

On the significance of the biography and thought of Pilgram Marpeck for a responsible engineering perspective

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Abstract: In the general scope of an aspirational approach to engineering practice and ethics, this article follows the paradigm of learning from biography and presents Pilgram Marpeck, an engineer and Anabaptist reformer of the 16th century, as a possible early role model for the engineering professional. A biographical review of his life and all-encompassing participation in the society of his time is followed by a self-contained summary of his thought on selected topics. When considering the bearing of these on engineering ethics and practice, Marpeck's thought and several of his concerns are found of current relevance.

Responsible approaches to technology have been investigated and discussed in and outside the engineering community for decades. As an example of discussion started in the engineering community, one may recall the one at Calvin College during the 1980s which resulted in the publication of *Responsible Technology* [1], a book frequently addressed in the literature as *RT*. As an example of discussion initiated outside the engineering community, one may cite the one entailed by the proposal of theologies of technology. Its significance for engineers has been pointed out in work done by the engineer and theologian Paul Heidebrecht (see [2] and references therein).

Discussion and debates on responsible approaches to technology are ongoing. The *IEEE International Symposium on Ethics in Engineering, Science, and Technology*, a major annual meeting of the world's largest professional association for the advancement of technology, the Institute of Electrical and Electronics Engineers (IEEE), is devoted to topics related to responsible technology and engineering practice. A regular meeting of related programmatic scope, smaller in audience and strongly connected to Christian faith traditions, is the biannual *Christian Engineering Conference*. Important conferences with connections to other faith traditions have also been held, e.g. the 2011 *Petroleum Institute Conference on Engineering Ethics*, in Abu Dhabi.

Results of such discussions have been: (a) a consensus that the ethical behavior of the engineer lies at the foundation of responsible technology approaches; (b) the adoption of codes of ethics by most engineering societies and professional engineering organizations; and (c) the inclusion of engineering ethics courses into the curricula of most engineering schools. Mainstream textbooks, such as those by Harris et al. [3] and Fleddermann [4] have experienced successive editions, evidencing the stabilization of concepts and approaches in engineering ethics. Though it is generally acknowledged that most ethical principles related to engineering practice come to us filtered through a religious tradition, these principles became cultural norms

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in Western society and are widely accepted regardless of their origin. For this reason, ethics courses in engineering schools often do not refer explicitly to religion.

The main approaches to engineering ethics are prescriptive, either prohibitive (i.e. what shall not be done by the engineer) or preventive (i.e. how can ethical problems be anticipated or avoided by the engineer). Both approaches have normative character and rely on a vocabulary of rules. However, many engineers embrace professional standards and goals for themselves that are not necessarily shared by all engineers. This is referred to as an aspirational approach to ethics and, as noticed by Harris et al. [5]:

- has a strong motivational aspect (that of doing good), which is not necessarily present in a perspective that focuses on prohibitions and avoidance of wrongdoing; and
- uses a vocabulary of character rather than that of rules.

The contribution of this article lies in the general scope of aspirational approaches to engineering ethics. It follows the paradigm of learning by biography, a paradigm well explored in education for leadership, but widely neglected in engineering education. A historic figure of the 16th century, rediscovered in the 20th, is portrayed herein and briefly presented as a possible early role model for the engineering professional: Pilgram Marpeck, an engineer and Anabaptist reformer noteworthy for his motivation and all-encompassing participation in the society of his time.

The remainder of this article is structured as follows. The next section is dedicated to preliminaries and further motivation. A section thereafter is devoted to biographical information on Pilgram Marpeck. Then follows a section that conveys Pilgram Marpeck's perspective on issues relevant to the understanding of his thought and life, which stood out for an all-encompassing societal engagement into which his engineering activities integrated without boundary distinction. A concluding analysis and final comments are found in the last section.

Preliminaries and further motivation

At the beginning of aspirational considerations pertaining to the engineer, it is important to characterize engineering and worthy goals of the engineering activity.

Kemper and Sanders [6] attribute the following characterization of engineering to the ABET¹: “Engineering is the profession in which knowledge of the mathematical and natural sciences gained by study, experience, and practice is applied with judgment to develop ways to utilize, economically, the materials and forces of nature for the benefit of mankind.” This characterization is compatible with a more literary one found in the memoirs of Herbert Hoover [7], who adds, though, two important aspects not considered in the characterization above: (a) creativity is required, “for engineering without imagination sinks to a trade;” and (b) administrative and organizational work is also part of an engineer's job.

