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### **The Parable of Giordano Bruno**

Bertrand Russell wrote in his *History of Western philosophy*: "When an intelligent man expresses a view which seems to us obviously absurd we should not attempt to prove that it is somehow true, but we should try to understand how it ever came to *seem* true. This exercise of historical and psychological imagination at once enlarges the scope of our thinking and helps us to realize how foolish many of our own cherished prejudices will seem to an age which has a different temper of mind." (39) Absent from Russell's volume is the philosopher Giordano Bruno. The impact of Bruno's philosophy on modern thought is difficult to fathom as subsequent scholars, scientists, and philosophers have held many conflicting views as to the message and import of his ideas. Nevertheless, his body of work is an impressive and fascinating project which aimed to explore and extend the possibilities of human understanding. Within his philosophy is found a distrust of the emerging trend of logical and mathematical analysis which eventually divorced itself from theological considerations and emerged as the science of our modern age. During his life Bruno explored an alternative to the emerging scientific mindset, and its emphasis on the quantification of natural phenomenon which he felt placed limits on the human potential for understanding.

Giordano Bruno, the son of a soldier, was born in the city of Nola in the kingdom of Naples in 1548. When he was 11 years old he was sent to Naples for his education. There he attended public lectures, and was tutored privately in an Augustinian monastery. At the age of seventeen he entered the Dominican Order at a monastery in Naples. In 1572 he was ordained a priest, but by 1576 he had left the order and began to travel throughout Italy. Over his lifetime Bruno traveled extensively in Europe, from Italy to Switzerland, France, England, Germany, and eventually back to Italy. He published works and delivered lectures in many of the cities he visited. Bruno generally left a city or region when his impolitic views had ceased to grant him livelihood and gained him instead the antagonism of an academic circle or secular and religious authorities. In 1592 he returned to Italy at the invitation of Giovanni Mocenigo, the sovereign of Venice, who offered Bruno employment as his tutor. Soon after his arrival Mocenigo had Bruno arrested by the Roman Inquisition. Bruno spent the last years of his life in prison. He was eventually convicted of heresy, and burned at the cross in the year 1600. Bruno's reply in reaction to his sentence is worth repeating. "Perhaps you, my judges, pronounce this sentence on me with more fear than I receive it." (Van Heiden)

Most explanations of Bruno's philosophy tend to focus on either his cosmology, or his religious views. This must be due in part to the fact that his philosophy, when all its various aspects are given equal consideration in a brief overview, sounds completely fantastic. Attempts to understand Bruno's work are hampered by the modern paradigm, which promotes a tendency to relegate religious and temporal considerations to distinct and separate arenas of contemplation. Consequently, Bruno's philosophy is somewhat incomprehensible absent an explanation of some prevailing trends of thought in the

Renaissance. His ideas may at first may seem bizarre and irrational but they begin to seem plausible in light of the Renaissance tradition he was a part of. As Bruno's extravagant collection of ideas deluges one for the first time, a person may be left somewhat confused. This sort of baptism avoids grasping at some individual aspect of his work and may allow one to appreciate his project in its entirety.

Metaphysics has been abandoned by the modern scientific project, as a distinct and separate arena of speculation. Bruno saw that any conception of the physical universe was inherently tied to metaphysical assumptions. Central to his philosophy was the view that some manifestation of mind or soul was the driving force behind all the activity we perceive in the world around us. The stars, the planets, the people, animals, plants, and rocks, down to individual atoms manifested some aspect of a transcendent and infinite consciousness. In his theory the earth revolved around the sun and rotated on its axis driven by its affinity to light and heat, akin to the observed phenomenon of a plant turning its petals to find the rays of the sun. The earth in its own manner of conscious volition would follow its orbit and rotate on its axis as the colder, darker portions sought to regain the nourishing rays of light emanating from the central sun. For Bruno the stars in the sky were not attached to a revolving sphere which signified the angelic boundary separating the physical world from the divine. The divine was contained within every substance. The stars in the heavens were each suns with collections of orbiting planets inhabited by terrestrial life forms. There was an infinite amount of substance in the universe, and so an infinite number of suns and planets. All matter manifested consciousness and each individual mind lay at the center of a sphere whose circumference extended to infinity. People, rocks, the air, and the spaces between worlds

