

## **Ploughshares of Change: Science and Westernization in Missionary Thought in Thailand**

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The American Protestant missionary role in nineteenth and early twentieth-century Thai Westernization<sup>1</sup> appears paradoxical. From the first the missionaries declared that they came to Thailand for only one purpose, to convert the Thai people to Christianity and Christianize the Thai nation. In actual fact, however, they engaged for decades in modernizing activities which contributed little if anything to that stated goal, while at the same time they devoted relatively less time to more direct proselytization or, to use their own term, evangelization. This appears in hindsight to be a contradiction, one which raises questions about the motivations which informed the Protestant missionary role in Thai Westernization. If they came to convert the Thai people to Christianity, then why did they spend so much time in activities which did not seem to bring in very many converts? What was the rationale for missionary Westernization?

The two American Presbyterian missions in Thailand, the “Siam Mission” (founded 1840) in central and southern Thailand and the “Laos Mission” (founded 1867) in northern Thailand, provide particularly clear and significant examples of this paradox between stated goals and actual activities. These missions, united in 1920 as the American Presbyterian Mission, not only dominated Protestant missions in Thailand from the 1860s until the 1960s, but they also established schools, hospitals, clinics, leprosariums, and printing presses. They promoted women's education, the teaching of English and science, public health measures, rural medical work, literacy education, the modernization of the central and northern Thai scripts, and numerous particular programs which consciously used Western ideas and techniques. These Presbyterian missions, in sum, imported an array of Western technologies and techniques to support their work, and their missionaries gained a reputation as scientists,

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<sup>1</sup>The terms “modernization” and “Westernization” are used in a general rather than technical sense. “Modernization” refers to all of those historical processes, by which Thailand has been drawn into the “modern” political, sociocultural, and economic world system. “Westernization” refers more specifically to historical processes which have introduced European-derived learning, ideas, values, tastes, technologies, institutions, and products into Thailand.

educators, and technologists who made a measurable contribution to Thai modernization both nationally and regionally, particularly in the North.<sup>2</sup>

It is clear from their own writings that the Presbyterian missionaries thought that their modernizing activities would promote the “conversion” and Christianization of Thailand. Dr. Samuel R. House stated as much in an 1850 letter describing his efforts to secure permanent land for the Siam Mission. He recounted how he had spent more than three years looking for land on which to build mission homes, establish a school, and start a press; and thereby lay the foundation for bringing “this heathen people” to Christ.<sup>3</sup> The almost casual manner in which he made this statement suggests how readily he assumed that the founding of a school and press in those early years of Presbyterian work was a necessary first step towards converting the Thai people. Sixty-three years later an unsigned article in the Laos Mission's quarterly, the *Laos News*, stated that the work of the Presbyterians in Thailand was “...the carrying of the Gospel of Jesus Christ to all the people and as aids and outgrowths of this work hospitals, dispensaries, [an] asylum for lepers, schools and churches are organized and established.”<sup>4</sup> The Rev. Chalmers Martin, a missionary in the North, put the matter more broadly in his comments on northern Thai social conservatism. He wrote,

It is this tenacity of adherence to what has been, which, in Siam as in other Eastern lands, makes railways and telegraphs veritable John the Baptists, preparing the way of the Lord. As they run the plough-share of change across old-established customs, the missionary may drop his seed of truth, into the freshly-turned furrow.<sup>5</sup>

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<sup>2</sup>See David K. Wyatt, “Samuel McFarland and Early Educational Modernization in Thailand, 1877-1895,” in *Felicitation Volumes of Southeast-Asian Studies*, vol. 1 (Bangkok: Siam Society, 1965): 1-16; Prasit Pongudom, “The Transmission of Western Learning into Thai Society: A Study of the Role of Protestant Missionaries, 1828-1868” (M.A. thesis, Chulalongkorn University, 1990) [in Thai]; Richard L. Popp, “American Missionaries and the Introduction of Western Science and Medicine in Thailand, 1830-1900,” *Missiology: An International Review* 13, 2(April 1985): 147-157; Herbert R. Swanson, “This Heathen People: The Cognitive Sources of American Missionary Westernizing Activities in Northern Siam, 1867-1889” (M.A. thesis, University of Maryland, 1987); and Herbert R. Swanson, “Advocate and Partner: Missionaries and Modernization in Nan Province, Siam, 1895-1934,” *Journal of Southeast Asian Studies* 13, 2(September 1982): 296-309.

<sup>3</sup>House to Lowrie, 10 December 1850, v. 2, Records of the Board of Foreign Missions, Presbyterian Church U.S.A. Microfilm copy at the Payap University Archives, Chiang Mai [hereafter cited as BFM].

<sup>4</sup>Under “Personal and Otherwise,” *Laos News* 10, 2(April 1913): 7. [hereafter cited as LN].

<sup>5</sup>Chalmers Martin, “Some Difficulties and Encouragements in Missionary Work Among the Laos,” *Woman's Work for Woman & Our Mission Field* 2, 5(May 1888): 116.

Martin and his colleagues in both missions, thus, claimed a strong link between modernizing social change and the conversion of Thailand to Christianity. They believed that the one led to the other.

The fact that the missionaries believed that a link existed between modernizing and Westernizing activities and their evangelistic purposes still does not explain why they saw such a connection. Their strategy of using Westernization for evangelistic purposes failed to achieve that total conversion of Thailand for which they worked and prayed. to the point that even today Protestants account for only a tiny fraction of the total population. Even so the Presbyterians continued to pursue their strategy of evangelism by modernization for decade after decade well into the twentieth century. Why, then, did the missionaries believe that a connection existed between all of the Westernizing activities they carried out and their goal of converting Thailand to Christianity?

