

NO DICE
by
Marvin Green

All of our past and all of our present are woven as one seamless fabric in our consciousness.

I have been thinking a lot about the year 1940 and about a man named David Bohm. Whenever I think about him, I remember my cousin Dolo. Dolo was a chemist. Bohm was a nuclear physicist who investigated matter and energy and the way they enter into our minds and experience.

The three of us are implicated in the death of my Uncle Nate. "Involved" would be the better word. "Implicated" would be Bohm's word.

In 1940, when Uncle Nate died, I was fifteen and Dolo and Bohm were in their early twenties.

Dolo had a round face and wore round metal-rimmed eyeglasses. Like many persons of Hungarian descent, he looked somewhat oriental. I do, too. I am sure we are lineal descendants of Genghis Khan. Dolo was short and wiry. He would be the last man to get a heart attack.

About thirty years ago, in the early 1960s, when Dolo was forty-two or forty-three, he and I were on a bus from Wilkes Barre

to Philadelphia after we buried my grandmother. He confided what he feared most. "The Bergmann slowdown," he said, by which he meant what now we call Alzheimer's.

I replied, "Cancer of the larynx." I was thirty-five or thirty-six, and I had not yet quit smoking. Nowadays my larynx is OK, but back then I was a five-packs-a-day man.

In the 1970s, when he was in his fifties, Dolo, who never used cigarettes, lost his voice, and the whole right side of his body was paralyzed. The stroke wiped out a tiny portion of his brain, destroying his ability to use words. He had global aphasia, which lasts forever. There is no relief.

Family members told me he was a vegetable. When I flew to Philadelphia to visit him, I found him lying in bed in a comfortable nursing home. Somebody had shaved him. As soon as he saw me, he began to cry. He was no vegetable. He seemed to go to sleep, but I knew exactly what he was doing. He was extricating himself from the situation the only way he could.

As I returned to Chicago, I found myself wondering how they came to believe he was a vegetable. I was trying to figure out how I would communicate if I lost my power of language and if I were paralyzed.

I remembered an article in Scientific American. Some scientist somewhere was training chimpanzees to "speak." They pressed buttons on a computer. As I recall now, each button had a picture or a

drawing. The chimpanzees were learning to select combinations that communicated feelings and simple ideas.

Scientific American's headquarters were in New York, but they listed a toll-free number in the Chicago telephone directory. The person I spoke with there remembered the article and promised that somebody would call me back.

Professor David Premack wrote the article when he was at the University of Southern California, but his secretary told me that he was on an extended trip to Europe and would not return. He would be settling at the University of Pennsylvania.

"Great," I answered.

About two weeks later he returned my call. He said, "I'm sure my methods are relevant to global aphasia, but there are two problems.

The patient is frustrated and depressed and cannot cooperate. Second, I need one person to stay with him for several years. Although graduate students are always fascinated with the possibilities, they finish their courses and move on before the work is done with the patient."

I said, "No problem. This guy's got four children who will stick with it."

"I wouldn't count on it. The depression and anger are overwhelming. One day in your life you can talk whenever you want.

The next you know the words, but you can't say them. On top of that, you can't move. You get me the people who will devote the

necessary time and who will have the fortitude to stick with it. I'll donate my own time and equipment. It will be a worthwhile effort."

I called one of Dolo's children.

Dolo died two or three years later. I never saw him again. He had a heart attack. He was living at State College with his daughter Annie. I hear that she used to wheel him through the campus, and I hear that he loved it.

I never spoke with Professor Premack again. The day after I informed his children about the offer, Dolo's former wife called me. She said, "We're all very angry, but we know you love Dolo, so we understand. You're accusing us of not doing everything that's humanly possible. We resent that and want you to stop interfering."

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The year I was born, 1925, there was the Scopes Monkey Trial, which brought journalists to Tennessee from all over the world. Sometimes the fabric of your consciousness includes things which you personally did not physically experience. The trial pitted religion against science and the titan Clarence Darrow against the titan William Jennings Bryan.

