

The Method to Science

(1696)

PREFACE, BOOKS I-III, AND APPENDIX

BY JOHN SERGEANT (1622-1707)

ED. BY JONATHAN VAJDA

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Editor's Preface to *The Method to Science*

This work is part of a larger effort for making John Sergeant's philosophical and theological texts available in full, electronically. My hope is that this edition becomes a resource that spurs on scholarship of lesser-known figures in the Early Modern period. By editing and making this text available, I do not intend to endorse John Sergeant's philosophy or theology expressed below.

In this edition of the text, my intent was to keep the body of the text (wording, numeration, references, etc.) very close to the original, perhaps to an extent that might be uncomfortable to a modern reader. This means that I have retained the author's original capitalization, italicization, spelling variations, typographical errors, Latin phrases, and archaisms. The brackets in the text ('[' and ']') are original, and frequently introduce technical terms or distinguish between mention vs. use of a word. The author's marginal notes (references to other portions of his books) have become footnotes; I have thus changed the original asterisks, daggers, double-daggers, etc. to superscripted numbers. As Sergeant's style, these notes almost always appear *before* the text in question. My own annotations are also in footnotes, clarifying Latin and Greek terms or phrases, English archaisms, or references to historical figures. These notes almost always appear *after* the relevant text.

As a synthetic edition, I have included in the main body text the corrections listed of the Errata sheet. Where these corrections occur (almost fifty in all), there is a footnote identifying the original. Original page numbers have not been retained in this edition, but I intend to re-insert them in a future edition. I have not found a clean and non-tedious way to indicate original pagination thus far. This raises the question on how one might want to cite portions of this work. Sergeant's own reference scheme is as follows: Book 1, Lesson 2, Section 3 → B. 1. L. 2. §. 3. However, I myself recommend the scheme Book.Lesson.Section.Paragraph. Thus, *MS* 1.2.3 will indicate *The Method to Science*, Bk. 1, Less. 2, Sect. 3, and without a specific paragraph. This recommendation follows citing conventions similar to those critical editions of the works of Locke and Hume.

I imagine that I may have introduced errors of my own, despite my efforts to be rigorous. I welcome feedback and corrections where this text differs from the extant originals and photocopies. More details about this text's provenance, as well as my principles in editing methods, textual criticism, and other considerations I applied for the preparation of this text, are available either by request (jonathan.vajda@gmail.com) or on my website (jonathanvajda.com).

Jonathan Vajda
University at Buffalo (SUNY)
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PREFACE DEDICATORY TO THE LEARNED STUDENTS OF Both Our Universities.

Reason being Man's Nature, and the Proper Act of Reason, the Deducing Evidently New Knowledges out of Antecedent ones, it may seem Wonderful that Mankind, after the using their Reason and Disputing so long time, should still Disagree in their Sentiments, and contradict one another in inferring their Conclusions: so that those who are fam'd for the Greatest Philosophers, do still remain in Perpetual, and (as far as it can be discern'd) Endless and Irreconcilable Variance and Dissension about their Tenets. It seems to shock the very Definition of *Man*, and to lay in some sort a scandal upon Creative Wisdom it self, that, whereas all other Creatures do arrive at the Natural End for which they were made, Mankind alone, nay the Noblest Portion of that Kind, who cultivate their Thoughts with the most exact care that may be, should still miss of Reasoning rightly, and so fall short of True Knowledge, which is their *Natural Perfection*. What Tree but bears the *Fruit* Proper to its Kind? Or, what Cause in the World but produces such *Effects* as are sutable to its Nature? And tho', by the Interfering of Cross-Agents, there *happens* now and then a Deficiency in some very Few Particulars, yet that Defect is never found in a Considerable part of the *Species*; for *Chance* would not be *Chance* if it did come near the reaching an *Universality*: whereas Mankind, in its *whole* Latitude, seems to fall short of improving it self in Truth; at least, in gaining Certainty of it; or, if some have attain'd it, yet the Number of those *Right Reasoners* is so very Inconsiderable, that they are *lost* amongst the Croud of those who *stray* into *Error*. Nor can those *Happy Few* who have light on it, obtain Quiet Possession of what they have Acquir'd; but their Title to it is perpetually Disputed by Great Multitudes of Pretenders; who put in their Claim, and set up their Pleas for their Opposit Tenets. Whence, our First Enquiry ought to be, *how* Man's Nature comes to be so Disabled from performing its *Primary Operation*, or from *Reasoning rightly*; that so we may bethink our selves by what Means it may (if possible) recover the true use of its Natural Faculty; how it may be cur'd of the Impotency it labours under; and be freed from those Impediments which hinder it from Acting as it ought.

2. Divines will tell us that this mischief happens thro' *Original Sin*. Nor can it be doubted but there is *some* Truth in what they alledge. For, questionless, Passion distorts the Understanding by the Ascendent which the Depraved Will has over it in such Concerns as the Will is addicted to, and has espous'd an Interest in. But, this comes not up fully to our difficulty. For, granting that, when the Soul is thus originally tainted, the Will influences and byasses the Understanding, so as it cannot discern clearly the just value of Spiritual Goods, and, by addicting it to such False Goods for which it self has a Passionate Concern, it makes it overvalue Vile Pleasures, Aiery Honour or Sordid Profit; whence, it becomes blinded and makes wrong Judgments both of the one and the other; yet, I see no Reason why Original Sin, which works only by giving us *Corrupt Inclinations*, should hinder us from concluding right in points *meerly Speculative*, to which our Discourse confines us; nor why an *Archimedes*, an *Euclid*, an *Aristotle*, or an *Hippocrates*, tho' Heathens, may not arrive at Truth in Mathematicks, and other Sciences to which they apply'd themselves; nor why a man of a Wicked Life, whose Soul is Corrupted with Actual Sin added to Original, may not cast up an Accompt right, as well as he might have done had *Adam* never fallen. To deduce Consequences right out of other Knowledges, which we call the Premisses, is so *nearly* ally'd to our very *Essence* and *Rational Nature*, that quite to lose that Faculty seems the same as to lose our Manhood; which we cannot be thought to have forfeited by the Fault of our First Parents. Nor has the Depravation of our Will any Interest or Inclination tempting it to be Accessary to such a Miscarriage: Rather the Acquisition of Science is