and solar systems were composed of miniscule indivisible particles, undetectable by human consciousness. All the matter in the universe was connected by these moving and touching individual particles whose agency was directed by some partial manifestation of the entirety of the infinite soul which was contained within each. For Bruno the secrets of the universe could be explored just as effectively by studying the rocks, the animals, and the planets as well as plumbing the depths of the human intellect. Each individual thing contained the totality of the divine blueprint. Divinity was spread throughout all of creation. Bruno believed that mapping the affinities by which the souls of different substances directed their interaction was the key to extend man's agency in the physical world. This view directed his efforts at developing a complex system of symbols, which employed mythological images borrowed from mystical religions of past ages. He developed a system of memory using these symbols as an aid to mystical intuition. Through this project he sought to recover insights which were abandoned by the Christian church in its eagerness for a conception of the soul divorced from matter. For Bruno the constant flux of the physical universe, and the divine source of this movement contained within substances, placed conceivable limits on the effectiveness of measurement and quantification as tools in plumbing the secrets of the cosmos. Bruno aimed at a comprehensive picture of the world which used the metaphorical meaning embedded in mythological symbols as tools to understand the cosmos beyond the limitations of logical and mathematical explanations.

A more graphic illustration may clarify his theory of matter. Let's begin with the example of an individual person whose form is directed by human intentions which are manifestations of the human soul. Through this agency our human decides for some

reason or another to cut off their own hand. The hand is now severed from the human body and the soul which formerly animated it. Rather than becoming some piece of inanimate flesh, in Bruno's conception, it is now separated from its human host with its human soul by other collections of animate particles which might also be divided in any manner of ways. The object of this hand is now a body of substance which constitutes its own animate entity, and as such has some form of agency; the manifestation of whatever you might guess is the soul of a disembodied hand. Any portion of the infinite universe may be divided into any collection of particles which one might see fit to view as an object. The fingers may be removed from the hand, and the joints of these separated from each other and so on. All of these portions possess their own manifestations of soul. Eventually in this process of division, in a realm too small to be perceived by the human senses, one comes upon the minimum unit of matter which is in itself indivisible. Within these basic components of the physical realm lay the infinite, transcendent realm which lies outside considerations of space and time. It is here that God is found; the absolute soul in its entirety. As Bruno explained in a public debate in Paris, in 1586, "We see that the infinite is not far distant but within us, for its center is everywhere, as close to dwellers in other worlds as it is to us." (Yates, 299)

This division of substance need not be a physical act as in our example of the severed hand. Bruno envisioned all matter as being in a constant state of flux, with each elementary particle forever in contact with other elementary particles. Thus the division of substance into the objects we perceive is necessarily an act of the human imagination. So one could imagine the agency of different systems *within* any living organism, or any other collection of elementary particles, without physically separating them from what we

normally perceive as a body; such as the circulatory system of an animal which does not operate by an animal's conscious volition but by the inclinations of blood, pumping hearts and vascular pathways.

Conversely if we begin once again with the example of an individual person we can connect this person with other objects as parts of a greater whole. The animals, plants, people, and landscape of one's homeland constitute a region; an interacting terrestrial ecosystem. For Bruno it would not be a use of metaphor to speak of the soul of Italy. All things which together make up the earth, its life forms and geology, somehow act in concert and with intention directed by the soul of the world. The movements of the earth and other planetary bodies are together an activity of the solar system, which has its own design by which it directs these activities. Collections of solar systems interact amongst each other and manifest an even more enveloping soul and so on to infinity. Beyond any limit of space and time the infinite whole can be seen to contain the same transcendent existence as each minimum unit of matter. A closed sub-system of the infinite whole was a physical impossibility in Bruno's cosmos. The same divine influence, assuming innumerable forms and manifestations flowed throughout all substance. A verse from Bruno's *Call of the triumphant beast (1584)*, eloquently captures this thought, "For...diverse living things represent diverse spirits and powers, which beyond the absolute being which they have, obtain a being communicated to all things according to their capacity and measure. Whence God as a whole (though not totally but in some more in some less excellently) is in all things. For Mars is more efficaciously in natural vestiges and modes of substance, in a viper or a scorpion, nay even in an onion or garlic, than in any inanimate picture or statue." (Yates, 211)

