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JEAN-BAPTISTE BULLET AND THE MIRACLE OF NORMALITY

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Summary: Abbé Jean-Baptiste Bullet was an 18th century French scholar and theologian. Using his knowledge of natural sciences, he offered a physico-theological proof of the existence of God in which the organization and the makeup of nature was used to show the existence of an intelligent Creator whose divine attributes could be detected in nature. He stressed the fact that humans are missing the miraculous aspect of the makeup of the world since they are used to it and thus consider it something normal.

Jean-Baptiste Bullet (1699–1775) was a Catholic priest, a professor of theology from 1728 and the dean in the University of Besançon¹. An erudite scholar who made his name by the three-volume work on the Celtic language².

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¹ *Nouveau dictionnaire historique*, vol. 2, Caen 1786, p. 469; *Dictionnaire encyclopédique de la théologie catholique*, vol. 26, Paris 1868, supplement, pp. xviii–xix.

² J.-B. Bullet, *Mémoires sur la langue celtique*, vol. 1, Dijon 1754; vol. 2–3, Besançon 1759–1760; see also C. Pignatelli, *L'étymologisme celtomane de Jean-Baptiste Bullet*, in: *Ki bien voldreit raisun entendre*, eds. S. Dörr, F. Möhren, Strasbourg 2012, p. 199–216.

As a historian, he wrote on the history of France³ and on the beginning of Christianity in which, by design, he used only the testimonies of enemies of Christianity, because “the calumnies, the satires, the mockeries, the insults, the edicts of proscription, the death trials that this aversion dictated to them to make us know how the Gospel was spread”⁴. As a theologian, he published three volumes of responses to the critics of the Bible and its alleged deficiencies and contradictions⁵. Also, in the theological spirit of the time, at the height of the development of physico-theology, he published a two-volume work in which he argued for the existence of God with a mixture of rational reasoning and physico-theological arguments.

The existence of God

First, Bullet proposed rational proofs of the existence of God spelled out in a series of propositions. The 1st proposition: something exists; 2nd: not all that exists has been indifferent to existence, where the curious scholastic phrase “to be indifferent to existence” is understood as simply not existing, to be in the state of nonbeing (1.2)⁶; this can be summarized more traditionally by saying that not all beings are contingent, whereby it becomes clear that the 3rd proposition, there is a necessary Being (the Being which exists of itself), follows from the 2nd proposition (3), since if not all beings are contingent, there must be necessary being(s). All that follows thus hinges upon the 2nd proposition. However, this is what it is, a proposition, since a question can be asked: why should not all being be contingent? Is a world that is constantly in flux impossible? This is, actually, where physico-theology is needed to strengthen this proposition. In the meantime, the 4th proposition states that matter is not this necessary Being (5), but the argument is unconvincing: matter existing by itself would have to have a particular form. This argument relies on peripatetic physics; however, we could ask, why could not matter existing by itself acquire forms that constantly change? Bullet based his proposi-

³ To mention only J.-B. Bullet, *Dissertations sur la mythologie françoise, et sur plusieurs curieux de l'histoire de France*, Paris 1771.

⁴ Idem, *Histoire de l'établissement du christianisme, tirée des seuls auteurs juifs et payens, où l'on trouve une preuve solide de la vérité de cette religion*, Besançon 1764, p. v.

⁵ Idem, *Réponses critiques aux difficultés proposées par les nouveaux incrédules, sur divers endroits des livres saints*, Paris, vol. 1: 1773; vol. 2: 1774; vol. 3: 1775. In 1783, vol. 4 came out, which was authored after Bullet's death by his younger colleague, abbé François Xavier Moise.

⁶ References are made to a volume and a page of J.-B. Bullet, *L'Existence de Dieu, démontrée par les merveilles de la nature*, vol. 1–2, Paris 1768.

tion on the assumption that it is impossible that matter by itself cannot give itself particular form; but this is assuming that matter is completely inert and Bullet who combatted atomism was aware that this assumption was not universally accepted.

