Topic 1 • Science Literacy Book & Movie Report (100,000 points)
PHYS-2050 (H18) • Spring 2008

Purpose

Science Classes

As a student, you have received science and science related information from your teachers. Whether you believe it or not is up to you. But a professional has taken the time to determine what sorts of things are important to know and with how much detail, both for the purposes of the courses you are taking and for the more general purpose of “Science Literacy”, to help make you a better citizen and better able to function in our science & technology driven 21st Century.

How Will I Get Science Information in the Future?

For some of you, your courses at Western Michigan University may be the last time you will have the benefit of someone directing what science you are exposed to. So, what happens when you get to the “real world”? Well, you may be bombarded with information from all sorts of sources: your job, newspapers, magazines, books, television, radio, movies, the Internet, friends, conversations overhead while standing in line somewhere – you name it. What these methods may lack, though, is the control and expertise of your teachers. You can find all sorts of amazing information on the Internet, but you would have to be very naïve to believe 100% of everything you read there. Much of our news is dominated by politics, but how much science do our politicians know? At the moment, we have exactly one professional engineer and one physicist in the House of Representatives (both of these men are from Michigan – you should know who they are, but probably don’t), none in the Senate. Most of Congress is made up of lawyers. While there is nothing wrong with studying the Law per se, legal arguments do not follow the same rules and purposes of scientific arguments. Therefore there is nothing that requires an environmental cleanup bill, for example, to have anything to do with either the environment or cleaning it up. Likewise, the talking heads we get our news from on TV are not trained in science and technology for the most part. I don’t know what Dan Rather or Connie Chung majored in at college, but I can probably bet it wasn’t Physics. They may have, unlike you, been able to graduate from college without ever having had a Physics course. Even on the cable channels, one of the hosts of a computer show I used to watch is now doing a cable show on gardening – go figure.

So how will you evaluate information on your own? This is possibly something that you have never thought about, but Dr. Phil and other professionals have. Dr. Phil’s approach is to have you read a book and examine what you read and how it affects you, as well as whether you believe it. (You don’t have to.)

Learning to “Parse” Information

Evaluating what you read in this context is very much in line with definition 3 of the verb parse:

\[
\text{parse (pārs) verb} \\
\text{parsed, parsing, parsed, parsed-es} \text{ verb, transitive} \\
1. \text{To break (a sentence) down into its component parts of speech with an explanation of the form, function, and syntactical relationships of each part.} \\
2. \text{To describe (a word) by stating its part of speech, form, and syntactical relationships in a sentence.} \\
3. \text{To examine closely or subject to detailed analysis, especially by breaking up into components: “What are we missing by parsing the behavior of chimpanzees into the conventional categories recognized largely from our own behavior?” (Stephen Jay Gould).} \\
4. \text{Computer Science. To analyze or separate (input, for example) into more easily processed components. Used of software.} \\
\text{verb, intransitive} \\
\text{To admit of being parsed: sentences that do not parse easily.} \\
[\text{Probably from Middle English pars, part of speech, from Latin pars (dribleis), part (of speech).} \\
\text{Source: Microsoft Bookshelf '95 (American Heritage Dictionary of the English Language (Third Edition))} \\
\]

Dr. Phil’s Definition of Science Literacy

\[
\text{science literacy n. An exposure to science in a historical context that serves to allow a person to observe the world around them with understanding, deal with technological applications at home and work, appreciate the distinction between fact and speculation in the media and politics, have a working knowledge of numbers and the scale of the universe, and be able to pursue more information if desired, as a function of everyday life.} \\
\]

Philip Edward Kaldon, Fall 1995

Books as a Source of Information

From all the sources listed in How Will I Get Science Information in the Future?, most are very difficult to evaluate. Dr. Phil can’t easily watch hours of VCR tapes or interview your friends along with every paper he reads to compare your impressions with the actual information being presented. So by narrowing the choices to one medium – books – we can have a little control and consistency between papers.

For more than ten years Dr. Phil has been building up a booklet of suitable books. They are, as you shall see, not just Physics books, but cover all the Natural Sciences, Engineering, Computers, Technology, Medicine and the Morality and Ethics of using these. The total list is kept around a hundred titles. Books come on and off the list from time to time, sometimes because Dr. Phil gets sick of reading too many papers on Airframe or Jurassic Park, etc., and sometimes because some books work better with some classes (such as PHYS-3090) than others.

Because this is not strictly a Physics paper but a Science Literacy paper, the range of books is considerable. There are fiction and non-fiction titles, biographies, science fiction, mysteries and technothrillers – books that straddle the line between science fiction and current reality – from some popular best-selling authors as Tom Clancy and Michael Crichton, covering topics that include Physics, Biology, Chemistry, Engineering, Computers, Mathematics, Technology, Medicine, etc.. The list is anything but boring.

It is easiest to pick a book you have not read before. And if you pick a title from the booklet, that’s it. However, you may decide that (a) you have read everything on the list, (b) read everything you think is interesting on the list or (c) waited too long to get the book(s) you were interested in from the library and are now stuck. You may read a book that isn’t on the booklet, but you must get Dr. Phil’s approval beforehand and be prepared to hand in a draft of your paper at least one week before it is due. If you go ahead and write a paper on a book that Dr. Phil has not approved anyway, there is a 100,000 point penalty.

Movies as a Source of Information

It turns out that many of the books on Dr. Phil’s booklet have some connection to a movie or a TV program. If you are tempted to avoid reading a book by watching the movie version – don’t. For one thing, the movies are almost always different than the books. And not only has Dr. Phil read all the books, he has seen all the movies (and owns most of both). So if you just watch the movie, you are going to get caught (and it’s a 90,000 point deduction). Secondly, in most cases, even jaded students like you will usually conclude that the book is usually better than the movie. While there is a lot to say about movies, there isn’t the time to contain all the information content of the book. Movies, at best, hold the flavor of the book.

Having said that, it can be worthwhile to compare what is in the book and movie of a particular combination. Often Dr. Phil is using Book/Movie combinations for his second-semester Physics courses (PHYS-1150 and PHYS-2070 at WMU) as well as with the Honors PHYS-2050 students. Having more to evaluate means you have to write a longer paper – it’s only fair. You also have to split your paper between the book and the movie.

Scope of the Paper

A booklet only about Physics topics is likely to be a very short and boring list. A movie list only about Physics would be painfully short. While it is true that “Everything is Physics”, there is nothing more pathetic that someone reading a really good medical story and then writing a paper where you try to find...
the one or two things that seem like PHYS-2050 Physics, and so end up talking about the “Physics of taking someone’s blood pressure”. While the use of a sphygmomanometer is rather fascinating, even Michael Crichton isn’t likely to spend much time to reveal any information about its use in the pages of one of his techno-thrillers.

