

6. “The pursuit of knowledge is not merely about finding truths; it is about finding significant truths” (adapted from PD Magnus). Discuss this statement.

The pursuit of knowledge in different areas of knowledge vary not only in their methods, but the very nature of the truths they obtain. I argue that truths in the natural sciences consist of knowledge about the natural world, and their significance is derived from their utility to humanity. Religious truths, on the other hand, are the positive statements that compose religious doctrine, with the normative implications of said doctrine being the significant truths in religious knowledge systems. As a response to the statement that the pursuit of knowledge is “about”, in other words, motivated by, the finding of these significant truths, in this essay I discuss both the motivations behind, and the nature of, the pursuit of these truths and “significant” truths in the natural sciences and religious knowledge systems.

The pursuit of knowledge in the natural sciences involves the process of empirical hypothesis testing to reach reasoned knowledge conclusions on the natural world.¹ The role of the natural sciences in driving the progress of humanity is indisputable²; the progress made in healthcare, telecommunications, and any number of other fields since the scientific revolution has shown how scientists pursue knowledge which is subsequently applied to solve problems and advance society. Thus, whereas truths in the natural sciences constitute knowledge obtained about the natural world in general, significant truths in the natural sciences can be defined as applicable natural truths, pursued to solve particular problems and bring utility to society.

It can be argued that the pursuit of such significant, utility-providing, truths primarily motivates the pursuit of knowledge in the natural sciences. The Manhattan Project, which was undertaken by allied powers during WWII and yielded several breakthroughs in nuclear physics, serves as a clear example of application-based research. In response to the problem of limited aerial bombardment capabilities which put the lives of soldiers at risk, knowledge regarding natural processes such as nuclear fission was pursued to develop a solution – the nuclear warhead.³ Albert Narath notes

¹ Andersen et al., *Scientific Method*, ed. Edward N. Zalta, *The Stanford Encyclopedia of Philosophy*, Summer2016 ed. (Metaphysics Research Lab, Stanford University, 2016), <https://plato.stanford.edu/archives/sum2016/entries/scientific-method/>.

² National Research Council, *Beginning a Dialogue on the Changing Environment for the Physical and Mathematical Sciences: Report of a Conference* (Washington, D.C.: National Academies Press, 1994), <https://doi.org/10.17226/9109>.

³ “Manhattan Project - HISTORY,” accessed May 28, 2019, <https://www.history.com/topics/world-war-ii/the-manhattan-project>.

in *The Pursuit of Science in the National Interest* that “the simple, inescapable truth is that science needs society [to] thrive”⁴. From research into lab-grown meats to ensure sustainable food production⁵, to bacteriophages curbing the threat of drug-resistant bacteria⁶, it can be seen that indeed; specific societal motivations underpin much of the knowledge pursuit in the natural sciences.

However, scientific research is not always motivated by utility; instead, the pursuit of knowledge in the natural sciences may be chiefly motivated by curiosity. Spector⁷ states in *Science Translational Medicine* that “today’s most transformative medicines” originate from research conducted “without regard to practical outcome”⁸. Despite some believing that research focused on practical outcomes should be prioritised, the study showed that most of the medicines in question led back to “curiosity-driven” research, “with their relevance to therapeutics only appearing decades later.”⁹ This suggests that the practical innovations that come from science come from research motivated by curiosity about nature, not utility. Magnus¹⁰ suggests that “there are parts of nature that we are naturally curious about”, suggesting an intrinsic motivation for finding truths about the natural world regardless of their practical significance. Indeed, this natural curiosity regarding nature is what leads to the discovery of the bulk of modern therapeutic medicines – not desire to uncover the treatments themselves. Similarly, Kleppner¹¹ writes of how innovations, including modern telecommunications, the transistor and gene editing technology all arose from curiosity-driven studies into

⁴ Council, *Beginning a Dialogue on the Changing Environment for the Physical and Mathematical Sciences: Report of a Conference*.

⁵ “Future Food: Growing Meat in Lab to Help Meet Supply Needs, Singapore News & Top Stories - The Straits Times,” accessed May 29, 2019, <https://www.straitstimes.com/singapore/future-food-growing-meat-in-lab-to-help-meet-supply-needs>.

⁶ Derek M Lin, Britt Koskella, and Henry C Lin, “Phage Therapy: An Alternative to Antibiotics in the Age of Multi-Drug Resistance.,” *World Journal of Gastrointestinal Pharmacology and Therapeutics* 8, no. 3 (August 6, 2017): 162–73, <https://doi.org/10.4292/wjgpt.v8.i3.162>.

