
Wilber's Quadrant Theory in an Interdisciplinary Approach to Teaching Sustainability in IT

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Abstract

This paper describes the use of Ken Wilber's Integral Theory as applied to first-year BIT professional practice students' oral presentations. The paper introduces Wilber's theory and his use of quadrants as a theoretical framework for approaching technology and sustainability via popular media.

Keywords:

Sustainability, Integral Ecology, Framework, professional practice

Introduction

Marcel Proust's statement that "The real voyage of discovery consists not in seeking new landscapes, but in having new eyes" provides a useful starting point for teaching sustainability in an IT context because it means looking at what we, as human beings, do—and have always done—from a new perspective: their effect on our environment. Further, Paolo Friere (1970, 1993, 1994: 26) tells us, as teachers and as human beings, to be involved in the "vocation of becoming more fully human." I believe, in order to "become human," it is essential that students be empowered to take control of their own lives and minds—and in order to continue to thrive on this planet—to apprehend the reality of our human tool-maker behaviours with new eyes. A vital aspect of this process is their learning to take control of the of the media products they encounter—to learn to understand and interpret the "imaginary." Nichols (1981: 3) defines this term, "imaginary," to mean not the "unreal" but the "views, images, fictions, or representations that contribute to our sense of who we are and to our everyday engagement with the world around us."

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These images are “the signs of social representation, the markers or bearers of ideology...” (Nichols, 1981). In this view, Nichols echoes Taine’s critical theories that define the artist in terms of “race, milieu, and moment”: that the creator/artist is the product of his/her nation, generally, his/her own cultural climate and circumstances, specifically, and his/her own location in time, i.e. the *Zeitgeist*—of the age. Art—including film art and literature—then, is a social, historical, and cultural product. Nichols also reminds us that “language, if considered semiotically, includes all forms of communication based upon signs . . . words, clothes, gestures [and is a] necessary element of all material social practice.” (1981: 2) In our Western cultural narratives, we can identify a repeating pattern—a motif—of cultural anxiety concerning what our creations can do to us. From Icarus’ fatal flight to the earth’s revenge against humanity in the Biblical Flood, from the Trojan Horse to the Terminator, from Shakespeare’s Prospero to Mary Shelley’s *Frankenstein*, from the novels of Thomas Hardy to *The Matrix*, from Ovid’s Pygmalion who falls in love with his own creation to Rusnak’s Katie Fuller who falls in love with her own computer simulation—our stories betray us: we *know* that we can destroy ourselves through what we make and what we do. Further, our recent stories—books and films—have been warning us, specifically, about the worsening environmental crisis for over 50 years. As early as 1962, Rachel Carson’s *Silent Spring* predicted dire consequences for our behaviours towards the environment; in 1970, the British film *No Blade of Grass* (based on the 1956 novel, *Death of Grass* by Samuel Youd) depicted world-wide famine and a resultant global plunge into chaos due to environmental pollution; in 1982, Godfrey Reggio’s *Koyannisqatsi* (*Life out of Balance*) bombarded the viewer with visual images of what technology is doing to us and to our world. In 2008, Al Gore’s *An Inconvenient Truth* reprises images and warnings from half a century ago, and challenges us to do something now, because we have no more tomorrows.

In order to effect change in ourselves and in our world, we must be able to comprehend the meanings of the signs—the images and language—with which we are

confronted. Cultures, however, change; their paradigms shifted by the intersection of Taine’s “race, milieu, et moment”: the right person, the right surroundings, and the right time. In order to incorporate images and changing cultural values, and a sustainability perspective, it was necessary to use a theoretical framework which effectively incorporates all three. Ken Wilber’s Integral Theory of Sustainability (Brown, 2005) allows the flexibility of approach needed and allows to reflect a) our propensity for using technology first and recognizing its impact on our world in retrospect; and b) our current and critical need to identify solutions to the problems we have created in ways that can be acted upon by each of us, immediately.