The Presbyterian missionaries' conception of science and its relationship to religion provides one important key to understanding why they persisted in their modernizing activities for as long as they did. Calvinists, including American Presbyterians, had long viewed science as an ally and friend useful to the glorification of God and inculcation of piety. The Presbyterian missionaries, thus, brought a *pious* devotion to science with them to Thailand which they expressed through the dissemination of Western ideas, technologies, and values as a part of their crusade to convert Thailand to Christianity. Their theological and scientific-technological heritage assured them that religious and social change, Christianity and civilization, went hand in hand and that the Christianization of Siam both required and resulted in its Westernization.

The "modern" mind generally associates the scientific revolution with the emergence of pluralism, secularism, and an intellectual environment which relegated religion to the fringes of thought. It has largely forgotten that earlier generations of scientists were frequently pious Christians who saw their science as contributing to a better knowledge of the benevolent, orderly, and loving Creator God. Science actually grew out of the strongly religious environment of early modern Europe, and Calvinistic beliefs, in particular, facilitated the emergence of its naturalistic and mechanistic world view. Calvinists, including those in England's North American colonies, believed God's providence provided rational order to a reasonable universe, emphasized one's life in this world,, and held that God "called" individual Christians to "worldly" duties. Calvinists, thus, concerned themselves with what

they took to be empirical, rational matters regarding the activity of God and the certainty of salvation in this world. Seventeenth century Calvinists gave science a prominent place in their educational institutions, and they predominated among both scientists and those who supported the advancement of science. Science, they believed, taught the same truths as revealed religion and its practice benefited humanity spiritually as well as materially.<sup>6</sup> Nineteenth-century American Calvinists, including the Presbyterians in Siam, thus, inherited a deep regard for science. American scientists frequently emphasized the religious value of their research, stressed the harmony between science and religion, and argued that the study of science reinforced religious belief. Science served as the “handmaiden” of theology.<sup>7</sup>

The European and American Enlightenment further strengthened the American Calvinistic inclination towards science. The expanding dominance in America of the Scottish Enlightenment philosophy, Common Sense Realism, particularly reinforced American Protestantism's love for and trust in science as an aid to religious faith. This philosophy, in opposition to the philosophical idealism of Hume and others, affirmed the substantial, independent reality of the world of the senses. It claimed to prove the reliability of the senses in providing true knowledge by demonstrating the existence of an innate “common sense” found in all of humanity. It argued that this God-given common sense informs us of certain basic truths of reality, including the truths of the Christian religion, which we need in order to function in daily life. Americans closely associated Common Sense Philosophy with science, and American Protestants frequently referred to science as “Baconianism” believing that the British thinker, Francis Bacon (1561-1626), first propounded the inductive scientific method.

Presbyterians, in particular, took up common sense realism in the nineteenth century as an excellent tool for defending the Christian faith from skeptics and heretics. Presbyterian thinkers, beginning with the Rev. John Witherspoon (1723-1794), played a key role in the popularization of common sense realism, which spread rapidly throughout early nineteenth-century America and

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<sup>6</sup>Richard S. Westfall, *Science and Religion in Seventeenth-Century England* (New Haven: Yale University Press, 1958), 5-8; and Robert K. Merton, “Puritanism, Pietism and Science,” in *Science and Religious Belief: A Selection of Recent Historical Studies*, ed. C. A. Russell (London: University of London Press, 1973), 25-27.

<sup>7</sup>George H. Daniels, *American Science in the Age of Jackson* (New York: Columbia University Press, 1968), 48-53

achieved a deep and wide influence.<sup>8</sup> The Presbyterian Church also served as a chief agent in the popularization of common sense philosophy, teaching it in its colleges and seminaries and disseminating its tenets through its pulpits and publications. Princeton Theological Seminary in New Jersey played a particularly important role as the Presbyterian center of Baconianism and Scottish realism. Beginning with the seminary's founding in 1812, a series of prominent orthodox Princeton theologians articulated and elaborated a "Princeton Theology" based on philosophical realism and advocating Baconianism. Not insignificantly, Princeton Seminary and allied Presbyterian seminaries, notably Western Theological Seminary in Pennsylvania, produced the bulk of theologically trained missionaries sent to Thailand up to World War II.

Nineteenth-century Presbyterians, drawing on their Calvinistic-Enlightenment heritage, emphasized a number of key points regarding the relationship of religion and science. They believed that God revealed divine truth in two forms, the Bible and Nature, and that these two forms must conform to and reinforce each other because they reveal the one Creator and Sustainer of reality. Science and revealed religion could not oppose each other because God would not give contradictory revelations. They believed that "inductive science," that is Baconianism, provided them with a universally applicable means for attaining secure knowledge. The inductive method proceeded by a careful accumulation of "facts" and emphasized these unchanging and absolute facts as the building blocks of knowledge. After a sufficient gathering of such facts, the scientist could eventually deduce principles or laws which explained the facts under study.<sup>9</sup> Presbyterian Baconians believed that both theology and the natural sciences used this method in the same way to discover the truths of their respective fields. The Bible, like any field of the physical sciences contained "disorganized" facts which the "biblical scientist" had to accumulate, order, and generalize in the same manner as an astronomer studying the facts of the heavens. In whatever field—be it the physical sciences, the social sciences, or theological sciences—the scientist would always proceed in this same manner.<sup>10</sup>

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<sup>8</sup>Herbert Hovenkamp, *Science and Religion in America 1800-1860* (Philadelphia: University of Pennsylvania Press, 1978), 10.

<sup>9</sup>See Samuel Tyler's series of articles in the *Biblical Repertory and Princeton Review* which details the theory and applications of the inductive method, esp. "The Baconian Philosophy," *BRPR* 12, 3(July 1840): 350-77; "Psychology," *BRPR* 1 5, 2(April 1843): 227-50; and, "Baconian Philosophy," *BRPR* 1 5, 4(October 1843): 479-506.