The Assignment

· Select a book and movie combination from the “approved book and movie list” or get approval for a different title from Dr. Phil.
· You should not read a book that you have already read, it only makes the assignment harder. You may find that a book you are already reading for another class may be acceptable. It is less of a problem if you have seen the movie.
· Failure to read an approved combo is a 100,000 point penalty.
· If you have ever had Dr. Phil before and you read any of the best-seller type books (Crichton, Clancy), you must pick a different combo for this report. Failure to comply with this rule will result in an 80,000 point penalty. This is a science literacy assignment after all, so we want you to learn something new.
· Book titles can be reported in a space provided on the first and second exams. If you don’t have a book title in mind, or you don’t remember it, you can leave the space blank. This is partly so Dr. Phil can see what people are doing and partly to remind you of this assignment. But it is not required.
· Read the book and view the movie (any order), especially with an eye as to how science is portrayed, what you may have learned that was new to you, whether you believe it to be accurate or whether you feel that the science issues were well explained. Remember that this is an assignment on science and technical literacy, so what you already know (or don’t know) is important.
· Each combo in the list has a brief description of some points that Dr. Phil came up with. You do not have to agree with Dr. Phil. This is an opinion paper and your opinion matters. Personal anecdotes that tie in with what you have read are appreciated.
· This assignment is not just about Physics. This book and movie list is about science, engineering, technology, computers and the history, application, ethics, morality, and understanding of it all. So the paper is about this, too. To simply rate the book based on the “Physics” may be to miss the entire point or in this case, a good chunk of the 100,000 points.
· Write a 5 to 7 page report, typed, double-spaced and a single simple cover sheet, on what you read, paying attention to the assignment. You can write more if you feel you need to, but more will not translate automatically into a higher grade. Good grammar and spelling are expected.
· Dr. Phil is expecting that a “B” paper will satisfy the above requirements. Exceptional papers will be rewarded; problems will be deducted.
· Late papers will drop an additional letter grade (10,000 points) per calendar day, starting after 5pm at the end of the Grace Period.
· Papers are due at the start of class, or can be dropped off in Dr. Phil’s mailbox at the Physics Dept. office by 5pm on the due dates listed below.

NOTE: The most popular combos, i.e. the ones Dr. Phil has read the most papers on, have been written by Michael Crichton (The Andromeda Strain, The Terminal Man, Jurassic Park and Timeline). They wouldn’t be popular (and rich) authors or have their stories turned into hit movies unless their writings were a lot of fun. Now not all of these nine books may be authorized for this particular semester, and no other Crichton or Clancy books will be approved, so don’t bother asking. But despite the fact that they show up in a lot of papers, there is no problem with many people writing their papers on the same book.

Content

This is an Opinion Paper

For many of the papers you may have written in high school or college, they have not wanted you to have or express your own opinions. But this is exactly what we want here – Dr. Phil wants to know what you think, whether you liked the book, etc.

It is All Right to use “I”

Unlike some college papers, it is not necessary to write in a formal style. Since this is an opinion paper, it is okay – even encouraged – to say that “I think that...”.

This is Not a Fourth Grade Book Report

Back when you were a kid, most book reports consisted of “I read Book X. This happened and then this happened and then this happened.” What such a report really ends up being is just a discussion of the plot. The problem with this is three-fold: (1) Dr. Phil has already read your book, so he knows how the plot goes. (2) Writers like Michael Crichton and Stephen Hawking are best-selling authors because they get paid more than you do to write – they’re better at it. Why would Dr. Phil want to read your version of The Andromeda Strain when he can read the book? (3) Just replaying the plot of a novel or a list of topics covered in a non-fiction book or the events in a scientist’s life in a biography does not involve any analyzing of the subject. It is this analysis – thinking about what you just read, thinking about what you already knew and what you have learned – that is the heart and soul of this science literacy assignment.

You Can Be as Serious or as Light as You Choose

Some of the combos are more serious in tone than others. You are free to avoid them. One semester a student asked if they could write their paper as if they were writing a letter to someone and talking about their experience. Sure – as a writing technique it’s sort of a crutch, but it got the job done. Others have taken a more humorous tone, or have gotten hostile or offended. Just remember that you should be able to justify your comments. What is Dr. Phil supposed to make of a paper that says the book didn’t do anything for them and it was boring and too technical after Chapter Four, and then in conclusion they said it was a great book and they’d recommend it to anyone?

You Do Not Have to Agree With Dr. Phil

Most of these books and movies are on the list because Dr. Phil likes them and they cover some subject areas that should make for good papers. However, everyone’s experiences and preferences are different.

Very few people in the world are Physicists or Physics teachers, and there are certainly very few Dr. Phil’s in this world. So it would be surprising if you responded to every book the same way as Dr. Phil did – especially since a good chunk of the book list was read a long time ago when he was a kid and not a Ph.D. Physicist. Since Dr. Phil asks for your opinion, you are free to give it. You can hate the book. You can loathe the movie. You can hate the assignment. You can decide that you didn’t learn a thing from the combo. Fine. Great. Wonderful. Now just write it up. Give examples, be specific. Some of the very best papers in a particular semester have come from the same book where the students reach completely opposite conclusions.

Suggestions

The following are suggestions for ways to start your paper (or start thinking about your paper) if you are stuck.

· Why Did I Choose This Combo?

For some, the reason might be as simple as “it was the only book I could find”. If you were a college student in 1903, you would have read a lot of books. In 2008, you can go to college and avoid reading books. So everyone’s experience is different. Just be honest.

· What Did I Know (Or Not Know) Before I Read This Book?

When you sit down to read a book, there is a lot of stuff that you bring to the table with you – this includes what you have learned in school, your life experiences, all the other books you have read in your life, many hours of watching TV & movies and what you are interested in doing. These are
some of the things that will affect how you react to a book and these are some of the things that Dr. Phil would like to know about you, in order to understand your responses.

What Did I Learn (Or Not Learn) From Reading This Book?
Remember, although you might need to discuss a plot point to explain something, your paper is not about what happened in the book, it is how you reacted to what happened. When we watch a play or a movie or read a novel or play a video game, we often engage in “a willing suspension of disbelief” in order to be entertained. Most people don’t really believe in wizards casting magic spells or the plots in James Bond movies or think that there really is a Darth Vader in a black helmet and cape that can use The Dark Side of the Force, or that terrorists set off a nuclear bomb at a Super Bowl game in Denver. But going along with the author is something we do to be entertained. Now, if you don’t buy it, you aren’t going to like it – we need to know this. If you don’t think that we really sent astronauts to the Moon (and some people don’t), then that will affect how you view any book about space travel. See how this ties in with the previous topic?

Pick 2 or 3 Good Examples
This is a 5 to 7 page paper. You don’t have time to discuss every one of the topics/chapters in Tom Wolfe’s The Right Stuff – it isn’t all in the movie – so you can’t. A rule of thumb might be about a page for your introductions, a page each for two or three good examples, a page or two of comparisons and a page of conclusions. Provided you follow the assignment – you’ve got your five or seven pages.

Conclusion
You really do have to wrap up your paper. After all, the premise is that books are one way that you might learn something about or improve your science literacy, so did you learn anything? Or did you read something that supported what you already knew? How does this assignment or this book affect your “world view”? Would you recommend this book/movie to your friends? … to other students?

Draft Review (Optional = NOT Required)
If you wish, you may submit a typed, draft copy of your paper at least one week before it is due. Dr. Phil will take a quick read and look for (1) basic mechanical flaws and structural problems in your paper and (2) how your paper fits in with the concept of science literacy and the purpose of the actual assignment. In return, the clock stops while Dr. Phil has your paper – if Dr. Phil has your paper for two days, then you add two days to your due dates, etc. The draft will not be graded and the submission of a draft is not required. If you choose to use this option, you must turn in your draft with your final paper – if you don’t then your final paper won’t be graded. This is to keep Dr. Phil from going nuts “as I experience major deja vu from thinking that I already had made a comment about some aspect”. (Please note that the phrase “rough draft” is never used, which should suggest that the draft be fairly complete as a paper. This is just a free shot before it counts. What could be fairer?)