In his memoirs, Hoover writes on life improvement as goal and possible outcome of the

¹ ABET: Accreditation Board for Engineering and Technology

engineer's activity. He also points out the societal challenges it entails:

“There is fascination of watching a figment of the imagination emerge through the aid of science to a plan on paper. Then it moves to realization in stone or metal or energy. Then it brings jobs and homes to men. Then it elevates the standards of living and adds to the comforts of life... Every time he [the engineer] discovers a new application of science, thereby creating a new industry, providing new jobs, adding to the standards of living, he also disturbs everything that is. New laws and regulations have to be made and new sorts of wickedness curbed.” [8]

In an article entitled “Do Engineers Improve Lives?” [9], Doug Lamm considers “improving lives” as providing an increase in satisfaction to the user of a technology or engineering solution. Satisfaction is understood by Lamm as having two components: pleasure and comfort. He concludes that “improvement” will depend on the potential of the engineering solution or technology to provide pleasure and comfort, but also on the user's wisdom when (s)he puts the new solution or technology to service. Lamm does not address the societal challenges in (re)defining pertinent legislation and regulations.

Jeremy Van Antwerp [10] explicates a much more refined goal for the engineering activity than Lamm does. It is based on the Judaeo-Christian tradition and defines the outcome of “improving lives” in terms of the Biblical “shalom” concept, meaning peace, harmony, completeness, prosperity, and welfare. Many engineers hold the view, expressed by Hoover, that in engineering nothing is free from moral nuance: a technology, design or solution will either promote good ends, or bad ends, or some of both. It makes engineering design a normed activity. With this in view, *RT* [1] introduced a norm based design tool that can help engineers achieving “shalom”-improving designs/solutions. It implements a preventive approach to engineering ethics, being quite compatible with the Systems Engineering approach, and has received much attention, e.g. in many contributions to the Christian Engineering Conferences and their predecessors, the Christian Engineering Education Conferences. However, in [13] VanderLeest points out that

“some authors have identified difficulties with the design norms. Van Antwerp raises a number of important concerns regarding use of the design norms in his 2006 CEEC paper [10], exploring some practical difficulties with using them in actual designs. VanderLeest explored humility as an additional norm needed in technology design in a 2006 ASEE paper [11]. Funk considers the design norms [12] and finds them lacking: 'I find an organization of principles based on a biblical hierarchy of value to be more conducive to thinking Christianly about things. Moreover, in my view, Monsma, et al. omit the most important ones or only address them secondarily.' Instead, Funk identifies three intrinsic, prioritized goods: (1) communion with God (individually and communally), (2) human welfare (based in part on being created in image of God), and (3) natural world (including cultural mandate and stewardship). In reflecting on these proposed priorities, he notes that 'Monsma, et al., *RT*, give inadequate emphasis to this principle [Principle 1], their principles focusing primarily on the two lower levels of the hierarchy of the good.'”

Van Antwerp recommends “presenting alongside the design norm approach the view that engineers are called by God to serve him and their neighbors and be stewards of the Earth through the technology they create. Engineers are to work as servants of God by serving others. ... The design norm view of trying to foresee all possible ends must be balanced with the reality that God in his sovereignty is in control of all history and through his providence works through us. Ultimately, Christian engineers must act as best they can” [10] (which might include using *RT* norms). Thus, Van Antwerp continues, a Christian engineer is not interested only in the sources of technical knowledge, but also in modeling Christian virtues and developing a Christian worldview and thoughtful reflectiveness. All of these are elements of an aspirational approach.

The approach to shape the process of judgment and evaluation that underlies engineering activity, summarized by Funk [12] and mentioned above, is particularly suitable for adoption by Christian engineers because it:

- is related to 3 general intrinsic goods, compatible with the Christian proposition;
- formalizes non reflected *ad hoc* approaches of Christians who understand their faith and engineering practice as integral parts of their life;
- does not lead to overspecialization in the discussion of responsible professional practice, allowing for the appropriation of insights offered by Christians from other professions;
- allows for the identification of role models in history (e.g. Pilgram Marpeck, the one advocated herein) and for appropriating lessons from such role models living under different circumstances; and
- constitutes a robust setup that remains unshaken when the professional focus changes.

