

The two cultures: the literary moderns revisited

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Abstract

Leading from C.P.Snow's comments in his Rede Lecture of 1959, regarding "self-improvement" on the part of both scientists and literary intellectuals, this essay begins by examining texts by two of the writers in question: "The Waste Land", by T.S.Eliot and *Women in Love*, by D.H.Lawrence. Noting, as Snow does, the pessimistic tone regarding the individual human condition informing these literary works, as well as what Snow terms their Luddite attitude regarding industry, technology, and scientific advance in general, the essay will highlight the authors' dismissal of the possibilities for concrete, collective economic betterment presented by the natural and physical sciences in the very period, the mid-Twentieth Century, when Eliot, Lawrence, Franz Kafka, and other literary pessimists held center stage in British, European, and American classrooms. The essay will then shift its attention to the Twentieth Century literary titan, Alexandr Solzhenitsyn, one of whose massive novels, *Cancer Ward*, emerges from the writer's comprehensive familiarity with the medical sciences. The author of *The First Circle*, *The Gulag Archipelago*, and *Cancer Ward* presupposes an educated readership conversant with primary facts and issues in both the humanities and the sciences. Therefore, while neither experimental in style nor blindly optimistic regarding a utopian future through science, the novel suggests another possibility: an ethically aware, active populace, educated in both the arts and the sciences, capable of using its knowledge for both individual well-being in the spiritual sense and collective well-being in the socioeconomic sense. The essay will focus on the dual function of medical science in *Cancer Ward*, as literary metaphor and as bureaucratic fact in the now defunct soviet Union. The paper will conclude with a retrospective look at the teaching of the modern literary canon in American classrooms of the 1960's and beyond, and a suggestion for revision of that pedagogic approach, which marginalizes scientific elements in those texts.

1. Introduction

C.P.Snow's Rede Lecture of 1959 pinpoints and defines what he perceives as a disturbing lack of communication between the two primary "cultures", the scientists, in particular the physical scientists, and the non-scientists, represented in the lecture primarily by a group he names the "literary intellectuals". At no point in his discourse, incidentally, does he specify the poets and fiction writers who fall into this category. Nevertheless, it isn't difficult for a literary specialist, weaned in the mid-Twentieth Century university setting, to guess at their identities: T.S.Eliot, D.H.Lawrence, Franz Kafka, Albert Camus, among others, spring to mind immediately, as does the pessimistic, even fatalistic tone and tenor that links together so much of their otherwise quite distinctive literary output. The rift between these two groups, who share nonetheless exceptional intelligence, secure socioeconomic station, advanced education, and caucasian ethnicity, rests, Snow believes, on misinterpretation on the part of each regarding the other's outlook on and hopes for the improvement of the human condition. We can surely assume that Snow is referring to the human condition as affected in the Nineteenth Century by the Industrial Revolution, whose undeniably positive impact he examines closely; clearly, as well, he is taking into consideration, although they receive little mention, two catastrophic world wars, in which military combat was rendered all the more horrific by the technology and the very machinery emerging from the industrial establishment.

The literary intellectuals, writing and being read mainly (and roughly) in the period 1914-1960, see their scientific contemporaries, in snow's view, as "shallowly optimistic" (Snow 5), in their expectation that they can solve fundamental problems in human existence in material concrete ways. On the other side, Snow notes, the scientists judge with severity the group of poets, fiction writers, and dramatists for their apparent lack of foresight, their intense introspection, which suggests indifference to the larger human

Forum on Public Policy

community, and their indefensible pessimism regarding the potential for improvement of the human lot: "... if one's individual tragic state is irremediable, why bother with the larger collective?" (Snow 7) Indeed, Snow decries "the moral trap which comes through the insight into man's loneliness", the irreparable isolation and impotence scrutinized and communicated by such authors as Eliot and Kafka, whose work shares lean, distilled language use and untempered despair: "it tempts one to sit back, complacent in one's unique tragedy and let the others go without a meal." (Snow 7)

