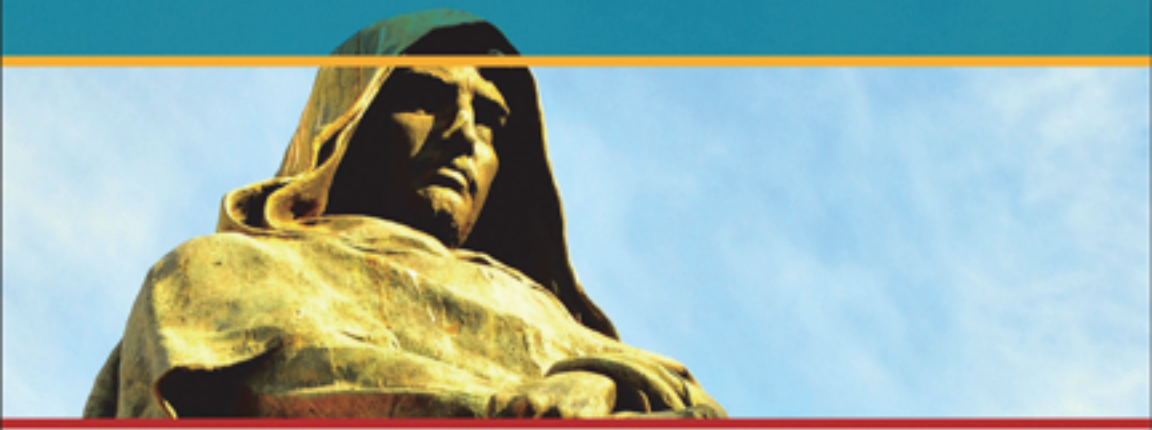
Paul Richard Blum



Giordano Bruno

An Introduction

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GIORDANO BRUNO

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GIORDANO BRUNO

An Introduction

Paul Richard Blum

Translated from the German by
Peter Henneveld

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Cover image: Bronze statue of Giordano Bruno by Ettore Ferrari, Campo de' Fiori, Rome. (photo: dreamstime)

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EDITORIAL FOREWORD

If only the statue of Giordano Bruno in Rome's Campo de' Fiori could speak. It might remind college students of the price their forerunners had to pay to ensure that it would stand there, gazing down on them as they caroused in the pubs below. It might relate the details of the trial and execution of the man it commemorates. It might even give him voice, allowing him to explain his theory of an infinite universe and infinite worlds so that students might compare it with the inflationary cosmology and the multiverse they learned about in physics class.

But alas, Ettore Ferrari's statue cannot speak, and university students may never know how hard their predecessors worked to raise the money for the monument and how they clamored in the streets to have it finally erected and unveiled in 1889. As for Bruno's trial, students today know only a bit more than students did back then, thanks to Cardinal Angelo Mercati's rediscovery of the *Miscelleanea Armadi* in 1940.

Perhaps the most important conversation, however, would be about Bruno's infinite universe and infinite worlds and our inflationary cosmology and the multiverse. In other words, the story of Bruno's trial and execution, although fascinating, are in many ways secondary to the story of his ideas. For far too long those ideas have been overshadowed by Bruno's enshrinement as an icon of academic freedom. His relentless drive to think for himself and express those ideas, regardless of the consequences, are integral to his story. But to understand his story we must first understand the ideas he felt so compelled to express.

That is where this book comes in. As with every volume in the Values in Italian Philosophy Series, it revolves around ideas. Paul Richard Blum expertly interweaves the history and the ideas into this brief introductory text, but the emphasis is on the latter. If Bruno did not receive a fair trial back then, he certainly deserves one today. Too often we approach him with a rigid view of how we think science and religion should or should not be related. That is why Blum's readers will feel a twinge of embarrassment when they realize how prone we are to construe the "science and religion" question solely in twenty-first-century terms. Although there are similarities, the issues were different in Bruno's day, and that is all the more reason to read him today. He was deeply imbued in classical and Renaissance literature, devouring the works of Aristotle and the Scholastics. Bruno, like many of his contemporaries, strove to understand the new with the help of the old and to reexamine the old in light of the new—a good lesson for us today.

Admittedly, Bruno can be extremely arcane and even esoteric, hence the need for an accomplished interpreter like Blum. But Bruno is not alone in this regard. Marsilio Ficino can be equally arcane and esoteric, yet the Tatti Renaissance Library deems his work worthy of editing and translating, a clear

indication of the high interest in early-Renaissance scholarship. The late-Renaissance was no less fecund and deserves no less scrutiny, especially in the English-speaking world. That is why the Values in Italian Philosophy series is pleased to feature Peter Henneveld's translation of Blum's book, originally published in German in 1999. May it say what Ferrari's statue cannot and promote a greater interest in Giordano Bruno's contribution to Italian philosophy and beyond.

Daniel B. Gallagher, Editor
Values in Italian Philosophy Special Series
Rome, Italy

FOREWORD

"There is nothing new under the sun"—this was Giordano Bruno's motto. Nonetheless it is appropriate to introduce him as a thinker who produced a peculiar philosophy. As one can see in the final chapter about his afterlife, he was mostly recited in order to take sides—be it against Catholics, in favor of tolerance, for or against current strands in philosophy, or as a representative of his era. However, one of his most constant impulses was resistance against monopolization. On the other hand, the thinker from Nola makes it difficult for the reader to follow him in the hopes of finding clear statements. The hectic speaker, with "names and titles longer than his body," pulling back his arms like a juggler and continually talking to his audience—this is not just a spiteful exterior description (at that time in Oxford) but also emblematic of Bruno's way of philosophizing: He is not looking for outright solutions but rather for the depth of the problems; he knows the literature and the strategies combined with their weaknesses. Therefore, he does not obediently study in the monastery what scholasticism has to offer; rather he loses his composure in light of the unsolved questions of long dismissed heresies. In a particular way, however, he is looking for allies in matters of his own insights, and he makes himself a propagator on his own account. Thus his fascination lies more outside than inside of professional philosophy. An attempt shall be made, through the convolutions and turning points of his argumentations, to find the identical Bruno in his various and different works—the same Bruno who proudly said about himself: "Philosophy is my profession!"

Unlike some other philosophers of his era, Bruno was neither holding an office nor was he a politician; he was neither a businessman nor an artist. Therefore, his way of thinking will be presented along the stations of his journey through Western Europe. On that way, key topics will offer themselves, as will be announced in the chapter titles.

Although footnotes are absent, this book is very much indebted to the literature listed in the bibliography (and there the emphasis was put on more recent research). Some citations regarding certain factual information have been put in parentheses. Ancient sources are being cited according to their inner structure so they can be consulted in any edition. Sigla of abbreviations are found in the bibliography. All translations have been provided by the author and the translator.

This book partly has been written during a research visit at the Center for Philosophy of Religion at the University of Notre Dame, Indiana. I would like to express my heartfelt thanks for this opportunity and the manifold help and assistance.

Baltimore, 6 December 2011 Paul Richard Blum

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One

PLEASANT CAMPANIA: EDUCATION BEFORE AND IN THE CONVENT

> Erstwhile your sacred lights, o delightful Mount Cicala, caressed me, as I recall … and you said to me with your forefinger outstretched: Turn your eyes northwards, and thereupon behold kindred Vesuvius. Akin to myself, he too wants you well, do you believe me? … I said: This one is a world far removed, shadowed in shabby fog; no good he has to offer. … You, however, didst say: And yet he is my loving brother, and he wants you well. … Thusly having thereupon arrived, I behold Vesuvius from close … with grapes richly dangling from the branches, with fruit of all kinds, and looking at the benevolent sky of home; nothing known to me is missing from him, and he has a hundredfold more of it. Thus at first I accuse my mendacious eyes in astonishment. And he commanded: … Thus stay here, despise the gods of Cicala. Behold the richness of my goods … herefrom direct your eyes, and look upon Cicala, my brother, far away touching the sky with a sable dome and shrouding the valleys with a pitch-colored garment. … Thereupon I said: You also were just the same before I came to you. … Thusly the fogs disappear; the sky and the center of the world thereunto return with me so that I enter, always accompanied by him, and he always remains with me wherever I remain. … In whichever earthly region I should dwell, I see West and East maintaining equal distance. … It is not, therefore, vision which lies, for as much will be reflected as can be measured with equal radius, and wherever you shall go, there will be an equal measure. … Therefore the sky is not bounded by a fixed edge …. (OL I 1, 312–316)

In this childhood memory, Giordano Bruno narrates his philosophy of the infinite world and the relativity of the center as a childhood experience.

With a clear view to Mount Vesuvius, dominating the "fortunate Campania," he had grown up in Nola, located about 30 kilometers (18.6 miles) from Naples where he had been born in 1548, presumably in February. Most of the pieces of information about his origin and early days stem from such biographical remarks slipped into his philosophical writings, as well as from the protocols of the inquisition process, at the end of which he was burned at the stake in Rome on February 17, 1600. Bruno's father, Giovanni, was a professional soldier; his mother's name was Fraulissa Savolino. There is no evidence of his family being wealthy, but one can assume that the son entered the Order of Preachers at the age of seventeen (in 1565), due to his inability to

otherwise afford his studies. At the age of fourteen, Bruno began his studies of the humanistic subjects, such as grammar, rhetoric, poetry, as well as logic in Naples, the capital of the kingdom which was under Spanish rule at the time. His most prominent teacher seems to have been the Augustinian friar Theophilus Vairanus who was later to become director of studies at Florence, then professor at the university of Rome, before finally becoming a private teacher until his death in Palermo in 1578. The Augustinians were a prominent order in the 16th century, and although they were giving public lectures in Naples, Bruno apparently took private lessons with Vairano. He attended the public lectures of Giovanni Vincenzo Colle, known as Sarnese († 1574); the latter is known to have published editions of the Averroistic philosopher Hieronymus Balduinus. Neither one of both teachers has made a name for themselves due to notable achievements, and perhaps Bruno is referring to their lessons in his later polemics against Aristotelian logic when he presents the following logical conclusion as an example:

> The heart (Cor) is the source of life.
> Snow (Nix) is white.
> Therefore the raven (Cornix) is the source of white life. (DI 1117)

It is obvious that during these lessons Bruno had come to know the philosophy of Aristotle in the Averroistic version. The interpretation of Aristotle done by the Arab Averroes (1126–1198) had been a subject of theological controversies in the 13th century. With Padua as one of its centers, the Averroism of the Renaissance represented a strict philosophical interpretation of the works of Aristotle which had partly been newly translated and were now studied critically. It supported two theories hardly reconcilable with Christian theology: the eternity of the world and the unity of the intellect. Christian theology teaches that the world has come to exist by an act of God's creation, and even though it is impossible to name a "time before time," the world is not without a beginning. From an Aristotelian perspective in which the idea of a creation does not exist, it follows that the world is permanent and exists from eternity. The problem of the unity of the intellect is dependent on the interpretation of a passage in Aristotle's treatise *De Anima*: Averroism interprets the individual human soul as an isolation of a universal soul, and after death the individual soul will be merged back into this universal soul. An alternative is the so-called Alexandristic solution according to the ancient commentator of Aristotle's writings, Alexander of Aphrodisias (ca. AD 200); here the soul of the individual person begins to exist at birth and ceases to exist with death. This latter solution was eventually supported by Pietro Pomponazzi (1462–1525), a renowned philosopher from Padua. In 1513, it was banned by the Church as, among other things, it renders superfluous the idea of sin and redemption. But the Averroistic solution also presents problems: according to Christian belief, human freedom and responsibility are dependent on the soul

of the individual person being created with birth and continuing to exist after death as an individual soul. Even though Bruno does not explicitly voice his opinion on Averroism in his writings, its influence is discernible in the fact that the problem of the soul and the tension between philosophical and theological interpretation of nature will become central themes of his philosophizing.

During these early years of studying Bruno ought to have learned by reading his enormous fund of familiarity with philosophical and literary sources. He knows and quotes the atomistic philosophy of nature of Lucretius, as well as the writings of Plato and the Platonists in the translation of Marsilio Ficino. He is familiar with Ficino's writings and those of other philosophers of the Renaissance era, especially those by Nicholas of Cusa; he is furthermore familiar with classical Latin authors, such as Ovid, Horace, and Vergil, but also with Italian poets such as Ludovico Ariosto or his fellow countryman Luigi Tansillo whose poetic works he often quotes in his Italian dialogues. If the young student at that time was able to move around freely in Naples, perhaps he also had the opportunity to establish and maintain contacts with Valdesians (named after Juan de Valdés [† 1541]; they are not to be confused with the Waldensians who joined the Calvinists, named after Peter Waldo [† 1218]). The Valdensians relied on the humanist Erasmus of Rotterdam while at the same time being inclined to antitrinitarian doctrines. Antitrinitarianism, that is to say, the doctrine according to which God does not consist of three persons, and consequently Christ does not possess a divine nature, had many centers throughout Europe and continued to have an effect in various shades well into the Enlightenment era. It is quite possible that Bruno later on got in contact with groups such as these in various European cities. This much is certain: his rejection of the Trinitarian doctrine had already begun at the age of eighteen, and it was also the topic of his inquisitional trial (Firpo 1993, 170). Likewise in early years Bruno had begun to study mnemonics (the art of memory), and this according to Peter of Ravenna († 1508), from whom he claims to have learned "even as a child" the principle of alphabetic tables, a principle which he compares to a spark which ignites countless fires and sparks (OL II 2, 130). Mnemonics is first of all an alternative discipline of learning and rhetoric, but Bruno expanded it into a peculiar epistemology. Around the middle of the sixteenth century, the European academic world, and also that at Naples, attended to alternative scientific models predominantly marked by Renaissance Platonism, by the reading of pre-Socratic philosophy, and also by such academic interests which one would nowadays describe as empiric. Thus emerged treatises on magic which could be interpreted as attempts to discover and control the natural energies, while in 1565 Bernardino Telesio (1508–1588) published the first version of his treatise *De rerum natura iuxta propria principia* in Naples. Herein he attempts to explain nature to a large extent by means of non-spiritual principles, viz., the basic energies of heat and cold. All these and many other sources are almost simultaneously

present in Bruno's published works. Therefore we may assume that he has come to know most of these theories already during the first years of his course of studies.

On June 15, 1565, Bruno enters the Dominican order. He becomes a novice of the monastery San Domenico Maggiore in Naples, the oldest local monastery where Thomas Aquinas had also been staying temporarily. On entering the order Bruno gives up his baptismal name Filippo, and he was assigned the religious name Giordano which he retained for the rest of his life. His motive of becoming a friar certainly consisted in the fact that religious orders were the only corporations in which it was possible to obtain an academic education with an ensuing professional occupation free of cost. To Bruno, the Fathers of San Domenico were "gods on earth" at that time, as he is reported to have said to a fellow prisoner of the Inquisition, albeit with the additional remark: "And then I discovered that they were all asses and ignoramuses, and that the Church was governed by ignoramuses and asses" (Firpo 1993, 251). Later on he dedicated a separate dialogue to the "asses," in a word, to the quibbling philosophers. The only teacher of that time who became well known due to philosophical publications was Matthias Aquarius de Gibbonis († 1591). He was the author of a treatise on memory, and he also wrote a commentary on Aristotle's *Metaphysics* which gives insight into the teaching practice of the house in Naples.

Bruno completed his novitiate and the diaconate according to the Rules; he studied theology at San Domenico, was ordained a priest in 1573, and two years later he was appointed lecturer of theology. His philosophical studies were partly done in Lombardy. At that time, the duration of studying philosophy was three years for the Dominicans, and it entailed dialectics, philosophy, and metaphysics (according to the terminology then used), i.e., logic, physics, and metaphysics according to Aristotle (Spampanato 1933, 158). In this, and even more so as regards theology, the decisive factors for Dominicans were Thomas Aquinas and the Thomists such as Sylvester of Ferrara and Domingo Soto for the interpretation of Aristotle. The course of theological studies was four years, and after the Dominican friar Francisco de Vitoria in 1526 had elevated the *Summa Theologiae* to be the textbook in Salamanca, the Neapolitan course of theological studies too was oriented towards this basic work. In 1571 it was even reprinted with the involvement of San Domenico Maggiore. The final exam at that time (and for some centuries to come) consisted in the public defense or disputation of theses. Two of these theses supposedly read: "Everything that is said by Thomas in the 'Summa contra gentiles' is true," and "Everything that is said by the teacher of the 'Sentences' is correct." Accordingly Bruno's exam was related to Thomas' other "Summa," not to the *Summa theologica*, and to the then customary medieval textbook written by Peter Lombard (Spampanato 1933, 652). By and large this information, handed down by a French interlocutor ten years later, ought to be correct, even

though it was not customary at the time to assign the candidate theses worded in such general terms and in this phrasing.

Nonetheless the studies did by no means go over smoothly. Already as a novice he got into difficulties, as he himself will tell later on during the inquisitional trial in Venice—obviously in an attempt to downplay the matter. First, he had given away pictures of saints—he explicitly mentions Catherine of Siena and Antonino of Fiesole—, but kept at least the crucifix. In addition to this, he had advised a fellow novice who happened to read a book on Marian devotions that he would do better to read *The Lives of the Holy Fathers* (by the Dominican friar Domenico Cavalca; Canone ed. 1992, 67–69) or something else. (It is yet not clear wherein the mentioned devotional books differ in such a way that Bruno's choice had to appear suspicious.) Thereupon the master of novices drafted a charge against Bruno, but he again tore it to pieces the same day. After the outbreak of the Protestant Reformation, the veneration of saints and especially Marian devotions constituted characteristic elements of the Catholic religion. Bruno therefore had to have aroused suspicion of being a Protestant. Also telling is the fact that he deemed it worth mentioning in the context of his testimony and also of its reiteration that he had retained the crucifix (Firpo 1993, 190f), for it would soon come to light that Bruno was entertaining philosophical doubts about the Second Divine Person, Christ. Likewise during the Venetian trial he confesses:

> In Christian terms and according to the theology which is to be firmly held by every faithful Christian and Catholic, I have in fact held doubts with regard to the term "person of the Son and of the Holy Spirit" because I did not understand these two persons as being separate from the Father save in the manner of speaking philosophically as I have said earlier, in that I accorded the intellect of the Father to the Son, and the love to the Holy Spirit, without acknowledging this term "person," the very same which Saint Augustine denotes as not an ancient, but rather a new and contemporary name. And this opinion I have retained from the time since I was eighteen years old to this very day. This I have never denied, though, and neither have I taught nor written, but rather—as was said—have I doubted by myself. … I have believed and undoubtedly kept everything which every faithful Christian must believe and hold as the truth regarding the first person. … As for the second person, I say that I truly assumed it to be one in essence with the first, and likewise with the third. For since they are undifferentiated according to their essence, they cannot incur inequality, so that all attributes befitting the Father also belong to the Son and to the Holy Spirit. I have merely maintained doubts as to how this second person was to become flesh (incarnate) and was to suffer; but—as said before—I have never denied this, nor have I taught accordingly. (Firpo 1993, 170)

But he had certainly denied it, and from a Catholic point of view, having doubted the Trinity and the Incarnation for years is already bad enough in and of itself. Furthermore, Bruno's decisive philosophical positions were to be found in conflict with the elementary theological doctrines of the Counter-Reformation. Bruno's reference to a differentiation between a "theological" and a "philosophical" manner of speaking, as presented in this document, does not help either: this reference already presupposes and assumes a position which was found to be unacceptable to Christian—and more specifically, Catholic—theology. Ever since the emergence of the so-called secular Aristotelianism in the medieval era—and here above all Siger of Brabant († 1284) must be mentioned—the attempt was made on the philosophers' part to separate theological theorems such as the creation of the world or the immortality of the individual soul from philosophical insights in conflict with the former on the basis of Aristotle and rational argumentation. Positions such as these fell into the category of "double truth" and were argued as such. In case it is correct that there is only one truth, then this position is either paradoxical, or one of the two "truths" is false. Whenever theology was affected, then it was heresy; if, however, it affected philosophy, then theology was exposed as being irrational. Therefore it fell to theology to show the rationality of the content of faith and revelation, and this was the task of the great medieval theologians, and certainly that of the Catholic reform. Today, this topic is discussed as "faith and reason." A special hermeneutic and epistemology is required in order to reconcile both, and this is probably what Bruno was seeking; however, it has not yet been fully developed to this day. There is a certain potential in Bruno's statement on his religious doubts since the time of his studies which might look like, and be interpreted as, an excuse or like a free fixation on mere philosophical positions. But this already bears a theological significance in the scope of the contemporary discussion in and of itself, and seen from the perspective of the inquisitors, it is heretical. The fact that Bruno never claimed to be a theologian can only be understood in the sense that Catholic theology at the time seemed to be insufficient to him from a philosophical perspective. But he also knew that one cannot simply philosophize apart from theology when dealing with topics which touch the heart of the doctrine about God and creation.

Since Bruno indicates an age of eighteen years as the moment of his beginning religious problems, the first incident of a clash with his religious superiors already took place at the beginning of his studies. The proceedings were reopened (Firpo 1993, 157), so that in 1576, the young friar traveled to Rome in order to justify himself. On this occasion he took his quarters in the renowned monastery Santa Maria sopra Minerva, owned by his religious community and also a place where Thomas Aquinas had lived for a while. When he arrived in Rome, he learned that certain books which he had hidden before his departure had been found: works by John Chrysostom and Jerome with (albeit crossed out) passages from Erasmus of Rotterdam (illustration in

Canone ed. 1992, 70–73). The book by Jerome could also be the text of *The Lives of the Holy Fathers*, the same text which he had recommended to a fellow friar, because a similar treatise was circulating under the name and authorship of Jerome. In any case, editions of the works of this Church Father were readily available; however, as of the early 1560s the Neapolitan Dominicans were explicitly prohibited to read the Fathers of the Church in the editions by Erasmus. At the same time they had been restricted and committed to the theology of Thomas Aquinas.

In reading these books, Bruno had not only formally violated certain regulations, but for his part he had assumed a dangerous position. As a result of the interest of the humanists in the fourteenth and fifteenth century, the Greek and Latin Church Fathers had become relevant. Beginning with Augustine, they were regarded as ancient authorities in whom the Greek and Latin stylistic elegance had been combined with Christian doctrine. Consequently they presented a welcome corrective to the pagan philosophers and poets. The technique of classical philology, developed in the fifteenth century, did now also affect the texts of Sacred Scripture; Erasmus of Rotterdam had contributed in a special way to this development. One of the consequences, in connection with new forms of individual piety, was the intense interest in Sacred Scripture as the sole source of faith (*sola scriptura*) as was propagated by the various Protestant reformatory movements. In this way, the Church Fathers now became some sort of paradoxes: they were pre-scholastic authorities of the truth of the Christian faith and, as such, independent from medieval scholastic theology; they were witnesses of continuity (i.e., the tradition) of the Christian doctrine beginning with the era of the gospels until the present time; they represented divergent theological doctrines among themselves, since they were in fact the ones who had transformed the gospels into academic theology. In other words, they ultimately became bones of contention among the religious denominations parting among themselves in the sixteenth century. Even though Erasmus' influence on Bruno's polemic style is clearly recognizable—and at the same time it may very well have been a model of humanistic caviling—, the Erasmian reformatory theology is difficult to grasp with the scholar from Nola. Therefore it shall be sufficient to ascertain that the Dominicans could indeed see an indicator of Bruno's heterodox views in the way he dealt with such patristic editions.

Another suspicion, though, was by far more serious: to defend the heresy of Arius. The defendant expounds very precisely the dogmatic problem of the Arian heresy, which had already been condemned by the Council of Nicaea (325):

> It is generally assumed that what Arius intended to have said was the Word being the first creation of the Father; I, however, have explained that Arius refers to the Word neither as creation nor as creator, but rather an intermediate between creator and creation, just as the word is in the

> middle between the speaker and that what is being said. And therefore it was to be called "only begotten" before all creatures, not "from whom," but "through whom" every object was created; not "to whom," but rather "through whom" every object turns and returns toward the ultimate aim, namely the Father. Over this I was very excited. … And here in Venice, as I recall, I have said that Arius did not intend to say that Christ, that is, the Word, was a creature, but rather a mediator in the manner as has been mentioned. (Firpo 1993, 171)

While yet standing in front of the Venetian inquisitors, the defendant does not seem to be willing to believe that merely deviating from the scholastic method can already be heretical; he does not seem to be aware that during the heated era of the Counter-Reformation, experiments with canonical dogmatic theology and recourse to earlier stages of dogmatic history were considered dangerous to the Catholic faith and orthodoxy. Regardless whether or not this interpretation of Arianism is historically correct, the fact that Bruno attempted to appreciate it in a differentiated interpretation must have been suspicious. In Naples as well as throughout all of Europe certain heresies of late antiquity and early Christianity had gained momentum due to patristic studies and the discussions about the right interpretation of the very words of the Bible. Among these heresies were also various versions of Arianism which, roughly speaking, amount to rejecting the Trinitarian doctrine and the Incarnation of the Son of God. Therefore a favorable interpretation of a heretic such as Arius was not only exciting for Bruno but also threw his audience into turmoil, as he continues on to report. For he argued that heretics were not "stupid just because they neglected to argue in scholastic terms," rather, "just like the ancient Fathers of the Holy Church had done," it should certainly be possible to "portray in terms other than scholastic ones" the relationship between God the Father and the Son. "At this, these Fathers jumped to their feet and said that I defended the heretics, and that I deemed them wise!" (Firpo 1993, 191) In terms of dogmatic theology, the issue was about the relationship between the three divine persons; in terms of hermeneutic, the question was whether one could express the Christian doctrine using different terminologies. This last question, however, contravened "political correctness" as dogmatic theology was leaning towards exact and unambiguous formulas for the sake of the uniformity of Christian doctrine, and taboos were imposed on diverging terminologies. Later on, the change of philosophical languages was to become one of the hallmarks of Bruno's philosophy, and it is this change which makes it more difficult to interpret his writings.

Two

FLEEING INTO EXILE—NORTHERN ITALY, GENEVA, TOULOUSE: ASTRONOMY AS A MEANS OF EARNING A LIVING

Bruno's journey to Rome turns into a flight. On his first transit he allegedly dedicated a book to the pope, entitled *L'Arca di Noè*. It is rumored that during this stay he threw a secret informer into the Tiber River—unfortunately there is no evidence for either one of those events (cf. Spampanato 1933, 151ff, 263–265). In the *Ash Wednesday Supper*, the author mentions that *Noah's Ark* was a satire in which, among other things, the donkeys were concerned about their primacy (DI 79f). Apparently, his attempts to rehabilitate himself in Rome were not successful. Rather, the friar lays down his habit and sets out northwards. It appears that he sought shelter in various Dominican houses which he had gotten to know during his studies. There he was advised to continue presenting himself as a Dominican, since the affiliation with any professional or social group was important to survival.

In Venice, as he indicates, he published a treatise entitled *De segni de' tempi* (*The Signs of the Time*) which is also not preserved. Here, too, one can only speculate as regards its content. It might have been an astronomical or cosmological treatise, but it also might have been a work on the history of philosophy combined with cosmology. The title alludes to two biblical passages according to which God knows the signs of the time, reveals past and future, and makes known secret signs (Sir 42:19), and Jesus invites the disciples to interpret the appearance of the sky in view of salvation (Matthew 16:3–4). Associations of this kind are quite often to be found in Bruno's writings, including the first treatise published in Latin, *De umbris idearum*. He explains that he had it printed for the sake of money, and the search for employment pushed him further on through Northern Italy. Between 1576 and 1578 he stayed in Noli, Savona, Turin, Venice, Padua, Brescia, Bergamo, and Milan, among other places. Temporarily he taught children or gave lectures on *Spheres*; these were presumably foundational courses in astronomy, reminiscent of the customary textbook entitled *Sphaera*, written by John of Holywood (Johannes de Sacrobosco). Now on the brink of becoming a "knight errant of philosophy," the fugitive then set out to Lyon—it is not clear whether or not he actually arrived there. After a short stay in Chambéry in Savoy he finally found a position as a proofreader at a printing shop in Geneva.

From the Dominican headquarters and that of the entire Catholic Church in Rome, the renegade friar now had come to the Vatican of Calvinism. At that time, there was a small colony of Italian emigrants seeking shelter in Geneva; these people had been forced to leave their hometowns for similar reasons as was the case for Bruno. It is possible that he could have sympathized with Calvinism due to the mutual rejection of the veneration of the saints. At any rate, Bruno later on explicitly rejected the doctrine of predestination, or rather the Protestant doctrine of grace in general, according to which the salvation of man depends on God's predestination, or in any case, however, on his grace. He deemed the significance of "good works" indispensable, at least with regard to the social meaning of religion. His criticism of the Christian religion at that time also included its Calvinist variant. Even though the Spaniard Michael Servet had been burned at the stake as a heretic, not without John Calvin's assistance, it seems that there were also some antitrinitarians staying in Geneva in 1579, the year in which Bruno joined the local Italian dissidents. Servet is considered to have been the founder of the modern antitrinitarianism, and with regard to the Protestant characteristic of interpreting the Bible in its most literal sense, this theory insisted that the doctrine of three persons in one God was not biblically founded. According to him, it was only through a return to the original teaching of the Bible that a reform of Christianity should be possible, including that of the Christian communities. As far as his reformatory intentions were concerned, they coincided with Calvin's positions; with regard to theology, however, there was a clash. In 1541, Calvin had established a theocratic rule in Geneva as a result of a strict ecclesial constitution. In 1559, he founded an academy (university); the renowned theologian Theodore Beza was to become its rector and also Calvin's successor in governing the Church in Geneva. The exile's ideological direction during those years is unambiguous. Lyon had been a place of refuge in the 1530s for both Calvin and Servet. At times, the antitrinitarian Lelio Sozzini had stayed in Geneva; together with his relative Fausto Sozzini (both hailed from Siena), he became the eponym of the European antitrinitarian (or unitarian) movement: Socinianism.

Bruno's wish, however, of living "in peace and security" (Firpo 1993, 160) in this city was not fulfilled. He enrolled at the academy of Geneva on May 20, 1579; of course, he did not use his religious name, Giordano, but rather his baptismal name, Philippus. As his professional title he wrote "sacrae theologiae professor." One of Theodore Beza's protégés, Antoine de La Faye, was in charge of this institution. In August 1579, Bruno had a pamphlet printed in which he exposed twenty errors held by de La Faye, the professor of philosophy (Spampanato 1933, 632f). We do not know what these errors may have been and how they manifested themselves. However, it is certain that the Genevan philosophy was committed to Aristotle; Bruno was put on trial before the highest ranking secular and ecclesiastical Calvinist committee, i.e., the Con-

sistory, and it ended with an apology on the part of the Italian, followed by his departure.

Bruno continued his journey, and he went to Toulouse via Lyon. He stayed there for two years which is a comparatively long time on his odyssey. For the time being, he secured his existence once again by giving lectures on *Spheres*, that is to say, on the subject of astronomy. After six months he obtained a position as a professor at the university of Toulouse where he then lectured on Aristotle's treatise *De anima*. We do not know what exactly it was that he was teaching; the commentary on this text was part of the foundational course in philosophy, and there were several ways to treat it. In Toulouse the Italian met the Portuguese Francisco Sanches († 1623), another philosopher in exile who cordially dedicated to him one copy of his book *Quod nihil scitur* (*Nothing is Known*). This was a token of a friendship which was answered by the recipient with a handwritten note (and hopefully unbeknownst to the donor): "It is amazing that this ass should call himself a doctor" (Canone ed. 1992, 86f). Like so many other Renaissance writers, this skeptic had been attacking the Aristotelian authority. The keyword "ass" reveals that Bruno counted him among those philologists whose merely rhetorically oriented scientific views and positions he had rejected all of his life.

Considered an apostate of both the Catholic as well as the Calvinist denomination, he found himself in the middle of France. This country had been in turmoil due to religious wars in the second half of the sixteenth century, ensuing especially between reformed Calvinists, locally known as Huguenots (a parody on "Eidgenossen," i.e., Confederates), and Catholics. The Queen consort of France, Catherine de' Medici († 1589), together with the leader of the French league against the Huguenots and the king's claim to power, Henri I, Duke of Guise († 1588), went so far as to instigate a massacre of Huguenots. This was the so-called St. Bartholomew's Day Massacre which took place on August 24, 1572; together with thousands of sympathizers of Calvinism, the philosopher Petrus Ramus (Pierre de la Ramée) was also among the dead. Even though Toulouse, by and large a Catholic city, was a good location for Bruno with regard to the inquisitors, it had also always been a den of dissidents. Soon he was to go to Paris due to acts of war flaring up yet again between Huguenots and Catholics.

Three

PARIS: THE POWER OF MEMORY

Paris was offering a wide-ranging milieu of cultural and intellectual groups. It was here that the Jesuit Order had originated as a result of a small conspiratorial circle of pious Spaniards, and the university life took place in numerous colleges. In the summer of 1581 the philosopher arrived, and he gave private lectures on mnemonics, as well as—allegedly—thirty lessons on the attributes of God. If one considers the number thirty, the content of these lectures immediately becomes apparent. For this number appears in many of his systematic treatises; in general terms, it is the development of metaphysical terms on thirty levels, in thirty stages, and in thirty areas. As will have to be demonstrated, this lecture is connected with mnemonics, and Bruno's classifying it as a lecture on the attributes of God must be seen as motivated by his intention of giving the impression that this was a topic of philosophical theology. At the same time such a topic is prone to be understood in pantheistic terms, namely when the attributes of God are meant to signify that the supreme principle is exhausting and emptying itself in the finite world. This is possible even if one was to give credence to Bruno's claim made during the inquisitional trial that he obtained these thirty attributes from Thomas' *Summa Theologiae* (Firpo 1993, 161). Based on the success of these lectures, it is evident that they had to do with mnemonics: Henry III, King of France, allegedly sent for Bruno after the regular lectures with the question of whether the memory of the Italian was natural or based on magic (Firpo 1993, 161). As the defendant describes the connection, his first published Latin treatise, *On the Shadows of the Ideas* (*De umbris idearum*), is a result of these lectures which he dedicated to King Henry (Firpo 1993, 162).

Mnemonics (*ars memoriae*, artificial memory) was a trendy topic of the Renaissance. Its original meaning lay with rhetoric, as it was the product of an era when the spoken word was not being sight-read. Especially the ancient authors Cicero and Quintilian had established rules and made recommendations as to how the memory could be supported on rhetoric occasions, i.e., especially on the occasion of a speech in court and the corresponding discussion. In simplified terms, this technique consisted in visualizing a system of locations such as a house while memorizing the text and linking the parts of the speech to these locations (in Greek: topoi; in Latin: loci). When presenting the speech, the orator had to remember this system of locations, i.e., the house in the present example; in this way, he was enabled to retrieve the speech in its correct context and "interrelation," and he could furthermore place the opposing arguments at the right position within his own argumentative context with the aim of formulating his counterargument. In this respect it

was a simple psychological technique based on the fact that the association was not so much dependent on the actual content of the speech but rather on the topical context as imagined in the mind of the orator. The topical system supports the presence of mind in the speaker regardless of whether or not he is able to think factually of the right argument in the right place. There are two interesting philosophical aspects of this rhetorical aid. On the one hand, the inner structure of the speech is being detached from the factual content. It is therefore conceivable that intellectual issues are linked to each other in a way that does not depend on whether or not these issues are actually being thought. On the other hand, however, there is a tendency for something like a structure or an interrelation to become independent, a structure which is in and of itself universal and, as such, behind or above the issues. Mnemonics deals therefore with a universal structure, and it does so with regard to the functioning of the mental activity of the human being. It is, as it were, about metaphysics and cognition.

