Robert Boyle, writing in the late eighteenth century, uses this model of a "composed" universe in defining the experiment:

> For as Plato said, that the world was God's epistle written to mankind, and might have added, consonantly to another saying of his, it was written in mathematical letters: so, in the physical explications of the parts and system of the world, methinks, there is somewhat like what happens, when men conjecturally frame several keys to enable us to understand a letter written in cyphers. [12]

The "keys" to nature's cypher can be mechanical devices that represent—to remain in the metaphor—means of translating the book of nature into terms comprehendible by human beings.

Experiments make nature speak, force her to divulge her secrets. They encapsulate those secrets in apparatus which demonstrate their operations.

The pool table stands in this relation to the laws of motion, thrust and angle by which the balls operate. Those laws exist and operate independently of that apparatus; it would be possible to chart and graph them, to record them in notebooks, to represent them in mathematical demonstrations and proofs. But the pool/billiard table is the simplest and clearest demonstration of laws which are not clearly visible and apprehendible anywhere in nature, even where they are in operation. They exist in nature in the form of that encoded cypher; the game of pool, properly analysed, translates them into visible and intelligible principles. It is for those laws what Galileo's slides and ramps were for the laws of acceleration and motion of falling objects, demonstration and empirical proof of the underlying laws; the laws of motion as experience.

The game forces those laws out of hiding, and it allows the "investigator"/player to enter into them. They become evident when they operate automatically, using him as their agent. Imagine Galileo sending balls down ramps repeatedly, measuring and timing, making observations and notes, gradually approaching a formulation of the unseen principles at work in front of his eyes. At length he sees the abstractions at work behind the fall of the balls, formulates the rules, tests them repeatedly and proves them when they hold true and are predictable in every case. Both the laws and their visible operations are present in his mind's eye, and the formulae in his head are seen as the very ones by which nature operates. The apparatus before him is no longer just wood and metal, but also part symbol, the conveyer of cosmic ideas. Galileo has brought these ideas into the open, but they are the same ideas by which nature operates. Mind and nature think the same thought. From this point on "dead," i.e. deadly precise

thought is easy. It is possible to predict the operation of anything that falls or moves by applying the same laws.

This is analogous to the experience of the pool player. In hours and years of practice his brain, nerves and muscles assimilate the laws of thrust, motion and angle by which the balls operate. This is not the mastery of individual shots, but the coopting of the governing principle of the game. The entire set of laws, and all possible shots have gradually reconstituted themselves in his mind, so that he masters an infinite number of perfect shots. In pool and in scientific experimentation there is a final stage of assimilation at which the player/experimenter enters into an unseen order governing the surface events of the game/experiment, and the player/ experimenter momentarily becomes one with that order; there is a kind of physical/mental union of thought and external idea.

The model of the pool game allows us to bring the strange and suprarational idea of the seeker's union with the sought idea and its conveyor up to the doorstep of that bastion of rationality and objectivity, the scientific experiment. My argument is that there are complexes of pattern and order outside the poet that he "studies," in some sense analogous to the way the scientist looks at the surface of nature, gathers data, out of which eventually an explanation and a discovery crystallizes. The composing poet discovers the orderliness behind surface appearances rather than creating it from nothing.

This model, the experience of order, takes in some of the main aspects of inspiration. It incorporates the external world or external objects, and so overcomes the myopic vision of a psychological approach that sees the problem of creativity as limited to the human mind. Also, it puts forward for scrutiny the real mystery that remains to be examined: the confluence of forces

—seeker, surface, underlying pattern—produces an effect incommensurate with the cause. By what logic does that constellation produce the intense burst of emotional, physical, spiritual, intellectual energy it does, and why is that experience so closely tied to discoveries that are seen as decisive advances in knowledge and compositions that are seen as remarkable contributions to culture.

NOTES

[1] I've borrowed the phrase from Eugen Herrigel, *Zen in the Art of Archery,* New York: Vintage, 1989), p. 5.

[2] Morris Berman, *The Reenchantment of the World,* (Ithaca: Cornell University Press), 1981.

[3] I'm reminded of a comment by Joseph Conrad, I don't remember where he made it, that in a storm at sea the captain and the ship are the same thing.

[4] Walter S. Tevis, *The Hustler,* (New York: Harper, 1959), pp. 38-9. Tevis is also the author of the now popular *The Queen's Gambit,* (***), from which also a popular film series was made. The connection is clear: both games generate an obsessive will to win, both have their own peculiar form of metaphysics.

[5] Bob Fancher includes a chapter on Dead stroke in his *Pleasures of Small Motions: Mastering the Mental Game of Pocket Billiards, 2nd ed.* (Lyons Press, 2002).

[6] BCA rankings.

[7] Clive Everton, *The History of Snooker and Billiards,* (Haywards Heath: Partridge Press, 1986).

[8] Guy Lefèvre de la Boderie, *Encyclie,* "Cercle cinquième," lines 243-46, 255-6. Quoted from *French Renaissance Scientific Poetry,* ed, Dudley Wilson, (Oondon: Athlone Press, 1974), p. 84.

[9] Arthur Koestler, *The Watershed: A Biography of Johannes Kepler,* (Garden City, N>Y>: Doubleday, 1960), p. 138)

[10] Friedrich Ohly, "Deus Geometer: Skizzen zu einer Vorstellung von Gott," in *Tradition als historische Kraft,* ed. Norbert Kamp and Joachim Wollasch, (Berlin and New York: De Gruyter, 1982), 1-42.

[11] *Die Welt als Uhr: Deutsche Uhren und Automaten, 1550-1650,* ed. Klaus Maurice and Otto Mayr, (Munich and Berlin, 1980).

[12] *The Excellency of Theology compared with Natural Philosophy,"* in Robert Boyle, *The Works,* ed. Thomas Birch, (London, 1772), vol. 4, p. 77. Quoted in Ohly, "Deus Geometer," p. 19