Such high sounding, resonant, but perhaps also unfocussed generalities: human betterment, human condition, human existence. Some narrowing of definition is required here, and Snow, with exquisite precision, provides it. Early in his seminal essay, he establishes a crucial distinction between the undeniably tragic nature of the individual human condition, man facing inevitable and solitary death at any point in history, and the communal, shared, or social condition, beset as it is and has been, world-wide and again through history, by hunger, disease, affliction by the natural elements, and early mortality. He believes the mutual distrust, approaching hostility, between the two cultures results in part from the unconscious conflation of the individual and the collective or social human condition. While the former is, existentially speaking, to some extent "incurable"--we are inevitably mortal; no matter how beloved, we die alone--the latter is fixable in matter-of-fact, material ways. We can struggle against cold, hunger and disease, and science makes it so. (Snow 7)

Thomas Stearns Eliot: The Waste Land
Here is no water but only rock
Rock and no water and the sandy road
The road winding above among the mountains
Which are mountains of rock without water
If there were water we should stop and drink
Amongst the rock one cannot stop or think
Sweat is dry and feet are in the sand
If there were only water amongst the rock
Dead mountain mouth of carious teeth that cannot spit
Here one can neither stand nor lie nor sit ... (331-339)

"Here", of course, is the austere, ungiving waste land Thomas Stearns Eliot defines, describes, and inhabits in the intricate, searing landmark poem written in Switzerland in 1921. The lines quoted above appear in Section V. What the Thunder Said and Eliot deemed them the best in the entire poem (Malamud xxix), although certainly they are far less instantly familiar than Eliot's allusive opening sentiment, turning Geoffrey Chaucer's jaunty introduction to *The Canterbury Tales* on its spirited, affirmative head.

April is the cruellest month, breeding
Lilacs out of the dead land, mixing
Memory and desire, stirring
Dull roots with spring rain. (1-4)

At the personal level, "The Waste Land" conveys in spare, elegant, uncompromising terms emotional breakdown, that generated in large part by Eliot's tumultuous marriage to the unstable Vivian Haigh-Wood. However, and more importantly for the general reader, "it recounts how the poet composes a sense of order, coherence, and direction on the cacophonous ... chaos of breakdown" (Malamud xx), the dual breakdown of the still young poet and, at the macrocosmic level, of post-World War I Europe. Moreover, while the rocky, parched landscape described above functions on two levels, the intimate and the broadly communal, it is strictly metaphoric terrain, one imagined and bodied forth poetically as the objective correlative of the disruption and futility sensed by the writer. Eliot, as we know, did not share the range of

Forum on Public Policy

interests of the ultimate "Renaissance Man", the incomparable Leonardo da Vinci, draughtsman and painter, student of geology, botany, zoology, human anatomy, and physiology, engineer. The factual data of topography, geological specifics, held no seductive charms for him; nor, in his repeated references to water for its symbolic healing powers, would he have been prone to investigate the nature of wave motion, as did Leonardo in his searching monograph. As Malamud notes, "Eliot postulated that the modern landscape looked harsh, hostile, crazy, fragmented, with the monuments of the past tormenting us amid our present unworthiness ..." (Malamud xxi) Further, the "landscape" in question is in fact the built landscape and the despair the poet communicates is not that of the prophet in the wilderness, but of the white collar office worker, the urban employee. In his review of the poem in *The Dial* (December 1922), Edmund Wilson pointed to the communal hopelessness, the shared anomie addressed by Eliot in "The Waste Land": "Sometimes we feel that he is speaking not only for a personal distress, but for the starvation of a whole civilization--for people grinding at barren office routine in cells of gigantic cities, drying up their souls in eternal toil, whose products never bring them profit, where their pleasures are so ... feeble that they are almost sadder than their pains." (Eliot 116) Doubtless, a social scientist, educated in the relatively young, primarily American field of sociology applauded by Snow himself, would find riches to mine in the following lines from Section III.

The Fire Sermon, integrating as they do classical reference and contemporary observation.