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so Agreeable to our Innate Vanity and Desire of Esteem, that it runs along with the grain of that primigenial Imperfection. The Honour that accrues to an Eminent Scholar prints him in such a Character, and is so grateful to Pride and Self-love, that it excites Industry, whets the Wit, and, thence conduces to clear the Understanding. So that to exercise our Natural Faculty as we ought in such kind of Studies, and so arrive at an Excellency in Reasoning, does sooth and not thwart those Vicious Inclinations. Besides, there have been without doubt, many Persons of Eminent Virtue among the Schoolmen both of the present and former Ages; who by a long practis'd Habit of Virtue have rectify'd those sinister Propensions of the Will inherited from their Parents; and yet, by their Contradicting one another, we may be assured that one side does still miss of Truth. Whence we may conclude that neither Virtuous Inclinations do avail the Good, nor do Vicious ones considerably or discernibly hinder the Bad in order to their Attainment of Science: Wherefore, we must look for *Another* reason for these constant Miscarriages, and this Unaccountable Disagreement among Philosophers and Speculators; and how it comes that the Truth or Falshood of very few Conclusions have, in so many Ages, been *decisively* Determined; or, which is the same, why *Truth*, in things subject to Reason, cannot, in so *long* time, be made *clearly appear*.

Reflecting then that Mathematicians do very rarely *disagree* in their Conclusions; or, if any *differ* from the rest, as in the Quadrature of the Circle, or such like, either thro' Surprise, or Unattentiveness to the long train of Consequences which are præ-requisit to those Conclusions; and that by this means a Mistake happens, the Errour is evidently discover'd, so that even the Mistaker himself is convinced of his Failing, when it comes to be thorowly examined by others, Learned in the same Art, who like By-standers see more than did the Gamester; this leads us naturally to consider whether the *same* Clear Way *has* been taken in *other* parts of Philosophy, as has been in *that* Science. And, at first sight it appears manifestly it *has not*. For 'tis evident that Geometricians do lay for their Axioms *Self-evident Propositions* and *clear Definitions*; and their *Postulatums* are not such as are *meerly* begg'd or *supposed*, and so need our Favour to let them pass for Truths; but they *claim* our Assent to them as their *Due*; and the Consequences they draw are all of them *Immediate*; which makes the Contexture of the whole Work *Close* and *Compacted*. Whereas I have not observ'd that any other sort of Philosophers have taken that Clear Method. Whence we have good reason to suspect that the want of observing this Method, or something Equivalent to it, has been the sole occasion of all those Deviations from Truth and Disagreements among Philosophers in their Conclusions and Tenets, which we find in the World. I say, [*or something Equivalent to it.*] For, I do not expect that every Demonstrator should be ty'd to observe that severe Method *in rigour*. This were to condemn *Aristotle*, and all the Philosophers that ever writ hitherto. 'Tis too laborious to the Authour to cast his Thoughts perpetually into that Nice and Exact Frame; and very Uneasie for the Readers also, and would too much strain their Brains to keep them still bent to such a Solicitous Attention. Besides, a Discourse that proceeds *endways* by Immediate Connexion, does comprehend as much in one page, as in *Euclid's* Method could be contain'd in Many. 'Tis enough then that such Discourses be so *perfectly Consequential*, that they can, if need be, bear that most Rigorous Test. And *such* they must be; or, otherwise, they will scarce pass muster with Acute Wits, who *candidly* and unbiassedly pursue *Truth*.

Nor does this precise Mathematical Method sute, in all regards, with the *other* parts of Philosophy. For the Notions *that* Science is employ'd in are, for the most part, *Extension* and *Figure*; which being perceptible to our Sight, they show the thing, in some sort, to our *Eye*, as well as demonstrate it by Reason to our Understanding; whereas, scarce any Other Science affords us this advantage; which forces us to have recourse only to our *Notions*, and to strive to make them Clear by *Definitions*. In which, having no assistance from our Fancy or Material Representations, they are hence *less easily* Imprinted and Reflected on; which makes our Attainment of Science more Laborious. Yet,

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notwithstanding this Accidental Disadvantage, their Productions are *not at all* less Evident or less Certain to the *Judgment*. For, it is not the Noting them with A, B, C, that either *makes* them True, or *shows* them to *be so*; but the *Connexion* of the *Notions* we have of those Lines, Angles, or other Quantities, and of their Proportions to one another, which we voluntarily agree to signify by such Letters. Whence results this Evident and Comfortable Corollary that Clear Demonstrations may be had, and, consequently, Science attain'd, in other parts of Philosophy, and in all Other Subjects, *as well* (tho' *not so easily*) as in those of the Mathematicks; so the Notions belonging to those Subjects be but *Clear'd* and rightly *Connected*; since 'tis the Connexion of Notions, or (as Logicians phrase it) the *Connexion of Terms*, which does beget Science, and not the Formality of *Lines* and *Letters* us'd by Mathematicians.

