# Gesture Posture Prosthesis: Religious Studies in the Digital Age

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*There is a nexus among gesture and posture and prosthesis. Gestures, as techniques of body, are culturally, historically, and psychologically shaped movements that are enactive, expressive, agentive, and interrogative. Posture as position includes concept and idea as well as body structure. Posture enables gesture, but, in turn, is also shaped by it. Prosthesis is the gestural use of anything to extend oneself interactively into the world; anything from the hand or the body to pencils and iPads to sacred texts and the Mars rover. Religious beliefs, practices, objects, behaviors, and emotions all occur in this nexus, as do academic research and pedagogical methods and toys. I will develop these ideas for the purpose of illuminating opportunities for teaching and studying religion in this wildly expanding digital age. I will suggest a mandate for radically creative developments and offer some concrete ideas about how to pursue these opportunities.*

## Contents

*In preparation for this presentation I couldn't avoid covering much more territory than appropriate to a brief talk, yet perhaps this will be of interest beyond just the occasion. I offer a table of contents here to assist in the selection of what is of potential interest.*

## The Concern

To link the academic study of religion (research/teaching) with the digital age opens the richest possible discourse on the development and future of the field. The force and seeming inevitability of the trajectory of development of electronic digital technology is rapidly changing the face of the world. Twenty-five percent of the world's population has access to a smartphone (many who have smartphones do not have clean water or a sanitary toilet) extending into village Africa and India, yet the technological innovations of pedagogy and research methods in religious studies as well as much of the humanities areas of academia, remain practically unchanged.

The concern is what must religious studies do in the face of global change facilitated by the technologies of the digital age? Should it persist in rejecting and ignoring these influences with perhaps the addition of new media related to religion as a subject area of study? Should it aggressively pursue revolutionary transformations in its research/pedagogical methods to incorporate the potential of this progressive movement? Should religious studies engage actively in contributing to the shape of the emerging digital age? Can religious studies even survive if it doesn't get involved?

This concern raises fundamental issues as well as engages seemingly endless areas of discourse. As I have begun to consider this topic I realize how very much needs to be considered, how many things we need to know and think about. I have had difficulty keeping any control on my approach to this topic, yet I have allowed myself to lose control at least as a paper that would support a concise well-defined presentation. I am allowing myself the luxury of putting forth something of a collection of ideas and information that may support a productive and engaging conversation, but also of providing resources for others to work with and for other conversations.

Perhaps most importantly for me is a sense I have that we must understand ourselves as continuous and integrated with the environment in which we live. We have a tendency these days to isolate the brain as a thing and to isolate electronic technology as comprised of things, both brains and toys somehow separate entities, even separate from us. We constantly read about the effect of technology on our brains; we hear about how technology is changing who we are, how we interact, how we work. In the first part of this paper I have endeavored to develop a platform for the consideration of these issues that allows us to see and appreciate the continuity between ourselves, both physical bodies and minds, our actions and vitalities, and our technologies and the associated devices. I believe it of enormous value to see all these in an essential inseparable interrelationship with one another.

Given this platform I then place religious studies (humanities academia) in the historical context of digitization and pedagogical/research methods in order to suggest something of a mandate for religious studies, at least as I see it, and then to

initiate the complex process of responding to this mandate by offering a few concrete principles, possibilities, and examples.

What I want to do is, at my career stage and experience, to imagine a future that I'd want to live in, to see a direction into a mist of possibility, and to take a few steps in that direction; but mostly I want to inspire those beginning their careers to recognize the vitalizing importance of such a journey and to pursue it each in her or his own way with enthusiasm, optimism, and courage.

## The Platform

### *Gesture*

Jonathan Z. Smith predicted that gesture will be among the most important concerns of the study of religion over the next generation.[1] Yet clearly to play this role, gesture needs be understood in the richest terms. That simplistic notions of gesture, what I call "poor gesture," that considers gesture as visual communication simply won't do.[2]

To build this rich view of gesture,[3] let's begin with Maxine Sheets-Johnstone's[4] view that we are born into the world moving. We don't need to learn to move. Moving is the quality of our life. Neruobiologically we have some fundamental innate gestural patterns of movement that might adequately be described as "groping gestures." In their gropings infants begin to discover themselves, their bodies, and their distinction from their environment as well as the nature of the world in which they live. Such gestures demand touching as well, that is the physical encounter with their own bodies and with the world, which engages not only the exteroceptors of touch, but also the interoceptors of proprioception. Through the experience of these innate groping gestures, gestural patterns are inscribed in body tissue correlating with knowledge of the environment, the mechanics of the body, vast interconnections with perception, and also strong markers of the culture, history, and the psychology (individuality) of the gesturer.

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[1] Public Lecture "'Now You See It Now You Won't': The Study of Religion Over the Next Forth Years" University of Colorado, April 2011. Smith did not present a theory of gesture in his lecture.

[2] Such a view of gesture is considered in Adam Kendon's book *Gesture: Visible Action as Utterance* (2004)

[3] I've developed such a view to some extent in *Dancing Culture Religion* (2012); see Chapter 2 "Gesturing." The more I consider gesturing the more I appreciate its promise and the extent to which it can and must be developed as we go forward.

[4] Maxine Sheets-Johnstone, *The Primacy of Movement* (1999, 2nd ed. 2011).

In his classic 1936 article "Techniques of the Body" Marcel Mauss[5] held that gesture comprises the bodily techniques through which we engender and enact our identities. He held that for gesture there is nothing one might identify as natural or perfect. Movement becomes organized as gestural patterns that carry knowledge of self and other and that inscribe into the body's tissues the markers of specific cultural, historical, and individual identity. The exception, I would think, are those innate gestures of groping that are obvious in the infant and perhaps persist in some fashion throughout life as the propensity for gesture as fundamental to enaction and interrogation; in other words, it is human (and not only human but also characteristic of all animate organisms) nature to gesture as a life and species fundamental. Gesture then is a truly comparative category in that while gesture is common among all animate organism, gestures are always shaped by the specific species and in humans by the historical, cultural, and psychological distinctions of the gesturer. Surely this feature is key to it being powerful as an academic concern.

Gesture is not limited to expression, to communication, as it is commonly understood. An appropriately rich understanding of gesture must see that it is always also an interrogative process, a reaching out to explore, to learn, to discover, to concoct, to create, to affect and effect; its merely communicative expressive role, while perhaps most easily identifiable, is but one side, and perhaps even the lesser side, of a loop. Gesture, to be gesture, is always interactive with one's own body as well as with the environment. Gesturing is always groping.

Gesture is distinctly patterned movement. Amazingly these patterns become established to the extent that they are adequate to identify a person and certainly even cultures. I once had fun trying to imitate a group of young Balinese men walking; they thought my efforts hilarious recognizing that they had a distinctive walk and one that I couldn't adequately imitate. This means that gesture is acquired not by a single effort, but by more or less unconscious repetition over considerable time. Gesture then becomes something that literally (I really mean this) resides in the shape of our bodies (anticipating posture) and in our sensorimotor programming. Neurobiologically we are our gestures. They impact and are engaged by every aspect of our existence and identity. We are gestural through and through.

Key to gesture is repetition. In contemporary western societies, but also especially in academic studies of religion, we tend to be quite intolerant of repetition. It suggests the boring, the absence of creativity, the loss of individuality, the presence of magic, the habitual (in a bad sense). My doctoral dissertation was on Navajo prayer and I found few academic studies of prayer. I believe that prayer has been academically ignored largely because most prayer throughout the history of religions is comprised of the repetition of a formula usually accompanied by a

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[5] Marcel Mauss, "Techniques of Body," orig. "Les techniques du corps," *Journal de Psychologie* 32, 1936.

repetitive gesture as in fingering the beads of a rosary. Throughout my studies of Native American cultures I've always been surprised that the study of ritual plays such a small role in the study of religion, and I feel that some of this reluctance is due to the repetitive character of ritual.[6] Yet, generally we understand that to build skill (as in learning to play a musical instrument or perform a sport or to be an artist) requires high repetition. We need think of the essential interconnection between repetition and gesture in terms of acquiring skills: music, sport, art, writing. In this sense, the process of acquiring the gestures that are inseparable from our historical, cultural, and individual identities is rather like learning the skill or art of our own being.

Gesture must be understood as both highly defined and specific movement patterns and also patterns that are malleable and flexible and adaptable adjusting to an amazing variety of situations while retaining distinctiveness. Neurobiologically this is often considered in terms of engrams. This feature is quite remarkable when we think about it. We can perhaps understand engrams in terms of one's signature. Imagine this: write your signature on a piece of paper using a very fine pointed pen writing it as small as possible while retaining its identity as your signature. Now write your signature on a wall using a can of spray paint writing it as large as possible. Hold the piece of paper in your hand as you stand back from the wall and compare your signature as written as small as and as large as possible. What is remarkable is that the two are recognizably the same signature, but consider that the patterns of movement they represent require a neurobiological base that can engage entirely different sets of muscles and mechanics of movement (the one micro-movements of fingers; the other whole bodied, extended arm, movements), yet the shape of the gestural pattern is retained. Gesture in this sense offers an interesting perspective on what we think of as "tradition." Tradition has that remarkable capacity to remain the same while adjusting to majorly different contexts and demands. Tradition is gestural in cultural terms and engrammatical in historical terms in that it both remains the same and constantly changes to adapt to the exigencies of historical context.

Gesture is comprised of looping patterned movements about which we are both aware (conscious) and not aware. Like many aspects of our bodied life, since we live them, they simply seem natural (even, as we can appreciate that they are not in the broader sense of the term). Our gestures (both individual and cultural) are simply who we are and how we be and since they function so that we live our lives they tend to disappear to our conscious awareness.[7] We can become aware of gesture (to some extent anyway) through effort and often through the awareness that occurs in the contrast with the differing gestures of others. When we see

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[6] Also that ritual is comprised of action and sensory richness that we have not known how to study. This work is the concern of my current research.

[7] See Drew Leder, *The Absent Body*, 1990 for an extended discussion of this tendency.

someone point with her lips (as do Navajos) we become aware that we point with our fingers; otherwise, we tend to have only a diffused and vague awareness of the movement patterns that are at the vital core of our identity (cultural, historical, psychological).

### *Posture*

Position and appearance are implicated by the term posture[8] (from Latin *ponere*, to place). Most of us emotionally connect posture with the harping of our mothers—I'm guessing this is more or less universal—beseeching us to sit up straight or to stop slouching. We somehow figured she did this because she identified posture with more than simply body position; something like laziness, intelligence, energy, even morality. While few of us listened to our moms on this matter, there is something to the connection. Body position often correlates with feelings and emotions. We say we are "up" when we are happy and we name the emotion "depression" in postural terms. We speak of "up-standing" people. Body position correlates with energy level, vitality, presence of pain, and so on.

Among the class of animate organism to which we humans belong, posture and motility typically define the species in the class. Indeed, as we trace human evolution, it is the development of an upright posture and bipedal motility that most distinguishes us. Recall those bumper stickers that depict the progression of evolution in terms of increasing upright posture. Recent evidence[9] suggests that it was not the expansion of the brain that led to these postural developments, but rather it was the other way around. And this finding offers us important insight as well. Posture and motility shape the brain (although I would think, despite the evidence, that these changes co-occurred); posture and motility continue to inform cognition in the most basic ways shaping concepts and perspectives and attitudes. Posture, understood as position, then includes not simply the attitude of the physical body, but the attitude of the mind and our whole "unseen" or "invisible" cognitive world. Interestingly the distinction and character of the academic study of religion has commonly been discussed in terms of "place" another word for "posture."[10]

Posture is also neurobiologically complex and fascinating. Our joints and bones are engineered through evolution to allow movement and action within limited parameters. For example, our knees and elbows bend in only one direction with a

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[8] Etymology: L, *ponere,* to place. The position of the body with respect to the surrounding space. A posture is determined and maintained by coordination of the various muscles that move the limbs, by proprioception, and by the sense of balance.
[9] John Stewart, et. al. eds. Enaction: Toward a New Paradigm for Cognitive Science (2010), p. 20.
[10] The critical discussion of this formative notion is important particularly from the perspective of moving/touching and also the gesturing/posturing/prosthesis nexus. I have a start on this critique in Chapter 6 in *Dancing Culture Religion* (2012).

mechanical limit to the range of motion and our bones have fixed lengths. Yet, despite these fixed and limited parameters, our movement potential is virtually inexhaustible (consider sports and dancing, for example). The skeleton is moved by muscles that both expand and contract and that are attached to both sides of a joint so that we can move our limbs in multiple directions. Our muscles are constantly engaged by an entire secondary neuromuscular system that constantly tests and shapes the tension and readiness of skeletal muscles and motor neurons for movement creating tonus, a sense of preacceleration (Manning) or incipience (Massumi). Posture reflects the experience of tone, muscle strength, core strength and so on. Vitality is tonally manifest as posture—physical and mental readiness.