Furthermore, aspirational approaches are particularly interesting because they usually are of easy extension (generalization) to tasks performed by engineers beyond technical design, e.g. administrative, leadership and coordination tasks, related or not to the development, implementation and operation of engineering solutions. Although administrative, leadership and coordination involvement has been perceived by some (e.g. Hoover) as more recently becoming part of the engineer's job, it can be verified in all larger engineering type undertakings throughout history.

Learning from others and learning from example fits into aspirational approaches to ethics in general and engineering ethics in particular. Becoming a good engineer requires the understanding of the nuances of general and specific technical disciplines, working as a subordinate, peer and supervisor. To understand and successfully tackle such challenges, it is important to study and reflect. Study and reflection with focus on biographies covers many of the general facets encountered in engineering activity, since many of the challenges faced today do not differ from those faced by the men and women who went before us. Learning how they handled their challenges helps to be more effective with those faced by engineers today.

Herein fits the motivation to focus on Pilgram Marpeck for the remainder of this article, “a well-to-do and highly placed Tyrolese mining engineer... whose witness was obscured, his writings misplaced or overlooked.” [14] Only in recent decades has Marpeck's life reemerged.

Because of his views aligned with the radical wing of the Reformation, in early 1528 he interrupted his career as a mining magistrate and – in addition to his work as an engineer – acted as Anabaptist community leader and writer with connections and responsibilities in South Germany, Alsace, Switzerland, Austria and Moravia. Despite persecution, having acquired valued technical abilities and organizational competence through general education, as well as hands-on training and problem solving, he repeatedly held important engineering positions with responsibility in the wood and water supply of the cities Strasbourg, St. Gallen, and Augsburg.

A biographical note²

Pilgram Marpeck was born ca. 1495 in the mining town of Rattenberg am Inn, a formerly Bavarian town in the Tyrol that became Austrian in 1504. Pilgram's father Heinrich Marpeck was a wealthy mine entrepreneur who had moved to Rattenberg in the early 1490s from the Bavarian town of Rosenheim. In Rattenberg, Heinrich served as city and district magistrate, later as councilman and mayor. Pilgram grew up in Rattenberg, and – either there or in Innsbruck – attended Latin school where he received a scholarly education discernible in his later writings.

His work life began in 1513 when the Rattenberg council, due to a lack of much-needed help in the city hospital, appointed him to serve there for an indefinite period. He was then about 18 years old. He must have proven himself at the hospital, because soon thereafter he was working for a hospice for disabled and aged miners established by the local *Bergwerkbrüderschaft*, a corporation of the local mining entrepreneurs, into which he was received as a member in 1520. That year, together with a business associate, he started an ambitious, independent business of transporting ore.

Some time before 1520 Pilgram married Sophia Harrer, with whom he had a daughter, Margareth. The couple also took responsibility for three foster children, possibly orphans of men killed in the mines. Sophia died some time before July 1528, when Marpeck remarried.

Possibly as early as 1520, Pilgram became a member of the Rattenberg city council. He served as mayor in 1522 and represented the city repeatedly at *Landtage*³ and in negotiations with the government in Innsbruck.

In April 1525, Archduke Ferdinand of Habsburg, the ruler of Tyrol, appointed Pilgram as magistrate of the *Berggericht* Rattenberg. This was a salaried function, akin to that of a mining superintendent. It included the responsibility for: (a) adjudicating the rights and claims of the miners, investors and nobles; (b) the care of widows, orphans and retired miners in the community; and (c) the representation of Tyrolean government interests in the local mining activities. Pilgram's jurisdiction extended over Rattenberg and Kufstein with their mines, smelting works and forests (since lumber and firewood supply was essential for mining activities).

² Biographical information in this section stems from references [15]-[18].

³ Representative assemblies of cities.