Please note: If you choose a non-booklist but approved combo, you MUST submit a Draft.

Structure – Standard Format
Most of You Will Use Word Processing Software Rather Than Typing
The assignment describes a “typed” paper, but very few of you will actually use a real typewriter. In fact, most of you will use some version of Microsoft Word, on either a Windows PC or a Macintosh.

5 to 7 Pages, Double-Spaced, 1” Margins All Around
The goal here is uniformity of papers for everyone, as well as ease of reading for Dr. Phil.

Left Justified, Ragged Right Margins, Standard Indent for Each New Paragraph
This produces a clean left side of the page and is the easiest to read. Turning on “Justify” also lines up the right side of the page, but does so by inserting extra spaces in each line to pad them. This is fine for magazine and book publishing, where they have more control and different rules than you do, but in a paper it makes each line jerky to read and incredibly annoying. Each paragraph should be indented with either a Tab or alternately five spaces. Do not put blank lines between paragraphs – that’s padding.

Readable Font (Courier 12, Courier New 12 – ONLY ALLOWED Fonts)
One thing Dr. Phil learned at the 2004 Clarion workshop was how much easier it is to read 115 papers when they are all in Standard Format. Now the standard will vary from professor to professor, industry to industry, but it is important to follow the rules. Since papers used to be “typed”, a typical standard font in college is COURIER – a non-proportional font that resembles typewriter print. Courier 12 point is large and easy to read, and it is readily available in some form for all printers using Windows, MacOS, Linux. Most Windows computers use TrueType fonts (TTF), and there the standard is Courier New 12 point. You can use any of the regular Courier “family” of fonts for your paper. Using Arial, Times New Roman, Old Dreadful Number 7, etc., will be penalized.

NOTE: There is no requirement that you “write” your paper in Courier/Courier New – only that you PRINT it out this way. Dr. Phil usually writes his fiction in “prettier” fonts like Garamond 14, Book Antiqua 12, Bookman Old Style 12 and Century Schoolbook – then converts to Courier New for printing.

Spelling
Nearly all word processors contain some sort of Spell Checker. Use it. But you must know that computers, like calculators, are basically stupid machines. A spell checker cannot tell the difference between two, to, too or Their – all of which are pronounced the same. Word choice in English is very specific. Misspellings, especially of the author’s name (or Dr. Phil’s name), looks sloppy, as if the paper was written at the last minute and/or without any care.

Grammar
Reasonable grammar is expected in a college paper. This requirement is loosened slightly in some papers, because some students are not native English speakers and some papers may be written in a casual, often first-person style. However, your paper is supposed to be read – if your meaning isn’t clear or your sentences don’t make sense, your paper’s grade will suffer. Microsoft Word and other modern word processors may have a Grammar Checker feature, but unlike a Spell Checker, Grammar Checkers do not work very well and only find some sorts of errors. They work best with certain types of documents, such as company memos, in order to give all company documents that same “feel”. Your best bet is to proofread your paper for readability. But even among good writers, it can be very hard to proofread your own work. So you can (1) get a friend to read over your paper and see if they understand it or (2) go to the Academic Skills Center and have someone there go over your paper with you.

Additional Information
Sometimes students go beyond the book, by looking up topics in the dictionary or encyclopædia, or going to the Web and searching the Internet. This is NOT required. But some students get enthusiastic and may use additional sources and additional information go on additional pages.

No Need For Footnotes
Again, this is not a formal paper in the sense of many other college papers. It is not required that you footnote, or even give page numbers, for every point that you make or quote (or phrase) you use from the book.

Structure – Standard Format
Most of You Will Use Word Processing Software Rather Than Typing
The assignment describes a “typed” paper, but very few of you will actually use a real typewriter. In fact, most of you will use some version of Microsoft Word, on either a Windows PC or a Macintosh.

5 to 7 Pages, Double-Spaced, 1” Margins All Around
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This produces a clean left side of the page and is the easiest to read. Turning on “Justify” also lines up the right side of the page, but does so by inserting extra spaces in each line to pad them. This is fine for magazine and book publishing, where they have more control and different rules than you do, but in a
Notes on Page Format and Submission:

**Five to Seven Pages**

Please make a note that “5 to 7 pages” does NOT mean that 4½ pages is “sufficient”. It is not. Dr. Phil interprets “5 to 7 pages” to mean FIVE FULL PAGES PLUS YOU MAY BE GOING ONTO THE SIXTH PAGE. You can write more than seven pages, but there is no automatic reward for doing so. Some people, like Dr. Phil, just write “long”.

**Padding Stunts**

There are all kinds of “tricks” you could employ to try to make those five pages without writing five pages. But since Dr. Phil has specified the margins, line spacing, fonts, and further suggests that you do not indent new paragraphs by thirty spaces or put one or more blank lines between paragraphs, or start the first page halfway down because you are repeating as a header the information that is already on your cover sheet – these “tricks” to pad your paper won’t work. And endlessly repeating the same phrases or thoughts will be noticed because your paper will be read. And if you want to include a long quote from your book, the proper way to include a long quote of more than two lines on a page is to single-space the quote, so that it is (a) set off, (b) easily showing that it is a quote and not your writing and (c) so that it does not take up an excessive amount of space. Sorry.

Dr. Phil has in the past received papers with 3” top and bottom margins and 2” side margins. This leaves a typing area of only 4 1/2” by 5”, coupled with a 14 point or 16 point font, and even a four page paper under those printing conditions contains almost no text. Hardly seems fair to everyone else.

**It’s the worst phrase in the world for the Y2K8 student, already struggling to get to work and maintain a home life:** “And there will be a paper due…”

**So Just What Do You Mean By A "College Paper"?**

A college paper is a reflection on you as a student, both in appearance and the quality of the work. It is expected that the writing assignments will be handled in a competent, serious and professional manner. To that end, a college-level paper by Dr. Phil’s definition contains the following non-negotiable elements:

- **Typed (word processed)**
- **Margins:** 1” all around
- **Page numbers (by hand is acceptable)**
- **Readable standard Courier font/face**
- **Reasonably clean and proofread grammar**
- **Stapled in upper left-hand corner**
- **SINGLE-SIDED ONLY!**

The Cover Sheet CANNOT Possibly Be Considered To Be Page 1
(If you can’t figure out how to do this, either number your pages by hand, or put the cover sheet at the end of the computer file.)

MANDATORY DEDUCTIONS FOR FAILURE TO COMPLY WITH THESE PERFECTLY REASONABLE RULES.

**NOTE:** Given that printing and typing are not always carefree processes, if you find that the printer does not line up properly or is otherwise giving you trouble at the last minute, write “Printer Trouble” on the back of the last page and very briefly describe your troubles; this lets Dr. Phil know that you were under duress and wouldn’t normally turn in a bad looking paper. You can then drop off a cleanly printed copy of the paper after the deadline, if one is required. PLEASE! Keep copies of your paper in two places – those USB flash drives are handy, inexpensive and work with most PCs, laptops and Macs.

**IF YOU USE A REAL TYPEWRITER**, then spell checking and corrections are not automatic. Make sure, however, that you go over typed papers and make minor corrections with a pencil.