Until 1940, when Dolo introduced me to David Bohm, I was like William Jennings Bryan—I believed the stories from the Old Testament and felt responsible for everything everywhere.

I was living in Lansford, a Pennsylvania coal-mining town forty miles from Wilkes Barre. We had a rabbi and a synagogue and a Hebrew school. We accomplished this by consolidating with some Jewish families from Coaldale, a mile away, and from Nesquehoning and Tamaqua, which were five miles away.

At age 15, early in 1940, I had the inkling that I was changing my religious beliefs. I was disagreeing with a monk in Thornton Wilder's THE BRIDGE OF SAN LUIS REY. He was attempting to find a divine pattern in a catastrophe that befell divers persons who had gathered on a certain footbridge. I thought it was pure chance that had assembled those persons on the bridge.

If you look at everything as a matter of chance, you are committed to the theory that you are lucky or unlucky. I had thought that Dolo was lucky, but then he had his stroke. My father was lucky, and I have been lucky. We were lucky in different ways. David Bohm and Uncle Nate were not lucky.

When my father was nearing eighty in the 1970s, I saw him the last time. I was around fifty. He was wearing a hospital gown and was sitting in an easy chair in the solarium. I was holding his hand. We were in Florida after his prostate surgery, and the sun was so bright he had to position his other hand to shield his eyes.

He said, "I want to talk about something."

I said, "OK."

"Nobody wants to talk with me about this."

"I'll talk with you."

He said, "How will your mother do her shopping if I should pass out of the picture?" My mother did not know how to drive.

My father said he wanted to be sure his children would be OK. After he talked about my brother, he expressed some concerns and some hopes about me. He was not finished being a father.

Then he sighed and whispered, "Nathan, Nathan." Uncle Nate, his brother, had been his partner in the Lansford furniture store. It was in 1940 that Uncle Nate had to have both his legs amputated. A blood clot from coronary thrombosis obstructed the artery which branched into the legs, and gangrene set in.

My father said, "As I glance back, I consider myself fortunate."

"How so?"

"I never had any of those debilitating diseases."

I said, "You're very fortunate." I hugged him tightly when the time came for me to go back to Chicago. He died just a few months later. It had to happen, and it was good that it was instantaneous. He had a cerebral hemorrhage.

I was fortunate in a philosophical way. I was a capitalist. During the Great Depression I was concerned about the 15,000,000 unemployed, but I was too young to embrace Communism. Some older persons were convinced that Communism would save them and save the

world. If Dolo and Bohm were partial to Communism, perhaps they felt responsible to feed everyone and to make sure they had beds to sleep in.

Until his stroke in the 1970s, Dolo was fortunate. During and after World War II, he was working for the government in a laboratory at the Philadelphia Navy Yard. In the McCarthy era of the 1950s, his loyalty was challenged, but he was cleared by a formal security investigation. He genuinely cared about the things that were happening to people, and he explained why he had signed some petitions and subscribed to certain magazines.

Evidently Bohm went several steps further, for at some time he became a friend of a man named Haakon Chevalier. Then it turned out that Haakon Chevalier might or might not have been involved in passing atomic secrets to the Soviets.

When Dolo introduced me to Bohm in 1940, the Nazis had just blitzkrieged France, Holland, Belgium and Denmark.

It was a Saturday afternoon, and we were standing outside the public library in Wilkes Barre when Dolo got excited and called Bohm's name and beckoned to him. I said, "Who's Bohm?"

I was in Bohm's presence for maybe five minutes. Since that time I have never seen him or spoken with him again. I am doing my best to remember him. I think he was blond. I am convinced he was slender. I believe he was wearing tan slacks and possibly a beige short-sleeved sport shirt.

My cousin Joe was there, too. Joe was about four months older than I. He whispered that Bohm was Wilkes Barre's resident genius. He was blazing his way through Penn State College. "In fact, Joe said, "he's the resident genius there, too. He already has an appointment to work at Princeton with Albert Einstein in the Institute for Advanced Study."