In the Rattenberg City Council, Marpeck was involved in efforts to obtain the release of Stephan Kastenbauer, the prior of the local Augustinian monastery, who was arrested in 1522 for preaching “heretical” sermons inclined towards Luther's teachings. Apparently this was when Marpeck became aware of theological concerns related to the early Reformation movement. However, more defined expressions of the Reformation became noticeable in Rattenberg only in 1527, when the former Franciscan monk Leonhard Schiemer won followers in the Inn Valley for the Anabaptist movement initiated by Hans Hut. Marpeck apparently knew about an Anabaptist church that already existed in Rattenberg during the imprisonment of Schiemer, who was arrested in Schwaz, on November 25, 1527. By order of the Innsbruck authorities, Schiemer was executed in Rattenberg on January 14, 1528, on the castle yard behind Marpeck's house. Although Pilgram had no direct connection with Schiemer's process and execution, it fell into his jurisdiction to report to the Innsbruck authorities on the Rattenberg Anabaptists. To evade this task, Marpeck resigned his office by January 22, 1528, arranged his affairs and left the city. As a widower, and presumably because of his uncertain future, he entrusted the guardianship of his daughter to close Rattenberg relatives. Marpeck's Rattenberg properties were confiscated in 1530. If Margareth returned to her father's home in later years is not known, though likely.

From Rattenberg, Pilgram moved to Krumau in Bohemia, then a prosperous silver mining center, which attracted numerous miners from the Tyrol. There is evidence that in Krumau he was rebaptized, married Anna, his second wife, and was commissioned into church leadership by the Anabaptist church from Austerlitz, Moravia. Already in June and July 1528 he was on record, together with the former priest Virgil Plattner, in relation to the founding of an Anabaptist congregation among the miners. Forced to leave Krumau, Pilgram moved to the religiously tolerant Strasbourg, the main city in the Alsace, apparently commissioned to work on church unity between the Strasbourg and Austerlitz Anabaptists.

In Strasbourg, Pilgram joined the gardener-wagoner guild, and acquired citizenship on September 19, 1528. To acquire citizenship, it was necessary to reside in Strasbourg, be registered with a guild, pay citizenship tax and annually reaffirm the pledge of loyalty and obedience to the city council. Marpeck's decision to join the gardener-wagoner guild may have been motivated by his logistics experience in Rattenberg. By joining this guild, the largest and poorest among the guilds in Strasbourg, he became institutionally connected to the laboring people in the city and entered a circle that was most likely to give him a hearing, since the gardener-wagoner guild was one of the most prominent in the course of the early Reformation in Strasbourg.

Shortly after settling in the Alsace, Pilgram joined efforts to assist and shelter refugees who had come into Strasbourg. He also led a local Anabaptist community, and wrote and debated intensively on theological topics. This was all integrated with full professional activity. Strasbourg authorities had become aware of his technical competence and hired him early in 1530 as *Holzmeister*, i.e. as a municipal engineer with responsibility for managing the purchase of harvesting rights and the supply of wood. He apparently spent a substantial period in the Kinzig and Leber valleys securing and organizing Strasbourg's supply of firewood and timber, which was floated down the rivers towards the city. Furthermore he took part in the establishment of Anabaptist communities in these areas, and maintained pastoral correspondence

with them over many years.

Strasbourg's departure from its policy of tolerating religious dissidents had the consequence that Marpeck was forced to leave the city in January 1532, after several weeks of investigation under the direction of the local leading reformer, Martin Bucer.

Evidence suggests that after leaving Strasbourg Pilgram and Anna settled in Switzerland somewhere between St. Gallen and Appenzell. In St. Gallen, Marpeck was involved in work on a system of water flumes for the local weaving industry. It is likely that this was connected to the conversion of a house and barn into a fulling mill, decided in 1535 by the St. Gallen city council. The conversion entailed the construction of water channels to divert water around a nearby mountain, in order to service the mill and to supply drinking water to the city.

The few references to Marpeck's whereabouts during the years following his expulsion from Strasbourg indicate that he remained continuously in touch with the Austerlitz Anabaptist church in Moravia. Several of his letters and edifying tracts of these years survived. Those writings reflect the clandestine networking of Anabaptist communities that stood in ecclesial communion with the Austerlitz mother church and extended from Grisons to Württemberg and from Alsace to Moravia and Vienna. To Marpeck apparently fell the task of maintaining the links between the communities. Thus, already in 1540 he traveled from Austerlitz to Grisons and directed letters from there to congregations in the Alsace area. But in 1541 he was back to Moravia, where he joined an effort to reconcile the Austerlitz Anabaptists and the Hutterian Brethren. During all this time, Pilgram also invested much of his time into a theological controversy started in Strasbourg with Caspar Schwenckfeld, a main representative of the Reformation current of radical religious subjectivism, known as "Spiritualism."