Briefly, Wilber’s quadrant approach places our relationship to the environment and sustainability in four spheres. The first sphere, Interior/Individual/Psychology, is the sphere of what *I* experience, my subjective realities of self and self-consciousness. The second sphere, the Exterior/ Individual/Behaviour sphere reflects what *I* am and what *I* do—my objective realities, primarily bodily functions and physical interactions with my surroundings. The third sphere, the Interior/Collective/Culture sphere is what *we* experience—the inter-subjective realities of shared values, norms, communication, and customs. And finally, the fourth sphere, Exterior/Collective; Systems: is sphere of what *we* do—our inter-objective realities of social systems and environment. Figure 1 illustrates Wilber’s integral theory and its quadrants regarding water.

For example, the first quadrant—the interior/individual, is how we experience water as individuals: we get wet, it goes up our noses and in our eyes, it can cool us or warm us, float us or drown us. The second quadrant—the Exterior/Individual reflects what we do with water or learn about it as individuals. We analyze it chemically and structurally, and understand its properties. It is H₂O, and can exist in three states: ice, liquid, and steam. The third quadrant, the Interior/Collective, is how we experience water culturally and as a means of communication. This

image in the third quadrant reflects water as representing not only an historical perspective, but also power, wealth, and privilege. Finally, the fourth quadrant, the Exterior/Collective, represents how we utilize water in terms of social systems. Economically, for example, the image in the fourth quadrant reflects how we use water for trading opportunities, for fishing, for pearl-diving, etc. Thus, in terms of sustainability, we can use integral theory to re-interpret the element of water from four specific perspectives.

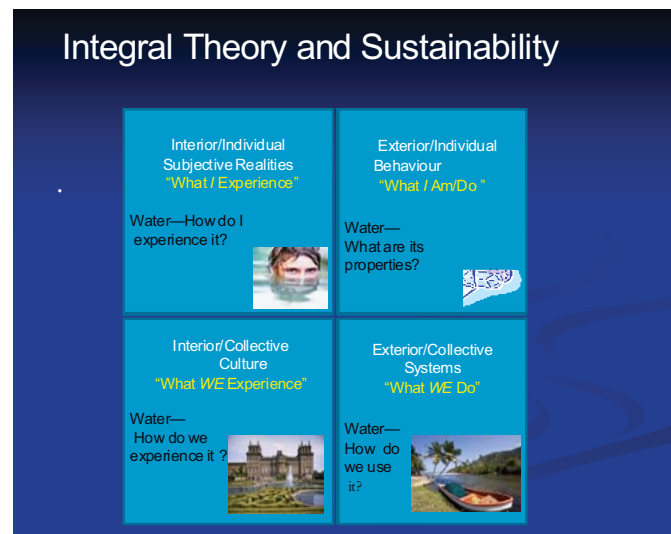


Figure 1. Wilber's quadrant model re: Water

The Oral Presentation assessment in the first-year BIT Professional Practice 1 paper intends to engage the students by examining new contexts—or as Wilber puts it, new perspectives or "lenses"—through which they could gain information and insights about human beings, their attitudes, behaviours, and interactions vis-

à-vis their environment and technology (especially, information technology). Within the parameters of these assignments, "sustainability" was defined as preserving and maintaining for future generations, a planet which can continue to provide the abundance and diversity of resources necessary for life—human and non-human—to thrive. Wilber's four quadrants, then, become important when we attempt to re-frame our relationship vis-à-vis IT technology—and our other technologies and behaviours—by re-viewing it through a different lens—a lens which focuses on sustainability.

A vital aspect of this process is their learning to take control of the media products they encounter—to learn to understand and interpret the "imaginary." Nichols (1981: 3) defines this term, "imaginary," to mean not the "unreal" but the "views, images, fictions, or representations that contribute to our sense of who we are and to our everyday engagement with the world around us."

These images are "the signs of social representation, the markers or bearers of ideology..." (Nichols, 1981). In this view, Nichols echoes Taine's critical theories that define the artist in terms of "race, milieu, and moment": that the creator/artist is the product of his/her nation, generally, his/her own cultural climate and circumstances, specifically, and his/her own location in time, i.e. the Zeitgeist—of the age. Art—including film art and literature—then, is a social, historical, and cultural product. Nichols also reminds us that "language, if considered semiotically, includes all forms of communication based upon signs . . . words, clothes, gestures [and is a] necessary element of all material social practice." (1981: 2) Thus, in order to effect change in ourselves and in our world, we must be able to comprehend the meanings of the signs—the images and language—with which we are confronted. Finally, cultures—their images and ideologies—change, their paradigms shifted by the intersection of Taine's "race, milieu, et moment": the right person, the right surroundings, and the right time.