The 5th proposition states that the world is not this necessary Being; the nature of necessary things does not change (1.6), but the world is changeable (7); however, if change is limited only to the form, the nature of the world could remain the same. Necessary things are eternal, said Bullet (7), and things in the world disappear (8). Non sequitur. In this, necessity is equated with eternity. It is possible to envision a necessary causal chain in which each link could appear at an appointed time and then, also by necessity, sink into nonexistence. In any event, Bullet's propositions lead to the conclusion that matter and the world are created and to the 7th proposition stating that the Creating Being is the necessary Being (9). For Bullet, that entails that the Creating Being is a wise Intelligence: there is motion in the universe; matter is not a principle of motion, thus, the first principle of motion is immaterial, and thus, an Intelligence; and hence, the 8th proposition: the Creating Being is a wise Intelligence (10). And now, Bullet submits some proofs, not just propositions.

Along with propositions, Bullet proposed a number of proofs. According to the 1st proof, there is motion in the universe (1.10); the natural state of matter is being at rest and there is no one "foolish enough to be afraid that a stone at his feet throws itself to his head" (12–13). However, what if the stone is ejected by a volcano or if it becomes a part of an avalanche? Is there a certainty that that was not self-caused by matter? The proof thus relies on the unstated assumption that matter is passive.

Then there are 28 proofs, which are of the physico-theological kind on various levels of generality, not altogether well organized. Here are some of them.

Physico-theology

The 2nd proof states that someone seeing the "spectacle of the universe" with all its beauty, diversity, order, and complexity would say that there is a sovereign Intelligence, an Author of it all (1.14–15). The 3rd proof states that "a Composite whose parts [are] exactly proportioned with each other and with the whole, well connected together, follow each other, require each other, suppose each other, respond to each other,

occupy the places that their respective configuration requires, support each other, help each other and all result in one object or one effect; such a composite clearly indicates a goal and a design” (19). The emphasis is placed here on the makeup, the internal structure of a compound entity, so it is an elaboration of the previous proof by concentrating on the inner orderliness of compounds. The 4th proof also speaks to the order: all order is the result of an intelligent principle and the more complex it is, the better manifestation it is of a wise, skillful, and powerful cause (74–75).

Scores of examples are included, beginning with the paradigmatic example of a watch⁷: when an atheist reads about a watch, he will no doubt admit that it was made by an intelligent maker (1.21–22). Also, the makeup of the watch and the coordinated motions of its parts clearly show the design of a worker just as well as a verbal explanation would do (23–24).

Then consider the human body, “its bones which like a mobile framework give all at the same time to the body the solidity and flexibility; all moistened by a fatty and unctuous fluid, which maintains their suppleness; some joined by sutures, others nested with an art, equipped in their junctions/joints with cartilages whose polish, as well as liquid which they induce, facilitate their movement and prevent them from injuring themselves while rubbing; its nerves which distribute themselves into infinity, not being there a part of the body, even the hardest, which is deprived of them; its nervous knots, which although arranged in the same way by an incomprehensible wonder, serve for various sensations; its muscles of a substance soft and of prodigious strength” (1.75), etc. about other parts of the body. No one believes that the mechanical flutist of Vaucanson made itself. It is considered a marvel of art (78), but it hardly measures up to the complexity of the human body (79). Human skills cannot match the precision of elements of the body (84). For instance, in one cubic inch of flesh there are 250,000 ramifications/branchings; 25,000 blood globules are of the size of a grain of sand (80). These observations would not be possible without the microscope which opened before naturalists the world they did not know before. For example, they saw creatures so small that a million of them would make the volume of a grain of sand (102). The microscope revealed that the minute mites have perfectly proportioned

⁷ An additional benefit from using this example in French is a pun: *montre* (watch) and *dé/montre* (shows, proves).

bodies and have all organs needed for life just like big animals (103). It would be absurd to think that “a blind cause formed these living atoms... with subtlety, delicacy, prettiness, elegance, beauty, colors, perfection, polish which are well above of what the most perfect arts can do” (107).