At the violet hour, when the eyes and back
Turn upward from the desk, when the human engine waits
Like a taxi throbbing, waiting,
I, Tiresias, though blind, throbbing between two lives,
Old man with wrinkled female breasts, can see
At the violet hour, the evening hour, that strives
Homeward, and brings the sailor home from sea
The typist home at teatime, clears her breakfast,
lights her stove, and lays out food in tins ... (216-223)

"The Waste Land" is in dialogue, as the current lingo has it, with a vast array of Eliot's literary ancestors, Ovid, Baudelaire, Verlaine inclusive, but the greater number of significant allusions are to Chaucer, Shakespeare, and Dante. It is profitable in reading the poem to attempt, at least, to nail the references, if not to match Eliot in scope of literary erudition. Recognizing the play on Shakespeare's portrayal of Cleopatra ("The Chair she sat in, like a burnished throne/Glowed on the marble ..." 77-78) or the Bard's haunting image of a drowned man in *The Tempest* ("Those are pearls that were his eyes" 126) not only gladdens the puzzle solver's heart, but expands and deepens understanding of Eliot's intent. Nevertheless, as Edmund Wilson pointed out in the *Dial* review quoted above, "the poem is intelligible at first reading, owing to the force of its intense emotion, its potent images and the sounds of words ... charged with a strange poignancy." (Eliot 116) One wonders, however, if members of the scientific community would be willing to apply Wilson's statement to grasp of any area of the scientific disciplines, physical or natural. Important to note here is Snow's observation that the scientific culture is characterized by rigorous argument at high conceptual level", and that words are used in their "exact senses", on the whole unfamiliar to those not steeped in the specific scientific field. (Snow 13). That is to say, for a scientist, "getting the gist" is not enough. Perhaps the scientist's notorious impatience with the nature and direction of analysis in literature classrooms can be understood in terms of this contrast in concern for precision in language use.

The expatriate American T.S. Eliot is known to the literary audience for reasons beyond the monumental achievements of "The Waste Land" and "The Four Quartets". An incisive literary critic, he was indeed responsible for the coining of the term "objective correlative", naming for the first time and defining the poet's search for the objective fact, experience, or circumstance that correlates to inner feeling. In

Forum on Public Policy

addition, he aggressively advocated the reuniting of emotion and intellect in literature, a union he felt had been lost in Nineteenth Century fiction and poetry. In light of the latter advocacy, it should be no surprise that his spiritual father in verse writing was the Metaphysical poet and Anglican divine John Donne. (Malamud 110)

Eliot's station on literary Olympus was secured, as if it had needed security, by the award of the Nobel Prize, for "The Four Quartets", in 1948. Like his passionate forebear in irony and paradox, Eliot communicated a hard-won and repeatedly renewed religious faith, after joining the Anglican Church in 1927. "The Four Quartets", reflecting the precepts and outlook on worldly affairs of that religious body, appeared significantly later, in the throes of World War II. They are written in a calm, more accepting and forgiving voice than that of early work, expressing, as Malamud points out, "stoic endurance in the face of external devastation." (Malamud xxx) It should be emphasized here, however, that if there is salvation on Eliot's mind, it is spiritual salvation, not to be attained through the efforts of the physical or biological scientists. It may be appropriate to mention at this juncture that one of Eliot's influential mentors at Harvard, William James, had long since shifted departments, from anatomy and physiology to philosophy and psychology, when he began working with Eliot, his graduate student charge. (Columbia Encyclopedia)

David Herbert Lawrence: *Women in Love*

The Industrial Revolution and its socioeconomic aftermath certainly suffer from "bad press" in the work of Nineteenth Century non-fiction writers on both sides of the Atlantic, the American transcendentalists Thoreau and Emerson, for example, and their British contemporaries, social theorist John Ruskin and Arts and Crafts designer William Morris. According to Snow, these canonical figures in social criticism were only able to respond to the industrial landscape through descriptions of "smoking chimneys" and, quite justifiably, atrocious conditions for factory workers. (Snow 25) Non-scientific intellectuals, Snow notes, are "natural Luddites" and he expands on this point in stating that "apart from the scientific culture, the rest of Western intellectuals have "never tried, wanted, or been able to understand the Industrial Revolution, much less accepted it." (Snow 22) Snow counters the pervasive assumption that the growth of the industrial sector has wrought havoc on the individual lives of those who man it with an extravagant claim: the momentous upsurge of industrialization has produced "the only qualitative changes in social living that men have ever known." (Snow 22) Sadly, he adds, the best minds in late Nineteenth Century theoretical and applied science had no interest in the industrial cosmos, in technical or social terms, nor were they prodded by forces internal or external to the academic arena to comprehend and improve these conditions in their research and teaching, at least not in the English-speaking world. (Snow 24)