The students' assignment required them to view a film or read a novel from selected lists, and to interpret it in order to identify issues deriving from the

interrelationship between human beings and each other, our technology (esp. IT), and our environment. Their interpretation should identify the underlying problems caused by technology, any benefits to be derived from technology, the relationship of human beings to each other and to their societies, vis-à-vis technology, and any solutions proposed by the film/novel. Finally, they were asked to identify the consequences of inaction. To finalize the assignment, they were required to consider both the solutions and the consequences of inaction, and recommend actions that an individual in the real world of "here and now" could take to contribute to the sustainability both of humans as a species and of our environment. Their interpretations and recommendations would be submitted as an oral presentation supported by written documentation and visual examples. Their journey through the assignment would, therefore, involve them in moving within and between Wilber's four quadrants, using the media product as the terrain, to emerge with a conclusion/recommendation for their audience.

The student presentations raised significant questions and presented challenging new perspectives on technology, the sustainability of human life and culture, as well as the sustainability of our planet home. Two are described following with transcripts included in Appendix A and Appendix B. The student presentations during the panel session reflect challenging new perspectives on technology and sustainability derived from contemporary media. Jane Sutcliffe's examination of Jean Auel's novel, *Shelters of Stone*, considers the environmental realities of our ingrained technological behaviours and the ethical issues that plague us when the question is "If we can do it—should we do it?" Jane examines the positive and negative sides of a simple but powerful Paleolithic technology—the spear-thrower—in terms of the same ethical questions that plague our contemporary uses of our own technologies. Ultimately, Jane's research and analysis focus on the role of leadership within any community and the effect that the leaders have on how a community receives, values and uses new technologies. Jonathan Ford provides a different view as he considers the sustainability and value of knowledge relative to the

wider environment presented in the post-apocalyptic film, *The Book of Eli*. His presentation challenges us to think about the worth of what we have when what we have is no longer worth anything. How much is money worth—if the value system in place is based on what can be eaten? How valuable are programming skills when the most pressing issue is how to find food and shelter? How do we use information that we need to survive if we can no access the places where we've stored it? Jonno asks us to consider several questions, in light of the film, but the most haunting is his question: "What will our qualifications mean if we not living in the future we're preparing for?"

Conclusion

This paper has described the use of a theoretical framework for approaching technology and sustainability via popular media. This has been successful in taking students beyond simple actions, instead they have been empowered to examine much deeper issues. The students were able to challenge societal perspectives and begin to frame their own role as sustainable practitioners.

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Appendices

Appendix A: Presentation by Jonathan Ford, *The Book of Eli* and the Sustainability of Knowledge

Overview

I will be giving a presentation on survivability and sustainability, and to demonstrate various points I will be using examples from the science fiction movie *The Book of Eli* written by [Gary Whitta](#) and directed by [Albert and Allen Hughes](#).

I will give you an outline of the movies setting, and its storyline. I will also go over some ideas and messages introduced by the movie, and how I interpreted them.

I will show you a small clip from the movie, and talk about the symbolism

in the movie – what I feel the creators of the movie are trying to say to its audience.

I will conclude and leave you with some important questions to ask yourself.

In this film, the world as we know it is barren and mostly devoid of life.

The film is set in a post-apocalyptic era, perhaps the not too distant future—possibly 2050 judging by the ages of people in the film – due, perhaps, to a nuclear war?

Craters the size of small towns mark the landscape, and the desert has claimed back the cities, suburban, and rural areas. It's a wasteland. The population left over after the war is very small – they live in a broken society; they are just trying to survive.

People fend for themselves with any weapon at their disposal. It is survival of the fittest and no one knows how to read/translate information that was stored away in the pre-apocalyptic, computer-driven world.

