

## AUTOBIOGRAPHICAL REFLECTIONS

*A talk given on June 5, 1998 by John Stachel at the Max Planck Institute for the History of Science in Berlin on the occasion of a workshop honoring his 70th birthday  
"Space-Time, Quantum Entanglement and Critical Epistemology"*

I have found from experience—in Boston and Berlin—that when one turns seventy, one's friends forget all one's sins of omission and commission (I hope mine have been mostly those of omission)—at least for the moment—and remember only the good deeds which they recall, often with an exaggeration that I can only ascribe to fondness.

In the course of my life, I have made many friends and not a few enemies. It seems to me that a life worth living needs both. There have been many gratifications in my life, but also many disappointments and still unresolved problems. My experiences have been such as to make me critical of many current shibboleths, including many that once were my own. As Iago said, "I am nothing if not critical."<sup>1</sup> I hope my experiences have made me much less dogmatic now than I used to be. Let me recall just a few of these problems.

I grew up a Jew in a predominantly Christian society, yet a non-religious Jew with no links to the organized Jewish community—what Isaac Deutscher called a non-Jewish Jew. My family roots in East-European Yiddish culture, on the one hand, on the other, the "civilized" anti-Semitism of my homeland, and above all the barbaric forms which anti-Semitism took in Germany while I was growing up, culminating in the holocaust, left me in no doubt of my Jewish identity. Indeed, it is a good example of the "List der Vernunft," the cunning of reason, that a celebration of my 70th birthday should be taking place in Berlin. If someone had foretold this fifty years ago, I would have been incredulous, to say the least.

Yet my pride as a Jew in the accomplishments of my people in surviving and overcoming the murderous assault on their very existence is tempered by the experience of seeing how the victims of oppression have themselves become oppressors of another people. Until the Palestinian people have fully achieved their liberation, I cannot think about the state of Israel with unmixed emotions.

I was brought up in a Communist family, in the heartland of capitalism. This was during the 1930s, a time when American capitalism was suffering its most profound crisis—so far—and the American Communist Party was at its strongest. The Soviet Union then still embodied the hopes of many people around the world, including quite a few in the United States, for a socialist transformation of society. My experiences inculcated in me a spirit of internationalism and inoculated me against an uncritical worship of the "American Way of Life." Of course, a healthy sense of pride in one's national heritage is entirely compatible with an internationalist orientation—and in that sense I am proud to be an American; but an all-too-common jingoistic nationalism is not. Certainly, I could not take pride in the America of the Vietnam War, nor in its current role as would-be policeman of the world. For me, shame over and struggle

against the wrongs done in the name of one's country are part of true patriotism.

My father was a leader of the American Communist Party, imprisoned for his beliefs during the McCarthy era. For many years I was a dogmatic Communist. But, as happened to so many in the Communist movement, at a certain point—in my case the Soviet invasion of Hungary in 1956—I had to reexamine my views. I came to see, as someone well put it, that the problem with the Communist Party was not that it was too far to the left, but that it was too far to the East. That is, notwithstanding many good causes it championed in the United States, it became a servant of Soviet Russian interests that had nothing to do with the cause of socialism.

But unlike many who left the Communist Party, I turned left rather than right, and returned—or rather turned for the first time—to a critical examination of Marx's work. I found—and still find—that his analysis of capitalism, which for me is the heart of his work, provides the best starting point, the best critical tools, with which—suitably developed—to understand contemporary capitalism. I remind you that this year is also the sesquicentennial of the Communist Manifesto, a document that still haunts the capitalist world.

This understanding of capitalism inoculated me against the current wave of worship of the not-so-free “free market” that followed the collapse of the Soviet bloc. This collapse affected the core of Marx's analysis of capitalism as little as the collapse of the Holy Roman Empire affected Jesus of Nazareth's teachings in the Sermon on the Mount.

After over fifty years of grappling with this problem, and over forty of trying to free myself from dogmatic approaches to it, this is how I see the problem of capitalism and socialism. In order to survive, capitalism must continually deal with a series of antagonisms inherent to it, starting with the antagonistic relation between capital and labor that lies at its core. Any temporary solution to one or another form that these antagonisms take ultimately generates new forms. Thus, the system changes through a series of crises, partial or global. No one of these is “the final crisis,” in the sense that the antagonisms provoking it cannot be solved within the capitalist framework. But these moments of crisis do offer an opportunity—and no more—for interventions by those forces within the society—primarily the labor movement and its allies—that are motivated by their position in society to move beyond capitalism toward a system of non-antagonistic relations of production that we may call socialism.

I no longer believe in the inevitability of socialism. But I do believe in the non-inevitability of capitalism. History shows that, at least in the past, there have been societies based on non-capitalistic social relations. If I am correct in asserting that capitalism cannot ever surmount its basic antagonisms, then there is always the possibility that the labor movement will succeed in an attempt to transcend capitalist social relations.

I see two main problems facing the current labor movement:

- 1) the concept of labor is too narrowly defined, even by the labor movement itself. What Marx called the collective laborer includes many intellectual workers who today neither define themselves nor are accepted by the labor movement as part of it. Until this split between labor of head and labor of hand is overcome in theory (which is easy) and in practice (which is not), the potential power of the labor movement will remain badly crippled.