In Bruno's universe, individual particles, things we perceive as objects such as rocks and mountains, heavenly bodies, animals, people, and plants all interacted with and affected each other. (Gatti, 99) These influences and interactions of substance can be described using two modern ideas; the butterfly effect, and spooky action at a distance. When considered together these more recent ideas may help explain the different aspects of Bruno's theory which together make it a complete conception. In the butterfly effect the slight change in airflow made by a butterfly's wings may ultimately be the deciding factor in the occurrence and intensity of a great tropical storm on the other side of the planet. Similarly, in Bruno's theory, an infinite number of atoms in the universe are surrounded by and in contact with other atoms. Each movement made by a single atom would provide a rippling effect throughout eternity however small and inconsequential. For Bruno this physical extension was not the only means by which all matter was interconnected. Spooky action at a distance is a phenomenon which illustrates another way in which Bruno conceived of matter influencing other matter. When two paired electrons are taken from the same atom, the actions performed on one electron have instantaneous effect on its former partner regardless the distance by which they are separated. For Bruno, each and any substance possessed its own conscious intentions; affinities of action, which were derived from the same transcendental inner source at the heart of all elementary particles. In theory, if one could tap into the power of this infinite inner realm they might be able to control the activities of an object in any physical location, no matter how far removed. Conscious intentions and physical manifestations were for Bruno inextricably linked.

The idea of an interaction between physical objects directed by the transcendent realm, was not unique to Bruno. This notion was taken for granted as common sense by the people of his time, Christians and pagans alike. Astrology was considered an important field of study and research in the Renaissance and ages prior to it. (Yates, 60)

The movements of the stars and planets portended events bound to happen in the terrestrial realm. Princes, bishops, merchants, and even more humble folk of the renaissance, if they could summon the coin, employed astrologers in pursuit of all manner of predictions. The practice of medicine was as much a science of the motions of the heavens as it was of the workings of the human body. (Yates, 4)

A less universally accepted, but still a commonly held view was that influences between the stars and the earth could be effected both ways. The skilled manipulation of terrestrial objects was thought to enable some manner of control over the influence of the stars. These magical beliefs were prevalent during Bruno's lifetime and not considered necessarily heretical. In 1628, twenty-eight years after Bruno's death, Thomas Campanella performed a magical ceremony for Pope Urban VII in Rome. (Yates, 375)

A theory of magic accepted by many of Bruno's contemporaries was to be found in a text titled the *Asclepius*, thought then to have been written by a contemporary of Moses named Hermes Trimegistus. (Yates, 41)

The *Asclepius* recounts the tale of an ancient Egyptian religion. According to this religion the earth possessed an animate soul which was in contact with the divine through the sphere of the heavens. Constellations and planets were associated with various deities, and had affinities to a varying array of plants, oils, minerals and other natural objects. Through the manipulation of natural materials and carefully constructed magical talismans an adept priest could control the angelic influence of the stars on the terrestrial

realm. These practices were thought by many to allow humankind to tap into the power of the divine. Common to magic, astrology and Christianity, was a hierarchical order from the earthly to the ideal; a transcendent realm apart from all substance which wielded power over temporal existence. Bruno envisioned a more egalitarian metaphysics. What was original in Bruno's thought was the idea that the transcendent power was to be found in all things and not in a distinct divine realm beyond the celestial sphere. (Gatti, 179)