By this time we may seem to have discover'd the true reason of the General Miscarriages of most Philosophers in the pursuit of Truth. For, since 'tis Impossible that he who intends to Travel to *London*, tho' he have both Clear Eyes, and Strong Legs, and employs both of them to his utmost, should ever arrive at his Journey's End if he does not take the Right *Way* to it; so it is equally Impossible any Man should arrive at *Science*, if he takes not the right *Method* or Way to attain it, tho' he have never so Clear a Natural Wit, and a Strong Brain, and labours never so industriously to make use of both to his best advantage. Providence therefore is justify'd, and the Ability of our Natural Faculty asserted; and the Blame lies wholly at the doors of the *Persons* who do not *first* apply their Thoughts to *know* the Way to Truth, e'er they set forwards in quest of it: but chiefly in those who pretend to be Guides to others, and yet are Themselves Ignorant of the *Method* that can bring men to it. Mathematicians *take* the Way, and so arrive *at it*. Others (a very few execepted) do *not take* it, and therefore *miss* of it. Whence we may establish this Fundamental and most Useful Maxim, that *The First and Chief Study of those who pursue true Knowledge in Philosophy, is to apply their Industry to comprehend the METHOD or WAY to it: that, If they find not that, their most earnest Study is lost Labour; but that, having once found it, they cannot doubt of compassing their End by using such Proper Means.*

But is not the *Knowledge of this Method* insuperably hard to be attain'd? For, if it be, we are never the nearer, but still at the same Loss. To give a Stop to such an apprehension, I must avow that no part of Mathematicks is more Demonstrable than is the *Way* to Demonstrate, or the *METHOD TO SCIENCE*. Nature (as we experience) gives us our Notions; on which, as on its Elements, all Science is grounded. To make these *Clear* and *Distinct*, we can *distribute* them under *Common Heads*, and *Divide* those Heads by *Intrinsecal* Differences, or such as are *Proper* to each of them, till we come to the Notion we are to discourse of. While we thus *Divide* them, we at the same time, and with the same labour, frame *Denitions* of each Notion comprehended under those respective Heads; by doing which we gain a *Distinct* and *Clear* Conception of them; which does, to a fair degree, facilitate our *Judging* whether such or such of them may be with Truth connected in *Propositions*, (or in such Speeches as *Affirm* or *Deny*,) in which *Truth* does Formally consist. To do this more exactly, we consider that those Propositions must either be such as show *of themselves* that the Two Notions (call'd it *Terms*) must be Connected; and then they are *Self-connected* or *Self-evident*: Or else they need to be *shown Connected* by means of some *other* Notion which is Connected with them both; to show which we call *Proving*. Those of the *Former* sort, if perfectly such, are fit to be *First Principles*; whose Nature, as Common Sense tells us, is not to *need* or *admit* of Proof. The Connexion of the *later* sort is made known by *Proof*, or by their joint Connexion with a *Third*, which we call the *Middle Term*, *Medium* or *Argument*; to do which is the Proper work of *Discourse* or *Ratiocination*. These Three Terms rightly placed or put together, compound that most Close and Exact Discourse call'd a *Syllogism*. Certain and most Evident Rules may be assign'd *how* to *place* those Three Terms in the two first Propositions, so as that Discourse may be most *Clear* and *Perspicuous*; as also, how to find out such a

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Middle Term as is Proper to Connect the *other Two*, whose Connexion or Truth is under Dispute; and to show the Force of the Consequence, and *why* a New Proposition call'd the *Conclusion*, must most *necessarily follow* out of the Former ones. All which being Demonstrated, (as I have reason to presume is done in this following Treatise) and the Equivocation of the Words that express our Notions being avoided, I see not what more can be substantially necessary to the *METHOD TO SCIENCE*. For, our Notions being Clear'd, First Principles establish'd, the true Form of a Syllogism manifested, Proper Middle Terms found, and the Necessity of the Consequence evidenced; all those Conclusions may be Deduced with *Demonstrative Evidence*, which ly within our Ken, or which we can have occasion to enquire after; that is, all that we have *Notions* of: provided those Notions be not merely *Accidental*, or very *Remote* from one another, and therefore Incapable of being Connected.

Yet still there is one Difficulty that sticks, and lies in our way; and which is more, seems hard to be remov'd. For *LOGICK*, or the *Art of Reasoning rightly*, being the Skill which is to teach us this *Method to Science*; and so many Logicks being written by Learned Men, and studied by such Multitudes; how comes it that, notwithstanding such Helps, men do still *differ* in their Tenets, that is, *many* or *most* of them do still *err*, as much as if they had never had such Proper Assistances. For, if Logick shows them the *way* to Science, and they *take* that way, and have a Natural *Ability* to follow it or walk in it, they must *all* arrive at Science; and their Thoughts center in the same Truths without any Disagreement; the contrary to which we do notwithstanding Experience. To give an Answer to this, I shall be hard put to it how to bear my self between the two Extremes of Modesty, *Dissimulation* and *Boasting*. For, if I grant those Logicks are as they *ought* to be, that is, *Full* and *Evident*, and *follow'd* by Men of *divers* Sentiments, I must confess I know not how to reply, or solve the Objection. On the other side, to condemn all the Logicks since *Aristotle's* time, or all Logicks which are not according to his Grounds, is to set up our selves, and savours of Arrogancy. In this porplexity I have no way to secure my self but to speak the plain *Truth*, and to hope it will bear me out. I must then, in behalf of *Truth*, declare, that the Pretended Logicks themselves are in the greatest Fault. For, 'tis easie to observe, that they do indeed give many *dry* and *unprov'd* Rules and Maxims; they afford many Definitions, some right, some wrong, being oftentimes Illogical and fram'd out of Fancy; they pester their Books with many unnecessary Divisions and Subdivisions; they treat very largely of the Predicaments, of Single, Opposit and *Æquipollent*¹ Propositions; they are prolix and superfluous in their Doctrine about Syllogisms, their Moods, Figures, several sorts of idle Fallacies, &c. All which look very Learned to New Beginners; who do, therefore, take much pains to lay them up in their Memory; I say *in their Memory*, for none of those passages being Demonstrated, they never sunk into or settled in their *Reason*. And therefore, notwithstanding all this, when they have as it were got without Book all these particulars, the Readers are no wiser how to demonstrate any point practically, or how to set himself about it, than he was before he read those Treatises.