⁷ Jonathan M Spector, Rosemary S Harrison, and Mark C Fishman, “Fundamental Science behind Today’s Important Medicines.,” *Science Translational Medicine* 10, no. 438 (April 25, 2018): eaaq1787, <https://doi.org/10.1126/scitranslmed.aaq1787>.

⁸ Ibid.; Mary Todd Bergman, “Most Transformative Meds Originate in Curiosity-Driven Science, Evidence Says – Harvard Gazette,” *The Harvard Gazette*, 2018, <https://news.harvard.edu/gazette/story/2018/04/most-transformative-meds-originate-in-curiosity-driven-science-evidence-says/>.

⁹ Bergman, “Most Transformative Meds Originate in Curiosity-Driven Science, Evidence Says – Harvard Gazette”; Spector, Harrison, and Fishman, “Fundamental Science behind Today’s Important Medicines.”

¹⁰ P D Magnus, “Scholars Archive Philosophy Faculty Scholarship Philosophy Regarding Scientific Significance,” 2010, http://scholarsarchive.library.albany.edu/cas_philosophy_scholar/6.

¹¹ Council, *Beginning a Dialogue on the Changing Environment for the Physical and Mathematical Sciences: Report of a Conference*.

fundamental natural processes. Thus, compelling evidence shows that the pursuit of knowledge in the natural sciences is motivated largely by curiosity about natural truths as a whole, rather than the desire to uncover significant, utility-yielding, truths.

Ultimately, it is worth noting that these motivations to scientific research do not exist in isolation. Just as research to satisfy natural curiosity sometimes yield applicable findings, the converse is also true where application-based research yields accidental breakthroughs into unrelated natural processes – like how the Manhattan Project unexpectedly broadened the “understanding of metabolic processes”¹². Thus, despite the broad overarching motivations discussed, in reality the pursuit of knowledge in the natural sciences progresses in a non-linear, somewhat sporadic, manner with context, prior scientific discoveries, and random chance influencing both application-based and curiosity-driven research.

Religious knowledge systems, in contrast to the empirical hypothesis-testing of the natural sciences, rely on historical evidence, personal experiences and faith to arrive at religious knowledge.¹³ Just as the natural sciences answer questions about the natural world, religious knowledge systems seek to answer existential questions and decree social norms through belief in the supernatural. Truths in religion take the form of positive, descriptive, statements that comprise the body of doctrine in a religion, obtained through the study of historical texts, artefacts, or other religious teachings. Significant truths are the normative, or prescriptive, implications derived from the interpretation of said doctrine which inform the religious on how to live their lives. The importance of this normative motivation of religion knowledge acquisition is not lost on scholars such as Émile Durkheim, who states that “the true function of religion is to deliver salvation by showing us how to live”.¹⁴

One can argue that the pursuit of significant religious truths can be categorised broadly as either “dogmatic” or “spiritual”.¹⁵ Dogmatic religion involves the pursuit of knowledge motivated by the seeking of laws and decrees within doctrine for

¹² Michael Hotchkiss, “Beyond the Bomb: Atomic Research Changed Medicine, Biology,” Princeton University, 2014, <https://www.princeton.edu/news/2014/02/27/beyond-bomb-atomic-research-changed-medicine-biology>.

¹³ Wendy Heydorn and Susan Jesudason, *Decoding Theory of Knowledge* (Cambridge University Press, 2013).

¹⁴ Stephen Thornton, “Sigmund Freud: Religion,” Internet Encyclopedia of Philosophy (Internet Encyclopedia of Philosophy Pub), accessed May 21, 2019, <https://www.iep.utm.edu/freud-r/>.

¹⁵ “Dogmatic and Spiritual Religion | Psychology Today,” accessed April 24, 2019, <https://www.psychologytoday.com/us/blog/out-the-darkness/201412/dogmatic-and-spiritual-religion>.

proponents to follow. The Sharia Law outlined in Islamic texts is an example of such dogmatic doctrine, from which Islamic scholars and leaders seek to obtain laws and moral codes including crime, marriage, prayer and fasting.¹⁶ Spiritual religion, on the other hand, is motivated by the uncovering of personal values to follow. For example, Buddhists obtain knowledge from the teachings of Buddha informing them to instill the three values of “*Sila*: Virtue” “*Samadhi*: Concentration”, and “*Prajna*: Discernment”¹⁷ within themselves – in contrast with the precise decrees of dogmatic religion.