Snow inveighs against the romanticizing of the pre-industrial age, so evident in the work of the German Romantic painter, Caspar David Friedrich and his spiritual, if not stylistic descendants, the German Expressionists. So at this point, it makes sense to address one of the novels of a second literary modern, and sometime expressionist painter, David Herbert Lawrence.

Women in Love was published in 1921, a mere twelve months before the publication of "The Wasteland". (Loftis x) Lawrence's prose, in this novel as in others, is as lush as Eliot's verse is lean. It is characterized by what some critics feel is outrageous, even tedious repetition, as well as an astonishing gift for descriptive detail and a propensity for romantic exaggeration, bordering on distortion. While the title indicates a focus on women's part in love relationships, the narrative is as much, if not more concerned with the intense emotional bond between the two male protagonists in a complex quartet of characters: Ursula and Gudrun Brangwen, involved respectively with Rupert Birkin and Gerald Crich. Birkin, as he's presented in the narrative, is commonly thought a fictive stand-in for Lawrence himself and develops an initially troubled, but ultimately durable relationship with the passionate, outspoken Ursula. Readers, on the other hand, are bound to be more riveted by the erotic, destructive connection between Gudrun, artist

Forum on Public Policy

and adventurous, chillier and more beautiful than her sister, and Gerald, who has inherited control of a coal-mining operation in the British Midlands. The massive novel is set primarily in Beldover, a small colliery town in the Midlands, with brief stops in Bohemian London, allowing Lawrence an exposition on the primal power of African masks, and a mesmerizing Wagnerian conclusion in the Swiss Alps. Here, the blond, blue-eyed, very Nordic Gerald dies what seems a fated, tragic death in the snow. Gerald is not himself any sort of scientist, but in his capacity as director of a failing mining company, he mobilizes engineering know-how and what Americans once termed "efficiency experts" to resurrect his dying father's moribund firm. While his father, Thomas Crich, has long been torn between his compassion for his workers and his equally compelling desire for profit, Gerald's tunnel vision, his relentlessly mechanistic approach to running the mine and increasing profits, seems demonic as it's expressed in the novel:

Immediately he saw the firm, he realised what he could do. He had a fight to fight with Matter, with the earth, and the coal it enclosed. This was the sole idea, to turn inanimate matter of the underground and reduce it to his will. And for this fight with matter, one must have perfect instruments in perfect organization, a mechanism so subtle and harmonious in its workings that it represents the single mind of man, and by its relentless repetition of given movement will accomplish a purpose irresistibly, inhumanly ... (Lawrence 227)

And again, with greater specificity and more pointedly:

An enormous electric plant was installed, both for lighting and for haulage underground and for power. The electricity was carried into every mine. New machinery was brought from America ... great iron men, as the cutting machines were called, and unusual appliances. The working of the pits was thoroughly changed, all the control was taken out of the hands of the miners ... Everything was run on the most accurate and delicate scientific method, educated and expert men were in control everywhere, the miners were reduced to mere mechanical instruments. (Lawrence 230-231)

Early in the novel, through Gudrun's musings, Lawrence conveys a surprising nostalgia for the roiling, much-maligned underworld vitality of Nineteenth Century colliery town life. The writer's father was, after all, a miner and the milieu, the mining subculture would have been, if nothing else, familiar. However, here, in the hyperbolic, feverish narration quoted above, one can only read fear and repulsion in Lawrence's reaction to what must have seemed an industrial environment removed yet further from the qualities of experience Lawrence celebrated repeatedly in his fiction: spontaneity, sexual and otherwise, unregimented harmony between people, and between people and the natural world, a life guided more by intuition than by overweening intellect, as embodied by Hermione in *Women in Love*. While the Nineteenth Century industrial landscape might be characterized by benevolent (or malevolent) paternalism on the part of the owners, and squalor, exhaustion, and physical danger for the workers, the systematic mechanization enacted on his father's mining operation by Gerald Crich in the Twentieth Century, all in the name of the Great God Efficiency, results for Lawrence in a far more fearsome outcome: while the communal body is thereby materially enriched, its spirit will be simultaneously and necessarily impoverished.