**The Seven Statements**

If you ask Dr. Phil what he wants in a paper or how to start, this is what he will tell you:

1. **Do not spend the whole paper summarizing the plot** (assume Dr. Phil has read the book and seen the movie he has) and
2. **Do not cheat and only rent the movie instead of reading the book** (assume Dr. Phil has seen all the movies he has – 90,000 point penalty),
3. **You might want to explain how you chose this combo** (sometimes it’s because it was the only one the library or video store still had),
4. **when you sit down to read a book,** you always bring something to the table, even if it is that you know nothing about the subject, or have never read any science fiction or whatever – it is this stuff, what you already knew, that is part of what Dr. Phil would like to know about, plus …
5. **what you learned or did not learn from the book and movie.** If fiction, you might tell why you believed the author – or did not. If non-fiction, whether the author was understandable.
6. **Give a couple of examples to show me that you read the book, but you won’t be able to talk about everything.** Again: **DO NOT SUMMARIZE THE PLOT BEYOND 2 SENTENCES**!
7. **Any kind of personal story or anecdote or current events that connects with your combo is super.**

This paper is not about PHYSICS, but about SCIENCE LITERACY (Sciences – including Physics, Engineering, Technology, Computers, and the Morality and Ethics Involved in using same).

**Due Dates**

**PHYS-2050**

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<thead>
<tr>
<th>Topic 1 – A Science Literacy Book Report</th>
<th>Due Thursday 25 March at 5pm</th>
<th>Grade Period Ends: Monday 29 Mar. at 5pm</th>
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<tbody>
<tr>
<td>PHYS-2050H</td>
<td>Topic 1 – A Science Literacy Book Report</td>
<td>Due Thursday 10 April 2008 at 5pm</td>
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The Grace Period Means You Can Turn In Your Paper on Thursday, Friday or Monday, as You Choose. If you submitted a Draft Paper to Dr. Phil, you must include the Draft with your Final Paper. NOTE: Watch Out For Exam 3
A Writing Sample

**U-571** is about an American submarine that is sent out on a mission to infiltrate a wounded German U-boat and take its Enigma machine and codebook. The Enigma is the coding machine that the Germans used to keep their messages secret from the Allies. To not get one was to guarantee failure. Anyway, soon after the boarding crew grabs the machine, the American sub sinks and the Americans are stuck on a wounded U-boat. The movie is about what happens to them as they try to get back to America alive with the machine.

I really liked the movie and even though I don’t know how submarines work, the subs in **U-571** definitely appeared realistic. The actors looked as though they had been trained in the Navy. It had excitement, adventure and tension. My one gripe is that you never get to know the characters. I mean, you how they act and how they feel at any particular moment, but you never really know them. Even though I didn’t like that, I think that wasn’t as important to the plot when the screenwriters wrote it. I think that what they did want to convey is what makes a captain a captain, because a lot of the movie is the lieutenant’s conflict over whether he would sacrifice a crew member or save the rest of them. Overall, this is an exceptionally good movie.

Chris Molnar, age 12
Sylvan Christian School
The Grand Rapids Press
Friday, 28 April 2000

So what does a paper for Dr. Phil look like? I’ve avoided simply copying what an “A” paper looks like, because then I’ll just get 25 to 100 papers just like that. But to some extent, it looks a lot like what this young movie reviewer has done regarding the Spring 2000 movie **U-571**. Now obviously this is a lot shorter than your assignment and Mr. Molnar’s agenda was very different than yours – he was a kid reviewing a movie for a newspaper. But in a little over half a page, Mr. Molnar has given a brief description of the plot of the story, identified that he doesn’t know a lot about submarines but that he felt that what was presented was believable, and that the characters, while not well-rounded, behaved in a believable manner. Now explain how you picked this particular book to read, add a few pages talking about what you know or don’t know about the science, engineering or computer technology (or the morality and ethics of using same) in the book you are reading, and then you’ll have a Dr. Phil book report. More or less.

HERE’S SOME NEW COMBOS TO ILLUSTRATE WHAT WE’RE TALKING ABOUT

**New for Spring 2009:**

**Airport (1970)**
Dean Martin, Jacqueline Bissett, Burt Lancaster, George Kennedy and academy award winning Helen Hayes show up in what I consider the first of the blockbuster movies, and the first of a series of Airport disaster movies (all of them increasingly stupider than the last) as well as the inspiration for the tampon film *Airplane!* Movies with Leslie Nielsen. When Airport came out though, it was a big show with a big cast – and Americans weren’t yet thinking about people putting bombs on airplanes, so it was exciting (and airlines refused to show it as an in-flight movie). Even if there’s almost a soap opera feel to it. The special effects won’t win any modern day awards, though they did pretty good for over 35 years ago. But I just saw the movie again in mid-January 2006 and it shows a world of aviation many Y2K6 students won’t find very familiar. You can get some mileage (but not the whole paper) out of talking about how today’s airline experience is different than “in the old days”.

I, III, V, IX

In the late 1960s and early 1970s, Arthur Hailey was an industry of big thick, fast moving, complicated novels chock full of the operating details of an industry: *Airport* (commercial air travel), *Hotel*, *Wheels* (Big Three automakers), etc. *Airport* wasn’t his first, but it was the first big bestseller. Both the book and movie really broke frontiers when they came out. In some ways, I consider *Airport* to be the first real technothriller book and the movie to be the first modern blockbuster. I’ve listed this book as a “IX” solely because it’s a little thick, but it’s not complicated or hard to read. In many respects, the technical descriptions in the book probably feel a lot more realistic and up-to-date than the movie, so it’s still well worth it if you’re interested in aviation to read the book for content.

**New for Spring 2008:**

**A Mix-n-Match Choice:** Pick either a Book-Book, Book-Movie or Movie-Movie comparison between “I Robot” and/or “Bicentennial Man”; or “I Robot” and “Terminator 2.”

Isaac Asimov’s Three Laws of Robotics was groundbreaking SF for its day. Pity the designers of the Terminator didn’t take them into account. (grin) Despite the troubles that Honda’s Asimo robot has walking up stairs, humanoid robots are coming whether we want them or not. There are some technological implications of having robots everywhere. In real life, Japan is developing humanoid robots to help out in nursing homes – Japan’s Baby Boomers are going to overwhelm the resources and staffs of nursing homes just when they need long-term around-the-clock care. Which means moral and ethical considerations, too. Of course, as per usual, movies tend to go for Style over Substance, and early Asimov stories tend to be shorter than we remember them to be, so use your judgment here as to what direction you might want to go. Also, make sure that at least ONE of your two choices is a book or movie you haven’t read/seen before.
Topic 1: The One Page Version (100,000 points)

1. Pick a combo from the booklist. If you don’t want to use a combo from the booklist, you must get approval from Dr. Phil and turn in a Draft Paper at least a week before the due date. If you had Dr. Phil before, you can’t use the same book.

2. Read the book. Watch the movie. This is a Science Literacy assignment, not just Physics. So read the book with an eye toward what you find interesting, all about the sciences, engineering, technology, computers, medicine, and the morality and ethics of using them. Is the author believable? Understandable?

3. Think about what you brought to the table before you did the combo — what you know, your experiences.

4. Consider what you learned. Is it new to you? Or is it something you already knew? This is an opinion paper, so what you know and what you think does matter. You do not have to like your combo.

5. Write the paper. Do not just retell the plot or story. Dr. Phil has read the book/movie and so have you. Start from there. You might begin by telling why you selected this combo. Then pick 2 or 3 things and talk about them in the context of (3) and (4) above.