The most significant advancement of cognitive science has been to demonstrate that cognition is inseparable from the body and the body's interaction with the environment. Enaction (discussed further below) is the current most promising paradigm for understanding cognition.[11] This development means that cognition is inseparable from the moving body. Sheets-Johnstone developed the idea of "corporeal concepts" based in movement that underlie all conception. Lakoff's counterpart to this idea is termed "image schema." Lakoff and Johnson, among others, developed notions of metaphor and "basic level categories" that are grounded in the moving body.[12] Alva Noë has argued that we are not our brains.[13] All of these studies suggest that we can think of posture as not only position and attitude of the physical body, but also the characterization of our minds as well. Concepts and cognitive processes do not simply occur without bodily involvement and the current trajectory of cognitive science is in the appreciation of the increasing extent to which the physical moving body is always involved. So our mothers had some basic wisdom in commenting on our bodily posture; they could see that it was inseparable from the development of our minds and values.

While we often think of posture as stable position, as a position even, we know that it is not simply stable and static. Posture is characterized by tone, an oscillatory harmonic attunement of muscle and proprioceptor and sensorimotor systems in readiness for movement. Posture at once is key to balance (and vice versa) as well as the foundation that enables movement. We are told that while standing the raising of one arm laterally initiates changes in virtually every muscle spindle/anulospiral proprioceptor in our body. I'd like to suggest that, since we may consider the mind and cognition in terms of posture, that we also consider that

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[11] See John Stewart et al, *Enaction: Toward a New Paradigm for Cognitive Science* (2010).

[12] Maxine Sheets-Johnstone, *Primacy of Movement* (1999, 2nd ed 2011), George Lakoff, *Women Fire and Dangerous Things* (1990) George Lakoff and Mark Johnson, *Metaphors We Live By* (1984, 2nd ed. 2003)

[13] Alva Noë, *Out of Our Heads: Why You Are Not Your Brain* (2009)

we have mental tonus.[14] I have strong views on the importance of on demand challenging self-movement as essential to postural tonus, including acuity of mind and physical body since they are separable only for analytical purposes.[15]

I want to suggest that we understand posture as associated with vital structurality both seen and unseen, both physiological and neurological and mental, and that these are interconnected and inseparable. We separate physical posture from cognitive position primarily for analytic purposes. The implications of this expansion of posture to vitality and acuity may appear shocking and radical; that's okay.

### *Prosthesis*

The word prosthesis is usually associated with the replacement of some lost body part. Prosthesis is perhaps most commonly associated with amputation; a prosthesis is the replacement of a biological part or limb that has been amputated. Thus most common among associations are materiality (usually non-biological) and replacement for a loss, usually a violent horrifying disfiguring and debilitating loss.

Historically the context in which much of the discussion of prosthesis has occurred has been one in which wars have produced great numbers of casualties, many the loss of limbs. Walt Whitman wrote of what we now call "phantom limb syndrome" based on his experience with amputees from the American Civil War. War, continues today to be the producer of amputees, although modern war is on a far smaller scale than the wars of the twentieth century through the Vietnam War (1955-1975). So we have a powerful and extensive context in which to strongly link prosthesis with amputation. And even those who have written of prosthesis in a non-war context, considering it in more general terms of "extension," have tended to continue the link between extension via prosthesis and amputation; a kind of puritan morality that demands a dearly personal price for the effort to reach beyond ourselves. We need think more about this connection.

The other aspect strongly associated with prosthesis is materiality. I don't know why, but pirates seem to have captured our imagination by offering the quintessential images of limb prostheses: the peg leg and the hook hand. Limb

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[14] That is, there is also a quality of readiness and acuity that attends our cognitive realm. Free of disease and certain kinds of disabilities, such as dementia and Alzheimer's, tonus is connected to the mind as well as the body and is an aspect of posture.

[15] Diseases such as Alzheimer's and dementia may be understood as disrupting the processes that provide tonus (physical and mental) leading to a cascading decline in acuity and vitality. I also suspect that a significant portion of the seeming inevitable decline of aging is actually decline of tonus linked as much to the restriction of movement as to advancing chronology.

prostheses, even today as we think of the "blade" prostheses of Oscar Pistorias, are often odd looking, attention demanding objects. The materiality of prosthesis can be linked as well to industrialization. As factories filled with machines and assembly lines developed these machines, these tools, were often referred to in the terms of prosthesis. Henry Ford compared assembly line mechanics to prosthetics by discussing how they accommodated various types of human loss. He wrote, automobile assembly line tasks "could be performed by the slightest sort of men [or] satisfactorily filled by older women and children. [Of these] 670 could be filled by legless men, 2,637 by one-legged men, two by armless men, 715 by one-armed men and ten by blind men."[16] So we can appreciate the identification of prosthesis with a material replacement for some biological loss, but to go forward I believe that we need to recognize that this powerful association is perhaps strongly influenced by the history in which its use developed and move beyond it.

My use of the term is more in line with the Greek root suggesting the extension of the body. The Greek root of the term prosthesis is *prostithenai* to add to, from *pros* in addition to + *tithenai* to put or to place (same root as "thesis" meaning "to put forward a premise or a proposition"). Prosthesis then is to put or to place in addition to or to extend. It is the act of putting forward *in addition or as extension* rather than specifying or limiting the character of that which is put forward. Prosthesis is first of all action not thing, yet the action may be embodied by thing or by the use required of thing. Second, the action that prosthesis designates is a reaching beyond one's limits, that is, it is an addition or an extension; it has the implication of going beyond. Prosthesis then is about action, putting forward, and it is distinguished by the extent of that action as being somehow "in addition" or "as an extension." To move forward with my discussion we must avoid limiting prostheses to some materiality or to any necessary connection with loss (amputation), although this more fundamental understanding of the term may clearly include both. In the most direct and obvious sense prostheses are our skilled or practiced use of tools and toys; those action-things that allow us to reach farther, amplifying our strength. Prostheses lengthen our arms, support our bodies, and provide external memory. Prostheses are generally action-things that we make or objects that we designate for specific use that reflect, echo, imitate our body in some respect and how our bodies function. In Elaine Scarry's[17] discussion of "making" the world she observed that most everything that humans make is an extension and amplification of the human body. Nearly everything in material culture might be seen as prosthesis in some sense particularly when conjoined with movement and use. Scarry showed that things made tend to fold back to amplify and multiply aspects and capabilities of the body; others would suggest that in this folding back we are reminded of amputation. In transcending the limitations of the body in some sense by these prosthetic

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[16] Henry Ford, My Life and Work (1923) quoted in Sarah Coffey, "Prosthetics" http://csmt.uchicago.edu/glossary2004/prosthetics.htm

[17] Elaine Scarry, *The Body in Pain*, 1987.

makings, the body remakes itself, enhanced, expanded. It's rather like that old Steven Wright joke, "I'm going to get a tattoo of myself, only bigger."

Prosthesis need not be limited to the artificial augmentation of the body, but it can be understood as indicated by the designated use of the natural body when it or some part of it is used as a tool or an object. Paleo-ethnographer André Leroi-Gourhan considered the hand to be the first tool. We can use our hand to pound and to wrench and many other things and in doing so think of it as an object, an object that extends our bodies into the world by an agentive use.

### *Gesture Posture Prosthesis Nexus*

I have now briefly introduced each of the key terms, offering an understanding of each largely by invoking the most etymologically rooted meanings of the terms along with current research trends. Perhaps it became increasingly clear in the introduction of the terms that, as we grow familiar with these terms, each implicates and necessitates the other two. It took a bit of discipline not to leap ahead to these implications. Once we understand these terms as I have presented them the three become inseparable, not as synonyms, but each as necessary complements and extensions to the other two. I now want to turn to a hopefully disciplined and therefore limited introductory discussion of the implications of this interconnectedness; enough to demonstrate what I see as a nexus among them.

Gesture, as patterned movement always reaches out to express and to affect and to interrogate. Leroi-Gourhan studied the earliest human tools in terms of their gestural implications as more primary and fundamental than their materiality. He considered the hand the first tool and it is a tool, prosthesis, because of the gestural movements that put it to use as a tool. We can't simply declare our hand to be a hammer; an object apart from us. We must use our hand in the gestural patterns of hammering to do so. This primary act of objectifying a body part is a fundamentally ontogentic action creating the subjective experience of object, a transcendental act I elsewhere developed extensively in the context of dancing as self-othering.[18] Gesture, understood as specifically patterned movements and as skill, is essential to all of our tools. We must gain the gestural skill to play piano or to type a text message or to fly a space shuttle. All of our tools are distinct in terms of the gestural patterns that they require. We can also appreciate that gestural patterns are often the best understandings of the distinctiveness of objects. If, for example, we attempt to define "chair" in purely material terms, we have a most difficult time. However, to define "chair" in terms of an object related to the gesture of "sitting" makes it clear and relatively simple. Our tools, but also the gestures that are involved with using the tools, are prostheses. They extend us into the world around us as they reflect the very shape (posture) of our bodies into the materiality and functionality of our social environment.

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[18] *Dancing Culture Religion*, Chapter 3.

As we practice the gestures that distinguish us culturally historically and psychologically, these gestures also reshape our bodies, our postures, and our cognitive processes and mental perspectives. These are the things that Conan Doyle's Sherlock Holmes was so amazing at observing and deducing. But we can exemplify it easily by the conscious and devoted effort so many skilled activities invest to shape posture, to reconstruct body, to support the desired gestural patterns. In the simplest terms, ballerinas' bodies are shaped rather differently than are those of speed skaters. I'm always fascinated by the shoulder positions common to body builders who often concentrate most on building chest (because it is so visible) resulting in their shoulders being pulled forward in a rounded slumped position. Then there are the gestures so common to western uses related to communication (writing, reading, use of computing devices, etc.) that encourage the establishment of a kyphotic posture (head forward hunched shoulders), weak core muscles (and the accompanying expanded mid-section), and decreasing balance and stability. Ouch!

Gesture then is distinguished by a reaching out, a connection, touch, with the environment; gesture is agentive both as influencing the environment as well as interrogating it; gesture is a way of discovering and creating oneself in cultural historical and psychological terms; gesture is an act that engages movement, proprioception, the construction of neuromuscular systems, the establishment of engrams. Gesture is then inseparable from prosthesis, the extension of the body into the environment. Gesture is then inseparable from posture (both bodily and cognitive) in that it at once depends on posture as the vital foundation for its very movement and also gesture in turn constructs and shapes the body's position, its stance, its physical and mental readiness, its physical and mental identity.