Snow defines members of the scientific community as marked by impatience when something, as they see it, can be done and an inclination to think it can be done, until it's proven otherwise. (Snow 7) Optimism

Forum on Public Policy

in the face of concrete challenge, for instance, surely identifies the attitude that propelled the physicist Ernest Rutherford in his groundbreaking study of radioactivity and investigation into the structure of the atom. At first glance, a similar hopeful activism may be said to drive Gerald Crich, who marshalls the findings of applied science in his virtual resurrection of the Midland mining enterprise. It is Gudrun who perceives Gerald's tremendous efficacy in the material world, his "instrumentality". "He was so superbly fearless, masterful," she thinks, "he knew that every problem could be worked out, in life as in geometry. And he would care neither about himself nor about anything but the working out of the problem ... He was pure, inhuman, superhuman instrument." (Lawrence 418-419)

But for Gudrun, for Gerald, for Lawrence and adherents of Lawrence's worldview, there is a deadly subtext, a fatal undertow to Gerald's economic success. In the case of Gerald himself, with the achievement comes terror. He has been working in a "trance of activity", from which he emerges in a state of aimlessness when his efforts have born fruit. (Lawrence 231) And in this delineation of a doomed, oddly pathetic "captain of industry", for whom the ends really do justify the means (at least for a while) Lawrence gives us the reducto ad nauseum of the Twentieth Century socioeconomic credo in which material prosperity is the primary, if not the exclusive goal. For this writer, it is astonishing how many devotees of Lawrence's opulent prose and complex characterizations bought uncritically his simplistic bead on industrial expansion and, by implication, technological advance. More to the point, Lawrence's pessimistic outlook on the modern industrial sector, his lopsided focus on the psychological downside of technological progress, has for decades been propagated uncritically in university literature classrooms.

Early in *Women in Love*, Lawrence recounts the inexorable physical decline of Thomas Crich, without actually naming his disease. The account is both precise and protracted in terms of surface changes caused by the illness, so that the reader can both empathize with Thomas' agony and surmise that he is being eaten away by some form of incurable cancer. Doubtless, Lawrence mined his memories of his mother's slow death by cancer in narrating the physical dissolution of an essentially sympathetic character. Nevertheless, in literary terms, Thomas' illness clearly parallels the accelerating failure of his mining enterprise; indeed, both human and commercial deterioration serve as objective correlative for the passing of a virtually feudal set of socioeconomic class relations.

Alexandr Solzhenitsyn: *Cancer Ward*

No such mystery attaches to the varieties of cancer suffered by the wealth of characters in *Cancer Ward*, Alexandr Solzhenitsyn's monumental novel written in 1968, nine years after the publication of *The Two Cultures*. While one might debate the inclusion of this and the Russian author's other fiction in Snow's "literary modern" category, there is no denying in this writer's work evidence of the observations Snow makes regarding higher education in the Soviet Union, both before and after Stalin's death in 1953. Snow notes that Russian university students receive a broader, deeper education in theoretical and, in particular, applied science in their five-year program than their Western counterparts. (Snow 47) As a result, Russian novelists, including uncompromising, risk-taking dissidents like Solzhenitsyn, might presuppose a comfort level with scientific principle and practice in their readership rare in Western readers of fiction. The following passage, occurring early in *Cancer Ward*, is but one of many in the novel indicating both solid knowledge of anatomy, physiology, and oncological complexities and depth of similar knowledge the author expected in his readers. The passage, incidentally, records the thought process of a female physician, probably one modelled on one of many Solzhenitsyn himself encountered during his own bouts with cancer in state-run hospitals. (Pearce 126-127)

Ah yes, she was thinking about Sibgatov. There are some thankless cases on which you can spend three times your usual ingenuity and still can't save the patient. When Sibgatov was first carried in on a stretcher the X-rays showed destruction of almost the entire sacrum. The error had been in establishing a bone sarcoma, even

Forum on Public Policy

though they had consulted a professor. Only later did it gradually emerge that the trouble was caused by a large-celled tumor, which makes the fluid appear in the bone and transform it into a jelly-like tissue. Still, the treatment in both cases was the same.