- 2) the globalization of capital has far outstripped the ability of current labor movements, organized at best on a national level, to conduct an effective defense of the interests of labor within capitalism, let alone to seriously challenge the capitalist system. To develop some form—or forms—of international organization of labor, long an ideological challenge (“Workers of the World Unite”) has now become an urgent matter of survival for the labor movements of the world.

Here is a challenge, on which I think broad agreement is possible: Even those who think capitalism is capable of indefinite survival must agree that it has functioned best in the past—for example, during the long period of post-World War II expansion—when the power of capital has been effectively limited by the countervailing power of labor. Effective exercise of that power has always depended on overcoming the segmentation of labor due to such factors as locality, race, gender, occupation, etc., which still remain important. Above, I have singled out the two factors that today seem key to me: the split between mental and manual labor, and segmentation by nationality. Let all concerned about the current state of capitalism work to build up the countervailing power of labor, and let time show whether this results in nothing more than the better functioning of capitalism, or whether a new challenge to the system ultimately emerges.

One thing seems clear to me even now: if we proceed along the path we are currently on, with the power of capital exerted almost without challenge on a global scale, we are heading for economic, social and ecological disasters that will make our descendants look back nostalgically on the horrors of the twentieth century!<sup>2</sup>

In science too, my experience has made me critical. I became a physicist, which put me in a small minority; then a theoretical physicist, another minority within a minority; then a general relativist at a time (the late 1950s) when we formed a tiny and often despised minority within that minority. Here again, my experience as a general relativist inoculated me against the prevailing view among theoretical physicists that quantum theory—and in particular quantum field theory—provided the answers to all the problems of physics, such problems always boiling down to computation of a number. I saw the dynamization and relativizing of the space-time structures as the unique contribution of general relativity to fundamental physics, a contribution that was not—and is not—easy to fit together with the quantization schemes so successful in the rest of physics, based as they are on fixed background space-time structures (usually taken as those of Minkowski space).

I reacted against what I saw as the two physics imperialisms: that of unified field theories, which (following Einstein) hoped to somehow annex all quantum phenomena by finding the right classical field-theoretical generalization of general relativity; and that of special-relativistic quantum field theory, which hoped to annex gravitational phenomena by treating the field equations of general relativity as no more than a non-linear special-relativistic theory with a particularly nasty gauge group, but otherwise to be treated by standard quantization techniques.

Forty years ago such skeptical views were heretical. Roger Penrose, who shared similar views, ironically dubbed a session on possible alternative approaches (at which he spoke) “the crackpot session.” Today, after sixty-odd years of failure of conventional attempts at quantization, alternative approaches receive a much more respectful hearing. The problem of the relation between quantum theory and general

relativity—for short the problem of quantum gravity—remains in my opinion the outstanding challenge to the fundamental physics of the next century.

As one grows older, it is tempting to dwell on the past; in particular, for me to try to hold on to a beautiful moment like this. Yet I must resist this temptation, and say with Faust:<sup>3</sup>

Werd' ich zum Augenblicke sagen  
 "Verweile doch! du bist so schön!"  
 Dann magst du mich in Fesseln schlagen  
 Dann will ich gern zugrunde gehn.

Life means change, and to resist change is death. "Nur wer sich wandelt, bleibt mit mir verwandt" says Nietzsche.<sup>4</sup> One must stay open to experience. One of my favorite graphic images, which I have already described to many, is a self portrait by the aged Goya: a very old man with long white hair and beard, bent over and supported by two canes, it bears the caption: "Aun aprendo," I am still learning.<sup>5</sup>

But one must not only continue to learn, to guard against all rigidity of belief, all dogmatism. One must continue to act in the world, not be paralyzed by the knowledge that all our opinions are fallible. We must act to change the world, our personal world, our social world, our intellectual world, guided by our best current beliefs, but always ready to change these in the face of new information. Our knowledge may fallible, but it is corrigible!

One of the greatest gratifications that one can have in life comes from the family ties that one forms. This is true of the biological family, of course. I cannot begin to tell you how much I owe to my dearest friend, lover, and companion in life for over forty-five years, my wife Evelyn, and to our children and grandchildren. To one who has not been so blessed, these joys are simply indescribable.

But for those of us in the scholarly world, there is another kind of kinship that supplements the biological: we are privileged to form intellectual families. We have our intellectual parents, siblings, and offspring. It has been and continues to be a source of deep satisfaction to me, both in Boston and Berlin, to see in person and to hear by letter from so many members of my intellectual family. Of course, like all parents; I take special pride in the younger people who think of me as their colleague, and some of whom I like to think of (to myself) as my intellectual children. I take the often exaggerated words of appreciation uttered by members of this intellectual family in the same spirit in which I take such words from members of my biological family: less as an indication of my own merits, more as an expression of the depth of their feelings and good wishes. Thank you all! As long as body and mind permit, I shall try to keep up our intellectual family contacts, to continue to give a little to you, in return for so much that over the years you have given to me.

#### NOTES

1. William Shakespeare, *Othello*, Act II, Scene 1.
2. When I spoke these words almost five years ago, I did not expect my gloomy forecast to be realized so quickly; but, for Americans, 9/11/2001 seems to have begun its fulfillment with a vengeance.
3. J.W. Goethe, *Faust*, Part I, Scene 6.
4. Friedrich Nietzsche, Nachgesang, "Aus hohen Bergen," in *Jenseits von Gut und Böse*.
5. It is in the Prado, Madrid.