

age. When Mahony came in, he started the Ministry with Lesbian and Gay Catholics, at whose head he eventually placed ex-Dignity chaplain Fr. Peter J. Liuzzi. Leafing through the pages of the *Mission* also brings this fellow's exploits back to mind, such as his memorable sprinkling of an audience with the urine of a frightened puppy he was raffling. Amusing as these antics were, they pointed up the lack of moral direction available under Mahony's leadership.

One could go on and on. But the kindest thing in this matter I could say to either Pope Emeritus Benedict XVI or reigning Archbishop Jose H. Gomez is that they can feel free to take condemnation by His Eminence the Cardinal Priest of Santi Quattro Coronati as a badge of honor. In the unlikely event that Pope Francis ever asked my opinion about the affair, I would respectfully suggest that His Holiness ask himself whether or not he could stand the burden of the Cardinal's approval. ■

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## RECOVERING BY GROUNDING MODERN PHYSICS — PART II

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**ANTHONY RIZZI**

# THE REDEMPTION OF MAN REQUIRES THE REDEMPTION OF SCIENCE

Ed. Note: *Part I of this two-part series appeared in our April issue.*

**H**uman history is filled with things that are crucial in God's preparing the world for His Son, but the most important ones for our very abbreviated explanation are the Greek and the Roman civili-

zations. God of course knew from eternity that He would send His Son into the world and knew exactly when the proper time would be. Indeed, He sent men to make key discoveries and to build civilizations that would be linchpins in His plan.

### God Prepares the World for His Son

God knew that if the words of Jesus were to be understood and not distorted, there would need to be a sufficiently advanced culture, both intellectually and politically. The Romans provided the great political and material ground needed for Christ's work and message to be propagated geographically and into the future. The Greeks provided the preamble, the great truths that are accessible to reason alone, which are needed for His message to be properly understood and transmitted.

Of particular interest to us is Aristotle, who was probably the greatest of all thinkers because he established the first principles of our thinking, the general physics, and even coined the word *physics*. He also showed that knowing the physical world inexorably leads to knowing the existence of God. He was the first to recognize in a clear way that all we learn comes through the

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senses, and to clearly distinguish and explain the first principles we all learn as children. For example, he gave a rigorous analysis, which concluded in a clear conceptual definition of a physical thing. Seem not very important? The Bible asks how we can claim to love the Father whom we cannot see, if we do not love the brother whom we can see (1 Jn. 4:20). For us, who reside in the most scientifically advanced culture in history, the principle at the base of this statement should be a recrimination to all of us who cannot answer the question “What is a physical thing” and yet seek to communicate the nature of the invisible spiritual life. In short, *How can we claim to understand the invisible when we do not understand the visible?*

It is no accident, then, that Jesus was born at a time when human culture had reached a peak. No other time or place in the world could claim to have done what Greece and then Rome had done at the point when Jesus, the expected Jewish Messiah and Son of God, was conceived in Mary’s womb.

### God Becomes a Man, but Why?

Because of the root nature of the damage of original sin, which was ultimately directly against our relationship with God Himself, only God Himself could rectify the damage. Disorder at a given level cannot create order at that level, only order can; something cannot come from nothing. What is the most fitting way to rectify damage caused by a denial of man’s nature, a false spiritualization of man’s nature? What is the best way to bring man, literally and figuratively, to his senses? It is something only the Almighty could know was even possible. God becomes a man. God takes on a human nature, including those essential sensorial powers by which man is in contact with reality. With those sensorial powers, He, of course, necessarily takes on all the potency of matter, including the living and inanimate powers. This makes sense, in the deepest meaning. After all, the disorder caused by man is a disorder in which his reason is no longer in right relationship with his bodily powers. What better way to fix a world that has fallen deep into irrationality than to bring *rationality Himself* into the heart of that irrationality?

Of course, an irrational-centered world does not deal well with rationality, so it seeks to get rid of it. So, already around 400 B.C., Plato describes what would happen to the rational man stripped of everything but justice, dropped into our fallen world. In words that prefigure the coming of Christ, he says in the *Republic* (Book II):

Strip him bare of everything but justice. . . . Without being guilty of one unjust act, let him have the worst reputation for injustice, so that his virtue may be thoroughly tested. . . . and let him go on till the day of his death, steadfast in his justice, but with a lifelong reputation for injustice. . . . There will be no further difficulty, I imagine, in proceeding to sketch the kind of life which awaits [him] . . . . The just man will be scourged, racked, fettered, will have his eyes burnt out, and at last, after suffering every kind of torture, will be crucified. . . .

