The Potential for Mobile Technology to Facilitate Playful Religious Engagement with the World

Abstract: Mobile technology is here for good (and for ill). Religion can ignore it, bemoan it, or embrace its potential. This colloquium is a step toward a paper about a dance, a quadrille wherein mobile technologies, play, religion, and the world sashay, allemande, swing, and circle each other. The potential is for a non-linear, self-directed, joyous, attractive, festival-based, celebration of God's goodness as manifest in the world. As neuroscience and evolutionary biology disclose the value of play, mobile technology makes playfully taking religion to the streets, an exciting adult learning option.

This colloquy is an introduction to a dance among mobile technology, the world, religion, and play. The dance metaphor is used because the movements among these players are complex. Although the literature review into the four arenas and the author's play in the world of mobile computing have advanced since the time of the Proposal and are expected to advance further by the time of Annual Meeting, a publishable paper is far from ready. What follows is the state of the question as of mid-September, 2011. The literature review has caused me to shift and enlarge some of the claims made in the proposal and radically reduce the scope of others. A similar shift could occur before the Annual Meeting but I include this to give you some introduction to my thinking.

A conversation at the Annual Meeting is expected to add to the understanding of the movements of this dance. At the end of this collection of notes, the reader will find some questions designed to spark your thinking in the hopes that at the colloquium, you will in turn, spark my thinking.

The Dancers:

Mobile Technology: So far, most of the apps created for the mobile platform are designed to keep the user's attention focused on the mobile device – this is at least in part because so many apps are games that require the user's ongoing attention, even if superficially. But the grace of mobile devices is that they are optimally used to support the user's interactions with the world because they are with the user when the user is encountering the world.

The operant educational strategy in my vision for mobile technology is constructivist learning – people have the desire and power to make meaning in the world. Pure constructivist learning models leave the learner to their own devices in their meaning making but the more accepted approach these days is to offer the learner some instructional scaffolding. Mobile technology offers two distinct advantages in the realm of instructional scaffolding. First, the scaffolding is immediately at hand but second, it allows the instructional scaffolding to be presented in a tree-like structure, allowing the learner to chase down whichever rabbit hole her or his own curiosity finds satisfying.

In the educational arena, this branching, tree-structure allows implementation of a modified form of cognitive flexibility theory; one might call it a closed-system cognitive flexibility. Users encounter an

event or phenomenon in the world and want to interpret that event or phenomenon. One user may be interested in cultural interpretation, another in economic interpretation, and a third in scientific interpretation. A mobile technology application could provide instructional scaffolding for all three types of interpretation allowing the user to choose the path of interest.

 Take a phenomenon like Christian art. A mobile application could offer information about themes common in Christian art, about the history of art in Christianity, or about how to read the formal qualities of a work of art. It could offer meditative approaches and interpretive approaches. It could guide the user to interpret the art and it could support a personal dialogue with the Christian message of the artwork. An atheist might not bother to follow the paths of meditation or dialogue with their own faith life but might be interested in the history and the themes as a way of making sense of Renaissance art. A Christian who has turned away from institutional religion may yet be hungry for an experience of Christ and so the meditations and personal dialogues may be exactly what that person wants from an artwork. A recent convert to Christianity might want to use the art to teach her children something about the faith but she may need help with the meaning of some of the stories depicted in the artwork in her local museum and may know little of the history of Christianity.

But art is not the only phenomenon or event for which users might want multiple perspectives. In recent election cycles, the publically-acknowledged religious rhetoric tends to be dogmatic and polarizing, whereas the issues at stake tend to be gray and paradoxical; scaffolding that teases apart issues and polemics would help many users make sense of the situation. The environment (natural and constructed) is complex and difficult to understand for people who have forgotten their high school science courses but scaffolding that reminds users of the science, the history, the economics, and the theological aspects of the created order might invite a deeper commitment to reduce, reuse, and recycle. Thoughtful, balanced, scientifically- and religiously-grounded support for the human encounter with the events and phenomena of the world is in people's pockets.

The World: God's creation overflows all around us. I work before a bay window that shows me a dozen varieties of trees, countless varieties of dogs and human beings, a few rabbits and a lot of squirrels. But from this vantage point, I see not only the wonders of nature, but also the marvels of human industry; I watch the gas company put in a new main and see the variety of tasks the laborers have to perform so that I can be warm and eat cooked food. I watch the local transportation authority repair and maintain the tracks of the elevated train that sometimes takes me to campus. At one time, most of society was lived from a worldview that allowed them to see the glory of God in all of this (and perhaps experience gratitude). That worldview is less prevalent in the developed world today.

The science-religion debates are structured so as to suggest that the natural world is the result of natural (not divine) processes and that the constructed world is the result of engineering OR that the world is the handiwork of God. There is little room for worldviews between the two ends of the spectrum. My bet in creating apps that help people make faith sense of the stuff of the world is that a "both/and" perspective could be taught, with attention to the beauty of nature (as it is currently

understood scientifically) and the inspiration behind human creations to touch both the intellect and the spirituality of the learner. While this makes fairly obvious sense in the worlds of art, music, and nature, I think it is also possible to find the action of the Spirit in more mundane human creations lovingly made.