Prostheses then—as distinguished by extension, as makings, as objective even artificial expansion of the body—are meaningless and ineffectual without connection to the movement patterns that indicate their use and value. As extensions of the body, prostheses alter posture by extending the body, but also by the hinge back to the body that reshapes it in terms of the gestural use of prostheses. Our tools are at once a realization of our imagination and inspiration of who we may become as they are also projections from us that reflect back on us to bodily and mentally reshape us as a reverberating force of the use of our tools. In a fascinating sense we can appreciate that often prostheses are accompanied by amputations. We create tools to assist us in some task that we have been doing without tools before only to discover that as these tools are embraced they have the effect of amputating the bodily function that it extended. My father for example was throughout his life opposed to, in his terms, "adding machines" because he believed that these tools would lead to the decline in our ability to add. He could add a column of numbers looking at it upside down faster than most of us can using a so-called "adding machine." Of course this amputation effect works on a large scale. The popular 2008 film WALL-E explored the impact on posture (mental and physical) that can occur with advanced prostheses.

Finally posture, our physical and mental position or stance, is the support for gestural movement. In the physical sense we cannot move without a postural disposition that supports this movement. This is a rather profound notion I must surely consider further at some later time. The evolution of upright posture and bipedal motility supported the gestural sphere defined by the reach of eye-hand that is so distinctive to human beings. Changes in physical posture have direct impact on physical gesture capabilities. Our mental positions function in complementing ways. We engage the world gesturally in the terms of our conceptions and understandings of the world.

### *Gesture Posture Prosthesis Platform*

The gesture posture prosthesis nexus, minimally developed above, offers a dynamic platform for rich and complex analysis and comparison. The analytic method is to identify a subject for analysis or comparison with any of the three nodes of the nexus and then to explore the implications of the interconnectivity with the other two nodes. In doing so one can describe something of a profile in the terms of the nexus important for both description and for comparison.

Let's just leap to one of the latest generations of electronic digital devices, Google Glass, for consideration. I have only seen videos and spoofs on this device that is now in test phase among developers, but the point here is simply to illustrate the platform. The move from desktops to notebooks to handhelds has distinct characteristics. There is a progressive miniaturization and mobility. In operating gestural terms the domain of activity remains that anterior space where eye and hand interconnect and coordinate. In terms of motility the notebook provided greater freedom of movement while requiring establishing a fixed temporary location for operation. The handheld has less connection with any fixed location and can be used while walking or other activities. Clearly the prostheses shift in gestural characteristics in parallel with the greater use of devices for social and environmental interconnection. Rather than fixing us to the location of the device, as with the desktop, the handhelds adjust to keep one connected to the changing environment. Thus the postural changes are consistent: greater freedom of individual motility, shift to gestural intuitive touching connections to the environment as to the device; greater concern to interconnect socially on a global scale and to be an integral element of the shifting environment. The cognitive models shift in coordination to a network information interaction interdependence base.

Now the leap of Google Glass is to disconnect the hands entirely; this is an enormous revolution and the first shift in human evolution away from the strong connection between eye and hand. Google Glass is a prosthesis of the eye and is operated by speech and presumably speaks to the user. Since it is worn like "glasses" it requires but a shift in eye position to consult the "screen." Google Glass then frees the hands and totally changes the posture from the head forward and down posture to complete freedom of movement. One can dance and play and do any sort of activity

while using Google Glass (though perhaps not without some risks and downsides). Google Glass is a shift towards an unencumbering prosthesis that allows fuller freer full-bodied movement. Posturally, in a physical sense, this re-introduces freedom of full-bodied movement that has been severely restricted by desktops. It opens posture to avoid the kyphotic posture that has become the signature of our times. The upright mobile posture is more forward looking, more interactive, more neurobiologically integrative. As cognitive scientists have determined that our minds, the cognitive processes and our concepts, are shaped by the way we interact with the environment, this greater whole-bodied interactivity will enable the development of different corporeal concepts and image schema, that is, posture in the cognitive sense.

This is not an advertisement for Google Glass, but an effort to show that we create the prostheses that supports the changes in the way we understand and imagine ourselves to be and, in turn, that these prostheses hinge back to enact this image as they extend and alter our body posturally and gesturally. Another important feature of this platform as I'm imagining it's value is that we can (or should) never again separate gesture, motility, cognitive processes, conceptual schemas, postures, and the variety of tools and skills that we create and habituate. These are all threads of the interwoven fabric of life.

## Context

So many of the considerations relevant to the digital age don't make the effort to take a somewhat longer view. These discussions can be characterized on the one hand by glee at the possibilities of a new toy or app or on the other hand by gloom at the possible impending damage of the same toy or app. A somewhat longer view, well even an evolutionary one and a long historical one, might mediate glee and gloom.

I want to think about digital and digitization before I think about electronic digitization. I want to briefly recount highlights of the history of electronic digitization. I want to consider briefly the history of humanities research methods and pedagogy. To do so provides us a framework, somewhat broader than glee and gloom, in which to attempt to imagine and articulate a mandate for the unfolding future of religious studies.

### *Digital*

The digital age emerges with the evolution of upright posture, bipedalism, and the hand. Leroi-Gourhan identified the hand as the first tool. In the terms of this present consideration we can be slightly more refined by considering the digits of the hand the first prostheses. Handprints with splayed fingers accompany the most

ancient of human art;[19] they distinguish the very prosthetic nature of art itself; that being the separated digits so constantly at hand both correspond with and point to something beyond the fingers. The finger stands for and points to not only a discrete way of comprehending the world, but the representation of the world by means of a digit.

Gesturally the digits of the hand are connected with the domain of human movement that occupies that anterior bubble shape protruding from the human chest to the length of the arms and hands with outstretched fingers and their sphere of movement. I often think of this as shaped like a beach ball held with both hands. Gesturally the digit connects the eye and hand. Gesturally the digit is groping as in those innate sensorimotor programs with which we discover the world and ourselves. And the digit is posturally the grasping which denotes both a holding in the hand and a realization in the mind. Gesturally the hand rises before the face with splayed fingers and the eye corresponds the fingers with items seen beyond as the forefinger of the other hand points to each digit to mark the prosthetic linking, connecting the there and the here giving postural grasp to the co-presence we know as depth or what Merleau-Ponty called "pure depth," the grounding of perception. Perception can be richly considered in terms of the gestural postural prosthesis platform.

Digitization is new only with the newness of the human being. Digitization is a mark of one essential aspect that distinguishes humans. Based in the separation of our fingers one from another, digitization is the prosthesis of distinction, systematization, alphabetization, and enumeration. The pointing of a digit is the gesture of prosthesis itself; pointing out that possibility of extending beyond our physical bodies. The gesturing digits create, as Leroi-Gourhan showed, the first external memory, prostheticizing our very minds in drawings and writings and so many other ways of recording what we are thinking and what we know. And, though the intellectual and religious traditions of the west have tended to ignore and discourage it,[20] digitization is the gestural partner of bipedalism where balance and a completely new set of movements become possible.

Of late I have been very much concerned that we become more aware and appreciative of ourselves as highly complex networked parallel processing beings. While it might seem that digitization corresponds with only the rational and formal

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[19] These handprints are usually made by spraying from the mouth liquid pigment over the hand placed on a surface, thus leaving a negative imprint of the hand.

[20] I find it fascinating that many philosophers—Husserl, Merleau-Ponty, Serres, Dewey, Heidegger, Stiegler—use the hands (and hands more than fingers) as key exemplars for their ideas, but most ignore the feet. Surely this is a postural disposition constructed by the gestural practice of intellectuals, that is, sitting at desks, reading books, and writing with the hands; the feet are no where to be seen or involved. Major implications here … tune in later.

sense of our humanness (in Schiller's terms)[21] I think it connects as well with the sensual and experiential. As the fingers and hands cannot be separated from movement, from gesture, they cannot be separated from emotion and feeling either. For all gesturing involves a touching in some sense and all touch is accompanied by feeling. Thus there is a reversibility in the digit that oscillates between distinction and continuity, between feeling and form, between internal and external, between prosthesis and posture.

It is then through the history of the development of tools that digitization is shaped and reshaped through prostheses interconnected with changes in posture (both physical and mental). In the broadest terms we might trace this process, following Walter Ong in his *Orality and Literacy* (1982) and others, through the development by means of digitization from orality to literacy. We might then follow Marshall McLuhan in his *The Gutenberg Galaxy* (1962) to appreciate the implications of the invention of moveable type and the printing press. The gestural postural implications of reading becoming expected of large portions of western societies are unmistakable and undeniable. Such prostheses as books and print media, recreate us at the very level of our tissues; we literally have different physical posture and accompanying conceptual and mental positions and perspectives.

So in this sense the digital age corresponds with the human age. But I suspect that these days when we refer to the digital age, as I have in my title, we actually mean the electronic digital age (or the information age); the capacity to represent anything in electronic patterns of zeros and ones or shifting directional flow of electrons in circuits; the counterpart of fingers restricted to their capacity to distinguish discreteness. Electronic digitization is the representation of anything in terms of a collection or an array of discrete points each comprised ultimately of an on/off (finger/gap) designation. Electricity is distinguished, in this context, for its speed (approximately the speed of light) and the directionality of its flow (often corresponding with on and off). Linking these features with increasing miniaturization we have the trajectory of the emerging digital age; the digital replication of the world as indistinguishable from the world itself (retinae displays and three dimensional printers) and the prosthetic effect of extending our fingers into every crevasse of reality.

### *Electronic Digital Age*

Let me tell you a story. My undergraduate major was mathematics with a minor in physics. Thinking that to be a mathematician would be a rather socially confining occupation I proceeded directly to an MS in Business and I did pass "go" and in doing so I got hired at the Coleman Company to assist in bringing the first computers to the company. The first computer was an IBM 1401 and stood 5 feet tall, was 6 feet long and a couple feet wide and had a total memory of a whopping 4,000 bytes. This computer was to replace comptometers, clumsy mechanical

[21] See Friedrich Schiller, *On the Aesthetic Education of Man* (1793).

forerunners to electronic calculators. These machines had huge banks of keys and the operator had to place his fingers on a group of keys at once and punch all of them the number of times by which they wanted to multiply. As an undergraduate I used a slide rule, an analog device that allowed one to make a remarkable range of calculations based on logarithms. That was 1964, 50 years ago, just 5 years before the first human set foot on the moon enabled by computers with just a few thousand bytes of programmable memory.

After a stint in business I went to Chicago to study religion swearing off computers and I wrote several books on a typewriter where cut and paste actually meant cut and paste. I resisted word processers believing that they wouldn't improve academic productivity and indeed the first ones were so cumbersome they surely didn't. My first computer acquired in the mid-1980s had a huge 40K memory and I couldn't imagine ever using even half of it and the monitor screen was black with orange fuzzy letters. It was most appropriate on Halloween. That was mid-1980s a mere 30 years ago; the Reagan era marked by Michael Jackson's *Thriller* and Steven Spielberg's *E.T.*

In 1998, the year Google was founded, there were less than 10,000 Google searches per day of an Internet that was not yet 10 years old; in 2011 there were more than 5 billion Google searches every day with about 50 billion web pages available to any of us in an instant. YouTube was founded in 2005; it was purchased by Google in 2006 and in 2013 has over 1 billion distinct users. Over 70 hours of video are uploaded to YouTube every single minute. With some experiments in social media beginning in the mid-1990s, Facebook launched a local version in 2004 and a platform that allowed 3rd party users to create pages in 2007; today, 6 years later, it has well over a billion users. Wikipedia was launched in 2001 and in 2013 has 4.2 million freely usable articles in 285 languages and receives over 8 million page views a day. Since their introduction in 2007, 25% of the global population has access to a "smartphone." Apple opened its App Store in 2008 (5 years ago) and there are presently 750,000 Apple apps with a matching number of Google (Android) apps. Increases in computer storage amounts (a terabyte fits in the space of a hand), the decrease in the size of the computer itself, and the increase in processing speeds (the next anticipated technological breakthrough is "quantum computing" which indicates that it will process at speeds over a million times faster than the present fastest computers) match this trajectory. Dramatic increases in Internet speeds eliminate the need for much storage capacity on any device with everything existing in "the cloud," which facilitates ever-smaller devices; the trajectory is towards wearable computers and implants. Then there is increase in display technology that now is capable of reproducing at a quality that is more refined than the retina of the human eye making it indistinguishable from direct vision (in some respects anyway).

