

**Teaching and Learning Psychology
Through an Analysis of Social Science
Fiction**

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Abstract

This paper is designed to accompany an appearance by the author as a panelist during a session on science fiction and teaching methods at the I-CON 28 Science Fiction Convention held April 3-5, 2009, on Long Island (near New York City). The author describes how he employs social science fiction in an honors course at the university level to promote the deeper understanding of how psychological theory, research findings, and scientific ideas can be applied to better understand human behavior. Imaginative literature is critically examined from an artistic and intellectual point of view in order to help students detect the obvious and sometimes underlying presence of psychological content. In addition to defining terms such as social science fiction and outlining exemplary stories that lend themselves particularly well to a psychological analysis, a situation in the short story "Deadlier Specie" written by David A. Kyle is analyzed as an example of what is accomplished in class. The major conclusion of the paper is that the teaching of psychology at the higher education level can be enhanced through the critical analysis of science fiction.

[Descriptors: science fiction, teaching methods, higher education]

Teaching and Learning Psychology Through an Analysis of Social Science Fiction

This paper is designed to accompany my presence on an I-CON 28 Science Fiction Convention panel discussion on the topic: “Feeding the Fire: Science Fiction in Education.” My invitation to serve with two other distinguished colleagues on this panel likely stems from the fact that for the last seven years I have been teaching an honors class entitled: PSYC-451 Psychology and Science Fiction on my university campus. My goal in this paper is to outline what I have done in this class and more specifically describe in some depth how I help my students analyze a short story in the social science fiction genre.

Any such endeavor must first examine exactly what science fiction is and isn't. There have been a plethora of definitions offered to define science fiction. The various attempts to accomplish this are a little like trying to throw a dart toward the bull's-eye of a moving target. Rather than trying to somehow offer a more superior or definitive definition, I shall be satisfied with simply defining these terms in useful ways based upon the work I do with college/university students as they confront the complex landscape that they know colloquially as “sci fi.”

The fact that so many distinctive definitions of science fiction exist in a nebulous genre that attempts to explore the depths of our universe and the most inner core of human nature should not surprise us. When we consider the continuing evolutionary nature of the field and the marvelously creative enterprise under analysis, it would be nothing short of shocking to find agreement. Nevertheless, it behooves each author and teacher to at least define the field for readers and students as a starting point for further thinking and discussion, rather than a final verdict on the topic. Issac Asimov (1983) defined social science fiction as “that branch of literature which is concerned with the impact of scientific advance upon human beings” (p. 348).

Asimov forces us to ask even more fundamental questions: What is literature? What is science? What is human nature? Such a broad and interdisciplinary definition prods us to think about this field as an integration of the methods and ideas from many disciplines within the humanities, social sciences, and natural sciences.

For over three decades, I have consistently confronted the same curricular-based problems in my teaching. Pre-requisites placed as an entrance requirement for my college/university courses serve as poor indicators regarding the knowledge that students actually bring to the academic table in my courses. Due to this glaring fact, I have taken a proactive pedagogical approach where on the first day of class I help my students examine the field of psychology as a discipline within the academic traditions of the humanities, social sciences, and natural sciences. I require my students to read a paper I wrote to review the essentials from a prerequisite introductory psychology class (much of which has been forgotten) and offer a model of understanding the field of psychology for use throughout the semester (see Herman, 2009).

When I teach my Psychology and Science Fiction Honors course, I also employ this paper to introduce students to the field of science fiction. In this teaching context, I help my students understand that the Asimov definition of social science fiction allows for the integration of the humanities, social sciences, and natural sciences like only a few other course venues. Although many science fiction courses at the university level are offered through English departments under the humanities, my psychology course offers a more social science perspective, and a course entitled “Physics through Science Fiction” would reflect a natural science knowledge base. The major point here is that social science fiction and even science fiction, for that matter, offers an interdisciplinary vehicle to explore knowledge and ideas. Many

students miss the key point that most psychologists and sociologists, for example, are also scientists and employ the same scientific method used by physicists, chemists, biologists, etc.

Table 1 below depicts how the academic disciplines are related to each other and the three academic traditions of knowledge.