Bruno transformed mnemonics into a universal theory, based on the unity of the intellect in the variety of its expression. The philosopher from Nola offered an important innovation to the French King in *De umbris*, and this innovation consisted in a new system used for the specification of words by means of a combination of letters and images. One such aspect ought to be mentioned; it has been reconstructed by Rita Sturlese due to the fact that the original edition contains disfiguring typographical errors. As a basis one must assume the construction of five concentric and independently rotating circles, each divided into thirty areas. Every one of these areas is assigned a syllable consisting of one vowel and one consonant, i.e., BA, BE, BI, BO, BU, CA, CE, etc. There are corresponding stages to each of the five circles, similar to a sentence: the first circle corresponds to an *agens* (an acting subject), the second to an *actio* (an action), the third to an *insigne* (a description or an attribute), the fourth to an *adstans* (something that is associated), and finally, the fifth to a *circumstantia* (another circumstance). Each single syllable is assigned a concrete image, a concrete attribute, etc. Now if a certain word is supposed to be memorized, then the syllables are put together, and a sentence is formed using their corresponding images, actions, attributes, and so forth, resulting in a general picture. Sturlese uses the word NUMERATORE as an example: following the method suggested by Bruno, the classification in this case is NU = Apis (the founder of medicine), ME = with a rug, RA = mourns, TO = bound, RE = a woman on a three-headed hydra. These result in an image that can be formulated in the following sentence: Apis is weaving a rug, clothed in rags and with his feet bound together, while a woman sits on a three-headed hydra in the background (Bruno 1991, *De umbris*, p. LXV). This means that every word to be memorized can be composed in an image whereas similar words (i.e., words stemming from predominantly common syllables) produce similar images.

In principle, Bruno continues to build on extant textbooks on mnemonics that had been in vogue towards the end of the Middle Ages and during the Renaissance period, be it to the end of political or juridical speech, be it also to the end of organizing knowledge, for instance in the realm of medicine. The special feature of Bruno's system is the fact that from the outset there is no associative correlation between the images assigned to syllables or entire words on the one hand, and the words to be memorized on the other hand. A further effect stems from turning the concentric circles and thereby forming sentences, and thus complex images, to which no real word corresponds; however, on the basis of the affinity to similar extant words, images, and sentences, the sense or point of it is open to speculation. Creating such complex word-image composites does offer an aesthetic aspect, apart from the technical one which we can only take for granted after 400 years of further development in the areas of literacy and scientific organization. Bruno is using the twenty-three letters of the Latin alphabet to create these and other circles in *De umbris idearum*, and he includes Upsilon, Phi, Omega, and Theta from the Greek, and Aleph, Tsade, and Shin from the Hebrew alphabet. In his opinion, adding these seven letters to the Latin alphabet facilitates the formation of all the words of these three sacred languages as well as all those languages which are derived from them. This is so because the remaining letters of the Greek and Hebrew alphabet have equivalents in the Latin alphabet. In this way Bruno provides a technical justification for his preference for the number 30 in all of his combinatory treatises, first to last, even though there is no mentioning of mnemonics but rather gradations of being, cosmology, and suchlike. Thus far goes the technical example found in this treatise.

With this, however, its content is by no means exhausted, as it consists of various sections. A large and important part deals with psychology of the memory, as well as with a metaphysical substantiation. Bruno portrays in many rounds a technique of producing images which in turn represent letters and words, and it may look like a complicated tool to assist in remembering—and perhaps even constructing—verbal expressions, and it ought to be the task of a practitioner to determine its usefulness. The philosopher, however, wonders what exactly it is that is being produced: does it really exist? And if it does, what is the achievement of this production? What is it that the human intellect is doing when it produces terms and images on its own initiative? The intellect ties a basic structure to a form by way of an organ (Bruno 1991, *De umbris*, 77), as if painting inwardly, for writing also is an inward intertwining of words and assigning of symbols and letters (Bruno 1991, *De umbris*, 75). Thus far, the mnemonic images are fantasy products in the colloquial sense. Now, however, this production of images and the combination of symbols and meanings parallels that which nature itself does.

Nature in this sense, however, is not to be confused with the external condition in the Aristotelian sense, which we would describe using the terms "matter" and "form"; rather, it is an internal energy forming that which "is"—

an energy which "concretizes" in the visible things. Using an example of a classical Aristotelian term: human nature is not a logical term which can be said about one person or another and is thus an external comparability between individuals. (Modern metaphysics would call this a universal attribute.) Rather, as Bruno put it, it is "something physical which is contracted both in everything and in the individuals" (here he is using the term *contractum*; Bruno 1991, *De umbris*, 70). Thus it is not merely about human nature, but about nature in general; it is not merely a random principle, but rather about the universal principle: "It is nature which adapts the bodies to the souls. Nature provides the appropriate tools for the souls … Nature itself is present to you in everything and in all that is" (Bruno 1991, *De umbris*, 68f). If, therefore, one moves away from imagining art as working externally on some matter, and then proceeds to imagining art as an activity acting from within, creating the form from the matter, then "art is nothing but an capacity of nature which is akin to the intellect" (Bruno 1991, *De umbris*, 67).

This, however, does not yet eliminate the argument according to which the images produced by mnemonics are merely imaginary products. Likewise, it is true that according to Bruno, the image is a means of cognition, and said image means "the representation of the matter known, inasmuch it is entitled to such representation due to an affinity to that which can be known; it [i.e., an image] also means a spiritual and nonmaterial entity according to which it exists in the one who recognizes it" (Bruno 1991, *De umbris*, 59). The Dominican had copied this concept of the image (*species*) word for word from Thomas Aquinas (Qu. de veritate III 1 ad 2); however, he used it so as to provide evidence of the productivity of the intellect, all the while (and unlike his teacher) presupposing that this spiritual and nonmaterial form of being possesses a continuing autonomy in the sense of this effective nature. If, then, one intends for the fantastic forms of mnemonics not to be mere chimeras, one is required to prove that the figurative products of the mind are realities. Since there are undoubtedly differences between real things (such as individual human beings or souls) and the entire course of nature, it needs to be demonstrated that these ontological differences are nothing but gradual differences, that is to say, differences with regard to the stages of existence. And it is exactly this gradation of existence, a hierarchy, as it were, with which Bruno is operating from the outset in *De umbris idearum*.

To him, *umbra* (the shadow) is the image for the diversity of the various stages of existence, yet at the same time also their close connection. This presents the concern of cognition and memory. The shadow is thus not simply darkness, obscurity, something that renders the things unrecognizable, but rather an indication, possibly even a last sign of light. "Nature does not permit a direct progression from one extreme to the other (from the supreme principle to the lowest particulars) but rather makes use of the mediation between shadows and shaded light." (Bruno 1991, *De umbris*, 36) "The shadow does not belong to darkness; rather, it is a trace of the dark found in the light, or a trace

of light in darkness, or an equal participant in light and darkness, or a composite of light and darkness, or a mixture of light and darkness, or neither one of those and separated from them. And the latter is due to the fact that it is not the entire truth of the light, or because it is false light, or because it is neither true nor false, but rather a trace of what is true or what is false." (Bruno 1991, *De umbris*, 26). As the title of this first published treatise (*The shadows of Ideas*) promises, the ideas (i.e., the pure intellectual forms; that what is ultimately to be known and, as soon as it is recognized, is also the only truth) are recognizable in the form of shadows. In other words, it asserts that the darkness of human cognition should not give rise to skeptical resignation; rather, it is an incentive to proceed through the shadows and progress to the light—and furthermore (and this might be even more important), to acknowledge and clarify the relative rights of the shadows as the lower gradations of being and of truth.

Once again one might ask impatiently: is this metaphysical effort worthwhile in order to justify a technique of memorizing? One must look for an answer in the use of analogies. If there is an analogy between the production of mnemonic images and the terms referring to the production of the nature of particularities (which are elements of a suspended nature, as it were), if therefore the images suggested by Bruno derive their right to exist exclusively from the creativity of the imagination, with their strict logic being situated on this level, and finally, if the productivity of the human imagination in turn derives its right to exist from the fact that human imagination in turn is a product of the intellectually and perhaps even intelligently acting nature—then it ought to be possible, with the help of the intellect, to decipher the natural powers so as to produce things with the same right and the same power belonging to nature, and these things would then be real, because they are natural. Thus, if the analogy derived from a mere comparison is transferred and applied to a correspondence within nature itself, then all of a sudden the fantastic task presents itself to not only create imaginary products, but reality. This is the ideal of magic.

A more modest variant reads as follows: the producer of mnemonic images (with the help of which he summarizes the topical content of his argumentation or concepts) is not only the creator of his images and the guarantor of the coherence of his thoughts. He also knows the images because he himself has created them. Now it may be that he will never arrive at the level of nature in the sense of a universal intellectual force so as to act with it or on behalf of it. But it ought to be possible to understand the intellectual structure and the specific manner in which nature operates, produces, controls, and manifests itself, since the human intellect is of a similar nature and therefore operates on an analogous level. If, therefore, nature in its external visibility is not being formed, isolated, made finite, and fashioned by a creator who is positioned outside of it and influences it externally, but rather by an energy which is inherent in things, and if the human intellect itself is such an inner

principle—even though it is not possible to be creative in a nature-like manner or alongside it, then by virtue of the interrelation of the intellectual structures it ought at least to be possible to recognize reality as it "truly" is, by recognizing precisely these operating principles of nature. This is the task of cosmology or, more generally, the philosophy of nature.

There is yet an unusual dialog which precedes this textbook on mnemonics and its psychological and metaphysical grounds. This dialogue, on the one hand, formulates some objections to mnemonics, e.g., that it could be simpler to memorize the things themselves instead of the mnemonic sentences. On the other hand, it also presents the broader standards of the book. The world of things and the realm of cognition, as it is said, are in the process of a constant change and yet at the same time in the process of a constant duration, so that the intellect is oriented towards constancy while the senses are oriented towards progress. An analogy of this is the sun which is always one and the same, and will remain as such, yet always appears differently and also always produces new things (Bruno 1991, *De umbris*, 13). As is said further on, this book "about the ideas contracted to an internal writing" (Bruno 1991, *De umbris*, 14) does not only provide simple mnemonics but rather introduces to a way of a manifold fabrication of skills (Bruno 1991, *De umbris*, 21).

The peculiarity of this introduction is the fact that those participating in this dialog are Hermes, Philothimus, and Logifer. It seems that Logifer ("the one who is bearing the meaning") is the spokesman of the author, and we may certainly associate Logifer with Lucifer, albeit not in the sense of the devil but rather in the sense of a quotation from Plotinus (VI 7:1). According to this, God has equipped the face with "light-bearing" eyes so that they might have an affinity to light (Bruno 1991, *De umbris*, 47). The other interlocutor is Philothimus the Well-meaning; it is he who usually raises the issues. Now Hermes is the main speaker, and one is reminded of the Egyptian sage Hermes Trismegistus who had become most popular in the Renaissance culture ever since Marsilio Ficino (1433–1499) had translated the *Corpus Hermeticum* from Greek to Latin. (*Corpus Hermeticum* are those writings which are associated with the sage.) The relatively young philosopher Bruno has his debut treatise presented by no one less than the highest Christian-pagan authority of the Renaissance.

The dialog opens with an impressive monolog of the same Hermes: "Pray proceed, for you know that the sun and the art are one and the same …" And ultimately the two other speakers urge Hermes (whose name also refers to the messenger of the gods) to present the agenda of this treatise. This is first of all an excellent PR trick. It arouses curiosity and raises the standards of the treatise to a universal philosophical and intellectual level; from there, the author is able, with the help of the messenger of the gods and the ancient sage, to look down on the extant literature regarding this topic, ranging from classical antiquity to his contemporaries. He is above such authors who "gather together sentences from others here and there and gather around those innu-

merable authors who strive for immortality with regard to future generations and at the expense of others" (Bruno 1991, *De umbris*, 20). The author intentionally monopolizes all those who have made a genuine effort in using their own intellect to arrive at a philosophical contemplation of the things, be it in the form of the Pythagorean mysteries, the Platonic beliefs, or the Aristotelian logical calculations (Bruno 1991, *De umbris*, 22). He does this, however, with the generous gesture of one who is above all of these. The debutant on the Parisian intellectual scene begins with an outrageous claim of authenticity and authority, of individually recognized truth which is universally valid, and he will uphold this claim until his very end. Certainly all of this is also rhetoric, but in the sense of rhetoric as understood in the Renaissance era, i.e., the enforcement of a rationally justifiable idea by means of images, literature, and also emotions.

During his ten years of public appearance between 1582 and 1591, Bruno published numerous treatises on mnemonics and rhetoric. In addition to *De umbris idearum* he wrote *Clavis magna* (*The Great Key*), and time and again he refers to this treatise, but it is nowhere to be found. Almost at the same time as *De umbris idearum* the dialog *Cantus Circaeus* (*Circe's Song*; OL II 1) was published; it contains an appendix on mnemonics. Another contemporaneous treatise is *On the Comprehensive Structure and the Supplement to the Lullian Art* (*De compendiosa architectura et complemento artis Lullii*, OL II 2), that is, a treatise dealing with the art of Raymond Lull. Furthermore, there are two related treatises on the *Thirty Sigla* (*Explicatio triginta sigillorum* and *Sigillus sigillorum*; all three OL II 2), published in England in 1583. Three years later, he published a commentary on Aristotelian physics by adapting mnemonic principles (*Figuratio Aristotelici physici auditus*, OL I 4), and furthermore, two treatises on Lullian art, i.e., *The Lamp of Combinations according to Lull* (*De lampade combinatoria Lulliana*, Wittenberg 1587) and *The Search of Images and the Lamp of Combinations according to Raymond Lull* (*De specierum scrutinio et lampade combinatoria Raymundi Lullii*, Prague 1588, both OL II 2). During Bruno's Wittenberg period, in 1587, a treatise on disputation appeared, entitled *On Procedure and the Searching Lantern of the Logicians* (*De progressu et lampade venatoria logicorum*), and finally, together with his great Frankfurt treatises, *On the Composition of Images, Signs, and Ideas* (*De imaginum, signorum et idearum compositione*, both OL II 3); the latter is a treatise on the technique of the production of images for mnemonics. The likewise later treatise *Lantern of the Thirty Statues* (*Lampas triginta statuarum*, OL III) is on the verge between both mnemonic rhetoric and cosmology. Those book titles were not unique at that time, and yet meant to arouse wonder and curiosity. Most treatises claim to have a practical sense: the technique of remembering and reproducing knowledge; it was this purpose which was emphasized for the most part to patrons, starting with the French King. On the other hand, under the above mentioned claims the distinction between theory and practice cannot be strong, as the practice is based

on a strongly Platonizing theory; thus Bruno says occasionally that "such a distinction [was made] only for the sake of the lessons" (OL II 1, 247).

The references to the Lullian art are in need of some elucidation. Raymond Lull (Raimundus Lullus, Ramon Llull, also Lully, 1232–1316), the Catalan theologian, philosopher, and poet, had invented some sort of universal science, among other things. This universal science had become very popular in the Renaissance era up to Gottfried Wilhelm Leibniz (†1716), for it was the boom of universal sciences, and Bruno also wished to contribute to these. Lull's universal science, *Ars generalis*, was universal with regard to its intention and topic. The intention was to provide an instrument for science in general and at the same time to contribute to reconciliation between the peoples, especially between Muslims and Christians, if not the conversion of the gentiles. The basic principle was some sort of natural theology; in this theology, the contemplation of God was to be made possible through the analysis and connection of his basic "names" or attributes, respectively, such as goodness, greatness, duration, power, wisdom, etc. At the same time Lull presupposed a continuous gradation of the dignity of things, or the dignity of that which exists: from inanimate matter, such as stones, through the human being to God.

A third model of thought was added to this: on condition that the attributes of God are to be found in creation in a sparser way and that creation is an expression of God's being at work, there is a type of operating and relating among things that is common to God as well as to all things. This manifests itself in things as the aspiration to perfection, in view of the whole as a uniform metaphysical structure of being. Therefore the effect of the Good is expressed in the one who *makes good*, in what can be *made good*, and in *making good* (*bonitas, bonificia, bonificabile, bonificare*). Everything on any level is a reiteration of the first level. Within the realm of natural theology, according to which God's attributes are simultaneously present and even identical in him, all the attributes of God are equivalent to each other and simultaneously combined. Consequently, Lull's physics and epistemology consist in combining things, attributes, and stages of existence with each other as effects of God. To that end he used in his treatises varied models of concentric circles which could be rotated against each other; in these circles, the different levels and attributes were indicated with letters.

It is apparent that Giordano Bruno has adopted such circular models from Raymond Lull or his successors. But it is likewise easily identifiable that this Lullian model of concentric circles has served as an example for the syllable technique in *De umbris idearum*; here, following the structure of the grammatical sentence, images are being produced using the subject, predicate, adjective, and adverbs. In the same way Lull had already partly claimed that with the help of his combination theory, not only could knowledge be reproduced, but also newly created, namely by the virtually mechanical combination of attributes and things in the circular models. Such creativity likewise is no fantasy in Lull's work; rather, on the basis of the continuous logic of eve-

rything which exists and every thought, it is a participation in the productive energy of nature and God's working in all, including the realm of thought. The self-imposed missionary goal of the Catalan, by the way, was not based on a Eurocentric conceit of Christianity, but rather on the presupposition of the anthropological unity of all mankind, gentiles and Christians alike, and on the accessibility of the rationality of the world to each intellect inasmuch as the boundaries of languages and cultures are being overcome by a universal model.

Roughly 300 years later the Lullian art provided a most welcome alternative to Aristotelian logic with which the Italian philosopher had grown up. Therefore, in his various treatises of mnemonics, he was eager to translate also this logic to the language of the Aristotelian scholarly philosophy and, from there, make it comprehensible. Thus, in his early treatise *On the Comprehensive Structure and the Supplement to the Lullian Art* (*De compendiosa architectura et complemento artis Lullii*, OL II 2), he begins for example in an entirely scholarly manner with the four Aristotelian causes. He then claims, however, that this "art" even transcends classical metaphysics in that it "contains that which is thought to exist, and that which exists in reality" (OL II 2, 8).

The difference between "that which is thought to exist" and "that which exists in reality" was a fundamental problem of scholastic logic and ontology. This problem had been discussed in great detail by Bruno's contemporary, the Jesuit Francisco Suárez (1548–1617). According to the classical Aristotelian theory, the objects of our knowledge gained from the sensory perceptions are being processed by intellectual activity. Knowledge that is deserving of this name does only exist, however, if there is a corresponding "objective" being outside of the intellect. For there are also objects (imaginations)—so goes the scholastic explanation—which only exist in the intellect, that is to say, which have an "objective being" only in the intellect. This methodologically clean distinction between things that are merely thought and things that are real, however, marks a rift between the intellect and the world, or between knowledge and that which is known, respectively. This rift was to deepen more and more in the course of centuries and was highlighted most fiercely in the transcendental philosophy of Immanuel Kant († 1804). He declared the external reality to be virtually unrecognizable so that only visual forms, the 'forms of intuition' are the basic conditions and guarantors of cognition. Traditional scholastic philosophy regarded fantasy as a transitional stage in rationally processing the sensory impressions to arrive at well-founded knowledge.

Bruno, on the contrary, regards the creations of fantasy as objects of knowledge with equal rights as the signs for things and abstract concepts insofar the creativity of the fantasy keeps the inner structure of nature. As an example for this, he uses the naturally inherent enmity between wolf and sheep; this enmity is at the same time a relationship which is being expressed in the

exterior appearance of these two animals (OL II 2, 167f). In this connection it is useful (and for skeptics, entertaining) to know that in the realm of magic, the following is regarded as a common fact: a drum made of sheep skin will crack if a drum made of wolf skin is struck right next to it; this is so because even then the natural enmity between both animals is manifested in the fear of the sheep. Fantasy plays an important role at the beginning of the treatise on the *Sigil of all Sigla* (*Sigillus sigillorum*, OL II 2). *Sigillus* refers to the shorthand symbol as well as a coat of arms in which an impresa, the motto of the owner, is expressed. (Bruno uses the latter in *Eroici furori*.) The fundamental sigil is said to imply all science and the art of all arts (OL II 2, 217). It is said there that in the realm of mnemonics, the "phantasibilia"—that is to say, everything which can be an object of fantasy, and that really includes everything—contain the seed of everything (166). Whereas classical logic (and also the Renaissance logic) differentiates between the discovery, the arrangement, the assessment, and the recollection of the possible objects of knowledge, Bruno's art summarizes all these skills in this one science, so much so that it bridges a rift between that which is merely perceived and that which is scientifically known. This knowledge is the knowledge of reality since it has been produced by the same powers by which reality is brought forth. And because this is so, the rift between "that which is thought to exist" and "that which exists in reality" is likewise bridged, leastways to all appearances of the claim made to this effect.

Bruno adopted the figurative representation in circles and diagrams partly from scholastic logic, partly from Raymond Lull. It is an expression for the fact that he deliberately dismisses the tension between reality and cognition. Following the terminology of classical logic, he expresses it in this way (OL II 2, 325): in general there are three forms of proof. 1. the proof from the ultimate cause per se (this, however, is no scientific topic), 2. the proof from the cause of being (*propter quid*—"therefore"), and 3. the proof from the cause of knowledge (*quia*—"because"). Both actually scientific forms of proof had been subject to meticulous analysis in the sixteenth century, especially by Jacopo Zabarella (1533–1589), an Aristotelian philosopher from Padua. It seems generally certain that this discussion in the end led to Galileo Galilei's new scientific method (e.g., H. Mikkeli, *J. Zabarella*, Helsinki 1992). This discussion as well has to do with the fundamental difficulty regarding the subject content of scientific statements in the realm of nature. Now Bruno adopts the claim (e.g., in *De lampade combinatoria Lulliana* which was quoted earlier on) that the Lullian proving method must be added to, if not given precedence over, the two other methods as it assumes an inner relationship among all worldly things and all ideas. The proofs taken from the causes of being and cognition differ from each other in that the former works in an *a priori* manner and the latter in an a posteriori manner. (In one case, the knowledge of causes precedes the effect which is to be determined; in the other case, the cause is deducted from the effect.) In contrast to this, the Lullian method sim-

ultaneously "brings along" (*comportantur*) both the causes and the knowledge at the same time. For the line of demonstration, based on the operating method that is derived from that which operates, evinces at the same time the cause and knowledge about it. Lull himself had called it the line of argumentation "from that which is equal, or that which can be equated" (*ex aequalibus seu coaequaevis*). We encountered it already as gradations of the one who *makes good*, what can be *made good*, and *making good* (OL II 2, 325).

If one tries to comprehend this thought, the difficulty of understanding Renaissance mnemonics and especially Bruno's mnemonics yet remains, albeit on a more technical level in that one must struggle with the production of wheels, tables, lists, and images. On a fundamental semiotic level, however, Bruno's approach must be plausible. As he says in his treatise *De imaginum, signorum et idearum compositione* (OL II 3): "Idea, imagination, assimilation, composition, expression, and naming—all these are generally the task of God, nature, and the intellect. Appropriate to the analogy among these, then, nature relates to the divine activity in a miraculous way whereas the human genius—in that it demands higher standards, as it were—reproduces the work of nature" (OL II 3, 89f). However, one needs to see this process of multi-level imitation not only from the difference between the stages but also from the viewpoint of their connection. Modern philosophy, be it epistemology or semiotics, has provided instruments that facilitate understanding the signifying power of images and—in general—the products of the human intellect as realities. Certainly Bruno could not have had such intentions, as he did not have the problems of post-rationalist philosophies. However, starting from the scholastic basis of the sixteenth century, in connection with alternative philosophical concepts (such as the aforementioned concept of Lull), he is striving for similar results.

Four

OFF TO LONDON: SATIRE, METAPHYSICS, AND ETHICS IN ITALIAN

Still in Paris, Bruno published his first book in Italian, *Candelaio* (*Chandler* or: *Candlebearer*); on the title page, the author refers to himself as "Bruno Nolano, Academico di nulla Academia, detto il Fastidio" (Bruno from Nola, Academic of no Academy, a.k.a. The Troublemaker). Every now and then the play is being performed in modern times, and it is as funny, complex, rude, vulgar, and learned as Italian comedies of the sixteenth century are known to be. One ought to be reminded of the comedy *The Mandrake* (*Mandragola*) by the political philosopher Niccolò Machiavelli (1469–1527). The main protagonists are a man who is in love, an alchemist, and a pedant; with this, it is clear that love, science, and erudition are thematic threads of the play. Although it contains a great number of allusions to philosophical theories to be found in other treatises by Bruno, it does not make any sense to analyze the comedy at this point. Bruno himself says in one of the various prefaces: "the theme, subject, and its method, arrangement and other details will, I assure you, emerge in due order … which is much better than if that order were to be narrated to you" (*Candelaio*, Proprologo 41; *Candlebearer*, 68).

This comedy marks the beginning of the series of Bruno's Italian treatises which he was soon to publish in England; it was in Paris at the latest that he came to know Michel de Castelnau (1518/20–1592) who once again was sent on a royal commission to the court of Queen Elizabeth I in London. Castelnau was a diplomat who had traveled to many places, and his most important task on missions throughout Italy, the Holy Roman Empire, Switzerland, England, and Scotland was to even out conflicts between Protestants and Catholics. In 1592, he composed informative memoirs about the 1570s in France. The Italian philosopher spent about two years with Castelnau in London. The various dedications of the works that had been produced in London reveal that Bruno had mixed with the courtly and diplomatic circles more than he had with those of the universities and colleges. His familiarity with the diplomat, however, also had the side effect that the English ambassador reported Bruno's arrival in advance to the London court, with the additional remark: "a professor in philosophy … whose religion I cannot commend" (Spampanato 1933, 329).

Bruno reached his greatest achievement of his life (and beyond his life) in London, for he published a series of dialogues in Italian which dominate his fame until the present time. Here the critic of Aristotle, the herald of the Copernican theory, the knight errant of freedom of thought, and the opponent

to Christianity enters the world; as such he was known especially since the late eighteenth century, and he was talked about as a secret tip in libertine circles. Now it is just "Bruno the Myth" which has provoked all sorts of speculations about his adventures and activities in England, including a story about Bruno as a secret agent. Speculations are not bad as long as they can be regarded as an expression of unsolved and complex interrelations, as is the case with Bruno's stay in England. In any case, the facts allow the assertion that on the one hand he sought a career at the University of Oxford (as he had previously done in Geneva and Toulouse); on the other hand, however, he found his audience at the court of Queen Elizabeth. The emigrant had a choice of two shark tanks, as it were: the renowned university where he had to make a name for himself as a new, yet acceptable, scholar—and the court where his host, the French ambassador, had to carry out a delicate mission in the midst of political tensions between Catholics and Protestants, France and Spain, England and Scotland. Here the apostate was apparently a problematic case in the area of religion and politics, just as the English ambassador had reported from Paris. Before acknowledging the London treatises in their entirety, a compilation of dates might be helpful (cf. *Bruniana et Campanelliana* 1995, 21ff).

Bruno left France in the spring of 1583 after he "had bid farewell due to the tumults which had been erupting there [in Paris], and went to London with letters from the King himself in order to live with the ambassador of His Majesty, Michel de Castelnau, Lord of Mauvissière; in his house I did nothing but be his guest" (Firpo 1993, 162). In the month of June, the Polish Count Albert Laski (Alasco) visited England and was introduced to the University of Oxford which arranged disputations in his honor. Laski (1536–1605) had originally been a Calvinist, but before the Polish Calvinists split up into Antitrinitarians (the so-called Arians, after Arius) on the one hand, and the remaining Calvinists on the other hand, he converted to Catholicism in 1569 for reasons of political opportunism. His trip to England was connected to his struggle for power among the Polish nobility. George Abbott, later Bishop of Canterbury, who was at Baliol College at that time, reported that Bruno took the floor at one of the disputations, eager to cause a stir and to make a name for himself in this famous place. It is also possible that Bruno wanted to impress the Polish guest and had therefore traveled with him from London to Oxford, perhaps in the hope of finding academic and religious accommodations in Poland. At any rate Abbott reported (p. 88):

> When that Italian Didapper [a diving duck], who intituled himselfe, *Philotheus Iordanus Brunus Nolanus, magis elaboratae Theologiae Doctor, &c.* with a name longer then his body, had in the traine of Alasco the Polish Duke, seene our Vniversity in the yeare 1583. his hart was on fire, to make himselfe by some worthy exploite, to become famous in that celebrious place, Not long after returning againe, when he had more

> boldly then wisely, got vp into the highest place of our best & most renowned schoole, stripping vp his sleeues like some Iugler, and telling vs much of chentrum & chirculus & chircumferenchia (after the pronunciation of his Country language) he vndertooke among very many other matters to set on foote the opinion of Copernicus, that the earth did goe round, and the heavens did stand still; wheras in truth it was his owne head which rather did run round, & his braines did not stand stil.

Moreover one of his listeners claimed to have discovered that Bruno had quoted almost verbatim from the works of Marsilio Ficino in his lectures (ibid.; added in the margins: *De vita coelitus comparanda*), and that this discovery led to Bruno's being sent away, thus destroying his hopes for a lectureship at Oxford (McMullin 1986, 86f). Another witness, the scientist Gabriel Harvey, reports that a disputation (most likely in honor of Laski) had taken place between John Underhill, Rector of Lincoln College, and Bruno who related everything in theology and philosophy to the commonplaces (*locos topicos*) and axioms of Aristotle, and "from there he began very quickly to argue about every topic" (McMullin). In letting a dialogue partner in the *Ash Wednesday Supper* say the following, Bruno narrates: "Allow me to tell you what happened to the man from Nola when he publicly disputed with the doctors of theology in the presence of the Polish Count Laski and the English nobility. Let me tell you how he knew to answer to the arguments; let me tell you how this poor doctor who had been introduced to him as an eminent authority of the academy was caught fifteen times in the trap like a flea by fifteen syllogisms" (DI 133). And further: "Inform yourselves about how they interrupted and stopped his public lectures, the one on the immortality of the soul as well as the one on the fivefold sphere" (DI 134). Another witness "NW" who is not further identified reports—possibly on the basis of the events at Oxford—that Bruno ("that man of infinite titles among other phantasticall toyes") had taught "that all sciences come to exist by way of translations" (Aquilecchia 1993, 244).

Since research is somewhat controversial and ambiguous as to what exactly it was that Bruno had said at Oxford, it is worthwhile to compile the list of topics as they appear in the witnesses:

- Center, circle, and periphery
- Copernicus' astronomy
- The works of Marsilio Ficino
- Aristotle's Topics and axioms
- Syllogisms
- Immortality of the soul
- Fivefold sphere
- Translations

While the events are still waiting for their solution, we may treat them as a detective story, which needs to consist of crime, opportunity, means, and motive. These eight topics, then, are the motive (and some also the weapons). These are in fact typical topics of Bruno's London writings which had certainly been in the process of development when he made his entrance at Oxford in an attempt to impress the academic community. A further indicator is his ostentatious letter to the vice chancellor and the lecturers of the university which was printed in the treatise *Explicatio triginta sigillorum*, together with the dedication to Castelnau (OL II 2). Already the self-introduction that begins with "magis laboratae (!) theologiae doctor" contains 140 words, and that is obviously what Abbot quotes in his mockery. The later witnesses were familiar with this letter, if not the entire book, and it is probably theory of sigils which is meant by "phantasticall toyes." Nonetheless this letter may have been written after the failure and with the arrogance of a loser, as he is hurling insults at the pedants and Aristotelians (and in the Italian works, these are the people at Oxford): "At the Flood, the donkeys' droppings supposedly said to the golden apples: 'As apples, we, too, float at the surface!'" (OL II 2, 78). In any case it will turn out how spheres, circles, and centers bear a special significance to Bruno if one puts them in relation to the doctrine of Copernicus and extrapolates them into infinity. It will become apparent to what extent Ficino's doctrine of immortality influenced Bruno's theory of the universal inherence of a soul in everything, what role Bruno grants to Aristotle and his logic, and how he understands and interprets philosophizing as translating. The rejected applicant returns to the London court, and this also in the figurative sense, as he later writes on the condition of Oxford University: "Those who are noble by birth or otherwise (even though they conjoin it with the best part of nobility, i.e, learned education) are ashamed to work on a doctorate and be called 'doctor'. They are content with being scholars. One finds such people in a greater number at the courts than one finds pedants at the university" (DI 213).

It is also a certain fact that all treatises which Bruno published in London are directed to a courtly audience, not a university community. Apart from the aforementioned work on the *Thirty Sigla* all dialogues are written in Italian: the *Ash Wednesday Supper*; *On the Cause, the Principle, and the One*; *On the Infinite, the Universe, and the Worlds*; *Expulsion of the Triumphant Beast*; *Cabala of Pegasus*; *Heroic Passions* (*Heroic Frenzies*).. All these have Venice as their place of publication, but this was simply a marketing strategy on the part of the publisher as Bruno himself admitted later on: Italy had become fashionable at court, just as only the educated nobility read Italian and spoke Italian. Incidentally the literary style of these dialogues as well as many others of Bruno's writings fits courtly prose rather than academic material. All dialogues are preceded by poems, and by their form the *Heroic Passions* are nothing but educated conversations about Bruno's sonnets and those of his fellow countryman Luigi Tansillo—predominantly sonnets of the English

type. There the sonnets are often thematically linked to emblems; this had been one of the most popular toys of the intelligent intellectuals. These writings are dedicated to his host, Castelnau, and the English poet Philipp Sidney who had been publishing similar cycles of sonnets. Therefore the *Heroic Passions* could also be read as courtly Petrarchian glamor on love, while the philosophical reflections contained therein, on the other hand, had quite some parallels to contemporary English literature; a fundamental example of this are the so-called Metaphysical Poets in which, similar to the Italian, cosmological speculations meet paradox puns. This series of philosophical dialogues, published in 1584/1585, contains "many different theorems which are stuck together so that they do not appear to be science, but they rather appear now as dialogues, now as comedies, then as tragedies, then as poetry, then as rhetoric; … there is physics, mathematics, morals, logic" and much more (DI 15)—what the author says about the *Ash Wednesday Supper* goes likewise for the entire work. This first London dialogue propagates especially Bruno's discovery of the Copernican Revolution; the dialogue *On the Cause* critically analyzes Aristotelian physics on the basis of the doctrine of matter and form. *On the Infinite* (*De l'infinito*; its content is for the most part repeated and expanded in the later treatise *De Immenso*) elaborates the Copernican and anti-Aristotelian cosmology. Appropriating Greek mythology, *Spaccio de la bestia trionfante* (*Expulsion of the Triumphant Beast*) contains some sort of criticism of religion with ethical and political implications. *Cabala of Pegasus* takes up again the scolding of pedants, and it does so in the form of a *Praise of Folly* as written by Erasmus of Rotterdam. Finally, the treatise on the *Heroic Passions* is more strictly philosophical, again, in connecting epistemology and the philosophy of love.