<sup>10</sup>See E. R. Craven, "The Inductive Sciences of Nature and the Bible," *Presbyterian Quarterly and Princeton Review* 6, 24(October 1877): 673-88; "Baconianism and the Bible," *Southern Presbyterian Review* 6, 2(October 1852): 226-253; and "The Harmony of Revelation and

American Presbyterians in general and their Thailand missionaries in particular, as heirs to Baconian Calvinism, grew up with a clear sense of what they meant by the term “science” and viewed science and religion as twin fields of knowledge, separate and yet related and similar. They *naturalized* theology in their belief that Christian doctrines, such as the Trinity or the Incarnation of Christ, carried the same weight of factuality and truth as natural laws.<sup>11</sup> Scientific and religious knowledge represented the same order and method of knowing. Presbyterian Baconians also *sacralized* natural science. Science led them, they avowed, to a sense of awe and worship in the face of the majesty of the Creator and the benevolent concern with which God surrounded humanity through the beauty and wonder of nature. Nineteenth-century Presbyterians would have actively rebutted the more recent view that religious thought and science, at best, have nothing to do with each other and are even opposed to each other.

The Presbyterian missionaries who served in the Siam and Laos Missions between 1840 and the 1920s brought this understanding of science with them, and the Baconian naturalization of theology and sacralization of science made of science a key ally in their drive to convert Thailand. They supposed a unity of scientific knowing and religious faith which would lead Thailand from science and modernization to Christianity. The Rev. Daniel McGilvary, perhaps the most influential and best known Presbyterian missionary to work in Thailand, aptly stated the missionaries’ perception of that role in his reflections upon his first year in Chiang Mai in 1867. He stated, “...we were not merely teachers of religion, though primarily such. We could often, if not usually, better teach religion—or, at least, could better lead up to it—by teaching geography or astronomy. A little globe I had brought along was often my text.”<sup>12</sup> In 1869 he argued that science and Christianity are “so intimately connected that they cannot be separated. They are both revelations of God, the one in His

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Natural Science,” *Southern Presbyterian Review* 5, 1(July 1851): 93-111.. Also see Theodore Dwight Bozeman, *Protestants in an Age of Science: The Baconian Ideal and Antebellum American Religious Thought* (Chapel Hill: University of North Carolina Press, 1977); and, Hovenkamp, *Science and Religion in America*.

<sup>11</sup>The term “naturalization” is taken from Bozeman, *Protestants in an Age of Science*, esp. 138-43.

<sup>12</sup>Daniel McGilvary, *A Half Century Among the Siamese and the Lao* (New York: Revell, 1912), 79.

word, the other in His works.”<sup>13</sup> McGilvary, thus, accepted both the theological concept of a dual revelation and the idea that science had a sacred role to play. He equated his globe with the Bible as being a “text” for his evangelistic work. And as a good Calvinist, he had no doubt as to which was the superior revelation. He once described the relationship between Christianity and science as that of “mother and daughter.”<sup>14</sup> Dr. William A. Briggs of Chiang Rai underscored that relationship between science and Christianity by terming Jesus Christ, “the great dreamer, the great thinker, the great builder, the one who laid the rock foundation for true science.”<sup>15</sup>

The Presbyterian missionary commitment to science was not simply opportunistic or narrowly pietistic in a negative sense of the word. The missionaries believed in science as the best way to understand the world around them, and in a few cases they consciously sought to advance the boundaries of scientific knowledge. Dr. House, who served in Thailand from 1847 to 1876, had received a strong grounding in the sciences through his medical education, belonged to the American Oriental Society, and corresponded with overseas naturalists. His contributions to natural science were recognized by the naming of two varieties of sea shells after him.<sup>16</sup> The Rev. Jonathan Wilson, another influential Presbyterian missionary who worked in Bangkok and northern Thailand from 1858 until his death in 1911, also had a strong naturalistic bent and developed a close relationship with a “rationalist” German naturalist who once visited Chiang Mai. His missionary colleagues considered Wilson to be a “deep thinker” in the natural sciences.<sup>17</sup>

“Science” meant “Baconianism” for these missionaries and Baconianism meant a measured, deliberate gathering of “facts” as the building blocks of knowledge. Science was a way of thinking as much as it was a body of knowledge. The Rev. William C. Dodd, a diligent missionary evangelist who worked under the Laos Mission from 1886 until 1919, exemplified the missionaries’ commitment to the Baconian, inductive manner of thinking. In the late 1890s the Laos Mission entered into a protracted dispute with American Baptist missionaries in Burma over which denomination could best

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<sup>13</sup>Daniel McGilvary, “Medical Missions and Missionary Physicians - No. V,” *North Carolina Presbyterian* NS 2, 81(21 July 1869): 1. [hereafter cited as NCP]

<sup>14</sup>Daniel McGilvary, “For the Little Folks,” *NCP* NS 7, 356(4 November 1874): 4.

<sup>15</sup>[William A. Briggs], [Address to the Laos Mission, December 1903], v. 272, *BFM*. [Letter #67]

<sup>16</sup>George H. Feltus, *Samuel Reynolds House of Siam* (New York: Revell, 1924), 66-68.