In the face of his dauntingly complex conception of the physical world Bruno sought an imaginative means for its comprehensive examination. Bruno took great pains to create a symbolic system which would capture the type of intuition which people experience when they bear witness to a work of art, a compelling tune, or a carefully crafted poetic verse. Imagine the advantages Bruno must have seen in such an approach to deciphering the world. Logical explanation, while eliminating a great deal of misunderstanding in communication, leaves out much in any interpretation, and fails to give full consideration to the awe in the novelty of any experience. Metaphorical explanation mirrors associations we perceive among the qualities of things, whereas logical explanation directs the mind to mirror in terms of extension and progression. A logical explanation limits the points of departure from any inquiry whereas something poetic derived from metaphor, is more akin to an unarticulated stream of consciousness. A logical explanation aims to capture relationships which Bruno felt to be mundane compared to the revelations of intuition. For him a metaphorical explanation seeks to grasp less tangible but more fundamental truths. An example which Bruno might have found to portray these different modes of interpretation is the art of literary analysis. A critic, or interpreter may devote paragraphs to logically unravel the meaning of a single

well crafted sentence of prose. This critic will be quite difficult to misinterpret, yet twenty other critics are ready to devote twenty more pages saying quite different things about the same single sentence. Perhaps in Bruno's eyes what the twenty critics have to say amounted to a long and unfortunate detour. Their twenty statements are all constrained by the limitations of logical expression and are consequently more unwieldy and less vital than the original sentence. The critics are using greater numbers of symbols to communicate much less. Logical thinking is one among many of the pedestrian pursuits of human consciousness and takes up less mental airtime than might be taken for granted. Much more mental activity is devoted to imagined storylines and disjointed associations. Bruno felt that to organize one's thoughts in systematized metaphoric associations, employed positive attributes of two mental practices (logic and association). Great amounts of information could be condensed using metaphor, and also easily retrieved and operated on by adhering to some devised system.

Departing from the consideration of plausible alibis for Bruno's epistemology one encounters the more difficult task of understanding the avenues he explored in his quest for knowledge. Caught in the purgatory of a logical pursuit to understand existence the modern mind is left at a disadvantage in attempts to retrace Bruno's path. The spiritual realities which Bruno theorized were embedded in all matter are not the subject of current investigations. Bruno viewed mathematics in the context of humankind's cognitive grasp of phenomena. (Gatti, 148) In his work *De triplici minimo(1591)* Bruno represents various "halls" of human perception with geometric, talismanic representations of the temples of Apollo, Minerva and Venus. The Renaissance scholar Hilary Gatti sees this project as embodying the "idea that the principal geometrical figures constitute a grid

through which the mind approaches reality." (Gatti, 147) Gatti states in her book, *Giordano Bruno and Renaissance Science*, "In *De triplici minimo* Bruno investigates the possibility that numbers and Euclidean geometry can act as the mnemonics required to reveal the nature of finite bodies composed of atomic minimums in a universe of infinite space." (143) Yet Bruno goes to great lengths to describe these geometrical objects in mythological terms. (Yates, 314) At the end of his investigation in the final chapter of the *De triplici minimo* Bruno abandoned geometrical considerations and attempted to create a symbolic reference system based on letters, unlike algebra and written language, by constructing tables describing possible relationships which can be captured by their ordered arrangement. (Gatti, 171)

Perhaps frustrated by his fruitless attempts to devise a system of number correlated with the divine Bruno returned in a subsequent work, the *De imaginum, signorum et idearum compositione (1591)*, to expound the art of memory which he had developed in earlier years. (Gatti, 173) Bruno was renowned in his time for prodigious feats of memory. The precision of his recollections were so baffling to those who bore witness to its demonstration, that he was often suspected of employing some arcane magical art. Bruno's forbears in the mnemonic arts were classical Roman orators. They would "store" different parts of a speech in mentally constructed memory palaces. (Yates, 191) Bruno devised a system of memory which was more advanced than the systems created before his time. (Yates, 192) His system was based on a map of the heavens, and their corresponding relationships to terrestrial objects. This map was arranged on a memory wheel, and the constellations of the Zodiac which each corresponded to thirty talismanic images, could be variously connected to the attributes and affinities of mythological