I'm not reciting all these data to demonstrate how old I am or to bemoan how fast the world is changing; "my ain't it awful!" No, I'm recounting these things because I

see opportunity and challenge; it's coming so rapidly I still have time to participate in even some things now unimagined; I like things heretofore unimagined. But for you I ask you to take a few minutes, absorb the current rate of technological innovation, and attempt to project yourselves into the world 50 years from now, that is 2063, and tell me what your world will look like!

If we look at electronic digital advancements as prostheses, we can see that they extend what we are and hope to be into the world around us. These prosthetic devices hinge and fold back to re-make us in the images we project or dream ourselves to be. Our devices are us; we are our devices. These prostheses are how we gesture and our gesturing to use them reshapes who we are (posture). Round and round and back and forth.

Clearly the trajectory of electronic digitization is to ultra microminiaturization and an integration of devices into the body as it moves untethered about the world. Google Glass is an excellent current example, though it has received its share of humorous treatments,[22] in which the electronic device is worn like a pair of glasses and responds to head gestures as well as voice commands. Notably in terms of the gesture posture prosthesis nexus this trajectory totally shifts the gestural/postural skills encouraging mobility, upright posture, free movement, multitasking without needing to look away from the world to a device as does even texting on handhelds. The gestural shift in human-computer interface is significant as well with touch and touching gestures becoming the most prominent. Rather than hitting a key, we touch a screen. We pinch and swipe and perform dozens of other flowing finger gestures increasingly free from hardware. The trajectory is clearly approaching Donna Haroway's long-ago prediction of the cyborg in her widely cited "Cyborg Manifesto" (1991).[23] Given the trajectory of the last twenty years, it is virtually certain that very shortly the organic body and electronic digital device will be integrated to the point of being seamless. It is this trajectory we must have in mind as we look to the future of the study/teaching of religion.

I really want to make a few more comments here to further explore obvious and common concerns about digital technology. I've noticed that there seems to be a fairly common attitude towards these electronic digital devices in which they are given independent agency and autonomy. We worry about the effect they have on us, how they will transform us, how they are a danger or a potential one. Stanford's

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[22] There have been a few, but see the hilarious skit on Saturday Night Live: http://www.hulu.com/watch/486603?playlist_id=1259&utm_medium=Email&utm_source=ExactTarget&utm_campaign=WeeklyTop5_2013-05-06_Plus_lessthan12m& . We'll see who gets the last laugh, but I know where I'd place my bet.

[23] Donna Haraway, "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century," in *Simians, Cyborgs and Women: The Reinvention of Nature* (1991), pp. 1490181.

own Clifford Nass, the author, with Corina Yen, of the 2012 book *The Man Who Lied to His Laptop,* studies what our relationships with our devices tell us about ourselves. And his work, to the degree I understand it as a non-specialist, tends to see these devices as things that have potential negative effects on us. This is undoubtedly correct from the dangers of texting while driving or walking to the obsessions and addictions we can have related to checking Facebook or email or any of dozens of other invitations that pop up on our many devices seemingly demanding our attention. Nass reports[24] that presently 25% of Stanford students are connected with at least 4 electronic digital devices; I can match that. His research reveals that multi-tasking, while often touted as an essential skill of the present age, simply doesn't work. People who multitask, he finds, are not even good at multitasking much less at being comparatively effective at any of the tasks they are working on. We have to listen to these results and consider the implications. Since given my sense of the very clear and certain trajectory of the development of electronic digital devices, we will need to resolve this issue, although it will be complex rolling resolutions.

What I want to suggest is that we may advance our understanding these electronic digital devices and our relationships with them if we consider them to be prostheses, that is, as both objects and extensions of ourselves and of our understanding of ourselves. They are us as extended into our environment and therefore they extend our subjectivity into a personal connection with the world. In this sense these devices are not objects that somehow came into existence independent of us and are willfully seducing us into some terrible catastrophic abomination of ourselves. Twenty-five percent of the world's population has a smart phone, a device operated by gesture introduced only 5 years ago. Can there be any greater evidence that such devices are prostheses that we understand to be as essential as a prosthetic leg or a pencil or an automobile? Further, in the proposed gesture posture prosthesis nexus I believe that we make great progress dealing with the issues Professor Nass raises when we concentrate on the gestural patterns that are inseparable from these devices. These gestures are techniques of the body; it is the gestures that insinuate the extended connections enabled by prosthetic devices into our neurobiology literally shaping who we are (posture). To focus largely on the potential detrimental impact of these devices is to understand their prosthetic function primarily in terms of amputation when clearly such devices as extensions of ourselves both other us as well as realize us, objectify us as well as extending our subjectivity. We must find a platform, such as the one I am offering here, from which to understand the reversibility and interdependencies of our lives in terms of these prostheses in the digital age.

I was fascinated by Hanna Rosin's recent article "The Touch-Screen Generation: What's this technology doing to toddlers' brains?" in *The Atlantic* (April 2013) addressing the same issue as it concerns kids toys which have become increasingly

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[24] Clifford Nass on "Talk of the Nation: Science Friday," May 10, 2013.

integrated with electronic digital technologies. Indeed, it is now common to offer tablets to toddlers. The insight I took away from Rosin's article is related to her decision to just give her 3-year old son, Gideon, a tablet to play with without restriction. At first her son played with it extensively, but eventually tossed it in the toy box as just one among other toys.

It seems some things are clear. 1) There is a seductive and potentially addictive side to these devices. Indeed, Jean Baudrillard's understanding of seduction in contrast with production is relevant here. The seduction is in what is coming as much as in what is here. It is in the not yet, the promise of what will make the current obsolete that is seductive. This is play, but it also creates what Baudrillard called "hyperreality." 2) Perhaps because of the seductive aspect of the process the trajectory is undeniable and perhaps unstoppable. Aiding the seduction is the progressive disappearance of the physical presence of the device and its increased apparent "naturalness" in terms of its gestural operation being largely intuitive. The otherness made obvious by large physical objects is diminishing with the target point being a complete disappearance accomplished by the integration of the device with our organic bodies. 3) As the devices are progressively integrated with our organic bodies, how we understand these devices will necessarily become the issue of how we understand ourselves; we'll finally be forced to consciously deal with this. The identity has always been there in their prosthetic function and gestural connection and postural projection/foundation. Ultimately, and this isn't far off, we must understand that the only question is and perhaps always has been who we understand ourselves to be and who we want to become.

To take on the complex issue of multitasking so nicely presented by Professor Nass, if those who construct themselves as multitaskers encumbered by distractions from multiple devices are indeed terrible at any task, they will not get jobs, they will not compete well, they will have disincentive to continue their practices. They may need to organize Multitaskers Anonymous or chapters of EDDAA, Electronic Digital Device Addicts Anonymous. They will begin their meetings with declarations of their identities "I am a multitasker." There will be industries that develop to treat these addictions and endless self-help books to offer tips; there surely already are. It may be possible that in time we will re-create ourselves with more graceful and effective multitasking skills. My sense is that if we have lives that have a large sense of purpose and our work has a clear sense of value, then our use of such devices will be in a responsible proportion to the extent they serve purpose and value. The principle holds as well for the way religious studies addresses this issue.

We can't control guns (and I think for reasons that might be articulated in terms of the prosthetic gestural postural nexus); we won't be able to control the thirst for access to the latest electronic digital devices.

Important to our shared concern here, what we must find utterly shocking is this: in the 50 years of my academic career almost nothing of significance in education has changed. Not the research methods (although the card catalog is thankfully gone); we still read books and write papers using the same objectivist writing conventions and we are largely studying issues and topics very little differently from those half century ago, or even two centuries ago, at the time of the establishment of the modern university. Nothing new in the classrooms and pedagogies: the chairs are still in rows forcing students to sit and to passively take in what is professed to them. At CU we have what are called "smart classrooms" (I suppose they are everywhere) but these are little more than rooms with overhead projectors that can hook to computers and screens that pull down and lighting conditions so poor that it remains almost impossible to see anyway. Furthermore, most of this technology is out of date and much of it doesn't work. Consider that most of these classrooms have existed unchanged since before smartphones and touch devices even existed. The pedagogy is virtually the same; we knowers stand up and inform and explain and do our best to motivate students who no longer find reading all that necessary or don't really even know much how to read complex academic material and who can't much see the point or the relevance in what we are talking about anyway. They tolerate education for the credentialing so they can get a job. This characterization is not simply a reflection of changing students (we tend, wrongly I believe, to assume they are less well prepared or something); it is more a reflection of the absence of change of teaching and research and the position of the humanities in higher education.

Were we to sketch a bit of the history of education/pedagogy related to the study of history and the humanities (including religious studies) it hasn't changed significantly in a very long time, as in centuries. And the shock to me is that, in the face of such accelerating world-transforming change effected by advances in electronic digital technologies, only a few small mostly incidental changes have occurred in education, in pedagogies. To look at classrooms from the perspective of gesture/posture/ prosthesis will offer insight.

Classrooms, like sanctuaries in churches, determine gesture. The furniture and its arrangement, the shape and orientation of the space, determine gesture. Classrooms, in the west, have changed little over the last several centuries (the American school desk invented in 1880 remains functionally the same today) and the gestures that such classrooms have come to shape us at the deepest level of muscle and neuronal networks. More accurately put, the furniture and architecture of classrooms are prostheses we use to extend our values, our dreams of who we might become, both into the world around us (our cultures) and into the very core of our being (our neurobiology).

The classrooms are enclosures, cloisters really, setting apart the activities within from those without; they reflect the same in relationship to the body. The classroom

designates the place of the knowledgeable and the transmission of what is known from one generation to the next. The classroom bears the joined values of change and continuity in the tradition of knowledge. It is the bastion of defending what is known while it is the engine of discovery and experimentation and exploration. Transmitted in a cloistered space, the gestural implication is that knowledge in the classroom is pure and unsullied by practical application. Truth is based on reason and argumentation with perhaps controlled experimentation in laboratories. The gestures of the classroom (even the lab) are safe and "merely academic" (don't you love that phrase?). This means that their prosthetic reach is limited to the space consciously separated from society; we often refer to it as "the ivory tower."[25] The gestures of the classroom are experimental but with limited consequence; the gestures mark the academic elite.

The furniture of the classroom and its orientation has also been stable for centuries. It is limited to basically two items: the student desk and the faculty podium or lectern. At minimum the podium or lectern places the faculty person standing, yet hiding the body below the waist. The podium offers a place for notes or manuscript to be readily accessed by the faculty person. The podium is a prosthesis that engenders gestures of professing, that is speaking with authority to a group from a superior position (marked by the elevated level of standing, sometimes even on a raised platform) with hands and arms free to move in service to establishing the message/argument/information delivered. The professor literally speaks down to students. The podium may be in the proximity of chalkboards, white boards, or more recently "smart" methods of delivering illustration to the presentation.

The student desk is the prosthesis that extends the passive receptive attitudes of the student into the space and orients all of the students' attention to the other piece of furniture, the podium. The student desk discourages movement in all parts of the body other than the hands, themselves limited in function. The student desk separates students one from the next to prevent touching or physically interacting. Throughout the long history of the classroom the furniture extends prosthetically the gestural practices of enduring educational values familiarly phrased today in elementary schools as "sit down, shut up (I mean be quiet please), and keep your hands to yourself." But then there are the hands. The student desk invariably, while discouraging body movement, encourages the movement of and presence of the hands. Hands move to hold books and pens that the student may read and write. Student desks then gesturally accomplish the great drive towards literacy that is among our most central cultural values. Knowers are readers and writers, the literate.

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[25] Quite fascinating that the origin of this term is biblical, *Song of Solomon* (7.4) "Your neck is like an ivory tower."