Five

GOD IS NOT IDLE: INFINITE POSSIBILITIES AND INFINITE REALITY

If we leave aside Frances Yates' thesis according to which the *Ash Wednesday Supper* (*La cena de le ceneri*) is written in a threefold code, that is to say, a philosophical code about Copernicanism, a political code about the policies of Henry II of France, and a poetic code (Yates 1984, 314), then the *Supper* is dealing primarily with Copernicanism and the way Bruno sees himself. As is said there, Copernicus had come to the necessary conclusion that it is rather the globe which is moving in relation to the universe than it was possible that all the many innumerable celestial bodies have the globe as their midst and basis for their orbits and influences (cf. DI 29). As is known, the innovation proposed by Nicholas Copernicus of Thorn (now Toruń, Poland, 1473–1543) and published in his treatise *De revolutionibus orbium coelestium* was a roganization of the orbits traveled by the planets. He describes these as "revolutiones" (revolutions in the sense of circulations), wherefrom the term "Copernican Revolution" was coined. The ancient astronomer Ptolemy had calculated the planetary orbits on the basis that the earth is at the center while the moon, the planets, and the sun are moving around the earth according to certain rules and regularities. There were several mathematical difficulties involved with this theory, as some planets seemed to be visibly moving forward and backward and in loops, respectively, and this was explained using the theory of epicycles (additional circles). In his treatise published in 1543, Copernicus now claimed to simplify these calculations in that he assumed the sun to be at the center of the planetary orbital system and the earth. Even though the majority of his work consists of tabular calculations, his theory became known mainly through the first book of his treatise in which he presented a general justification not least with reference to ancient examples.

Bruno discusses this model especially in the fourth dialogue of the *Ash Wednesday Supper*, and he also offers an illustration. In this connection, he makes an interesting mistake. According to Copernicus, the earth is moving on the third orbit (after Mercury and Venus) around the sun whereas the moon is circling the earth on its own small orbit. He describes this in these words: "The annual rotation … in which—as we say—the earth is contained together with the lunar orbit as in one epicycle" ("annua revolutio locum tenet, in quo terram cum orbe lunari tanquam epicyclo contineri dicimus"; DI 141, Annotation). Apparently, Bruno is reading "cum" as "uno" ("with" or "numerically one") and paraphrases to the effect that Copernicus was suggesting for earth and moon to be contained in a single and conjoint epicycle. Here the protago-

nists in the dialogue are disputing whether the alleged marking for the earth was nothing but the puncture of a pair of compasses. (This gives rise to the supposition that what was available to them was not a printing but rather a manuscript.) It is important to note, however, that Bruno evidently had the original text written by Copernicus at hand, particularly since a printed edition of this book which had possibly belonged to Bruno has been found in the Biblioteca Casanatense in Rome (O. Gingerich, *An Annotated Census of Copernicus' De revolutionibus*, Leiden 2002, 115; McMullin 1987, 59; Canone ed. 1992, 93, illustration). At that moment, therefore, when Bruno wants to act like a philologist, he is wrong, although his intentions are quite scientific. He attempts to explain why the sun appears to be sometimes bigger, sometimes smaller by way of the alleged common rotation of earth and moon on their orbit around the sun (DI 140). It is possible that he has something in mind which later worked successfully by means of Johannes Kepler's laws of planetary motion which suggests elliptical orbits instead of circular ones. Bruno attributes a similar common circular motion to Mercury and Venus in the tenth chapter of the third book of *De Immenso* (OL I 1). Nonetheless, for him it is not about a geometrical structure of the cosmos; rather, he uses this geometrical description in order to portray the "real" nature of the world.

The new astronomy of Copernicus had raised the question of the mathematical structure of the world, and it was this question which continued to be discussed far into the seventeenth and eighteenth century, at least from the time of Galileo Galilei until Isaac Newton. If scientific knowledge consists in the ability of exactly naming the components of the world, and if there are various competing scientific theories on the market (as in the example at hand, Ptolemy's and Copernicus' astronomy), then there is a possibility of examining the accuracy of such theories: the measurement of results. Astronomy, which was especially significant for calendar calculations, could rely on a continuous screening by way of the occurrence of predictable constellations in star formation. Now astronomy in any case is based on a calculation of geometrical figures, and ever since the time of Plato these figures are known to be not "something" by themselves but merely rational constructions. It was therefore a large step for Galileo to maintain that the mathematical structure of the universe was a reality.

Copernicus was also aware of this disparity between calculation and reality. Therefore Bruno quotes his dedication to Pope Paul III in the third dialog of the *Ash Wednesday Supper* as well as in the ninth chapter of Book III of *De Immenso*; in this dedication, Galileo refers to the liberty of devising geometrical models used to explain stellar motion (DI 90; OL I 1, 384). Bruno however insists that Copernicus also had assumed to have found the reality of nature through this calculation. He attacks in detail the famous introduction by the Protestant theologian Andreas Osiander who had attempted for the first time to make the Copernican doctrine acceptable to faithful Christians in emphasizing the purely hypothetical character of the Copernican calculations.

This may have sounded like a foolish excuse to the philosopher from Nola; in reality it was an important step in the direction of the so-called hypothetico-deductive method. This method presupposes an explanation and applies it to empirical data, and this assumed explanation can claim validity until empirical data refute the hypothesis or restrict its area of applicability. Osiander says in the excerpt quoted by Bruno that it was the task of astronomers to collect the data of planetary motion and to "fabricate" geometrical principles as long as the "true causes" remain unknown, and with the help of these principles, one could calculate constellations. Osiander propagates the Copernican "Revolution" because of its "wonderful and elegant simplification of the calculation" (DI 88f). Whenever science and reality are intended to be brought in line, this is a reductionist viewpoint.

In the *Ash Wednesday Supper* now there follow geometrical arguments for the plausibility of the Copernican theory, but Bruno has other intentions. While Copernicus had pointed out in the aforementioned letter that "mathematics is written mathematically" (OL I 1, 385), his interpreter reduces this claim to mere mathematics and in return demands the extension of the Copernican model to reality as a whole. To him, Copernicus' argumentation is still "more mathematical than natural" (DI 29). Bruno unmistakably assumes a hypothesis to be a vivid idea, namely that of "an immensely ethereal realm"; for him, the universe is "really a sky which is called a space and a dome in which there are many stars, thereupon fixed in no other way than the earth as well as the moon, the sun, and the countless other celestial bodies in this ethereal realm, just as we know about earth" (DI 130f). The stars are moving about in this infinite sky "so as to communicate with each other and to mutually share the principle of life; in certain spaces and at certain intervals some orbit around others as it is obvious with those seven planets which are orbiting the sun" (DI 131). This idea is a fantastical image in the sense of the mnemonic theory of images; Bruno assumes it to be reality in saying:

> It is possible, appropriate, true, and necessary that the earth is rotating around its own center so that it may partake in light and darkness, day and night, warm and cold; that it is orbiting the sun so that it may partake in spring, summer, autumn, and winter; that it is rotating around the so called poles and the opposite points of the hemisphere [this seems to refer to the fluctuation and tilt of the earth's axis] for the sake of renewal of centuries and the face of the earth so that where there once was the sea is now dry land; where there was heat, there is now cold; where the tropic makes the equinox occur, and where finally the change of all things can take place, and as it is with this planet, so it is with the others which, not without a reason, were called worlds by the ancient and true philosophers. (DI 131f)

If Bruno declares this image to be real, then it is on the condition that for him a theory is possible, appropriate, true, and necessary at the same time. From an epistemological [scientific-theoretical] point of view, though, possibility and reality, adequacy and necessity are opposites. Therefore one must ask how Bruno intends to transfer a fantastic idea, a cosmological hypothesis into truth. For this, necessity must be first a real and logic necessity at the same time, that is to say, the persuasive power of a logical hypothesis must go so far as that it presents nothing but a real correlation. The adequacy of the parts of the theory cannot be accidental but must consist in a strict manner of being mutually dependent. Then necessity is not merely a "thus it ought to be," but truth. If that is so, however, then the congruence of the image or the theory turns out to be a possibility which is stylized (like the calculations of Copernicus, according to Bruno) to such an extent that it fits together in all its parts and consequently is a completely possible necessity. This part must be appalling to epistemologists then and now, and yet Bruno touches on a point to which all epistemology points, that is to say, the congruence of theory and reality. In the eyes of rigorous realists such as most of the Renaissance philosophers, a hypothesis is not worth the paper on which it is written. Therefore one must ask about the conditions on which a theory (i.e., a plausible composition of data and explanations) describes nothing but reality. If this requirement is met, then Bruno's conditions as described above are acceptable, only with the skeptic immediately stating that these conditions are unrealizable. Therefore modern-day epistemology concentrates on analyzing those forms of thinking which claim to be scientific.

Here lies the reason why Bruno expands Copernican astronomy to a theory of the infinite world: Possibility here does not mean a shrugging "maybe" but rather the plausibility of real connection. In terms of everyday thinking, reality is the realization of one of countless possibilities. If, however, the possibilities are to be regarded as real, then the possibility itself expands to the infinite and demands a likewise infinite realization. Thus no longer a field of indefinable options and a limited setting of actualities are facing each other; rather, infinite possibility now corresponds to infinite reality, for that what is necessary is the absolute realization of the possible connection, the possibilities on their part being endless. This thought is much too fascinating for Bruno to examine it as regards to logical errors. For according to him, possibility has a name: it is God's omnipotence. An indefinite setting of unrealized possibilities is thinkable only as a logical construct. If, however, reality is supposed to be the realization of "real" possibilities, then these possibilities must not just be thought but real and actual, and yet again infinite possibility coincides with infinite reality. It is Christian theology which has thought about God as infinite possibility although—until Bruno—it put a quite finite reality as its counterpart.

A very ambitious research program results from this, and Bruno will pursue it in the years to follow. He is required to demonstrate how finiteness

is possible at all in view of the correlation of infinite possibilities. He needs to show how the parts of the world are interrelated. He needs to explain—and this is not meant in an ironic way—why nobody before him had this idea, and finally he constantly needs to keep in mind the theological implications of his theory.

In light of the latter point, there are interesting expositions with regard to the interpretation of the Bible. The prologue to the Book of Ecclesiastes (Qoheleth), which Bruno likes to quote because of its natural-philosophical content, says: "The sun rises and the sun goes down; then it presses on to the place where it rises." (Eccl 1:5; cf. DI 122) The philosopher comments this by cautioning "the divine Scriptures do not deal with proofs and speculations about the things of nature in the service of our comprehension as if it was a matter of philosophy; rather, the practice of moral actions is being organized by laws in the interest of our intellect and senses" (DI 120). He refers to the Book of Genesis as evidence in which sun and moon are called the "two great lights," but one must not conclude from this that all other stars are smaller than the moon. This thought is usually compared with Galileo's famous letter to Grand Duchess Christina of Lorraine, dated AD 1615. However, the differentiation between factual information and religious instruction in the Bible, has a longstanding tradition since the time of Augustine, whereas Bruno himself refers to the Arabic philosopher Algazel (1058–1111); this philosopher describes the aim of legislation not to be the search for the truth of things and speculations, but rather the quality of customs, the use for society, the coexistence of nations, as well as the practice in human society, the preservation of peace and the growth of countries (DI 121f). Thus Bruno takes from this Arabic critic of philosophy the distinction between morals and politics on the one hand, and the distinction between morals and academic philosophy on the other hand. This also means that in his understanding the Bible appeals to the natural understanding of ordinary men: "To talk in the terms of truth where it is not appropriate means to require a special understanding on the part of the people and the uneducated masses from whom the practice is being demanded, just as if one wanted to demand from the hand to possess an eye, even though by nature it is not made to see but to act and to follow the vision" (DI 123). Therefore the authors of Sacred Scripture do not possess any authority in matters of nature as regards to which they are "indifferent" as he says at this point. This of course entails further reflections on the metaphoric sense of Scripture.

The self-confidence of the philosopher with respect to the fathers of Christian morals has its counterpart in the self-confidence with respect to all scientists and philosophers who differ from his opinion. Therefore he says repeatedly in the *Ash Wednesday Supper*, while he is referring to Copernicus and other authors, what he intends to do in reality is to follow his own thoughts. This also means that the originality of his theses must prove itself

on the basis of the coherence of his theory, not (i.e., at least not exclusively) on the basis of the accordance with any one tradition or any colleagues.

The question about how the parts of the infinite cosmos are being interrelated, and superior to that, the question about the relation between infinity and particularity are another part of his research program, as has been stated earlier. These questions are addressed in the second London dialogue *Cause, Principle, and Unity* (*De la causa, principio e uno*). We may again take a passage from the *Ash Wednesday Supper* as a starting point: here Bruno deals with the question of the origin of the tides, a question that has indeed been long discussed. Bruno rejects the theory (which had been repeatedly brought forward, and which—from a modern perspective—is correct) according to which it is the lunar gravity that moves the sea; it is the same theory which Galileo will reject later on, albeit based on different arguments. At first Bruno produces a mechanistic argument, as it were, which had also been held by Aristotle: movement could only originate by way of contact, i.e., a remote object such as the moon could not cause movement on earth without a mediating contact. However, since there is an observable temporal connection between the lunar phases and the tides, Bruno holds that the moon is not the cause but rather a "sign and indication." The moon indicates what happens on earth, and this is possible because of the "order and correspondence of all things and because of the laws of change which are uniform and proportionate to the laws of other changes" (DI 147). The absence of a mechanistic explanation of the correlation between moon and tides leads to naming an invisible cause and the assumption of a uniform law with respect to both the moon and the earth. This law, however, is not a mathematical but a spiritual one, as it were.

From a global perspective, Bruno does not stand alone with this. Not only has the doctrine of Copernicus already been taught at Oxford around 1573 at least temporarily (thus before Bruno's arrival in England), namely by Henry Savile; his contemporaries also had worked the Copernican theory of the centrality of the sun into their philosophy of nature: John Dee (1527–1608) who took an interest in numerous occult sciences and was traveling around Europe, just like Bruno, and Thomas Digges (1546–1595), a friend of Robert Dudley, Earl of Leicester, who was the chancellor of Oxford University at that time (Aquilecchia 1997, Granada 1997). One can describe their explanations using the collective term "hermeticism" coined by Frances Yates, or as variants of Neo-Platonism and magic during the Renaissance era, and Bruno's book would then belong to these variants.

After his brilliant debut on the London scene in the *Ash Wednesday Supper* the Italian feels obliged to provide a few philosophical clarifications. In the dialogues *Cause* and *On the Infinite Universe and Worlds* (*De l'infinito, universo e mondi*), therefore, he takes a critical look at the Aristotelian philosophy of nature which was not only dominant at Oxford but throughout the whole of Europe. In *Cause* he takes apart the terms "cause" and "principle" and traces them back to a term of "the One," while *On the In-*

finite refutes in a special way Aristotelian celestial physics. It had already been said in the *Ash Wednesday Supper* that the purpose of the rotation of the earth was its renewal and rebirth (DI 154). Obviously, purpose becomes circular. Aristotle had taught in his *Physics* that the purpose was the actual cause and the driving force behind the natural powers without there being the need to think about an intelligent being. Since late antiquity and especially during the Middle Ages, Christian philosophy had attributed the highest intelligent being, God, to this final cause. This highest intelligent being, however, is no longer an internally active principle of the things but rather an externally controlling principle which is beyond nature, just as the creator with whom it is identical. Bruno likewise identifies the active cause and the final cause as a higher reason; only for him, this higher reason is identical with a world soul (*anima mundi*). He distinguishes "three kinds of reason: the divine reason which is everything, this worldly reason which makes everything, and the remaining individual 'reasons' which become everything" (DI 234); in all this, he retains a residue of transcendence. Nonetheless he proceeds quite quickly to demonstrating that this acting reason is both external and internal: internal in that it acts from within the matter, and external in that it is not identical with matter itself. This acting cause now sets as its goal the perfection of the universe; hence, it is also the final cause.

The distinction between principle and cause had already been difficult in Aristotle. In Bruno's text it expresses only the difference between internal and external cause as mentioned. An example from Aristotle's *On the Soul* (II 1, 413) serves Bruno as an explanation. Just as the helmsman is on the ship, so the soul is in the body: the helmsman is sailing on the ship, hence he is part of the ship; but insofar as he is steering the ship and keeping it in motion, one does not regard him as being part of it but rather as being distinct from it. Aristotle deemed this comparison to be unsuitable since in terms of natural creatures the soul cannot leave the body in the same way that the helmsman can leave the ship. According to Bruno as well, the helmsman can never leave the ship, for he does not talk about the soul of the individual body but rather about the soul of the universe. This soul, "insofar as it invigorates and forms, is an inner and formal part of it, but insofar as it directs and steers, it is not part nor principle, but cause" (DI 236). Elsewhere he explains the powers of the human soul by comparing it to the ship which is being saved or destroyed by either the presence or the absence of the helmsman. The power of God, however, is wholly and entirely in everything and cannot be absent whereas the human being can turn towards it or away from it (*Eroici Furori* II 1, DI 1092). This comparison of the soul to a helmsman aroused the mistrust and suspicion of the inquisitors in Rome later on because Bruno possibly excludes the existence of an individual soul (Firpo 1993, 324f).

The astronomical thesis of terrestrial motion now runs parallel with the animation and universal navigation of the earth and all other celestial objects. Or, vice versa: if the entire universe is an animate creature which is controlled

by a reason in all departments, then Copernican astronomy is not only more plausible in terms of mathematics but even necessary, since this universal reason cannot possibly cause the earth, of all planets, to stand still. From this result two further thoughts: if perfection is the intended effect of the universal reason, then it must also extend to the smallest parts of the matter (DI 235). Hence follows the next thought, namely, that all parts must be animate (DI 239).

Aristotle had treated the efficient cause and the purpose as factually equivalent to the form of the natural objects (e.g. *Physics* II 8), albeit only with regard to the individual objects to be explained scientifically. In this respect, the soul had been thought to be the form of the animate body ever since Aristotle. Now for Bruno the soul as *anima mundi* or world reason is the universal form of all that exists, and since the emphasis is on "all," it is infinite. Insofar as it is identical with the formed universe while being distinct from it at the same time, one is faced with the question about the opposite: that which is being formed and what is called "matter" in the Aristotelian tradition. In the Italian dialogues the author had presented his subject mixed with jokes and polemics; as part of a lecture during his time in Wittenberg (1587), he demonstrated the same subject in a commentary on Aristotle's *Physics* in scholastic style. Aristotle had presented the term "matter" as the indefinite, as the underlying principle of change, whereas form was the constant element beyond all changes; in this way, he managed to make motion and duration in nature philosophically conceivable. Bruno, on the other hand, defines matter as the substance remaining identical within changes, and similarly to Aristotle (but in the opposite sense) he uses the example of carpentry: "Just as there is one matter in carpentry which remains, and it is this matter which is one and the same in all objects which are being produced through this art, and every alteration takes place with the one and the same object, so one may see one substratum also in the multitude of forms brought forth by nature. This substratum is always recognized by an analogy to the various forms which seem to consecutively arise in the substratum" (OL III 304). The so-called "Primary Matter" of the Aristotelian-scholastic tradition which had always been regarded as indefinable, unnamable, and unrecognizable, even as "almost nothing at all" (Augustine, *Confessions XII*:7, 7; DI 289 and 307), now becomes a universal substance.

Plato had already emphasized in *Timaeus* that one could only arrive at the quasi-material framework of natural events by way of analogical deduction (cf. OL III 9ff on "chaos"). Aristotle had introduced the term "Primary Matter" only as an auxiliary term as he was concerned about empirical objects of nature. Therefore he inferred analogously the principles of nature from the activity of the craftsman: his commentator now deducts the operation of nature from the activity of the craftsman, and the universal matter from the material. Bruno states in the fourth dialogue of *Cause* that the material of the craftsman is never formless. The universal matter is one, and in fact it is for-

ever so, namely as the whole and each individual thing, while the empirical material is gradually being formed in temporal moments, in varied ways, and one by one (DI 307). In this context his reference to Averroes († 1198) is conspicuous; Averroes is said to have taught that matter consisted in indeterminate expansion; this theory has been opposed and fought by Thomas Aquinas, among others, since it renders conceivable the assumption that matter exists as infinite expansion, not dependent on forms and thus independent, i.e., it may be thought as autonomous substance (DI 306).

With this new interpretation of the traditional theory of matter the philosopher from Nola seems to take on the role of a materialist; however, he is not yet finished. In his opinion, matter itself produces the manifold changing forms which one can perceive in the sensual world; here, too, he holds fast to the basic philosophical rule that principles must be real and not only instruments used for interpretation. This matter, however, unmistakably receives all those characteristics which had already been received by the form as principle and universal soul. Only a little later, during his second stay in Paris, Bruno published his *Theses Against Aristotle* (*Acrotismus*). There he states: "One cannot define anything more meager than this Primary Matter which, according to Aristotle, is the principle of natural objects; according to the same Aristotelian principles, however, this Primary Matter must disappear if the natural objects require not a mathematical and logical principle but a natural one in the fullest sense" (OL I 1, 101f).

In summarizing the detailed and multifaceted discussion about this problem, the following brief assertion can be made: universal form and universal matter mean one and the same thing to Bruno. It is a necessity of reason to make a distinction between them, just as principle and cause are the same in different aspects (DI 181). The universal form, i.e., the *anima mundi*, is tied together with the universal matter in a "great unity" (DI 274). It follows that if one thinks according to the Aristotelian thought patterns, the individual objects no longer constitute the reality. Substances are no longer individual and concrete ("composite") objects consisting of matter and form and in which matter provides quantitative determination and form provides that which is identifiable. Rather, there is only one substance, the infinite universe as a whole which acts as form in certain respects while acting as matter in other respects. The individual objects are merely passing and changing manifestations, and this is exactly Bruno's theory in this treatise *Cause*.

Time and again it has been ascertained that this kind of metaphysics is similar to reducing the philosophical principles by René Descartes (1596–1650) to only two principles, namely the intellectual substance and the materially extended substance (*res cogitans* and *res extensa*); yet, it is even more similar to the metaphysics of Baruch Spinoza (1632–1677) who traced these two Cartesian principles back to the one substance which he identified with God, so that all extant objects are nothing but God's attributes. Based on his approach, Descartes tried to put forward a theory of a purely mechanical

physical motion, while Spinoza drafted a theory of human freedom from the unity of the intellectual substance.

Bruno sees an entirely different problem, namely how individual objects are supposed to be possible in the framework of a universally active divine power. This question is being posed in the concluding fifth dialogue, and it is not really being resolved. This famous fifth dialogue on *Cause, Principle, and Unity* begins with a hymn to the "One": "Thus the universe is One, infinite, immovable. One—I say—is the absolute possibility, One is the act, One is the form or soul, One is the matter or body, One is the object, One is that which is, One is the maximum and optimum" and so forth (DI 318). It is a masterpiece of a rhetoric of unity, and there we find all the commonplaces of the history of philosophy up to that time, praising unity above multitude. Toward the end, however, the virtually prophetical phrase appears: "It is a profound magic to know how one is to bring out the opposite once one has found the point of unification" (DI 340). One can read Bruno's philosophy of nature in such a way as if he wanted to prove the infinity of the cosmos, the omnipotence of God and of the *anima mundi*, and the productivity of matter—even against common sense, if necessary. However, it is also evident from the theorem quoted above that his rhetoric about philosophy to be "natural" is to be understood in such a way that philosophy misses its target if it is only concerned with universalities; in that, it would not address the question of how, and in what way, and how understandably the universal principles serve to establish that which is concrete, perceptible, and individual. On the level of mnemonics, Bruno has progressed from psychological-technical artifices to the intellectual structure of the objects which one can comprehend intellectually and hence memorize. In the realm of cosmology, Bruno assumes a physics of natural objects (including the stars) in order to find the correlation which transcends these particularities; however, this transcendence only goes far enough so as to be regarded as a real reason for the individual objects and their discernibility.

Here in this fifth dialogue Bruno demonstrates this in the form of a short history of philosophy. He begins with this commendation: "Those philosophers who have found this unity have found their friend Wisdom!" (DI 324). He then explains the meaning of this unity. First: This unity summarizes all "stages of nature" so that "the One," the Infinite, does not consist of parts; rather, variety consists of "parts *in* the infinite and not parts *of* the infinite" (DI 328). This One, then, is that which also produces the multitude. Bruno refers to the numerical speculation of Pythagoras and Plato because "mathematical constructs per se or by way of analogy contain the existence and the substance of things and in this respect trace back the multitude and variety of the species to an identical root" (DI 330). Those constructs of mathematical imagination, therefore, are based on the unity being understood in the sense of the number "one" which is found again in all numbers and, correspondingly, the unity in all individual unfoldings. At this point Bruno already reverses the outlook; he

is not concerned with the demonstration of "the One," but rather with the question how this "One" produces "the Many." This thought in turn demands that unity relates to multitude, the infinite relates to the finite, the indivisible relates to the divisible not simply as a point relates to pictorial figures; rather, "unity is the cause and reason for being individual and being point, and it is an absolute principle which can be applied to all that exists" (DI 331). This is a strong statement; it is a philosophical postulate, not the result of research. For "the intellect clearly proves how the substance of objects consists in unity, and the intellect then searches for this unity either in truth or in similarity" (DI 332).

So as to properly understand this philosophy of unity, one ought to be reminded of the thoughts and observations in *De umbris idearum*. There the author was concerned with the demonstration of the uniform principle of thinking and cognition, yet always with regard to the "clarification of shadows" which are seen in their twofold function as signs of light and loss of light. Thus the reflections on the unity of the universe make sense to Bruno only if they provide information about the structure of the sensual world which is accessible to human beings. Therefore, his critique of Plato's transformation of the Pythagorean theory of numbers aims at establishing that the finite objects are not merely figures and depictions of "the One" but rather that this "One" is to be found in the objects just as the number "one" is found in each number; in this way, the cognition of "the One" leads back to the cognition of "the Many," and the cognition of "the Many" vice versa leads back to the cognition of the real "One." Here, too, we can see that Bruno does not want to understand thinking and cognition as a mere analogy, parallelism, or abstraction with regard to reality but rather as a manifestation of just this unity (cf. *Sigillus* OL I 2, 212–215).

Based on various treatises by Aristotle and scholastic commentaries, it was possible for Bruno to put Pythagoras' and Plato's theory in relation to that. Thomas Aquinas, for example, emphasizes in his commentary on Aristotle's *Metaphysics* (I 987b; Comm. § 156f) that the Platonic Theory of Ideas had adopted the participation of the sensual objects in the unchangeable ideas from Pythagoras and modified it. But he points out the difficulty that such a theory of ideas is not suitable for the justification of the individual objects: there can only be one idea (e.g., the idea of a human being) while multiplication is based on the nature of numbers. Thomas then accuses Plato of an error, and from his point of view the same error would also be held by Bruno: both the theory of ideas and the theory of numbers are founded on the assumption that "the mode of being of the known object is the same as the mode of knowledge." Therefore "the idea has to be inherent in the intellect in the same way as it is in the known object." But one ought to discern "between the One as the principle of numbers and the One as that which is exchangeable with that which exists" (ibid., § 158f). Bruno's philosophy, however, is based on the postulate of the identity of the mode of cognition and the mode of being.

Thomas needs to present the mathematical mode of cognition as a purely intellectual work of abstraction in order to maintain the difference between spiritual substances and the products of the intellect. Bruno, on the contrary, needs to attribute a form of being to the number "one" and the numbers which derive from it, and this form of being is not abstract but rather produces the multitude.

He also appeals to the authority of Euclid who had reduced geometry to only a few principles from which all mathematical laws can be derived. It is Bruno's ideal to reduce all these geometrical forms of thinking contained in his principles to just one; thus it would be possible "to ascend to perfect cognition and to summarize the multitude, just as unity unfolds in a descending way to the production of objects" (DI f).

According to Bruno, the universal substance is one, so that all individual objects are "circumstances" or accidents of the substance, as it were; here he must distinguish in passing between the non-quantitative unity of the "One" and the quantitative measures of the individual objects. In order to repeal this distinction, he introduces so-called signs (*segni*) so as to prove that every finite number nonetheless contains the infinite number "one" which, "if repeated a finite number of times, results in the number, while negating the number as an infinite 'one'" (DI 335).

For this, Bruno uses geometrical paradoxes of Nicholas of Cusa (1401–1464) who had formulated speculations about the coincidence of opposites in his treatise *On Learned Ignorance* (*De docta ignorantia*); he had claimed that the maximum coincided with the minimum under certain conditions. To this end, he used geometrical figures in his treatise *On the Beryl* (*De beryllo*) and in various other, especially mathematical treatises, and Bruno repeats these geometrical figures here and in other works. For instance, it is reasonable that circles and straight lines are opposites. However, since the arc of a circle becomes more and more flat with an ever increasing radius and thus comes closer to a straight line, and since on the other hand the arc of a circle comes closer to a point on a straight line with an ever decreasing radius, both an infinitely large circle and an infinitely small circle coincide with the straight line (DI 335). Nicholas of Cusa was concerned to demonstrate that it is possible to understand God externally, so to speak, in that the possibilities of thinking are being pushed toward those boundaries where the reality of the infinite God begins. He, too, speculates on the presence of the "One" in that which is finite. He experiments with numbers and geometrical figures in order to illustrate the creative power of the all-powerful God (in this, he is very close to mysticism) but also in order to demonstrate how the human mind functions as seen from its limit (and in this regard he is one of the fathers of modern dialectic and the philosophy of subjectivity). In the context of these reflections he even arrived at the assumption that the earth was moving, or that it could be a planet like other planets, and Bruno acknowledges this in the *Ash Wednesday Supper* (DI 91 and 102). However, unlike the philosopher from

Nola, it is not the reality of an infinite world which matters to Nicholas but rather the inconceivability of a finite world; to him, "world" means all that which exists, and this has been caused by an infinite creator who cannot be approached by thought. His argument is seemingly mathematical: "For since the center is a point which keeps a regular distance to the circumference, and since it is impossible that there exists a pure sphere, or such a circle that there is no purer circle, it is clear that there is no center which could not be indicated in a more pure and accurate way" (*De docta ignorantia* II, chapter 8). Thus it is the weakness of human cognition and the presumed inaccuracy of the finite objects which suggests an infinite world.

Bruno, on the other hand, regards the geometrical figures of Nicholas as evidence of the reality of the infinite in the finite and as evidence of the identity of thinking and being which is expressed in geometry. The philosopher from Nola calls these geometrical examples "signs," but since for him signs are themselves products of an intellectual process (as could be seen in his theory of mnemonics), in his opinion they hold the rank of proofs by experience. It is only then that he also gives references for examination purposes (*verificazioni*), i.e., examples which he rhetorically takes from everyday experience and from applied sciences.

The entire treatise *Cause* thus amounts to the objective identification of the One, the Principle, and the Cause on the following condition: "He who approaches the understanding of the One comes also close to understanding the Whole" (DI 342).

With the idea of an infinite universe thus being proved using the means of Aristotelian metaphysics, Bruno now feels obliged to deal with the scientific theories of Aristotle; he does this in the third Italian dialogue *On the Infinite Universe and Worlds* (*De l'infinito, universo e mondi*). Here he provides epistemological arguments in the narrower sense, e.g., that sensory perception can only be useful to comparison, but that truth must lie beyond the sensory perception. The author deals, most importantly and one by one, with the classical Aristotelian and scholastic arguments against the plurality of worlds and the infinity of the cosmos. If one leaves aside the rhetorical, polemical, and jocular dialogue elements, this book then reveals the structure of a scholastic tractate in which the opposing opinion about each problem is being presented, discussed, and refuted.

Thus the definitions of world, place, space, perfection, and infinite power are being tested; furthermore, the meaning of the stars, the elements, and especially the so-called quintessence are being tested. Finally, Bruno presents his physical conception of the world, that is to say, how one can conceive the infinite number of worlds which are distributed throughout the infinite cosmos, and this in turn affects the problem of gravity and lightness, of the comets and the determination of above and below. In the fifth and final dialogue he refutes once again the scholastic arguments against the multitude of worlds. The interlocutors in this dialogue are again a spokesman, called Filoteo, and some

who are there to cue him. Among those is a certain Fracastorio, apparently reminiscent of the Renaissance philosopher Girolamo Fracastoro (1478–1553) who had become well-known for his didactic poem on the new disease syphilis, as well as a natural-philosophical book *On the Sympathy and Antipathy of Things*; this book likewise clearly contrasts with the Aristotelian theory of nature, albeit in a different form. The advocate of the Aristotelian position in the fifth dialogue is newly introduced by the name Albertino, and it has been puzzled over whether this could have been a historical figure associated with Bruno. However, it is presumably an allusion to scholastic authors, for Albertino is the diminutive form of Albertus, and many of the arguments used by Bruno are found in the commentary on Aristotle's treatise *De caelo* (which is the subject of Bruno's critical examination) by Albertus Magnus († 1280), as well as in the *Quaestiones* on the same subject by Albert of Saxony, known as Albertus parvus ('minor,' † 1390). Incidentally, Albertino is convinced by Filoteo, especially since Bruno masters the scholastic argumentation well, for as Bruno himself says quite often, without scholasticism one can barely understand his philosophy and whoever masters scholasticism can easily access the true philosophy (DI 498; OL I 2, 243 and 482). It should be mentioned here that one of Bruno's later treatises, *Summa terminorum metaphysicorum*, has been reprinted posthumously as an encyclopedia of scholastic terms; in this work, he treats the predicates of God in thirty stages. At any rate, from this dialogue and its Latin counterpart *De immenso* (1591) one can ascertain that Bruno's cosmology (as far as the doctrines are concerned) is entirely based on the scholastic speculations of the past two hundred years; it is also based on the argumentation of Aristotle himself, only that Bruno reverts it in its decisive points.