<sup>17</sup>E. P. Dunlap, “Bi-monthly Letter. Tap Teang Station, Siam,” August 1911. Photocopy in the Research Papers of Maen Pongudom at the Payap University Archives; and W. A. Briggs, “Father Wilson,” *LN* 8, 3(July 1911): 184

evangelize the Shans of Kengtung State and the Tai people of Yunnan Province, China. In order to prove that those peoples were similar to the “Laos” of northern Thailand and therefore rightly within the Presbyterian sphere of responsibility, Dodd and his Presbyterian colleagues undertook a series of intensive investigations into the ethnicity of the Tai people. He gathered an impressive array of “facts” from his own research, that of others, and secondary sources. He took extensive fact-finding tours during which he conducted numerous interviews, gathered word lists, and collected facts concerning dress, literacy, customs, and language. A missionary associate once described how on his tours Dodd would take out a note book whenever he stopped for a rest and jot down his impressions and whatever facts he had collected to that point. His associate observed that from these notes poured forth a “deluge” of data advocating the expansion of Presbyterian missions among the “Tai” people which Dodd directed towards the Presbyterian Board of Foreign Missions in New York City. Dodd, posthumously, achieved something of a scholarly standing for various publications based upon these same notes.<sup>18</sup>

Dodd thought like a Baconian. He also argued like one. He diligently, patiently collected a multitude of carefully recorded “facts” which he correlated in order to arrive at general principles. In this way he discovered the “Truth” of the issues involved in his dispute with the Baptists. Dodd, in taking this approach, became the chief spokesman of the Presbyterian missionaries' drive for expansion, their champion against the Baptist in Burma and the Presbyterian Board in New York when either stood in the way of that expansion. No one questioned his attachment to “scientific” methods of collecting and arranging data. Eula Van Vranken of the Laos Mission, illustrates the same Baconian perspective. In setting down some of her observations as a new missionary, she stated in 1907 that the experimental sciences conducted a great deal of laboratory work and sensory observation before deducing laws or drawing conclusions. She then related that since her arrival she had been using her eyes, ears, and powers of questioning and had arrived at some conclusions as a result.<sup>19</sup> For Van Vranken, as well as Dodd, the personal acquisition of knowledge involved a process similar to that of

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<sup>18</sup>Howell S. Vincent, “A Missionary Statesman,” *New Era Magazine* 26, 6(June 1920): 476, 479; Dodd. *The Tai Race* (Cedar Rapids, IA: Torch Press, 1923); and W. Clifton Dodd, “The Relation of Chinese and Siamese,” *Journal of the North China Branch of the Royal Asiatic Society* 51(1920). See also Herbert R. Swanson, “The Kengtung Question: Presbyterian Mission and Commity in Eastern Burma, 1896-1913,” *Journal of Presbyterian History* 60, 1(Spring 1982): 59-79.

<sup>19</sup>Eula M. Van Vranken, “Siam and Laos Impressions,” *LN* 4, 1(January 1907): 17-18.

the sciences, a deliberately sensible process involving learning from sensory data. Van Vranken too thought like a Baconian.

The members of the Siam and Laos Missions found nothing to fear in science. As they understood it, it indeed had a formative influence upon the way they viewed the world and gained knowledge. At the time of McGilvary's death in 1911, one of his eulogists noted with approval that McGilvary had a reputation for his "reverence for the truths of science" and "respect for the discoveries of research." The "advanced theories and iconoclastic speculations of extreme criticism" left him "unmoved and unannoyed."<sup>20</sup> The Rev. Roderick Gillies reflected this same mentality when he described "the old orthodox way" of preaching the Christian message by emphasizing human sin and the need for salvation as "the scientific way" of preaching.<sup>21</sup> Gillies did not consider associating such concepts as orthodoxy, sin, and salvation with science as a confusion of categories. For him "scientific preaching" simply meant preaching which revealed the truth of the real world, which truth accorded with sensible, divinely created human nature.

While Dodd, Van Vranken, Gillies, and McGilvary, as well as House and Wilson, were not scientists, they did have a genuine inclination towards science as they understood it. They valued science as a useful way of knowing and explaining their world. At the same time, they and their associates were largely practical men and women with a driving vision to Christianize as well as convert the whole Thai nation, and science came readily to mind as an instrument for that purpose. The Presbyterians in nineteenth and early twentieth-century Thailand, as a consequence, engaged in what amounted to "Baconian evangelism," which evangelism sought to utilize the fruits of Western science and technology for the ultimate goal of creating a Christian Siam.

The Rev. John Culbertson, working in Bangkok, articulated in 1876 the missionary rationale for Baconian evangelism. Referring to the curriculum taught in the Siam Mission's schools, he noted that it had a necessarily negative task, namely, "...revealing scientific truth, such as geography, geology, and astronomy, thus showing by the contrast how much of Buddhism is monstrous absurdity; 'old wives fables.'" Culbertson went on to avow that intelligent Thai already knew that their

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<sup>20</sup>S. C. Peoples, "Rev. Daniel McGilvary, D. D. An Appreciation," *LN* 8, 4(October 1911): 118.

<sup>21</sup>Roderick Gillies, "The Laos Evangelist," *LN* 4, 1(January 1907): 26.

traditional cosmology was false and wrote, "When Buddhism ceases to command [the] confidence of sober reason, it must then cease to inspire reverence and faith." Culbertson asserted that since Buddhism and its Scriptures had been proven false in matters of science they couldn't be trusted in matters of religion either since they might be equally false there as well. One can't pin one's hope of salvation on such uncertainties. Culbertson concluded by writing that while he didn't expect the end of traditional Thai religion would automatically lead to the establishment of Christianity, it had to be removed from the scene before Christianity could take its place.<sup>22</sup>

The Presbyterian missionary use of science as an evangelistic tactic or tool began with a sharp distinction between scientific truth and traditional Thai beliefs. On the one hand, Culbertson placed Thai cosmology into the category of absurd superstitions and in doing so voiced a common complaint of the Presbyterian missionaries in Thailand. Jane McFarland, writing from Phet Buri in 1867, lamented how easily the Thai people fell into creating "idols" even out of shadows on rocks and observed that they lived in a "night of fearful darkness, superstition and idolatry."<sup>23</sup> This "fearful" condition of living had significant consequences for their whole understanding of reality. Lillian Curtis stated of them in her 1903 book, *The Laos of North Siam*,

Thus it may be seen that there is no rational perception of natural phenomena, and that reasoning faculties are necessarily kept in bondage and subjection to the wildest flights of fancy and imagination. The secrets of nature are not investigated, and no poor Roger [sic.] Bacon has ever arisen among the people to begin research and prove that natural phenomena are not sorcery and magic.<sup>24</sup>

