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AUTHOR Spinks, C. W.
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ABSTRACT

A brief history of science fiction and an analysis of its functions precedes a description of a university level course taught at Trinity University on science fiction, technology, and values. Science fiction writing is briefly traced from Mary Shelley's "Frankenstein" through the golden age of science fiction in the 1940s and 1950s to its increasing sophistication in the 1970s. From its beginning, science fiction has been concerned with social issues arising from scientific discoveries. The genre seeks to clarify values surrounding issues generated by these discoveries. Its major focuses are wonderment, technology as generator of new ideas and situations, and the relationship of science to technology. Science fiction has thus become the mythos of industrial and post-industrial societies. The purpose of the course is to probe attitudes about the relationship between technology and values. Readings include Toffler's "The Third Wave," essays on technology and values, a short story anthology, and three novels. The PBS 10-part series, "Connections," is also used. An end-of-semester survey revealed that 83 percent of the students agreed that the course had helped them articulate their views on technology and values. (KC)

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PROPHECY, PULP, OR PUNT:

Science Fiction, Scenarios, and Values

by c.w.spinks

Saint Paul once said, "For now we know in part, and we prophesy in part. But when that which is perfect is come, then that which is in part shall be done away with." However, Paul was, of course, no futurist even if he was a utopian. He had--to his own lights--the secret of things and probably would not waste his time with things like either futurism or science fiction. He undoubtedly would have considered them both so much "childish stuff" to be put aside when one came to adulthood, or adultery as Radar O'Reilly calls it. Science fiction would probably be too much like escapist flesh or prideful spirit for Paul; something counter-productive to the True Vision. But then Paul had an excuse: his existence was in a technologically simpler time and he did not have (be it blessing or curse) to roll with the shock waves of technological change. Still Paul, like other visionaries, shared one common view with science fiction folk; he recognized that society could be changed--if not by technology, at least by preaching Christ Crucified, or if not by science at least by apocalypse.

I stress Paul's view here for two reasons. One, western science and science Paper presented at the Annual Conference of the World Future Education Society (5th, Dallas, TX, February 13-16, 1983).

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fiction, despite the consequent discomfort, both rise out of Western religion. They both may feel discomfort with a word or will driven cosmos, but they both also view the world with a sense of monkey curious awe and a desire to "improve" the known world. Two, whatever the intellectual wars existing between religion and science, they both share the need to narratize the wonder of the universe, and when science abandoned "wonderment" for reductionism, a mythic (spiritual if you will; axiological if you wish) void was formed. Reductionism brings imaginative chaos out of order, and if Bacon slaughtered the myths and Newton killed the gods, Blake and the Romantics revived them in literature. The Romantic fascination with the wonderous hero and the mythic narrative is in part a response to an informed (they were very knowledgeable folk about the science of their day) repulsion at Cartesian, Baconian, Humean, and Newtonian reductionism--at least as they were adopted and adapted by the evolving industrializing middle class.

For the 19th century there was a literary hunger for three fundamental things: narratives, wonder, and values clarification. The new middle class needed to articulate and reinforce its own developing values; it preferred and was educated more to prose (and a realistic mode) than poetry (and a symbolic mode); and its literary tastes were not terribly well developed. Darwinian earthquakes, and Tennysonian readings notwithstanding, penny dreadfuls, overly complex stage machinery, and journalistic Dickens were the order of the imaginative day, and their modality was a strange mixture of photographic realism, wonderous romance, and sticky sentimentality.

Out of this matrix of an expectation for realism and sentiment and a need for wonder and adjustment, science fiction arises, and I would say the first and clearest example is Mary Shelley's Frankenstein, or The Modern Prometheus, for here you have a novel which

examines--what will become the stock problem for science fiction--the dangers inherent in a technological obsession. It is filled with tensions between science and emotion, realism and sentiment, and wonder and duty. In short, Frankenstein sings the litany of a middle class undergoing industrialization, and it has remained one of the most popular of the techno-myths in western culture.