Bullet described in great detail some organs of living organisms. One favorite example of physico-theologians was the eye, the 5th proof on Bullet’s list. It is marvelous, for instance that an image of an entire city can be put on the eye’s retina to be seen and each object (building, cart, etc.) can be distinguished (1.109). Billions of rays reflected from all objects of the city merge marvelously into one single point in the eye creating a coherent image (111). There is also a remarkable variety of eyes in the animals. To give just one example, there are 12,544 hexagonal lenses in one eye of a dragonfly and a butterfly has 34,560 eyes (115–116) (today the latter number is estimated to be about a half of it). Bullet also described in some detail the mechanism of emitting voice (117–124), and of smelling (2.72), also teeth (74), the tongue (78), the palate (79), and lungs (80).

Marvels can be seen in the world of insects. For example, “a species of aquatic moth brings grains of sand on its skin. It is so dusted that it looks like the moth has rolled over [in the sand]. It is an embellishment which is not of a great price, but is of some weight. The moths, laden with this heavy matter, would have to crawl at the bottom of water, and could not rise to the surface, if they did not have the industry of procuring counterweights. But this expedient requires great precision, because if the counterweight is too light, it will raise the insect to the surface of the water and will prevent it from diving; if it is too heavy, you see the consequence,” etc. (2.95).

Bullet included examples from the world of fish. For instance, “the starfish that we see in the Antilles Islands, roams during the calm; but as soon as it foresees a storm, for the fear of being pushed to the land, it throws little anchors from its body, with which it attaches itself so tightly to the rock that all the agitations of the billowing waves cannot detach it” (2.99).

Bullet left these examples and many like them without a comment, but the point appears to be that animals are able to perform tasks without being trained. How can a moth properly counterbalance its load? How can a starfish predict an incoming storm? At one point, Bullet did make a comment to that effect when he wondered about a butterfly that does

not feed on leaves, but caterpillars do and the butterfly knows without fail where to deposit its eggs so that the hatched caterpillars will be able to feed themselves. “The hand of the Providence directs them” (2.111), directs them, we may add, through an implanted instinct.

Some very specific and disconnected examples are provided. For instance, the 15th proof: the scales of fish are interlocked like tiles on the roof. Could it be done by chance? (1.140). The 18th proof: water does not stick to the plumage of aquatic birds (142). Also, chicken suffocate under water after 3–4 minutes, ducks after 8–15 minutes (never mind how this information was obtained). This means that different makeups of animals are divinely fitted upon creation to a particular environment (143).

Bullet’s theological adversaries were deists and atheists, but he used philosophical and theological arguments primarily against the latter, in particular, the atomists, since in the absence of non-physical deity they had used randomness as the primary mechanism explaining the makeup of the world. In fact, already the ancient indicated that chance is blind, stupid, without intelligence, always fickle (Cicero) (2.2), always flighty; it loves change and has nothing constant except for its inconstancy (Boetius, Plutarch, Aristotle) (3); it is an enemy of order and reason, observing no rules, and it is the source of confusion (4); chance produces no similarities, no regularity, no perfection, no exact copy (6). In his view, chance as a creative and creating mechanism was simply impossible. And so, the 16th proof says that chance is a blind principle (1.140). If chance could do more and better what a rational worker cannot do, then there would have been more reason in the lack of reason than in the reason itself (141).

On that note, the 9th proof: chance cannot produce an orderly whole out of parts (1.131). This observation can be even pressed to the atomic level. Even assuming that atoms are intelligent and can move by themselves, they would have to have a complete knowledge of the mechanism of a body in order to position themselves in a place which would create with other atoms well-structured organs and the body; such a knowledge would be much higher than the knowledge of most knowledgeable philosophers (207–208).

The 10th proof: in double organs, such as eyes, ears, or limbs, the two parts must be similar; can randomness assure that this would always be the case? (1.131–132). The 23rd proof states that if everything happens by chance, then on each day there should be new plants and new animals and yet in the last 6000 years – the then assumed age of the universe

– plants and animals did not change (188). The 24th proof: there are some necessary connections in nature: the heat of the sun rises vapors, condensed vapors fall as rain fertilizing plants, etc.; as to chance, there are no necessary causes and effects, all is chance, and thus such orderly sequences cannot be generated (189). The 25th proof: detectable equality, similarity, proportion (190), and interdependence among plants and animals point to intelligence and speak against randomness. The 26th proof: chance cannot regularly repeat the same movements, actions, events (191). How can the regularity of the motion of the sun (or the earth) be explained by chance? (194). Same with the moon, with flows and ebbs of seas, with the four seasons, etc. (195). Chance cannot repeat the same effects, and yet the body of a child, as it were, repeats the body of its parents, so that the progeny looks like parents, both among animals and plants (197–199).