Table 1

Academic Disciplines and the Three Traditions

Humanities

Art, Music, Philosophy, Religion, Modern Languages, Ancient History, Literature, Speech, Journalism, Theater/Drama

Social Sciences

Psychology, Sociology, Political Science (Politics), Economics, Geography, Modern History, Cultural Anthropology, Gerontology

Natural Sciences

Biology, Chemistry, Physics, Mathematics, Geology, Computer Science, Genetics

Even the casual reader of science fiction recognizes that science fiction offers a bridge to move between these three academic traditions and extract fresh insights, new applications, and intellectual excitement. Science fiction could be thought of as the glue that unites various disciplines or the catalyst that is capable of pushing the extrapolation of theories and ideas past traditional disciplinary boundaries. Fiction writing frees us from the conventions of particular disciplines and allows us to speculate upon the improbable, previously unknown, or unproven hypothesis.

What scientists do in the laboratory is remarkably similar to what science fiction writers do through story-telling on the written page. They both ask questions like: What if? What happens when...? and If X changes, what happens to Y ? Further support for this similarity comes from the fact that some science fiction writers also have strong scientific backgrounds and careers outside of the literary field.

The fact that science fiction leaves open the possibility that the term “science” here could mean a social science as well as natural science seems obvious. The term social science fiction is even more emphatically suggesting that this subcategory of science fiction deals with stories that employ theories, research findings, and methodologies from the various social sciences (psychology, sociology, anthropology, etc.). Social science fiction becomes the creative and literary testing ground for social science ideas such as pushing the limits of existing knowledge and exploring the meaning and consequences of ideas, beliefs, and behaviors.

Such a vision of social science fiction demands the existence of such theories, research findings, and methodologies from the social sciences in story form. When I help students analyze a sf story or novel, I ask them to seek detailed answers to the simple question: Where is the social science here? Frequently, students will become so overwhelmed with the evocative images, fascinating characters, fantastic/unbelievable story, and paradoxical ending that they lose sight of the key—the social science ingredient!

I wish to suggest that this central and crucial ingredient of social science fiction (the theory, research findings, and methodology) is required by both definition and namesake. The remarkable stories about ghosts that capture the hearts and minds of readers might be excellent fantasy fiction, but certainly should not be called social science fiction.

Perhaps some stories (novels, short stories, and movies) likely to be already familiar to readers might add clarity here. I have used all of these stories in my class with the successful analysis of the thought-provoking guiding question: Where's the social science here? Identification of the theory, research evidence, and scientific method should guide our analysis here. A brief excerpt from each example, rather than a full-scale synopsis, will be used here for demonstration purposes.

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Author: Robert Louis Stevenson

Story: *The Strange Case of Dr. Jekyll and Mr. Hyde*

Movie: Dr. Jekyll and Mr. Hyde (Saville & Fleming, 1941) [this highly psychological version is highly recommended here]

Social Scientific Excerpt/Analysis: Note that when Dr. Jekyll transforms into Mr. Hyde after taking a chemical potion he becomes a much more primitive human being whose basic desires are impulsively satisfied and leading to immediate pleasure. This is a stark contrast to Dr. Jekyll who is a refined and respected gentleman in the community who very much obeys the conventions of his culture. (Theory: Sigmund Freud's personality theory: id, ego, and superego)

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Author: Ray Bradbury

Story/Film: *Fahrenheit 451* (Bradbury, 1996; Allen & Truffaut, 1966)

Social Scientific Excerpt/Analysis: Guy Montag is a firefighter who lives in a futuristic world where books are outlawed and his job is to find and burn the books that citizens are hoarding to read. Montag is teaching new recruits how a firefighter must think like book lovers and discover their favorite hiding locations. (Theory: empathy and cognitive thinking/problem solving skills)

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Movie: Forbidden Planet (Nayfack & Wilcox, 1956)

Social Scientific Excerpt/Analysis: Dr. Morbius is a philologist (expert on words) that lives on a remote planet with his daughter, Alta, and Robbie the Robot when a spaceship arrives to rescue them. A mysterious creature begins killing members of the rescue team and the search to find the murderous creature ensues. The actual dialogue includes the following terms: id, subconscious mind, and mindless primitive. (Inspired by Shakespeare's *The Tempest*)
(Theory: Sigmund Freud's theory)