Christ’s death and resurrection stop the natural cycle of spiritual and even physical death. How so? One can easily see the power of the example of God Himself taking on a human nature and doing all these things to show us how to live and how to die. He shows us in His preaching, life, death, and resurrection what body/soul integrity is about. But we still need to know: *How do these things affect the reality of our fallen state?*

By taking upon Himself the natural consequence of thinking and acting according to falsehoods, by staying true to Truth even unto death, He re-establishes the proper order of reason over the body, giving the body back its integrity lost through Adam. Before this point, there was no man who lived according to reason all the way and in every way. With his life, death, and resurrection, there now is such a man.<sup>1</sup> Through this God-man, human nature is repaired. It is a kind of ultra-radical surgery in which the patient (human nature, through the Man) must die in order to complete the necessary radical repairs. Of course, if the patient stayed dead, the surgery could not in any way be called a success. Only because Jesus returned to life and only because He returned to life

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having repaired, through His perfection, the malady that afflicted man, can we call the operation on man a success. In His resurrection, He even gives us a glimpse of that more complete ordering of the body to right reason that, according to the Faith, can be ours after this life. There is now an actual man (who is also God) who has had right reason in control from the beginning of His physical existence through the completion of His life's mission. And that very mission is that, through His human existence (including His death and resurrection), all men will be able to live according to right reason. *But, you might say, the cure is in some way not complete, for the human race is still in dire straits. Furthermore, how is this new reality transmitted to us?*

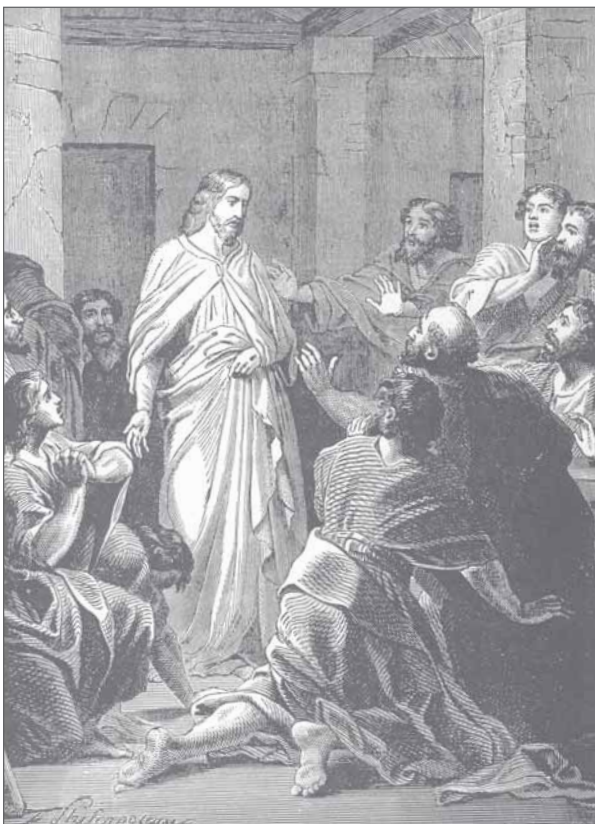
Unlike with original sin, this re-established mind/body integrity is not transmitted physically through procreation. Instead, the sacramental order is established through His Church. Addressing us through our bodily nature that He gave us to know through, He established a body of men so that all who choose can make their own the essential repair work He already completed and tap into the efficacy of that work. His Church, in taking upon herself the consequences of fallen human nature, will, through His grace, complete what was only implicit in His death and resurrection. As St. Paul says, we “com-

plete what is lacking in the suffering of Christ” (Col. 1:24).

