UNIVERSAL AND PARTICULAR ASPECTS OF SCIENTIFIC GROWTH AND SPIRITUALITY IN THE FORMATION OF MEDICAL RESEARCHER

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UNIVERSAL AND PARTICULAR ASPECTS OF SCIENTIFIC GROWTH AND SPIRITUALITY IN THE FORMATION OF MEDICAL RESEARCHER (Abstract): The education and growth of researchers should aim not only to teach concepts but also to form character. The process of initiation into a field requires the practice of virtues explicated in the article below. This article proposes that scientists develop their character along two planes: a vertical plane that is concerned with internal moral formation of the virtues of the scientist and a horizontal plane that is concerned with societal influence and the role that medical research plays in serving humanity. We also argue that scientists that view their formation and research practices coexisting with a belief in God and faith may enlighten and embolden their research experiences and endeavors. Keywords: SPIRITUALITY, VIRTUES, SCIENTIFIC FORMATION, MEDICAL RESEARCH, FAITH.

“In the religious sphere, the classical expression for wholeness is ‘the peace of God’ which, according to St. Paul, exceeds all nous (rational understanding), and which is able to safeguard the heart (the center of personality) and the noemata (acts of rational understanding)” (1).

Yet while there exist both supporters and skeptics of this line of inquiry, current and forthcoming empirical evidence in this field published on the connection between religion and health continues to strongly indicate a positive correlation. Prestigious universities are conducting programs of research in the field and numerous top journals have published findings that are statistically significant. Therefore, we encourage new medical researchers and social science investigators to incorporate this field in their formation and familiarize themselves with this work and further build future research on evidence that have been already published in this domain. We will go a step forward and argue in this paper that a researcher’s personal and professional formation will benefit from an alliance between religion and medicine—an alliance which could generate new knowledge about how faith and religion contributes to health and healing in people (2).

LIMITATIONS IN SCIENTIFIC INQUIRY
Some of the most fundamental questions of humanity such as what is the mean-
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ing of life or what happens after we die remain largely overlooked by modern scientific inquiry which privileges that which is quantifiable. Such questions do not easily lend themselves to quantitative experimentation, and we must recognize that scientific research remains powerless to provide answers to these profound questions. Recognizing the limitations of the scientific mind in obtaining a complete objective grasp on reality of truth about the world and our place in it, nevertheless, the paper endeavors to comment on the motivation, values, and assumptions in scientific inquiry and biomedical research aligned with the quest for the philosophical, moral, and religious truth about the world and what place we - the scientists and/or care takers have within it. Additionally, we will expand on the possibility that the medical scientists seek the truth and could bear witness to the truth in harmony with God’s created order. In this empirical reality of current world, a spiritually attuned scientist may bring God’s created order more fully to light and stretch his own horizon towards the uncreated light wherein the Creator dwells.

Many top scientists view their research practices in the light of spirituality. A notable example is Francis Collins: “I have found there is a wonderful harmony in the complementary truths of science and faith. The God of the Bible is also the God of the genome. God can be found in the cathedral or in the laboratory. By investigating God’s majestic and awesome creation, science can actually be a means of worship” (3).

Religion and spirituality impact on medical care and health are studied across the globe (4); as an integral part of the health care system researchers should be guided in their work and constantly reflect on how their research is applied to improve the society in general and the well-being of the patients. This purpose may remind the scientist that serving humanity is also an expression of serving God.

WISDOM GUIDES SCIENTIFIC RESEARCH FORMATION

It is not enough for medical science to increase general knowledge; the purpose of science is to serve the welfare of communities. While clinical research is essential, the quality of this research is reflected directly by the strengths and weaknesses of the discipline itself. As a result, the education and formation of both clinicians and researchers should be aiming not only towards teaching concepts but also to form character. We then propose the formation of such character on two planes:

A vertical plane mainly focusing on moral formation and virtues a scientist may acquire to be a good person, e.g. justice, honesty, humility, graciousness as well as cultivating the virtues expressed in serving others, e.g. kindness and love. All these criteria are very similar with those that are cultivating and nourishing a relationship with God.

A horizontal plane mainly concerned with the way how the scientist may influence the society and the services brought to the humanity. This plane certainly aims to align the research in the way that society benefits but also appropriate boundaries to scientific quest for progress and knowledge are maintained.

RESEARCH AND VIRTUES

Those responsible for training new researchers should seek to develop not only the research skills of students but also their character. Contemporary moral philosopher Alasdair MacIntyre argues that new participants in any complex social activity, such
as scientific research, must develop character-building virtues in order to learn their craft (5). Students of novices must accept the authority of established standards of excellence in research and recognize the inadequacy of their own work in light of those standards before they can gain the capacity to criticize or further develop their standards.