Five years later, in 1945, I was in the army in Belgium when we dropped the atom bomb on Hiroshima. Assuming that Bohm had worked on it, I derived a sense of vicarious participation. I visited Dolo and stayed the night with him and another cousin at his apartment in Philadelphia when I was discharged. I said, "So your friend Bohm developed the bomb."

Dolo said, "No."

I dragged one bit of the story from Dolo. Bohm was unable to get security clearance for the Manhattan Project. He was never permitted to work at Los Alamos with Robert Oppenheimer.

I saw a grainy picture of Bohm in the New York Times, around the time that we executed Ethel and Julius Rosenberg. The House Un-American Activities Committee had subpoenaed him. When he took the Fifth, they indicted him for contempt of Congress. He was tried. He was acquitted.

I found out what happened to Bohm in the next few years. Princeton University allowed his academic contract to lapse. He got a strong recommendation from Einstein, and he was appointed to

the University of Sao Paulo, Brazil. After he was there only a short time, the United States lured him to the Sao Paulo consulate on some pretext and confiscated his passport to prevent him from traveling to the Soviet Union. He became a Brazilian citizen. The government allowed him a brief visit to the United States in the 1960s when his father was dying of a brain tumor.

Arthur Koestler explained that Communism's philosophy was of religious magnitude and exerted an enormous force on young intellectuals. There is an inevitable power and direction in history. Communism says we are all responsible for implementing the ultimate triumph of the proletariat.

Now I have read a number of Bohm's books about physics and consciousness. He has a theory about the universe. It enables me to understand why he believed he had to do something about those 15,000,000 unemployed.

He said the universe is based on laws, not chance.

He was taking sides on a fundamental question that is still unsettled. He said there was a "crisis in modern microphysics." Either the laws of nature can be fully ascertained or they cannot.

Some quantum physicists, who are on the other side, maintain that the universe is fundamentally random. Werner Heisenberg was one of them. He won the Nobel Prize for his uncertainty principle. He and those quantum physicists said you can never know the laws

that govern nature. The most you can do is study the statistics of physical events.

Einstein disagreed. "God does not play dice," he said. Bohm not only worked with Einstein but lined up with him, too. Bohm's first book was called CAUSALITY AND CHANCE IN MODERN PHYSICS. He said the universe is not random. There are patterns in the fabric of your life.

On the question of whether the universe is fundamentally random or orderly, I do not remember which side Dolo took. I think he liked to strike neutral poses, so that he could explain all sides without ever committing himself. I remember one afternoon in the 1930s. I was twelve or thirteen or fourteen. It was getting to be dusk. We were drinking iced tea and lounging on the floor of his room in Maltby. He said, "Ask me a question about anything, and I'll give you the answer."

Often I find myself wishing I had gone to visit Dolo in State College. I wish I had strolled with him and Annie while she wheeled him through the State College campus. Maybe he would have figured out the means of communicating with me. Maybe he would have communicated some fundamental explanation of matter and energy and where they come from.

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When the surgeon amputated Uncle Nate's legs, he carried out the procedure under a local anesthetic. Uncle Nate's heart was too

weak to tolerate a general anesthetic.

One night in August, as Uncle Nate was hovering somewhere between death and life with no legs, we tried to do something for him. There was Talmudic authority for an emergency prayer service for a person who was gravely ill. It seemed our last chance to save him. We needed a *minyan* of ten men above the age of thirteen. One or two men drove in from Nesquehoning. Somebody came from Tamaqua. I was the tenth man.

The problem was that just three or four weeks earlier I had become an atheist.

It was during my summer vacation from high school. I was spending about ten days with my cousin Joe in Swoyerville, right next to Dolo's Maltby. Joe, Dolo and I had many searching debates. They took me to the public library in Wilkes Barre.

There was one particular day that was the hottest day I had ever experienced. There was no air-conditioning anywhere except at the Comerford Theater, which decked its marquee with giant banners proclaiming its new amenity.