deities to be found on a separate wheel. These mental wheels were to be rotated and aligned in the process of cataloging experience. Bruno came to see an imaginative enterprise based on mythological images as "the sole gate to all internal affections and the link of all links." (Yates, 263) An authority on the works of Bruno, Francis Yates, gives a brief summary of his system. "The magic images were placed on the wheel of the memory system to which corresponded other wheels on which were remembered all the physical contents of the terrestrial world-elements, stones, metals, herbs and plants, animals, birds, and so on-and the whole sum of human knowledge accumulated through the centuries through the images of one hundred and fifty great men and inventors. The possessor of this system thus rose above time and reflected the whole universe of nature and of man in his mind." (Yates, 198) The possessor of Bruno's system was, "...one who both knows the reality beyond the multiplicity of appearances through having conformed his imagination to the archetypal images, and also has powers through this insight." (Yates, 199) Beyond the advantages which Bruno's system might offer in intuiting and cataloging natural relationships, it is unclear what sort of agency Bruno envisioned his system might grant its practitioners.

Many modern scholars express in their reading of past works a division between the physical and metaphysical which is taken for granted in our present age. This division was not clearly conceived in the pre scientific age. Today we are experiencing some unfortunate consequences to this divisive perspective. Life in the twenty-first century seems marked by a pervasive spiritual bankruptcy. One can't help but wonder how differently we might have treated our planet, it's life forms, ourselves and the people around us if our modern enterprises had been directed by Bruno's conception of soul

inherent in all substance. Bruno's complete vision becomes trivialized in the context of our current notions. Yates' acclaimed work, *Giordano Bruno and the Hermetic Tradition* devotes little attention to the physical theories Bruno developed in his work. Her book labels Bruno as an "intensely religious magician", and depicts Bruno's understanding of the Copernican diagram as a "hieroglyph of divine mysteries." For her the work of Bruno is the legacy of a lifelong and ill-fated mission of religious reform. In an apparent reaction to Yates' work on Bruno, in *Giordano Bruno and Renaissance Science*, Gatti crafted a completely different image of Bruno; as a visionary philosopher and innovative theorist, who grappled with the epistemological issues which arose from the prevailing trends of thought of his day. Gatti places Bruno in the role of a philosopher of science, while Yates portrays him as a religious mystic and missionary. Even during his own time Bruno was aware of a tendency to misinterpret his work. Bruno wrote in his preface to *The Heroic Frenzies*, "But think who will as it seems to him and pleases him, in the end, willy nilly, if one is to be just, each must understand and define it as I understand and define it and not I as he would understand and depict it.; for just as the passions of that Hebrew have their own proper modes, succession and names, which no one has been able to understand and could never explain better than he, if he were present, so these canticles of mine have their own names, succession and modes which no one can explain better and understand than myself, since I am not absent." (Bruno, par 7)

Both Bruno and his contemporaries which would go on to forge the incubus of our modern scientific institution shared a common past. It is tempting to think of Bruno as stuck in a "pre scientific mindset"; that his contemporaries made fruitful investigations while he explored a bewildering array of misconceived notions. But this view fails to

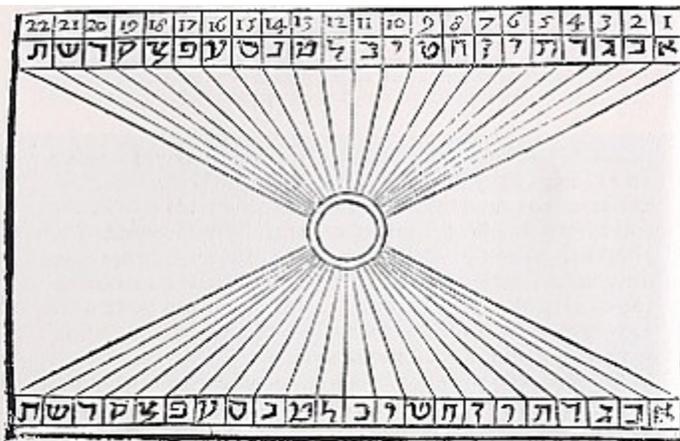
consider that Bruno addressed issues which were largely overlooked during his time, and have only more recently been the subject of growing speculation. Ever since Immanuel Kant produced his works in reaction to the legacy of English empiricists, (Russell, 713) it has become increasingly apparent that the study of the physical world must take into account the capabilities and limitations of our perceptual and cognitive apparatus. Bruno misjudged the potential of quantitative mathematical and logical lines of inquiry. It is evident that the scientific enterprise has enabled greater achievements than Bruno could possibly have imagined. He believed that a logical and quantifying avenue of contemplation would lead to intellectual stagnation. As an alternative he sought to explore other facets of experience integral to a human understanding.