However, one should be cautioned against assuming religious teachings always fall into one of these groups. Flannery O’Connor, on the strict dogma of Catholicism, writes that “for me a dogma is only a gateway to contemplation ... an instrument of freedom and not of restriction”¹⁸; showing how the religious adhere to personal, spiritual, interpretations of dogma. Further caution should be taken against hastily placing whole religions into either category since several religions fit into both. Even Buddhism, mentioned previously for its spiritual teachings, employs decrees and laws to some extent¹⁹.

Additionally, regardless of whether dogmatic or spiritual, various challenges hinder the pursuit of both truths and significant truths in religion. In the pursuit of religious truths in general, differences between the sources accepted as the basis for doctrines pose a challenge. For instance, both Islam and Christianity accept the old testament as a source of their doctrines, but Muslims accept the Quran, whereas Christians accept the new testament as its continuation. As a result, Muslims and Christians accept different religious truths – whereas Christians hold Jesus to be the son of God, Muslims consider him as one of many prophets sent by Allah. Such differences in religious truths often lead to differences in the significant truths one obtains from them – explaining why Muslims adhere to the teachings of various prophets in the Quran whereas Christians adhere only to the teachings of Jesus. Thus, differences in the sources of doctrine affect the truths and, consequently, the significant truths, one obtains in religious knowledge systems.

¹⁶ “Religious Law,” in *Wikipedia*, n.d., https://en.wikipedia.org/wiki/Religious_Law.

¹⁷ “The Buddhist Core Values and Perspectives for Protection Challenges: Faith and Protection,” 2012, <https://www.unhcr.org/50be10cb9.pdf>.

¹⁸ “Flannery O’Connor on Dogma, Belief, and the Difference Between Religion and Faith – Brain Pickings,” accessed April 24, 2019, <https://www.brainpickings.org/2014/05/15/flannery-o-connor-letters-religion-faith/>.

¹⁹ “The Buddhist Core Values and Perspectives for Protection Challenges: Faith and Protection.”

For the pursuit of significant normative truths in religion, ideological predispositions which cause differences in interpretation may lead to disagreement between the significant truths obtained from identical doctrine. For example, Matthew Vines, a gay evangelical Christian author, argues that biblical verses condemning homosexuality are not reflective of God's view of the "committed same-sex unions between social equals" in the modern day²⁰. However, Gudel²¹ argues that it is "ludicrous" to believe an all-knowing God would have been ignorant of modern homosexuality. Furthermore, Gudel chides the "amazing anachronism" of interpreting ancient texts through modern liberal views that normalise homosexuality. In this case, the anachronism argument can be used to justify either conclusion, but ultimately, it is clear that other ideological predispositions may influence interpretation. Vines, a homosexual himself, would be predisposed towards a biblical interpretation accepting his sexuality. Despite religion's normative motivations, personal or even cultural ideological underpinnings²² have been shown to greatly influence the significant truths arrived at from religious doctrine.

Overall, the pursuit of knowledge in religious knowledge systems is motivated by the finding of dogmatic or spiritual significant normative truths from doctrine. Differences in sources of doctrine lead to differences in truths, and hence, the significant truths obtained in religion. Furthermore, even when the sources of doctrine are identical, the "significant" truths gleaned from them may not be. Ultimately, the significant truths one finds in religion are not set in stone. Instead, they vary according to the source and interpretation of doctrine, as well as the spiritual or dogmatic motivation behind their pursuit.

²⁰ "Debating Bible Verses on Homosexuality - The New York Times," accessed April 10, 2019, <https://www.nytimes.com/interactive/2015/06/05/us/samesex-scriptures.html>.

²¹ Joseph P. Gudel, "Homosexuality in Society, the Church, and Scripture," *Christian Research Institute Journal*, 1993, <https://www.iclnet.org/pub/resources/text/crj/crj-jrnl/web/crj0108a.html>.

²² "Culture Shapes Religious Belief | Psychology Today," accessed May 28, 2019, <https://www.psychologytoday.com/intl/blog/the-big-questions/201107/culture-shapes-religious-belief>.

In conclusion, significant truths in the natural sciences bring utility to society, yet curiosity, rather than utility, often motivates scientific research. In religious knowledge systems, both religious and dogmatic significant normative truths are derived from interpretation of the truths established within doctrine. However, differences in sources and biased interpretation are challenges to this. Ultimately, in the pursuit of knowledge, knowers in an area of knowledge often differ greatly in their motivations – any one scientist may be motivated by utility or curiosity, and a devotee may have their personal spiritual or dogmatic interpretation of doctrine. These individual motivations are hard to predict; instead, the points explored in this essay involve the aggregate of these individual motivations behind knowledge acquisition within entire fields of knowledge.

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