The conceivability of an infinite world and of many worlds had been increasingly discussed in detail. The aforementioned Albert of Saxony talks about the conceivability of many worlds, be it as concentric circles (which contradicts the Aristotelian doctrine of the elements according to which earth, water, air, and fire are stacked in concentric globes), be it "like marbles in a bag," or in such a way that the stars and planets are to be understood as worlds just like the earth (l. 1, q. 13, dist.). Albertus Magnus—to use another example—had established in his commentary on *De caelo* (l. 1, 13 ch. 5) that there could be only one world since there can only be one "Unmoved Mover" who is immaterial as had been proved earlier. From this Mover could result only one movement and only one First Moved, and consequently all moved objects would be within one single system so that there could be only one world and not many worlds. Albertino makes a similar argument (DI 508), to which Bruno has his spokesman answer that for infinitely many worlds there may also be infinitely many movers; these movers, however, could be traced back to one mover, just as all numbers can be traced back to the number "one" in that the infinite number coincides with the number "one." What Bruno rejects is the gradual orientation of the multitude of moved objects to the

one "First Mover." Rather, he understands unity as the internally constant principle of the multitude of worlds, and here he explicitly refers to *De la causa*.

In Aristotle's *Physics VIII* and *Metaphysics XII*, the "Unmoved Mover" had been established as the final and infinite level of finite world. Christian Aristotelianism has identified this "Unmoved Mover" as God. Bruno's "One" as a substitute for God, therefore, suggests pantheistic ideas. However, his teacher Matthias Aquarius had already dealt in great detail with the relation between God and world in cosmology—entirely in the tradition of his contemporaries. As a result he had put forward the thesis that God is a part of the universe; to justify this, he differentiated the term "world" as follows: 1. the inhabited earth, 2. the aggregate of all bodies, including the celestial bodies, 3. the totality of all creation, including angels, and 4. finally the totality of God, angels, and all bodies. In this sense God is part of the world, even though he does not make up the world but rather must only be included in it, as it were (Blum 1990). With this, however, the layering of the world, which Bruno occasionally described as onion cosmos (DI 472), is dissolved by itself. Therefore, scholastics such as Aquarius need to examine whether the sky differs from the earthly things in not containing any matter. A possible solution was that the sky does contain matter, but that it is matter of a different kind than the earthly matter; otherwise, matter would no longer have the function which it had since Aristotle, i.e., to individualize the forms and to transfer the possibilities inherent in the forms to finite reality. Albertus Magnus emphasized that the concept of matter is only defined by its mere ability to be locally and essentially designated by the form. One may therefore not assume that there is an absolute matter which faces an absolute form. With this he attacks the famous commentator of Aristotle, the Arab philosopher Averroes who had claimed that the four elements were the matter of the sky. Thus the sky was moved close to a universal form so that the individual sensory objects are merely special cases of the universal "whole." In this point, too, Bruno's theory comes close to Averroism in that he does not assume substantial forms and merely potential matter of the individual objects.

Just as the entire treatise *On the Infinite*, so too the series of arguments and counterarguments of the fifth dialogue can be found in detail in *De Immenso*, even though the scholastic form is more concealed there (OL I 2, 242ff).

In addition to the natural-theoretical problem of Aristotelianism, Bruno had to deal with a serious theological problem which appears time and again in his Italian cosmological dialogues, namely the theory about God's omnipotence in relation to the finiteness of His creation. Based on the Neo-Platonic interpretation of Christian revelation, this relation had to be thought as a relation between the infinite and the finite, and it was the pagan Neo-Platonist Proclus († 485) who had found the formula which states that the finiteness of the world belongs to, and is included in, the perfection of the infinite God, the

One. Proclus' writings had also been available in Latin since the thirteenth century, and Marsilio Ficino had partly translated them again. Especially since Christian theology had been interpreted using the terms of Aristotelian metaphysics in the thirteenth century, reality was thought of as the realization of a possibility, as the action of a power. The origin of all power was the infinite God. Since the term "power" has a double meaning of a sheer possibility and of the executive power, the imbalance between the infinite, all-powerful God and the finite, imperfect world came to be understood as a differentiation within the power of God, namely as *potentia absoluta* and as *potentia ordinata* (absolute potency and ordered/applied potency). One interpretation stated that God's power, in absolute terms, is unlimited and infinite while it is limited to that which is realized in the actual implementation of God's own will. Another interpretation stated that the applied power corresponds to the ordinary way in which things work and that it is insofar limited, but that the absolute power is always and constantly active in the background, i.e., not in a merely hypothetical or theoretical way. For only the real and active absolute power of God can serve as an explanation of those events which occur beyond the natural course of things, i.e., the miracles like the one reported in the Bible where the young men in the furnace (Daniel 3) did not burn as it would have been in accordance with the nature of fire.

This complicated differentiation has been discussed many times, and it had a long history of which Bruno was only one episode. In order to understand it, one ought to be reminded of its later continuation, namely the definition of the sovereign of a state: as a ruler, the sovereign is defined by his superiority to the laws in that he alone decides on the state of emergency. This means that he has a power which remains in the background as long as the public affairs proceed according to the legislation; his power becomes effective only in an emergency. Such power, however, could not become effective if it were not constantly present and did not supersede the ordinary course of events, although this advantage does not become apparent normally.

The conception of *potentia absoluta* in God was used in Aristotelian scholasticism as a reason for the existence of a finite creation without diminishing God's omnipotence. It was for exactly this reason that this omnipotence could not simply be hypothetical. Now, according to the Aristotelian concept of possibility and reality, every power has a counterpart. Since the world is finite, God in his absolute power must have a surplus of power which is not realized; Thomas Aquinas explains this by saying that there is not adequate object to the absolute power (*Summa theologiae* I 7, 3; Granada 1994). The Renaissance philosopher Marcello Palingenio Stellato (Pier Angelo Manzoli, † 1543; *Zodiacus vitae* 1534-1537), among others, had demanded that there ought to be an infinite world corresponding to the infinite power of God, and for that Bruno refers to him with praise (OL I 1, 17; OL I 2, 292). But he also criticizes him in the eighth book of the treatise *De immenso* (which picks up the argumentation of *De l'infinito*) because simple and direct equivalence of

infinite omnipotence and infinite creation renders exactly this creation unrecognizable and unreal. According to Palingenio's theory, God is paralleled by an Elysium without matter, without space, body, weight, mass, measure, and number, and therefore without individual species (OL I 2, 303f). In physical terms: simple pantheism is no scientifically acceptable explanation of nature. But Bruno adopts the idea of the equivalence of absolute power and its object, explicitly declared to be unbalanced by Aquinas, and he postulates that God's omnipotence is active and that it is therefore equivalent to an infinite object of action, namely the infinite world. This world, however, must be at the same time concrete if it is to be real and not plainly identical with God. Therefore the object of God's creation is not one single, even finite, world, but rather infinitely many worlds of an infinite cosmos. Bruno, therefore, states in explicit polemic against a certain scholastic opponent whom he calls "priest," but who is not further identified:

> You assume an active power in God to which there is no corresponding passive power, according to your theory … We want to assume that this which is voluntarily active is divine and invariable, in which the will does not contradict the power, and in which the power satisfies the will, in fact in which it is the will itself because thus it can only want what it wants, and it cannot lack its immovability, its unity, and its simplicity, as it also cannot do anything except what it wants. We therefore also do not imply that there is an inherent differentiation between absolute and applied or ordinary power [absoluta, ordinata, ordinaria] since this is not a sign of freedom but rather an open contradiction. It is a perfection within us human beings, if you will, that we can do many things which we do not do, but it is blasphemy to make God different from God and to let his will be now this way, now that way; that is to assume one will to be paralleling power, and one to contradict power, and yet another to be inclined towards the better or worse of opposites. (*De immenso* III; OL I 1, 320)

Bruno presents a bundle of theological and philosophical problems in this sentence, and they can be summarized as follows: the differentiation between absolute and applied power and likewise the differentiation between God's omnipotence and its object are abolished. However, they are not abolished so as to divinize the world, and neither to secularize God, but rather with the claim of thus having provided both an adequate field of activity of the all-powerful God who is the creator and a reason for the reproduction of things to infinity. Bruno has the Aristotelian Albertino state in *De l'infinito*: Although God could create many worlds, it does not follow that they exist, for in addition to God's active power a passive power of the objects is required. However, not every active power passes over to a passive power, but only that active power which has a proportionally corresponding object capable of ab-

sorbing such an effective act (DI 512). Bruno mockingly states that God would then be like the musician who knew how to play, but who could not play as he was missing a musical instrument (DI 358): "Why would we want to believe, or why could we believe, that the divine efficacy was idle?" (DI 380; cf. OL I 1, 238)

At the beginning of *De immenso* he puts forward the following as one of the first principles of natural philosophy:

> To the infinite cause and principle nothing is great; in fact, there is nothing but the infinite: if, therefore, it communicates itself to the bodily objects, or rather, if it unfolds itself into the existence of bodily objects and the multitude, it must take an object as the likeness (insofar this is possible) and as the trace of the power, and this object must be infinite in its magnitude and without any number. … In the realm of the infinite, nature is as great as the power, the act, and the effect, and this is as easily disputable as it is impossible to prove it. (OL I 1, 242)

Bruno knows that he makes a decision here which had already been the basis of the entire scholastic theology of creation; he merely makes this decision in the opposite direction. Whereas his theological contemporaries and predecessors had opted for a surplus of power in the infinite God for the purpose of justifying the finiteness and imperfection of the world, Bruno now decides in favor of a truly all-powerful God, with a proportionally infinite world corresponding to Him, in the hope of better rendering conceivable the finiteness of the world as the creation of the Almighty than it had been done before. At this point there follow basic principles of his argumentation (OL I 1, 242–244), and in these the Lullian form of thought reappears again, the same form which had been fundamental to his theory of images and his mnemonics: the identity of ability, action, will, essence, possibility, and reality, all of which amount to truth. Thomism and later voluntaristic scholasticism placed great importance on the differentiation between divine will and action. Bruno advocates the unity of divine will and action, with the result of necessity (of nature) and freedom (of God) being one. Thus God's freedom consists in that he acts according to nature which he creates himself; at the same time, the infinite will, or the infinite power, must not become "frustrated" (243) as this would mean an inner limitation.

Here too, Bruno touches on a number of problems which will be taken up later by Spinoza. However, they also were urgent problems during the Renaissance era. Thus the humanist Coluccio Salutati († 1406) from Florence had already dealt with the stoic conception of destiny. Likewise, the question there was how a universal natural law limits the human freedom. Another question was, if—according to Christian interpretation—God is the originator of destiny, how either God's freedom is limited by the course of events, or how the way of the world is unpredictable due to God's freedom. Finally, an-

other question was the role of human freedom of action. The last point, i.e., the human freedom, is not thematic in this discussion of Bruno, but the freedom of God is. It seems that human freedom becomes unimportant in Bruno's conception since Bruno takes the view of the Almighty, as it were, and from this viewpoint all activity can progress without restrictions, and this means down to the individual parts, and forward to infinity. Later on, Leibniz formulated metaphysics as the basic question: "Why is there something rather than nothing?" Bruno now attempts to answer the same question in a different phrasing: "Why is there something finite rather than something that is only infinite?"

Christian theology predominantly endorsed an interpretation of God's omnipotence which, as has been mentioned, had a double objective: on the one hand, the *potentia ordinata* guaranteed the ordinary course of natural events; on the other hand, the *potentia absoluta* facilitated miracles, paranatural events, so to speak, due to the surplus of the divine power in comparison with nature. By abolishing the difference between the active and the passive power, and consequently also the difference between the absolute and the applied power, Bruno not only treated the infinite cosmos and the infinite creator objectively as equals (even though some differences are still imaginable), but also excluded the possibility of miracles. For since miracles are supernatural, they do not explain natural events; thus they allow an imbalance between the ordering power and the ordered world. Moreover, miracles are usually interpreted as special signs of God for human beings, and this includes the idea that there exists a form of communication between God and human beings, i.e., revelation. This form of communication is situated beyond nature, yet it takes place within nature, in a selective way, and independent of Sacred Scripture. All this Bruno cannot accept. On the occasion of the contemporary discussion about the nature of comets he criticized those who were talking about extra-natural signs of God: "As if truly there were no better, and best, signs of the deity than those which are in the ordinary course; under those these signs do not deviate from the ordinary course, even though their origin is not known to us." (OL I 2, 51; cf. 228) God's omnipotence therefore proves itself in its regularity. In that their naturalness is being proved, miracles help people to comprehend God's omnipotence. Ultimately the question arises whether Bruno accepts a special form of communication between God and human beings at all.

One generation later the French priest Marin Mersenne (1588–1648) saw this danger and the connection between Bruno's cosmology and his theory about fantasy and memory (he was a friend of Descartes and many other academics of his time). In his apology against *The Impiety of the Deists, Atheists, and the Libertines of Our Time* (*L'impiété des Déistes, Athées et Libertins de ce temps*, Paris 1624, X, 229ff) he demonstrates the logical correlation between the philosophy of universal oneness as it is being propagated in *Cause*, and the theory of the migrating soul which is found in particular in the treatise *De*

minimo (I 3, OL I 3, 142f). Mersenne argued: if there is only one substance, every change is an alteration of this substance, as if the *anima mundi* assumed this body, then another body. This is what Bruno actually held: "We are who we are only because of the indivisible [individual] soul, for it is around this soul, like a center, that the atoms are scattered and gathered. Therefore at birth and during adolescence the artistic spirit reaches this mass of which we consist, and it expands from the heart … Birth, therefore, is the expansion of the center, life is the existence of the sphere, and death is the retreat to the center." (OL I 3, 143) Mersenne points out that the individual soul is being denied here, in fact the freedom of God is being denied, for "God is tied to this earth, and his infinity is tied to the finite things, so much so that he cannot be all-powerful and infinite without them" (Mersenne 232). Having come to this conclusion, Mersenne reminds of the treatise *Sigillus sigillorum* in which those powers of the soul are being described that are needed to produce images. This happens in such a way, however, that they explain phenomena which today we would call para-psychological and which Mersenne considers to be evidence of miracles and saintliness. Thus in the first so-called "contraction" of the *Sigillus*, examples are provided for the abilities of the soul by concentrating on the place, for example by retreating to solitude. Such examples also include the miracles of Jesus of Nazareth which were made possible by his overcoming of the devil in the seclusion of the desert. In another example the temporary rapture to heaven, experienced by both Thomas Aquinas and Paul the Apostle, are explicitly not called miracles but rather an achievement of the natural power of the intellect by concentration in contemplation. Mersenne uncovers a correlation, and this correlation is valuable for the history of criticism of religion and its advocates: each "spiritualist" worldview has a tendency to abolish transcendence by explaining it "away" and to level off the difference between the spiritual and the material. Conversely, religion is dependent on a balanced relation between that which is natural and that which is supernatural, between that which can be comprehended by the human intellect and that which is miraculous, between the ordinary and the extraordinary. With regard to the interpretation of Bruno's philosophy, this reference demonstrates that Bruno does not intend to plead the case for woolgathering, witchcraft, or occultism by presenting his theory of fantasy and the creativity of the human intellect; rather, on the opposite he wants to portray the "miraculous" to be natural.

Six

RELIGION AND ETHICS FOR THE PEOPLE AND THE HERO

Bruno's first three London treatises written in Italian thus deal with his philosophy of nature and their metaphysical grounds. Therefore the editors of the *Dialoghi italiani* called them *dialoghi metafisici* as opposed to the following three dialogues that are entitled *dialoghi morali*. For indeed it was seen that the metaphysical foundation of cosmology has "moral" consequences in that it concerns human freedom and religion. The treatise *Spaccio de la bestia trionfante*, commonly translated as *The Expulsion of the Triumphant Beast*, deals with some sort of reformation of the heaven with important consequences situated in the realm of the philosophy of religion. *Cabala del cavallo pegaseo* (*The Cabala of Pegasus*), with an appendix *Asino Cillenico* (*Cyllenian Donkey*), is a very complex satire, some kind of "Praise of Folly" in the style of Erasmus of Rotterdam. The dialogues *Degli eroici furori* (*Heroic Passions*) finally consist of interpretations of poetry; they mainly contain an epistemology and some sort of metaphysics. All three treatises unmistakably continue the cosmological and metaphysical argumentation of the preceding dialogues.

Ethics can be interpreted as a theory of human actions, motivations, norms, responsibilities, regulations, values, and virtues—either according to Aristotle or according to Stoicism, Epicureanism, or Christianity. Ethics can also be interpreted simply as a discipline of philosophy, along with logic, physics, and metaphysics; it can further be interpreted as part of practical philosophy, which also comprises economics and politics. If understood in these facets, however, one ought to ask whether there can be any ethics at all in the thought of Giordano Bruno, that is to say, whether he fits any of these schools. Bruno's dialogues deal neither with individual ethics nor with a theory of social behavior, although virtues and vices are mentioned quite frequently in them. The reasons for this will soon become apparent.

The dialogues on the *Expulsion of the triumphant Beast* stage a conference of the Greek realm of the gods for the purpose of reforming heaven. Following different examples, among others the Greek author Lucian of Samosata and the Renaissance philosopher Leon Battista Alberti († 1457), Bruno offers a satire on the Greek gods. This was a literary genre which had been quite stylish among the intellectual English society at that time, and it allowed him to offer provocative theses under the guise of satirical writing. Sophia, wisdom herself, is the main protagonist of the dialogues and the spokesperson for the author. She reports about this discussion among the Greek gods, and the lead-

ing parts are attributed to Jupiter and Momus, the traditional critic of the realm of gods.

Jupiter reports in his programmatic speech about the classical astronomical constellations in mythology being connected with morally questionable and depraved actions. Thus, in symbolic terms, heaven which is known to be full of starts and full of gods now has sunk so low that it has become a broad system of vices and a symbol for the loss of the veneration of the gods (DI 598). Constellations and stars are particularly seen in light of their mythological context and in their mutual correlation, so that for example there is a depiction of Jupiter abducting Europa and Ganymede. Therefore Jupiter suggests purging the sky by driving away these figures and replacing them by concepts of virtue "so that the sky does not remain empty but is being cultivated and inhabited in a better way than it was before" (DI 613). "We must cleanse ourselves internally and externally. Therefore, let us first order the heaven which intellectually is within us, and let us then order the visible sky which shows itself to the eyes in a bodily manner. Let us remove from the heaven of our intellect the Bear of depravity, the spear of diversion, … the Hercules of violence, the Lyra of conspiracy, the Triangulum of impiety …" etc. (DI 611). Jupiter calls this a fundamental conversion to righteousness, for "since we had been estranged from it, we are being estranged from ourselves so that we are no longer gods and no longer ourselves. Let us return to righteousness if we want to return to ourselves" (DI 610). Thus the main concern is about "expelling the triumphant beast, that is to say, the vices which prevail and which always obscure the divine" (DI 561), and in the course of the following discussions, Truth takes the place of the Bear, Prudence takes the place of the Dragon, etc.

It is quite obvious that Bruno is relying on the vast array of literature in the fields of astronomy and the mythology of the Greeks, such as Aratus, Ovid, Hyginus and others. However, Bruno is not concerned about astrology or astronomy, but rather about the combination of visible celestial bodies, deities, and abstract terms. If, then, Jupiter says, "Onwards, onwards, you gods, let us remove from the sky those masks, statues, figures, images, portraits, events, and stories of our greed, yearning, plunder, shame, contempt, and blemish" (DI 611), then it becomes immediately clear that this is a pictorial program. This program is constructed in a similar way as are the images of mnemonics; astronomical and mythological "figures" are being interpreted as images which summarize in themselves complex relations and "stories." These "figures" are now to be transferred to a discourse on morality or to a system of virtues. The return to themselves which is being demanded from the gods, therefore, means neither more nor less than a new interpretation of the message which can have a mythological system for the human being.

Nonetheless Bruno does by no means present a new ethics here. The introductory letter, this time addressed to the English poet Philipp Sidney, marks as usual the intentions and aims of the treatise and summarizes the con-

tent, and in this letter Bruno merely announces some new ethics. He calls his dialogue a prelude to a future moral philosophy:

> These three dialogues are being presented merely as matter and basis for a future art [*artificio*], for since I intend to present a moral philosophy according to the inner light which the divine intellectual sun has irradiated, and continues to irradiate, in me, I deem it practical to present first a few preludes in the style of the musicians … And it seemed to me that I could not carry this out in a more adequate way than in enumerating all forms of morality, namely the most important virtues and vices, and arranging them in a certain order. (DI 554)

The dialogues on the *Heroic Passions* will demonstrate what Bruno means by the divine light about which he is talking. At this point, however, we may assume that—if there is such a thing as moral philosophy—it will be an art, a system of fantastic images. For in this introduction as well the author hints to reading the gods and constellations of the *Spaccio* as a system of terms similar to the thirty images or statues in the mnemonic and logical treatises; it is his explicit intention to present "the order, the depiction and arrangement, the methodical key, the tree, the theater, and the area of virtues and vices" (DI 555). All those are technical terms taken from the area of mnemonics. Thus we may interpret Jupiter's exhortation to an intellectual, inner, and exterior reform as a program of the conceptual interpretation and pictorial representation of moral terms.

Thus it also follows that Bruno by no means intends to radically question Greek mythology, as one may first assume. Rather, he takes his theory of the presence of universal principles in the finite world and the figuration of complex conceptual interrelations within images and applies it to ethical principles. The divine images invite to the permutation of abstract statements about virtues and deities. Jupiter says, "Let us cleanse the inner emotion, for it will not be difficult to progress from the 'information' of this interior world to the 'reformation' of the sensible and exterior world" (DI 612). Information, however, is one of the key words of Bruno's theory of cognition and passion. For instance, there is a passage in the *Eroici furori* which states that the "well-formed affect loves the bodies or the bodily beauty insofar as it indicates the beauty of the intellect" (DI 992). This is a reference to the intellectual formation of emotions, and it is only this formation which is capable of sensing intellectual beauty by means of bodily beauty. For beauty—as is said in this context—is not being abstracted from the bodily relations, but the intellect "forms" it in the mind so that the beauty which is being intellectually constructed becomes a representation or shadow of the divine (DI 996). If one recalls at this point the relation of matter and form within the universe as presented in *On the Cause*, according to which matter forms itself from itself (DI 263), and if one connects this thought to Bruno's theory of images, then it is

obvious that he cannot radically reject images; he can only plead for their correct usage. The fact that definitely not all images are being "expelled" from the sky (and this applies in a special way to the image of the Altar) is a clear indicator for this.

The Altar—and we may certainly think of the table of the Christian sacrifice of the Mass—here represents religion, piety, and faith in contrast to gullibility and superstition, impiety, and atheism (DI 570, 825). As Jupiter says, there is no place for the Altar on the earth; rather, it should be placed in the sky as a sanctuary "like a relic or like the plank of the sunken ship of religion and the cult of the gods" (DI 602). With this image we approach the peak of Bruno's criticism of religion which is quite critical of the cult but does not completely reject it; rather, it intends to lead it to appropriate forms. For Jupiter makes the Centaur the priest of this Altar—the mythical creature, half man and half horse. Momos, the court jester of Mount Olympus, mocks him as a human being who has been put into an animal or an animal which is trapped in a human being, in which "one person is being created from two natures and two substances come together in a hypostatic union" (DI 823). "Hypostatic union" in Christian theology refers to the union of the divine and human natures in Christ. The centaur thus represents the person of Christ, with the animal and human natures proportionally relating to the human and divine natures. Momos furthermore mocks the paradoxes of this concept, including the paradox of the human being's need to appear like an animal if he intends to prove to be divine. This can be translated theologically in such a way that God has proven his divinity exactly in the Incarnation of Jesus Christ (DI 824).

Jupiter blocks off all these blasphemies by decreeing that the centaur Chiron was a most righteous man and therefore most worthy, for in the heavenly temple at this Altar there was no other than him. Jupiter then goes on in making a blasphemous allusion to the Body and Blood of Christ in the Eucharist: "… with this sacrificial animal in hand and a sacrificial bottle tied to the belt." Momos then gives in and explains: "If he has well-distributed this animal which he holds in his hands, then it is impossible that he should ever lack this animal, for he himself, and only he, can be the sacrifice and the one who sacrifices, that is to say, priest and victim," and Jupiter adds, "From here onwards bestiality, ignorance, and useless and dangerous fable must disappear; and where the centaur is, righteous simplicity and the moral fable shall remain." According to the traditional theological imagery, Christ is the victim and simultaneously the high priest of the religion. In him, the sacrifice, that which is being sacrificed, and the one who sacrifices are identical.

Bruno confirms a fundamental truth of Christian—and especially Catholic—theology, but he does so only to save it as a symbol and relic of an extinct religion and as a moral story. In presenting the salvific message of the victim and of the two natures of Christ as a moral fable, he intends not to destroy it but rather to present it as a moral principle put into an image. From his perspective it is not Christianity per se which is the enemy but rather the "use-

less and pernicious fable" (DI 825). Here Bruno recognizably uses the scholastic distinction of religions as natural, fabulous, and political theology, according to Augustine (*Civitas Dei* 6, 5; cf. Thomas, *Summa theologiae* II-II 94, 1). This thread can be followed in the direction of the moral fable and in the direction of the erroneous fable.

Sophia and the gods present a broad spectrum of knowledge pertaining to the history of religions; in this context, besides the Greek gods, it is especially the Egyptian cults which play a major role. Bruno may have acquired the knowledge about these cults from the so-called "Hermetic Writings" (*Corpus Hermeticum*), that is, the literature which has been ascribed to the mythical Egyptian priest Hermes Trismegistus and which was held in high regard throughout the sixteenth and seventeenth centuries and beyond. Furthermore Bruno clearly refers to the treatise *On the Mysteries of the Egyptians* by Iamblichus Chalcidensis and to *Asclepius*, a treatise handed down from the Latin author Apuleius which had been attributed to the Greek "Hermetic Writings." Here, too, the philosopher is not concerned with the finer points of the distinction but rather with the comparability of the phenomena.

In comparing the Greek, Egyptian, and Christian religions he begins with the contrast stating that the divine names are being derived from the deity; on the other hand, however, Jupiter was nothing but a king on the island of Crete, a mortal human being, just like Venus is said to have been a particularly beautiful queen on the island of Cyprus. Based on this paradox of divine origin and human form he explains veneration as human routine and the custom of venerating preeminent human beings as gods because in them the deity communicates itself to humanity: "They did not worship Jupiter as if he was a deity, but they worshiped the deity as if it was *in* Jupiter" (DI 779). Thus, according to Bruno, while the divine mode of self-communication was being venerated in Jupiter, the divine wisdom, interpretation, and presence was being venerated in the Egyptian sage Hermes. Without explicitly mentioning Christianity, he concludes this thought with the reflection that "what is being celebrated in this and that human being is nothing but the name and the representation of that deity which has deigned to communicate itself to men through their birth; with their death, the deity regarded its work as being completed or returned to heaven" (Di 780). This or that person, any human being served the deity as a means to communicate itself to men through the birth of that particular person, and this work of self-communication is either being completed with the death of the person (in this case, the death of the crucified Christ), or the deity returns to heaven.

With this imprecise phrasing, Bruno keeps open the alternative of the deity either dying or rising to life in those human beings in whom it is being represented and in whom it communicates itself. In a figurative sense Bruno regards the second possibility as valid by means of the centaur's rehabilitation. A passage in the *Acts of the Apostles* (Acts 14:11; DI 780) serves him as a piece of evidence for his religious-historical combination of Greek, Egyp-

tian, and Christian myths. In this passage, having just seen Paul healing a crippled man, the people exclaim: "The gods have come down to us in human form." And they venerated Barnabas as Jupiter and Paul as Hermes. Subsequently, Bruno reaffirms that human beings at all times have venerated the gods in the form of animals and other things because the godhead was to be found at certain times and in certain places in various mortal objects one after another and at the same time. In all of this, it revealed itself in its similarity to the finite objects and not in its abstractness and absoluteness (DI 780). Therefore, since the divine extends itself and communicates itself in innumerable forms, it also has countless names and is being searched for in countless ways with its own proper means; consequently, it is being venerated in countless rites because we also ask for manifold graces to result from these rites (DI 781). Thus, for Bruno cult and rite mirror the universal self-communication of God in his creation.

Bruno's contemporary fellow theologians exerted great efforts to prove that the external cult with its worded prayers, ecclesial rituals, and visible expressions of the faith are by no means placed outside the religion or even alien to it; certainly they are not idolatry but rather essential expressions of the faith and, as such, commandments demanded by God himself. Especially the aforementioned Francisco Suárez, the same age as Bruno, dedicated a major treatise to this topic, *De religione*. This treatise was written as a commentary of the main source of theology, and Bruno must have been familiar with it as well: the *Summa theologiae* of Thomas Aquinas (II-II q 81). Albeit not without satirical woof, Bruno rather takes sides with Catholics than Protestants who interpreted the Eucharist in a much weaker sense and criticized the point of external cultic celebrations. Bruno seems to defend the veneration of the gods as he seems to anticipate a particular thought peculiar to the era of Enlightenment, namely that the veneration of the transcendental is a basic form of human thought which seeks for idols for this purpose. This is done on the basis of the insight that the human being cannot but seek the effect of this transcendental element, this god, in the natural objects and in all human beings (cf. Kant, *Religion within the Bounds of Bare Reason* III 5). This shall suffice for the time being as far as the positive side of Christian symbolism is concerned.

The detrimental and pernicious fables obviously consist in that men are to be deceived as regards the true meaning of the divine and its presence in the world. In this dialogue, Orion has to pay for this. As a favorite of Neptune and possessing the ability of working miracles and walking on water, he can be identified as a metaphor of Peter and thus the Pope of the Roman Church. Momos who describes him as such becomes annoyed at Orion (who is Greek) demanding that everything should be Greek. If one translates "Greek" as "Roman," then Bruno may have alluded to the claim to universality for the whole of Christianity made by the Roman Catholic Church. It is being suggested that Orion should be sent to dwell among men so as to make them believe—

by way of a reevaluation of values (as done later by Friedrich Nietzsche)—that white was black, that the human intellect was blind where it appeared to see, that that which seemed extraordinarily well in the eyes of reason was in fact worthless, disgraceful, and extremely bad, etc. (DI 803f). One ought to keep in mind the fact that the founder of the Jesuits, Ignatius of Loyola, had said in his *Spiritual Exercises* that being faithful to the Church could even demand that something was regarded as being black if so taught by the Church, even if it appears to be white to the eyes (*Regulae* 13). In an allusion to Paul the Apostle, Orion is being quoted as saying that philosophy was madness and heroism was cowardice; in a special way, however, Orion is credited with the presumption that he himself was Jupiter, and that all the other gods were nothing but figments of fantasy (DI 804f). This is the passage which justifies most clearly that *Spaccio* was in fact infamously known as a satire on the pope, beginning with the inquisitional proceedings through the era of Enlightenment.

Bruno's diatribe furthermore aims at any kind of deceiver who might take advantage of the stupidity of the masses and thus destroy civilian life (DI 805f). Orion, therefore, is being deprived of his power, and diligence, warfare, and military art takes his place "so that the fatherland, peace, and authority may remain" (DI 807). It is remarkable that on the one hand Bruno is unable to expose the falseness of the cults at their root while on the other hand he is fighting them for the sake of the political order. For through the entire text, the function of religious cults in the eyes of Bruno is twofold: theological, with regard to the representation of the divine in the world, and political-moral-social, with regard to the order of civilian and individual life. Religious symbols are therefore not obsolete, but they are being reinstated to their rightful place by reason and interpretation. To this he also adds the yearning for fame and heroic gestures (DI 651).

Deities who permit that people venerate and worship them are being deposed, for since they are "most glorious in and of themselves so that their glory cannot be increased from the outside," they did not establish the laws and religions so as to receive honor, but rather so that honor might be mediated to men (DI 657; an allusion to Thomas, *Summa theologiae* II-II 81 a 7, though the aim there is the subjection of the human intellect). Likewise, Spinoza will later say that God does not require the honor given to him through adoration. For the cult of the gods is made for the sake of human beings and the social order. This, however, presupposes that men are capable of acting responsibly and prosperously. Therefore Bruno's mockery is also aimed at something else, namely the Protestant (and especially Calvinist) reformation which in his portrayal "consider the action and the act of good works to be an error because the gods do not care, and in their sight human beings can never be justified, no matter how great the works accomplished may be" (DI 654f). Bruno calls this an "invented religion" (DI 655) and demands that one ought to be able to see the meaning of a particular religion by its fruits; with this, he in-

terprets religious communities as social organizations which have the right and the duty to enact and enforce laws which benefit the human coexistence.

Bruno's criticism of religion contains the essential elements of modern philosophy of religion in a satirical and entwined form. These are the restriction of the function of religion to moral and political management on the one hand and to natural theology on the other hand. This second aspect becomes immediately clear if one calls to mind that he justified the variety of cults and the veneration of gods in animals, plants, and other objects in maintaining that they were reflections of the presence of the gods in the world: "The Egyptians came to worship living images of animals and thus venerate the gods in this form …, for one should know that the animals and the plants are living effects of nature; this nature, however, is nothing but God dwelling in things" (DI 776). "Natura est Deus in rebus" (nature is God in things) is the formula which connects Bruno's cosmology with his philosophy of religion. In his cosmological writings, Bruno was concerned with a principle with which the discernibility of nature could be justified, and he identified this principle with "the One" which communicates itself in infinite variety. This "One" also serves him as an explanation of religions behavior. For access to the divine—whether one interprets this in the sense of a creator and preserver or in the sense of a sensual resource of human behavior—is only possible by way of finite appearances; for cosmological reasons, as well as for reasons of cognitive psychology, these appearances must be viewed as manifestations or representations of the divine (in other words, as somehow determined forms of the presence of the divine). In the same way in which the divine communicates itself to men, man has access to the divine. One form of this access is religious veneration, and therefore religion, politics, and cosmology run parallel in *Spaccio*.

Nonetheless Bruno does not offer a simplified physico-theology as it came to exist in the seventeenth and eighteenth centuries and which sets the tone for most discussions about the relationship between science and religion until the present day. The laws or nature and its discernibility are a proof of God's existence, science is probably similar to worship. One might be able to infer from this the conception of a god in the sense of the author of the plan of creation which can be traced in the laws of nature; this god, however, has no practical relevance for science and the orientation within the world. Such kind of reassurance of religious thinking by way of science, such secularism is completely unknown to Bruno.

This can be seen in connection with the main character of the events, Jupiter, since he himself is a crossbreed, so to speak. On the one hand, he is the "representative and governor of the first principle" (DI 555, 560, 641f); on the other hand, he is being portrayed in quite human terms. He is a finite being among all others, and it is exactly in this double function as the leader of the gods and changeable individual which matures, reaches adulthood, grows old and gains wisdom that he "represents every single one of us" (DI 560, cf.

556). The inner reform which is the topic of his speech at the beginning is also the reform of the human being; it is the inner formation with the aim of recognizing the nature of God and of the moral principles. Thus it may seem as if Bruno intended to offer an individually ethical recommendation which is valid for every human being. However, one needs to take into consideration that he allows one of the divine principalities to make his own decisions, sometimes even against the opinion of the other gods in the gathering; furthermore, in the introduction he had explicitly described this treatise to be merely a prelude to a prospective code of ethics. One might expect the treatise on the *Heroic Passions* to fulfill this promise.

