

Prayer and Entangled Quantum States

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1. Introduction

Prayer is an important aspect of the Christian spiritual life. Prayer, for the faithful, is a way to come into a deeper relationship with God and to seek his help and guidance not only for them but also for others. *The Catholic Encyclopedia* defines prayer as “the raising of the mind and soul to God.”¹ When an attempt is made to understand prayer, many questions arise in the mind of a person. A skeptic can view prayer as talking to someone at a distance without any apparent mechanism or communication between the person and God, thus degenerating prayer to talking to oneself, wishful thinking or as an escape from reality. To understand this communication at a distance, this article looks at Christian prayer and the concept of entangled states from quantum mechanics where a physical mechanism is used to explain interaction between quantum objects separated by large distances. It is suggested here that Christian prayer has an analogy in quantum entanglement, providing an argument that counteracts the criticism that there are no known scientific channels of communication in prayer.

Often science and theology are put in separate compartments. In contrast to the mechanical view of the universe, presented by classical physics, the advent of quantum mechanics has produced a paradigm shift, replacing the logical processes observed in the macroscopic world with processes that obey a different physics in the quantum world. One of them is entanglement, a characteristic trait of quantum physics. It is a physical phenomenon that occurs when a pair or groups of independent particles enter into a temporary physical interaction due to known forces between them, so they can no longer be described independently of the others; and then after a time of mutual influence they separate, where even at large distances, they can no longer be described separately; instead they must be described as a whole. Section 2 discusses Christian prayer while section 3 describes quantum entanglement. Section 4 is the conclusion.

¹ R. C. Broderick, *Catholic Encyclopedia* (New York: Thomas Nelson Publishers, 1976), 485–487.

2. Christian Prayer

In Genesis 2:7 the account of the creation of humanity is described as follows: “Then the Lord God formed man of dust from the ground and breathed into his nostrils the breath of life; and the man became a living being.”² This brief description of the Genesis account of the creation of humanity implies that the human being is made up of matter and a life giving spirit. However due to the disobedience of humanity this spirit lost its relationship with God. The redemption of this spirit back to God is the message of Christianity. For Christians, the saving grace of Jesus, made possible by his death on the cross, restored the fallen spirit of humans to union with the Spirit of God. Thus in baptism when the Christian accepts Jesus as their savior by faith, they receive the Holy Spirit. Paul in his letter to the Corinthians reminds them of this redeemed spirit in them: “Do you not know that you are the temple of God and that the Spirit of God dwells in you” (1 Cor 3:16). Further in Romans we read: “And in the same way the Spirit also helps our weakness; for we do not know how to pray as we should, but the Spirit Himself intercedes for us with groaning too deep for words; and He who searches the hearts, knows what the mind of the Spirit is; because He intercedes for the saints according to the will of God” (Rom 8:26–27).

Thus, it is the Holy Spirit who enables us to pray. The Holy Spirit is part of the Trinity, which comprises of God the Father, Son and the Holy Spirit. The Holy Spirit is in total ‘entanglement’ with God. Though separate, they act together. When our minds and souls reach out in humble dependence to God in prayer through Jesus, our faith dictates that the Holy Spirit transfers our pleas and supplications to God’s presence. This transmission is instantaneous. However what is being transferred is what the Holy Spirit communicates. The result is that the Holy Spirit receives back power to act according to God’s will in our lives but also in the lives of others. Such a belief in the Trinity and instantaneous transmission in prayer cannot be dismissed as irrational or unscientific, since a similar physical phenomenon exists in the quantum world. This phenomenon is referred to as quantum entanglement which will be examined in the next section.