At the end of the 19th century, scientists in England and the U.S. conducted empirical studies of allegedly telepathic experience, such as crisis apparitions (appearance of a loved one soon after death). A spirit kindred to Bruno, the American philosopher William James would write of the reaction of the mainstream scientific community to these projects, "It is the intolerance of science for such phenomena as we are studying, her peremptory denial of their existence or of their significance except as proofs of man's absolute folly that has set science so apart from the common sympathies of the race." (Blum, 206) James admired the effectiveness and accomplishments of 19th century science. It had made possible the vaccines, anesthesia, combustion engines, and telephones from which humanity hoped to derive great benefit. Yet he saw that science, in its purely mechanical explanations, had unwisely discarded as beyond the scope of empirical study important facets of the human experience. (Blum, 206) Bruno's tale harkens back to an age when sentience was inextricably bound with sentiment. Science

had yet to be birthed from its genesis in human passion. Religion was often considered as the opening of the door to reasoned enlightenments. This Renaissance mindset was perhaps more pragmatic than we might be inclined to envision it. The amount of knowledge one has, after all, means very little if one fails to take account of the value which such knowledge offers its bearers and their legacy.

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Bruno's drawing of light linked to the Hebrew alphabet and numbers.

<i>Actus</i>	AciouhxkqjlnrsgzcdtfWmbp
<i>Beatitudo</i>	EiouhxkqjlnrsgzcdtfWmbpA
<i>Certitudo</i>	IouhxkqjlnrsgzcdtfWmbpA c
<i>Consensus</i>	OuhxkqjlnrsgzcdtfWmbpAe i
<i>Idea</i>	VhxkqjlnrsgzcdtfWmbpAei o
<i>Fruitio</i>	HxkqjlnrsgzcdtfWmbpAeiou
<i>Habitus</i>	XkqjlnrsgzcdtfWmbpAeioub
<i>Motus</i>	KqjlnrsgzcdtfWmbpAeioubx
<i>Lex</i>	QjlnrsgzcdtfWmbpAeioubxk
<i>Productio</i>	JlnrsgzcdtfWmbpAeioubxk <sup>y</sup> q
<i>Verbum</i>	LnrsgzcdtfWmbpAeioubxkqj
<i>Seruitus</i>	NrsgzcdtfWmbpAeioubxkqj l
<i>Auersio</i>	RsgzcdtfWmbpAeioubxkqjLn
<i>Acceptatio</i>	SgzcdtfWmbpAeioubxkqjLnr
<i>Continuitas</i>	GzcdtfWmbpAeioubxkqjLnr s
<i>Vsus</i>	ZcdtfWmbpAeioubxkqjLnrsg
<i>Miraculum</i>	CdtfWmbpAeioubxkqjLnrsgz
<i>Possibilitas</i>	DtfWmbpAeioubxkqjLnrsgz c
<i>Pœnitentia</i>	TfWmbpAeioubxkqjLnrsgzcd
<i>Repressio</i>	FwmbpAeioubxkqjLnrsgzcdt
<i>Ordo</i>	wmbpAeioubxkqjLnrsgzcdt f
<i>Obiectum</i>	MbpAeioubxkqjLnrsgzcdtf w
<i>Accessio</i>	BpAeioubxkqjLnrsgzcdtfW m
<i>Recessus</i>	P AeioubxkqjLnrsgzcdt <sup>y</sup> fWmb