Dr. M. A. and Mrs. Sarah Cheek provided one of the clearest missionary critiques of the supposed superstitions and credulity of the northern Thai in an article they published in 1884. They described the northern Thai as a "benighted" people who substituted supernatural imaginings in place of the rational perception of natural causes. They likened the northern Thai world view to the "pitiful gropings" of Europe prior to the Protestant Reformation and concluded, "Average Laos [northern Thai]

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<sup>22</sup>John N. Culbertson to Irving, 10 November 1876, v. 3, *BFM*. This discussion necessarily focuses upon the missionaries' perception of Thai cosmology and belief systems. For views "from the other side" see Craig J. Reynolds, "Buddhist Cosmography in Thai History, with Special Reference to Nineteenth-Century Culture Change," *Journal of Asian Studies* 35, 2(1976): 203-20; and Prasit Pongudom, "Transmission of Western Learning."

<sup>23</sup>J. E. McFarland, "The Image of a Shadow," *Foreign Missionary* 25, 9(February 1867): 248.

<sup>24</sup>Lillian Johnson Curtis, *The Laos of North Siam* (Philadelphia: Westminster, 1903), 230. Curtis meant Francis Bacon rather than the much earlier Roger Bacon (1214?-1294).

credulity-and the Laos are all average-will accept any absurdity, however monstrous, provided only it be supernatural.”<sup>25</sup> The Thai people, thus, suffered under a terrible cognitive bondage to their fancies and imaginations which prevented them from seeing the real world as it actually is. The Rev. James Van Dyke of the Siam Mission, drove this point home with his Baconian observations that the Thai had almost forgotten how to think. They lacked a spirit of inquiry, blindly followed tradition, had developed no habits of searching for truth, and showed no desire for improvement.<sup>26</sup> For Van Dyke too, the hope of the Thai people lay in their throwing off lethargy and tradition, the old ways, and their seeking after “improvement” and “truth” through a spirit of inquiry.

Culbertson, to return to his comments, saw in rational scientific truth the antithesis of Thai superstition and one means for achieving the “liberation” of the Thai people from superstition and ignorance. He emphasized the importance of “sober reason” to religious faith, observing that when a religion no longer commends itself to reason a loss of confidence in that religion necessarily follows. It can no longer inspire people with a sense of faith and reverence. Culbertson’s faith in reason paralleled his rejection of superstition and neatly coincided with his reliance on science as a tool for Christian proselytism. It also reflected his Baconian heritage, which emphasized the rational acquisition of knowledge. At the same time, Culbertson’s statements that religious confidence depends upon its ability to convince sober reason recapitulates the centuries long tendency of “scholastic” Calvinism to stress the importance of reason and rational suasion for attaining a solid religious faith.

The Presbyterian missionaries defined the means by which people were liberated from heathenism, that is conversion, as a largely rational, Baconian process leading from careful study, discussion, and reflection to an apprehension of certain fundamental truths. Study led to conviction, and conviction led to religious belief. The missionary interpretation of the conversion of Nan Inta, the first baptized Christian convert in northern Thailand, aptly summarized their vision of conversion by inductive reason. Not long after the McGilvays first arrived in Chiang Mai in 1867 curiosity and a cough brought Nan Inta to visit them. He sought medicine for his cough and information about

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<sup>25</sup>Dr. and Mrs. Cheek, “Superstitions of the Laos,” in *Siam and Laos as Seen by Our American Missionaries*, ed. Mary Backus (Philadelphia: Presbyterian Board of Publication, 1884), 504-05.

<sup>26</sup>J. W. Van Dyke to Irving, 12 January 1870, v. 3, *BFM*.

Christianity to satisfy his curiosity. Nan Inta returned to visit the McGilvays often and entered into an extended debate with McGilvary concerning the shape of the earth, geography, the nature of eclipses, and other points of science and cosmology. “What he heard,” McGilvary wrote, “was as foreign to all his preconceived ideas as was the doctrine of salvation from sin by the death of Christ.” Nan Inta adhered to his traditional northern Thai cosmology, however, until McGilvary correctly predicted an eclipse for 18 August 1868, which prediction proved to his satisfaction that Western science provided a truer picture of the world than his own former views. He then took up an intensive study of Christianity. McGilvary claimed that “the truth” dawned on Nan Inta only slowly, but he came to a full acceptance quickly after he completely understood it. As he walked in the rice fields one day, mulling over what he knew of Christianity, Nan Inta reputedly suddenly exclaimed, “*maen ta*” (It's true!). McGilvary baptized him in January 1869.<sup>27</sup>

Whatever might have gone into Nan Inta's own thinking, McGilvary saw clear signs of a classic Baconian conversion based on a rational, carefully considered, and well-studied perception of natural and religious truths. Nan Inta also modelled for McGilvary the role of science as a tool for “saving” the superstitious northern Thais. Science undermined Nan Inta's confidence in his old religion and pointed to the truths of Christianity, which McGilvary took to be of the same order of strangeness to Nan Inta as those of science. McGilvary used this Baconian, scientific approach to evangelism on a number of other occasions, in each instance seeking to use scientific facts, such as the fixity of the North Star, to prove the reasonable truthfulness of Western science and Western Protestant Christianity.<sup>28</sup> The Presbyterians, thus, took it as their task to free people living under the bondages, as they saw it, of unreasonable superstitions from those superstitions. They used scientific thinking and Western learning as one means to that end.

To return again to Culbertson, he drew on his contrast between the supposed superstitious nature of Thai religious thought and the rationality of Christianity to make yet another point. He concluded that since the Thai Scriptures had proven unreliable in matters of science they must be equally unreliable as guides to religious truth, and he assumed that perceptive Thais would see this

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<sup>27</sup>McGilvary, *Half Century*, 96-98; and McGilvary, “Our First Convert,” *NCP NS* 2, 85(18 August 1869): 4.