To understand the meaning of this at a more physically grounded level, consider the following. The first meaning of “body of man” is, of course, man's own physical body, which is that by which an individual man *knows*. The second meaning, when we talk about a “body of men,” refers to those “political” groupings that men form, which are made in analogy to the human body. In analogy to the way we know through our own body, through this unity of men we supplement what we cannot do and know on our own. Recall that we are, as explained in Part I, social animals because we need each other to advance in our knowledge — i.e., in our nature as knowers. Finally, by analogy to this, Christ finds a body of men to carry the cure to the lack of order in our nature to all men, so that all may undergo the operation needed to perfect our natures in the cross of Christ, as further described below. Again, the whole purpose of the cure is to re-establish the order in our nature — i.e., to put right reason in control so that man will again be able to attain his ultimate purpose, to be united with Truth Himself. So, Christ founds a Church, which is His body.

How, in particular, does He do this, and in what sense is it *His* body? There is much to say in answer to both of these questions, but again we are here laying out the basics to connect us back to the primary role of the body and reason, not giving an exhaustive account. Succinctly said, Christ gives the Church both the authority to teach the generic truths men need to attain their final End and the power to confer the instruments of grace (the sacraments) because only *through that grace* can a man overcome his fallen nature, grow in truth, strengthen his nature, and become “perfect as your Father in Heaven is perfect” (Mt. 5:48). In particular, Christ does this by first giving the aforementioned authority and powers to His Apostles, the first bishops, with Peter as their leader and His vicar. These are passed on through the generations so that His body, the Church, living throughout physical history, will continually have contact with His essential saving action.

Christ the perfect Man, who healed human nature through His life, death, and resurrection, and who is the Source of grace, now gives His grace through the sacraments, starting in the life of a new member of the Body of Christ with baptism. In baptism He grafts a new, non-physical, supernatural nature onto the soul. It is through this graft that each man becomes linked to Him, and it is in this way that we ultimately share in this re-established



integrity.<sup>2</sup> It is first baptism — that access to the power of God acting in us, aiding us to return to Truth so as to have a permanent home with Him — which makes the body of the Church *His* body.

It is important to emphasize that this supernatural way of grace is *not a substitute for our physical nature. It is a powerful balm, aid, and perfecter of our physical nature.* Grace is God's action of re-establishing the order that we need to be what we are made to be. It is the means by which right reason can be put back in charge of our nature. This means that, through grace, our willing and acting according to right reason gradually heals even the most physical aspects of our knowing. For example, our sensorial powers begin to fall into line so that, for instance, what is good *feels* good and what is bad *feels* bad. It must be emphasized that this is done through grace, which further enables us to go beyond the capacity of our own nature (or any created nature), not only perfecting that nature but enabling eventually the beatific vision, the supernatural seeing of God. It is likewise with the other sacraments: They are aids that apply the reality of the new Man to perfect our nature. Here is literally and figuratively the crux of the matter, for it is through the Mass that the direct contact between the work of the God-man and His body, the Church, is made. Through the Mass, which *actually represents* the sacrifice of Christ in a non-bloody way, we can now bring our own activities into Christ's work of re-establishing Truth in the heart of our lives. Through the Mass, we can join our sacrifices with His.

These sacrifices really do (if done with the right intent) have the effect of stopping the evil caused by lies. A certain amount of suffering (from having to overcome or endure effects for which we are not responsible) arises when an element of irrationality is introduced into our path. This irrationality introduces new duties to defend the good, duties that would otherwise not be present. Despite its difficulty, we can choose to do the good that we have, by nature, a duty to do, instead of avoiding it, which would allow the irrationality to continue to wreak its havoc unchecked. And we can go even further and do good that is not properly our duty, further containing the effect of the irrationality. However, these good actions can of themselves neither repair the aforementioned damage at the root of our being nor repair the supernatural rupture from grace, both of which resulted from man's fall. Christ, through His death and resurrection, has this order perfectly established in His manhood, and only by uniting our suffer-

ing and activity with that of Christ can we hope to have the drops of our actions change the ocean of the problem at our core.

Through the Mass, Christ allows us to be participants in re-establishing right order, in moving from trying to shortcut our nature to working through the heart of our nature. We do this through grace, even though it is difficult, and even though it is "the cross," because we know that Truth is what we are made for.

The sacraments all underline the point that we are not to avoid our nature but perfect it. They are each physical signs that effect what they signify. They are reminders that by our very nature we know through the body. Remember that we are fed spiritually, *in the natural sense*, by what we see, hear, touch, and feel; this is why sensible physical properties can be good signs of our supernatural food, grace.