I have studied many of those Logicks my self when I was young, and all of any note I had seen then, and consider'd them very attentively, till I had almost lost my *Natural Reason* by dwelling upon them; yet notwithstanding (and I believe the same passes with other young Students) I knew no more how to go to work to demonstrate any thing, than if I had never seen them. They started now and then some curious, amusing (but jejune and useless) Questions about *Ens rationis*,² Unions, &c. and set many confused *Ideas* of the several parts of Logick in my *Memory*; but still my *Reason* was not Enlighten'd, nor enabled to perform those fine things they had told me of. Nor was it any wonder;

¹ Equally forceful or having equivalent power.

² Latin: "being of reason", i.e., that which we can conceive in our mind but cannot actually exist, such as *nothing*, *circular-square*, and *a material substance without accidents*.

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for they spoke not to my *Reason*, nor endeavour'd to ground their Discourse on the *Nature* of the *Things* in hand; nor to show demonstratively *why* every Step they led me, or Lesson they taught me, *must* be True; nor *how* it did influence True Knowledge, or advance directly towards the Acquisition of *Science*; so that it look'd more like a kind of *History* of what those Authours had *said* or *writ*, than like a *Method* to find out *Truth*; insomuch that I came at length to suspect that the Intention of those kind of Logicians, was not to pursue the Knowledge of Truth, which is only to be had by Clear Demonstration; but that they meant to furnish young Wits with certain *Modes of Talking* with a *show* of Learning, and of signaling themselves for being able to argue *pro* or *con* indifferently in Scholastick Dissertations. It resembled the Tiring of a Hawk, serving only to exercise its Nibbling Faculty, and whet the Appetite, but had nothing of *Nutritive* in it to *satisfie* it. For, Reflexion will teach us very Evidently, that only that which is made *Clear* to our *Reason*, can *Settle* in it, *Nourish* and *Dilate* it, as being *Proper* and Connatural *Food* to a Rational Soul; and that whatever we take in or carelessly swallow, that is not such, but meerly *Wordish* only fills us full of *Wind* and *Ayr*, which breaks out in *Insipid Talk*.

The Fault then lies evidently in the Logicks which have been us'd in the Schools hitherto, none of which have attempted to show *Demonstratively* the Way *how* to Demonstrate, or given us a Connected Discourse of the *METHOD TO SCIENCE*. 'Tis noted that the *Practice* of the Preacher going along with his *Doctrine*, makes the Doctrine it self more Edifying: and, by parity, had the Teachers of Logick *Practised* Demonstration all the while they had taught how to Demonstrate, those Rules, so Rationally imprinted, *sinking deep* into their Soul, and thence becoming as it were a *Limb* or *Faculty* of their *Judgment*, would have truly Enabled them how to *act* accordingly; whereas, while they *swim* only in their *Memory*, they serve for nothing but to pour out indigestedly what they had rawly taken in.

But now, where is that Authour who has hitherto made such an Useful and Necessary Attempt? None that I know of. The Treatise call'd *Ars cogitandi*³ has divers Excellent things in it, and in some places has made many good steps towards *True Logick*; and the Examples it brings are very Illustrating. But yet, in the main, it amounts to no more but *The Schools Reform'd* into Method and Elegancy. It abounds with many useless particulars: It does not bottom it self upon *Nature*, only which can give *Solidity* to our Reasons: It has many Unprov'd *Suppositions*, and bare *Sayings* without offering any *Proof*. And, yet I do verily believe that, had not the Authours calculated it for that particular sort of Philosophy they had espous'd, which could *bear* no Evidence, but had follow'd the guidance of their own Natural *Genius* (which, doubtless, was very Extraordinary) it would have much excell'd its present self. *⁴ Mr. *Le Grand's Method* says much, but *proves* little; and I believe, both *Cartesius*,⁵ and himself, did first consider and survey the whole Scheme of their *Doctrine*, and then *fitted* their *Logick* to it. Which is Preposterous and Præter-natural; for the certain *Way* to the *End* of

³ *Ars cogitandi* is the Latin title for *La logique, ou l'art de penser*, AKA Port-Royal Logic, written by Antoine Arnauld (1612–1694) and Pierre Nicole (1625–1695).

⁴ Expected is a marginal note, but it is apparently missing. Antoine Le Grand (1629–1699) was a French philosopher. It is unclear to me which text is intended by mentioning Le Grand's *method*, but it may be *Institutio philosophiae secundum Principia D. Renati Descartes: Novo methodo adornata & explicata, conque indice locupletissimo actua*, originally published 1672, but may be instead *An Entire Body of Philosophy, According to the Principles of the Famous Renate des Cartes, in Three Books, I The Institution; II The History of Nature; III Dissertation on Brutes* (1694).

⁵ René Descartes (1695-1650) was a French Rationalist philosopher. He held that knowledge was infallible and primarily given by reason. In the *Meditations on First Philosophy* (Latin ed. published 1641; French ed. 1647), the meditator proposes tossing out all one's beliefs and preconceived notions, only to add back on a solid foundation only those that pass a rigorous test. He proposes a skeptical filter for belief acquisition, whereby any measure of doubt would imply withholding assent. In practice, the meditator mistrusted sense experience but prioritized a confidence in reason.