The sacrum cannot be removed or sawn out. It is the cornerstone of the body. The only thing left was X-ray therapy, which had to be immediate and in large doses. Small ones would not be any good. And Sibgatov got better! The sacrum strengthened. He recovered, but the doses he'd been given were large enough for a horse and the surrounding tissues became excessively sensitive, developing a tendency to form new malignant tumors ... (Solzhenitsyn 59)

While the passage isn't as rigorously detailed as a comparable passage in a medical text, it does reflect substantial grasp of anatomical structure and far more than hypothetical insight into the long range effects of radiation therapy. Indeed, excessive, irresponsible use of radiation by exhausted physicians constrained by horrific working conditions, bureaucratic directives, and inadequate supplies forms one of the major narrative strands woven into this panoramic tapestry. The novel might be characterized as a depiction of the Soviet medical industry in a foundering totalitarian ship of state. Striking to most alert readers is the seamless integration of hard factual knowledge and linguistic power in bodying forth what is, in essence, a jeremiad against such Soviet medical abuses as unmonitored, possibly fatal radiation overdose.

Through the square of skin that had been left clear on his stomach, through the layers of flesh and organs whose names the owner himself did not know, through the mass of toadlike tumor, along his arteries and veins, ... through the spine and lesser bones and again through more layers of flesh, vessels and skin on his back, then through the hard wooden board of the couch, through fourcentimeter-thick floorboards ... down, down until they disappeared into the very stone foundation of the building or into the earth, pounded the harsh X-rays, the trembling vectors of electric and magnetic fields, unimaginable to the human mind or else the comprehensible quanta that like shells out of guns pounded and riddled everything in their path. (Solzhenitsyn 68)

No precisely worded clinical caution or thunderous journalistic editorial could match the admonitory force of this description, which tracks the path of an X-ray from its source, through Kostoglotov's body, to the very earth on which the cancer ward and the entire hospital sit. Not surprisingly, the character of Kostoglotov--crusty, individualistic, endlessly acquisitive of knowledge--is thought to be modelled on Solzhenitsyn himself.

A look at the biographical data of Solzhenitsyn's life is useful here. The Russian writer's experiences contrast sharply with those of Eliot and Lawrence and they go some distance in explaining both the extent of scientific information found in *Cancer Ward* and the moral outrage informing this lucid appraisal of the Soviet medical environment, a microcosm in human and bureaucratic terms of the larger Soviet society. Solzhenitsyn's focus in his university years was in mathematics, a field in which he excelled and could teach while safeguarding literature as a 'consolation of the spirit.' "I had no desire to become a teacher of literature, because I had too many complex ideas of my own, and I simply wasn't interested in retailing crude, simplified nuggets of information to children in school." (Pearce 26) The writer's development as a literary voice was energized early in his career by service in the Red Army, an experience whose physical

Forum on Public Policy

and psychological demands would have overwhelmed both Eliot and Lawrence. Indeed, he achieved the rank of artillery captain and was decorated for bravery toward the end of the war, in June, 1944. "He had passed from the rank and file to the rank of officer, from persecuted to persecutor, and only in later years did he realize how he had been brutalized by the experience." (Pearce 53) However, in 1945, still on the German front, he was targeted for criticizing Stalin in letters to a friend. Initially imprisoned in Moscow and witness to the tragic fates of other political prisoners, he was ultimately sentenced to eight years in labor camps. (Columbia Encyclopedia) The physically and emotionally draining years as menial laborer surely account for the tightly observed and visceral account of labor camp events, and perception of those events, recorded in *The First Circle*, published in 1968. Important to add, however, is that toward the end of his incarceration, Solzhenitsyn was re-categorized as a "special-assignment prisoner" and sent to Sharaska, a special prison institute for scientific research.