But technological dangers to the social order and cultural values are only one side of the equation, and utopian fiction--as a kind of Dr Jekyll to Mary Shelley's Hydean Frankenstein--tended to address the other side by portraying ways in which society and values could be made technologically efficient. Soon after Mary Shelley, there arises on the scene H. G. Wells (whose progenitor is probably William Godwin, Mary Shelley's socialist and utopian father) and a host of 19th and early 20th century utopian writers who come out of the growing socialist movement and the burgeoning sciences. This fascination with scientific discovery and social progress (pro and con) continues and moves into main stream literature in various guises as naturalism, realism, or socio-political fiction, but science fiction itself mostly gets isolated--at least for the literary establishment--into a juvenile side line. It becomes regarded, and for awhile regards itself, as an adolescent literature, and some 30 years in the pulps allows it to grow its own way without much interference from a cultural elite which has found its values voice in the modern novel (and/or movie). The isolation continues until the 40's and 50's, when science fiction Golden Age blossoms forth. Industrialization is then established fact, and some pre-cognitive types seem to hear the first stirring of the Tsunami of the Third Wave; there is a revival anti-utopian fiction concerned with the impact and wonder of technology.

Then in the 60's and 70's science fiction becomes increasingly sophisticated; the cracks in the industrial (and perhaps cosmic) egg are becoming more pronounced. Sex ceases being the pigtails-in-the-inkwell variety, religion is no longer B-grade-movie style, politics becomes realistically complex, and adults began to act like adults with adult problems. The X rated novel, the satiric novel, the weird novel all make their latest and science fictional public appearances. The genre was becoming literarily sophisticated with complex characters, experimental narrative, humor, satire, broken time-lines, complex narrators, etc. Finally now as the 80's get solidly here, science fiction has begun to wrestle with the economic realities of contemporary publishing and to develop the complexity of its fantasy potential, and though the results of that struggle will be as astounding to what our cultural values are in the face of technology, such a discussion would really lead me in another direction.

For now let me stay with fiction which concentrates on science and hope that you will forgive this brief and highly argumentative history of the genre. I have abused history here in order to stress two important points. One, science fiction has always been concerned with social issues arising from the discoveries of science, and two, science fiction has always been a voice for some kind of values clarification for the issues that surround those discoveries. I personally believe most literature does just exactly that anyway, but what is important here is that science fiction (despite its disclaimers of being only an entertainment literature or of being a "real" literature) has often provided a literary base for all sorts of mythic and axiological presentations about technological issues--even in its non-scientific, but highly technological phases like fantasy or sword and sorcery. Science fiction is, in short, the mythos of an industrial or post-industrial society, the narrative impulse to wonder and adjustment

brought to literary existence in the face of technological impact. Thus, it has three major centers of focus: one is wonderment--either technological or fantastic; two is technology itself as a generator of new ideas and situations; and three is the relationship of society to technology--ranging from speculative to polemical to prophetic fictions. I suspect that most science fiction can be categorized by one of these three foci.

The first is obviously the most problematic because it forces one to deal with the differences between science fiction and fantasy--which is a genre problem of literary and historical significance. Fantasy is, I think, in a kind of border area to science fiction where the narratives--with or without a sense of science, but always with a sense of technology--can move quickly into wonderment; for example, escapist and fantasy trips of the marvelous journey variety now current in adventure games like Dungeons and Dragons, et al. The area of fantasy--as alternative or revival--is in many ways a separate kind of impulse, more concerned with the struggle between good and evil than value adjustment. Obviously there is a close relation to the generative impulse in both fantasy and science fiction, but science fiction, at least as I am concerned with it, is more scientific in its nature and its concerns. It may use wonderment and be concerned with values, but its chief criteria for judgement will be plausibility, its main frame of reference will be the human scale, and its primary focus will be on scientific technology (this is, as most non-anthropologists think of it) and its effects. Lots of things can happen in a science fiction novel, but they had better be logically consistent. The wonder is still there, but so is logic. Lots of the early adolescent stuff was really in this category, and was more or less scientific depending on the writer, the audience, and the media, but the Golden Age writers worked more and more toward plausibility as their

standard.

The second focus is a fascination with technology itself--sometimes as content and sometimes as agent. By this, I mean standard hardware science fiction that concentrates on exemplifying the theories, the formulae, the applications of technology, and/or the consequences of technological systems--something like the early space flight novels where one describes launching systems or raptures of outer space. The magazines were full of this kind in the 30's, 40's, and 50's, and countless fans wrote letters of corrections to specific formulae or applications. Now this does not mean that science fiction must be fabrication based on engineering or R and D systems, but that lots of science fiction has focused on the wonderment and pleasure of technological speculation and problem solving and that science fiction can be as much concerned with the technology of magic and it is with the magic of technology.