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our Journey should be *foreknown*, ere we set the *First step* towards it. Mr. *Lushington*⁶ has with much pains gone about to demonstrate some particulars of the Summulist part of Logick,⁷ and chiefly that about *Predication*. But, there is nothing at all of *Nature* in his Grounds. He regards not the Common Notions of Mankind, nor in what they consist; and therefore his Discourses are so perfectly Artificial, that they have nothing to say to *Nature*, nor *Nature* to *them*. He imposes imprudently new Language and new Terms upon his Readers, which he might have assur'd himself they would never take pains to learn. He affects the way of A, B, C, which makes a show of Science; but the Product of his Discourse is, oftentimes, no more but the bare Proposition he is to prove, onely drest up in a Mathematical Garb. His whole Book, in my judgment, might have been more clearly compriz'd in one Sheet of Paper: And, lastly, as for want of *Nature* to ground his Conceptions, his several Proofs can never enter into the *Reason*, so 'tis almost Impossible they should ever stay long in the *Memory*. Yet his Attempt to demonstrate in such a Sceptical Age, and his Industry, deserve a fair Commendation, and may provoke others to make the *same* Attempt with *better* Success. *Burgersdicius*⁸ is clearly contriv'd for the *Memory* onely, and not for the *Reason*; and he confounds and overburthens *it* too, with the Multitude of his Canons, Rules, and Divisions; for which he seldome or never gives any *reason*, but puts them to be *Believ'd* by his Reader if he pleases; and, so leaves him still *in the dark*. Yet he might be made Useful to New Beginners; were something of every thing, that is to purpose, pick'd out; Unnecessary things (in which he super-abounds) cut *off*; his Errours, which *are* not a few, Corrected by some Learned hand; and his shatter'd thrumsends woven into *some* kind of Connexion, and Dependence on one another; to do which, little Transitions from one passage to another are Insufficient. But, as he is, he informs not the Understanding of any one thing groundedly or solidly. He falls exceedingly short of *Ars cogitandi* in many regards: How, he may please Climates of a duller *Genius* I know not; but I should much wonder if any Learned Englishman should consider or esteem him. Mr. *Clark*,⁹ far exceeds him in good Sense, and in giving some Reasons for what he says in many particular passages. But, by his framing the Contexture of his Book out of Authours of different Principles, his Discourses do sometimes appear Desultory, and like a kind of Elaborate Rhapsody, laid well together by his own good Wit. He mistakes *Aristotle* now and then, by taking his Sentiments as represented by his Adversaries; whose Interest and Principles conspire to make them misconceive him. He abounds with many Reflexions not all conducing to *Science*. A Fault, from which *Aristotle* himself was not altogether free; which makes it more pardonable. For instance; To what purpose are his many Distinctions of his Propositions, especially those he calls *Exponibiles*¹⁰? Let but the Learner know certainly and liquidly, what are the *Subject* and *Predicate* in any Proposition, which is easie to be discover'd by the *Copula* that is to come *between* them, and *unite* them; and have a care that the words that express them are Univocal; he will be furnish'd with means to see the *Form* of *Connexion*, which is Essential to a Proposition, and is onely Conducive to *Science*, which wholly consists in the *Connexion of Terms*. His chief Misfortune is, that he does not seem either at the beginning, or in the Process of his Book, to *know*, at least to *build upon* this Truth and stand to it, that our *Notions*, or (as the Moderns have taken a Toy to call them) *Ideas*, are the *very Natures of the Things in our Understanding imprinted by Outward Objects*; without which no Stability of those Notions or *Ideas* can be, with Evidence, asserted; nor any Solid knowledge possibly be had of our *Predications*; nor the true Ground of *Truth* or *Falshood* be understood; nor,

⁶ Thomas Lushington (1590–1661), a preacher, logic professor at Oxford, and tutor of Thomas Browne (1605–1682).

⁷ A reference to *Summulae Logicales* (Little Summaries of Logic) used to teach Aristotelian logic in the 13th cent. and later.

⁸ Franco Burgersdijk (1590–1635) was a Dutch logician.

⁹ Perhaps Samuel Clarke (1675–1729), an English philosopher and theologian. Clarke would've been but 21 years of age at the time of Sergeant's writing, and had very few public works. Clarke's more influential works were written later.

¹⁰ An exponible term (*termini exponibiles*) is a term that implicitly (logically) contains propositions. For example, 'until' is exponible, e.g., "the movie runs *until* 9pm" means that the movie *has a duration before 9pm* and *has no further duration at 9pm*.

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consequently, can there be any Firmness in our *Judgments* or *Discourses*. Whence, I could wish that every Beginner were at first well instructed and settled in this point; for, without this, all will be but Loose, and Ungrounded Talk in the Air. And, tho' I lose Credit with our late Wits, I must avow that *Aristotle's* dry Assertion, that [*Anima intelligendo fit omnia*,¹¹] tho' it may seem to some a wild Paradox, has more Solid Sense in it, were it rightly understood, and is more Useful to true Philosophy, than all the other Maxims that do not proceed upon it, and suppose it; which yet I see the Goodness of Nature *intimates* to many, and forces them to ground their Discourses on it *Practically*; even tho', while they speculate, they *deny* it, or, at least, seem to doubt of it, or disregard it.