6. Be careful to make sure you are talking about the combo you have on. Dr. Phil has seen all the movies and read all the books.

7. The paper should be written in English with correct spelling and reasonable grammar. Because it is an opinion paper, you may use the word “I” — as in “I think that…” (first-person is acceptable).

8. The paper should be 5 to 7 pages typed (probably on a PC or Mac using a word processor in April 2008), double-spaced, with 1” margins all around, a single simple cover sheet, and numbered pages. The cover sheet cannot be page 1, and 5 to 7 pages means that there are at least 5 complete pages of text without extra blank lines at the beginning or end. You may write the page numbers by hand if you wish.

9. Most computer printers and word processors allow you to control the font (lettering) size and style. Acceptable fonts are: Courier/Courier New (12 point). If you have printer problems, contact Dr. Phil. If you typing on a real typewriter, see Dr. Phil.

10. You may, if you want to, turn in a Draft Paper at least one week before it is due, for a free evaluation by Dr. Phil. If you are reading a combo not on the booklist and Dr. Phil approved it, you must submit a Draft Paper. In either case, if you turned in a Draft Paper and Dr. Phil marked it up, you must turn in that marked up Draft Paper with your Final Paper, or your Final Paper will not be graded. The number of days that Dr. Phil has your Draft are counted as a due date, so there is no penalty for writing a Draft Paper. In either case, if you turned in a Draft Paper and Dr. Phil marked it up, you must turn in that marked up Draft Paper with your Final Paper, or your Final Paper will not be graded. The number of days that Dr. Phil has your Draft are counted as a due date, so there is no penalty for writing a Draft Paper.

11. Papers are due on Thursday 10 April 2008 by 5pm. You have a Grace Period that extends until Monday 14 April 2008 at 5pm — that means you can turn in your paper on that Friday or Monday with no penalty. After that, there is a 10,000 point/day penalty.

12. Major penalties: Writing about the movie and not the book — 90,000 points. Writing about a combo that was not approved or on the booklist — 100,000 points. Previous Dr. Phil students reading the same book — 80,000 points. Writing only about the Physics in a combo that isn’t about Physics — 80,000 points. Writing only about the plot with no analysis — that fraction of 100,000 points that the offending section covers. Other minor penalties assessed based on severity/frequency (2000 points ea.)

13. Papers that meet the minimum qualifications are worth at least a “B”. Exceptional papers will be rewarded; problems will be deducted.

Dr. Phil likes most of the papers he gets, but it takes some effort to get everyone to take this assignment seriously.

This handout is also at: http://homepages.wmich.edu/~kaldon/classes/ph205-h18-bm.htm

PHYS-2050 (H15) (Kaldon)
Western Michigan University

Book-and-Movielist - Spring 2008

This list stays in constant flux, with additions suggested by faculty, students and friends. Your comments are always welcome. Some of the entries are out of date and new works added since last checked a particular library. Some popular titles may be available in Paperback. Older entries are included even though I haven’t seen them listed anywhere. Public libraries and libraries at other colleges have not been checked. Many titles should be available through area bookstores, or the main WMU Bookstore.

“Science, Engineering, Technology, Computers, Math, and the Morality and Ethics of Using Same” – Dr. Phil

Over the last few years I have been working on a booklist for reading assignments in all my classes. For my Spring Section of PHYS-2050H, we are going to continue to do something a little different, that we call “Book and a Movie”.

IF YOU HAVE HAD DR. PHIL BEFORE – READ THIS ASSIGNMENT CAREFULLY!

Mary Shelley’s Frankenstein (1994) kenneth branagh, Robert DeNiro etc. The Mummy (1999) No one you’ve ever heard of - While mixing Frankenstein with the Mummy seems an odd mix, the fact is that the staple of bad B-movies from the 1930s include Frankenstein, Wolfman and the Mummy. So if you don’t want to overdose on Frankenstein, you could consider the whole Power of Life issues in both the book and The Mummy.

Frankenstein: A Modern Prometheus / Mary Shelley

When I first started thinking about a booklist, it was because I had heard of an engineering school that required all of its freshmen to read Frankenstein. Not the 1930s movies, but the original early 19th century ghost story. Although there are other contenders, I personally date Science Fiction from the writing of this book. This is a story in ethics, of taking responsibility for your science and your creative genius. So even though I don’t have a good citation for this, surely you can find a copy of this work somewhere. If you’ve only ever seen the old black & white movies, you’ll be very much surprised.

Infinity (1996) - This is about the Los Alamos years, with Matthew Broderick and Patricia Arquette as Mr. & Mrs. Feynman, but no one has ever seen it. A beautiful portrayal of a genius just living – when life is very hard.

H W K L V - Surely You’re Joking, Mr. Feynman
and H W K L V - What Do You Care What Other People Think? both by Richard Feynman

Two very funny accounts of The Manhattan Project, a life as a physicist, being on the California school textbook board, the space shuttle Challenger commission, painting and playing the bongo drums – with a vast and rich life. Not just cookies, but another (non-science and therefore not eligible) book Taor & Bust or by Richard Leighton, that documents Feynman’s last great adventure to try to visit legendary Tannu Tuva in the heart of Central Asia, having once seen only a postage stamp with it. A beautiful portrayal of a genius just living – when life is very hard.

The Mummy

In the 1930s, it was probably the most popular horror film ever. It was the first of the series, and it set the tone for all of the others. It’s also one of the most entertaining. The story is about a mummy who is brought back to life by an archaeologist. The mummy comes to life and starts to terrorize the town, and the archaeologist tries to stop it.

Frankenstein: A Modern Prometheus

This book is about a scientist who creates a monster and can’t control it. The monster goes on a killing spree, and the scientist tries to stop it. The book is about the consequences of playing god and the dangers of technology.

Fat Man and Little Boy

This book is about the Manhattan Project, the creation of the atomic bomb. It’s a very interesting read, and it’s very well written. It’s also very informative, and it gives you a good understanding of what went on during the Manhattan Project.

The Making of the Atomic Bomb

This book is about the Manhattan Project, the creation of the atomic bomb. It’s a very interesting read, and it’s very well written. It’s also very informative, and it gives you a good understanding of what went on during the Manhattan Project.

The Making of the Atomic Bomb / Richard Rhodes (896 pages) – Probably too long for this class, I mention it because (a) Rhodes is not a scientist, but like Tracy Kidder mentioned below, he is simply just a very good writer, and (b) this is absolutely the most complete history of the Manhattan Project that you’ll find in an unclassified library. No matter your feelings on the ethics of the result, the science and events that led up to the Bomb and the incredible grouping of scientific minds in one place that did it, is one of the

This handout is also at: http://homepages.wmich.edu/~kaldon/classes/ph205-h18-bm.htm

PHYS-2050 (H18) (Kaldon) - Spring 2008 - 12
20th century's great stories. To me, the best part is that he not only explains what is going on, but weaves a story that lets you understand what the scientists did and did not know and the whole politics of the Manhattan Project.

**The Andromeda Strain** (1971) Arthur Hill, James Olson • Typical of early 1970’s movies in sort of stodgy view of high tech. At the time this was filmed, the stainless steel for the dramatic expense was the most expensive single set ever ($7 million). Those are real lasers, burning real make-up off James Olson. But forgive me, for many people even that doesn’t make this movie very exciting. There are some terrific lines. But it is a stodgy movie, for all of us.