There, laboratories, workshops, sometimes entire factories were run by prisoners capable of producing results in specialist fields. So the adept, but reluctant scientist was saved from hardship, perhaps death itself, by his degree in mathematics and physics from Rostov University. (Pearce 94-95)

His sentence complete, Solzhenitsyn was next exiled to Kazakhstan, another stage of what seems an endless purgatory, but his position improved with Stalin's death in 1953, and his lost citizenship restored in 1956. In a striking shift in fortune, he rose to the first rank of Russian authors with the publication of *One Day in the Life of Ivan Denisovich*, in 1962. In Krushchev's view, Solzhenitsyn's description of the grimness of life in the Staliinist labor camp system would encourage anti-Stalinist feeling, and in turn a boost to Krushchev's own popularity. Inevitably, however, subsequent novels, those relentlessly honest and comprehensive works of fact-suffused fiction addressed above, suffered increasing censure in the late 1960's and their author labeled a hostile, dangerous critic of Soviet society. (Pearce 162) As we know, Solzhenitsyn's fiction surfaced in the West in this period, through translation and publication of fearless, compelling novels describing with excruciating precision techniques of terror and resulting moral debasement in both Stalinist and post-Stalinist society. His books and polemical writings circulated in his own country through a self-publishing underground press, samizdat editions; his readership in the Soviet Union comprised a multi-disciplinary, dissident intellectual elite, whose educational scope and humanitarian rage for reform matched his own. Once again, it would be a mistake to marginalize Solzhenitsyn's efforts in the arena of the sciences, the natural as well as the physical, in examining his achievements, as well as his popularity among his peers. In his "Letter to Soviet Leaders" (1973), for example, he launched a passionate protest against the squandering of resources, the sapping of soil, and the contamination of land around industrial centers in a Soviet Union frantic to catch up with the capitalist West in the material ways scorned by D.H.Lawrence. (Pearce 204-205)

It is ironic, to say the least, that Solzhenitsyn, like Eliot, was awarded the Nobel Prize for Literature, in 1970, but elected to refuse it, fearing he wouldn't be permitted to return to Russia from Stockholm. A writer of less determination and moral fiber might have retreated into more accommodating work at this point, as did the Constructivist designer Rodchenko in his propaganda for Stalin. In the latter case, a resigned choice was made between principle and physical, if not moral survival. But Solzhenitsyn persisted. Still living in the Soviet Union, he published abroad *The Gulag Archipelago*, a massive tome comprising personal interviews and reminiscences of the oppressive Soviet system, 1918-1956. Yet again arrested and stripped of his citizenship in February, 1974, the intransigent writer was deported to the West, ultimately settling in the rural, bucolic forests of Northern Vermont, at that point untouched by any form of of polluting, resource-exhausting industrialization. In 1974 as well, he formally accepted the Nobel Prize. His exile lasted for eighteen years.

It may very likely seem wrongheaded, if not downright ludicrous, to praise a university system that placed great emphasis on scientific understanding, when that system developed in a totalitarian state. The enormous scientific advances produced by laboratory research under Stalin, Krushchev, and Brezhnev

Forum on Public Policy

generated not only a more than competitive Russian space program, but a frightening stockpiling of deadly nuclear armaments and, in medicine, irresponsible practice based on untested cure, as *Cancer Ward* reveals. This essay doesn't so much offer an unqualified paean to Soviet-era education per se, as register real curiosity about a situation that, obvious flaws notwithstanding, somehow allowed for the absorption of scientific fact and theory into the process of art-making, literary or otherwise. One might point, in explanation, to Solzhenitsyn's singular scope and depth of intellect, or to the lack of interest in stylistic experimentation in Soviet literary circles, while stylistic innovation preoccupied Western writers on college campuses in the 1960's and 1970's, to the exclusion of other issues. Nonetheless, the unique impact of Solzhenitsyn's fiction rests on the assimilation of biological, chemical, and physical fact with shrewd political observation, in combination with profound psychological insight.