At the library, I did not suffer from the heat, because I was glimpsing a magnificent new world. Leaning on my elbows at an oblong wooden table, I was reading Sir James Jeans' *THE MYSTERIOUS UNIVERSE*.

If you put a drop of ink into a glass of water, Jeans said, the random motions of the molecules will soon disperse the ink. I readily agreed out of my own experience. However, Jeans also said it was

conceivable that the ink could re-accumulate into a drop. It was a matter of chance, he explained, because, after all, all of the molecular motions were random. I was profoundly disturbed. I could not visualize the ink gathering into a drop.

When we had entered the library that morning, I was a boy who had been *bar mitzvah* two years earlier. I was a boy who had stood before the congregation and made many solemn vows.

When we left the library in the afternoon, although I did not realize it at the time, I was teetering between Heisenberg and certain quantum physicists, on the one hand, and the Einstein and Bohm people on the other hand,

Then I met Bohm himself and somehow became an atheist but never anticipated that in less than a month this David Bohm would become involved—would be implicated—in the issue whether my father's brother would live or die.

Over the years since then I have speculated a lot about my decision at the synagogue. Even if God exists, He had a world war going on in Europe, and I do not think that He would have been perturbed that one member of the *minyan* in Lansford, Pennsylvania, was an atheist kid. To this day I believe I did Uncle Nate a favor by not praying for him. He was around fifty. I remember standing with the *minyan*, wondering where the hospital would put his legs and pondering whether I had the fortitude, or whether anyone else had the fortitude, to wheel him around his house seven days a week, around his furniture

store and up and down the hills of Lansford.

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Now it is the first decade of the 21st Century. In the last century the Nobelist Erwin Schrodinger developed the theory that matter can be regarded as waves of probability. Matter comprises our bodies, but what about our minds? Schrodinger wrote a monograph, WHAT IS LIFE?, that addressed this question. Although he did not really answer, he spoke of "the youth that was I."

Is it I or is it "the youth that was I" who keeps on thinking of David Bohm? Sometimes he simply pops into my head. Sometimes I encounter him in text. Perhaps it is chance coincidence, or perhaps it is not.

One day I called Pittsburgh to talk with my cousin Joe. I said, "Remember David Bohm? Whatever happened to him?"

Joe said, "Is he still at Sao Paulo?"

Later in the same day somebody handed me a book I had not seen in twenty years. The book argues that our consciousness is "the missing hidden variable in the structuring of matter." It was based on something that Bohm had written. Then that very evening, not feeling like working, I read an article which claimed that the Soviets and the Americans were both developing psychic phenomena for military purposes. The author cited a new book by Bohm as the authority for the scientific premises. Bohm called this new book WHOLENESS AND THE IMPLICATE ORDER.

The theologian Paul Tillich says that human beings are ultimately concerned about two mysterious end points. Our lives and our consciousness stretch from the one to the other. They are "creation" and "culmination." In CAUSALITY AND CHANCE IN MODERN PHYSICS, Bohm dealt with both of these end points. He said, "We find that nothing simply surges up out of nothing, and nothing ever disappears without a trace."

I definitely agree. Dolo, Joe and I did not surge up out of nothing. We are lineal descendants of Genghis Khan. As for our disappearing, I do not think of Dolo as gone. Nobody is gone. Although I am an orphan, my mother and father seem to be with me every day. I am sure that Dolo seems to be with Annie, and I imagine that Bohm's father was at least a trace in Bohm's mind.

According to WHOLENESS AND THE IMPLICATE ORDER, we are all threads of a single fabric. I can see that. Persons I have never met—Hitler, Stalin and Mussolini—are threads in my consciousness. So are the members of the House Un-American Activities Committee. So are the men and the women and the children who happened to be in Hiroshima and the fifteen million who had no jobs and no beds to sleep in during the Great Depression. So are Scopes and this man Haakon Chevalier and Ethel and Julius Rosenberg and the two orphaned sons of Ethel and Julius Rosenberg.

There is, of course, a time not far away when both I and "the youth that was I" will disappear altogether and become a trace.