As an interlude the philosopher from Nola presents the relatively short satire on the *Cabala of Pegasus* with the appendix *Cyllenian Donkey* (*Cabala del cavallo pegaseo con l'aggiunta dell'Asino Cillenico*; in bilabial pronunciation of the 'b' in Cabala, it sounds like *cavallo*, meaning "The Horse Ride …" or "Mare of Pegasus …"—ambiguity is the means of a satire). This treatise is peppered with funny sentences, and it also includes an apology of Aristotle about his intentions to dull the people and finally a rehabilitation of the donkey. It is as difficult to interpret as is the comedy *Candelaio*; with every sentence, one needs to retrace the accidentals of irony or deeper meaning as they determine how this sentence should be read. Here the Orion of *Spaccio* appears in an adaptation as Onorio, simultaneously reminiscent of the corresponding Greek word for donkey and the Latin 'honorius' (honorable). He is the flying donkey and the horse Pegasus, respectively (DI 884), and he acts at the same time as messenger of the gods and also as Aristotle. Moreover, the donkey is being referred to as Cyllenian Donkey; accordingly he belongs to Hermes/Mercury who is said to have been born in a cave of Mount Cyllene. Among the numerous allusions permitted by the figure of the donkey, one ought to remind of that donkey on which Jesus sat as he solemnly entered the city of Jerusalem before his passion. The treatise concludes with the speech of Mercury (Hermes, the messenger of the gods and the Egyptian sage) directed to the donkey who is now being elevated to the level of an academic and the supreme authority of all sects: "Correspond with everybody, debate with everybody, make friends, unite, identify yourself with everybody, rule over everybody, be everything" (DI 923). This final turn of the complex satire intends to say at least this much: he who wants to understand everything needs to be above everything while at the same time making himself a part of everything so that he understands nothing like a donkey while simultaneously permeating and transcending everything like a god.

The treatise consists of three dialogues, the second of which in turn has a three partite structure. The third dialogue, however, simply dropped out because one of the participants needed to look after inheritance matters, the other participant (a pedant) suffered from gout, and the main character had gone to the baths. Instead, there is the appendix on the Cyllenian Donkey. All of this is preceded by a letter of dedication and a declamation to the readers. As

is right and proper, these prepare the level of expectations: the person to whom the treatise is dedicated seems to be a relative of Bruno, a certain Don Sapatino Savolino; Savolino was the name of Bruno's mother, and a certain Saulino is also Bruno's narrator in the dialogues. As regards the audience to which the treatise is directed, the following is said: No, this treatise could not be dedicated to a Cavalliere, nor to a priest, a lady, or an old maid, nor to a pedant or a poet; it only befits a "enciclopedico ingegno" who is also a theologian, a philosopher, and a Cabalist, for this treatise is "una cabala di teologia filosofica, una filosofia di teologia cabalistica, una teologia di cabala filosofica" (a cabal of philosophical theology, a philosophy of cabalistic theology, and a theology of a philosophical cabal) (DI 837). But so as to ease the expectations, Bruno makes the following promise to the reader: "Everything of partly nothing, part of the whole in nothing, nothing of the part in the whole." And just in case we should not like the treatise, we (or rather, Don Sapatino) are to give it to a peasant who may distribute it to horse and ox, or to a hunter who may give it to goats and deer, or to a precocious young madam who may use it as her lapdog, or to a cosmographer who may use it to wander between the North and South Poles. We receive only one clear piece of information, and that is that Bruno intends to confuse his readers. Even more ironical is the declamation to the "studioso, divoto e pio lettore": by way of allusions to the entire rhetoric on the donkey, we learn here that the metaphor of the donkey plays with the ambivalence of foolishness and wisdom.

The dialogue is opened with the remark that the reader will consider everything that follows to be metaphors, fables, parables, images, allegories, mysteries, and tropes. The mythology already found in *Spaccio* is being resumed, and an explanation is given as to why the places of the Great Bear and Eridanus remain empty: this is because they would be reassigned the stupidity in the abstract and in the concrete, and one would have interpreted this as a mere parable. Now there was to be explained—as it had never been done before—the meaning of the insight that ignorance and asinine folly in this world signified wisdom, doctrine, and divinity in the other world (DI 864). By means of Plutarch, Tacitus, and others the claim is made that the Jews had adopted their wisdom from the Egyptians, and that they furthermore had masked their "Egyptian disgrace" with the sign of the donkey. Saulino/Bruno, however, defends "this sacred generation" because it had brought forth the Light of the World; rather, the Jews had reasonably and voluntarily cultivated the cult of the donkey (DI 869). Excursions now follow in which the sacred stupidity is being identified with the *docta ignorantia* while at the same time being distinguished from forms of skepticism.

Onorio joins the circle in the second dialogue. He is a specimen of metempsychosis, that is, the transmigration of souls from body to body. Bruno twists the term and spells it "metamfisicosi," suggesting transformation of nature and transcorporation (DI 885). One of Onorio's incarnations was Aristotle, and in the person of Aristotle he perverted philosophy on the basis of

complete ignorance of nature. In another incarnation he appeared as Xenophanes who is being portrayed as a skeptic. Thereupon the pedant asks how Onorio managed to maintain his memory through the course of his realizations and "hypostatic unions" (DI 899). In the background is the scholastic question, whether individual human souls retain what they learned in life after the body died.

The answer is that Onorio always returned after his adventures as a flying donkey or Pegasus to the heavenly "asinity" where he reported about his experiences. Propelled by a Plotinic inclination of the soul towards the bodily realm, he returned time and again to the earth while leaving behind his constellation in the sky. The Flying Donkey therefore shares in the idea of ignorance/wisdom as well as in the changeability (*vicissitudo*) of the physical world. Thus from time to time Onorio returns from his wanderings and reports about the "memoria of the species" (i.e., the intelligible concepts of the finite things) which he had acquired during his bodily indwelling, and he leaves them behind as in a library whenever he had to return to an earthly dwelling (DI 892). This library is an embellishment and ornamental belt of his virtue which is placed in the sky (one ought to remember that this is a sequel to *Spaccio* in which the constellations are being transformed to virtues, and Orion is wearing a belt). For it does not only contain the memory of the opinions (*specie opiniabili, sofistiche, apparenti, probabili e demonstrative*) but in addition also the power of judgment needed to discern between the right and the wrong opinions (DI 900).

Again, we may not forget that this is a satire. The knowledge acquired as a result of earthly wisdom, which has taken the form of opinion, sophistry, pretense, appearance, and line of argument, is being elevated to the rank of the *species intelligibilis*. Everything is merely metaphor and fable, and yet at the same time it is the heavenly library (i.e., the realm of the Platonic Forms). But when Onorio recommends, "if you are not willing to listen under the appearance of doctrine and science, then do it just for fun" (DI 891), then not only the foolishness becomes a metaphor, and not only the malicious portrait of Aristotle becomes a fable, but rather the entire wisdom displayed throughout this dialogue becomes a narrative. Kabbalah becomes a cabal. The third dialogue which allegedly failed turns the entire work into an unfinished Kabbalah, a little preparatory and paradigmatic intrigue for beginners: "Cabala parva, tironica, isagogica, microcosmica" (DI 912).

Bruno makes a lavish and abundant use of the satirical models of the Renaissance period. Whereas the donkey was a popular satirical figure, the term "Kabbalah" and quotations from cabbalistic treatises are somewhat puzzling. The ten "sephiroth" are of a particular importance as Bruno describes them as parts and disguises of the divine and the universe (DI 865). The book *De occulta philosophia* by Heinrich Cornelius Agrippa von Nettesheim († 1535) may have been the most important source of the ten stages of the Kabbalah. The Kabbalah is a form of mysticism which was developed in Jewish

religious literature during the Middle Ages and reached a high point in Spain at the end of the fifteenth century before the expulsions of the Jews. Jewish scholars lived in Italy as well, and they cultivated both the cabbalistic tradition and the important sources of mysticism and Neo-Platonism which were important for the Latin culture. Giovanni Pico della Mirandola († 1494), Johann Reuchlin († 1522), and Agrippa von Nettesheim were among the first to attempt making Jewish mysticism fruitful for Christian philosophy. A central question of Jewish mysticism was God as being unpronounceable and unnamable against the background of the infinite interpretability of Revelation in Sacred Scripture and in the world. In this sense, the Kabbalah is among other things a hermeneutics, an interpretational procedure, and at the same time an exhortation to link as large as possible areas of knowledge and being. This is in accordance with Bruno's mentality.

In *Spaccio*, he classifies the Jewish religion as descendant of the Egyptian religion anyway, since it is known that Moses has been educated in Egypt, and therefore he declares the Kabbalah to be a variation of the Greek local gods (Neptune in charge of the sea, Apollo in charge of the sun, etc.), whose peculiarity was based on the hierarchical derivation from a primary indescribable principle (DI 782f). Jupiter poses the serious question to himself as to whether he was a god of the Greeks, the Jews, the Egyptians, or any other people, and which religions were fables and which ones were true stories (as not all of them could be true); moreover, if all of them were fables, he wants to know which one was the mother and which one the daughter so that it eventually mattered to reduce all fables to one single metaphor which was worth to be regarded as occult (DI 799). From these questions of Jupiter it is evident that Bruno regards the Jewish Kabbalah merely as another invitation to a general syncretism of religions or to the abolition of the historically and geographically diverse modes of expression within a universal philosophy.

The Hebrew sages are not donkeys, but they report from the Third Heaven, and above all the supreme donkey Onorio reports from the workshop of the gods. Bruno's *Cabala* demonstrates the attempt to view wisdom from the perspective of the omniscient sage—not in an ascending mode, but in a descending mode. It is only from this point of view that the philosophical schools turn out to be forms of deception and presumption, and the earthly world is not merely the scene of changeability but at the same time incorporated into heaven. The vicissitudes of earthly life, the course of wisdom's history grows and becomes the heavenly library. The divine donkey not only talks about everything—he is everything.

When Bruno's spokesperson claims at the beginning of the satirical *Cabala*, "I deliver the facts exactly as they occur, and exactly as they are I point them out," what credit can we give to him?

The sixth and final dialogue treatise of Bruno's creative period in England, the *Heroic Passions* (*Degli eroici furori*—also translated as *Heroic Frenzies*), consists of a series of interpretations of symbolic images and po-

ems originating partly from Bruno himself, partly from his fellow countryman Luigi Tansillo (1516–1568), also a resident of Nola who appears as one of the participants in the dialogue. In terms of its external form, this treatise is situated in the tradition of poetic and philosophical reflections beginning with Dante's *Vita nova* and reaching the most authoritative Renaissance form with Petrarch's sonnets. This is true even though Bruno attacks Petrarchism in his dedication to the English poet Philipp Sidney. Naturally the poems and subsequent reflections and discussions deal with love, and since Bruno intended to secure his position in the closer circle of the unmarried Queen Elizabeth by means of his dedication to the court poet Sidney (so much so that there are allusions to her virtue and intelligence, as had been the case also with earlier dialogues), we do not need to search for a concrete cause, for instance a secret lover of the poet-philosopher.

Thus one can—and should—read this opus on three levels, namely (1) as a model of philosophical and lyrical poetry and its interpretation in the late Renaissance (or early Baroque), (2) as a theory of cognition, and (3) as a form of Platonic metaphysics. As far as this subject is concerned, the philosopher from Nola is not unique, for it was already in Plato's *Symposium* that love is being discussed as model and metaphor of cognition since love offers the most widely known experience of the transition from bodily to intellectual feelings and the experience of practical and merely theoretical insights. In his commentary (or rather, his imitation of the Platonic dialogue) and in connection with his medical knowledge, Marsilio Ficino had connected the theory of love, beauty, and cognition to the ascension of the cognitive soul from bodily data to the vision of "the One."

Faced with the question as to whether Bruno in this treatise keeps his promise of offering a systematic ethics, one will immediately realize that Aristotle's *Nicomachean Ethics* (which was a substantial component of the philosophical literature of the Renaissance) plays only a little role here. One of the most significant achievements of the *Nicomachean Ethics* was the presentation of the virtues as balance in between extremes (a standard example: courage as medium between daring and cowardice). But this form of balance is not Bruno's message. In one passage he states that a certain so-called heroic passion consisted not in temperance and balance but rather in the excess of the opposites (DI 978); for it was not wise to keep a balance between cheerfulness and sadness, but he who was the least sad was also the least cheerful, and he who was the least cheerful was also the least sad—and thus wise. The negative extremes converge in one singular virtue while the vice dominates through the existence of opposites. Once again he applies the Cusanian method of the coincidence of opposites. Thus the argumentation leaves the realm of daily experience in which it is possible to outbalance emotions and circumstances. The ethical argumentation is being transferred to a metaphysical principle, i.e., the principle of indifference. Indifference, however, is not just a stoic balance in the face of facts as shown by experience, as it were; rather, it

transcends experience as a principle of indifference of opposites inherent in a unity which is intellectually graspable.

This example already shows that all the reader may expect is a system of absolute virtues, not a set of guidelines to individual and collective moral behavior. A polemical interpolation directed at Aristotle makes this clear; it is contained in a similar manner in other treatises, but here it apparently concerns the interrelation of virtues. Bruno first rails against those philosophers who intend to abolish the natural differences between craftsmen, peasants, servants, lower people, the poor, etc. on the one hand, and philosophers, thinkers, those who have possessions, captains, noblemen, sages, etc. on the other hand. After all, "it was nature which divided the universe into greater and smaller things, higher and lower things, famous and obscure things, worthy and unworthy things, and it did so not only externally but also within ourselves, within our very substance" (DI 1114). Such is the case with Aristotle. According to the accusation brought forward, he had fought against the Pythagorean doctrine and:

> intended with his logical grumbling to take all sorts of definitions, terms, certain kinds of quintessence and other products and failures of fantastical thoughts and reflections and determine them to be principles and substance of the things. He did this because he studied the views and opinions of the people and the stupid crowd; the crowd, however, should be spoon-fed and guided with sophisms and outward appearances, which are located at the surface of the things, rather than telling them the truth which is buried in the substance of these things and which is the substance of the things itself. (DI 1114f)

Even among his contemporaries (this is probably a reference to Petrus Ramus, † 1572), Bruno complains, there were certain people who were pinching words, who "have grown old in boys' bottoms and the anatomy of sentences and words" and therefore devised new logics and metaphysics because they could reckon and rely on the approval of the "ignorant crowd" (DI 1115). (Bruno always associates pedants with pederasts, and he had already done so in the comedy *Candelaio*, since they combine uncontrolled zeal with scientific sterility.) Ethics, as well as logic, is not suitable for the crowds. For Bruno, it is an elitist business.

The virtues and the affects connected to them—that is to say, emotional movements which connect intensive feelings and clear reflections—are being presented in sonnets, then in symbols such as emblems and mottos. Emblems consist of a poem which portrays a conceptual interrelation in the form of an image, preferably taken from mythology. This image also bears an inscription which at the same time serves as motto, and there is usually also a depiction which shows the situation described in the poem and the thought summarized in the motto. Ever since the humanist Andrea Alciato published such poems

with illustrations in 1531, the production of these kinds of emblematic books expanded vastly. Its aesthetic and hermeneutic appeal consists in synesthesia, so that both the pictorial understanding and the linguistic performance together with the intellectual analysis are being addressed. The genesis of mottos is slightly different, but they have the same effect of the interaction between image and thought, for they are coats of arms, so to speak, in which a certain personality presents itself to its contemporaries by means of a motto which the picture then explains. As is the case with any artistic production of this kind, emblems and mottos cannot be completely transferred to a rational portrayal because one may reproduce the elements in an elucidating manner and name the respective interrelations, but it is not possible to reproduce the interaction itself. This is crucial in the case of Bruno who regards this interaction as the decisive element; the poems and the emblems are meant to represent the enfolding and unfolding of the universal principle in the world and in the human person. However, since Bruno himself takes over the task of explaining his sonnets and images, he reduces the tension described in them; on the other hand, he increases this tension because his text in turn is highly interpretable and in need of interpretation.

Undoubtedly the most famous picture from these dialogues is the myth of Actaeon (I 4, DI 1005f). Actaeon is a hunter who owns two dogs which represent the intellect and the will. Accompanied by these dogs, he goes hunting and discovers Diana, the goddess of the hunt, standing in the water. "Lo!—Bust and face more beautiful than any mortal man and any god could ever behold … He saw, and the great hunter became the hunt." Antlers grow on his head, and his dogs tear him to pieces. "I expand my thoughts to a great prey, and these turn on me and bestow death on me by their gruesome and wild bites." (DI 1005f) What is the philosophical significance of this image according to which the thoughts aspiring to great heights devour the thinker himself? A mystical or even Neo-Platonic interpretation will probably state that the human being striving for the divine, the good, wisdom, and beauty needs to leave the wilderness of the sensual world; in doing so, he begins to go wild and is thus destroyed as he identifies himself with the supreme good to which he aspired. Therefore, he is not the same as he was when he set out for his intellectual quest. Someone like Marsilio Ficino would perhaps interpret this myth according to his imagery of ascent and leaving the sensual realm. Bruno supports this imagery until a certain point in saying that the death brought about by the dogs means the end of his life in the delusional, sensual, blind, and fantastic world and the beginning of the intellectual life; now he leads the life of the gods (DI 1008f). In addition, philosophizing has often been portrayed as "hunting for wisdom," for instance and among others by Nicholas of Cusa. He had maintained that just as all living creatures strive to survive, the intellect needs wisdom for nourishment so that this kind of hunting is natural and genuine to it (*De venatione sapientiae* 1). What is unusual about this hunt is the circumstance that its "prey" is distant and yet at the

same time within the hunter, especially since the intellectual hunting is at least an expression of wisdom, if not synonymous with it.

Therefore, one must take into consideration that it is not the goddess who hunts Actaeon. He is not devoured by the gods but by his own dogs, his own intellectual abilities which he used to venture forth towards the divine. Since a poem is not just about rhyming words, it should also be noted that the verses do not explicitly state, "the hunter became the prey," but "the hunter became the hunt"; the Italian word for hunt (*caccia*) can signify both the action and the purpose or the game whereas the word for prey (*preda*) only means that what has been caught as a result of the hunt. In the philosophy of the absolute, hunt and prey are the same. For as Bruno explains through his spokesman Tansillo, "the hunter went hunting, and he became the prey through the operation of the intellect with which he transformed into himself the things he had grasped" (DI 1007). And immediately afterwards he describes the metaphorical process as follows:

> Actaeon's thoughts are looking outside of him for that which is good; they look for wisdom and beauty in the wild forest, and to the extent to which he becomes aware of it, he is being torn apart from himself by such beauty. He becomes the prey, and he sees himself being transformed into that which he sought. At the same time he becomes aware of himself becoming the prey chased by his dogs—of his thoughts—because he has already contracted the prey within himself and does not need to look for the deity outside of himself anymore. (DI 1008)

This is first and foremost a well-known epistemological statement. Love transforms and changes the one who loves into the one who is being loved. In the dialogue *Alcibiades I*, ascribed to Plato, Socrates in conclusion suggests reversing the roles of disciple and teacher (135 d 8); it is thanks to the loving dialogue that Alcibiades is able to put himself in the position of Socrates, and Socrates in turn is able to take the position of the disciple. Marsilio Ficino's philosophy of love (*De amore*) presupposes the human experience that unrequited love ends in nothingness, and fulfillment comes from requited love on the part of the partner who is the object of love. From this it follows that love dwells in the other person, namely, that the thought of the one who loves—while being oblivious of himself—dwells in the person whom he loves. Ficino, Augustine, and many others regard love as model or metaphor for the quest for wisdom and truth, that is to say, philosophy. Time and again, the basic common thought is that possession of truth (which is being sought) at the same time destroys and enables the ability to think. For as long as one seeks, that which is being sought is still at a distance; once the seeker reaches it, it transforms him because—and this is different from physical encounters—the truth becomes so clear to the intellect that it in turn becomes wise and the place (*locus*) of truth. Another passage states that love transforms the object

of love into the one who loves in the same way as fire is able to transform all other simple and mixed elements into fire because it is the most active element (DI 964). Translating love as philosophical cognition, the concept now reads in scholastic terminology as follows: the intellect understands the things only according to its own manner (DI 1007). To use an example of Aristotle: in the soul, the stone does not exist as a stone but merely as its image. With this, one must keep in mind that in the aforementioned comparison it is not that which is being loved, but the lover who is being compared to fire: it is the lover who transforms the object of his love into himself. It might seem that the hunter-philosopher himself becomes the truth which he seeks, but it is also the truth which "becomes the philosopher." For such truth is not a possession, but it is the activity of the intellect.

Love is also a most suitable model for comparison because it is exactly in its capacity as activity that it is unfulfilled by nature, at any rate in those aspects which mostly concerns the human person. Just like most of the Renaissance philosophers, especially those influenced by Neo-Platonism and mysticism, Bruno does not regard cognition as a fact which is being understood proportionally clearer the more distinct terms are being used to analyze cognition. Rather, it is in and of itself a paradox, and this paradox can be philosophically grasped best if the point of convergence of opposites is precisely indicated. From the perspective of the lover, courting is the most essential feature, and it is also the source of happiness and despair. Earthly love may reach its fulfillment, but the essence of love consists in the ability to strive for the other person, and there is no rational explanation for this phenomenon. (Marsilio Ficino described it in this way in his adaptation of Plato's *Symposium*.) And in an analogous manner, it is the essential characteristic of the intellect to set, and aspire to, new and hitherto unknown goals of cognition. The fulfillment of this striving would rob the intellect of exactly that ability which would lead it to its goal. Thus it follows that the object of cognition does not cease to exist beyond the quest for cognition, and the human spirit consequently tends towards the infinite:

> Once the intellect has come to capture a certain delimited intelligible form and if the will emotionally corresponds to such comprehension, then the intellect does not stand still here. For its own light propels it and moves it to think about that which contains in itself every kind of that which can be recognized and aspired; it continues to be moved until together with the intellect it grasps the highest rank of the source of ideas, the ocean of all truth and goodness. (DI 1011f)

One antinomy of cognition consists, therefore, in the fact that the fulfillment of its quest time and again sets new goals; thus the goals which have already been accomplished are being debased in that they were achievable. In a comparison reminiscent of Nicholas of Cusa (*Idiota de mente*) it is said that

the intellect concludes from the fact that it discerned something that there ought to be greater things than this; the measuring intellect understands everything that is being understood as something that has already been measured, and it deducts that this cannot satisfy its striving because it is not in and of itself sufficiently good and beautiful. Seized by its goal (which is only infinitesimally attainable), the intellect searches for that which has not yet been measured—the infinite. Bruno calls this movement itself useless. And yet, if one looks at the term 'infinite,' it also belongs to its infinity that people infinitely search for it and strive to follow it—*hunt* it. Such a quest is no longer an earthly hunt but rather a "metaphysical movement" (DI 1012). Because of the change in perspective from the hunter to the sought-after infinite, the philosopher can describe this metaphysical movement as a "cycle through the stages of perfection towards the infinite center which is neither being formed, nor is it form." Faced with the counterquestion, "And how does one reach the center if one goes in circles?" Bruno replies, "I cannot know that." "Why do you say it, then?"—"Because I can say it, thus making you think about it." (DI 1012f)

Seven

RETURN TO PARIS: CHALLENGING MATHEMATICS AND ARISTOTELIANISM

Although the Italian guest had presented Queen Elizabeth with the first four of his London Dialogues in one volume in December 1584, and even though he had dedicated the dialogues *Spaccio* and *Eroici furori* (which are more literary in style) to the poet Philipp Sidney, he had to leave England in late summer of the year 1585. He had certainly hoped to attain protection from Sidney at the royal court, but Sidney himself lost his influence and left in November of the same year in order to fight in the war in the Netherlands. Bruno had praised Queen Elizabeth as "sole Diana" in the *Heroic Passions*, her place among the "nymphs of England" just as prevalent as the sun among the stars; he had praised the "divine Elizabeth" in *De la causa* due to her physical beauty, her education and wisdom (DI 936, 951, 222f). The same Queen Elizabeth apparently had no use for the poet and philosopher. His host, the French ambassador Michel de Castelnau, was ordered back to Paris; his task had consisted mainly in representing the interests of France in the sense that he sought to balance the tensions between the religious groups, just as he had done on earlier missions. During the journey the poor philosopher, together with the family of the ambassador, was attacked and robbed, but at least he seems to have salvaged the manuscript of the first three books of *De immenso* (Spampanato 1933, 387). This work was published six years later.

Bruno arrived in Paris in October 1585 where the political climate had changed. Pressured by the Catholic League, King Henry III revoked protective measures in favor of the Huguenots, so that Bruno himself considered reentering the Catholic Church. He asked the Spanish ambassador in Paris, Bernardin Mendoza, to petition the Pope (at that time, Sixtus V) as regards his case; Mendoza, however, refused to do so even though (or because) he still knew Bruno from his time in England. As he had done already in Toulouse, Bruno turned to a Jesuit (here a certain Father Alonso) who told him with regard to his confession that he could receive absolution only from the Pope (Firpo 1993, 176 and 197). For the time being, Bruno somehow managed to lead a life as a private person conducting studies; he used the library of the Abbey of St. Victor among others. There he read—certainly not for the first time—the didactic poem on nature written by the Latin philosopher Lucretius (Spampanato 1933, 650); this philosopher would influence the later Frankfurt didactic poems in terms of the literary form, and he was Bruno's most important source of Epicurean atomism. For two months Bruno conducted scholarly and private conversations with the librarian Guillaume Cotin who

summarized them in his diary so that we are able to gain some information as to Bruno's private life and his personal thoughts (Spampanato 1933, 642–659).

In January 1586 Bruno became acquainted with the mathematician Fabrizio Mordente; not only did he originate from Southern Italy (Salerno), but his brother Gaspare had been in the military together with Bruno's father Giovanni. A man of sixty years at that time, Fabrizio Mordente worked on the famous problem of the squaring of the circle; in this context, he had invented some sort of pair of compasses. Since it was apparent that he did not understand Latin, Bruno, out of friendship and professional admiration, offered to make his invention known to the public through a Latin treatise. With this, Bruno broke new ground; however, earlier on he had already discussed geometrical figures and used them for philosophical argumentation, for example in *Sigillus sigillorum* and *De la causa*. As a precursor to the sector, also known as proportional compass, Mordente's new compass was not only the simple two-part instrument with points used to draw circles or measure distances and lengths; rather, it was equipped with needles at the points and the hinge set at right angles with the legs so that one could also measure angles within circles or produce arcs of a certain angle. Thus the inventor joined the great number of practitioners and theoreticians of the fifteenth and sixteenth centuries who worked towards solutions of geometrical problems.

Geometry was a decisive technique used in the realms of astronomy, geography, architecture, and fine arts. At the same time it was the means and subject matter of metaphysical speculation, because it was in geometry where lucidity and precision, theory and practice met. It was a commonplace of the Renaissance philosophers who insisted that geometry was fit to be regarded as a model science because cognition and construction coincide in geometry. This is so because the thinking mathematician is in principle identical with the one who produces the geometrical relations. Nicholas of Cusa had therefore used geometry to demonstrate the similarity between human intelligence and the creative power of the divine intellect, only to discover the differences which are due to the fact that the objects of human geometry are ultimately finite; thus, the essence of God begins exactly at the point where the capacities of human thought reach their limitations. Ever since antiquity, the circle had been the paradigm of the speculative appeal of lucid geometry, for—as Heinrich Cornelius Agrippa von Nettesheim wrote in his *Three Books Concerning Occult Philosophy* (II 23)—the circle is "an infinite line which does have neither starting point nor end, for its beginning and its end is in every point, wherefore the circular motion is also called infinite, not according to time, but in terms of space. Therefore, the circle is the most comprehensive and most perfect of all figures." Thus, the construction of the circle and with it also the ratios in parts of the circle, such as central angle, chord of a circle, inscribed and circumscribed polygons constituted the areas of theoretical and applied geometry.

Using Mordente's compass and placing it on the circle to be measured, it was possible to produce certain proportions in a quasi-mechanic manner. Obviously, in geometry there are figures and proportions which can be either produced only graphically with compass and ruler (for example the diagonal within a square) or determined only by calculation (such as the transformation of a circle to a square equal in area). Here, too, geometry combines the tension between lucid practice and the intellectual rational process, as well as the fundamental contrast between continuous quantities in geometrical figures and discrete quantities in arithmetic numbers. Therefore Bruno's fascination about the invention of his fellow countryman was due to the practical advantage connected with the production of certain circular lines and angles (OL I 4, 248f).

According to Bruno, the philosophical return of this discovery lies in overcoming the contrast between graphical geometry and arithmetic calculus; from this, he deducts the practical provability of the existence of minima or atoms, respectively. Mordente had "implemented in a mechanic and visible way" that which refutes a principle of natural philosophy, namely that all things according to their form were not infinitely divisible. For one ought to differentiate between the smallest quantities of the continuous quantity and the smallest basis (*subjectum*) which contains the form; thus the form of a human being was not contained in any arbitrary matter, but there was indeed a minimal and a maximal mass from which the form of the human being could be produced. In other words, if one divides mechanically, the quality or form will be lost at some point, but not the quantity; the latter, however, could be divided into ever smaller parts until a "smallest part," a minimum, is reached, but in such a way that the form of that of which it constitutes a minimum is being lost. Accordingly, the smallest part of a curved or straight line, or of a regular or irregular line, are indistinguishable. If, therefore, it is the form that defines a certain thing, according to Aristotelian ontology and natural philosophy, then this does not yet reveal anything as to the limitation through matter. Therefore in Bruno's opinion, Mordente has demonstrated in a mechanic way that there are ultimate parts of things, and he has done so lucidly and bypassing "the arduous business of arithmetic" (*Idiota triumphans* 14f).

The philosopher from Nola literally idolizes his fellow countryman Fabrizio Mordente, albeit not without the irony of accusing him of not having understood, or even known about, the philosophical meaning of his discovery. Using quite similar words as he had done in praising Copernicus in the *Ash Wednesday Supper*, he presents the mathematical practitioner as someone who from the limited view of his professional discipline had made a discovery of great philosophical significance, and it requires a genius to understand and disseminate it. Bruno will indeed repeatedly return to the theory of the minimum and the philosophical significance of mathematics in later years; the encounter with Mordente perhaps signified a turning point in his philosophical development. His fellow countryman, however, was definitely not delighted

to see how his discovery was being presented to the scholarly world. Mordente appears as his own interpreter in three out of four small treatises by Bruno (two of them in OL I 4, all in *Due dialoghi* ed. Aquilecchia 1957), even though he unmistakably speaks the language of Philotheus/Bruno who takes the floor in the fourth treatise (*Idiota triumphans*). The philosopher deemed it important to present the discoverer as a practitioner and someone who is not an expert in matters philosophical (*Idiota*) as this corresponded to his opinion of the mob; as a rule, the people are not aware of the wisdom and potencies of the human intellect while still participating in it. This is the anthropological parallel to the theory which Bruno now was developing, according to which the divine wisdom is inherent in the finite things, down to the smallest atoms.

The mathematician was simply offended. The two Italian scholars living in Paris got into an argument which they continued when they met again in 1588 at the court of Holy Roman Emperor Rudolf II in Prague. There was also the fact that they belonged to different groups in the political tensions between Huguenots, Catholics, and conciliatory so-called "politiques" in Paris. Whereas Bruno sympathized with the conciliatory party since his protection through Castelnau and in light of his own precarious denominational situation, Mordente apparently belonged to the Catholic party, as well as Boterus. This person appears as an interlocutor in the mentioned dialogues and must be identified as the political author and diplomat Giovanni Botero (1533–1617) who had stayed in Paris through the end of 1585 (*Due dialoghi* p. XXI). Described as being a hot-tempered person by a contemporary, Mordente bought up the first two dialogues with his own money because he considered them to be shameful so that there are only two copies which have survived.

Bruno's attempts to come back to the Catholic Church failed. He fell out with the Catholic group and—under the conditions at the time—threw away his chances to succeed at court. Now he prepared a scandal to take place at the university. He published the aforementioned *Figuratio Aristotelici Physici Auditus …* (*Schema of the Aristotelian "Physics," to be Set Forth in Fifteen Images for the Purpose of Understanding and Recollection*), and just as he had done with *Idiota triumphans*, he dedicated the *Figuratio* to Abbot Pietro Del Bene. Del Bene was a supporter of the King of Navarra, heir to the throne and sympathizing with the Huguenots; his kingship as Henry IV was to become definitive only in 1593 after he had converted to Catholicism. This treatise as well was directed at the wrong party.

The author promulgates his scientific-political program in the dedicatory letter (OL I 4, 133–135): some people had already attempted to criticize Aristotle, and in doing so they made a fool of themselves; it seems to be better to err with Aristotle than to join the clamor of his critics. Hence it is important to improve and strengthen the inherent weakness of Aristotelian philosophy and to give it a consistency which it lacks in its present form. For this purpose the arguments as regards content must be listed in numerical order and missing arguments must be added so as to prepare everything for a potential critique.

On this occasion the meaningless and dispersed theorems are being joined together, and the entire immature system of theories is being put in shape and in order. Then it will become apparent that Aristotelian philosophy is not something like an open secret, but that it does not contain any more ambiguities and vagueness than are being secretively inserted in it. The term "figuratio" used as part of the title does not signify an external schematization, but it expresses the claim of bringing meaning and structure into natural philosophy. For according to Bruno, the function of mnemonics is not to use arbitrary schemata as a peg on which to hang the subjects and topics to be memorized, but rather to fabricate imaginary pictures in such a way that they initially—or on the intellectual level—establish the inner meaning and the external context. At the beginning of the treatise the author has placed several series of fifteen or ten images; he then proceeds to win the favor of the academic readers by means of a seemingly scholastic categorization of the philosophical sciences. The main body of the treatise consists in a concise summary of Aristotle's *Physics*; the flukes and unorthodox interpretation of this summary can only be noted if meticulously compared to Aristotle's text and its standard commentaries. This treatise, evidently, was not so much aimed at the nobility in Paris rather than the University of Paris.