**H W K L V** • The Strain / Michael Crichton

The first major sci-fi book I ever read, Crichton’s gift as a writer is to blend fact and fiction so that you cannot tell what is true and what is story. (There really is a Jeremy Stone and all those publications of his listed are real.). A character in one of the chapters is somewhere you can connect to the book. The Andromeda Strain is a classic.

**The Bedford Incident** (1965-67) Richard Widmark, Sidney Poitier • The movie version of The Hunt For Red October is all flash and no sizzle. Pretty, but dumb. I include this older movie so that you can appreciate more the movie before reading the book. This movie was released before the book was done, so the story is very different. But all the main characters are there: the ‘real man-apes’, the Moro, our intrepid astronauts, and of course, HAL the computer. (Change each letter in HAL’s name to the next one in the alphabet to get the joke.) People who fail asleep see the movie find the book exciting, which is a good thing considering that this is a book report not a movie review. A classic.

**Five Million Years to Earth** (1967) • This UK film I only just saw recently, where it’s been playing on AMC (American Movie Classics). Suffers a bit at the end because they didn’t have a huge budget, but the beginning part is reminiscent of the beginning of **Inherit the Stars**. Makes one wonder what-if we ever found aliens. This is a movie directed by Roy Skelton, to which we often refer in the class.

**H W K L V** • The Stars / James P. Hogan

When Prof. Stickland, former chairman of the GVSU Physics Dept., first brought this S.F. book to my attention, my first thought was my usual evil thoughts to S.F. book cover artists who don’t have a clue when it comes to science. A mummy in a space suit on the Moon? Come on, it wouldn’t happen. The dead astronaut would either be vacuum freeze-dried or an anoxic sublimed in a short time. Ah, but what if the guy in the space suit has been sitting dead on the Moon for 50,000 years before we bring a space program? This forensic nightmare has a real lot of things to think about (okay, so the ending is weak - there’s true of a lot of books - read anything James Michener has written since about Centennial). There is a paperback version called Giants (?) which includes Inherit the Stars and two sequels. But it is not excessively long.

**2001: A Space Odyssey** (1968) • One of the great SF and Stanley Kubrick movies of all time, but long and very deliberate (i.e. slow). A good friend of mine loves the movie but has never managed to stay awake through the whole thing in one sitting. The special effects in this movie made Star Trek, Star Wars and Industrial Light and Magic all possible, to say nothing of having better apes than Planet of the Apes.

**H K L V** • 2001: A Space Odyssey / Arthur C. Clarke

In 1968, the year 2001 seemed so very far away. We were about to send Men To The Moon and American companies like Pan Am seemed invincible in the world market. Clarke wrote and rewrote this story over time (other versions can be found in the rare paperback The Lost Worlds of 2001 / Arthur C. Clarke) while Stanley Kubrick struggles to make this first major science fiction epic come true. Cubed (spelling mistake) Kubrinski and others, who ended up forming Industrial Light and Magic to do special effects for Star Wars and every other big budget movie of the 70’s, 80’s, 90’s and beyond. Still, the movie suffers from the book - it is much better than the movie. The Andromeda Strain is a good version, but the book itself is better. Watch for some terrific lines. You’d never know that Helen Mirren is a British actress with her wonderful Russian accent. Though Roy Scheider in no way resembles William Sylvester in the first film, the sixteen years between films and the tension of the Cold War and why a new submarine is a big deal. Watch for serious roles by Wally Cox and Donald Sutherland. (This is actually a movie from a book, but they are quite similar.)

**Colossus: The Forbin Project** (1970) • Sometimes just called The Forbin Project, this movie is about a computer that is given control of all of the West’s nuclear weapons – and then figures out that the East has done the same thing. Two major beings become self-aware and they’re armed. Humanity ‘loses’.

**H L V** • The Two Faces of Tomorrow / James P. Hogan

If you watched any TV around New Year 1995, you probably ran into the networkMCI commercial with the strange English kid raving about digital information. The future is coming. Internet is already here. WMU’s computers are heavily networked. At what point does an information network have so many computers and connections that it no longer is “just a tool”, but becomes self-aware? This is the problem faced in this SF story, where the government deliberately sets up a space station just in order to try to force the issue. The results don’t quite match up with the expectations, which is pretty much what you’d expect. We tend to give all kinds of human emotions and attributes to computers, though any tendency toward personality are strictly the result of programming. This story neatly discusses some of the stuff that computer science people have been batting around with Artificial Intelligence (AI) for years.

**10**. 2010: Odyssey 2 (1984) • The sequel to the excellent **2001: A Space Odyssey**. The movie version of 2010: Odyssey 2 is much more the story here – sterile NASA gives way to much more lively US/Soviet détente. Different countries have different tastes in science fiction adventure billions of light years away: imagine being one of just three human beings, really and truly separated from the telescoping billions on Earth by one-quarter of a million miles of the real vacuum of space... and having something go seriously wrong with your spacecraft. Lowell commanded the real Apollo 13, the mission that didn’t make it to the Moon, write this compelling story. Tom Hanks always wanted to do something about this mission, and when Ron Howard ran across *Lost Moon*, their agents got together and...
thing. There are two versions: 140 minute version is original release, 190 minutes version was made for network TV and David Lynch took his name off the movie, but the extra explanations are a real help at times.

Dune / Frank Herbert (1984)

This is the classic science fiction novel of an alien desert ecology, combined with all the galactic drama and interstellar politics you could ever want. A generation of science fiction readers grew up blown away by the scope and grandeur of this novel, which has achieved a stature almost like J.R.R. Tolkien's Lord of the Rings trilogy, especially since Dune was followed by numerous sequels. (The sequels are best enjoyed by those fascinated by the politics; otherwise, they suffer from the usual sequel problem of a loss of innocence from the first, wonderful book.)

The Hammer and the Cross / Harry Harrison (1970)

Despite what you read about King Arthur, modern England really was established in 1066. But what if the Battle of Hastings had happened in 866? And the Vikings had won? This is the beginning of a series of books (One King's Way and King and Emperor continue the story) that put a very different view of history, the Renaissance and the use of science and technology. Although the book suffers from a "I can't believe that they could do all this in two years" problem common to many SF stories, it is interesting conjecture to collapse the history of metalurgy into a short time, going from iron works, to steel, to case hardened steel, and the consequences of having such advances. If you saw the Summer 1999 movie The 13th Warrior, you might be interested in this book as a way of learning more about the early technologies of steel and what was going on in 922 A.D.

The Terminal Man (1974) George Segal • if anything, the movie version is even more Crichton's statement on the inhumanity of the medical profession he had trained for and then abandoned because he couldn't be the uncaring tyrant that he felt they were trying to make him. Of course, it doesn't hurt to be able to write best-sellers and wildly successful movie screenplays and demands of Hollywood regarding creative controls. His TV show ER may not portray medicine in the best of lights, but at least the show is populat with human beings.

The Hot Zone / Richard Preston (1994)

After the triumph of The Andromeda Strain and the publishing of the non-fiction Five Patients, Crichton produced this catchy fictional story of uncaring doctors forging ahead with a research project to help epileptic patients control their seizures, without really looking at the trade-offs in their brains (or plugged in like a computer, hence the title). Sci-fi for twenty years ago, but not today. This story is as much about ethics as it is about the leading edge of science.