Observing therefore this great want under which Philosophy (which is the *Study of Truth*) labours, I have, out of my true Zeal of improving *Science*, and beating down *Scepticism*, (the profest Patron of *Ignorance*, and covert Parent of all *Irreligion*) hazarded the Opinion of Singularity in endeavouring to write and publish a *Demonstrative Logick*; at least I have given such Reasons, quite thorough it, as I judg'd to be Clear and Conclusive, in every piece of it that has any Influence upon Scientifical Knowledge. What my Reader may expect from me is this. I begin with our Natural Notions, the *Bottom-Ground* of all our Knowledge. I show them to be the very Natures of the *Things*; whose Metaphysical Verity being *Establish'd* by Creative Wisdom, does, consequently, give *Stability*, and *Solidity* to all our Discourses that are built on them. I *distribute* those Natural Notions under those several Common Heads, and manifest why there must be so many and no more: I show how their *Definitions* are to be fram'd, which make our Conceptions of them *Clear* and *Distinct*. I lay Rules to escape the Snares, which *Equivocal Words* lay in our way while we are Discoursing. I show the *Reason* of all *Truth* and *Falshood* in Connected Notions, or Propositions: Which, if Self-evident and Identical, have Title to be First Principles, as from many Heads I demonstrate. I trace Nature in all those nice and Immediate steps she takes to *generate* Knowledge in us *at First*. Coming to those Propositions that *need Proof*, and the *Way* of Proving them, I lay open the Fundamental Ground of the *Force of Consequence*, which gives the Nerves to every Act of *True Reasoning*, and of the Certainty and Evidence of every Conclusion which we rightly *infern*. To perform which, I manifest that there can be but *One* Necessary or Natural *Figure* of a Syllogism, and but *Four Moods* of that Figure. I lay down and fix the Fundamental *Laws* of *Concluding*. I evidence the Nature of that Third Notion or *Middle Term*; by the Connexion of which with the *Two Terms* of the *Thesis* to be Proved, they must inevitably be joyn'd with one another, and so the *Thesis* it self must be rightly Concluded; and, therefore, *Infallyibly True*. I show how to *find out* a Middle Term fit for our purpose, and thence prepare the way for Demonstration. I lay open how every *Truth* must have at the Bottom an *Identical Proposition*, and every *Error* a *Contradiction* as their First Principles, and how they may be *reduced* to those Principles of theirs: To do which (tho' more laborious) is the best Way of Demonstrating. I manifest thence how one Truth is *in* another, and what strange Consequences follow thence. Also, how Middle Terms, Proper for Demonstration, may be taken from all the Four Causes. To clear better the Notion of *Science*, I treat of the Natures of *Opinion*, and (Human) *Faith*; their *Grounds*, and how the Former of these two last Deviates from Right Reason; and when the Later does, or does not. Then I consider the *Effects* issuing from all sorts of Proof; viz. *Assent*, *Suspense*, *Certainty*, and *Uncertainty*. And, to put in Practise my self what I do persuade, and recommend to others, I add Seven *Demonstrations* of the

¹¹ Latin: "The soul becomes all things by understanding [them]", and it alludes to *De Anima*, Book III, Ch. 5; the doctrine here refers to how the mind comes to understand reality by becoming equal to it (as a correspondence theory of truth). Sergeant falls in the Thomistic tradition of interpreting this as *the active intellect becoming the thing known according to its intellectual manner*; see also St. Thomas Aquinas, *Summa Theologiae* Part 1, Question 79; and his *Commentary on Aristotle's De Anima*, Book III, Lectures 4-5.

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most Considerable *Theses* in divers Sciences. And, lastly, I lay open the Ways and Methods of *Disputation*; and detect the weak Stratagems, and inefficacious Attacques of *Fallacies*, or *Paralogisms*.

This is the Summ of my Endeavours in common. But, besides these, many particular Knowledges light in on the by, (and, as I hope, very *Useful* ones) which it would be tedious to enumerate. The *Manner* I use to carry on the Scheme of my Doctrin, is, not to propose my Conceptions *Magisterially*, or to expect any one should assent to the least Tittle of what I *say* upon my *Word*: But, I offer my *Reasons* for every Paragraph I advance, if it can be conceiv'd to need any; by doing which I speak to the *Reason* of my Readers, and withall I *expose* my self to the Severe Examination of the most Acute and Judicious Wits; of which, I doubt not, there are Multitudes in those Seminaries of Learning, our two Famous Universities¹²; to whom I humbly dedicate this small Present. I neither strive to *ingratiate* my self by my *Style*, nor to *surprize* any by *Plausible* Discourses; much less to *Impose* upon their Understandings by Voluntary *Suppositions*. I draw now and then divers Useful Corollaries, and some that will seem, I doubt not, Paradoxical; that so I may carry on my Doctrine to farther Consequences, and show withall to what Unthought-of Conclusions *Reason* will lead us if we follow her *close* and *home*. Nor am I ashamed to declare openly, that I hold, that the Chief End of *Science* is to beget *Virtue*; and not onely to raise us to Higher Contemplation, but also to comfort, and strengthen *Divine Faith* in us, and to make it more *Lively* and *Operative*. Whence I have taken occasion to excite my Reader's *Devotion* out of the Reflexions on divers Points, that seem'd of themselves to be but *Dry Speculations*: making account that Good Thoughts arising, upon the Spot, out¹³ of Truths *newly Clear'd* to our Reason, do affect the Will most connaturally, *raise* Devotion, *heighten* Contemplation, and make it *Solid*; and, consequently, keep the Soul Clear from *Idle Fancies*, and set her above *Light Bigotteries*.

I have not enumerated these Particulars to boast my Performances, (for these are yet to be Decided, by examining whether the Reasons I have all along produced will bear the Test) but to bespeak my Reader's Pardon, if, travelling in an unbeaten Road, I happen now and then to stumble. Which as I am not conscious to my self to have done at all, so I shall hope I no where do in any passage that substantially concerns the *METHOD TO SCIENCE*: Rather, I must positively avow that it is impossible for any Wit of Man to invent any *other* Way, than what I have propos'd, that is *Solid* and *Evident*. For, 'tis granted by all Mankind hitherto (unless, perhaps, the *Cartesians*) that Truth is *fundamentally the Conformity of our Judgment to the Nature of the Thing*, and that it consists *Formally* in the *Connexion of the Terms*; both which I have follow'd *most exactly*; and, as some Readers (I doubt not) will think, *too superstitiously*.