Gesture is shaped by the design of furniture, but gesture, as Leroi-Gourhan has shown, is inseparable from tools. Educational technology dates to the earliest furniture (this is indeed technology) and to the accompanying gestures (these are as Marcel Mauss showed "techniques of the body") but there is a fascinating history of tools that extends the hand and its immediate objective of literacy. There are of course books and pens, both of which have a long and interesting history. We need only think of the revolution that accompanied the technological developments of the conjoined role the pen and book have in the changes of the world. In *The Gutenberg Galaxy* Marshall McLuhan shows the implications of the invention of moveable type and the advent of the printing press. Yet remarkably this revolution had little impact on the classroom architecture and furniture. Indeed, if anything, it further reduced the need to move. No longer did one need to travel distances to study with a knowledgeable teacher or to consult the rare scrolls or hand written copies of books in libraries; one had them at hand more easily in printed books. Further, with the advance of technology of print, a greater percentage of people could go to school, could enter the architecture and use the furniture of classrooms.

Among the first tools of education was the Hornbook (1450 c.) that allowed students to have available a model for learning their letters and a few essential passages to read. In his youth my own father was, as a child, the proud owner of a slate (originated in late 19th century), or small chalkboard, that allowed him to learn his letters without the waste of precious and expensive paper. But still the classroom remains gesturally unchanged.

You can see where I am headed; even equipped with iPads students today are practicing the very same gestures that are reflected in and compelled by the changeless classroom prostheses, furniture and architecture. We can then comprehend that posture, both physical and cognitive, remains basically unchanged as well; it can't have changed.

The gestures that comprise the techniques of body that are most determinative of who we are and what we value are those that discourage bodily movement, separate bodies to discourage touching, require a submission to authority (or those credentialed as knowledgeable), and isolate the hands as the most visible, available, and active body parts while constraining the movement of the hands almost exclusively to fine motor movements (turning a page, writing letters with the fine tip of a pen, typing, keyboarding on computers, finger-gesturing with touch-pressure sensitivity to operate an iPad).

The common orientation of the faces of students toward the teacher limits the development of facial expression and facial gestural interaction with others; diminishing gestures to bear values of passivity and isolation.

Despite the mostly successful challenge to objectivism that persisted throughout the twentieth century, it is fascinating that academic writing has not changed very much in style or convention. We still demand an objectivist perspective and a linear logical development from thesis to conclusion. We expect conclusion to be definitive and authoritative. I teach a writing class to religious studies majors and when I urge them to be present and invested in their writing, to develop their own voices, to care about the conclusions and impact of their work, they respond to me with distrust as though I'm trying to trick them. Frequently students ask me if they can use personal pronouns in their writing. I doubt few academics would strongly argue for objectivism or for the adequacy of a simple linear argument to definitive conclusion, yet many persist in continuing to use writing conventions that reflect these values and to demand that their students also do so. Certainly most of the academic outlets for book and article publication that are considered respectable and that are peer reviewed continue to maintain these conventions.

I suggest that the writing conventions are inseparable from the gestural postural prosthesis nexus of the unchanging pedagogical environment and methods. Writing can be seen as gesture and as prosthesis. It is clear that it has a powerful impact on the conceptual posture and cognitive processes. They are inseparable from the type of learning/thinking associated with classroom gesture: Bergson's "retrograde movement of truth," or Massumi's "backfilling." Contemplate the fascinating correlation between the kyphotic weak-cored toneless muscled typical academic body and the movement-discouraging methods of reading and writing and the retrograde backfilling methods that characterize much of what academics do as well as with concepts such as the mind/brain/spirit being separated from/superior to the body. Prosthesis is often also amputation.

All of these gesturally embodied values are expressed in what remains perhaps the largest public secular ritual practiced today—graduation exercises. Academic garb, not surprisingly similar to Christian liturgical vestments, renders even the moving body inarticulate and leaves exposed for view only the face, still with unitary orientation for all students, and the hands, the all important hands which are still kept to oneself.

The corner of academia specializing in the study of religion has a special interest in that it is largely a particularly religious history that shaped the earliest classrooms and furniture; indeed, worship was conducted in much the same sorts of spaces. The church established the early universities and many western universities have a religious heritage, if often now born somewhat awkwardly. Most great American universities have impressive chapels that mark this era in their history.

Interestingly as well, despite the phenomena of religion, the practice of religion, the living of religion, all being inseparable from lush sensory experience, characterized by richness of bodily movement and distinguished by the passions of belief, students

of religion continue to practice the gestures of sitting in their student desks, keeping their hands busy turning pages, translating texts, and writing often passionless analyses of the works of religious thinkers and intellectuals, those marginal few who lived lives practicing the gestures similar to today's scholars. Let me be clear, we students of religion do not study religion; we study but a tiny fraction of religion. And as we come to appreciate the enormous influence of gesture on value, we begin to appreciate the significance of our scope being limited to those few whose gestures we can comprehend. I have written that even with the secularization of education, the gestural postural prosthetic practices still have enormous influence on all that we know and remain the bearers of specific religious valuations.[26]

## Religious Studies in the Digital Age

### *Mandate*

Little has changed in terms of the research and pedagogical methods of religious studies in the past 50 years, the period roughly corresponding to the establishment of the academic study of religion in state supported institutions. In but the last decade the planet has been transformed by the accelerating development of electronic digital devices with the trajectory of continuing development one that is shifting the gestural postural prosthetic to upright motility, increased intuitive connection with the functioning of the devices, rising social interconnection, and instant hands-free interactions with devices. Most certainly this shift in gesture/prostheses will link to revolutionary changes in cognitive posture.

A product of the recent advancement in digital technologies is a near universal connectedness. The global population is now a connected network integrated socially, politically, economically, and physically through the prostheses of social media, YouTube, and instant language translations. As the world has become so intimately interconnected it has become increasingly beyond question that religion plays a central role in nearly every aspect of life.

There is a case to be made that time is more than ripe to launch a new era of religious studies distinguished by the experimentation and development of bold new methods of research and pedagogy. Frankly, I don't know how religious studies has continued to be supported as long as it has in this increasingly competitive economic environment given its absence of even a self-awareness of being thoroughly outmoded and self-marginalized limiting itself to the study of topics of relative obscurity. The effectiveness and acknowledged importance of religious studies will continue to decrease proportionate to the increase in innovation associated with electronic digital technologies. The disparity will rapidly grow between the gestural postural prosthesis nexus of religious studies research and

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[26] See Gill, "Embodied Theology," in *Shifting Paradigms: Theology, Religious Studies, and the University*, edited by Delwin Brown and Linell Cady (2002), pp. 81 – 92.

pedagogy and that of the emerging nexus of gesture posture enabled by an accompanying miniaturization and increasing speeds of electronic prostheses. Given the unquestioned critical relevance of religion to almost every aspect of public and private life from politics to law, economics, history, geography, war, terrorism, art, architecture, marriage, gender, sexuality, digitization itself, and on and on, the study of religion has generally failed to even recognize that it has a mandated responsibility to provide insight, criticism, and direction on all of these issues. Religious studies must not only recognize its own essential importance, it must also realize that fulfilling any measure of its mandate must be accompanied by the deeply considered ways to take the fullest and most creative use of advancing electronic digital technologies while directing such use clearly within the parameters of how religious studies chooses to create and realize itself in the future. It must do so not simply to be in fashion, but rather because of the promise of these technologies to changing the gesture posture prosthesis nexus of religious studies research and pedagogy. It is my sincere belief that religious studies must either wake up and get with it or die.

I will offer a few principles and directions as well as a few examples, but before that I want to note that I believe that a major difficulty that must be faced in bringing about change is the very conservatism that is inseparable from the gesture posture prosthesis nexus itself. Gesture is movement that is skill and habit. Gesture takes form in patterns of movement that are identified with culture and history and personal experience. While it enables experimentation and innovation and interrogation, it also has enormous powers that are conservative. Gesture, while only marginally characterized as "natural," becomes so inseparable from posture and prosthesis that it "feels natural," that is, as the obvious and only way that things are and should be done. Disrupting gestural patterning with innovative prostheses can be experienced as postural crisis often evoking strongly conservative responses. When we refer to higher education by the term "training" we catch some of this aspect. When one is trained to do something in a certain way it often comes to be the only way we can imagine it can be done. This is perhaps why Thomas Kuhn observed that paradigm shifts typically occur only between generations. I suppose that this means that the older we are as practitioners of our trained way, the less likely it is that we will find it inadequate enough in any way to require significant change. Only young scholars[27] will experience this lack enough to be motivated to be innovators. This gestural/prosthesis conservatism may also help us appreciate why so many of the major innovators of our prosthetic electronic devices have been school and company dropouts. Innovation is initiated, I argue, by shifts in gesture and prostheses and physical posture, perhaps even more so than the mental side of posture. We don't think our way into innovation; we act our way there.

So let's be optimistic and energetic and proactive about the future of the study of religion. Let's face the hard realities of the world we live in both in terms of the

[27] Well with some exceptions, ha!

remarkable challenges they offer the study and teaching of religion (I think we'll need to radically change if we are to survive) and also the remarkable creative exciting opportunities that are there for those with the courage and boldness to pursue them.[28]

## *Principles/Issues*

### *Transposition*

All research, all teaching requires that we bring some subject from outside the classroom into the classroom, or outside the study environment into the study/learning environment. This movement requires a process of transposition. In the past we have relied principally on textual media for this process supplemented with video, images, and audio components.

It is interesting to me that the rise of the modern study of religion was grounded importantly as a comparative enterprise, yet the comparison was textually, even biblically, based, facilitated by the translation into western languages (which continues today) of the "sacred books of the east." The enormous record of cultures made by ethnographers was and continues to be of less significance to comparative studies. Yet, what initiated from a comparative motivation is now almost gone perhaps due to the significant efforts and demands to study a specific tradition. Comparative studies is now almost lost; yet surely this approach is essential both to understanding religion as an aspect of being human and also as the basis for evaluating and expanding research and pedagogical methods that contribute to the larger world.

Perhaps remaining as a persistent residual of this comparative interest and surely importantly influenced by feminist studies and "ethnic" (hate this term) studies is the growing interest in what is often termed "the body" and sometimes "materialist."[29] Such approaches tend to emphasize an opposition with "thought," "mind," "text," retaining, yet flipping, the Cartesian dualism. I strongly feel that such oppositional exclusionist dualist strategies are dead wrong and will make little if any contribution to the study of religion for a number of reasons. One of these reasons is as simple as the fact that we have yet to understand how to transpose so much of lived culture into something we feel we can study apart from the whole

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[28] As I write this paragraph I can literally feel the rising resistances to what I suggest; I can feel the quick dismissal. It is a feeling I am happy to live with. I am reminded of the resistance Mark Taylor has met from scholars when he suggested the need for major changes in academia. He reported that there was an almost perfect divide: established scholars resisted, students welcomed the changes.

[29] As in Manuel Vasquez's recent *More than Belief: Toward a Materialist Theory of Religion* (2010)

apparatus of text and language.[30] We don't yet know much how to do anything we understand to be academic that isn't a "retrograde movement of truth" (Bergson) or a backfilling (Massumi).

The challenge to future transposition is an enriched gestural postural prosthesis profile of both the resulting transposition and what we understand as appropriate academic gestural postural prosthesis profile for research and pedagogical paradigms.

I suggest that a measure of adequate transposition is the correspondence of the gesture posture prosthesis nexus profiles of the subject and the means by which it is experienced and available in the study/learning setting. In religious studies we have often considered that we create maps, maps that correspond with territories. The issue of the field, of academia by its design really, has then been how we understand the status of the maps and the territories and the correspondences that exist or not among them. Jonathan Smith articulated these issues so provocatively in much of his work, but particularly in his enduring and now classic 1978 essay "Map is Not Territory." Smith has persisted in reflection on the notion of "place" (something akin to what I'm calling posture) and the difficulties in the postmodern world (a framing he doesn't explicitly use) to discern anything like a defensible and dependable "place." He frequently invoked the dictum of Archimedes "Give me a place to stand on and I will move the world." Smith, throughout my respectful and appreciative reading of his work over the past almost 50 years that I've considered him my most valued influence, holds some hint of a nostalgia for stability, for center, and thereby suggests that there is something a bit regrettable about this undependability of place, of every imaginable place.