From February 1544 until his sudden natural death sometime during the week between October 31 and November 6, 1556, Marpeck's resided in Augsburg. There he took a leading role in some of the city's most important public works. As a city employee and member of the city's building committee (*Geschworene Werkleute*), he oversaw and often coordinated important projects and operations related to the city's wood and water supply. At the same time, he secretly kept Augsburg's Anabaptist community life intact, and through letters and messages supervised and instructed the far-flung communities of the network of Anabaptist communities in which he participated.

A close-up on selected aspects of Pilgram Marpeck's thought

Although Marpeck's eclectic contribution to society was already thematized by Bender [14], it was Paul Peachey who first pointed to Marpeck as a role model in combining profession and faith [19]. His basic identity is anchored in Christ's order and Christ's people, which resulted in world affirmation: he designed engineering solutions, addressed social welfare challenges, and participated in the central religious discourse in the city. While he took covenantal responsibility in the civil as well as the religious realms, for the sake of his Christian commitment Marpeck was willing to sacrifice the security and prestige provided by his technical occupation. Furthermore, he illustrates the reciprocal character of freedom and covenant; to make their

interdependence clear is a particular vocation of every Christian. In addition, implicit in the idioms, which Marpeck embodied, we find a free church within a society that depends upon covenanted individuated action – a structured reality seen today.

Many writings of Pilgram Marpeck surfaced throughout the 20th century. In many if not most of them, Marpeck addressed Christian life encompassing all aspects and realms of daily life, which included his professional activities and challenges. The following paragraphs convey a summary of his thought on topics with special bearing to the Christian engineer.

Gifts are given for the glory of the Creator and to serve others

God is the giver of all gifts. They are given for two chief reasons. Firstly, in them we can learn to know God as Creator and Father so that we may glorify, praise, and thank Him. Secondly, we are not to use His gifts to rule over each other, but to serve each other. And, if in doing so we accomplish something to the Lord's praise and the neighbor's benefit, we do not rejoice over it. The very deed of showing love towards our neighbor with unshakable faith and certain hope, shall be our highest joy and the way we prove our love of God. [20]

Since everything has been given to us for service and to convey God's inexpressible goodness and grace, nothing should be capriciously wasted as if such were at our discretion. The reason we serve to the praise of God and not to indulge ourselves, is that the Lord Himself has served us. Hence, whoever does not serve in the voluntary spirit of Christ – even to the loss of her/his life – the same pursues his own satisfaction, reward or honor. To all his servants God promises reward and heritage with Christ. But His servants do not look to the reward as though it could be earned with their service; they look alone to the Giver and Rewarder. [21]

On the intertwining of faith, love, God and human action to serve all creatures

Witness, fruit, and work are manifestations of faith. Thus, love is faith in action; it edifies and improves. However, the power of love is available to us only to the extent it is given by God, and to the extent, we receive it.

Furthermore, the life and deeds of all true believers serve all creatures. Through Christ, their spirit is lord of all things, because whoever believes that all authority has been given to Christ moves, speaks, and acts by the authorization of Christ. For Christ never commanded: “Go forth, all power be committed to you;” rather, He instructed: “To me all power is given – therefore go forth.” [22]

Reason and will seen with skeptical optimism

Reason is a valued function of the human spirit, which Marpeck described as “a sensitive, sublime creature” and an “image of humanity's godlikeness.” However, reason “presumed to be a god” who “can be saved or condemned by her own power.” Marpeck's critique referred not to reason as created by God; he targeted its use by men in the hopeless search for ways to attain their own salvation, an arrogance, which was most pronounced among educated classes, who

despised “simple, uneducated, coarse, faithful people.” In Marpeck's perspective, salvation required that reason be humbled at Jesus' physical feet. [23]

The will, like reason, is a function of the spirit and admirable as created. Yet Marpeck criticized those who conceded “all power and ability to man's free will.” [24]

