Newton's *Principia* on God-mediated action

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As John Henry states, (Henry 2011)Newton simply wants to reaffirm the truth of God's omnipresence without directly involving him in the physics of the world system. Newton simply *wants to distance himself from a Cartesian concept of God* and convince the atheists that *God is a real presence extended in the world*. God must exist in space for the space to exist, but God does not only act through contact. Henry believes that Andrew Janiak(Janiak 2008)and HylarieKochiras(Kochiras 2009) give us a wrong picture of a Newton who believes in opportunism. Newton, Henry asserts, has always assumed that God acted through *secondary causes*:

"He rules all things, not as the world soul but as the lord of all. And because of his dominion he is called Lord God Pantokrator. For “god” is a relative word and has reference to servants, and godhood is the lordship of God, not over his own body as is supposed by those for whom God is the world soul, but over servants "(Newton 1999)

In the 1687 edition of the *Mathematical Principles of Natural Philosophy*, Newton clearly states that he *does not attribute a particular cause* to the gravitational attraction:

"I likewise call attractions and impulses, in the same sense, accelerative, and motive; and use the words attraction, impulse, or propensity of any sort towards a centre, promiscuously, and indifferently, one for another; considering those forces not physically, but mathematically: wherefore the reader is not to imagine that by those words I anywhere take upon me to define the kind, or the manner of any action, the causes or the physical reason thereof, or that I attribute forces, in a true and physical sense, to certain centres (which are only mathematical points); when at any time I happen to speak of centres as attracting, or as endued with attractive powers.."(Newton 1999)

while affirming openly the *faith in God's involvement*:

"When I wrote my treatise about our Systeme I had an eye upon such Principles as might work with considering men for the belief of a Deity & nothing can rejoice me more then to find it useful for that purpose."(Cohen 1978)

John Henry confirms that Newton has *never denied the possibility of God-mediated remote divine action*, in accordance with my opinion. Practically, Henry points out that, excepting the comment in the third letter to Bentley, there is no real evidence that Newton

rejected the concept of remote action. (Henry 2011)In support of this idea one can also appeal to Section 11 of Book I of the *Principia*:

"I now go on to set forth the motion of bodies that attract one another, considering centripetal forces as attractions, although perhaps—if we speak in the language of physics—they might more truly be called impulses. For we are here concerned with mathematics; and therefore, putting aside any debates concerning physics, we are using familiar language so as to be more easily understood by mathematical readers." (Newton 1999)

An additional argument in support of my idea that *Newtonoscillated between remote action with divine causes and immaterial mediated distance action*, a proposition suggested by Henry, is found in the General Scholium at the second edition of the Newton's*Principia* of 1713, with the famous phrase "*Hypotheses non fingo*":

"Hitherto we have explained the phenomena of the heavens and of our sea by the power of gravity, but have not yet assigned the cause of this power … I have not been able to discover the cause of those properties of gravity from phenomena, and *I frame no hypotheses* [*hypotheses non fingo*]; for whatever is not deduced from the phenomena is to be called an hypothesis; and hypotheses, whether metaphysical or physical, whether of occult qualities or mechanical, have no place in experimental philosophy … To us it is enough that gravity does really exist, and acts according to the laws which we have explained, and abundantly serves to account for all the motions of the celestial bodies, and of our sea." (Newton 1687)

Newton believed there must be a cause of gravity, but he was not yet able to rule on the cause. But we have no reason to suppose that Newton excluded the remote action from the range of possible explanations. Newton makes countless hypotheses, including in the *Principia*, or the hypothesis of the ether in *Opticks*. Thus, practically Newton states that a scientist proposes hypotheses, but he cannot "invent" them, in the sense of being determined by experiment, observation, or reasoning. Newton thus states that he has established mathematical relations, but not the existence of the ether, with direct reference to the fact that Leibniz "feigned" the hypothesis of the vortices.

Newton conceives space as independent of objects and their relationships, and each entity must connect with space in some way. He *rejects the Cartesian concept of a God without a space*

location. In the *Principia'*s General Scholium, which was added to the 1713 second edition, for example, he wrote about God:

"He endures forever and is everywhere present; and by existing always and everywhere, he constitutes duration and space. Since every particle of space is always, and every indivisible moment of duration is everywhere, certainly the Maker and Lord of things cannot be never and nowhere. ... God is one and the same God, always and everywhere. He is omnipresent, not virtually only, but also substantially; for virtue cannot subsist without substance.. "(Newton 1999)

In my opinion, Newton categorically *rejects the idea of active matter*. Schliesser argues, however, based on Newton's interpretation of "*A Treatise of the System of the World / De mundi systemate*",(Schliesser 2011)that Newton does not exclude the existence of the (appropriately materialized) matter as an active agent or gravitational cause. According to Schliesser, a body has two dispositions: a “passive” one "to respond to impressed forces codified in the second law of motion", and an “active” one "to produce gravitational force", as a distinct interaction codified in the third law of motion. (Schliesser 2008)But Newton writes about *De mundi systematically at the beginning* in Book III of the *Principia* that this is a popular version, Newton's concern here rather being methodological, and the idea of an active matter would be inconsistent with Newton's theological reserves for such remote actions, respectively he is taking into account the passivity of the matter. (Ducheyne 2011)

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