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Author: B. F. Skinner

Novel: *Walden Two* (Skinner, 1948)

Social Scientific Excerpt/Analysis: This is a communal utopia where unwanted emotions are conditioned out of young children and adults in order to promote health and happiness. (Theory: B. F. Skinner's operant conditioning theory)

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This is only a small sampling of stories and more theoretical examples can easily be drawn from each of the full story lines. The reader of this paper should be able to grasp the variety of story possibilities and the process of searching for social science themes in such literature. Students in my class usually become more critical observers through the semester as they learn to apply what they have learned in psychology classes to behavioral observations in the literary examples. Readers can easily find more useable science fiction stories which easily lend themselves to educational use (see Katz, Warrick, & Greenberg, 1974; Olander, Greenberg, & Warrick, 1974).

Readers might also be interested in how social science fiction could reflect ideas and theories from other social sciences. Stover (1974) highlights several literary works that depict ideas from political science, anthropology, sociology, economics, psychology, and history for possible use in such an analysis. Miner (1956) offers a provocative story of a fictitious tribe who exhibit strange taboos and pays homage to magical witch-doctor practitioners called “holy-mouth-men.” Academic writers in many disciplines other than departments of English clearly respect prose as a tool to invite the reader to think, question, and wonder about the world.

Since I-CON 28 has chosen to honor David A. Kyle and the author of this paper has frequently had David attend his Psychology and Science Fiction Honors class, this is the perfect place to showcase how I’ve used some of his literary work in my classes. Just in case the reader is unfamiliar with David’s illustrious science fiction career, a few highlights will be offered here. He has published science fiction short stories, novels, and historical books. His two coffee-table books [*A Pictorial History of Science Fiction* (Kyle, 1976) and *The Illustrated Book of Science Fiction Ideas and Dreams* (Kyle, 1977)] stand as important contributions to the field. David’s work as a publisher (co-founder of Gnome Press) and life’s work has placed him in an elite circle of friends such as Isaac Asimov, Arthur C. Clarke, Ray Bradbury, Hugo Gernsback, and Damon Knight. He was elected to the Science Fiction Hall of Fame by First Fandom in 1988.

Readers interested in David Kyle’s personal reflections might enjoy reading a published interview where David reflects upon the science fiction field (see Herman & Herman, 2006). Whenever David visited my classroom, students were totally in awe of his presence and respected his description of how he helped the field grow into prominence. Anyone who knows David extremely well, knows how he loves to tell a story. If you have the time, the hours will

pass by very quickly while listening to his unique take on life and first-hand description of the field of science fiction.

The following example serves the dual purpose of demonstrating David's writing and my use of such a story in my Psychology and Science Fiction Honors class. Each semester, I have my students read and analyze his short story: "Deadlier Specie" originally published in *If: Worlds of Tomorrow* (see Kyle, 1968). The story involves Gregory MacKenzie who is one of 37 Earth scientists that land on Mars in order to help negotiate a treaty with aliens. The aliens capture and drug MacKenzie in order to analyze his thought processes and behavior to thus seek an advantage at the bargaining table. As a result of such an interrogation, the aliens deduce that Gregory employed mechanistic thinking and Aristotelian logic—in a word he was predictable! These non-violent aliens attempt to fight their battles with rhetoric and knowledge of the human mind. Suffice it to say, the aliens are thwarted in their attempt to gain the edge in negotiations when another very distinctive Earthling heads the delegation instead of Gregory MacKenzie.

In order to not reveal the exact surprise ending of the story, I shall only focus upon a couple of psychological concepts here. The attempt to predict human behavior has long been a valued goal for psychologists. Without the ability to make accurate predictions, science would be no better than astrology or a Ouija Board. Science not only tries to predict, but it offers the statistical odds of being accurate in such a prediction, tries to explain why a particular outcome happens, and elaborates on just how a phenomenon operates. It is within this scientific framework that I help students analyze the story "Deadlier Specie."