The process of initiation into a field requires the practice of particular virtues. New researchers require justice to discern what they owe to whom. They must determine, for example, how to show their gratitude to their teachers, how to treat animal subjects of research humanely, and how to compensate human subjects appropriately. They require courage to take the risks necessary for good research. And perhaps the most crucial virtue for researchers is honesty. The entire enterprise of scientific research would collapse without the commitment to a truthful sharing of results. Consequently, the scientific community levies harsh punishments on scientists who betray this trust. The virtue of honesty also promotes a high regard and relentless pursuit of the truth. The truthful researcher constantly seeks to expand his or her knowledge and avoids misleading sources. Such researchers candidly evaluate their own performances, and by practicing humility, seek out constructive criticism.

Educators must do more than discuss virtues because the virtues are not abstract intellectual concepts. Rather, they are habits of good character and behavior; students will acquire them only through active participation in research under the close guidance of mentors who possess these virtues themselves. Research from the “positive psychology” movement indicates that under the right circumstances virtues can be taught. MacIntyre’s work suggests that virtuous behavior will flourish only within communities that hold the virtues at the core of their common life (6). Therefore, academic departments must recruit and promote faculty members who exemplify virtue.

This emphasis on the moral formation of researchers is meant to supplement, not replace, the existing guidelines on ethical research. Indeed, fidelity to fundamental research statutes, such as those regarding informed consent, could be considered a virtue. However, these guidelines may not always provide a clear direction in challenging situations, and from time to time institutions will promulgate the guidelines as unethical. In response, virtuous persons must act upon their character and pursue right.

A CHRISTIAN ASCETIC TRADITION AND ETHICS IN RESEARCH

We assume that a student who embraces a research career will seek a practical pathway by which the student can develop virtuous habits of character. Lessons from literature that reflect on virtues would further allow researchers to learn from the long history of ethics (e.g., authors like Homer, Aristotle, Benjamin Franklin, and Jane Austen). Several religions consider the virtues necessary for a good and moral life; thus, researchers can enrich their understanding of the virtues by engaging with these traditions and welcoming religious perspectives in discussions about research ethics. This so-called “open pluralism” can contribute to the professional development of novice researchers, particularly if they belong to one of these religious traditions (7).

To illustrate we will offer a few considerations from the ascetic tradition of the Near East. In the Platonic model of psychology, the human psyche consists of three key elements: the noetic, or intellect;
the incentive describing desires and anima-
tions; and the appetitive, the ability to sat-
ify bodily needs. Each element can be char-
acterized by the virtues of justice, courage, and temperance respectively, with
wisdom as the overruling principle of the
human soul. A modern commentator of
Christian-Platonic understanding, John
Claude Larchet builds on the philosophies of
early Christian thinkers such as St. John of
Damascus and Maximus The Confessor.
Larchet describes these powers of the human
soul as vegetative (nutrition and growth),
animal (aggressiveness, desire and affectivi-
ty) and reasoning (reason being the principal
characteristic and that distinguishes humans
from all other creatures) (8).

The power of reasoning has two im-
portant faculties: the spiritual faculty (intel-
lect, or nous, linked to humans’ noetic abili-
ity and responsible for the moral and psy-
chological senses of consciousness) and the
faculty of self - determination (8). Although
it adopts the Platonic virtues, the Christian
ascetic tradition, with respect to the ince-
tive element of the soul, focuses on the vir-
tue of love, cultivating practices that exhibit
brotherly love and compassion (9). Early
Christian-Platonist thinker, St. John Damasc-
cus, described the contrasting “sins” to the
incentive element as including “heartless-
ness, hatred and lack of compassion” (10).
Peter of Damaskos states that love of neigh-
bor is highest among all virtues (11). And
St. Isaac of Syria states that a person whose
incentive powers are in the right order has a
heart “burning with love towards the whole
creation: towards men, birds, animals, de-
mons and every creature...cannot bear to
hear or see the least harm done to or misfor-
tune suffered by creation” (12, 13). In con-
trast, the “passions” are barriers to manifest-
ing love. The passions should not be under-
stood as human emotions but rather as vices
precluding obedience to the Word of God
(14, 15). Examples of these passions include
avarice, bitterness, resentfulness, anger,
pride, jealousy, lustfulness, or what the
ascetic fathers call “self-love.” The Church
teaches that such “passionate” persons will
be preoccupied with satisfying their own
desires for pleasure, wealth, and praise, and
will fail to attend to or to cultivate the true
virtues of compassion and mercy. Particu-
larly relevant to research practice, those who
give in to their passions will regard others as
rivals or as impediments towards satisfying
their self-love (9) - a pattern that is likely to
erode the spirit of teamwork and undermine
a research team’s effectiveness and success.