This point can be illustrated with just one of myriad instances of the author's sensitivity to the human ramifications of Soviet medicine's much lauded "miracle cures", in this case for cancer. Late in *Cancer Ward*, the tough-minded Kostoglotov ruminates on the threat of loss of sexual drive and potency through a treatment that will effectively reduce his tumor. The trade-off, for him is debatable:

Even before this I thought a lot about the supreme price of life,
and lately I have been thinking about it even more. How can one pay
for life, and how much is too much? To preserve his life, should a
man pay everything that gives it color, scent, and excitement? Can
one accept a life of digestion, respiration, muscular and brain
activity -- and nothing more? ... is not such a price
extortionate? (Solzhenitsyn 299-300)

In other words, should medical advance, unimpeded by concern for quality of life, rule the day in matters of healing and recovery from disease? The question is one that falls squarely into the realm of bioethics, a field of study in the current medical and academic realms that was virtually non-existent in 1968, when *Cancer Ward* was published. It is noteworthy, for this writer, that so prescient an observation should have been made in the Soviet Union by a literary figure with scientific credentials.

Conclusion

In the late 1950's and into the 1970's, literary moderns like Eliot, Lawrence, Franz Kafka, and Albert Camus enjoyed immense popularity in progressive American high schools, particularly those in the Northeast, and in literature classrooms on liberal university campuses. So, for that matter, did the distilled, rather mannered prose and austere fatalism of Ernest Hemingway, as resonant with the self-doubt of young men as was Lawrence's sensuality with the budding eroticism of young women. Classroom discussion was studded with terms like "alienation" and "existential despair", and comporting oneself with an air of melancholic ennui seemed essential to what is crucial for young people at all times, "fitting in". This projected image of stylish boredom was often fashioned from a rather superficial reading of the futility expressed in Kafka's piercing indictments of dehumanizing bureaucracies, in *The Trial*, for example, or from Camus' depiction of the notion of the "absurd", in *The Stranger*.

In retrospect, this American pedagogic bias, in literature coursework, on European writers whose real-life experiences informed portrayals of spiritual depletion seems grotesque. American postwar theoretical and applied scientific research, carried out in part by escapees from war-torn Europe and the Holocaust, was proceeding at an ever-accelerating clip. While literature students debated the meaning (or meaninglessness) of life in their classrooms and dorm rooms, scientists and their student assistants developed vaccines for polio and other heretofore incurable diseases in their university laboratories. Rarely did these two "tracked" groups intersect, so channeled were their educational activities. Moreover, the dominant critical attitude of the day, Formalism, rendered it unlikely that Camus' participation in the

Forum on Public Policy

French Resistance movement or Thomas Mann's escape from Nazi Germany to neutral Switzerland in 1933 would have found a place in professorial analysis of their fiction.

More serious still, many feel, is evidence that the divergence of the scientific and literary paths addressed by Snow in 1959 still informs university experience in many theory-dominated literature, as well as art historical and other humanities departments. While chemists and physicists often express a thirst for greater exposure to the arts, literature inclusive, their counterparts in the creative disciplines, with the possible exception of music, seem still at best apprehensive, at worst disdainful of exacting study in the natural and physical sciences. And it is a crying shame. Clearly, many of the great works of fiction themselves reflect significant scientific grasp on the part of their creators.

Would *The Plague*, Camus' redemptive narration of the infestation of a town by bubonic plague, be as convincing absent the author's exhaustive research into the medical, as well as the sociological ramifications of the outbreak? Need professors of German literature sidestep Thomas Mann's exploration of the nature of the virus in *The Magic Mountain*, his magisterial novel of 1925, in favor of extended concentration on the admittedly sublime passage describing Hans Castorp's philosophic transport in a blinding snowstorm? Tellingly, the authors felt the imperative of scientific study in the structuring of these narratives of combined physical and moral disease and cure. The "mutual impoverishment" Snow defines, the reciprocal deprivation shared by scientists and scholars in the humanities, especially the arts, finds its source in the classroom. It can be remedied there as well.

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