On May 28, 1586, Bruno organized a public disputation at the Collège de Cambrai, an earlier version of the Collège de France. It was affiliated with the university, but it was supported by the royal court. As was customary with academic disputations, Giordano Bruno wrote the text and had a student present the theses: the young nobleman Jean Hennequin. It was his declared intention to provoke the professors at Paris to participate in a profound and thorough discussion about Aristotelian philosophy. The text of the disputation has come down to us in two versions: one, in a printing published 1586, probably before the disputation itself: *One Hundred and Twenty Articles on Nature and the World Against the Peripatetics* (*Centum, et viginti articuli de natura et mundo adversus Peripateticos*); then, two years later at Wittenberg under the title *Proclamation of Cambrai Or Reasons of the Articles on Physics Against the Peripatetics, Proclaimed in Paris, etc.* (*Camoeracensis Acrotismus seu rationes articulorum physicorum adversus Peripateticos Parisiis propositum, etc.*; OL I 1). The word "Acrotismus" is not part of the classical Latin vocabulary; it insinuates the Greek word *akroasis* which means lecture or talk, and it is the generic name for Aristotle's *Physics*. It contains the sensual perception of something that is outstanding or excellent. Therefore, and because of the programmatic intention of the treatise, I deem "proclamation" to be the best translation.

The first printing consists of ten folios; this is the usual format of an academic disputation as it was customary at that time and also later on. Some articles have been reorganized in the second version, and especially the theses have been provided with extensive commentaries. For the spectacle of such a public disputation consisted in the defendant or respondent (the one who de-

fended the theses) publishing the theorems of his professor, thus offering to defend these theorems in the course of the disputation. In a formal examination process, an opponent was appointed who had prepared counterarguments; in this manner, he put the defendant to the test. The number of theses proposed by Bruno, but especially their content, by far exceeds the usual academic ritual. One ought to be reminded, however, that approximately one hundred years earlier the philosopher Giovanni Pico della Mirandola had presented a spectacular number of nine hundred theses for the purpose of a public disputation, and he too claimed to reform the entire philosophical system.

The second version, published in 1588, reveals the philosophical reasons which Bruno used to equip his student Hennequin. The Parisian version is dedicated to King Henry III (a reprint of the only remaining copy can be found in Canone ed. 1992, 159f); the letter mainly addresses the fact that these theses are intended for discussion at the "princess of universities." The actual title and the brief preface, however, expand this claim to all of Europe: here the "articles on nature and the world" are being referred to as theses which are being presented at the most important and indeed all European academies (OL I 1, 82). Accordingly, for Bruno this is not merely an incidental event at a particular college but rather a challenge to the entire University of Paris, and he expresses this view in a letter to the rector of this university, Jean Filesac. On the one hand, he takes it upon himself to prove to his Parisian colleagues "that Aristotelian philosophy is always and forever more than true" and that "this university owes more to Aristotle than Aristotle owes to this university" (that is to say, the university depends on Aristotle, but it has not contributed anything to the knowledge of Aristotle). On the other hand, he insists that it must be possible at this university "to think freely philosophically when it comes to philosophy and to maintain an individual teaching" (OL I 1, 57). The programmatic speech given by the defendant on behalf of the philosopher from Nola is also a defensive speech, and in the Wittenberg version it is entitled "Excubitor" (watchman), for as the imagery of light and dark as used in this speech shows, the author thinks of himself as guardian of the light in a universal darkness.

Using similar words as he had already done in the *Ash Wednesday Supper*, Bruno holds the opinion that light and darkness, error and truth follow each other naturally throughout the course of history. This also includes the consequence that a new view held in the present will be revealed as an ancient doctrine upon closer examination, and this ancient doctrine is being held by those who are familiar with the nature of the matter, just as conversely there is no ancient doctrine which appeared to be new at some point (I 1, 60f). If we want to simply believe the author that he had presented his theses at various European universities, then we should be reminded first of all of his appearance on the scene in Oxford, where, according to the witnesses, he dealt with Aristotelian cosmology. Even the quotations from *Marsilio Ficino* of which he was accused might be traced and identified by means of an exact textual

comparison, particularly since Bruno puts three times ten theorems on nature, the universe, and the visible world in front of his one hundred and twenty theses, and he collects them under the title "Pythagorean and Platonic Sentences, deemed impossible by the Peripatetics." It is not clear whether Bruno claims to implicitly defend these thirty sentences in the one hundred and twenty theses, or if he rather intended to explain them in addition to the other theses. This might have been the subject matter of the Oxford debate.

As an example of the provocative tone, here the first article: "The subject of natural science: most Peripatetics do not understand that Aristotle never regards the natural, bodily, moving beings as objects of science, and they do not listen when Aristotle himself in many places explicitly calls nature by its name." (I 1, 83) He plays Aristotle (or the tradition of Aristotelian natural philosophy, respectively) off against himself. He touches on a sore point of Aristotelian philosophy of science which is being discussed amongst his interpreters to this day: the thesis contained in *Posterior Analytics* according to which there cannot be a science of that which is changeable, visible, and movable; there can only be a science of that which is constant, regular, and unchangeable. The practice of Aristotle himself is at odds with this: he determined nature as the principle of motion, and he identified the realm of natural science exactly in the finite and changeable things. Bruno rightly points out that some scientific works of Aristotle (especially on biology) ought to be described as natural history, that is to say, as stocktaking of the natural things and not as philosophy in the narrow sense. In his first thesis Bruno quotes a solution of the scholastics which consisted in circumscribing the object of physics as science: this object is the "natural, bodily, or movable being." The stress is on "being," for physics obtains its scientific character in the sense of the universal, uniform, and regular from the concept of "being" which in this case is finite and multiplied. Bruno objects—and this is paradigmatic of his reinterpretation of Aristotelianism—that Aristotle defines nature as the principle of motion and thus aims at "the universal nature itself." Traditional Aristotelian philosophy regarded nature as a special case of being, and accordingly the scientific nature of physics was maintained in using logical conclusions which are formally correct. Bruno's critique states that if this is the case, this science only moves around in the realm of the visible, movable, and particular without combining the things objectively in a uniform principle (OL I 1, 83–87).

But what may this uniform principle look like? To this end, Bruno goes back to the difference between the terms *subjectum* and *objectum*. Subject, that which forms the basis, is the topic of physics in the sense that it is the universal realm with which this science is concerned in general and in particular. Object, however, in the scholastic sense means that which is being offered or represented in the scientific intellect as result of thinking. Such objects are as manifold as the items with which they are dealing; they resemble the objects of technology and craft which never constitute an entirety but always

remain material things consisting of many parts. Nature, on the contrary, should be a uniform and underlying nature—hence, subject (OL I 1, 89f). Therefore the Anti-Aristotelian favors the concept of a uniform nature, as was emphasized in the aforementioned Pythagorean and Platonic theses, namely nature as "eternal and indivisible essence, instrument of divine providence which is active because of an inherent wisdom" (OL I 1, 80). Aristotle had explicitly argued against such a conception at the beginning of his *Physics*. On this condition "that which is most knowable (even though it might not be actually known) is the most being and the most constant, i.e., not a natural thing but nature" (OL I 1, 88). Thus he reverses the objective of 'cognition of nature' to the objective of the 'naturalness of cognition': "That which is naturally perceivable is nothing but nature itself; nature itself gives that which eventually results as that which can be known from natural things." (OL I 1, 88) Subsequently, this can only be achieved if the scientific statement corresponds to the manner of nature as "being true": "That which is in all and which proves to be true in everything (*verificetur*) and which is said to be true about everything is nothing but nature." Since Nature reveals itself to human beings in its diversity and finiteness as well as contingency, Bruno does not understand verification in the sense of empirical or experimental examination of the accuracy of scientific statements on a particular issue; rather, verification is exactly the way in which nature reveals itself diversely. Research then means "search for nature," be it in the scientific sense that the things of nature are being ordered in the way in which nature has ordered them, be it also in the particular scientific disciplines as natural history which puts the empirical facts in order (OL I 1, 88).

Just as Bruno plays off Aristotle as the physicist against Aristotle as the philosopher of science, so he constantly repeats the contrast between logical and natural definitions in Aristotle's theory. It is not acceptable that natural science results in a construct of terms which are mere objects of reason and logical in themselves; rather, the result must be completely congruent with the object of cognition so that "thinking of nature" must be brought into line with the "nature of thinking." Bruno proceeds paragraph by paragraph to bend the Aristotelian text in accordance with his cosmology as already presented in the Italian dialogues. In a clever and hermeneutical work he transforms Aristotle into a "Brunian" so as to be able to present himself as a true Aristotelian.

This masterwork of scholastic-antischolastic polemic was meant to be the ticket with which the homeless philosopher wished to gain access to the academic world. At least he succeeded one or two years later in giving private lectures on Aristotle's *Physics* at the University of Wittenberg; these lectures are also handed down in a manuscript. He interprets Aristotle less polemically but with the same intentions and closeness to the text in order to break it down and refute it. Apparently he was also permitted to put the comprehensive version of the programmatic Parisian treatise on the market. These treatises give us an insight into his studio. For unlike his numerous and often con-

cealed references to other authors in the dialogues, these writings reveal his method and his use of specified philosophical sources. With regard to the numerous other allusions—even if he mentions names—one must arduously locate the passages which he may have had in mind or which he may have even used in their written form; thus one may be easily tempted to make sweeping allocations such as Platonism, Stoicism, Cusanus, Virgil, Lucretius, Hermeticism, Neo-Platonism, etc. Bruno connects all these sources in a peculiar and syncretistic manner. However, he acknowledges Aristotle in such a punctual and exact analysis so that one can realize that this is not the result of vague influences or unfocused reading; rather, this is a program of offensive reception and philosophical reinterpretation. As he says himself, he is following the threefold step: reception—comprehension—critique. Aristotle is being examined with regards to clear theses and problems; Bruno suggests a solution by which he twists the common meaning to mean just the opposite (OL I 4, 134). The cosmology of the infinite results from denouncing the terms of the Aristotelian space, expansion, division, etc., to be merely logical terms which address a particular phenomenon and not a "natural" reason. All Aristotelian natural principles, including the causes, are being examined with regard to a uniform principle, and the result is that there can be only one uniform principle of nature which must be at the same time the principle of thought and diversification (and in this respect also the principle of human errors).

The consequence is a paradoxical freedom and dependence with regard to philosophical sources. On the one hand, Bruno boasts about his insolence of disproving the highest authorities of Western thought or harnessing them for his own benefit; on the other hand, he makes himself—or remains—dependent on them. He philosophizes independently and in a very original way within the categories of tradition. At the peak of its diversification and academic distribution he poses the central question of Western philosophy: how can a theory of extramental objects be possible? However, he looks for a solution in the opposite direction than some of his contemporaries, and especially scientists after him such as Galileo and Francis Bacon: he does not look in the direction of validation of empirical data and experimental sequences by means of which the accuracy of scientific conclusions is meant to be recorded in a methodical and orderly manner. Rather, he seeks his answer in the removal of the distance between thought and its objects. He can only succeed in presenting the variety of objects as an expression of unity, as well as presenting the search for this unity in philosophizing as the restoration and actual establishment of this unity. In the area of epistemology, therefore, he focused on the operations of the mind as the ability to produce unity in diversity; in dealing with historical philosophies, he tried to present the unity of the philosophical problem and the variety of its expression as part of this problem. Thus far the program.

The great disputation in Paris was scheduled for three days as one could gather from a notice: "After the Solemnity of Pentecost, from Thursday until

Saturday, God willing, Jordanus Bruno Nolanus will defend one hundred and twenty articles on nature and the world against the Peripatetics, with Johannes Hennequin as the speaker and respondent. Daily from the first hour until the evening in the Royal Auditorium at Cambrai." The same source then reports:

> The young man Hennequin gave a speech against the teaching of Aristotle in the presence of the philosopher from Nola. After the speech the man from Nola challenged everybody to take part in a competition. When nobody came forward, he went to the lectern and said many things against the finite world of Aristotle; finally a professor came forward who insulted the philosopher from Nola with abusive words, calling him Jordanus Brutus [like Brutus, Julius Caesar's murderer, in Latin 'animal']. He produced a few arguments in a confused manner, and when he did not permit the man from Nola to answer, there was a commotion, and the session was disbanded. This man from Nola calls himself a devourer of Aristotle, and he calls Aristotle the god of the philosophers' ignorance. (Canone ed. 1992, 108f)

Another contemporary reports: "The man from Nola is still against Mordente, and he is writing new dialogues. Now he is interested in destroying all of Peripatetic philosophy, and based on how little I understand these things, he seems to have good arguments. But soon he will go to Germany. It is enough that he left behind a great controversy in England; he is a pleasant and fun-loving chap" (*Due dialoghi* p. XII). The librarian Cotin in turn has this to say on the entire affair: "Giordano sat on a small chair near the gate to the garden while Jean Hennequin, his student, presented his theses." And regarding to commotion he reports that Bruno might have escaped the agitated audience only because a continuation of the disputation was scheduled for the next day, "but Bruno did not turn up, and nobody saw him ever since in this town" (Spampanato 1933, 659). Indeed one finds his next sign of life in Germany—in Marburg.

Eight

"HOUSES OF WISDOM" IN GERMANY: HISTORY, MAGIC, AND ATOMISM

Bruno tells in his biography at the time of the trial in Venice that he had travelled from Paris to Germany in the wake of the tumults. First he set out to Mainz, an important archiepiscopal and electoral see; after twelve days he turned towards a place called Vispure (perhaps referring to the name Wiesbaden, in imitation of the local dialect), only to continue onwards to Wittenberg due to the fact that he had been unable to earn his living (Firpo 1993, 162). He prudently neglects to mention that at first he attempted to teach at Marburg, the location of the most prominent Calvinist university. In light of the fact, however, that the rector denied to grant permission, Bruno must have caused a scandal which, in turn, only accelerated his departure (Spampanato 1933, 663). It is safe to assume that the reason for the denial rested with Bruno: He had registered himself as a Doctor of Roman (Catholic) Theology. Nonetheless, the hapless Bruno was indirectly to be associated with Marburg: It was Raphael Egli, later a professor in Marburg, who had heard his lectures in Zurich in 1591 and in 1595 had them printed under the title *Summa terminorum metaphysicorum* (*Handbook of Metaphysical Terms*), and fourteen years later he issued an expanded edition. Johann Heinrich Alsted, a philosopher who had tied close friendships with Marburg scholars due to Calvinism, also published Bruno's Wittenberg lecture on rhetoric in Frankfurt in 1612, entitled *Artificium perorandi*.

Bruno attained a position as a private outside lecturer in Wittenberg through the initiative of a fellow countryman, Alberigo Gentili, a law professor at the Protestant university. He had become acquainted with Gentili in London. In his new position, he was now allowed to give lectures on the topics of logic, rhetoric, and philosophy of nature. In this context, it is important to know that Marburg was strongly influenced by Ramistic logic. At the exact same time, complaints were raised in Wittenberg that "Aristotle is not being read due to Ramism catching on, and that there are attempts to quench the teaching method of Philipp Melanchthon" (Canone ed. 1992, 113). It is hence safe to assume that Bruno's offer of teaching Aristotle was gladly accepted, seeing as he regularly spoke disparagingly about the Ramistic method. Philipp Melanchthon (1497–1560) had substantiated Lutheran theology with an Aristotelian philosophy interspersed with elements of Humanism and Platonism. In this way, and combined with the promulgation of new academic regulations, he had made Wittenberg University the leading Lutheran institution.

After the international and courtly intrigues in London and in the aftermath of the permanent civil war in France, Bruno did by no means escape the German denominational controversies; rather, he had now stepped onto the German rag rug of small states and inner-Protestant parties. For in the second half of the sixteenth century, Protestantism consisted not only of Calvinists and Lutherans; there were also the followers of Melanchthon, so-called authentic Lutherans, crypto-Calvinists, and some more trends. Bruno describes it to the inquisitional tribunal as follows: "I found two groups in Wittenberg, the philosophers who were Calvinists, and the theologians who were Lutherans … At that time [1586] the son had succeeded the old duke in office [Christian I succeeded Augustus I as Elector of Saxony]; the son was Calvinist, and whereas his father had been Lutheran, he now began to support that party which was opposed to Lutheranism, the same party which supported me" (Firpo 1993, 162). Christian was regarded as a crypto-Calvinist; thus he supported Calvinism in Saxony which was Lutheran. We can deduct that Bruno was more inclined towards the Lutherans at this time and that his supporters were among the theologians, not the philosophers. Since the influence of the Calvinists increased, Bruno left the "Athens of Saxony" in the spring of 1588 and again tried his luck at court, this time at the court of Emperor Rudolf II in Prague who had been residing there since 1583. He bid farewell with a speech in which he unfolded his philosophy of a history of philosophy.

His entry in the album of the university at Wittenberg reads as follows: "Salomon et Pythagoras. Quid est quod est? Ipsum quod fuit. Quid est quod fuit? Ipsum quod est. Nihil sub sole novum." (What is that which is? That which was. What is that which was? That which is. Nothing new under the sun.) He wrote the same adage in the autograph book of Hans of Warnsdorf, one of his students (Canone ed. 1992, 121–125). It is notable that both Salomon and Pythagoras, i.e., the wise man of the Old Testament and the first of the Greek pagan philosophers, are credited with this aphorism. Bruno will make reference to this saying during the trial in Venice as well so as to support his thesis about all things being animate and therefore immortal "since there is no other death than separation and connection" (Firpo 1993, 169). In the same declaration he connects this thought with the wisdom of Salomon: "The Spirit of the Lord fills the world, and that which holds everything together [has knowledge of the voice]" ("Spiritus Domini replevit orbem terrarium, et hoc, quod continent omnia [, scientiam habet vocis]"; Wisdom 1:7). He compares this in turn to Virgil's aphorism which is being quoted time and again in the context of Renaissance philosophy: "The spirit nourishes heaven and earth from the beginning … from within, and reason which is poured out into all limbs moves the mass." (Virgil, *Aeneid* VI 724f)

The theologians who were sitting in judgment on Bruno deemed it important that Bruno thus had explicitly expressed his doubts on the Holy Spirit as the third person of the Trinity in identifying him cosmologically with the world spirit and world reason. Bruno's motto "nothing new under the sun,"

however, not only contains this specifically theological and cosmological meaning but also a summary of his role as a philosopher of his time. His motto is a quotation from the Book of Ecclesiastes (Qoheleth) (1:9–10) which primarily warns about the fleeting nature of the wisdom of this world. It should be noted that Bruno changes the wording, and it remains unsolved why he does that. The biblical text does not address present and past, but past and future: "What is that which was? That which will be. What is that which has been done? That which is to be done." ("Quid est quod fuit? Ipsum quod futurum est. Quid est quod factum est? Ipsum quod faciendum est.") Without any doubt this is a motto of Bruno, for he quotes it many times (DI 247, 324; OL II 1, 44, II 2, 213; III 341; Spampanato 1933, 664, 711; cf. Firpo 1993, 169, 301, 304); therefore, one cannot explain the change in wording by saying, Bruno quoted this passage from memory (DI 247 annotation)—especially since he was famous for his memory.

Rather, by altering the tenses from past and future to past and present Bruno draws attention to the fact that this biblical text unfolds a natural theory which one can generously describe as stoical, since the cosmos is being portrayed as eternal recurrence and thus in itself identical. The biblical text goes on to conjure the vanity of human labor and studies; by shifting the verb from "doing" to "being," Bruno might have been particularly interested in the constant recurrence of human wisdom in view of the infinite universe and the totality and changeability of history. He continues the quotation as follows: "And nobody can say: Behold, this is new, for it already existed in earlier centuries." Looking back from this perspective to the quotation from the Book of Wisdom, on will notice that Bruno also quotes "incorrectly," for the original passage reads: "That which holds everything together knows every word said" (New Jerusalem Bible). Bruno cuts off the sentence in such a way as to give the impression that the passage would imply that the world spirit fills the cosmos and all its parts. The tactical reasons as to why Bruno is doing this are not clear—after all, he addressed theologians who were biblically sound. But in this phase of the trial at Venice he clearly demonstrates the connection between his cosmology, his theology of God's spirit permeating everything, his syncretism and the deliberate use of the most various sources, and last but not least his philosophy of history: there is but one universal wisdom, and it is the task of the philosopher of his time to update it again and again.

Bruno's farewell discourse at Wittenberg opens with a prayer to the "God of my Fathers" who bestows wisdom "in the shadow of the light":

> For there is first the nature of the sun which is merely being touched upon by reason alone; secondly, there is the existence of the sun which has its own circle and absolutely consists and lives where it lives; thirdly, there is the assistance or the effect of the sun which entails everything and is embraced by everything. In like manner one can interpret the Sun of Understanding in a threefold sense. First, in the nature of the divine;

> secondly, in the substance of the world which is an image thereof; thirdly, in the light of the meaning of those who share in life and knowledge. According to the first degree, Cabbalists interpret it and refer to it by way of the *sephirot cochma*; according to the second degree, orphic theologians call it Pallas Athena or Minerva; according to the third degree, it is generally credited with the name of Wisdom. (OL I 1, 12f)

In a relatively simple form Bruno describes the condition of the cognition of the world as the threefold presence of divine wisdom, in fact as absolute wisdom, as manifestation within creation and as "helmsman on the ship of the soul" (OL I 1, 14). Surprisingly, there is a division of labor of the threefold stratification of wisdom and cognition connected to this; this division of labor is executed among Cabbalists, Orphics, and philosophers in general. Similarly, there are different speakers in the "House of Wisdom," the constant metaphor of this farewell discourse praising the university of Wittenberg. Job speaks on behalf of the first house; the narrator of the second and third house is Salomon (OL I 1, 14). Even if we may immediately deem such a threefold stratification to be plausible according to the neo-Platonic thought pattern, it still needs to be explained why different groups interpret such a stratification in different ways; moreover, even individual groups of interpreters (viz., Cabalists, Orphics, and philosophers) are said to be responsible for different representations of the same wisdom. According to this application the House of Wisdom "wanders" between the ontological stages of the divine manifestation as well as throughout the chronological and geographical sequence.

Fortunately Bruno's flow of words continues. He touches upon the *septem artes liberales* not without adding unscholarly disciplines such as astrology, alchemy, and magic, only to present a *translatio sapientiae* in which the House of Wisdom is handed down from the Egyptians and Assyrians via the Persians, Indians, etc., to the Germans. (This is an obvious bow to his audience, crowned with a eulogy on Martin Luther.) The orator refers to the wandering of the House of Wisdom as "memoria hominum," memory of humanity, in which the numerous peoples and sages appear in roundelay. However, why does he not say "history"? History and memory mean the same thing to Bruno. They contain within them the entirety of truth and the facts, and it is the task of the philosopher to grasp this totality as unity and to unfold it as multiplicity. Therefore he describes the so-called second House of Wisdom, the manifestation of divine wisdom in creation, not only as "voices of wisdom and traces, works of the deity, which indicate the supreme providence," but also as "most reasonable book in which one can read the history of divine power, wisdom, and benevolence" (OL I 1, 14). This is not merely a resumption of the widely known metaphor of nature as a book in which God reveals himself to humanity parallel to Sacred Scripture; rather, the *kenosis*

and self-revelation of God is itself being understood as Scripture, not only by way of analogy, but as a foundational pattern of that which is written: "For that which is invisible in God is being understood by way of that which is created: this is Scripture" (ibid.).

Just as in the realm of mnemonics the construction of images takes place as the disposition of that which can be known in the tension of contraction and unfolding, so the entire creation—that is, the entirety of the objects of human cognition—is a "history" of the divine creative power. This "history" is a "memoria," that is to say, the entirety of memory, if it is being portrayed as the perceived object of human cognition. This, however, means that the entirety of creation—unlike the objects of mnemonics, with the peculiarity of combining the contents of discursive and successive argumentation—is the representation of reality as a whole, including the index of temporality. Thus history differs from memory only by virtue of gradual formation. Nonetheless it remains questionable whether we may talk about temporality at this point, if temporality is understood as characteristic of objects, not merely as accidental sequence. A living and finite organism is necessarily temporal insofar as it is determined at each point by that what it used to be earlier and what it is supposed to become. It is ontologically undetermined as to whether "the heavens which proclaim the glory of God"—another metaphor applied by Bruno—are "homiletic voices" (OL I 1, 14) in the sense that they teach humanity and the philosophers trans-temporarily, as it were.

Such reflections would be nit-picking, had Bruno himself not expounded the thesis—maybe so as to flatter his hosts—that wisdom had built its seventh and final house among the Germans of his time. As the number seven makes it clear, the fulfillment of the wisdom program in Wittenberg is not meant to be coincidental; rather, it is in the nature of wisdom itself which, accordingly, is said to have a teleological structure. In light of the destruction of teleological thinking in medieval philosophy (and Bruno follows this schema), this is relatively improbable: Christianity interprets the Aristotelian 'final' cause as a merely metaphorical talk about causation; a development is interpreted "as if" it were driven by its purpose. Another possibility would be to attribute a planning subject to the final cause, and with regard to the totality of creation this means that its cause is rooted in the planning of the all-knowing God (cf. DI 154). At this point, there is no need of further explanation that Bruno regards this all-knowing, planning Designer-God to be identical with the world created by him—at least in terms of extent, if not even factually. This is also what he expresses in his speech about the three Houses of Wisdom: according to this speech, the eternal divine wisdom is found in the first-created wisdom, namely the visible world, and the second-created wisdom, namely the human soul. Therefore, the divine wisdom cannot be different in the various human souls, even though these are the souls of Egyptian or Assyrian Chaldeans, Persian magicians, Indian gymnosophists, Thracian Orphics, Greek sages, Italic philosophers or German Protestants.

For this reason one must go on to ask whether the presence of divine wisdom in the world of humanity can increase. It must rather be a recurring revelation, and temporality does not belong to its nature. Therefore the eulogist immediately explains to his audience at the university of Wittenberg that wisdom (by means of dominion) and science (Jupiter and Minerva) "seem to have changed country and domicile in successive alteration" (OL I 1, 16). This is a determining keyword for Bruno's cosmology and metaphysics: "vicissitudo," the change in which the unity of the principle manifests itself again and again. The continuous change, the merging of elements and appearances in general, is a distinguishing feature of the stoic concept of nature as one can find it in Cicero's writings (*De natura deorum* II 84). Bruno uses the continuous change of elementary properties and forces in *De immenso* as the epitome of order and consistency of the things. In doing so, he refers to the thought of uniting opposites according to Nicholas of Cusa (OL I 1, 279f).

If the continuous change represents the object of cognition, and if this corresponds ontologically to the universal principle, and epistemologically to the one who understands it, then there is no philosophy which can claim any progress of science as its own, let alone any accumulation or gathering of knowledge. Rather, it needs to prove that it has found its place in the continuous change and that it reflects this continuous change as a unity. Consequently, the historicity of Bruno's philosophy must manifest itself at that suitable and convenient moment which, as one among others, is "at the height of the time," that is to say, in unison with eternal truth. Therefore he says towards the end of *De immenso*, Wisdom (Sophia) was naked, she had no face nor clothes nor a title, insignia, or parts, for "she bears witness to herself" ("Ipsa fidem facit ipsa sibi"); however, it is Wisdom who expects and welcomes the one who loves her, and in doing so she—paradoxically—assumes the quality of Fortuna, the unforeseeable fortune. Fortuna in turn is the wheel of time, and she causes everything that comes into being "repeat ancient positions in that she carries everything while flying away" (OL I 2, 290).

This is Bruno's philosophy of history: "The best thing which can happen to a mortal being in this destiny is a life related to the nature of the gods; you can only accomplish this if you have been embraced by this goddess so that you may despise the dreams of the miserable mob, deeply sunken into the musty floods of Lethe." (OL I 2, 290f) On the conditions of the finality of human thought and the eternity of wisdom and truth, philosophizing appears to be fate, a stroke of luck, a fortunate moment in fleeting time. The fleeting nature of the finite things is reflected in the fleeting nature of grasping the truth:

> Time takes everything and gives everything; everything changes, nothing is being destroyed; there is only one thing which cannot change, one is eternal and can persist eternally as one, equal, and the same.—My soul rises in this philosophy, and my intellect expands in it. For whatever

> is awaiting me this evening, if the change is true, I who am in the night await the day whereas those who live in the day await the night. Everything that exists is here or there, near or far, now or hereafter, earlier or later. Therefore, enjoy yourselves, and stay healthy as far as possible, and love those who love you. (*Candelaio* 13f)

Even though this passage is taken from the highly ironic dedication of a comedy to Morgan le Fay (alluding to Ludovico Ariosto), it demonstrates the philosophical-historical meaning in Bruno's philosophizing, in connection with the Wheel of Fortuna in the didactic poem. If the course of history destroys nothing but preserves and contains everything so that it is exactly here that eternity, unity, equality, and identity are found, and if the solace of philosophy consists in the joyful knowledge of the one who loves that which loves him, then it is apparently the task of the philosopher to embark the wheel of time and to enter the transiency of things in order to transcend it. He exposes himself to the naked truth in understanding that which is consistent as something transient and vice versa; this is what transforms his philosophy into a form of life—the form of life according to the nature of the gods.

The treatise *Sigillus sigillorum* praises mnemonics as nectar which purifies the "lethargic fluids of Lethe" and thus gives "heavenly life with the heavenly gods and afterwards even the supercelestial circulation with the supercelestial gods" (OL II 2, 162). Thus, being forgetful of history is tantamount to the end of philosophical life; "memoria" is the transition from perceived knowledge to the supernatural perspective. This promise, however, does not offer any possession which one might acquire or refuse to do so; rather, it signifies a dialectic tension between ability and failure: history does not cease to be transient in memory, the nectar does not replace Lethe, and history retains its "forgetfulness" in "memoria." For the quoted passage is accompanied by the memento of Prometheus who brought the treasure of the gods to humanity, and it is also accompanied by reference to the simultaneity of "Pythagorean" and "Simonidean times" of forgetfulness and remembrance (OL II 2, 162f). Prometheus signifies the boundary between divine and human, impartial to both, which cannot belong to either one of them, especially when it attempts to combine them. The philosopher is not a god, and he cannot offer any lasting improvement to the human being. Both "times" either extinguish everything through oblivion, or they bring it forth anew—the problem consists in Bruno's explicit statement: He (and only he) who accepts the time of oblivion also agrees to the time of recurrence. The past of history is the fleeting matter of the memory. Alluding to the myth of Prometheus, however, philosophy makes the philosopher rise above the masses who do not understand this union and therefore is prone to oblivion. Here oblivion is both on the side of the insightful philosopher who despises the masses and on the side of the mob, oblivious to truth and wisdom. And yet: even though fleetingness is "incorrigibly foolish" (in terms of the "Pythagorean time"), the

thinker of history remains dependent on it. He is the historian/philosopher who is completely self-absorbed. Bruno wants both, the naked truth and the fullness of reality. His concept of "vicissitudo," the changeability of truth in reality, demonstrates this.

In *De umbris idearum* Bruno writes about various models of ascent and descent from the material things to the spiritual things and vice versa—on the condition that there is "an order and linking in all things" (OL II 1, 23–25). He reminds of the ascent metaphor of the Platonists, the eternal circulation of the sky according to the theory of some Aristotelians, the theological implications, and finally the traditional classification of that which is according to genus and species, concluding with the following thesis: antiquity may have taught how the memory works, but it did not understand—unlike Bruno—how one could use a multiplicity of images to advance towards a universal image of that what is possible to be memorized (OL II 1, 25). Here Bruno places the universal correlation of the things within the interrelation of various theories about the things in order to eventually emphasize his own new invention. Time and again, the philosophy of the "One" is the philosophy of the "only one."

If one wishes to examine Bruno's relationship with the history of philosophy, one repeatedly comes across the antithesis of a universal world order which is insufficient and finite in terms of it peculiarities; at the same time, however, it refers back to a union and is found in insufficient and momentarily positive accomplishments of human thought. With regard to these accomplishments, Bruno asserts that he sees them clearly, thus emphasizing his claim of being in a superior position with general overview. As philosopher and historical person, Bruno apparently attempts to retain simultaneously a global perspective and his personal idiosyncrasy.

On the occasion of a sonnet in *Eroici Furori* on the subject of past, present, and future, Bruno once again connects the natural order and the seeming circulation of science and wisdom. "Today, there is no evil and no shame to which they [the Jews] are not exposed, but there is also no good and no honor which are not in prospect." (DI 1075) Hope, it is said, recompenses for the bad present. However, Bruno adds: thus it is with all generations and conditions. It is exactly the changeability of the things which makes them long-lasting so that good follows evil, superior follows the lowly, and darkness brings forth light: "Thus is the order of nature." Although the subject here, too, is the general topic of love, Bruno talks about the decline and continuance of philosophical wisdom, and he refers to the famous lament of Asclepius about the decline of religion which he quotes extensively in *Spaccio* (DI 1074 and 784–786). The history of culture turns out to be a sequence of light and darkness, captivity and liberation. However, in this chapter we also learn that the hope placed in the future compensates more than enough the loss of the past and the evils of the present: "In each condition of this order the present hurts more than the past, and both together do not reimburse us in

the way in which the future does—the future which always consists in expectation and hope." (DI 1073)

Just as consistency of the change takes precedence over the change of the constant in this speech about changeability, hope in the ascent or recurrence takes precedence over the other conditions of loss in the Wheel of Fortune. In this context, there is an allusion to the eternal recurrence of the same: "The circulation and the Great Year of the World is that period of time in which one returns from various conditions and effects to the same by means of the opposite means and conditions; we see the same in the individual years: in the solar year, the beginning of a contrasting position is the end of another position, and the end of the former is the beginning of the latter" (DI 1072f). However, this eternal recurrence is not the recurrence of the same in the sense of that which is equally bad, but rather the recurrence of the hope in the good. By switching the perspective from the transtemporal observer to the participant in this constant change, then the good, the hope, the recurrence of the good, is the propellant of the circulation. Thus the protagonist of the dialogue asserts immediately following the description of the "Great Year" that one had arrived at the hidden reservoir of the sciences, at the end of education, customs, and traditions, but that exactly because of that one could expect the return of a better status (DI 1073).

One can observe this figure of thought in all of Bruno's treatises: the thought that in finite reality, opposites clash and the infinite is present in the finite; the thought that philosophy is supposed to be the representation of this changeability. At the beginning of *De umbris idearum* he postulates that certain heralds (*mercurii*) appeared from time to time because wisdom was not always present and not in everybody present; this in turn is being tied to stoic circulation of the elements (OL II 1, 9 and 24; cf. OL I, IV 227). Likewise, the dialogue *De la causa* opens with the metaphor of light and darkness, and the third dialogue of *Spaccio* mentions that darkness was not dark it if was recognized, and "profound magic" consisted in finding the hidden deity in the natural things; this is the condition for keeping the change of light and darkness as determined by fate in motion. It is the same "profound magic" which he demands in the fifth dialogue of *De la causa* so as to be able to oppositely develop the contrasts from unity (DI 778 and 340). And yet again it is in the *Eroici Furori* where Bruno states that it is the wise person who deems the changeable things to be non-being because time relates to eternity as a point relates to a line (DI 976). This means that the wise person is required to place himself on this point. Thus the question remains as to whether and how the wise person is able to do that; how he finds himself and holds his ground in the constant change of the opposites into each other and way from each other, in the discovery of the "One" and the consistent as opposed to the "Many" and the finite, and in turn exactly in these diversities. Therefore Bruno arranges historical phases of philosophy in a systematic sense, just as if these phases

were to demonstrate certain aspects of philosophy which in turn is only one expressing itself in many ways.