An important reason for bringing to light
these traditional thinkers in contemporary
practice and regarding the ethical growth of
researchers and scientists is that we be-
lieve a similar model can be used as an impetus
towards understanding the purpose and vir-
tuosity of performing scientific research.

UNDERSTANDING SKILLS
AND WISDOM

There is a distinction between two types
of knowledge - wisdom and skill- that ap-
plies to every realm of life including med-
ical research. In this section, we will discuss
the distinction between phronesis, or practi-
cal wisdom, and techne, or technical skill, as
used in Aristotle’s language. Phronesis is
the development or internal formation of the
self as someone cognizant of his or her pur-
pose that acts with wisdom in all areas of
life; techne is the production or formation of
an outside object or external good (e.g., a
drug, a car, a hospital). Phronesis aims at
moral and ethical understanding and virtu-
ous living, whereas techne aims at the cre-
at

nical” knowledge, the product of their teachings being the skills that are imparted on their students. Teachers should further develop practical wisdom by applying and practicing virtuous behavior in their own lives so they can become role models for their students.

**WISDOM - A COMMON GROUND FOR SCIENCE AND RELIGION**

Since antiquity wisdom has been understood as a psychological trait. In modern times, wisdom has been variously described as involving social attitudes or behaviors, pragmatic knowledge of life, emotional homeostasis, reflection or self-understanding, value relativism and tolerance, and the acknowledgment of uncertainty with the ability to cope with it effectively. Although broadly defined, wisdom is consistently recognized as including thoughtful decision-making, compassion, altruism, and insight (17). In ancient philosophy, by contrast, wisdom was considered attainable in the context of practicing “askesis,” which implies exercises of self-control, self-discipline, self-denial, and meditation guided by a mentor. Both Western and Eastern religions teach that to develop wisdom one needs to practice this self-constraint, disciplined morality, charitable concern, and compassionate actions (17).

According to Pavel Florensky, a Russian Orthodox theologian and thinker, wisdom is Divine and a direct representation of God’s creative love. “Sophia is the original nature of creation, God’s creative love... For everything exists truly only insofar as it communes with the God of Love, the Source of being and truth” (18). Because of this act of love, wisdom is imprinted in each one of us “in our hearts by the Holy Spirit which is given unto us” (Romans 5:5”). The medical arts seek to integrate science with this wisdom from the Holy Spirit for the benefit of patients. The purpose may not always be to cure but to help the patient throughout the process, while instilling a realistic hope or peace in individual suffering, something medical science alone cannot do. Medical disciplines therefore serve a greater purpose: to understand needs and sufferings of patients and address these problems through medical practice and research. We suggest that the training of practitioners and researchers therefore needs to address both developments of self as well as sensitivity to others.

**CONCLUSIONS**

As we have noted, religion and spirituality may enter the medical research sphere when researchers personally see their work as part of a Divine calling. The individual may view medical research as part of an obligation to serve humanity and thereby indirectly attain Divine grace. A researcher may decide to work towards ameliorating a disease, or works to serve an underprivileged community. These sorts of research endeavors encompass a drive to choose research endeavors prudently to bring about maximal scientific benefit, but which also contain an element of Divine service.

A medical researcher who is motivated by religious concerns may also strive to focus his activities upon a more vertical plane whereby he works to develop within himself the sort of moral character that is pleasing to God and other humans. He may, for example, practice prayers that help him stay regarding God and through that connection instill virtuous behaviors and thereby be a better servant of God.

These two dimensions horizontal and vertical that involves the formation of the researcher and we have highlighted in the beginning of this chapter are often pursued simultaneously and there may be places for
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overlap. A case example is a researcher who employs his skills to introduce virtues into the medical education curricula and thereby affects physician behaviors and patient care. Another example is a researcher who examines the ways in which religion impacts patient behaviors and works to develop healthcare systems that serve the religious and spiritual needs of patients, clinicians, and researchers alike.

The content presented on this paper may enable the future researcher to render a deeper consideration of the idea that a fundamental relationship exists between rigorous scientific growth and spirituality, and to encourage further reflection and meditation on the universal and particular aspects of this perspective.

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