Story outline

The drifter Eli has been wandering to west across North America. He carries a Bible that he reads from everyday; he survives hunting animals and scavenging destroyed houses/vehicles to trade for water and supplies . When he reaches the village ruled by the powerful mobster Carnegie, the man offers a job to Eli to join his gang, but Eli refuses. When it is revealed to the mobster that Eli has the Bible, he, Carnegie, sends his gang to take the book, and Eli spends a large part of the movie protecting it with his life.

What I want you to ask yourself and remember throughout this presentation is this : how much of what I know is sustainable—and can I survive in a world I am not prepared for?

So if it's the year 2050 and there has been a nuclear war how far back does this set us really? Pretty far back from what I can tell – No infrastructure or utilities like water/gas/electricity. No vehicles / housing / certainly no computers

The symbolism in the film speaks clear enough to me: people find the most effective weapons for hunting and self-defense are bows and knives— the bigger the better. They protect themselves with biker leathers and chain mail made from scrap.

The Bible that Eli protects with his life could easily represent how precious information is and maybe how it is taken for granted. It's because of his skills and knowledge that he is the most effective fighter, traveller and protector

He has learned his ability to survive and his knowledge of martial arts by working at Kmart.

“What is Valuable now?”

Eli is about to do some trading in this part of the movie. Pay attention to what the store-person wants from him

as payment – even though he refers to the currency as “coin” anything but cash is about to change hands.

Did you notice what he used as currency? (KFC moist towelettes)

Part of a Cree Indian Prophecy I remember from classes in high-school helped me illustrate this next point. It says “Only after the last tree has been cut down; only after the last fish has been caught; only after the last river has been poisoned; only then will you realise that money cannot be eaten.” In the film, Eli says “People had too much; they didn’t know what was precious or valuable; they threw away things that people are killing each other for now.”

What caught my attention in the movie pertaining to the topic of survivability and sustainability were the following examples:

The obvious shift from what people’s needs and wants were before the war, and what they are now.

Technology took knowledge away when it (the technology) was destroyed. For example, water is the most expensive thing in the bar, and the wife richest man in towns wife get the shampoo.

How much will we lose if we can’t use computers? What happens if we lose the ability to read and write? For example, in the movie, *The American Army Survival Manual* picked up by bikers who can’t read.

Have we written everything down and then forgotten it? I’ve forgotten a lot of information because it is so easy to store it electronically stored and recall it at the touch of a button. Do you have basic hunting and foraging skills? Do you know how to make a fire? Without looking it up on the Internet?

Remember my quote from the beginning about whether money can be eaten?

Consider the following questions:

- How much is your currency/information worth?
- Is our current style of learning/storing knowledge sustainable?

- Have you taken steps to secure the future you are preparing for?

We are learning programming/web design and how to survive in a technological commercial environment. If there’s a nuclear war tomorrow, my exceptional programming skills won’t help me catch cats to feed the tribe. So just be aware—take care of the earth and the knowledge we’ve stored within it . . . and make sure you can live in the future you’re preparing for.

Appendix B: Presentation by Jane Sutcliffe, *Shelters of Stone: Innovation and Ethics*

Today, I am speaking about technological sustainability, what it means to me, and the relative meaning I found within the novel *The Shelters of Stone* by Jean Auel. I'll give an example from the novel of how a new innovation is introduced in an ethical manner and touch on how this may relate to modern humankind.

The *Shelters of Stone* is set at the end of the last Ice Age. Cro-Magnon humans are developing new technologies and the culture is flourishing. There are numerous examples of innovations in this novel. In reality, we know of at least 20 technological innovations from this era, ranging from using small, everyday bone tools, to crafting boats, to developing musical instruments. When I considered this topic and what innovation and ethics mean to me, I did a little thinking and I asked myself; what really are innovations and what is ethics? In "The Truth About Innovation," Max Mc Keown (2008) states that "Innovation is, literally, 'new stuff that is made useful.'" It can be a new thing, or a change to something already in existence, or a new way of doing something that results in a gain— be it financial or social gain. This return can be for the few or for the many. For example the new Kinect hands free console is an innovation on the Xbox 360. But the gain of financial return is for Microsoft, not society.