<sup>28</sup>McGilvary to Irving, 28 February 1873, v. 3, *BFM*; McGilvary, letter dated 21 February 1876, *NCP NS* 9, 440(14 June 1876): 4; and McGilvary, “The Laos Mission,” *NCP NS* 10, 485(25 April 1877): 1.

and, like Nan Inta, loose their faith in their former beliefs.<sup>29</sup> He also assumed that Christianity's Scriptures did not contradict the truths of science and that Christianity, therefore, provided the only viable religious alternative for the Thai people. He grounded his comments and assumptions in a thoroughly Princetonian and common sense view of the Bible and the nature of truth itself.

The Princeton Theology believed that the Christian Scriptures contained clear "evidences" of their divine origin because they accorded with the human perception and experience of what something of divine origin should be and, thus, would cause the rational, objective reader of any nation, race, or age to accept them as divinely authored. That is, the Bible inspires a rational conviction of its own truthfulness.<sup>30</sup> The Princeton Theology equated the rational objectivity of the Bible with its authority to the extent that the contents of the Bible must be rationally convincing if they are to be believed. And in order to be convincing, they must be without error since, according to the Baconian principles of Common Sense Philosophy, all truth is one and by definition cannot involve contradiction or error. Therefore, the Bible must be factually true in all fields of human knowledge including the sciences.<sup>31</sup> The Princetonians, in short, took a view of the Bible which emphasized not the events it recorded but the literal contents of its words. They viewed the Bible as containing vital *information* for the future state of humanity. They insisted, moreover, that one must either entirely accept the full reliability of the Bible or entirely reject it as a lie and a forgery.<sup>32</sup>

The Presbyterian missionaries applied these same principles to the Thai Scriptures and, in consequence, found the supposed scientific accuracy of the Bible and inaccuracy of those Scriptures significant to their work and message in Thailand. Cort observed of King Mongkut's revisions of religious texts to bring them into line with scientific principles that "It is remarkable that all false religions may be improved, and made better than their originals, while the more Christianity reverts to

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<sup>29</sup>For the Thai response to these views see Chaophraya Thiphakorawong, *nungsu sadaeng kitchanukit* [A Book About Many Things] (Bangkok: Ongkan khong khuruspha, B.E. 2514 [1971]) portions of which are translated in Henry Alabaster, ed., *The Modern Buddhist* (London: Brubner & Co., 1870).

<sup>30</sup>See John C. Vander Stelt, *Philosophy and Scripture: A Study in Old Princeton and Westminster Theology* (Marlton, NJ: Mack, 1978) 127-28; and Jack B. Rogers and Donald K. McKim, *The Authority and Interpretation of the Bible: An Historical Approach* (New York: Harper & Row, 1979), 296.

<sup>31</sup>See Rogers & McKim, *Authority and Interpretation*, 282-85; and Ernest R. Sandeen, "The Princeton Theology: One Source of Biblical Literalism in American Protestantism," *Church History* 31(September 1962): 311.

<sup>32</sup>Raleigh Don Scovel, "Orthodoxy in Princeton: A Social and Intellectual History of Princeton Theological Seminary" (Ph.D. diss. University of California, Berkeley, 1970), 54.

the original, the purer and holier we find it.”<sup>33</sup> Sarah Peoples, writing from Chiang Mai in 1885, simply found in the Bible “the beginning of earthly wisdom as well as the heavenly.”<sup>34</sup> Implicit in such thinking is the assumption that the Bible contains nothing which science, properly understood, could contradict. Science, thus, provided an important validation of the authority, the truthfulness of the Bible while at the same time undermining confidence in the authority and reliability of traditional texts.

Which observation leads into a final point implicit in Culbertson’s comments on the relationship of science to traditional Thai religion, namely that the introduction of science would undermine that religion and cause its eventual demise in Thailand. Commenting on the introduction of missionary medicine into northern Thailand, Wilson wrote in 1873,

Enough has been accomplished to show the superiority of the healing art, as practiced by Christian nations. Science and skill may well challenge the muttering of charms and the incantations of the spirit-doctor means of cure, in which this people put so much confidence. Triumph will succeed triumph until victory shall be complete on the side of the Christian physician.<sup>35</sup>

The physician waged a scientific war on the “mutterings” of traditional northern Thai medicine. McGilvary elaborated on the value of science as a tool for the Christianization of Thailand when he called for the teaching of science in “heathen lands” as the first step towards laying Christian foundations. That first step was overthrowing the “gigantic systems of errors” found in heathenism. He wrote,

And when we take into consideration that in teaching the very first principles of geography and astronomy that matter has not existed from all eternity, and the true theory of the motions and revolutions of the heavenly bodies, the very foundation of Buddhism and other false systems is effectively undermined, who would advocate the rejection of these invaluable handmaidens of religion?

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<sup>33</sup>Mary Cort, *Siam, Heart of Farther India* (New York: Randolph, 1886), 105.

<sup>34</sup>Mrs. Peoples, “Native Christians in Chieng Mai, Laos,” *Woman’s Work for Woman & Our Mission Field* 15, 1(January 1885): 14.

<sup>35</sup>J. Wilson, undated letter, *Foreign Missionary* 31, 10(March 1873): 307.

McGilvary concluded, "Some of the simplest truths of western science, when taught to the adult overthrow his system of idolatry, when to the young they can no longer embrace it."<sup>36</sup> The Laos Mission's evangelistic training school in Chiang Mai taught its students geography and arithmetic because of their evangelistic value both by helping disprove traditional cosmology and by demonstrating the intellectual superiority of Christian evangelists.<sup>37</sup>

The Presbyterians, in short, reasoned that the dissemination of scientific knowledge would necessarily undermine Thailand's adherence to its traditional cosmography and, thus, to traditional religion itself. In holding to this line of reasoning, they again displayed that absolutist, dualistic thinking which informed their view of the Bible. Either the Bible was entirely true and therefore entirely trustworthy, *or* it was flawed and therefore entirely untrustworthy. By the same token, they believed that if they could disprove Thai cosmography they could shake the faith of the Thai people in their former beliefs. That is, since that cosmography was untrue in matters of science it and its underlying system of beliefs was entirely untrustworthy. It seems not to have occurred to them that Thailand unacquainted with Western Christian absolutist and dualistic thinking, could accept Western science without experiencing a deep crisis of religious faith.