Again, through the sacraments, especially the action of Christ in the Mass, we can take on some of the consequences of all of man's lies (especially that primal one of the attempted shortcut around our nature and ultimately around God, explained in Part I) to become part of Christ's action of re-establishing order in ourselves and in our brothers. In so doing, He, through us, re-establishes order in the body of man, which has been transformed into the body of Christ for those in union with His Church. This union is first accomplished through baptism, but later is continued through an ongoing commitment and faithfulness in one's thinking and in one's practice of the Catholic Faith. With these tools and truths in hand, the Church grows in wisdom, as Christ did in His earthly life (and as Mary did). The Church's understanding of the truth that she has been given deepens with time. We have today, *in principle*, a deeper understanding than the Apostles had of the truths of the preamble of the Faith and of all the truths of nature, as well as the revealed truths given to the Apostles.

### **The Growth of the Church**

The growth of the Church's understanding of the deposit of Faith and the growth of her membership continued through time as she spread throughout the known world, especially the Roman Empire. In the early Middle Ages, the Church gradually became the dominant force in the Roman Empire, first intellectually and, through that, culturally. Due to a confluence of political, social, and material effects (such as the warming trend in Europe around that time), the Church was able to form her own culture. That medieval culture is re-

nowned for its beautiful architecture, art, and music, as well as its knights and romantic yet realistic view of life. Yet, ultimately, its defining feature — its love of Truth, which includes its love of learning — is barely noted. The head of that medieval culture, its brain so to speak, was formed to such a degree that it developed the first university, properly so called, in the world. The university sprang up not just in one city; rather, the list of university cities reads like a list of major European cities. The universities sprouted like daisies, giving evidence of how fertile the cultural soil was to that particular plant. Pope John Paul II captured this tendency in the title of one of his encyclicals, *Ex Corde Ecclesia*, which means “out of the heart of the Church.” What does he say comes out of the heart of the Church? The university. It is her true nature to value truth, because she carries the message of Truth Himself to man, whose nature is made for Truth. Hence, it is natural for her to bear the university, and she did.

From this well-tended cultural ground sprang St. Thomas Aquinas who, learning from the great Greek Aristotle, completed one of the great developments of the Church’s thinking. He gave her a clear explanation of man’s starting point in the physical world and carried it into the heights of theology. From here emerges a long list of scientists who contributed to all aspects of science, but especially mechanics. Progress was also made in understanding the human person, progress made nowhere else, so that a new method could be conceived that would transform the human landscape and allow, for the first time in human history, science to come, in the late Fr. Stanley L. Jaki’s phrase, to a live birth. Only Catholic-formed medieval Europe had provided the fertile womb for the robust conception of science and its live birth. But the birth quickly ran into problems. Indeed, because of these problems, the damage of original sin is effectively given a robust amplifier. Original sin is put on hyper-steroids.

### **The Biggest Battle to Date: *Per Impossibile*, Reason Seems to Separate from the Church**

About the year 1600, man entered a radically new era in his development, for at this time modern science in the most general sense began. It started when Descartes<sup>3</sup> discovered a new method of doing mathematics, which can be called *quantiological*. Mathematics studies quantity; the new method looks at *quantity* (*quantio*) as a *logical* system of symbols, hence the name *quantio-logical*. Before this time, men focused on

quantity itself — i.e., extension, which is a property of physical things — and did not allow symbols to take a controlling role. This meant that reasoning was slow and heavily prone to error because it was left in the mind and was not able to be put effectively “on paper.” The heavy respect for the physical, deeply engrained in the medieval mind, coupled with its deep study of human nature, set the intellectual environment for Descartes<sup>4</sup> that eventually led to a robust use of mathematical symbols — what we now call equations. This symbol-based, logical system allowed one to convert one’s thinking into rules of manipulating symbols. Not just simple aids but the reason steps themselves and purely mental entities were represented in the system. This eventually enabled computers, when the technology was ripe, to do what they do. Because of this great new method, the math discovered, for example, in the years 1600–1900 dwarfs anything done anywhere in all preceding human history. An even more important revolution, building on that one, occurred when, via Galileo’s work (standing on the medieval work), Newton successfully centered physics around a logical system that is easily put into two fundamental equations. Again, because of this new method, often called the modern scientific method, these advances in physics do, in a very real sense, dwarf all other previous efforts.