As anyone involved in the negotiation process knows, the more you know about how your adversary thinks and operates the better chance you can obtain the "best" deal. A social scientist in current day society might be employed in such a capacity. The confident aliens in the

story are using a time-tested tool for seeking the advantage in the negotiations. What does psychology teach us about human behavior that might help us explore this story?

It appears that the aliens have committed a sampling error in a statistical sense and tried to generalize beyond their sample. Was Gregory MacKenzie selected at random? How many human beings did the aliens interrogate? How typical and how different was MacKenzie to the actual human that would eventually lead the delegation from Earth? It seems as though the aliens neglected to consider these facts.

Another related vein of exploring this story might force us to consider the statistical odds of prediction for human nature, especially when fierce competition exists and strategies are employed to counter anticipated strategies. Many basketball coaches during “crunch-time” near the end of a close game will purposefully have a player run the unexpected play hoping to gain the advantage of surprise. Apparently, the aliens in the story were not prepared for the unexpected. Naïve theory in psychology suggests that if a person knows that a certain behavior is expected, he/she might act differently just for spite or to deny the pleasure of someone making the prediction. The human being seems to lose a key element of personal dignity if he/she is really mechanical and predictable. Humanistic psychology that espouses the importance of individual uniqueness begins to explain some of this phenomenon.

Human beings have a wide variety of mental processes, cognitive skills, and emotional states that are theoretically available and we sometimes hide the true motivations behind our actual behaviors. The fully-functioning human can be logical and rational as well as ill-logical and irrational. We humans can be brutally aggressive and also tender, loving, and kind. We can choose to pay attention to the small elements that eventually make up the whole or we can focus upon the whole or “big picture” instead. Human brains have bifurcated hemispheres and

research has isolated specializations associated with the right hemisphere (creativity, intuition, fantasy, unconscious processes, emotional expression, etc.) and left hemisphere (analytical thinking, logical reasoning, conscious processes, 1st language, etc.). The corpus callosum (a bundle of over 200 million nerve fibers) even connects these two hemispheres to allow for communication within the brain. Psychological research has supported the belief that the human brain is complex and offers a repertoire of different behaviors and rationales as explanations for our behaviors.

Why didn't the aliens have a counselor to remind them that all human beings are not likely to exhibit the same or even similar behaviors due to cultural, environmental, and familial influences that obviously would not be identical? Perhaps training in anthropology or sociology here might have been useful to advise the aliens. The recorded history of Earthlings might also have provided the aliens with insights regarding our behavioral tendencies. An understanding of our various political institutions and economic policies would further add to the alien's knowledge base. All in all, the social sciences have much to offer those who wish to predict and understand human behavior.

Anyone who has read the "Deadlier Specie" story knows that I have purposefully neglected a discussion regarding the most obvious psychological construct represented in the story in order to avoid giving away David's surprise ending.

Summary

This paper outlines the author's use of social science fiction with college/university students as they explore theories, research findings, and methodologies from the field of psychology and other social science disciplines. Any story that depicts human nature and people operating in social situations holds the potential for use in translating theory, research, and

method into meaningful learning situations. The author argues that to ensure that a work of fiction meets the criteria for being called social science fiction we should be able to identify elements of the story that are rooted in theoretical constructs, research evidence, or research methodology. Obviously, this type of qualifier casts a wide net and is open to personal interpretation. It is exactly the requirement that evidence be provided for any claim that a work of fiction is social science fiction that represents the strength of such a definition.

My suspicion is that some readers might have further interest in some additional pedagogical details regarding the Psychology and Science Fiction Honors course that I have taught. If this is the case, readers can find further details in a book chapter devoted to this topic located in an anthology of educational innovations in higher education (see Herman, 2008).

The author offers this paper as a “thought piece” to open discussion and dialogue rather than some final word on the subject. Those who employ science fiction in educational venues need to share perspectives and describe what and why they do what they do in the classroom. Science fiction holds the potential to unite the artistic and intellectual points of view and the result is a Gestalt—something bolder, deeper, and more fascinating. May we continue to press the boundary limits of the field and rejoice in celebration for pedagogical tools that offer thought provoking ideas and personal meaning to students through the educational process.

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