The orderliness of the universe, undeniable as it is, has apparently some flaws. Bullet to some extent addressed this problem. Why are there natural disasters? According to Bullet, some problems such as droughts or local floods may be a favor to the creation. They may have stopped epidemics and pests. If we don't want to see these acts as motivated by God's goodness, consider them to be the acts of justice, the punishment for sins.

Many complain that the just often suffer and the unjust frequently prosper (2.54–55). Shouldn't each good deed be immediately rewarded and each sin immediately punished? In Bullet's view, people frequently fall, but they can repent (56). When a sin is punished right away, there is no room for repentance and justice is not accompanied by mercy. Vice often offers a pleasure, and virtue often requires a sacrifice; people must force themselves to avoid the former and follow the latter; they must prefer an invisible and distant happiness over an immediate pleasure (57). When a sin is punished right away, there is no merit in avoiding vice and in practicing virtue. In such a case, vice will be avoided out of fear; it will be done by instinct and practicing virtue will be out of narrow self-interest (58).

Bullet made an observation that while complaining about some alleged irregularities in the universe, people have to know very well some work in order to decide that something in it is irregular or useless (1.69). No one has a complete knowledge of the universe to say what is useless in it. Such criticism, however, only shows people's ignorance. They

can make some local changes such as drying marshes, but this does not change the design of the universe (70). Also, venomous animals often considered to be of a doubtful benefit as part of creation are not created for humans who avoid them and if they are hurt by them, it is by accident. By the removal from the universe hurtful things, the universe would be destroyed: fire can burn us, bad water causes diseases, and air can bring pestilence; humans are often vicious toward others, so, to satisfy “the censors of the Providence,” no human being should be placed on earth (71). Furthermore: water needs to fertilize fields, water comes from rains, rains from vapors (73), and vapors from waters on earth, so a complaint about too many seas and oceans being on earth is unjustified. The complaint about insects is directed against the bounty of divine marvels and no one can see insects in any other way than marvels after reading Swammerdam and Réaumur. Besides, insects are food for birds which are, in turn, our “most agreeable” food (74). In this Bullet used purely physico-theological argument by calling attention to the marvelous organization of the body of insects, but it will not always be the first thing on someone’s mind who is stung by gnats or bees.

Miracles

The 28th proof refers to miracles as a proof of the existence of God. Bullet distinguished two kinds of miracles: one kind is when God suspends the present order of the universe; the other is the establishment of this order when He “imprints on matter motions contrary to its tendency,” and mixes elements to establish the structure of the world (1.209). How can a miracle of the first kind be recognized? There are three possibilities. First, a miracle takes place when there is a great excess of an effect compared to the effect normally produced by a certain cause; consider lifting a car with one arm alone. Second, there is a miracle when a cause does not produce its normal effect; consider someone free-falling from the roof of a skyscraper to be completely unharmed. Third, when a cause produces an effect contrary to normally produced, for example, when fire cools something down instead of heating it up or even burning⁸.

These three possibilities are not quite comprehensive and the divisions between them are rather blurry. Where would fall the miracle of water turned into wine? The resurrection of Lazarus? It seems that

⁸ Bullet, *Réponses critiques*, vol. 2, p. 520–522.

a better definition of a miracle would be an event which is the result of no (known) natural causes. This would include miracles used to establish the supernatural origin of Christianity. It is a miracle to heal the blind, but even a greater miracle is to change religion, mores, opinions, tastes, and inclinations of millions of people. If the testimonies of the Jews and the pagans about the miracles of Christ and the apostles are rejected, then the fact of “the conversion of nations” would be such a testimony, since “it could not take place without miracles.” All these miracles were performed by God; thus, Christianity is true⁹.

Miracles of the first kind are normally surprising and, at the first blush, more obvious and less controversial than miracles of the second kind; however, Bullet considered the latter to be more miraculous than the first kind (1.211).