In my recent research and thinking on dancing and moving I've discovered the part of the Archimedes passage that I find most interesting, his interest in moving the world. With our attention here, it is possible to read his "give me a place" more processually than declaratively, that is, his moving the world is inseparable from his manipulation of the fulcrum (for leverage is, as I understand it, the focus of his concern). Or to go wild with Archimedes, might we not be able to suggest that he was concerned with transposition which isn't just replication in some shadowy smudgy fashion, but the moving of the world from one position (postural understanding) to another. What is the point of transposition, of movement from one context to another, if not the creation of difference? This importance of difference too is what Smith has tirelessly taught us.

I think we need see transposition as a primary act of moving the world rather than as one limited to getting ready to comprehend some world not here. Let's elevate

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[30] See Laurence Sullivan, "Body Works: Knowledge of the Body in the Study of Religion," *History of Religions* 30 (August, 1990)

what we do and be damned proud of it. Might the measure of the transposition be the effect it has on the world? Might the measure be the extent to which it allows us to engage in the critical concerns of the world? Does what we do save lives, improve health, create humane policy, offer insight or provocation? And we need to get over the notion that to be so involved would mean we'd be making judgments with agency. We need to understand that no matter how we tiptoe about trying not to have agency in the world (can you believe we do this?) we need to know that to live and work in the world is to impact it and often in ways we cannot even imagine. My book *Storytracking* (1998) shows the scale of this impact, as do books like Timothy Mitchell's *Colonizing Egypt* (1991).

Transposition must also be understood as the construction of prosthesis, an artificial extension of the subject of concern into an object of knowledge and consideration. Transposition is an essential part of what religion scholars do; yet we have limited our talents and tools severely in our understanding of this task. We write down stuff about our subject and collect and privilege written materials from our subjects and take a few pictures to prove we've seen the real thing. We simply ignore the vast data of religions and cultures, those messy, smelly, scary, bloody, melodic, colorful, awesome, shocking, dusty, crazy things that we all do that are inseparable from anything we consider religion. Then we worry about how our subjects will consider the incomprehensibility to them of our often stuffy writings about them, but not so much that we do much more than talk about it.

Transposition understood in the gesture posture prosthesis nexus takes on exciting possibilities. First, we must understand that the object in its independence and the object suitable for study/learning are in a dynamic and interactive relationship; they enjoy a reversibility and they mutually impact and influence one another. Second, we must understand that the gesture posture prosthesis nexus allows us criteria for the effectiveness of the process of transposition, which is one of the most important aspects of the academic process. The degree of compatibility between distinctive characteristics of the transposed nexuses is a key concern.

### *Enaction:*

Psychologist Jerome Bruner writing to construct pedagogy for childhood education introduced the term "enaction" in 1966.[31] He contrasted enaction as knowledge based on action, literally hands-on engaging sensorimotor dynamics of interaction with the environment, with "symbolic" knowledge based on words numbers and other symbols and "iconic" knowledge based on images diagrams and illustrations. Enaction is active learning.

[31] Jerome Bruner, *Toward a Theory of Instruction* (1966)

More recently Francisco Varela and Humberto Maturana[32] used the term "enaction" to described developments in cognitive science and the philosophy of mind that began to locate cognition between the sensory input and motor output. This has marked a major development in cognitive science broadly expanding the understanding of cognition basing it on circulating afferent-efferent interaction between experience of the environment (via touching and moving with proprioception being fundamental) and the construction of sensorimotor programs, memory, engrams, concepts, and so on based on and constantly modified by the experience of this interaction. In a recent collection of essays "enaction" is proposed as the new paradigm for cognitive science.[33]

And, of particular interest to the themes being developed here, "enaction" has been a key term and concept in the recent development of electronic digital technologies in the area of developing human-computer interfaces. Enactive interfaces are developed on human hand and body interfacing with computers primarily through touch and gesture; we know the enactive interfaces currently primarily in the increasing ubiquity of "touch screen" technologies.

Enaction then has developed over the last several decades, but increasingly prominently recently, to identify the trend in both epistemological (and thus also pedagogical) and technological developments, marking a convergence and conjunction among them. Enaction is movement and gesture and touching (understood proprioceptively perhaps more than, but as well as, haptically). Enaction indicates the looping interactive afferent/efferent self/environment dynamic and ongoing interdependence that is the basis for our knowledge. Enaction is a way of describing the structuralities embedded in the gesture posture prosthesis nexus that I have been developing. In contrast with Bruner I would not contrast enaction with symbolic and iconic knowledge because I think that these forms of knowledge cannot be acquired apart from enaction. Reading and writing are thoroughly gestural as are the connection with iconic forms compared with symbolic forms. This issue recalls C. S. Peirce's classic theory of signs, which I believe promises insight if we include it in the discussion of enaction and the gestural, postural, prosthesis platform.

Since enaction conjoins cognition (and also feeling/emotion, we will discover) with the encounter with the environment it is also relevant to perception, particularly as developed by Maurice Merleau-Ponty. So enaction then is not a form of knowledge (an epistemology) or a form of technology; rather, enaction is the structurality that

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[32] F. Varela and H. Maturana, *Autopoiesis and Cognition: The Realization of the Living* (1979) and Varela and Maturana, *The tree of knowledge: Biological basis of human understanding* (1984), and Varela, F. J., Thompson, E., & Rosch, E. *The Embodied Mind: Cognitive Science and Human Experience* (1991).

[33] John Steward, et. al. (eds), *Enaction: Toward a New Paradigm for Cognitive Science* (2010)

is at the core of the dynamics, the ontogenetics, of all of these. It is akin to what Merleau-Ponty called "flesh."

Enaction then holds promise as a means of enriching the gestural postural prosthesis nexus I'm developing and vice versa. Further as this richness develops it becomes increasingly valuable as a perspective from which to evaluate and guide the development of the study of religion in the digital age. If the philosophical theoretical epistemological trends and trajectories of digital technology, cognitive science, philosophy of mind, pedagogy are any measure or inspiration, then religious studies must move in the direction of recognizing enaction as a possible paradigm for its future progress and development. Enaction is fundamental to understanding and guiding the pedagogical, research methodological, and technological developments of religious studies.

*Writing:*

As it is clear in my brief discussion of writing in the "context" section above, I believe writing (more broadly communicating) is inseparable from who we are and who we strive to become. Writing must be seen as gestural and as prosthesis. From Leroi-Gourhan's understanding of the hand as the first tool and the use of the hand prosthetically to extend ourselves into the world by making it possible to create external memory, we come all the way to writing continuing to be at the core of our access to not only personal or local memory, but to the memory and knowledge of the globe via Internet access. [34]

I commonly hear the present revolution in electronic digital devices compared with the revolution stimulated by the invention of the printing press (1450 c). I think this a fair comparison, but for educators it should be a shocking one. The revolution connected with the invention of the printing press centered on education and pedagogy. Widespread access to books was one thing, but the growth in literacy transformed the way we think and communicate and value; it changed us as human beings or it reflected and effected the changes in who we wanted to become and it changed the world in almost every respect.

What is of great concern for scholars and teachers, I should think, is that the current revolution is also one of information delivery and accessibility, but it is not centered in transformations in education, in humanities research methods, or in humanities pedagogy. The concern is that there is a reluctance in humanities education to embrace the potentialities of the new technologies not recognizing that they are a

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[34] Certainly what should also be included is a serious discussion of Leroi-Gourhan's influence on Jacque Derrida's and Bernard Stiegler's discussion of writing. See Derrida *Of Grammatology* (1967) and Stiegler's multivolume *Technics and Time* (vol 1, 1994, English translation 1998). Certainly as religious studies is interested in its own development, much in these works will contribute.

prosthetic that expresses the interests of the bulk of the world's population. Touch screen apps are centrally important to the growing business of women in village India and Africa, but not to scholars in American humanities classrooms many of whom strongly resist even electronic editions of books and articles and hate e-readers. This isn't right.

Who better than humanities and religion scholars should be directly involved in not only helping guide the course of technological innovation (we after all should be the most knowledgeable and wise in understanding what it is to be human and what we desire to become), but also these scholars should be innovators in greatly expanding the conventions of writing (and mixed genre and media communication)? Clearly recognizing the gesture posture prosthesis character of writing (understood as inclusive of much more than written and read words) should mandate scholars to urgently and constantly reinvent the writing conventions with the challenging to retaining a distinction of what is recognizable as academic while embracing the endlessly expanding potential of relevant technologies. We have long understood writing to include not only the creativity of the writer, but also the reader. Surely the interactive technologies and the social media serve to achieve this understanding in broadly engaging ways.

To reinvent writing conventions (to reinvent writing) is coincident with reinventing academic research methods and pedagogies. The challenges of such an endeavor are enormous and immensely exciting pushing the boundaries of everything we have taken for granted. To fail to take up this task will result (I believe) in the present shift of education away from the academy.

## *Models*

### *Electronic Digital Devices in the Classroom; EDDs as the Classroom*

Sometimes I don't keep up with my colleagues adequately and I was stunned recently to learn that many of them include a statement on their syllabi that they don't allow computers in their classrooms. I likely wouldn't have ever known this practice except students began to ask me my policy and I finally asked why the hell they were asking such a question? I'm thinking of requiring students to bring quill pens and ink pots! We must be true to our resistance to changing anything about education! Ballpoint points and (God forbid) roller ball pens are simply outrageous, abominable amputations! As Heidegger felt about the typewriter, such objects are just the first step in removing us from the organic character of the word, although the word is prosthesis as well. I know that we are worried that students will be using computers to do email and Facebook and who can imagine what. I had one high school students in my salsa dance class who tried to "text" while dancing; I was delighted when she failed in her effort. Most students with average abilities can text on their phones in their laps without anyone knowing. And, I've seen, in my great

vigilance, students reading on their phone screens on their desks. Maybe we need to pat down students as they enter class!

I don't much mind any of these devices, these prostheses. They present a challenge to me as a teacher. If I can't keep students' attention in competition with social media, then they are likely better off dividing their time. Let's think about this. Most courses involve something like 40 hours of class time. That is a tremendous amount of time to be engaging and to command student attention. Ted Lectures aren't limited to 20 minutes because they can't afford 40 hours or they pick easy topics. Attendance isn't required of my students anyway. Then too I can always call on students to look up stuff that I want to add to my lectures or to clarify something in discussion I don't remember or simply don't know. I love that! "Hey, would someone look up …?" And in half a second there it is. And we live in a world remarkably jangled and chaotic; we learn to multitask and consider multiple things at once. While I still treasure relative silence and aloneness for much of my work; I don't think this is absolutely necessary for everyone and I know it is rare. I remember when I was a graduate student in the School of Business at Wichita State University (now that prairie setting was a peaceful environment) one of my teachers would start us taking an exam and then he would walk up and down the isles in the classroom lecturing and commenting on all sorts of things and even attempting to engage students. Asking him to be quiet so we could concentrate on the exam was not the right thing to do as some students quickly learned, for it precipitated a lecture on how we would never succeed in business unless we could concentrate fully in a distracting environment and even be able to comprehend what was occurring in that distraction. Cubicles are not sound proof.[35]

I want to turn this around to faculty. We need to consider that whatever we do in a classroom we are competing with about a hundred forms of other stimuli to our students. We may attempt to eliminate the sources of these competing stimuli so we can continue on with our not so exciting ways, or we can step up to the challenge and actually develop methods that engage and challenge students so that they will voluntarily be engaged by what we do, rather than multitask through their many prosthetic devices. It's all gestural really.