Meantime, as I come awake in the mornings I run through a checklist of body parts. I have no chest pains, so my heart is OK. I get out of bed and verify that my legs and my prostate are OK. I kiss my wife and hear myself say, "Good morning, Anne," so I know that my larynx is OK and that the little spot in my brain that controls language remains intact.

When I become a trace, the fabric will continue to show what I did and what I did not do. I did not become a scientist. I became something else. What I became will not matter to the fabric of the universe.

There is something that matters to me even if it will not matter to the world. It is that I never understood the fabric. Having committed myself to Einstein and Bohm that God—if there is a God—does not gamble with Creation, I accuse myself of doing exactly the opposite with my own life. I see myself at the craps table. I am wagering everything there is on one reckless throw.

I want Annie to know that I never visited her father in State College, because I was busy becoming something. It was not because he could not talk while we strolled through the campus.

I want Annie and his other children to know that he is still communicating with me. In fact, it is more than half a century that I have been engaged in comprehending his message on that hottest day I had ever experienced, when he and Joe and I emerged from the Wilkes Barre Public Library at closing time.

We stepped into the afternoon sun that day and had to squint. I voted to go to the Comerford to find out what air-conditioning was like. Dolo was saying, no, there is something more urgent. He directed us to consider whether an egg could fry on the sidewalk. Suddenly he saw someone and yelled, "Bohm! There's Bohm." He seemed excited and happy to see him. He said, "Let's get him in on this."

That was when I asked, "Who's Bohm?"

That was when Dolo beckoned to a slender young man his own age. He was the man who possibly was wearing tan slacks and a beige short-sleeved sport shirt. As the man looked up and then approached us, Dolo nudged me in the ribs and said, "Wait till you get a load of this guy."

Dolo leaned on my shoulder and said, "Hey, there, Bohm, this is my cousin from Lansford. Do you think we could fry an egg on the sidewalk?"

Bohm muttered an answer which I did not regard as momentous. Dolo was silent. Although he appeared to be contemplating the answer, I knew he was figuring out some other means of demonstrating Bohm's prowess.

He said, "OK, Dave, I'll tell you what. If I were going to spit, at what angle should I hold my head to achieve the maximum distance?" I was interested in this question. Just the day before, Joe, Dolo and I had had a spitting contest. Dolo won, but I suspected

there was a simple principle which could improve my performance.

Bohm said, "We'll have to differentiate a trigonometric equation."

Thereupon he calculated something mentally and announced the angle. I wish I could remember what it was.

He pulled Dolo to the center of the sidewalk. Standing right next to him, he adjusted Dolo's head. He removed Dolo's glasses.

He folded them and inserted them in Dolo's shirt pocket. He stepped back and checked Dolo from a distance of about five feet. Then he came forward and adjusted Dolo's head two or three more times until he was perfectly satisfied. I cannot believe that such a careful man would ever betray his country in any way. He should have been allowed to work on the Manhattan Project at Los Alamos with Robert Oppenheimer. We should not have confiscated his passport.

At last Bohm was ready. He raised his right hand and counted backwards from three. When he reached "one," he lowered his hand and yelled, "Spit!"

Only a little while earlier, in May, the Nazi Panzers and Luftwaffe had swept across France. I was frightened the whole summer, but that particular afternoon at that particular moment in Wilkes Barre there were two other things that really mattered to me. One was the drop of ink. The other was that a man named Bohm had successfully differentiated a trigonometric equation. I did not even know what a trigonometric equation was, and I did not even

know what differentiation was.

All I knew was that I saw Dolo spit. Now it another century, and in all of my life I have never seen a man spit as far as Dolo spit that afternoon in Wilkes Barre.

Random or orderly, everything has consequences. If there is a God, and if He is the sort of God who pays attention to us, it is possible that He, too, was astonished. In His excitement it is just possible that He took His eye off Uncle Nate for one tiny instant and thereby permitted coronary thrombosis to rupture Uncle Nate's heart.

I would not be surprised. Every time I think about 1940, I discover threads I never saw before.