Now, since *Rectum est mensura sui & obliqui*,¹⁴ my Design engages me to show (as far as the Brevity of a Preface will allow) that the different Methods taken by Others do *not* lead us to true *Science*. And, indeed, there is a kind of Necessity laid upon me to make this Charge good: For, since we take Different Methods, if *theirs* be a *Right* one, *mine* must be a *Wrong*; and my Publishing it no Advantage, but an Injury to Truth, and to my Greatest Neighbour, the World. The *METHODS* which I pitch upon to examine, shall be of two sorts, *viz.* that of *Speculative*, and that of *Experimental* Philosophers; The Former of which pretend to proceed by *Reason* and *Principles*; the Later by *Induction*; and both of them aim at advancing *Science*. Looking about for an Instance if the Former sort, I did not think *Epicurus*,¹⁵ and his School worth my taking notice of; for he who *supposes* all his Principles, bids

¹² I.e., Oxford and Cambridge.

¹³ Corrected per errata sheet. Original: "but."

¹⁴ Latin: "A right (i.e., straight) line is the measure of itself and also of the oblique."

¹⁵ Epicurus (ca. 3rd century BC) was an ancient Greek atomist philosopher.

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Defiance to all *Methods* of *Concluding* any thing. And, as for our Modern School-Philosophers, they have so disputed themselves quite out of breath for want of any Certain Method, that they have brought all *Science* to an Indifferency of Opinions, or maintaining any thing with Equal Evidence (or rather No-Evidence) a thing absolutely impossible for those who lay any right *Method to Science*. And this Deficiency of theirs, losing their Credit with our late Wits, have given them occasion to cast¹⁶ about how to model Philosophy a-new, and frame it wholly in another Mould: for the Schoolmen on the one side represented *Aristotle* wrong, and on the other side his (perhaps affected) Obscurity, won them rather to believe the Schools concerning his Doctrine, than to be at the Expence of Pains and Patience to understand him right, speaking by himself, or by his First Interpreters.

The Inconsiderableness then of other Pretenders to a *Method to Science*, and the Weakness of their Pleas, throws me forcibly upon examining the Method of that Great Man, *Cartesius*: It must be confess'd *his Method* is vastly *different* from *mine*. He pretends to a *First Principle*, and the *Self-evidence* of that Principle; which therefore I must either disprove, or give up my Cause, and condemn what I have written; since it is impossible that *two* Methods, contrary to one another, can both of them be the *right* one; or lay just Claim to Self-evidence in their Principles. But, with how Potent an Adversary has my Unlucky Audaciousness, in attempting to lay a *Demonstrative Method to Science* oblig'd me to grapple! It must be acknowledg'd that he was a Man of that Prodigious Wit, that scarce any Age has produced his Equal. His School has dilated it self into divers Nations; and his Scholars and Followers are of such *Eminent* Rank and *Name*, that it would terrifie any Man to encounter his Doctrine, especially his Principles (which must be the solidest, strongest, and clearest parts of it) who had not an unshaken Confidence in the Invincible Strength of *TRUTH*, under whose Banner he fights. He dazles the Understanding of his Reader with his most Ingenious and Clear Way of Discoursing; a Talent peculiar to himself; and he lays his Thoughts together with such an Artificial and smoothly-flowing Currency, in proper and unaffected Language, that he captivates it at unawares into a Complaisant Assent; and his greatest Adversary must be forced to confess that, if his Doctrine be not *True*, at least Truth was never so exactly and handsomely *Counterfeited*. He postures his Thoughts so dextrously, that nothing but perfect Evidence can break their Ranks, or make a hostile Impression upon them; so that, if his Hypothesis be False, and hap to be overthrown, it will certainly be the most Glorious Victory Truth ever gain'd. But all those Bug-bears cannot deter me from the Defence of Truth; in such a Cause, *Non Divûm parcimus ulli*¹⁷ and the more his Doctrine *resembles* Truth and has Greater Patrons to abet and carry it on, the *higher* Obligation it lays upon *me* to detect its Falshood, if I sincerely judge it Fallacious, and think I can show it to *be so* I would not be misunderstood to intend here a *Confutation* of his Doctrine; 'tis neither a Work for a Preface, nor for a Man of my small Leasure; but only to take *Minutes* of some few, (but main) Hinges of his Doctrine in order to confute his *Method*; leaving it to others who have better parts and less Employments, to carry on my slight Animadversions, if they may be found of weight, to farther Reflexions.

To begin then with his *six Meditations*. In the first place, I cannot conceive why they should be styl'd his *Metaphysicks*. For 'tis proper for that Noblest and Highest Science to treat of *Ens*, as *Ens*, or of such¹⁸ Notions as concern *Being*; which I cannot discern to have been the direct Scope of those Treatises.

¹⁶ Corrected per errata sheet. Original: "east."

¹⁷ Latin: "[I] do not halt for any god;" it is a reference to Virgil's *The Aenid* (Book X), in which Mezentius says to Aeneas, "nec mortem horremus, nec divum parcimus ulli," that is, "I neither fear death, nor halt for any god."

¹⁸ Sic. "Such."

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He sets himself to investigate some First Principle, to fix upon, by a laborious Divesting himself of all those Knowledges he is seemingly possess'd of; and, after much tossing his Thoughts to and fro a long time, with *doubting* or pretending to doubt, of all he had *hitherto* known, he arrives at length at that odd first Principle of his [*Cogito, ergo sum*¹⁹] and triumphs mightily with a εὐρηκα at his having found it. Against which Procedure (waving here what I have said of it, Book 2. Less. 4.) I have divers Exceptions, as Irrational in many Respects. For,

First he might *as well* have made that Inference, or have found that First Principle at the very beginning, when he made his *first Doubt*; since [*Dubito ergo sum*²⁰] is full as Conclusive of his own Existence as [*Cogito ergo sum*] can be pretended to be. Nor can any reason be given why [*Ego sum dubitans*²¹] does not include in it [*Ego sum*] as well as [*Ego sum Cogitans*²²] does. And *Cartesius* himself (*Medit. 3d.*) confesses the same expressly. To what end then did he run on in a long ramble of *Doubting*, when as the very first Act of *Doubting*, would have done his whole business, and have prov'd that he is? If it be pretended that [*Ego cogito*] was more comprehensive than [*Ego dubito*] because *Doubting* is *one* Head, or sort of *Thinking*, then his Argument should have been put thus [*Dubito ergo cogito*²³] as we argue from [*Est Homo*] (which is *one* kind of *Animal*) to *Ergo est Animal*; whereas he takes and pursues a quite different Method.