A dispute between the Rev. John A. Eakin, founder of Bangkok Christian College, and the Rev. Frank L. Snyder, also of the Siam Mission, indicates the unity of missionary thinking on the use of science as a tool for undermining traditional Thai religion. In 1890 Eakin started a Siam Mission publication entitled *Sang Arun* in which he published articles on scientific subjects. Snyder soon complained that those articles had no overt religious content and thus failed to reach its Thai audience with an effective Christian message. He wrote, "How foolish to teach these people all about the wonderful works which God has made & yet never say a word about Him who made them!" He also asked, "Must we teach science as an end itself or must we use it as a means to an end? Are we pedagogs or are we ambassadors of the King of kings, sent on an especial errand to announce to these people the gospel of Salvation?" Eakin replied that the articles in question were entirely Christian in

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<sup>36</sup>McGilvary, "Medical Missions and Missionary Physicians - No. V," *NCP NS* 2, 81(21 July 1869): 1.

<sup>37</sup>"Report of the North Laos Mission Training School for the Year 1891," v. 9, *BFM*.

character, set forth the good providence of God, and commended the Christian religion to their readers.<sup>38</sup>

The Eakin-Snyder dispute amounted to a matter of tactics and emphasis rather than a fundamental difference of opinion concerning the relationship of science to religion or its value as an evangelistic tool. Snyder represented the more forthright and aggressive tactics of the nineteenth century which confronted Thailand openly and aggressively with what it took to be the divine command to accept Christianity. He did not object to the use of science, but he wanted science taught to the end that it would result in conversions, which meant the religious implications of science had to be explicated clearly and forthrightly. Eakin took a tack more frequently associated with the twentieth century, which still sought to use Western learning for the advancement of Christianity but eschewed open attacks on Thai religion. He emphasized, rather, the goodness of God. Eakin, however, no less than Snyder believed that traditional Thai systems could not “save from sin” and that only Christianity provided religious hope for the Thai people.<sup>39</sup> For both of these men, science pointed away from Thai religious beliefs, towards the goodness of the Christian God and truth of the Christian message, and ultimately to the full Christianization of Thailand at a future time.

Four points, then, summarize the significance of Baconian science for the work of the Laos and Siam Missions. The Presbyterians, first of all, used the concept of superstition, the antithesis of the rational, scientific mind, to define the condition of the Thai people. They, secondly, contrasted superstition with Protestant rationality, which they associated with a scientific approach to both physical and metaphysical knowing. The missionaries, thirdly, insisted on the literal, infallible truth of their own Bible in contrast to Buddhism’s Scriptures and used the charge that Buddhist texts were unreliable scientifically not only to discredit traditional cosmography but also to point out the ultimate superiority of the Christian religion. Finally, they used science as a weapon in their battle against Thai “heathenism” and “superstition.” The Presbyterian missionaries, thus, imported the long-standing Calvinist alliance with science into Thailand and used the teaching of science to Westernize Thai

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<sup>38</sup>F. L. Snyder to Mitchell, 5 February 1892, v. 8, BFM; and *The Eakin Family in Thailand* (n.p., n.d.), 35.

<sup>39</sup>See, for example, J. A. Eakin, “A Buddhist Revival,” *Assembly Herald* 22, 5(May 1916): 251-52..

learning, religion, and cosmology as an important step in their campaign to turn Thailand into a Christian nation.

The missionary reverence for science as the only true way of knowing and the hand maiden of their religion had important consequences for the history of Thai Westernization because the missionaries did not distinguish between science and the Western technologies and methods which they also brought with them to Thailand. Just as they used science to “civilize” as well as Christianize Thailand, so they also used Western ways of thinking generally and Western technologies to the same end. An 1859 article written by Harriet M. House reporting a conversation her husband, Dr. House, had with a group of Buddhist monks makes just this point. Dr. House, his wife reported, charged Thailand with an unthinking acceptance of tradition and a veneration of the wisdom of “the ancients.” He pointed out by way of contrast that foreigners such as himself accepted nothing without examining it for themselves first. The ancients, he argued, did not understand science as well as modern people did, nor did they build houses as well or have steamboats.<sup>40</sup> It was all of a piece for House. He associated thinking and examining things for oneself both with science and with “modern” technologies such as house and ship building.

The missionaries also justified the use of various methods and technologies in much the same way as they justified the use of science as an element in their crusade for a Christian Siam. Expanding upon their condemnation of Thai superstition and idolatry, they categorized Thailand as an uncivilized or, at best, semi-civilized nation trapped in the chains of heathenism. Cort articulated the general opinion of the Presbyterian missionaries in her charges that the Thai people didn’t understand the fitness of things, showed disrespect to even their own religion, and dressed in an uncivilized manner. Their homes were dirty, lacked a happy home life, and were unrefined. Even their best attempts at being civilized betrayed an air of “rude barbarity.” Siamese men lacked the patriotism and lofty, heroic spirit which motivates civilized men to die for their country.<sup>41</sup> The Thai people, according to the missionaries, stood in pressing need of change, of “civilization,” which could only be provided by the conversion of the whole Thai nation to Christianity. McGilvary once summarized the missionary

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<sup>40</sup>Harriet M. House, “Siam,” *NCP* 2, 42(15 October 1859): 1.