Outbreak (1995) Dustin Hoffman, Rene Russo, Morgan Freeman, Kevin Spacey, Cuba Gooding, Jr. • Take The Hot Zone and wonder what it would be like if Ebola were an airborne bug. Okay, so the helicopter chase scenes are a bit over-the-top and there is an X-Files-like conspiracy going on in the background, but lots of fun.

Jurassic Park / Michael Crichton (1993)

Robo-Cop's never Outbreak and a blockbuster movie of the same name (not by Robin Cook) were big news in the summer of 1995; both have an exciting story of spreading of a plague and the attempts to stop it. Michael Crichton's Andromeda Strain who spins a yarn about scientists rushing to prevent the spread of a deadly organism. Great stuff, both of them, and very entertaining. Part of the entertainment value comes from the very believable portrayal of science and government in those fictional stories. But what's the real scoop about how well are we prepared to face a super plague? Well, The Hot Zone is not fiction. It's about a real outbreak of a real disease in the United States (the actual Library of Congress subject headings: Ebola virus disease—United States and Ebola virus disease—Virginia). And the efforts to identify and stop the spread. Although The Hot Zone apparently provided the inspiration for Outbreak, Preston claims that we are not nearly as well prepared as the fictional accounts would have you believe. NOTE: The graphic (sensationalized?) descriptions of what hemorrhagic fevers do to the living are not for the squeamish.

The Road to Wellsville (1984) Anthony Hopkins, Matthew Broderick, Bridget Fonda • Who would have thought that you could have tried to recreate this odd world, but they did. Watch for Dana Carvey and Colm Meaney (Miles O'Brien on ST:TNG and ST:DOS).
would tunnel into Cheyenne Mountain in Colorado and the numbers of nuclear missiles and weapons would increase probably by a factor of ten.

**Contact** (1987) Jodie Foster, Tom Skerritt, Matthew McConaughey • Terrific view of how radio astronomers work, and the excitement of discovery. And how we know what we know. (Also of the worst simulated zero-g floating ever filmed.) But for me, this movie is a fave. On a big screen with Dolby™ sound, you really believe that you are standing over that massive rotating machine.

Carson Sagan ended up writing a couple of very thoughtful science-fiction books. This was widely thought to be unfinishable as written. SETI – the Search for Extra-Terrestrial Intelligence has gone in and out of favor and funding over the years, but the idea is easy enough. If there are other nearby civilizations advanced at least up to our level, then we might either detect their radio emissions, or perhaps they might send us a message. We’ve sent some messages (radio and physical) in the past, but it would be a long time before they’d reach anyone. For scientists and non-scientists, the whole issue of “fate” is one that is worth exploring.

**Gattaca** (1997) Ethan Hawke, Uma Thurman • This movie is about Style versus Substance, and on many levels.

Genetic enhancements might be well for some, but it might divide human society into the Haves and Have-Nots. So a bright young lad might not be able to get a job, unless he can fake being a genetically enhanced person. Beautiful and bleak at the same time, they have picked a cast that looks the parts. Definitely raises a lot of ethical questions.

**Logan’s Run** (1976) Michael York, Jenny Agutter • Although this movie is getting a little dated, it pairs nicely with Brave New World as sort of an endgame to their culture. One way to make sure everyone stays young and beautiful is to kill you when you reach thirty. I rather object to that! I’ve gotten much more interesting since thirty, thank you very much.

**THX-1138** (1971) Robert Duvall, Donald Pleasance • If you have already seen the first two, then you’re a real Sci-Fi head anyway, you might want to look at the film that George Lucas developed from his University of Southern California film school project. Makes Logan’s Run look like paradise. The problem of treating people like interchangeable parts is that after a while they act like parts, and not like humans. Watch for people not taking the parts. Definitely raises a lot of ethical questions.

**War of the Worlds** (1898) H.G. Wells • This classic Sci-Fi novel is also well known for Orson Welles’ radio play that scared America half to death on October 30, 1938. It was after I had watched the DVD of The Abyss and then watched the documentaries that came on Disk 2, that I began to believe that the central concept of both ‘The Abyss’ and ‘War of the Worlds’, is quite the event of science, engineering, technology, computers and the morality and ethics of using such. What makes ‘Titanic’ a little bit special though is that it is not a science fiction film, even if a whole lot of technology was needed to make 1912 come to life.

**Contact** (1997) Kate Winslet, ‘That Leo guy’, Billy Zane, and hundreds of extras • Anyone who knows Dr. Phil since January 1998 knows he is a huge fan of this movie – that should be enough to scare some people away from doing this one! But Titanic is quite a physics movie, as well as a window to the steampunk era. The sinking of the ship was a major shock to both sides of the Atlantic, and along with the Hindenberg and Challenger, had a profound effect on history and technology, to say nothing of the creation of the U.S. Coast Guard after 1912.


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**Starship Troopers** (1997) Caspar Van Dien, Dina Meyer • Robert Heinlein was one of the deans of 1950s and 1960s SF. His early stuff is classic, his later stuff is epic, and very strange. Starship Troopers is classic Heinlein, but I was really surprised when they decided to turn it into a movie. Amazingly, Heinlein’s odd concept of a future of citizen soldiers, with a rather fascist central government, survives partially intact. And the “bugs” that are out to destroy humanity – they are tough and hard to kill. Oh sure, there are some plot flaws you could drive a battle fleet through and science is sometimes tosses out of the window, but even so, a gung-ho war movie is visually stunning, fast paced and exciting. And there’s plenty of fodder to praise and shred for your paper, especially with regard to the book part of the assignment. Oh, and don’t ask about using Heinlein’s original book for your comparison.

**Somewhere in Time** (1980) Christopher Reeve, Jane Seymour • A romantic movie set in 1912, and I love Titanic. But it was filmed at The Grand Hotel on Mackinac Island. Somewhere in Time was not a hit originally, but has obtained cult status among romantics. Based on a novel Bid Time Return by Richard Matheson, who wrote the TV movie *Fluorocil* and the movie *The East Newton Experiment*. There have been lots of SF books about men in armored fighting suits taking on bug-like aliens, but none better. And when you find out Felix’s secret and why he goes on patrol after patrol...

**War of the Worlds** (1953) Gene Barry • Despite its age, George Pal’s movie still holds up pretty well. For 1953 it was amazing, winning the Oscar for special effects.

**Time and Again** / Jack Finney

Philosophically this story uses an ingenious concept for time travel: that we are trapped in our own time by all of the things that we do. If you make just one change to the past, you can’t go forward in time without destroying what you did. It’s quite the event of science, engineering, technology, and the morality and ethics of using such.

**Fluorocil** (1979) Don Matheson • A real synthetic oxygen carrying fluid and the mouse scene was tough. This movie came out just about the same time as other underwater pics *Titanic* and *The Abyss*. This has prompted a war of sorts between fans of the two works, each accusing the other side of stealing the idea. Questions for a paper on this can be fun.

**Brave New World** (1932) Aldous Huxley • An awful lot of high school and college students have had to read this book one time or another. If you’ve missed out, then this is your opportunity to read this SF classic. Set in a future where genetic engineering has progressed to the point where people are grown and assigned to jobs based on their mental abilities. Since this was written before the discovery of DNA as the basis of genetics, this is quite visionary, but morality and ethics of using such a technology are clearly the forefront here. Often paired with 1984 on the political side to showcase our bleak future.

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and again may be made into a movie; something that couldn't have been done well with movie making technology even just a few years ago.

For those of you well-versed in many of the books and movies included here, a challenging assignment on the nature of the End of the World As We Know It. Two very old movies and two classic SF movies: pick one each of.