Enlightenment-era science focused on empirically analyzing this world for universal laws. Science today is finding that many of the patterns evident in the world do not follow simple linear geometry, but instead are examples of fractal geometry. In other words, the idea of clear universal laws such as those posited by Newton has given way to the awareness that complexity is built into many natural systems. These natural systems can still be approximated in mathematical language but not the simple calculus of Newton; rather that requires the complex calculus of fractal geometry. Circulatory systems, neural networks, river deltas, ice crystals, trees, and many other systems exhibit patterns with self-similarity in their branching. So what? So if this is a common structure in nature, then perhaps we should structure education in a parallel fashion.

With the self-organizing criticality and self-similar structures of the brain as the focal point of our exploration of the brain and in particular the work of Richard Taylor of the University of Oregon as to how the human eye/brain responds to nature and fractals. My hypothesis is that intentionally structuring instructional scaffolding according to a branching self-similarity pattern will lead to self-organizing criticality in learning. Much more research is needed to even articulate a solid rationale for the hypothesis. I hope to present some of that research in Toronto.

Religion: Religion, Christianity in particular, is attacked as irrational by atheist polemicists, particularly on the grounds of contradicting hard science. The main Christian response to these attacks that is understandable by the average church-goer is from a literalist Biblical perspective, which asserts that the universe began less than 10,000 years ago and eschews any of the currently accepted scientific theories of the universe. Most Christian denominations are not articulating their thinking on the relationship between God, the created order as described by science, the created order as depicted by artists, the created order as designed by engineers, and the created order being affected by human consumption in a way that can be easily understood by the Christian in the pew.

In the United States, the Establishment Clause of the First Amendment prohibits publicly funded institutions like schools and science museums from mentioning religion in their explanations of the created order. Even if it were allowed, the fights among religions as to what to say about God would be endless. The television networks which make both science and religion programming are not to be expected to represent a particular denomination's perspective on the relationships between religion, art, and science either.

But, I am not suggesting another topic to be covered in the official religious education curriculum. The intersection of nature, art, science, the structures of civilized society, and religion is best encountered where it exists or resides, in the concreteness of the world. Educational scaffolding that is available to learners when they are hiking, enjoying a day at the beach, paddling a canoe, visiting a new city, or otherwise engaged in recreation is possible today.

Play: This is the area that has shifted the most for me since submitting the proposal. I expected most of my neuroscience links to be housed here but surprising little work has been done exploring the brain science of play. Neuroscience and evolutionary biology are beginning to look at the significance of play. Few human studies have yet been done but rat studies show that adolescent play and adult play lead to improved emotional calibration, which in turn leads to improved motor, social, and cognitive skills. Evolutionary biology would say that play prepares animals (and humans) for changes in their biological niche; it creates flexibility and therefore adaptability. One hypothesis for social bonding is that raising endorphin levels via social contact cements social bonding. Song & dance are sufficient to provide such an endorphin release; language alone is not.[1] Recent improvements in technology have allowed for the ability to take EEG and fMRI measurements during game play. These will offer insight into the value of play for brain development but as yet the science is young.

Since drafting the proposal, I have discovered that my understanding of the world of play was quite limited. Numerous studies have been done on play and on the interrelationship of play and education. I hope to be able to offer a summary of this work by the time of the annual meeting.

The Dance Pairs:

Mobile Technology & Religion. Mobile technology and religion have made some tentative steps together but religion seems to be reluctant to follow the lead of mobile technology, skittish about surrendering to the unfathomable complexity of the mobile platform. Most of the Christian apps available in the iPhone AppStore as of mid-September, 2011 are linear; they deliver discrete bits of content to each user without much freedom of choice or interest on the part of the user. In addition, few encourage the user to make religious meaning of the world. That said, two of the Top 25 apps that appeared with the search term "Christ" are more complex than most; two more than were in the Top 25 when I searched in late spring.

Religion & Play. Play is seen as significant for encouraging children to appropriate faith in God (Berryman and Cavalletti) but rarely are adults encouraged toward religious play. Nevertheless, James H. Evans has recently written a great piece on the intersection of play and theology, calling for and outlining a new theology of play.[2] I will present a summary of his approach at the Annual Meeting.

Mobile Technology & the World offer infinite possibilities for interaction. Most westerners lack the toolkit they need to interpret phenomena of art and nature. A mobile app with just a bit of information

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[1] "The culture ready brain" Charles Whitehead *Social Cognitive and Affective Neuroscience* 2010 Jun-Sep; 5(2-3): 168–179. Published online 2010 June 16. doi: 10.1093/scan/nsq036

[2] James H. Evans, Jr. *Playing*. Christian Explorations of Daily Living Series. Minneapolis: Fortress Press, 2010.

can teach these skills, making the worlds of art and the environment (natural and created) more accessible to a vast number of people. Most parents have forgotten their high school biology lessons and probably never had art lessons so they are unable to effectively coach their children through an examination of a local ecosystem, even one as small as a puddle of water after a spring rain, or an interpretation of a Cranach Crucifixion. A mobile app with a bit of information could coach them on the questions they need to guide the explorations of the curious child.

Choreographing the Next Movement in the Dance

How then can these various pairs of dancers be brought into a quadrille? Where are the gaps into which another dancer can step? What patterns are possible among these four? The suspicions religious leaders often bring to technology tend to keep religion from leading the way in technology development and adaptation leaving it to carve out a small corner of the world after it has become crowded with drivel. Can we change the pattern with this technology? Do some of these dancers have steps in their repertoire that would be perfect in the quadrille but which I have omitted in my inventory above?

I invite you to "cut in" with new steps in this dance. Gambol with me as we try to choreograph a new dance in which Christians might revel.

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