On the trust in human power

Exclusive trust in human power is “contrary to the true manner of the patience of Christ.” [25]

Means and wealth

Means and wealth may be gifts to serve others, however grasping is reprehensible and their ungodly handling gives way to injustice and suffering. Marpeck's position herein is aligned with that of Hans Denck (c. 1495-1527), who criticized poor as well as rich for grasping after wealth rather than preparing their hearts through *Gelassenheit* for Christ's filling [26], and with that of Peter Riedemann (1542-1556), who maintained that God is reflected in creation but that humans misuse creatures, seizing them for their selfish purposes [27]. In an anonymous tract attributed to Marpeck, we read: “It is the fear of losing possessions that deceives the whole world. It is that fear which binds up the love of God and the love of man on the earth. If Christ must leave, as he left the village of the Gadarenes, unrighteousness takes over. Love grows cold. Selfishness takes over and all men suffer.” [28] This detached but responsible standing lies at the foundation of Marpeck's successful enterprises and his concern with the socially weak or disadvantaged.

What drives us?

Serving others was one of Marpeck's chief concerns, and probing the motivation or drive underlying service became foundational to him. We see his concern with motivation extending to all individual action. He found it most important to recognize “whether our actions are impelled by the Holy Spirit, or flow from a carnal mind.” For instance, it happens quite often that natural impulse is against evil and zealous about the good. There are situations when men are overpowered and driven by zeal, exerting themselves considerably. Such is not a compulsion of the Holy Spirit, it is a servile compulsion. Thus, one should be able to perceive one's drive, or better from what source it stems. [29]

To inform perception, Marpeck suggests four criteria, which concern the practical, ethical life of the Christian rather than an application of specific passages of the Scriptures. However, Marpeck did not separate these domains: Scriptures were to be studied for practical application [30]. The four criteria (“things, or reasons” as Marpeck calls them) are:

1. Love for God and granting my neighbor that which God has granted and given me.
2. A devaluation of life and willingness to suffer for Christ's and the gospel's sake.
3. The (spiritual) discernment of God's open doors and refraining from entering where God has not opened the door.

4. Freedom and soundness in teaching and judgment and in truth (i.e. no mingling with interests incompatible with the realm of Christ).

Our relationships and reactions

In his later years, possibly after the unsuccessful effort to reconcile Anabaptist groups in Moravia, Marpeck became increasingly aware of the importance of neither taking nor giving offense or scandal. Diligent attention is needed in order that “our earthen vessel does not cause offense to anyone else. Otherwise, our own or our neighbor's vessel might be broken.” [31] Marpeck points out that arrogance, conceit and “room and place to the lust of the flesh” will entail such breakage.

An invitation

Aligned with a typical Anabaptist understanding of the missional dimension of God's new creation [32], Marpeck emphasized the all-encompassing reach of the Gospel's invitation, message and effect: “We invite all creatures to rejoice with us and to sing praise to our God.” [33]

Practicing it

Marpeck took all of his teaching on personally, as he explicitly states in his Confession, presented to the Strasbourg city council on January 18, 1532: “I have surrendered to God and all true believers, and try to serve all men with whatever I have and can accomplish through His Son Christ Jesus. I am prepared to show human love to everyone according to the word of Paul [34], to serve everyone from the heart and not to hurt anyone's feelings. If I have, unaware, not followed these strictures, I ask for forgiveness from everyone. However, I will in matters of faith, God willing, not yield to anyone for the sake of love.” [35]

Government

In Anabaptist circles, relationship to government has always been a subject of intense debate, very often bottomlined by some obedience formula. For engineers this is an important issue, since many engineering undertakings and/or solutions are either paid or regulated by government, or sometimes they imply other direct or indirect government involvement. Marpeck addressed the issue several times, e.g. in his Confession presented to the Strasbourg city council, wherein he admits civil authorities “as servants of God, in earthly matters.” [36] Taking into account this and his other known writings, it seems that Marpeck generally endorsed participation in government's socially beneficial functions, without including coercive ones [37].