But the old enemy of looking for a shortcut around our nature came back with a vengeance through this great new method. It must be emphasized that the modern scientific method is wonderful, and it is very sad that so few in our culture have been taught it and really understand it. Modern science defined by the scientific method is what makes our “modern culture” modern. It is responsible for everything from the polio vaccine to cell phones to robots on Mars.

Nonetheless, the method was not digested properly, for its *meaning* was never really digested. No one really developed a proper understanding of how the new method relates to the simple physics base we have discussed. No one ever determined in a clear way what the equation-centered systems mean in terms of the simple things we learn as children, that first physics. Hence, the symbols and systems increasingly became — by default, not clear choice — what the intellectual elite, the scientists, prized as the most finished understanding.<sup>5</sup> Now, this is natural in one way, because the method is powerful, allowing one to get results relatively easily with less error, and the results (though buried in equational thinking) are profound. What happens next? Imagine that you began to



of analysis we are doing here) that starting with modern science necessarily involves a denial of the first simple things upon which *everything* we know (including modern science) depends. This holds for those who actually know modern science, but with the caveat that most modern scientists are okay with the idea that modern science undoes common sense. For the layman, the situation is even worse, but in a different way; in particular, the layman has no real idea that the nature of modern science that controls his thinking is so *inextricably* tied up in equations and logical systems.<sup>6</sup> In short, we, scientist or layman, do not know that we are on steroids. And because of this, the steroid of scientism is immeasurably more powerful in entangling us in the idea that we can find a shortcut around our nature than physical steroids are in giving men strength.

The delusion that we can circumvent our physical nature is even further amplified as the technology that springs from the deep insights of modern science seems to give us the ability to remake that physical nature. Moderns take a pill to alleviate Attention Deficient Disorder, even if it results not originally from a physical problem but from, for example, the angst of a child who hungers for truth in the stability and the love of a mother and guidance of a father. Moderns use *in vitro* fertilization to get a child and avoid having a husband. Moderns use a pill or a device to subvert the natural meaning of intercourse, a child. Moderns use pharmaceuticals and surgery to “change” their sex. This is just the tip of a huge iceberg.

### **The Response of the Church: Returning to the First Physics We Should Have Learned as Children**

To return to the first physical principles as we need to, we must truly learn the fact that man is a rational animal made for Truth and then integrate the consequences of this principle into our everyday thinking, feeling, and acting. This, in turn, means that we must own, in this full way, the fact that, because we are animals, *everything we know comes through the senses and thus our bodies are essential to who we are*. Our body is not an extra. In order for this fact to be a real part of our modern thinking and living, we must launch a two-pronged counterattack: (1) Re-establish right thinking at the deepest levels and spread that thinking from the base physics up into *every* branch of learning (note that all branches of learning, including learning for its own sake and learning directed at doing something, which includes the arts, depend on our most mature physical understanding); and

(2) Figure out what actions such thinking requires and begin to carry out the actions ourselves and spread our findings to others.

As for the first prong, we have to dive deep into the heart of modern science and discover what it is we mean by our equations and our systems — what exactly do they say and not say. This means we have four hundred years of work to catch up on. Where do we start? In fact, the Institute for Advanced Physics (IAP) has already started and been working steadily on this for the past ten years. It is the first and only institution in the world doing that work. The IAP has already uncovered the grounded meaning of modern physics up to the twentieth century, in particular for the fields of mechanics, electricity and magnetism, and special relativity, and is currently working on quantum mechanics.

Now, as we have said, man is a social animal; he is made to know through the complementary talents of others. And, as Christ said, and as is clearly evident by reason alone, “a house divided cannot stand” (Mk. 3:25). Any primary activity needs to be integrated into the community. Activities do not get any more primary than the work of the Institute for Advanced Physics. To thrive, then, the IAP needs to become more and more an integral part of the larger community. Now, as you will have already noticed, figuring out the grounded meaning of modern physics is obviously the work of physicists. You might be a physicist, in which case we can use your involvement. If not, you might know a physicist who would be receptive. There are many ways that one can become part of the work of the IAP, building the requisite community.