The third focus is obviously the one most important here; that is, the examination of the relationship of society to technology and the adjustment necessary when changes occur. It would cover the bulk of 20th century science fiction since science fiction--even the speculative variety and the sword and sorcery variety to the extent they focus on the plausibility of their structures--is interested in how human beings react in interesting situations made possible by technological systems. This is very much where science fiction becomes the mythos of an industrial/post-industrial society. First, human beings--even the isolated, brilliant or deranged, atavistic anti-utopian hero--exist in a social structure made plausible by its references and differences to the known social orders of the reader. Two, reactions themselves must be plausible within the nature of character and behaviour assumed by that social order. And three, the

technological systems are expected to be plausible within known or probable limits of physical laws and technological systems. Since historically the societies which have produced science fiction of this sort have been either industrial or post-industrial societies, the stage is set for the possibility that science fiction is the mythos of those societies.

Let me break here and give a definition of "mythos," for in most techno-scientific societies that term takes on negative connotations. But I use the terms very much in its anthropological sense--those narratives of a society which are used to explain to the members of that society the nature of the universe, their role in it, and what limits and values the members are to respect. With that as the definition of "mythos" and with the broadest anthropological definition of "technology," it becomes quiet easy to see that science fiction (as other forms of literature; e.g., contemporary experimental literature in its borrowings from pulp science fiction) very possibly does fulfill exactly the roles I have argued--wonderment, values clarification, and adjustment.

These were my assumptions when I developed a version of my science fiction course at Trinity University called "Science Fiction: Technology and Values." It seemed to me to be a natural use of narrative and science fiction to get at any number of problems that students face about their futures because I agree with Toffler that universities need to educate for the future just as much they need to educate about the past. I have now run this course twice, am in the process of doing it a third time this semester, and intend to use it again next year at Bucknell University in Pennsylvania. Let me sketch briefly how the course is organized and then I will discuss its results.

My intellectual impetus and first choice for the course was Alvin Toffler's Third

Wave, for that book served as a motivational spur to trying to deal with the problems of the future in the classroom. So I started drafting a course outline with Toffler as one major anchor point. Also, the PBS "Connections" series (by James Burke, 1978) had aired a season or two before and was owed by our media service; so I added that as the second major anchor point since it offered a nicely pro-technological view. I found a series of essay on technology and values, by Bernard Gendron, 1977, called Technology and The Human Condition which is critical examination of the pro and con arguments about the issue, and I settled on a good short story anthology by Charles W. Sullivan called As Tomorrow Becomes Today which illustrates a wide range of fictional and technological problems. I then begin to draw up a list of possible novels to explore utopian and dystopian views of technology, and I finally settled on Huxley's Brave New World, Heinlein's Stranger In A Strange Land, and Brunner's Shockwave Rider. The novels were the key of my literary focus on some utopian and dystopian characteristics in order to put Toffler's optimism and Gendron's critical pessimism into some kind of literary and intellectual perspective.

Since my basic goal was to use the science fiction course to help my students articulate the relationship between technology and values, I designed a set of paper assignments to focus on that goal. I structured the PBS series of ten different tapes, Toffler, the essay text, and the fiction (short stories first, and novels last) into reading or viewing assignments for the semester. This was to give them small doses and to allow for some natural patterning of the materials by focusing on related ideas in the discussion. I developed a series of study guides to focus student reading, and I scheduled throughout the semester four papers; the first on their beliefs about technology and values, the second on the use of technology and values in a particular short story, the third a short story of their own to reflect some relation between

technology and values, and finally a final paper reassessing their first position paper or on their views of the future. These assignments were staggered enough to allow at least a couple of days discussion between the 10 section of the series and three to four weeks between papers.

The thrust of my discussions, study guides, and lecturettes was to probe the attitudes of my students (and myself) about the relation between technology and values, and the most surprising thing to me, naive as it may seem, was how political the class got. We weren't talking about abstractions; we were talking about limited growth and their future jobs, biological discoveries and their definitions of life, small technologies and their life styles, nuclear policy and their survival, etc. And, of course, nearly every student had strong opinions on the issues. The arguments were forceful, loud, and occasionally uncivilized, but they kept coming--from the Toffler, whom they tended to dislike, from Gendron whom they tended to think too ponderous, and from the stories and films which they liked the most. I had used the novels to focus on literary issues that related to the course; but I found out that they also tended to focus and concentrate the political opinions of the students.