Of course, the historical placement of the philosopher from Nola in the first dialogue of the *Ash Wednesday Supper*—which has been interpreted many times—is also related to this. It opens with a prelude on duality and the coordination of primary opposites such as "finite/infinite," "bent/straight" etc. (DI 22) after which it continues on to the "paradoxes" of the new philosophy which primarily consists in Bruno's claim to see with his own eyes without denying the scientific progress (DI 26f): judgment and empirical research are being played off against each other. While the "observations" (*osservazioni*) are being accumulated in time, judgment and the formation of concepts (*giudizio e determinazione*) occur punctually; in a special way, however, experience and philosophical judgment are separated from each other, and they are different entities just like an interpreter and a listener are different (DI 27). Copernicus, too, speaks in the manner of an interpreter when he reports about a forgotten theory, leaving purely mathematical and empirical research behind (DI 29), because fate has determined him to be the dawn of the revival of ancient true philosophy. This kind of repetition is structurally congruent with Bruno's description of "breaking through the walls of the celestial spheres" (DI 33); for truth proceeds forth from contrariety, be it temporal or conceptual. All this is a prelude to a version of the *querelle des anciens et modernes* that culminates in the adage: "Wisdom lies with antiquity, and many years bring forth prudence" (DI 39). It is the competence to judge which makes "old," and in this sense everybody who sees the truth is "older than the predecessors" (DI 39). Especially since wisdom is only found "within ourselves" (DI 34), antiquity itself is nothing more than a metaphor of truth which can be discovered at any time, again and again, and only punctually. In comparison, the course of time is the realm of prudence which has just about as little to do with truth as the interpreter who translates it, so that the "years" are the garment of the seclusion of truth. In this sense Bruno applies the famous aphorism "Veritas Temporis Filia" (truth is a daughter of time): he can merely laugh about the ancient theories of the comets, and if truth comes with time, then only against the intention of those who report about it (in this case, Aristotle who has unintentionally preserved the correct meaning in a doxographical way in his *Meteorology* - OL I, II 229f).

Bruno may claim that he was a chosen figure or even a point in the history of thinking in which truth and wisdom, reality and thinking coincide. However, he is unable to explain why the potentially infinitely many other "points in history"—all the pedants, scholastics, and other fools—are not likewise peaks in the process of thinking the "One." What remains is the "heroic effort." The result, however, is that the imagery of allowing oneself to be grasped by the object of thinking (as he already had recommended to Morgan le Fay, and as he had presented in the myth of Actaeon) transforms the vicissitude of time, the historical succession of moments of wisdom, and the very

history of thinking into a metaphor: this is the metaphor of the profound distance that separates the philosopher from his cultural and natural environment.

If the eternal recurrence of the same, the heroic passion, polemics, satire, and last but not least mannerist rhetoric (with its overextravagant examples, metaphors, and literary style) are being interpreted in this sense, then they become an indication of the philosophical problem per se, namely the question: "How is thinking possible after all, in light of the fact that it is by far more likely to be thought, to be a possible object of a cognitive intellect—than to actively think?" If that is so, then the philosopher is unable to perceive himself as only a cog in the works of a large thinking machine in which he makes a modest contribution to the transmission of verifiable truth. Rather, he must see himself as the critical authority left to itself—and authority which is repels itself from truth so as to attain it. Therefore Sophia states in the first dialogue in *Spaccio*—presuming, of course, that the present must be evil, but that the future promised by fate must be successful: "With the help of my divine object of truth—the truth which has been hidden, suppressed, submerged on its flight for such a long time—I have decided to accept this moment according to the arrangement by fate as the beginning of my return, appearance, exaltation, and veneration which is all the more magnificent the greater the opposition was." (DI 573f) Wisdom takes up her position. "Whoever wishes to take off from earth with greater momentum needs to bend well first, and whoever strives to jump effectively over a ditch takes a run-up by stepping back eight or ten steps." (DI 574) In other words: the world does not provide any friendly advice on the truth of philosophy. In the end, the philosopher needs to push himself off from within himself.

The homeless philosopher now put his hopes in Prague. The Bohemian capital had become the Mecca of sciences and arts of every kind, due to the patronage of Rudolf II and a general religious tolerance which enabled Protestants, Catholics, and dissidents to coexist peacefully. The external pressure of the Turkish threat contributed to this (the Turks had conquered vast parts of Hungary in 1526). To mention only two examples: John Dee (1527–1608), whom Bruno might have met in London and whose biography was similarly turbulent, tried his luck with Rudolf II; also, the astronomer Tycho Brahe (1546–1601)—reputable, from a modern perspective—at times worked in Prague. While he was still at Wittenberg, the philosopher from Nola had sent him a copy of his *Theses Against Aristotle* (*Acrotismus*) to Uraniborg; he took Brahe's observation of the stars as confirmation of his cosmology. Brahe, however, wrote this annotation in his copy: "Nullanus, nullus et nihil, conveniunt rebus nomina saepe suis" (Zero, nobody, and nothing—names often fit the object.) Finally, Bruno's mathematical friend and adversary, Fabrizio Mordente, had found his way to Prague. It was the German neo-Latin poet, Philipp Nicodemus Frischlin who had advised Bruno in Wittenberg to go to Prague; he claimed to have received an annual salary of three hundred

Thalers (Canone ed. 1992, 126). Bruno introduces himself to the audience there with a reprint of a short Lullian treatise (*De specierum scrutinio*), and he dedicates a polemical treatise of *One Hundred and Sixty Theses Against the Mathematicians and Philosophers of Today's Time* (*Centum et sexaginta articuli adversus huius tempestatis mathematicos atque philosophos*) to the Emperor. After all, Rudolf gives three hundred Thalers to the wandering philosopher; with this money, Bruno sets out on his way to Tübingen.

At that time, Tübingen was the stronghold of Lutheran orthodoxy; many theologians who later worked in Wittenberg came from Tübingen, such as Polykarp Leyser the Elder, whom Bruno will soon see again in Helmstedt. Bruno's meeting with Martin Crusius, a professor of the Greek language, was also inevitable; Crusius was the chatterbox of Tübingen, and he kept a diary of everything he heard and saw. He was also a sworn enemy of Frischlin, and he questioned Bruno about him. Bruno's request to be admitted to the university was granted at first; however, the senate decided eventually to "deal with him humanely so that he might stay here no longer"; he was offered four Thalers on the condition that he disappeared as soon as possible (Canone ed. 1992, 129).

The next stop was Helmstedt; the university had been founded in 1575 by Julius, Duke of Brunswick-Wolfenbüttel. When the Duke died in May of 1589, Bruno gave a solemn speech of consolation (*Oratio consolatoria*). Apart from the generic commendation of the Duke and praise of the university founded by him, this speech contains a system of virtuous symbols—astronomical signs as had been presented in a satirical way in *Spaccio* (OL I 1, 27–52).

If we can trust a handwritten letter of protest which is preserved in the Herzog August Library in Wolfenbüttel, then the refugee was also excluded from the third of the major denominations, as fate would have it. At any rate, on October 6, 1589, Bruno complains that the local pastor and superintendent (Johannes Mebesius) had excommunicated him in a public sermon; Bruno demands the vice chancellor to conduct a public investigation of the case (Spampanato 1933, 665; Blum 1984). The vice chancellor was the theologian Daniel Hoffmann who shortly afterwards became the instigator of the so-called Hoffmannian Dispute (Hoffmannscher Streit). This dispute was about the interpretation of the Formula of Concord (1577) whereby the various Lutheran groups had reached an agreement; in a special way, however, the dispute was about the relationship of philosophy and theology within the Lutheran denomination. Bruno's case seems not to have had wide repercussions. In any case he was able to stay in Helmstedt until April of 1590. There he wrote (or prepared for printing) his final treatises he was to publish later, and he collected some material which was only printed in the 1891 edition of his works.

One of Bruno's most dedicated students was Hieronymus Besler (whose brother was the renowned botanist Basilius Besler from Nuremberg) who had studied with Bruno in Wittenberg and Helmstedt. Later on, Hieronymus worked as a medical doctor in his hometown. Both met again in Padua to-

wards the end of 1591, for the student had become Bruno's secretary. At Wittenberg and Helmstedt, the philosopher must have had a pile of papers on his desk as he was preparing the mnemonic treatise *De imaginum compositione* and the great trilogy of didactic poems which were printed in Frankfurt in 1591; he worked on the lecture soon to be given at Zurich, and he also looked intensively into certain problems in the realm of magic and medicine, the latter maybe under the influence of the future medical student, Besler.

Magic in the Renaissance era appears to be a suspicious and at the same time electrifying topic, especially as it has been discussed for a long time whether the theory and practice of magic served as a bridging element from the natural science of the scholastic period to that of the modern times. Francis Bacon, regarded to be the father of modern empirical-scientific research, had recognized that magicians and alchemists worked on an empirical and practical level, except that their theoretical reasons were made rashly and thoughtlessly. On a closer look one needs to subdivide the term "magic" into various aspects and areas, such as charms, wizardry, interpretation of the influence of the stars on earthly nature, etc. The treatise *De occulta philosophia* by Heinrich Cornelius Agrippa von Nettesheim (which has been mentioned multiple times) is the easiest-to-manage compendium on this topic. Giordano Bruno used it extensively in the preserved manuscripts on this topic (OL III). For example, before he addresses the force of attraction of magnets, the effects of ghosts and demons, etc., he organizes the different kinds of magic in an almost scholastic manner. He enumerates various types of magicians, and it stands out immediately that those are the same sages who make an appearance throughout the history of mankind: Hermes Trismegistus in connection with the Egyptians, druids with the Gauls, gymnosophists among the Indians, Cabbalists and the Jews, magicians of the Persians, sages among the Greeks and Latins. Magic, then, means first of all "to do amazing things through the mere application of active and passive powers as it is done in the realms of medicine and alchemy; and this is natural magic in the general sense." Apart from fraud and witchcraft, Bruno lists seven different kinds of magic activities, including clairvoyance. In short: "A magician is a wise human being with the ability to create effects." (OL III 397–400) Since it is the effect that matters, magic differentiates between two kinds of that which is at work: nature and will. The will can be human, demonic, or divine. Nature can be internal or external: internal, as basic matter or as form with active characteristics; external, as image, trace, or shadow, as the light belongs to the sun and is being reflected in the things which are being touched by this light (OL III 404). Bruno unmistakably reproduces his philosophy of nature in these notes, according to which internal and external principles are simultaneous, as well as his theory of continuous unity and expression in diversity, as was seen earlier. For:

> This is the primary principle and the root of all principles used to explain everything in nature which is astonishing, namely that on the basis of the active principle and the spirit or the universal soul, there is nothing preliminary, imperfect, incomplete, and, finally, totally negligible by its outer appearance which could not be the principle of great operations and activities. Most of the time, one even needs to make use of these so that a new world might originate from them, so to speak. (OL III 497)

This, however, means that the magician is aware of the presence of the universal principle in these smallest and most insignificant parts (OL III 408). As Girolamo Fracastoro (1478–1553) had done, Bruno emphasizes the mutual "sympathy" of all things in this context. Furthermore, it is only logical that such connectivity of active and passive characteristics of sensorial things cannot take place on one level alone (such as the world spirit or God's providence); rather, these connections multiply themselves, and Bruno uses the term *vinculum* (bond, string, ties, connection) to signify this.

Thus at that time the treatise *On Ties in General* (*De vinculis in genere*) was developed which remained incomplete. In this treatise, all thinkable forms of links and ties, bonds, subjects (i.e., the ones who do the linking and the binding), methods and objects of linking and tying are being discussed. Here, too, the number 30 is being used to orderly arrange the various groups. Generally binding in this sense are God, the demon, the soul, living beings, nature, coincidence, fortune, and fate. It becomes immediately clear that "binding" is not a bodily activity but rather a spiritual accomplishment, for "the body does not drive the intellect spontaneously but rather by means of a power which exists within the body and which proceeds forth from the body." The logical consequence is that the binding of a hand can only metaphorically be called as such because it "bends and commences to bind only after manifold preparation" (OL III 655). Similar to the magician, whoever intends to bind or tie something in any way and in any sense must have a universal understanding, i.e., he must know the nature, aptitude, inclination, condition, use, and purpose of the object to be bound (OL III 695). Love is of course the strongest bond, for: "he who does not love anything has nothing to fear; there is no hope for him; he has no reason to boast or be arrogant, to dare or despise, to accuse or apologize, to humiliate, to imitate, to grow angry, or to feel anything else" (OL III 684). The special structure of the bond of love is then being described in a similar way as it had been done in the *Heroic Passions*, namely, as stepping away from oneself. The bond consists exactly in wanting to be in a place where one is not, and wishing to have what is missing; this, however, is a reciprocal relationship: "It is due to the change and reciprocity (vicissitudo) of that which is special that the particular things step away from themselves in a certain sense" (OL III 692f). The particularity of this theory of magic consists therefore in the fact that Bruno's metaphysical and epistemological problem of linking the disparate and unfolding the universal unity

is being treated under the general concept of "bond" on a trivial, practical, psychological, but also cosmological level.

This treatise has come down to us in two versions: an early one, and a more elaborate version. Therefore one can observe how Bruno adopts even those sources which are well known and obvious; in this case, it is especially Marsilio Ficino's philosophy of love (*De amore*). For example, in the first version, he says this about love: "The bond of beauty is called an act or ray of the good; first, it radiates in the spirit, secondly in the soul, thirdly in nature, fourthly in matter." In the edited version the same passage reads as follows: "The Pythagoreans and Platonists call the bond of beauty a flash of lightning, ray, and act, or rather, their shadow and image, as well as a trace which unfolds first in the spirit, adorning it with the order of things; secondly, in the soul, filling it with the ranking of things; thirdly, in nature, honoring and strengthening it with seed; fourthly, in matter, providing it with forms" (Scapparone/Tirinnanzi 223 and 196). Here, Ficino's doctrine of the stages of that which exists, expressing themselves in beauty, is not merely rhetorically embellished but rather filled with the specific thoughts of Bruno. A specific example is the similar analogy of the various levels, as well as the play of light and shadow in which one is the trace of the other so that the connection consists exactly in the absence of light or shadow at the same time being the indicator if its presence.

Due to the systematic gathering of indications, cases, and usage examples of influencing things and human beings, Bruno's excerpts on magic—and *De vinculis* in particular—have been branded as a manual on manipulating the masses and individuals, comparing them to Niccolò Machiavelli's treatise *The Prince* (*Il Principe*) (Couliano 89f). That happens whenever philosophy gets practical. Moreover people noticed that Bruno's inventory of virtues and his theory of the heroic act are unable to produce an ethical theory because of the extreme concentration on intellectual abilities demanding to find the absolute in the vastness of the limited. Practice and morals are not the same. It is already apparent in the case of Marsilio Ficino that magic and astrology have a tendency to get practical: not only had Ficino given realistic hints regarding the psychology and physiology of love in his dialogue on love, besides the ascent to pure beauty—in his great medical work *Three Books on Life* (*De vita libri tres*) he had unfolded the theory and practice of the spiritual connection between the bodily and intellectual world in the form of astrological medicine. Therefore, medicine was counted to the wider circle of magical theory and practice as well, since it was traditionally placed on the intersection of the theory of nature and the dealings with the functions of the living organism and its material constitution.

One ought to be reminded that the turning away of Renaissance humanism from scholastic science consisted in praising the complexity of the human being and to see its superiority in creation not only in its intellectuality but also in the practicality of the body; Giannozzo Manetti (1396–1459) had de-

scribed this in an exemplary way. Just as medicine occupied either the noblest place among all techniques or was regarded to be the most technical of all natural sciences in hierarchical terms, magic was also able to assume such an intermediate position because it was regarded to be the application of intellectual metaphysics and philosophically-based practice, respectively. Giovanni Pico della Mirandola who has been mentioned earlier also shared the same opinion; he referred to magic as the practical—and even noblest—part of natural science, albeit (unlike Bruno) trying to differentiate distinctively between divine miracles and magical practice (*900 Theses*, ed. S.A. Farmer, 1998, p. 494f).

Even though the animation of all things was a common precondition of all theoreticians of magic in the Renaissance era, one must attempt to demonstrate differences between the individual authors, especially when their mutual dependence is apparent (as it is quite clear in the case of Bruno and Ficino). If one pays attention to slight changes in direct or indirect quotations, one can observe that similar terms can assume various meanings. Bruno, for example, inserts his theory of light and shadow in Ficino's Platonic theory of light, and even Ficino uses the obvious phenomenon of the shadow in the light, for example in his commentary on Plato's *Sophist* (ed. M.J.B. Allen, *Icastes*, 1989, 271–277). However, he recognizes that shadows have a fundamentally individual ontological status in comparison with light, and he explains the shadow on the basis of the existence of an obstacle. In this sense, Ficino's cosmology is probably by far more dualistic than Bruno's cosmology, according to which the shadow is a phenomenon of light itself. This also includes Marsilio Ficino's presupposition of a clear hierarchy of ontologically independent levels—for example, divine, human, and demonic actions—so that he can claim that even the images in the innermost being of the human person come from a demonic action insofar they are being produced by a spiritual and demonic being (Allen, p. 273). Ficino considered demons to be a reality, Bruno regarded them as images of reality. D.P. Walker has therefore not included Bruno in his historical account of Renaissance magic (*Spiritual and Demonic Magic from Ficino to Campanella*, 1958).

Thus Bruno repeats Ficino's question about the spiritual effects in the material world, and he gives a similar—and yet, new—answer. His spiritual effects cannot be put on a separate ontological level; rather, they are ultimately found in the one who operates magically. Beginning with the humanistic reverence of the intermediate position of the human being within the cosmos of the spiritual and bodily world, Bruno arrives unmistakably at the central position of the human being as an individual, more specifically: as Bruno, in a world which can only be ordered by himself and by imitating the cosmic order. For he presupposes spiritual forms of various quality which are found exclusively in matter itself, as he explicitly repeats in his treatise *On Ties in General*, referring back to his *De l'infinito* and *De la causa* (OL III 696); he who wants to "bind" needs to observe and know the conditions of matter.

Moreover, he refers back to his earlier London treatise *Sigillus sigillorum* in which he had unfolded the psychology of comprehending natural relations (OL III 694). In the practical aspect (for example, erotic temptation), everything depends on the psychological and emotional capabilities of Bruno's hero; thus his theory of images, albeit not empiricist, is very similar to some psychological trends of the twentieth century. Looking back to the Platonizing theory of magic prior to Bruno, however, one must ask whether there were alternatives to the subjectivist and epistemological access to knowledge and knowledge of the world; these might have searched for a totality of knowledge in an extra-human—and in this sense, objective—intellectuality of reality, that is, in an autonomous all-knowing intellect.

Even though Bruno took on new material with the aforementioned magical treatises and excerpts (*De rerum principiis* and *Medicina lulliana*), the years in Wittenberg and Helmstedt were obviously dedicated to summarizing, editing, and completing his philosophy which he presented in the most comprehensive form in his Frankfurt trilogy. He received a notification from the Frankfurt town hall in July of 1590, telling him to "consume his penny somewhere else," and his residence permit is being revoked. Bruno is given shelter with the Carmelites (Canone ed. 1992, 134) as their monastery was not under the city's jurisdiction; they were used to accept foreign visitors of the book fair. Bruno publishes the following treatises with one of the most powerful publishing houses at that time, Johann Wechel and Petrus Fischer: *The Threefold Minimum and the Measure as Principle of the Three Speculative and Many Active Techniques* (*De triplici minimo et mensura ad trium speculativarum scientiarum et multarum activarum artium principia*), *Monad, Number, and Figure: Sequel to the Five Books on the Smallest, Great and Measure* (*De monade, numero et figura, liber consequens quinque de minimo magno et mensura*), *The Innumerable, the Immense, and that Which is Without Figure, or: The Universe and the Worlds* (*De innumerabilibus, immenso et infigurabili, seu de universo et mundis*). Note that this is the correct order whereas the works were incorrectly arranged in the late nineteenth-century edition of his works.

The Frankfurt trilogy was published in two volumes at the time of the fairs in spring and autumn of 1591; Bruno gave lectures in Zurich in the meantime. For the same reason the foreword to the entire work is contained in the third part, *De immenso*, together with an elaborate dedication and laudatory speech addressed to Henry Julius, Duke of Brunswick-Wolfenbüttel (1564–1613). The author summarizes the intention laid out in his work as follows: *De minimo* contains "the insight into the first principles"; in *De Monade* one will find "the rudiments and traces" of ideas, opinions, and experiences with regard to revelation, faith, and prophesy; *De immenso* presents "the order or nature as comprehensible and incomprehensible" by means of evident, certain, and strong lines of argumentation insofar as they are available in this world. He says that wisdom has a body in the first treatise, a shadow in the

second treatise, and a soul in the third treatise. We must pay attention to the fact that the body is assigned to the "minimum" while the rudiments of knowledge and opinion are being portrayed as shadows, with the natural order as the soul. This seems to be contrary to popular opinion. What is meant is that the "minimum" (e.g., as atom) makes up the substance of everything; monads, numbers, and figures are "shadows of principles," and the natural order has the quality of a soul in terms of the thing as well as in terms of cognition. Accordingly, *De minimo* deals with limits, the smallest, and the greatest—in geometrical terms: lines, angles, and triangles which originate from intersecting circles. *De monade* addresses the substance of things insofar as they are qualitative and quantitative. The topic of the third book *De immenso*, finally, is the visible world in the usual sense, albeit as regards its infinity, elements, etc. (OL I 1, 196–198). The third book by and large repeats the contents of the Italian dialogues on cosmology and metaphysics; the first two books are in direct relation to the mathematical interests of Bruno, claiming a geometric-mathematical justification of cosmology and metaphysics. All three treatises are written in hexameters with comments in prose; the verse parts imitate an archaic Latin, and the form is reminiscent of the basic work on ancient atomism—*De rerum principiis* by Lucretius.

Other Renaissance philosophers, too, have disseminated their knowledge in didactic poems—a few examples are the first scientific description of syphilis by Girolamo Fracastoro and the philosophical poems of Tommaso Campanella. Atomism may mean all sorts of things in the early modern era, especially as scientific discussion since the time of René Descartes and Pierre Gassendi assumed atoms or corpuscles to be the building blocks of the visible world. (Gassendi, by the way, owned a copy of *De monade*: Sturlese 1987, 123.) This scientific hypothesis was more successful in terms of a mechanizing the conception of the world than the scholastic theory of forms and accidents in relation to indefinite matter. Even though Bruno potentially prepares the grounds for these thoughts, it is not his primary intention. On his quest for the universal principle of the totality of the world and the visible and particular things he adopts atomic thinking, focusing it on a theory of the smallest, the minimum, the monad, or the atom. This theory claims from the start to be a universal doctrine, i.e., not only in an empiricist manner, but also metaphysically. Therefore, at least at that time, he considers his major challenge to establish geometry as a science which is able to mediating everything.

As competition for the manual of geometry per se—*Elementa* by Euclid—Bruno presents an ambitious new geometry in the *Theses Against the Mathematicians* written in Prague, as well as in the *Geometrical Lectures* (*Praelectiones geometricae*) which were published only in 1964. It is the task of the historians of mathematics to study this geometry and its foundations. He structures his presentation into axioms, definitions, theorems, etc., but the difference becomes already apparent in the first theorem. Whereas Euclid begins with the definition, "that which has no parts is a point," Bruno opens

with the thesis: "The universe is the maximum. The Whole is greater and perfect. The part is smaller, imperfect, and closer to the measure. The individual is the minimum, neither perfect nor imperfect, and it is the general measure. The limit is not a part; it is indivisible in the negative sense" (OL I 1, 10). With regard to the last term, "limit" (*terminus*), Euclid states as follows: "The limit is that which is the most external of something" (I 13). Bruno begins his *Geometrical Lectures* with the following axiom: "There is one term for one, a similar term for the similar, the same term for the same, an opposite term for the opposite, a reversed term for the reversed" (*Praelectiones* 7). This tautological formula refers on the one hand to the Lullian argumentation of the comparability of terms and levels of being; on the other hand, it refers to the "law of relatives" which Bruno uses during the trial to signify the equality of infinite power and infinite creation by God (Firpo 1993, 300).

The difference consists in the fact that Euclid understands geometry as something that is to be constructed and drawn, developing it from the simplest assumptions to complex constructional directives and proofs. Bruno, on the other hand, starts from fundamental assumptions of metaphysics and epistemology and immediately sets his geometry in the extremes of the Greatest and the Smallest so as to mark out the working field of geometry: the paradoxes contained in the extremes (e.g., the term "limit"), as well as the elementary intellectual processes such as conceptual comparisons. Thus he summarizes Mordente's quantitative and qualitative mathematics (i.e., the mathematics of quantitative units and geometrical figures) as he had already done in his treatise on the compasses (OL I 1, 16). To him, geometry means as much as "figuration": the sensory shaping of abstract terms and the demonstration of universal principles in geometrical figures.

To this end, he constructs three basic geometrical shapes to which numerous other figures are added, mostly as applications or developments of these basic shapes. He calls the first the Figure of the Spirit: it consists of four circles, equal in size, which intersect with the centers of the other three circles. The second is the Figure of the Intellect: it consists of one circle in the center and six other circles, equal in size, surrounding the one in the center and tangential to it. The third shape, called the Figure of Love, consists of four circles, two of which face each other and touch in one central point (OL I 3, 20, 78–80; cf. *De minimo* IV, OL I 3, 277–282). At first glance it seems clear that these three basic shapes produce a host of possible angles, tangents, and secants which can be used to demonstrate numerous geometrical axioms. However, Bruno puts special emphasis on proving that in reality the elementary geometrical figures cannot consist of incommensurable quantities; rather, they can be reduced to simple basic quantities. In a special way, though, he is eager to demonstrate that adding surrounding and touching circles to a central circle (and there can always only be six surrounding circles) results in the basic pattern of the structure of the sensory world. Accordingly, every finite object is basically composed of accumulations of such "spheres." It seems

that these reflections were adopted by Johannes Kepler (1571–1630) in his explanation of the hexagonal structure of snow crystals (*Strena seu de nive sexangula*, 1611) while Joachim Jungius (1587–1657) developed them further in terms of the philosophy of mathematics (Lüthi in *Bruniana et Campanelliana* 4, 1998).

This may seem absurd at first glance, but its philosophical meaning is rooted in Bruno's personal conviction that traditional geometry—insofar it uses compasses and ruler to construct that which it is unable to calculate arithmetically—necessarily gets only inaccurate results. In other words, in terms of measures (and this includes the reality of that which is being portrayed geometrically) geometry is not at all mathematically precise but most inaccurate. There are numerous passages in his treatise where he inveighs against the assumption that the geometrical representation of the world cannot be exact since nature (as it really is) cannot consist of irrational quantities. This is true for the stellar orbit (OL I 1, 186; OL III 469) and all other circulations in nature (OL I 1, 364f), the globe (I 1, 360; cf. DI 442), any kind of local motion (OL I 1, 160 and 189f); furthermore, it is necessarily valid for the movements of the soul (OL I 1, 365 and II, 7, 92 and 260). It is only on the basis of a minimum as the real and mathematical starting point of any calculation and any reality that Bruno regards geometry to be possible, as he states: "Ignorance of the minimum turns the geometers of our time into geameters, and philosophers into philasophers" (earth-measurers into geo-un-measurers, wisdom-lovers into would-be-stupids; OL I 3, 21). Bruno wants to transform the geometry of continuous quantity into a geometry of discrete quantity.

The advantages and disadvantages of this procedure are quite apparent: it needs to remain unclear as to whether "minimum" ought to be understood as a point without quantity, an imaginary object, or rather a material sphere. This and the resulting paradoxes are the subject of *De minimo* and *De monade*. The new mathematician has not made it easy for himself, for his theory contains a mixture of thinking which is mathematically abstract, ontological, and vivid—hard to tell apart. He argues against the century-old doctrine according to which quantities are divisible to infinity, stating in *De minimo* (I 6): It ought to be apparent to everyone that the nature of things could arbitrarily add more and more to a given quantity, and this was valid for numbers as much as it was valid for knowledge or terms, voices or words. If we, therefore, add mass to mass, number to number, then there is no natural end at any point. Bruno describes here totally different forms of augmentation, at the very least, however, qualitative and quantitative growth. But from there he twists the thought and states: Just as we may arbitrarily add anything, we may also always take something away; in taking away "something," however, we reduce by a finite "something" so that according to this vivid concept we must necessarily arrive at an atom or a "smallest," a minimum from which it is impossible to further take something away. Were we able to infinitely reduce, then the adding would be missing its principle. In light of the vast knowledge of literature in-

sinuated by Bruno in these treatises we must not assume that he did not know the difference between logical, metaphysical, and material elements or principles. Consequently, we must assume that he intentionally mingles these different meanings of principle, beginning, origin, element, and—therefore—also minimum, monad, and atom, with the result of identifying them with each other (OL I 3, 150–154).

If one summarizes Bruno's intention in this sentence, "The whole world is based in mathematical structures," and if one reminds of the fact that ever since the era of Galileo, modern mathematically oriented science is based on similar (i.e., Platonic and Pythagorean) sources like the ones used by Bruno, then one could think that Bruno had actively contributed to the modern scientific world view. (It was especially Marsilio Ficino who had distributed these ancient sources in Latin; according to them, the cosmos consists of proportions and the unfolding of numerical relations [cf. Ficino, Opera 1576, p. 386–390, 1451–1453].) On the other hand, the difference could not be greater, for the development of the scientific world view since the seventeenth century is based on the methodical separation of quantitative research and theologically justified metaphysics. Bruno, however, conversely wants to connect these areas indissolubly. Therefore he begins his treatise *De minimo* with the triad God, nature, and reason:

> The spirit above everything is God, the spirit in all things is nature, and the spirit which permeates everything is reason. God prescribes and arranges orderly, nature executes and creates, and reason observes and thinks through. God is the monad as the source of all numbers, the simplicity of every quantity, and the substance of every composition—that which exceeds every moment, everything that is innumerable and beyond measure. Nature is the countable number, the measurable quantity, and the attainable moment. Reason is the counting number, the measuring quantity, and the perceiving moment. (OL I 3, 136)

As was mentioned, he calls the three basic shapes Spirit, Intellect, and Love; so that we may be assured that Bruno has not lost his interest in mnemonics and symbolic representation, he uses verses to summarize the axioms in his *Geometrical Lectures*, providing them with names taken from Greek mythology—Orestes, Pylades, Amyntas, etc. Thus Bruno's geometry is in turn a summary of his philosophical endeavors to grasp the unity of the various intellectual abilities and the variety of the world. Therefore the term "monad"—unity—serves as a cipher for this endeavor itself, that is to say, to be unity itself, to think unity, to find unity, and to multiply it by way of construction. Unity may thus be found on all levels of knowing and thinking and in all objects. The monad guarantees that atomism does not degenerate into an anarchy of immediate points; rather, order generates itself from unity, and this

order binds together the whole construct, defining the particular in its respective place.

It seems that it was while working on his tripartite principal work that Bruno also composed a major mnemonic and cosmological treatise, the *Lantern of the Thirty Statues* (*Lampas triginta statuarum*, OL III) which was not published during his lifetime. He also gave the lecture at Zurich mentioned at the beginning of this chapter, entitled *Lantern on the Descent of Being* which was sent to be printed by one of the students, Raphael Egli; it appeared 1595 under the title *Summa terminorum metaphysicorum* (*Handbook of Metaphysical Terms*) and was reprinted in 1609, with explanations of the philosopher Rudolf Goclenius (also known as Rudolf Göckel; 1547–1628). It is possible that Egli and Bruno met in Frankfurt on the occasion of the book fair, and maybe they already knew each other from the time of Bruno's short stay in Geneva where Egli had been a student. This so-called *Summa* undoubtedly reflects Bruno's philosophy, and his student may have understood him correctly in publishing his notes as a short philosophical encyclopedia, even as *Outline of Metaphysical Terminology*; Bruno had often used conventional and scholastic forms in order to enter the academic world.

Nine

OFF TO VENICE: THE TRIAL OF THE HERETIC

Upon his return to Frankfurt, two Venetian booksellers present Bruno with an invitation from Giovanni Mocenigo, a patrician who was enthusiastic about *De minimo*. He arrives there in the autumn of 1591, but he immediately travels on to Padua, the university of the Venetian territory. Here he meets his student Hieronymus Besler, and he submits his application for a professorship of mathematics which had been vacant for years. For this purpose he composes the aforementioned *Geometrical Lectures* with excerpts from his Frankfurt trilogy. Once again he goes back and forth between the university and the nobility; it is only when his hopes are shattered that he moves into the house of Mocenigo. His host reports him to the Inquisition on May 23, 1592; according to his own statements and Bruno's defense, he was disappointed in Bruno because he did not teach the mysteries of practical magic as he had expected him to do. The philosopher had finally found a patron and admirer—and now he was unable to live up to the reputation which preceded him.

This was the beginning of an inquisitional trial, documentarily and juristically reconstructed by Luigi Firpo (Firpo 1993), which ended after almost eight years with conviction and execution. The documents and procedurals of the process are witnesses of superior philosophical and theological quality combined with endless bureaucracy. The trial at Venice seemed to pass off without serious consequences because Mocenigo's accusations could not be confirmed and the defendant admitted to his philosophical thoughtlessness, showed remorse, and asked for forgiveness (July 30, 1592; Firpo 1993, 195f). As was customary, the proceedings were reported to Rome; the Roman Inquisition, however, recalled Bruno's earlier case during the 1570s and sought to take the trial into their own hands. After some diplomatic tug-of-war—Venice was concerned about its independence (and this might have caused the excommunicated emigrant to think himself safe)—the defendant was extradited, and he arrived in Rome in February of 1593. Perhaps here, too, the trial would have led to a short prison sentence which corresponded to the legal position at Venice, had the Capuchin friar Celestino da Verona not accused Bruno once again of heresy all of the sudden (cf. Firpo 1993, 47f); these accusations were passed on from Venice to Rome. (Celestino had been a fellow prisoner of Bruno in Venice, and he was executed as a heretic in 1599.) The trial was reopened, particularly as Mocenigo added some accusations as well. At the beginning of 1594 the usual phase of review of the process began, and the wit-

nesses and the defendant were once again interrogated in Venice and in Rome.