The Quiet Earth (1986) - This New Zealand film is about walking up in a world where you appear to be the last human being on earth. Well, at least you discover that there are two other people. But everyone else is gone, and you spend who knows how many years in a crazy and turns out that maybe you are responsible for killing everybody. Talk about the morality and ethics of using technology!

--or--

The End of the World (1991) William Hurt, Solvay Dommartin, Sam Neill - This is one of Dr. Phil's all-time favorite movies. It is, as they say in the movie, a "dance around the planet" and what a dance it is. It is a long movie, and if you were to stop every ten minutes and ask "who are the good guys and who are the bad guys" and "what is going to happen next", you will be wrong every time all the way through the movie. It's another movie where there is a HUGE left turn in the middle (it would be a really classic depressing movie if it just ended at the pivotal plot point), and in a real twist you will discover that the left turn in the middle means that the beginning is the end, but it really makes you wonder about technology and your reliance on it. This was supposed to be a huge hit in 1991 and has one killer soundtrack CD, but it was the first movie managed by Sony after they got involved in the movie business and Hollywood decided that the Japanese "interfered" with the making of the movie, and so in protest there were efforts to keep this movie from being promoted or seen. There are lots of Sony HDTV (High Definition Television) technology on display here, and despite it being ten years old, it is still a vision of what life with HDTV and whatever comes after Microsoft Windows will look like. Very stylish, very complicated – and everything is very important.

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A Beautiful Mind (2001) Russell Crowe, Mister Action Gladiator, led this movie to a pike of Oscars – playing a schizophrenic mathematician? If that doesn't get you, then the fact that is based on a real story might. Ron Howard directed, with lots of tension, great score and a real attempt to show you what being a schizophrenic is about. Not so hot about what being a high level mathematician entails. But...

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John Forbes Nash, Jr. came out of West Virginia and ended up winning the 1996 Nobel Prize in Economics. What happens in between is both amazing and tragic. Now, are we going to be surprised that the book covers a LOT more territory than the movie? That one wonders exactly how one gets from Nash's book to Howard's movie? I don't think you're supposed to ask those questions – except that this is EXACTLY what this assignment is about.

New Combos for Fall 2001!

New Combos for Fall 2001!

Cast Away (2000) Tom Hanks, Helen Hunt - Talk about product placement, FedEx gets the bargain of the century, and for free. Dr. Phil has had several books!

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The Mysterious Island / Jules Verne

The 1980's saw watching the ever-resourceful McGuyver and his trusty Swiss Army Knife, think and work his way out of any scrapes. But a hundred years earlier, fiction adventure books abounded where the hero(es) managed to survive...how will they ever get home? And what unseen force is helping them survive? I first read this when I was 9, and I think that it strongly influenced my interests in dabbling in all manners of science, engineering and technology. I doubt that I would do as well as these hearty souls, but then they really did have a lot of help and a 19th century upbringing and no dependence on computer technology. The big difference between abridged and unabridged versions of the book, as noted in From the Earth to the Moon, is much longer inventories and descriptions of things in the latter.


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Level 7 / xxxxxxxxxxx

Stylized, dank end of the world story of a future that seemed all too possible in the 1960s and 1970s.

New for Summer 2002!

The Difference Engine / William Gibson and Bruce Sterling

I-V, VI, VII, VIII, IX

I-VI, VII, VIII, IX, X

Level 7 / xxxxxxxxxxx

Microsoft Windows will look like. Very stylish, very complicated – and everything is important.

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The Difference Engine, listed earlier. Neumancer, which has several sequels (and some short story sequels in Private Eye and others), is kind of about hacker/cyborgs riding the wild range of cyber space and generally poking their noses into places those big, evil, impersonal corporations would rather one didn't poke. Very much run like an action-adventure movie and great fun; it's hard to keep score as to who the good/bad guys are. The recent movie Johnny Mnemonic is from a Gibson short story of the same name (included in a collection titled Burnt Chrome), and is from the same series as Neuromancer. Islands in the Net, on the other hand, rings much closer to a possible future.

While there is a sort of adventure mystery to justify having a story, part of the interest in this book is the kind of New Age sensibility that is used to blast global corporations slash industrialism/entrepreneurism. A paranoid view of the business system of our self-righteous heroine of the novel. If you read some of the history of computer books about Apple, Microsoft and the California high tech business climate. Sterling's vividly clear springs from the same ideals. (What can I figure out is whether Sterling believes or whether he's making fun of it.)

New Combos for Fall 2002!

Enigma (2001) Dougrey Scott, Kate Winslet - Watch carefully so you're not confused, there's a little of time shifting in dabbling in all manners of science, engineering and technology. I doubt that I would do as well as these hearty souls, but then they really did have a lot of help and a 19th century upbringing and no dependence on computer technology. The big difference between abridged and unabridged versions of the book, as noted in From the Earth to the Moon, is much longer inventories and descriptions of things in the latter.

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PHYS-2050 (H18) (Kaldon) - Spring 2008 - 21

Don’t bother asking to read other Clancy, Crichton or The Lost World (Jurassic Park 2). A: “No.”

New – An attempt to code the titles as an aid to keep you from making a bad mistake.

I, – Best-Seller

Many books are popular in their field, but a best-seller is defined as one that appeals to a much wider audience. Should be readable.

II, – Fact

This book is based on Fact.

III, – Fiction

Fiction is made-up. All Novels are fiction. Occasionally a book is based so much on a real incident, that I’ve coded at least one book as both Fact & Fiction.

IV, – History/Biography/Reminiscence

The material in this book is based on actual events, which you could look up elsewhere, or use as a reference to some extent.

V, – Technology

The technology of 1999 is the technology of the 20th Century. This includes more than just the latest Intel Pentium III, chips at 650 MHz, but all sorts of stuff invented since the 20’s and 30’s. Understanding our technology is a major cornerstone in what Dr. Phil calls Science Literacy.

VI, – Non-1999 Technology

Most of us would not survive very well outside the 20th Century technological base. Studying the technologies of the Victorian or Edwardian engineers (19th & earliest 20th Century), or of metal work in the year 1000, or how one gets food to the table in a world without Saran Wrap™, microwaves or McNuggets™ is one window on today. A few books that study possible future technologies are also labeled with this code.

VII, – Fantasy/Alternate Worlds

Some people argue that all Science Fiction is just somebody’s fantasy, but technically Fantasy applies to stories that exist outside the realm of science – nearly anything with Magic, for example. Magic is often written in such a way that it becomes a science or a technology to its users in fantasy, and this is a good way to learn to study how and why we know science.

I’ve also included in this code, some books which have chosen to rewrite what history we know, again as a way to evaluate where we are today. These are What If...? books.

VIII, – Difficult to Evaluate

These books are minefields in some way. You can write a really lousy paper by not getting the point of the book and many people have. Most book reports on The Diamond Throne, a fantasy book, or Dune, an SF book, concentrate on the politics. Now if you are going to talk about the politics in relation to Science Literacy, you’re going to have to be really good. Otherwise, its best to stick the mantra for this paper: Science, Engineering, Technology, Computers, Math and the Morality and Ethics of Using Same.

IX, – “Nutrient Dense”

Fancy way of saying long, hard book.

X, – Advisory for the Faint of Heart

Contains one or more of the following: adult situations, controversial materials or descriptions that are hard to handle. You have been warned!

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