Beyond this, the layman is needed in his own role (even in the first item enumerated above) for at least two general reasons. No scientific enterprise is successful without the support of the community, which, varying according to one’s gifts, includes financing and volunteering to help in various ways, and praying for the advancement of the work. Few think much about it but, at least financially, we already do this by second nature with modern science in its present form. For example, in the U.S., funding for physics is one of the few areas where there is little disagreement (when it comes up, it’s a question of *how much*, not *if*). Or again, nearly every state school has a graduate physics department and effectively no one is fighting hard against it. Of course, in addition to direct financial help, non-technical people can do many things to facilitate technical research directly and indirectly.

There are also roles in learning and teaching the material that IAP develops. IAP has technical material and non-technical material and even simple material, such as *A Kid's Introduction to Physics*. We encourage people with some science background to become associate members and learn this non-technical material so as to become a directly active part of the solution.

We encourage those without that science background to form study groups to learn the material, in particular groups focused on the book *The Science Before Science* and the many resources around it, including a TV series and audio book and study questions. Once you learn it, you can begin to figure out how to live it and pass it along to others.

There is a lot of work to be done to reclaim a clear understanding of the basic preamble of the Faith, those simple things we all should know from childhood, which we now need to understand much more clearly than ever

before. Only by reclaiming these basics can we reclaim our understanding of salvation history and then begin to robustly enter into that saving action that Christ wants to accomplish through His Church. Doing this means that we embrace our duty and take on the daily task of making ourselves and our brothers more what we are meant to be because we are growing in truth and love of Truth, thereby growing closer each day to our final End, who is Truth Himself.

To fail to participate in the work of reclaiming the ground of our thinking by reclaiming modern science is to stand timidly by while the Gospel is made more and more opaque, making it harder and harder for its message to be heard and understood. Indeed, as we have seen, even for believers that message has already been, at some deep level, transmuted into a kind of myth with magic words, instead of facilitating a deepening knowledge and relationship with Christ and His Church. ■

## ENDNOTES

1. Recall from Part I that human nature necessarily includes man and woman; succinctly said, man is man *and* woman. Hence, the fall of Adam and Eve, the corruption of both “halves” of human nature, implies that an appropriate cure would require a female complement to be involved. This is achieved through the immaculately conceived sinless woman, Mary. Wanting to enter the world through its own center, God, taking on the nature of a man, entered through a woman. This woman, to be appropriate, needed to be unique. Our Blessed Mother is unique and it is in her that we have the woman who lives a totally truthful life from beginning to end. It is she, then, who becomes the needed complement and at the same time becomes the model of the Church through the active/receptive division involved in the sexes. She is the model of the body of Christ. She grew in perfection while she never sinned. Though the instruments of the Church can and do sin, the Church grows and, at the completion of time, through her activity of growing in truth in the physical world, will become perfect. Christ will then be able, in analogy to physical marriage, to present Himself with a spotless bride.

2. Baptism, through its actual change in our being, also quenches the debt of justice of man to God caused by Adam and passed on to all subsequent men (via his common nature passed on by generation, which establishes a kind of analogical body of all men). But it leaves us with the damage done to our nature by Adam's sin (damage in its orderedness toward Truth), which we are to fix via grace and the infused virtues and gifts of the Holy Spirit given at baptism.

3. Descartes, as happens in the telling of history, serves as an icon for many men (because of a certain primacy), including French and Flemish mathematicians Francois Vieta (A.D. 1540-1603) and Simon Stevin (A.D. 1548-1620).

4. Other influences also made it easier for the place of the scientific method to be misunderstood, beginning with Descartes. Note, however, that the path to improperly digesting the meaning of the method, or better, *not digesting its meaning at all*, is in a real way a natural effect of the power and nature of the method itself (as we will discuss shortly in the text of the article). Remember that the very nature of the method is to translate real things into a powerful system of symbols that can become highly self-referential, at least through the rules that govern them.

5. Someone might complain that this description leaves out the heavy experimental emphasis of modern science. However, think about how experiments are understood and interpreted in the modern scientific method. For example, in the heart of the base science of physics, experiments are understood and designed according to equation-centered systems. Recall even in high-school physics that when you study a projectile you are asked to make measurements and understand it in terms of, for example,  $F=ma$ .

6. Even if the layman were aware of this, he could not untangle the good science from the false philosophical exposition that results when the science popularizer attempts to convert the equations into ordinary language, since the layman does not know the equations that alone give the physics as it is currently understood.



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