Now Bruno's treatises were to be examined, and this dragged on until the end of 1597, including the procuring of rare prints, reports, and interrogations. In the meantime, Bruno's file had become so extensive that a summary was ordered at the beginning of 1598 (Mercati 1942, Firpo 1993, 247f), and this meant a further waiting period for the prisoner. Historians regard this summary as one of the few documents of the Roman part of the trial since the original documents have been lost, probably during the deportation of the Vatican Secret Archives to Paris by Napoleon Bonaparte at the beginning of the nineteenth century. One of the most famous authorities of the inquisitional tribunal, the Holy Office, was the Jesuit Cardinal Robert Bellarmine who was a theological advisor of Pope Clement VIII since January 1597 and who had recently published a multi-volume treatise on the disputes between Catholics and Protestants (*Disputationes de Controversiis*). In January of 1599 he reduced the accusations against Bruno to eight theses in order to shorten the trial; the verdict was made dependent on either recanting or defending these theses (Firpo 1993, 312f). Bruno seemed to have responded positively to this (Firpo 1993, 317 and 324f). Nonetheless the trial was not over, for there were other errors to be treated. Since these open questions were neither admitted by Bruno nor adequately supported from a legal point of view as they were based on statements made by other heretics (such as Celestino), the Cardinals of the Inquisition suggested torture. Clement VIII, however, already considered the defendant to be guilty because of the admitted charges; thus he ordered the usual time of re-consideration that was normally granted in the context of these trials, i.e., four weeks (Firpo 1993, 328f).

There is no other evidence, by the way, to support the thesis that Bruno was tortured, but there is proof of the fact that he was allowed the basic necessities such as cloak, writing utensils, and glasses. When he asked for a knife (to sharpen the quills) and compasses, his request was denied—as was probably customary in prisons (Firpo 1993, 324). He might have used the compasses to represent his atomistic geometry or the Copernican planetary system.

At any rate, during the last phase of the trial, the prisoner presents the Pope with a letter, together with the declaration of his intention to submit to the Church (September 16, 1599; Firpo 1993, 331). Surprisingly, however, he states on December 21, 1599, that there was "nothing to reconsider and he was not aware of anything for him to think about"; thereupon two superiors of the Dominicans were sent to him in order to persuade him (Firpo 1993, 333). Apparently he now claimed never to have written anything heretical; rather, he was being misunderstood, and thus he was ready to give an account as regards all his treatises and to defend them in the face of any theologian—though he was not accountable to them but only to the Apostolic See and the ecclesial decrees (Firpo 1993, 338). Bruno had acknowledged the eight theses

to be heretical at first, but since he faced more accusations, he probably moved his defense at this point to the principle "nulla poena sine lege" (no punishment when there is no law). Already in February of 1599 he had reacted to the eight theses with the question as to whether these were doctrines that had been declared to be heretical only recently, or if these had already been declared and condemned as such by the Fathers of the Church, the Catholic Church, and the Apostolic See. If the latter was the case, then he was ready to recant (Firpo 1993, 315). With this, he called the canonical competence of the inquisitors into question, and this was interpreted as persisting on his errors. At any rate, the Pope ordered the trial to be ended and to hand the heretic over to the worldly jurisdiction (Firpo 1993, 338).

The Inquisition, unlike secular jurisdiction, did not punish past offenses or the expression of heretical doctrines that had been made earlier but rather the persistence on these doctrines during the trial. Thus the recantation was of such great significance, even though such recantation meant the prohibition of earlier publications and a "muzzle" for the future. The verdict of February 8, 1600, therefore repeats five times and in conclusion that the defendant remained in his heresy "without remorse, obstinately, and hardened" (*heretico impenitente, pertinace et ostinato*) and was thus to be handed over to the worldly jurisdiction (Firpo 1993, 341f). On February 17, 1600, Bruno was burned alive at the stake on Campo de' Fiori in Rome. Thus far the legal aspect of the trial.

As regards their content, the case files are not only one of the most important sources of Bruno's life, they also contain numerous quotations and references to his philosophy, so much so that one almost might be able to reconstruct it, had the original treatises all been lost. However, so as to understand the thought processes of the inquisitors it is not so much important what kind of accusations the informers brought forward against which Bruno had to defend himself. It is much more interesting to see how the trial is structured in terms of topics in the official summary (Mercati 1942). The approximately thirty topics contain disciplinary questions such as the obligation to abstain from meat on Fridays, celibacy, or reading prohibited books (Firpo 1993, 291, 288, 292); they also contain a large amount of dogmatic questions such as the doctrine about sin or the veneration of saints and relics (Firpo 1993, 263 and 277f). It begins, however, with Bruno's relation to Church and the doctrine about God.

It is reported that in the context of a play, he had to recite a verse written by Ludovico Ariosto: "D'ogni legge nemico e d'ogni fede" (Hostile to any law and any faith; *Orlando furioso* [*The Frenzy of Orlando*] 28, 99; Firpo 1993, 249–252). Mocenigo, on the other hand, reports that Bruno had appraised Pope Clement VIII (who had been elected only in January of 1592) to be a "sophisticated man" (*galant'uomo*) which is correct insofar as Clement had appointed great scholars to be Cardinals, such as Robert Bellarmine or the historian Cesare Baronio; in a special way, however, "the Pope supports the

philosophers, and thus I may hope to be supported as well, just like the philosopher Patrizi who believes in nothing" (Firpo 1993, 248). In fact, Francesco Patrizi (1529–1597), whom Bruno had insulted as "lousy pedant" in *De la causa* (DI 260), had become professor of Platonic philosophy at the Sapienza University of Rome in 1592. It is possible that Bruno misjudged the philosophical tolerance of the Pope, and—what was even more fatal—that he did so towards the end of the trial. At the same time, however, these chapters of the trial state that Bruno planned on founding his own sect, or to have already done so in Germany—the Giordanists (Firpo 1993, 248–253, 294). The defendant denied this, and the inquisitors apparently did not come back to this charge again. One the one hand, Bruno constantly demanded a general reformation, especially in *Spaccio*; on the other hand, it was apparent that his relation to philosophical theology was thoroughly elitist so that it is doubtful that he actually wanted to set himself up to become the leader of a vast movement. He saw his role in proclaiming philosophical and theological truth—hardly in practicing of a religion to which he granted a relative function—even during the trial—according to times and regions, unlike philosophy (Firpo 1993, 278). He could assert in good conscience that he had nothing to do with Catholic Dogmatic Theology, for "philosophy is my profession" (Spampanato 1933, 720).

His attitude towards Trinitarian doctrine, his conception of God, and his view of the Incarnation were of utmost theological significance; this had already been addressed at the earlier trials in Naples, together with his relation to the veneration of the saints. As mentioned, in this case he differentiated especially between the philosophical and theological interpretation, but this could not save him as he himself did not really believe in a "double truth." He agreed with the ecclesiastical authorities that philosophy (if conceived to be a philosophical doctrine about God) could not remain without conflict as regards the theology of revelation and the institutions administering it.

Since the philosophical treatises were censored on the basis of the present statements and defense, the list of topics on which the defendant was interrogated is an indication of the intentions of the inquisitors:

- First, he is being asked about the creation of things; these were eternal—as he now says—insofar as they were created by the eternal God; he repeats his doctrine of the equality of the creative potentiality of God and the world created by him, for "if one assumes a finite effect, one can impossibly ascribe it to an infinite cause" (Firpo 1993, 229).
- Secondly, he continues to deny the difference of active and passive potentiality between God and creation; the denial of this relation ("la legge irrefragabile delli relativi") resulted in heretical doctrines, for if one agrees to such "unbalanced elements of relation" and "as-

sumes that God had caused finite effects, one can only presuppose a limited cause and power" (Firpo 1993, 299f).

- Thirdly, the human soul was created by the universal principle and would return to it in that the created spirit was created by the uncreated spirit, and the individual spirit was created anew by the created spirit (Firpo 1993, 300).
- Fourthly, accordingly there was nothing new in this world in a certain sense (see above p. 80), even though the human soul remained an individual soul after being separated from the body, while the souls of animals did not cease to exist but rather returned into the one spirit (Firpo 1993, 301f)
- Fifthly, in justifying the planetary motion of the earth, he interprets the biblical quotation "The sun rises and the sun goes down" (Eccl 1:5) not in favor of the traditional Ptolemaic solar system but rather as proof (and quite correctly so, according to the biblical context) that the created world changes constantly (Firpo 1993, 302).
- Sixthly, he justifies the claim that the stars were angels with the famous sentence that the heavens proclaim the glory of God (Ps 19 [18]:1)—a metaphor of creation as a whole referring to its creator (Firpo 1993, 303).
- Seventhly, he has a biblical verse ready to hand to support the claim that the earth was a rationally animated living organism—Gen 1:24: "Let the earth bring forth all kinds of living creatures [literally: Let the earth produce living soul]," omitting the postscript "according to its kind" (*Producat terra animam viventem in genere suo*); thus the creation of the various living beings is now interpreted in the sense that the world soul emerges from earthly matter (Firpo 1993, 303).
- Eighthly, Bruno is reported to have claimed that the intellectual soul was not the form of the human body; in doing so, he used the image of the soul wandering among the bodies, saying that "the internal human being lived in the external human being as a prisoner was captured in prison" (Firpo 1993, 304).
- The ninth thesis repeats the reference to Salomon according to which the finite things under the sun were nothing but "vanitas" (Firpo 1993, 304).
- The tenth and last point is the doctrine of the multiplicity of worlds; the author of the *Sommario* merely refers to "wild statements" (Firpo 1993, 304).

Had it not been a matter of life and death to the defendant, one could notice that his adversaries were not incompetent and had recognized central concerns of his philosophy.

Bruno was convicted on the basis of the eight heretical theses compiled by Bellarmine; however, we do not know the exact wording of these except

for two which Bruno had been asked to clarify on August 24, 1599; these are the first thesis regarding the Novatianist heresy and the seventh thesis in which the soul is being compared to the helmsman of a ship (Firpo 1993, 324f). The erroneous doctrine of the Novatianists from the third century consisted in denying the Church's authority to reaccept sinners, amounting to rejecting the Sacrament of Penance. Bellarmine accused the Calvinists and Lutherans in his *Disputationes de Controversiis* (I 4, l. c. 9) of repeating exactly this mistake. It is astonishing that this accusation came to fruition: the accused Bruno had already been questioned in Venice as to his relation to this sacrament, but he had said that he had occasionally gone to confession, and he had emphasized that he believed that "unrepentant sinners are condemned and go to hell" (Firpo 1993, 176). The author of the *Sommario* has also paraphrased this statement without comment. The Sacrament of Penance was not on the list against which the published works were being examined. However, the suspicion of Novatianism may indirectly be related to the other uncertainty, namely the doctrine of the soul.

Among the queries on the basis of the censorship of his treatises were two questions about his doctrine of the soul. Bruno had used the comparison of the body as the prison of the soul (Firpo 1993, 304), and Bellarmine traces it back to the Platonists and Origen (*De Controversiis* III 2, l. 4 c. 11). The error consists in seeing the soul not as a form of the human being but independent from it; accordingly, birth would be punishment for souls which had existed prior to the connection with the body. Hence, the doctrine of Original Sin (in which context Bellarmine reports about the problem) and redemption, but also the possibility of penance would be at stake. Bruno's comparison of the soul to the helmsman of a ship (see may possibly go even further, for the Origenists also assumed the individual creation of the souls from nothing; Bruno's comparison, however, tends to connect the soul of the individual with the world soul which is thus the manifestation of divinity, eternal, and transindividual. Bellarmine certainly needed clarification as to whether Bruno was able to accept within the framework of such a doctrine that the individual sinner remains personally responsible.

Bellarmine's joining the body of inquisitors was fatal for the philosopher possibly insofar as two high-ranking thinkers had to compete with each other. Bruno's query as to the status of the erroneous doctrines—whether they were new or traditional—was probably based on the self-awareness that he, the philosopher from Nola, proclaimed a completely new philosophy which could therefore not be affected by old condemnations and anathemas. Thus he did not hesitate to recant the eight false doctrines, refuting them at the same time: heretical, yes, but he never held them. On the other hand, Bruno had always promised that he wanted to revive an ancient wisdom which had been forgotten in the darkness of the times. As regards this train of thought, however, he was very close to the Cardinal, for the special accomplishment of Bellarmine's manual of controversies consisted in historicizing the present heresies

of Protestantism: Calvinists, Lutherans, and others merely taught repetitions of ancient errors which had long been anathematized. The theologian of the Catholic Counter-Reformation was conservative insofar as he wanted to save the status quo of dissociation form theological errors in making plausible that the Reformation had nothing new to offer. Applied to Bruno's philosophy, this could mean: maybe new, but nonetheless old and just as wrong. Bruno's insistence on his originality thus changed into canonically decisive obstinacy.

Ten

AFTERLIFE: FROM HERETIC TO HERMETICIST

On the very day of Bruno's execution, February 17, 1600, the philologist, polemic, and publicist Caspar Schoppe (1576–1649) who had converted from Lutheranism to Catholicism only two years prior to Bruno's execution (1598) and who had been living in Rome during that time wrote a letter to his teacher and friend, Conrad Rittershausen in Altdorf near Nuremberg. In this letter, he reported about the dramatic event, and according to this letter, he had been an eye- and earwitness of both the pronouncement of judgment on February 8 and the actual burning. He unmistakably paraphrases the formal pronunciation which contained the most important phases of the heretic's life as well as the various accusations made against him. The zealous Schoppe summarizes Bruno's heresy as follows: "He has propagated whatever has been claimed by pagan philosophers or our ancient and modern heretics" (Firpo 1993, 351). Schoppe also reports about Bruno's famous dictum after the verdict: "You pronounce the verdict against me probably with greater fear than I accept it!" (Firpo 1993, 351) And the letter also contains the observation that Bruno turned away from the crucifix held up before him at the stake. Thus Schoppe provides the most important elements of the narrative about the philosopher's death as a martyr as it can be found in dramas and novels written in the twentieth century. His actual intention was to convince his friend that this was "the manner in which we deal with these human beings, nay monsters" (Firpo 1993, 352), but this intention was mostly lost in the further process of reception. He wanted to assure Rittershausen that Lutherans were warmly welcomed in Rome and had nothing to fear because they did not spread such false doctrines as Bruno had done. Thus the eyewitness makes Bruno a heretic within the Catholic Church and explicitly sets him apart from the Reformation. This may also be an indication that the eight theses which have been quoted did not contain any explicit accusations of sympathizing with Lutherans or Calvinists, even though in the course of the trial there had been a constant interest in the activities of the defendant in the Protestant countries.

The report of the eyewitness proved to be quite convenient for many purposes, for its first printing was done by a Calvinist, Peter Alvinczi, in 1621. This was done to pillory the cruelty of the Roman Inquisition (*Salvestrini* 1958, No. 296).

The further fate of Bruno's philosophy can be gleaned from the distribution of the original works by the philosopher from Nola among the various European libraries. Rita Sturlese has compiled a critical inventory, since some

printings are very rare. There is also the fact—analyzed by Giovanni Aquilecchia (see his introductions to the Italian treatises)—that Bruno developed a habit of editing his texts repeatedly during printing so that there are various versions of some treatises. The list of temporary owners of first editions reflects the interest group—from circles of dissidents and bibliophiles to specialists on philosophy, and finally the public libraries. The underlying factor for this are changing interests of reception.

Saverio Ricci has divided Bruno's heritage until 1750 into the following strands: Lullism, new science, speculation on infinity, Spinozism, and Freethought. In 1598, while the philosopher from Nola was in prison in Rome, Johann Heinrich Alsted together with the printer Lazarus Zetzner in Strasbourg , published a great collection of the works by Raymond Lull and the most significant commentaries on Lullism, among them also some treatises by Bruno. Since then Bruno's mnemonics was a basic component of all attempts made in the seventeenth century to set up a universal science on the basis of a theory of combinations interpreted in terms of Neo-Platonism—until Gottfried Wilhelm Leibniz who considered him to be intelligent but not very profound (Ricci 265). It was also Leibniz who was one of the first to assume similarities between Bruno's theory of the infinite and the Cartesian theory of vortices in an undetermined and infinite universe; Leibniz had had the opportunity to read these treatises in his capacity as librarian of the Herzog August Library in Wolfenbüttel (Ricci 172).

Bruno seemed to be an anti-Aristotelian at first in scientific circles, for example in the Northumberland Circle led by Henry Percy, Earl of Northumberland. Some direct or indirect witnesses of Bruno's appearance in London around the beginning of the seventeenth century belonged to this group. Especially the magnetism theory of William Gilbert apparently was influenced by Bruno's Italian dialogues on cosmology and metaphysics. For in all parts of Europe alternatives to the scholastic and metaphysical concept of nature were sought; consequently, the same sources which had inspired Bruno were being incorporated and amalgamated, such as atomism, Stoicism, and the most various forms of Platonism and esoteric lore. Famous philosophers such as Thomas Hobbes, René Descartes, John Locke, and finally Isaac Newton emerged successfully from these contradicting trends.

In connection to the cruel fate of the philosopher and the reports about his provocative appearance throughout Europe, Bruno assumed the role of the dissident par excellence in the course of time. Pierre Bayle devoted an article to Bruno in his *Dictionnaire historique et critique* (1st ed. 1697), calling him a "knight errant of his philosophy" and comparing him to Spinoza for the first time. For even though Benedict (Baruch) Spinoza (1632–1677) most likely did not know Bruno's writings, he nonetheless took the Animism of the philosophy of the Renaissance and the dualism between matter and spirit as occurring in Cartesian thought, coming to a similar conclusion as Bruno's physics of unity—monistic metaphysics in which all finite things are nothing but

attributes of the infinite God. According to Bayle the difference between Bruno and Spinoza merely consisted in the former arguing rhetorically (i.e., including mnemonics) while the latter argued geometrically, i.e., strictly deductively. However, it was apparent that Bruno experimented with the geometrical method as well.

Both authors had implicitly criticized religion of revelation; for this reason, the British philosopher John Toland (1670–1722) was particularly interested in Bruno's *Spaccio* which was interpreted as unambiguous polemics against the Pope of Rome, not least since Schoppe's report on the verdict of the Inquisition. Toland was regarded to be a freethinker because of his attempts to explain Christian theology in a rationalist way. Thus a discussion emerged about the legal and religious causes of the execution of the heretic, and this discussion is explicitly described by Johann Jakob Brucker (1696–1770) in his work on the history of philosophy (*Historia critica philosophiae*, 1744, IV 2 p. 12f). This was to become a standard work for a long time, and Bruno was listed as the first important philosopher after the Renaissance and as the representative of a new eclecticism.

In the meantime, Spinozism had become the battle cry against any kind of religiously unreliable thinkers even though some of those using it probably only had second-hand knowledge of the sources. In 1789, therefore, Friedrich Heinrich Jacobi (1743–1819) published excerpts from Bruno's *De la causa* in German in a treatise entitled *On the Doctrine of Spinoza, in Letters to Mendelssohn*. It was Jacobi's intention to prove, with the help of Bruno, that Gotthold Ephraim Lessing (1729–1781) was a Spinozist and thus a pantheist. All three of them, allegedly, made attempts—incompatible with the Christian religion—to prove the unity of God, world, and human beings in a rational way.

Bruno now became the touchstone of a cultural-philosophical discussion within German Protestant Enlightenment, including participants such as Herder and Goethe. There was also the fact that Bruno broadly referred to Egyptian wisdom as well; Lessing, too, was impressed by it, and thus chose the formula "Hen kai Pan" (One Therefore All)—allegedly originating from Hermes Trismegistos—as his motto. This matched the formula "Deus sive Natura" used by Bruno as well as Spinoza (God Therefore Nature—*kai* and *sive* mean exchangeability; Jan Assmann, *Moses the Egyptian: The Memory of Egypt in Western Monotheism*, 1997, 193). Thus Jacobi specifically chose those passages in *De la causa* for his translation where Bruno almost identifies matter with form; Jacobi wrote the following ending to Bruno's text: "For the glorification of the infinite being which is cause, principle—one and all." Following in Jacobi's footsteps (and using copies stemming from his property), Thaddäus Anselm Rixner and Thaddäus Siber dedicated Volume 5 of their *Leben und Lehrmeinungen berühmter Physiker* [*Life and Doctrines of Renowned Physicists*] (1824) to the philosopher from Nola, with further excerpts in translation.

Friedrich Wilhelm Joseph Schelling (1775–1854) paved the way for Bruno's return to one of the philosophical mainstreams—German Idealism. In 1802, Schelling published the dialogue *Bruno, or On the Divine and Natural Principle of Things* as contribution to his philosophy of identity in order to present pantheism as a preliminary phase of the development of thinking the "One"; this phase is overcome by the thought of identity. Thus, Schelling has Bruno quote from Jacobi's excerpt: "In order to penetrate the deepest mysteries of nature one must not grow tired of examining the opposite, conflicting, outermost parts of the things; it is not the greatest to find the point of convergence, but rather, the true and deepest mystery of this art is developing the opposite from this point of convergence as well." The author describes this as "the symbol of true philosophy" (*Werke* I 4, 1859, 328). Bruno's image now shifts from the heretic, Lullist, dissident, and pantheist towards the dialectician of the congruence of opposites. In a letter to Johann Gottfried Herder (1744–1803) written on November 18, 1782, Johann Georg Hamann (1730–1788) had already referred to Bruno's principle of coinciding opposites as "worth more than all Kantian critique." Hamann owned *De minimo* and had long been looking for a copy of *De la causa* (J. Nadler, *Hamann*, 1949, 408f). Georg Wilhelm Friedrich Hegel still recognizes some Spinozist body of thought in Bruno's treatises; however, he calls the main character of his works "a beautiful enthusiasm of self-awareness" which sought to overcome the trivialization of the concept of God according to traditional philosophy. As an example he depicted scholastic notions of God as creator with these words: "The benevolence of God was merely external in the final causes or purposes … [so as to say:] the cork tree grows so that we have stoppers to seal the bottles." Hegel was the first to appreciate Bruno's mnemonics as "system of thought determinations," extensively quoting from *De umbris* which he acknowledges as "an attempt to present the logical system of the inner artist—the producing thought—in such a way that the forms of the exterior nature correspond to it" (*Lectures on the History of Philosophy* II 3 B 3).

Franz Jacob Clemens, Catholic and Neo-Scholastic professor of philosophy in Bonn and Münster, was the first to investigate the source of Bruno's doctrine of coincidence, systematically comparing it in his book *Giordano Bruno und Nikolaus von Cusa* (*Giordano Bruno and Nicholas of Cusa*; 1847). An expert and critic of Hegelianism, he categorized the philosopher from Nola under the philosophy of subjectivity which had its beginnings with Descartes. In terms of morals, Clemens identified the philosophy of subjectivity with arrogance; in terms of theology, it meant agnosticism. Nicholas of Cusa, on the other hand, was the representative of the traditional scholastic doctrine of God and—simultaneously—its peak. Clemens barely hides the fact that he is kicking the "dog" Bruno in order to mean the "master"—German Idealism and its effects in modernistic theology.

In the meantime, the 'Hegelian' Bruno continued to make a career for himself: in his book *The Philosophical Worldview of the Reformation Era in*

Its Relations to the Present (1847), Moritz Carrière, one of Hegel's last students, equated Giordano Bruno and the dark and unsystematic mystic Jakob Böhme (1575–1624)—albeit not the first in doing so, but with lasting effect. In the same year, 1847, Christian Bartholmèss, a scholar at Strasbourg, published the first modern scientific biography on Giordano Bruno (*Jordano Bruno*, Paris 1846–1847); this biography sheds a better light on Bruno's time in Paris in particular.

After Bruno's Italian and Latin treatises had been critically collected and edited for the first time by the German scholars Adolf Wagner and August Friedrich Gfrörer in 1830 and 1836, the time had come for the Italian culture, too, to remember the Italian thinker. This was done particularly in Naples in the middle of the nineteenth century, by philosophers influenced by Hegel such as Bertrando Spaventa, Benedetto Croce, and—later—Giovanni Gentile. Each worked in his own way towards elevating Hegelianism to the level of Italian national philosophy, presenting Giordano Bruno as the Italian precursor to the German Hegel while at the same time outlining specific national character traits of thinking. This influenced the Italian Renaissance research until the pioneering works of Eugenio Garin in the 1940s (among others *Storia della filosofia italiana*, 1947; *History of Italian Philosophy*, Amsterdam: Rodopi, 2008). Francesco Fiorentino as well belonged to the group of Neapolitan scholars; when the literary critic Francesco De Sanctis was Minister of Education and the Arts, Fiorentino presented the first volume of a Latin edition of Bruno's works subsidized by the government. Since then, this edition with all its conceptual and philological weaknesses has been replaced only in part.

For the most part the thinker eked out an existence between diffuse occultism and anticlericalism, or as personal tip among a few experts. He was seen as a martyr of intellectual freedom, even though the expert on his trial, Luigi Firpo, maintained that he may have been a victim of intolerance "which, however, one can only understand within the historical framework" (Firpo 1993, 114). What was not taken into consideration anymore was the paradox that Bruno's case had nurtured the discussion about tolerance and freedom of the intellect since the era of Enlightenment, because he had claimed it for himself; and yet, as a polemicist he did not set an example of tolerance himself. In 1889, accompanied by journalistic polemics and at the peak of a proverbial "Brunomania," anticlerical groups erected a monument in Campo de' Fiori where there had been no more burnings of heretics for a long time. In an inscription on a plaque, these anticlerical groups called themselves "the century which he had envisioned."

It was in that same spirit that Eugen Diederichs published a six-volume German edition (*Gesammelte Werke*) in 1904–1909, translated by Ludwig Kuhlenbeck; this publishing house showed various esoteric or mystic tendencies. Both Diederichs and Kuhlenbeck sympathized with the *Monistenbund* (*Monist League*), a fellowship of freethinkers founded by Ernst Haeckel in

1905, which itself emerged from the *Giordano-Bruno-Bund* (*Giordano Bruno League*), founded in 1900. This edition contains only the Italian dialogues, apart from the documents of the Inquisition, and it is still the only German translation of some texts.

Under the impression of the cultural-philosophical program of Aby Warburg, Ernst Cassirer regarded Bruno as the witness of a new "world feeling" (*Weltgefühl*) when he published his book on *Individual and Cosmos in the Philosophy of the Renaissance* (1927) in which he passed from Neo-Kantianism to his own philosophy of symbolic forms. According to Cassirer, Bruno had turned away from medieval cosmological dogmatic, however, without understanding the infinite in the sense of exact sciences. Bruno's key function consisted in his "new dynamic concept of the world" preparing the "science of dynamic."

Hans Blumenberg, too, interpreted Bruno's philosophy to be the beginning of the modern era in reiterating the comparison of "Cusan and Nolan"; to him, these two figures marked the "epochal threshold." What Hegel had understood to be self-awareness, and what Cassirer thought was world feeling, Blumenberg transformed into a historical-philosophical indication of "self-assertion" of the modern human being by means of abolishing the difference between divine omnipotence and potentially infinite cognitive ability (*Die Legitimität der Neuzeit* [*The Legitimacy of the Modern Age*] 1966).

There had been no new Bruno edition in Germany since the translation of *De la causa* by Adolf Lasson in 1872 and the Kuhlenbeck edition until 1947 when Ernesto Grassi, a student of Gentile who worked in Germany, published an anthology entitled *Heroische Leidenschaften und individuelles Leben* (*Heroic Passions and Individual Life*). He suggested a humanistic philosophy interpreted by existential philosophy, delimiting it from the dominating trends of Cartesian rationalism but also Heidegger's existentialism. In this context, he used the hero of Bruno as a model of anthropology in which poets and philosophers carry out the human intellectual potential and continue the tradition of the history of ideas.

The publication of *Giordano Bruno and the Hermetic Tradition* by Frances A. Yates in 1964 (after some preparatory work) marked a decisive turning point in Bruno research. Yates was a British independent scholar who had connections to the Warburg Institute in London. She reconstructed the sources and the circles in which Bruno had moved without any respect of scientific disciplines and terminological limits. Her conclusion was that Hermeticism and magic had been the essential elements of his thought. To this end, she reconstructed the reception of the writings ascribed to Hermes Trismegistus, especially in the Renaissance era, as well as the techniques and literature of mnemonics (*The Art of Memory*, Yates 1966). At one point she summarized her interpretation as follows: "Bruno conveys a remarkable vision of an infinite universe in which the earth and all the heavenly bodies move through the divine life which is in them. This concept of universal ani-

mation Bruno found in the Hermetic writings, which he attributed to 'Hermes Trismegistus'. Expanding it to cover an infinite universe and innumerable worlds, Bruno arrived at a world view which is a curious foreshadowing, in magical and animistic terms, of the mechanical world view. The *Ash Wednesday Supper* is the text in which Bruno most fully presents his Hermetic universe, a concept which is indissolubly connected in his mind with his Hermetic religious reform." (Yates 1983, 148f). Thus she made all varieties of Renaissance occultism acceptable.

There has been a lot of polemics against this kind of interpretation, but even more so the hints were accepted and processed further so that presently several aspects can be combined and presented in the figure of Bruno—the magician, the heretic, the Copernican thinker and the proponent of mnemonics, the precursor of subjectivist philosophy, as well as the heir of medieval scholasticism. Yates' interpretation is a syncretism of theories. Thus it is congenial and useful to the history of philosophy insofar as it represents to scale the all-embracing gestures with which Bruno utilizes his sources for his own philosophy—in spite of intentional lack of conceptual clarity in terms of terminology and the differentiation of philosophical problems and trends. The exact interpretation of Bruno's way to appropriate the philosophical strains that were available to him at that time permits access to the Renaissance way of thinking. We don't need to project our philosophical problems into the Renaissance, just to find them to be insufficiently answered; rather, we discover those philosophical problems which philosophers like Giordano Bruno attempted to answer.

CHRONOLOGY

1548; ca. January/February: born in Nola, east of Naples; baptismal name Filippo; Giovanni Bruno, his father, was in the military; his mother was Fraulissa Savolino.
1562; Studying the humanistic subjects attending public and private lectures at Naples.
1565; June 15: Joins the Order of the Dominicans at San Domenico Maggiore, Naples. Assumes the name Giordano.
1566–1570; Studies of philosophy as a Dominican friar.
1566/1567; Criticism of Marian devotions and the veneration of images of Saints leads to a first conflict with the Order.
1570–1575; Studies of theology.
1573; Ordination to the priesthood; first mass in Campagna near Salerno.
1575; Completion of studies with a defense of the *Summa contra gentiles* of Thomas Aquinas and the *Sentences* of Peter Lombard.
1576; February: Suspected of heresy regarding the Incarnation and Arianism and due to reading Patristic literature according to the edition of Erasmus of Rotterdam. Trip to Rome. Leaving the Dominican Order, flight to Genoa and Noli/Liguria; private lectures on astronomy.
1577; Noli, Savona, Turin, Venice (publication of the—lost—treatise *De segni de tempi*), Padua, Brescia, Bergamo; he often stayed with Dominicans.
1578; Milan; on the way to Lyon, spent the winter in Chambéry/ Savoy.
1579; Geneva: Worked in a printing house; converted to Calvinism; university registration on May 20. Consistory proceedings because of a philosophical polemic treatise (which is lost); continued the journey to Lyon, arrived at Toulouse in the autumn. Private lectures on astronomy; degree of *magister artium*; associate professor of philosophy; lectures on Aristotle's *De anima* among others.
1581; Due to the French Wars of Religion he went to Paris in the autumn. Private lectures on the *Attributes of God*, attracting King Henry III's attention as regards his mnemonics.
1582; *De umbris idearum* with *Ars memoriae*; *Cantus Circaeus*; *De compendiosa architectura & complemento artis Lullij*; *Candelaio* (comedy).
1583; April: Arrival in London with a recommendation of the king to the French ambassador Michel de Castelnau. Disputations at Oxford. Return to Castelnau in London; friendship with intellectuals associated with the court. *Recens et completa ars reminiscendi*, *Explicatio triginta sigillorum* and *Sigillus sigillorum*.
1584; *La cena de le Ceneri*; *De la causa, principio et Uno*; *De l'infinito, universo et mondi*; *Spaccio de la bestia trionfante*.

1585; *Cabala del cavallo pegaseo con l'aggiunta dell'Asino Cillenico*; *De gl'heroici furori*. Return to Paris, together with Castelnau. Attempt to come back to the Catholic Church.

1586; *Figuratio Aristotelici Physici auditus*; *Dialoghi duo de Fabricii Mordentis Salernitani prope divina adinventione ad perfectam cosmimetriae praxim*; *Idiota triumphans seu de Mordentio inter geometras Deo dialogus*; *Dialogus de somnii interpretatione seu Geometrica silva*; polemics with Fabrizio Mordente. *Centum et viginti articuli de natura et mundo adversus peripateticos*, intended for a public disputation at the Collège de Cambrai. Escape to Germany: Mainz, Wiesbaden, Marburg. July: Refusal of a teaching license. August: Registration in Wittenberg, private lecturer, among others lectures on Aritotle's *Logic*.

1587; *De lampade combinatorial lulliana*; *De progressu et lampade venatoria logicorum*; *Artificium perorandi* (published 1612). Production of *Animadversiones circa lampadem Lullianam* and *Lampas triginta statuarum*; *Libri physicorum Aristotelis explanati* (published 1890/1891).

1588; *Camoeracensis Acrotismus*, reprint of the theses presented at the Collège de Cambrai in 1586. Leaving Wittenberg due to increasing influence of Calvinists (*Oratio valedictoria*); arrival in Prague in the spring. *De specierum scrutinio et lampade combinatoria*; *Articuli adversus huius tempestatis mathematicos atque philosophos*. November: Tübingen; later: Helmstedt.

1589; *Oratio consolatoria* on the occasion of the death of Julius, Duke of Brunswick. Treatises and excerpts (published 1891): *De magia*, *Theses de magia*, *De magia mathematica*, *De rerum principiis et elementis et causis*; *Medicina lulliana*; *De vinculis in genere*. Protest against the excommunication by the local pastor.

1590; In April: Departure from Helmstedt en route to Frankfurt; residence permit was not granted.

1591; Frankfurt trilogy *De triplici minimo et mensura* (printed on the occasion of the spring fair), *De monade numero et figura* and *De innumerabilibus, immenso et infigurabili* (on the occasion of the autumn fair), published by Johann Wechel and Petrus Fischer, dedicated to Henry Julius, Duke of Brunswick. Private lectures in Zurich, entitled "Lampas de Entis descensu," published in excerpts 1595 and expanded in 1609 under the title *Summa terminorum metaphysicorum* by Raphael Egli. Again in Frankfurt: *De imaginum, signorum et idearum compositione*.—August: Arrival in Venice due to an invitation by Giovanni Mocenigo.—September: Efforts to acquire the vacant Chair of Mathematics at the University of Padua: *Praelectiones geometricae* and *Ars deformationum* (published 1964). Return to Mocenigo in Venice.

1592; May 23: Giovanni Mocenigo informs the Inquisition on the case of Bruno.

1593; February: Extradition to the Holy Office in Rome.

1600; February 8: Bruno is sentenced as a heretic; on February 17, he is being burned at the stake on Campo de' Fiori.

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Abbreviations:
DI = Bruno 1958. *Dialoghi italiani*
OL = Bruno 1879–1891. *Opera latine conscripta*

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