Circular motion is a miracle of the second kind since it is against matter’s tendency to move in a straight line, and so is the motion of matter, since by itself matter cannot move or change direction (1.210). The miracles of the first kind are rare and they are used to attest God’s revelation and are addressed to all people; the miracles of the second kind are constant and everywhere present, but some knowledge is required to see and appreciate them, and thus they are addressed to philosophers and they are used to prove God’s existence; these miracles include the following events: 1. atoms making the universe would have to produce first earth, water, and air (211–212); 2. bodies move in a straight line (213), so atoms could not create anything by constantly moving in a straight line, i.e., parallel to one another; 3. the subtle matter [aether] in which celestial bodies move creates some resistance, so they should stop moving; 4. fire dissipates, but not the fiery sun that remains a solid body (214); 5. from a seed, roots always grow down, stalks up, regardless of how the seed is positioned in the soil (215).

Bullet also spoke about mysteries as phenomena that surpass human reason. One is the existence of the eternal, infinite God who created the world out of nothing. Atheists also have a mystery since “what is more incomprehensible than making chance [to be] the author and the preserver of the beautiful order that reigns in the universe?” Mysteries are around us: the union of the body and soul, the nature of thinking, of memory, the mechanism of senses. We experience such mysteries daily, so we should

⁹ Idem, *Histoire de l’établissement du christianisme*, p. 57, 55, 65.

not be surprised by seeing mysteries in religion¹⁰. It appears that with these definitions, mysteries would include miracles of the second kind.

And so, miracles of the second kind make the universe what it is. People do not see anything miraculous in them since they are used to them and so they are considered normal events. Instead of seeing nature as something spectacular, people got used to this view and the view of nature does not incite in them the feeling of admiration (1.16). However, the normal is miraculous, more miraculous than extraordinary occurrences. And this is what Bullet along with his fellow physico-theologians wanted to bring to the attention of people so that by seeing the ordinary course of phenomena around them, they would see them as something truly extraordinary, whereby they would see the Author of the universe. The recognition of the existence of God would not only satisfy curiosity, but it should also lead people to the acceptance of the moral order stemming from God, and this has eternal consequences for each person.

Bullet's book is somewhat chaotic, particularly the second volume, theological analyses are not well integrated with physico-theology. However, the reader gets a fair share of natural theology and information about the natural world, although the value of the latter is somewhat undermined by the fact that Bullet used a large amount of information from the previous century, 70–100 years old. True, this information is duly referenced and drawn from scholarly journals and monographs written by reputable authorities whose names we recognize even today, to mention only Buffon, Huygens, Leeuwenhoek, Fahrenheit, the already mentioned Swammerdam and Réaumur, and others. However, although in many cases the scholarly information is quite dated, this does not change its value for making physico-theological points. The fact that the normal course of events should be seen as miraculous comes out strongly. Awakening in his readers the realization of the miraculous nature of normality Bullet saw as an avenue leading people to the divine Creator of the universe and, ultimately, to the recognition to the divine moral law. Apparently, readers appreciated that since the book had several editions in the 18th and 19th centuries¹¹ faring better than many other physico-theological books of that age.

¹⁰ *Idem*, *Réponses critiques*, vol. 2, p. 530–532.

¹¹ First published in 1768 and reissued in 1773, 1779, 1819, 1823, and 1848. A German translation came out in 1795.

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JEAN-BAPTISTE BULLET I CUD NORMALNOŚCI

Słowa kluczowe: Jean-Baptiste Bullet, fizyko-teologia, kartezjanizm, istnienie Boga, cuda.

Streszczenie: Abbé Jean-Baptiste Bullet był osiemnastowiecznym francuskim uczonym i teologiem. Korzystając z osiągnięć nauk przyrodniczych przedstawił fizyko-teologiczny dowód na istnienie Boga, w którym organizacja i struktura przyrody posłużyły mu do wykazania istnienia inteligentnego Stwórcy, którego boskie atrybuty można wykryć w przyrodzie. Bullet podkreślił fakt, że ludzie nie widzą nadprzyrodzonego aspektu przyrody, gdyż przyzwyczajenie prowadzi ich do widzenia regularności przyrody jako czegoś normalnego.