Comments and conclusion

As put in an earlier section, aspirational engineering ethics can be shaped through study of biographies, which is the reason why Pilgram Marpeck's life and aspects of his thought were outlined. Marpeck did not write down specifics about his engineering practices. This is not

surprising, since it was in the year of Marpeck's death that the first modern document on mining and metallurgy, *De Re Metallica*, by Georgius Agricola, was printed, inaugurating a time of writing in engineering. It is evident, however, that many of his writings convey considerations and principles that are readily transferable to statements of value to the engineer. Marpeck took all of his teaching on personally, as made explicit in his Confession, presented to the Strasbourg city council, and in other aforementioned texts, which adds to his credibility. Furthermore, Marpeck in his approach and writings “unites the social and ethical dimension of the Christian life with the personal and spiritual, suggesting ways of creatively combining them.” [38] Thus, in this conclusion section, contents of the main sections, those on Marpeck's life and thought, are revisited with concluding remarks about their bearing on engineering activities.

Regarding practical life, Marpeck emphasized that gifts are given for the glory of the Creator and to serve others. Such understanding set a double perspective for all his activity, including his engineering work: the spiritual perspective of praise (directed towards God)⁴ and service to “the benefit of the neighbor” (directed towards men). An important nuance Marpeck gave to the second perspective is that serving itself should be taken as ground for joy, rather than the outcomes or successes attained by serving. Marpeck's considerations nicely fit into the general perspective of engineering as a serving profession explored by Van Antwerp [10].

With respect to empowerment of individual action, Marpeck emphasizes that a Christian's work is part of the manifestation of his/her faith. Deeds will express love, which is “faith in action; it edifies and improves.” [39] But the power of love does not stem from men: it is God given.

Although Marpeck for obvious reasons did not refer to 20th century concepts such as environment and sustainability, his emphasis is remarkable that “the life and deeds of all true believers serve *all creatures*.” [40] A concern for *all creatures* is most appropriate to inform and balance engineering activity, so often accused of lacking concern with creation at large.

Reason and will, two of engineer's most remarkable tools, are seen by Marpeck as admirable, but limited. In particular with respect to reason, he understands that humility is in place. Absolute trust in the power and the abilities of reason and free will, Marpeck critiques. Not surprisingly, elsewhere a correct blend of skepticism and optimism with respect to individual engineering problem solving capabilities is seen as the best possible posture (the so called “skeptical positive thinking” [41]), specially at the engineering project management level.

The solution of engineering problems requires means and material resources in addition to “imaginative faculties.” [8] For Marpeck, means and wealth are gifts to serve others; grasping after wealth is reprehensible. His successful enterprises and his concern for the socially weak or disadvantaged exemplified the practical consequences of his understanding. Typically, an understanding such as Marpeck's will entail socially responsible decisions with respect to the use of resources; those are demanded in many major engineering undertakings.

⁴ A perspective linking engineering and doxology is discussed by Paul C. Heidebrecht in [2], chapter 5, without mentioning Pilgram Marpeck.

On a more personal side, Marpeck's comments on personal relationship and reaction to others – in particular on giving and taking scandal – are instrumental for life in community and teamwork, both highly valued in contemporary engineering, were multidisciplinary teamwork and the need to focus on customer demands and necessities has become commonplace.

Finally, the recognition of what drives us came to be of special concern to Marpeck in the later years of his life. He suggested four criteria related to the practical ethical life of the Christian, independently of her/his trade or profession. These criteria were chiefly formulated on spiritual grounds, envisioning a Christian's spirituality and practical life – including pragmatic professional concerns – as connected. The whole can also be taken as a warning and guide against unreflected behavior and “exerting oneself considerably” in the pursuance of what one may – personally and impulsively – consider worthy goals. Such concern presently is found in the engineering community. It underlies, for instance, the following promise, found in an engineering's professional pledge commonly used in Brazil: “In fulfilling my duties as engineer, I will not permit to be carried by the glare of technology.” [42]

In this text Peachey's proposal of Marpeck as role model for the Christian professional was taken one step further. The consideration of Marpeck's thought from the perspective of his vocation laid open important insights of value to engineers concerned with aspirational ethics. In a broader sense it also serves as a call to reflection on relevant issues pertaining to Christian life, which – depending on the trade or profession – may or may not include engineering activity.

Acknowledgment

The author gratefully acknowledges the use of resources of the Mennonite Historical Library (MHL), Goshen College, as well as the partial support by a Schafer-Friesen Fellowship during a short research stay at the MHL in July 2015.

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