The course was both difficult and fun. They students worked, argued, and complained a great deal. There was a great deal of avoidance behaviour about the issues generated by the class; they preferred fantasy and got tired of such huge problems, but when surveyed at the end of the semester more than 83% agreed that the course had helped them to articulate their views of the relations between technology and values. My observation is that a number of them even changed their opinions during the course. Those who were knee-jerk techno-progressives were now willing to examine the human consequences of

techno-change, and the dyed-in-the-wool Luddites were willing to see any number of possible benefits to technological change. The biggest problem for the class was looking too closely at the relation of corporate capitalism to the impact of technology; this was, I think, because of the nature of the student body at Trinity. They tend to be divided into 90% or so "free marketeers" and 10% of so "anti-corporationists." The class--like our culture--was virtually schizophrenic about utopian social perfection and anti-utopian individualism, and since the literature we read was divided itself; opinion struggled back and forth, and feelings got rather high--sometimes too high for freshman. I believe, these "high feelings" and the serious relevance of the arguments for people's daily lives is one of the attractions to fantasy. I don't want to use such a critical cliché that the fanciest are simply attracted to escapism, for they are not and fantasy is just as focusing on these problems as science fiction, but to freshman fantasy seems an easier road, and the fanciest will struggle with such a design as this one.

The obvious solution to such problems is group training designs and discussion generators to focus the energies, highlight the power of the fantastic, and down play radicalization, but I did not--nor do I think anyone should--tone down the power of such discussions. Moreover, I personally do not think there is one answer to this kind of dilemma, and the whole point of such a design is to illicit value response and articulate understanding. It turns out to be a powerful design. The mixture of film, fiction, and critical literature is an exciting--if explosive--mix, but it is also one that can be channelled. This particular design focused on technology and organizations, thus the utopic and political slant. My next version is going to be more ethical rather than political in its slant toward the dilemmas of techno-change. I am even considering a version in which I would deal with the current problem of the "right to information"

suggested by the expensive presence of micro-computers, or a version which examines the nuclear freeze issue in the context of apocalyptic novels. I am even looking at the possibilities of confronting the fantasy beasts in some similar kind of design. My point is that if one keeps current of the technological problems extant in society, watches for some useable film/video materials, and gathers a collaborative sample of science fiction, it is relatively easy to build a good solid values clarification course about technology and the future and whatever problems one envisions about the future. Such is, of course, an opened ended process, but then, after all, so is the future unless you're a scientific Paulist.

Part of the power of such a design as this is that it need not take place in a university classroom. Nor must it be done on a semester basis. The entire format is divisible into as many modules as memory, audience interests, and time will allow. It is connectable to whatever organization is faced with values clarification about technological change. Plus with a good resource person, topics can be developed about any number of current social issues to be used in almost any situation where people need to discuss some current problem. For example, St. Martin's Press has three different books dealing with science fiction and social issues, anthropology, and international relations. And there are any number of theme collections like science fiction and religion, science fiction and myth, science fiction and history, etc. There is virtually no limit to the topics than can be dealt with by the literature, and any good sci fi fan will be glad to play resource person.

But also science fiction is a ideal motivator. IT IS FUN! It is popular, and it is engaging. The writers usually have good imaginations and reasonable insights, but one of

the fun things, for futurists at least, is that science fiction writers are often garbage heads, as we called ourselves in graduate school. They read the filler in the newspaper and usually are information addicts of the worst kind; so their writing usually articulates all sorts of current concerns--remember, the impulse to mythos and narration seems to be a genetic one. Science fiction is the literary equivalent of a scenario; in fact scenarios, if done well, are good science fiction; if they are not, then they are bad scenarios. However, for motivational purposes, science fiction is just plain fun, and folk usually enjoy reading and talking about it. It is an idea generator and, as I think I have established, a voice of the mythic power of human symbolism brought to bear on technological impact. Since I am not one of those who accepts C. P. Snow's "two cultures" and since I am a humanist and also a futurist, I find science fiction to be a natural vehicle for validating the power of the human imagination--technological and mythic. It probably is knowing in part and prophesying in part, but then even Paul saw through a glass darkly. 'Tis the human condition.

C. W. Spinks, Box 231
Department of English
Trinity University
715 Stadium Drive
San Antonio, Texas 78284

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