Another side of this issue engages epistemology (I have to work this term in here somewhere). If by "to know" we mean primarily to "have information," as I see it technology has already taken over this task with devices that everyone already has that are more efficient and accurate than any of us "experts." Computers are quite excellent at doing searches for information based on voice commands. Most phones are equipped with Seri who not only searches for us, but also responds to us in human speech. With the Google Glass soon to be out all of this will simply be available for hands free operation while doing anything anywhere any time. This

[35] In my spring 2013 "Religion and Senses" class I asked all the students to raise their right hands and take a pledge, which I led, never to take jobs in cubicles.

epistemological function is done and gone for us teachers. And frankly good riddance! I've never enjoyed myself so much as to be able to look anything up at any time to fill in context and to add richness to almost everything I do. Hallelujah.

So then here's the situation. Our students (better than us and I am including current graduate students) know how to access information. The issue is, what might we be able to do with students to take advantage of this abundance of information? In one sense anyone can know everything about anything, and be able to watch a video on it, so what's left? Well, certainly information needs to be understood, interrelated, evaluated, and applied and appreciated and enjoyed in some vital way.

I think the future of religious studies demands boldly innovative and imaginative incorporations of electronic digital technologies into research methods and pedagogy. Given the hugely complex nature of religion as well as its cultural and sensory richness, it seems remarkably compatible with the advent of an aggressive incorporation of developing technology. On the other hand, as we come to understand the interdependence of technology with conceptions and images that are cultural, historical and personal, religious studies has an important role to play in monitoring and critiquing what these technological developments reflect and also in advising and guiding future development.

Online delivery. The growth of online courses is most certainly to be broadly advanced in the near future. Sites like Lynda.com, iTunesU, YouTube, and dozens more and the online offerings of credit courses at universities are major and rapidly expanding. With the use of FaceTime and Skype it is easy to have face-to-face conversations with and among students. Mixed reality architecture will soon allow us to "appear" together in retinal quality life-sized for personal encounters. Faculty will be untethered from specific institutions and will be able to offer courses to students throughout the world. As a student, wouldn't you rather take a course from the world's foremost authority than some assistant professor or graduate student new to the topic? The almost inevitable shift will be 1) to lower the cost of education for a large percentage of courses, 2) for continuing education to occur throughout life as a way of life rather than being largely confined to the "school years," 3) a very different and more economic use of the present hugely expensive college and university campuses, and 4) an increase in the quality and intensity of in-residence on-campus education that will likely include dynamic learning communities. All of these developments interlock with the appropriate use of electronic digital devices.

A couple years ago I volunteered to design and prepare an online course for CU's summer school online program. I purposefully selected my "Dancing Culture Religion" course, first, because in the regular face-to-face class setting we dance one day a week and have lecture/discussion two days a week (how's that for classic Cartesian split?) and, second, because it is such a sensory rich topic. I wanted the

challenge demanded by such a course. I found that the preparation was remarkably time-consuming. I didn't want to be simply a talking head or a disembodied voice, so I prepared the course so that it would be talking supported by a wide variety of visual images, videos, and music. I've tweaked it a bit, but I will be teaching this course for the third time this summer (2013). Now the point I want to make is that while I did my best to "produce" a visual/sound pleasing course that would engage students, I began to realize that, while I was doing way more than most faculty who teach such courses, I was only scratching the surface of what is technologically possible in preparing these media rich kinds of courses. While I had considerable technical support, the range of expectation and imagination related to these courses is relatively low.

I'd suggest that for the future we develop production studios with video and animation artists available to help faculty in the development of courses so that they will meet entirely new standards. I suggest that the gestural postural prosthetic profile may offer an important evaluative guide in developing and articulating such standards. I know that many online courses continue to be based on talking heads or voices with some visual markers like images and slides. These technological prosthetic innovations make little impact on the gestural postural aspects of learning. I suppose that is one of the reasons that many of the best online courses are on topics that are related to using and developing EDD technologies. Stanford University for example has an online program, but it is, so far as I can determine, limited largely to technical and business topics.

An essential aspect of the development of these online courses is the student involvement. I believe it is the current tendency to require of students work to be similar to, if not the same as, current classroom delivered courses, that is, listening to lectures, reading other materials, and writing papers or taking exams. We will need to rethink this approach as we change the standards of the courses as they are prepared so that students will be engaged in a matching work gestural postural prosthesis profile. Students should be engaged in field studies, site visits, photographing and filming and recording (all possible on any smartphone) materials to complement their work. Their work should be multimedia and multi-genre as appropriate to the specific courses. This is possible now; so imagine the future.

We need to serious rethink this entire area; it is the future and we cannot let the conservatism of present gestural postural prosthesis nexus limit our imaginations in the development of such potential.

### *Learning Community Model: Medical School/Laboratory/Studio*

I know that many religion scholars are so attached to their micro-area of research and the occasional graduate seminar in which they can share their research that the thought of doing anything else is objectionable. Clearly not all research in religion

should be on topics of contemporary relevance, yet, the field is missing out on enormous opportunity to create thousands of jobs and whole clusters of learning/research institutions because we have refused to engage the most obvious need and importance for the study of religion. And that would be how to understand so many of the complex and pressing issues dominating the world today from the perspective of a deeply knowledgeable understanding of religion.

I have no first-hand experience with the medical school model other than my obsession with "Grey's Anatomy." Clearly there is an understanding of the need for intense study of factual material (comparative anatomy for starters) and for detailed knowledge of highly specialized research and experimentation. This kind of study is done using books and computer assisted learning, in classrooms with lectures, practice on interactive models, and in observation of actual medical practice. The incentive for this knowledge is linked directly with responsibilities for the health and life of others. Such study is necessarily complemented with clinics in which medical students gain "hands on" experience with increasing responsibilities and independence. Research is conducted not only in labs, but also in clinical trials. Again the incentive is to be able to serve the health of others; knowing that in many cases their lives are at stake.

My thinking is that religious studies should adopt a medical school inspired approach to create learning/research institutions and learning communities. We should demand of our students exacting knowledge of religions, religious histories, and religious data (not only sacred texts and theologies, but also rituals and practices and architectures and music and dancing). Our students should also be responsible for knowledge of religion as a human subject along with the research, theories, and experimentation involved in a professional community studying religion. Comparative religion is beholden to comparative anatomy and we should return to the spirit of those roots. Knowledge of the interconnection of the study of religion with many other fields—anthropology, sociology, philosophy, cognitive science, critical theory, neuroscience, for starters—is not optional, but essential. Further, our students should be required to be involved with the intense study of religion and religions with the express purpose of engaging in understanding the religious aspect of the world's most pressing concerns. Our students should be held to a standard that their work is vital to the world in which we live on a par with medical research and practice. Personnel in these communities should be hierarchically placed with junior faculty working under the mentorship and guidance of senior faculty and with graduate students and undergraduate students working under their demanding guidance. There is a simple principle here really. If we recognize that what we do makes a real difference in the world—the kind of difference that effects the quality, even the saving, of lives—we would go about religious studies quite differently.

The establishment of learning communities, on a model suggested by futurist Thomas Frey of "The DaVinci Institute" [36]offers a model akin to the medical school model. One might envision a community of scholars from related fields along with students who gather together around a common focus on a specific issue or concern—understanding the religious motivation of terrorism, the religious contribution to contemporary US government politics, or any of hundreds of critical topics—to study and research and engage so many aspects of this topic to produce findings appropriate to the media of the digital age and to engage in using these findings to impact the world. Such learning communities should not be understood as "student exercises" or research to produce a journal article or edited collection of articles motivated by tenure requirements, but rather they should be understood as bearing responsibility for shaping the world.

Frankly, I'm tired of the university context being overburdened by many meaningless administrative distractions; I'm tired of faculty complaining about having to produce research (our schedules obligate us to about 200 hours per year); I'm tired of the atomization of research into tiny little kingdoms that are insular rather than seeing their importance and relevance to the ongoing world; I'm tired of my interest in areas beyond my specialty being rebuffed by scholars because they seem to feel that the only access to their expertise should be limited to those with peer expertise (comparative studies can't possibly exist in this environment); I'm tired of seeing religion constantly relevant to the news with rarely to never seeing any religion scholar asked to comment; I'm tired of feeling apologetic about being a religion scholar (especially the assumption that I should exude something like piety), so tired in fact that I usually just make up something else when asked; I'm tired of the community of old white guys reading and talking about boring books; I'm tired of religious studies pedagogy being based on a self-cloning model.

Let's change!

### *Examples*

In my teaching career I've made a few attempts at moving the classroom experience for students beyond the traditional method of expecting students to passively receiving information or instruction. The question is not, I think, so much whether or not my efforts were successful as the issues and concerns they raised. Some involved very little digital technology but a great deal of student active learning; others were completely digital being delivered totally online. There isn't much of a forum for the presentation of teaching methods and experiments and how they come about, so I'll simply describe several of my experiences here should they be of interest.

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[36] http://www.davinciinstitute.com/

*Ritual Drama*

Many years ago I was deeply interested in the study of ritual. I had a conviction that something as experiential and enactive as ritual could not be adequately understood simply by reading ritual theory, ritual texts, and ethnographic descriptions of ritual. This would be like studying music by studying music theory, reading musical scores, and descriptions of musicians playing without ever hearing the music. I've used this analogy often, especially in teaching dancing, and I continue to think it appropriate.

The issue I faced had to do with how to engage students in some experiential sorts of activity without creating more harm than good, and without becoming just plain weird. I looked at a couple models: Ronald Grimes's teaching ritual and that offered by Victor Turner and Richard Schechner. Grimes tended to be the ritualist for his students; he constructed ritual that would engage students in ritual processes that would appear and feel real. Turner and Schechner, working together in the 1970s, on the other hand used more of a "drama" approach where they used Turner's knowledge of the Ndembu and Schechner's knowledge of drama to engage students in what might be termed ritual theater. Students followed the scripts of an actual people and used quotidian materials as substitutes for ritual objects. It was all done in a studio setting.

I was frankly terrified to even attempt Grimes's approach because I felt the student involvement was too personal and would tend to become about the student's personal lives rather than about learning about ritual. For me the approach was "too real;" the student involvement was "too personal." I felt that I didn't have the necessary training as a psychologist to deal with possible (I felt likely) outcomes nor the sense that I wanted to be a ritualist in this way. It was my desire to have students learn about ritual (separate from their deepest personal selves) through some active experiential means.

Of the Turner/Schechner approach I tended to feel that to "play like an Ndembu" was both slightly disrespectful while at the same time presumptuous. Students playing parts in an Ndembu ritual using a toilet brush for the molimo tree wouldn't teach them, I didn't think, about how the Ndembu experienced the ritual, nor could I see how it would exactly teach them about ritual and ritual theory.

My approach began with the idea that every community constitutes itself ritually. Now I'd think this more appropriately as "gesturally" constituted, but that was my view then. I decided that the members of the group would be the constructors and enactors of rituals they wanted to develop to establish and maintain themselves as a group and that group was simply a group of folks (including me) interested in the study of ritual.

I decided that my role as a teacher would never infringe directly on the group process, nor would I take a teacherly role during the class times. All of my input was

done outside the actual room where we met with information provided them usually at the end of each session. I decided that there would be a few group initiating acts that I'd institute as starters for the first meeting and at least one rule, which the group might or might not follow or change as it saw fit.

So on the first day of class, I arrived early and cleared the space of chairs. I set up a table near the door on which I placed a large bowl and a pitcher of water. As the first student entered I directed her to place her stuff on the floor and I poured water over her outstretched hands (catching the water in the large bowl) and then dried her hands with a cloth. As each student entered, this process was repeated with each pouring for others, and so on. The rule they knew was to be followed was "act first, talk later;" in other words, don't intellectually discuss or analyze what occurs before completing the exercise of acting. It is quite fine to discuss, argue, and negotiate procedures to be established and followed and the group had to fumble through learning how they made decisions. On the first day they first sat in a circle and I offered them a cup of tea presented communally (not done by me), mostly just to give them a starting point.