3. Quantum Entanglement

The concept of quantum entanglement arose as a result of the argument put forward by Einstein, Podolsky and Rosen (EPR)³ questioning the validity of quantum mechanics as a complete physical theory. Schrödinger⁴ described this concept in the following manner: “When two quantum systems of which we know by their respective representatives, enter into a temporary physical interaction due to known forces between them, and when after a time of mutual influence the systems separate again, then they can no longer be described in the same way as before: viz. by endowing each of them with a representative of its own. I would not call that one but rather the characteristic trait of quantum mechanics, the one that enforces its entire departure from classical lines of thought.” What this says is that two quantum objects

² The quotes from the Bible were taken from the New American Standard Bible, Reference Edition (1973), Foundation Press, CA, USA.

³ A. Einstein, B. Podolsky, and N. Rosen, “Can Quantum–Mechanical Description of Physical Reality Be Considered Complete? *Phys. Rev.* 47 (1935): 777.

⁴ E. Schrödinger, “Discussion of Probability Relations Between Separated Systems.” *Proceedings of the Cambridge Philosophical Society* 31 (1935): 555–563.

which have interacted with each other at one time but are now separated by large distances from each other cannot be described in the same way they were characterised before the interaction. This is different from what is observed in classical physics. In other words the two quantum objects have become correlated or entangled due to the interaction, even though they are at present separated by such long distances as to consider them as separate.

Thus quantum entanglement is a physical resource, like energy, associated with the peculiar non-classical correlations that are possible between separated quantum systems. Entanglement can be measured and transformed.⁵ A pair of quantum systems in an entangled state can be used as a quantum information channel to perform tasks that are impossible in classical systems.

Thus entanglement is a strange feature of quantum physics, the science of the very small. What it tells us is that if it is possible to link together two quantum particles, photons of light or atoms in a special way that makes them effectively two parts of the same entity and then separate them as far as you like, then a change in one is instantly reflected in the other. It is as if two particles act together. They behave like one object, but remain as two separate objects. A good analogy is two people seated on a seesaw. No matter how long the sea saw is, if one end is down, the other end must be up. This happens instantaneously. There are no messages between the two people saying, "I'm going down, therefore, you must go up" and waiting for the person to receive the message. Yet, the two people are always connected and behave as one.

This physical phenomenon of entangled particles though separate but behaving as one with instant communication between them, throws some light on Christian prayer. The existence of quantum entangled states is evidence that a corresponding situation can exist during Christian prayer dismissing the skeptical view that it is talking to someone at a distance with no channels of communication.

4. Conclusion

To the skeptic, prayer can be viewed as talking to someone at a distance with no scientific mechanism to link them, akin to talking to oneself. To overcome this skepticism, this article first examined Christian prayer, which is understood as the indwelling Holy Spirit in the believer's heart interceding to God the Father through Jesus. The Christian believes that though separate God the Father, Son Jesus and the Holy Spirit are one. Focusing now on the quantum world, one finds that objects which have interacted before but are now separated by large distances, though separate, behave as one. Such objects are termed entangled states. For such entangled states, communication between them is instantaneous. Such a result from quantum physics with instant communication between entangled states indicates that an analogous situation can exist during Christian prayer, where the Spirit within us makes instant contact with God through Jesus, all of whom form part of the Trinity. The presence of such an instant communication channel between entangled states provides a scientific

⁵ Bub, Jeffrey, "Quantum Entanglement and Information," *The Stanford Encyclopedia of Philosophy* (Spring 2017 Edition), Edward N. Zalta (ed.), <https://plato.stanford.edu/archives/spr2017/entries/qt-entangle/>

counter argument to the skeptic who denies the possibility of any known outside communication routes during prayer.

For millions of Christians all over the world, prayer is a source of power and solace. They do not analyse how their prayers are communicated, because prayer is real to them. They do not require any convincing of its veracity because of their experience in answered prayers. Prayer forms the backbone of their faith. To the skeptic, on the other hand, who requires scientific proof for everything, what is put forward here is that in the quantum realm, within the class of entangled particles, communication takes place instantly. Such a result dismisses the claim of the skeptic that there are no known communication channels in science between a person and God during prayer.