<sup>41</sup>Cort, *Siam*, 156-57; 170-77, 213, 229, 242.

task as being one of civilizing and Christianizing the “perishing millions” of non-Christians.<sup>42</sup> The Presbyterians seldom distinguished between the “civilizing” and the Christianizing elements of their work, since for them anything which promoted the civilization of Thailand would most certainly also promote its Christianization just as Christianization led automatically to the refinements of civilization.

The Rev. Henry White, writing in 1911 in the spirit of the American Progressive movement, stated the case for missionary Westernization. He claimed that while the missionaries saw much good in Asia, they had to look below the surface, “and be painfully aware of the inability of [Asian] religion to socially, intellectually or spiritually redeem them or raise them to any high degree of moral excellence.” White found Asia's only hope in Christianity, and he cited the example of Great Britain, which Christianity had raised from a state of rude barbarism to eventually become “the greatest and mightiest Christian Empire on the face of the earth.” He urged that Thailand had the right to enjoy the same fruits of Christian civilization, and he enthused that, “What the Gospel has done for Europe it can do for her sister continent of Asia.” He went on to observe that the missionary, knowing the history of sin and salvation, was “ever conscious of the necessity and value of his message as a potent force for the uplift and redemption of the people religiously, socially and industrially.”<sup>43</sup> The Presbyterian missionaries believed that they came to do much more than change the religious label the Thai people wore. They came to “uplift” the Thai nation, which meant to transform every aspect of its life, economic and social as well as religious and moral. They used Western science, values, methods, as well as technologies as the “plough-share of change” which they ran across the fertile but untended field of Thailand to the end of creating a Christian Siam.

Missionary technology, thus, performed the same dual function as science. On the one hand it undermined traditional Thai systems of belief, which systems the missionaries held to be false and enervating and, thus, played a key role in the missionary attack upon “heathen superstition and idolatry.” Technology, like science, also played a positive role according to missionary thought. It contributed to the uplift of the Thai nation and helped to create a happy, wholesome Christian civilization. The Rev. John A. Eakin, speaking in 1928, proudly pointed to the great benefits Siam derived from missionary work, including foreign medicine, foreign surgery, vaccination, hospitals,

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<sup>42</sup>McGilvary, letter dated 19 March 1858, *NCP* 1, 34(21 August 1858): 1.

<sup>43</sup>Henry White, “The Aim and Value of Mission Enterprise,” *LN* 8, 1(January 1911): 14-17.

printing, Western education, and sanitation. He spoke of the unselfish sacrifices the missionaries had made for Thailand, saying that it was all “part of the great price that had to be paid for bringing to this land the benefits of Christian civilization.”<sup>44</sup> The missionaries saw the evangelistic benefits and the humanitarian benefits of Western science and technology as being but two sides to the same coin. Indeed, for them the conversion of Thailand from immoral, idolatrous heathenism to civilized, moral Christianity was itself a humanitarian act.

The Rev. William Buell, writing in 1842 during the very first years of Presbyterian work in Thailand, summarized the Presbyterian identification of technology and science which marked all of their work in Thailand. He described Thai thinking as a system of superstitious jargon which departed from every principle of reason and stated that the light of “Christian revelation” had never penetrated the utter darkness of its “fabulous” and contradictory cosmology. Buell concluded, “How much do such a people as this really need the blessings of the gospel, the enlightening and sanctifying influences of the Holy Ghost and the rich enjoyments of civilization and of Science.”<sup>45</sup> Buell’s close identification of the Christian message, the Christian God, the benefits of Western culture, and science suffused all of nineteenth-century Presbyterian missionary thought and lingered well into the twentieth century. Christianity, God, Western culture, and Western science amounted to strands of a common web, and it was indicative of the importance of science to missionary thinking that Buell singled it out, of all of the elements of Western culture he could have cited, out for particular mention.

In the end the Presbyterian missionary love for science and use of science and technology as key elements in their missionary program for Thailand had far more to do with Calvinism, the Enlightenment, and Princeton than it did with Thailand. The missionaries arrived in Thailand already knowing what they needed to know. They knew that, whatever incidental good they might contain, traditional Thai ways and beliefs were in essence “heathen,” being based on superstition, immorality, and idolatry. They knew they had a duty to “liberate” Thailand from this condition of bondage. They knew that the teaching of science and the spread of Western methods and technologies would play a

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<sup>44</sup>J. A. Eakin, “Address of Welcome, Centenary, 1928,” in the Eakin Family Papers at the Payap University Archives, Chiang Mai.

<sup>45</sup>Buell to Lowrie, 31 August 1842, v. 1, *BFM*.

central role in that liberation. The missionaries so clearly perceived these “truths” that they never considered their failure to Christianize Thailand as an ideological or programmatic failure. They continued to carry out their Westernization for Christianization program for decade after decade on the belief that if they faithfully persevered God would certainly bring about the conversion of Thailand. They deeply believed that the eventual success of their mission on “That Day” was divinely promised and assured.<sup>46</sup> Such beliefs largely prevented them from adapting their religious message to Thai sociocultural realities and led them to continue to act as agents of Westernization in Thailand.

The Presbyterian missionary involvement in education, medicine, printing, and a wide range of Westernizing programs and activities was for them a profoundly religious act which would help them fulfill what they took to be their duty to make Thailand a Christian nation and people. That involvement also underscored their deep belief in science as a way of knowing and a system of knowledge and their association of Western technology with science and “civilization.” There was for them, then, no paradox whatsoever in using modernization and Westernization. However the late twentieth century might view the matter, Baconian evangelism made perfect sense to the Presbyterian missionaries of the nineteenth and early twentieth centuries as one key means for achieving the conversion and Christianization of Thailand.

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<sup>46</sup>See Herbert R. Swanson, *Towards a Clean Church: A Case Study in Nineteenth-Century Thai Church History* (Chiang Mai: Office of History, 1991), 27-33.