Prior to class they knew based on instructions given outside of class that the task for the first session was, through experience, to determine the character of the space and how they would enter, leave, and comport themselves while in the space. I refused to take a leadership role and when they would look to me for guidance or approval, I simply looked away.

What occurred then was that some students began to take different roles in the group and to establish relationships, but to begin to understand that they were doing so through the enactment of the community that was coming into being rather than by someone telling them what it would be. They recognized that to establish a "way" of doing things was part of the group becoming a group.

I supported the group outside of class by providing assignments for ritual tasks often accompanied by a set of readings that presented ritual theory, ritual texts, and ethnographic descriptions of actual cultures doing the same sorts of things. They were free to draw on these or not. The group soon decided that they would institute a ritually designated time and manner to include a discussion of these materials related to what they had done in their own ritual constructions.

Week by week I observed the emerging group and would be inspired by types of issues that I felt they would benefit from exploring based on their work. For example, after a few weeks they had developed clear patterns of entering the space; engaging and acknowledging one another; and setting up processes for initiating action, making rules, settling disputes and so on. I felt that it would be important to offer the growing solidarity a challenge so I constructed a task that involved the treatment of someone that broke ritual process, broke the rules. Later someone

wanted to visit the class and I used this as an opportunity to ask the group (remember always outside the time/space of the class) to determine how to deal with someone outside the group.

With each class the ritual process became more firmly established and "natural" for the group and served as the basis for taking on the challenges that the group faced. So it became increasingly an experience of ritual practice and a process of constructive ritual. The designated discussions that occurred in the sessions were important in helping students become conscious of the broader implications of what they were doing and, perhaps more importantly, they paid intense attention to the materials offered them as resources for their own actions and as guides to help them both solve community problems ritually as well as to understand the power of the ritual process. They full well understood that their rituals were secular rituals and that religious rituals have other dimensions, which they could discuss and comprehend, based on their experience.

Did this work? Certainly a good question and one I can't really answer in any definitive way. I know that it was a huge effort for me as the teacher of this class. I offered it only twice and I co-taught it with a colleague from the theater department. I can't imagine it was any less effective than a course on ritual theory with a few videos thrown in to relate it to actual cultural practice. I think it was much more. I do know that students found it engaging and powerful as a learning experience and the connection among students was enduring; I still have contact with several of these students. I sometimes found the process bordering on weird and occasionally slightly uncomfortable because there is a tendency in such environments for people to create and cross boundaries differently than those outside the group.

### *TheStrip*

In the spring term of 1996 a group of mostly graduate students approached me with a request. They had begun to feel highly constrained by the conventions of academic writing and they wanted to form a group to experiment with writing; to push into territory that was beyond what they felt they were allowed to do in their course work.

I was delighted and we set up a schedule so that each of us would write something for the consideration by the group and we would meet to discuss and critique each other's writings. We met a few times over the summer and the writings blossomed and became increasingly experimental and fascinating. The point was that we wanted to write as academics, but without being constrained by objectivist argument-to-conclusion conventions. One of the students was a young woman who was a double leg amputee with severe limitations in the use of her arms; all injuries she'd received just one year before in a fire. She wrote an amazing paper about the "differently abled" rather than the "disabled" and as a way of showing the experience she was feeling she inserted a blank opaque page between every one of

her typed pages. Her point was that to read her work one had to look through the opaque page; she was showing that she felt she had faded and disappeared, her voice was no longer heard, she was hidden somehow behind a veil, because of her particular "different" ability. This simple device allowed her to "show" something of her experience along with describing it and constructing a broader view of "ability" that rejected disability.

As we proceeded, I began to think about the potential of using the then newly emerging possibilities of the Internet for these students. I suggested it to them and they all immediately saw the potential and the challenge. What most attracted them was the possibility of engaging readers interactively rather than passively. To use a broad range of media and to demonstrate and create experiences for their "readers" that they couldn't do on paper. The problem was that none of us knew anything about computers or how to program such things. None of us owned computers that were powerful enough to even manage such tasks.

Yet the group was motivated and they went to work. They captured "down-streamed" computers from the sciences. They proposed a graduate level course on "Religion and the Internet" to the religious studies faculty and got it approved. They appropriated unused huge attic space (equipped with raccoons) in a campus building and quickly moved in desks and couches and tables. The group grew to perhaps 12 to 15 and while their first efforts were done for 3 hours of course credit, they had become so involved that virtually all of them continued on for a two-year period earning no additional credit. They established an online journal called "TheStrip"[37] and each one of us began to learn how to begin creating work in this environment.

The group met regularly and frequently and I have never ever been in a group as intensely devoted as well as boldly and frankly critical. Every person involved felt that all of the work done had to be innovative, theoretically grounded both in terms of the content of the subject as well as in terms of communications technology, and done well. Anything short of the best work was sharply criticized. The group took the project to an AAR meeting in Orlando and they made presentations to the A&S Dean as well as the director of the then newly forming IT administrative division.

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[37] When the students most centrally involved with this project graduated, I inquired of other students to see if there was sufficient initiative to continue the project. While most students knew about the project, only a few expressed interest, none on the level of those graduating. While this had been one of the most important experiences of my academic career (still is), I had no interest in continuing other than in terms of student initiative. As a parting gesture, many of those involved wrote a final note about the project and these were posted on a homepage that would serve something of a memorial to the project. It continues to be available at http://www.colorado.edu/religiousstudies/TheStrip/ .

Many of the students in that group got computer-related jobs when they graduated; several are now established faculty in religion. I've kept up with quite a few of them.

Most stunning about this group is that it was self-initiated self-motivated self-governed and done at first for credit, but mostly simply because of the experienced importance of it. When the project ended after two years I asked participants how much time they estimated they had devoted to it and many said at least 20 hours a week year round throughout the two-year period.

I think this project is exemplary of the great potential of a "learning community" on a single-leveled medical school model.

### *Dancing Culture Religion*

A byproduct of one of my mid-life crises in the mid 1980s was my taking a jazz dance class leading me to discover how remarkably unfit I was but at the same time to introducing me, after decades of sedentary academic dormancy, to the buzz one gets from simply enjoying moving. I quickly hit the gym and became a fanatic at aerobic dancing. This led me to dancing hip hop (in gyms it was called "cardio funk"), which led me to the precarious situation of missing faculty meetings because of my addiction. To save my job I eventually realized, especially since dance was so much of my experience studying Native Americans, that there wasn't any reason I couldn't study dancing so I immediately collected reams of articles and piles of books on dance cultures around the world. Realizing that this was an enormously rich field of study virtually untouched in religious studies, I offered my first "Religion and Dance" class somewhere in the early 1990s in a summer session. We sat and read texts about dancing!

One day that first summer we were reading about some dance done in Greek Orthodoxy when one of my students spoke up, "I actually know this dance. Do you want to do it?" My god I was hit like a thunderbolt. How on earth could one even think of studying and teaching dancing without actually dancing? After all, wasn't the whole reason I wanted to teach it was because I was obsessed with dancing? I quickly found several other dancers of dances we were "reading" and brought them to this carpeted room where we shoved back the chairs so we could both see the dance demonstrated and also try out our dancing feet.

In several years this class grew to a consistent 90 students. It was two semesters long covering around 25 different dance traditions from all over the world. The class consisted of lecture on Mondays and Wednesdays and studio on Fridays. Dancers from the cultures studied taught all the studios; they were artists and dance teachers. The amount of talent and cultural resources available was astounding to me. Given that I found so many dancers teaching out of living rooms and nasty rented garages, I founded a school, Bantaba World Dance and Music, and invited them to teach. This was a time before 2001 and I was able to get three-year cultural

exchange visas for more than 20 artists from cultures all over the world—Ghana, Mali, Senegal, Bali, Colombia, Brazil, India—to come to Colorado. Many have managed to remain and continue to live in the area today.

I continued teaching the course in that format so long as I was actively travelling and studying dances in new cultures. As it became stable it eventually (mid 2000s) came to be of decreasing interest to me. I have since taught versions of it in a single semester constantly changing format, sometimes more theoretically based, other times more culturally based, but there have always been studios on Fridays. In recent years I teach them and I focus on a single dance form, *rueda de casino*, in a style that I have developed (see below). I know that this is a different experience for students than experiencing performances and dance classes from artists from a dozen countries, but it gives them a more in-depth experience of learning a single dance, which has some advantages. This dance also is amazing at creating community among a large group of people. The result is that the whole class is transformed by their dancing experience. I'm convinced that because they are experiencing one dance in some depth they are engaged somewhat differently in terms of their gestural postural prosthesis nexus of learning.

As I look back on this course (or collection of courses) from the perspective I'm presenting here I think that, while it exemplified a classic Cartesian split, it nonetheless shifted the learning experience of the students who took this class. I think that on completion of this course they had a completely different understanding of dancing and the place and significance of dancing in religions and cultures throughout the world. I believe that they also learned something about their own western typically Christian religion and culture (exceptional in its marginalization of dancing) that was transformative. Many of these students also learned something about themselves. Most importantly for the concerns here is that what students learn is not propositional knowledge, it is not simply information, it amounts to a feeling kind of knowing that is won through experience, through movement, and that kind of knowing transforms who one is in some core and abiding sense.

As I have thought about my teaching of this cluster of courses over the years, I know that my colleagues have never taken the studio aspect of it as serious education. I suppose that I got by doing it because of my senior faculty status. Yet, the regret I have is that I couldn't figure out a way to do every aspect of the course in an environment where students could and were required to engage in extensive and challenging movement as essential to their learning. I'm sure that such an approach is possible, yet, at least at this point in history, our methods of transposing dancing requires some significant presence of print and audiovisual materials. To forego these seems to lose the depth and complexity of the forms that, in situ, would be gained not through a few hours of dancing, but through decades, indeed centuries, of living out a religious cultural dance tradition.

I can see the potential; I can imagine a future better served; I don't think we are yet there.

### *Salsa Dancing*

Many years ago I was approached by the principal of a high school to teach a salsa dance class as part of the regular curriculum in a seminar program for a progressive high school. I was reluctant to do so believing it would require constant effort just to keep the students engaged. Yet, primarily because I felt a call to community service, I agreed to do so.

I developed a form of Cuban salsa called *rueda de casino* (a form of salsa danced in a circle with partners with called moves and featuring circulation among partners) to accommodate any gender mix and a performance setting. My innovations were simple, but have a major effect. All dancers learn to lead and to follow and the shift in role can take place while dancing. The circle can be oriented to the center (as is the standard since it is a social dance) or to the outside (my innovation), which shows well for performance. These simple innovations allow for any group, no matter the number or gender mix, to dance together. And, as I developed this form and gained experience in it, I began to realize the many other benefits: ambidextrous movement, cross lateral movement, movement shifting within the orientation of space. I did a good deal of research on teen development and the importance of such movement to human development and discovered that it has remarkable contributions to make. These contributions and details on the essential pedagogical principles are discussed in a current article and in an e-book I am preparing.[38] I teach this dance form to my "Dancing Culture Religion" class at CU in weekly studio sessions. I have over a dozen years experience with hundreds of young people.

This dance form and the pedagogy involved do not have any use of electronic digital devices, but I have included it here because I think it indicates an enormous potential for the development of pedagogy and the entire way to conceive of education. As online delivery of education increases and as student learning of information and techniques becomes increasingly monitored by electronic media devices, I believe that students will actually achieve more quickly and efficiently the curricular goals we presently have. Interestingly this will present "schools" with a basic problem: what to do with students for the balance of the time they spend in school.

My suggested solution is to complement the education that is EDD enabled and monitored with intensely engaging movement activities such as this salsa class. It is effective in creating and maintaining full-bodied acuity and it has tremendous

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[38] "Dancing: Creative Healthy Teen Activity" an article in press and *Dancing to be Smart* (an e-book in preparation)

impact on the social and developmental skills that involve movement and touching in on demand challenging situations. This sort of activity as required in schools offers students the intensely focused EDD-free activities that help keep the gestural tendencies connected with these devices in something like balance.