I also considered this: what makes *us* such amazing innovators?

We've been innovators since we fell out of the trees. Early humankind picked up a stick, stone or bone and used to their advantage. Imagine picking up a stick and thinking 'this is an innovation! Life's going to be so much better with this!'

Of course we didn't stop there: we sharpened the stick, we shaped it, we cut and carved it, we burnt it to cook food and to keep us warm. That, ladies and gentlemen, is innovation, and it is technology at its grass roots level. The *Shelters of Stone* reflects many examples

of innovative ideas that enabled our ancestors to evolve. They developed more efficient ways to hunt –I'll give an example of this soon, and interestingly, it's a technique that is still in use today.

More efficient hunting methods meant more leisure time. More leisure time and abundant food, paved the way to a more developed brain. A more developed brain meant more innovations. But innovation does raise some questions.

Why change? Why use this new tool or adopt this new idea? Will it be to my advantage or detriment? How will it affect society, the planet, the future? And who will have the gain, the power? This is where ethics comes in.

We already have a good idea of what "ethics" can mean, personally: our inner sense of right and wrong, our own code of conduct that enables us to, hopefully, make good decisions when faced with a choice or dilemma. When a choice has to be made for humankind we look to elected leaders, who we hope will make ethical decisions to everyone's advantage.

When developing and introducing new technologies and innovations I believe we must employ ethical practices. In *The Shelters of Stone*, a spear thrower, an innovation for spear hunting, is introduced to the tribe. I'd like to invite you to consider, while hearing about this innovation, how it may relate to us today.

Spear throwers came into use from around 40,000 to 10,000 years B.C.E. Here we see a spear thrower from France dating from around 15,000 B.C.E. It's been made from reindeer horn, and we can see that the handle has been ornately carved with a horse, perhaps it was used primarily, to hunt horses? There is a hole in the end that a spear would notch against, offering stability when raised and ready for use. A spear thrower uses leverage to launch a spear many times the distance of a conventionally thrown spear, well over 100 metres, although; loss of accuracy does occur after about 20 metres. The spear thrower, an innovation from the upper Paleolithic era, is still used in Australia today. It's a boat shaped, shallow object measuring about 80-100cm in length. On the spear end, instead of

a hole, a sharp barb or notch is attached with chewed cat gut and more tree gum. The spear sits snug against the notch before being thrown in exactly the same manner as its pre-historic counterpart.

In *The Shelters Of Stone*, the introduction of the spear thrower is set to revolutionize hunting. The obvious advantages are apparent: the need to get dangerously close to the target is eliminated, and the resulting, more forceful throw would dispatch prey with deadly accuracy. It is a powerful innovation; however, it is met with mixed reactions. Many of the hunters are skeptical, they don't see a need to change when their way has worked for generations, until they see a demonstration.—until they witness their leaders adopting it.

When influential tribal leaders and respected hunters take up the new way of spear hunting, others soon follow suit. The device is then taken to an inter-tribal gathering and introduced to more hunters by the leaders. The greater populace then sees the advantage of the spear thrower, and the use of it becomes the norm rather than exception. We aren't so different today, we like our technology to look familiar and to operate in a familiar way. And we look to influential members of our society for direction; when they adopt new ways, we follow suit. In *The Shelters of Stone*, the tribes listen to the leaders because they are ethical and knowledgeable, and knowledge is power; the leaders know this and use it for the good of the tribe, they make changes for the people, the gain is shared.

In our age money is power. The modern gain is financial and that return is for the few rather than the many. Now, I'm not suggesting we try to return to egalitarianism here, I can't imagine that working in our conservative, capitalist society. But I don't believe our way is encouraging sustainability. We live in a throwaway society built on consumerism, constantly looking to make personal gain. It doesn't have to be this way though. Perhaps while we are developing new technologies, we can employ our ethics a little more and ask "What can I give?" rather than "What can I get?" and "What will we contribute, what are the negative impacts" or, in I.T; "How long will this be

useful to society, and when and how will it be disposed of?" I believe that however we choose to interpret sustainability in technology, innovation and ethics are at the very core of it.

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