2dly. He infers his First Principle, [*Ego sum*] and so makes it a kind of Conclusion; which is clearly against the Nature of *First Principles*, they being *Self-evident*, and, therefore Incapable of being *Inferr'd* or *Prov'd*; because there is nothing *more* Evident than themselves to *infer* or *prove* them by.

I know *Spinoza*,²⁴ and some others of his School, deny he meant an *Inference*, but intended by these Words one *positive* proposition, viz. *Ego sum cogitans*, or *Res cogitans*. But, what means then the Illative particle [*Ergo*] or what sense bears it? Or, why did himself in his Third Meditation say expressly, [*Ex eo quod dubito SEQUITUR me esse*?²⁵] Again, his first Principle is deny'd by himself to be [*Ego sum res cogitans*] but merely [*Ego sum*,] at which he arrives by the means of *Ego cogito*: For, in the *2d. Meditation* he has these words. *Nunquam efficiet Deceptor ille summè potens, &c. ut nihil sim, quamdiu me aliquid esse cogitabo; adeò ut — denique statuendum sit hoc pronunciatum, [Ego sum,] [Ego existo] — necessariò esse verum.*²⁶

¹⁹ Latin: "I think, therefore I am."

²⁰ Latin: "I doubt, therefore I am."

²¹ Latin: "I am a doubting thing."

²² Latin: "I am a thinking thing."

²³ Latin: "I doubt, therefore I think."

²⁴ Baruch Spinoza (1632-1677) was a Dutch Rationalist philosopher of Jewish heritage. Though following Descartes, he was an original thinker who argued (among other famous claims) that the infinite, eternal God is the only substance properly so-called, and thus nature (created entities) are modes in God. This acquired him the reputation of pantheism.

²⁵ Not given verbatim. Descartes's *Meditations* was published in both Latin and French. The passage to which Sergeant refers in the [original Latin, Meditatio III](#), §9: "ut quòd ex eo quòd dubitem, sequatur me esse." According to Ian Johnston's [translation of the Latin text](#), "from the fact that I am doubting, it follows that I exist."

²⁶ Not given verbatim. The [original Latin, Meditatio II](#), §3: "Sed est deceptor nescio quis, summè potens, summè callidus, qui de industrià me semper fallit. Haud dubie igitur ego etiam sum, si me fallit; & fallat quantum potest, nunquam tamen efficiet, ut nihil sim quamdiu me aliquid esse cogitabo. Adeo ut, omnibus satis superque pensatis, denique statuendum sit hoc pronunciatum, Ego sum, ego existo, quoties a me profertur, vel mente concipitur, necessario esse verum." According to Ian Johnston's [translation](#), "But there is some kind of deceiver, supremely powerful and supremely cunning, who is constantly and intentionally deceiving me. But then, if he is deceiving me, there is no doubt that I, too, for that very reason exist. Let him trick me as much as he can, he will never succeed in making me nothing, as long as I am aware that I am something. And so, after thinking all these things through in great detail, I must finally settle on this proposition: the statement I am, I exist is necessarily true every time I say it or conceive of it in my mind."

But, not to hold him too severely to his own words, tho' no Man uses to express himself more clearly, let his *First Principle* be [*Ego sum cogitans;*] I object then farther against it.

3dly, That, notwithstanding²⁷ all that can be alledg'd, it must be granted, he *has* *inferred* and *prov'd* that whole *First Principle*. For was not *all* that *antedeceded* to the finding it so many *Discourses* or *Reasonings*? And did he not evidently *infer* this to be *True*, because all else might be *doubted* of? If not, to what purpose did he pretend he might doubt of all else? For, if this was *Evident of it self*, and not needed to be *Prov'd*, he might have propos'd it at first, without making all that a-do.

4thly, Since he must necessarily grant that something or other is *inferred* or *Prov'd* by him, that is, *follows* from his *Antecedent Discourses*; and, it is evident that, in his opinion, something *did* follow thence, because he *discours'd* or *Argu'd* all the while, and us'd more than once the word [*Sequitur;*] and no such Discourse can be, but something must still *follow* out of what went *before*; he ought, in the *First* place, and ere he began his Discourse, or went about to speak *consequentially*, to have been perfectly satisfy'd himself, and have shown his Readers, so as to put it past all Doubt, what the *Force of a right Consequence* is, and in what it *consists*; and that himself, while he discours'd, did make use of such *right Consequences*. And, he should the rather have done this, because Men do *more frequently err* in drawing *Consequences*, than in judging that they have a Body, that they see, feel, hear, or use their other Senses; all which he represents as possible to be doubted of. Whereas, he never starts or makes the least Doubt of his *Consequences*, which are to *bind* the parts of his Discourse together all along, and so bring him orderly to his First Principle; nor gives any Reason *why* they may not be Doubted of *as well as the rest*; nor takes care to settle that Doubt. Which shows that he is not true to his own extravagant Method of settling his First Principle, by Doubting of every thing till he comes at it; but leaves *it*, and consequently his First Principle, which depends on it, *Uncertain*.

5thly, and *Lastly*, No man can have a Clear and Distinct *Idea*, (in which, according to him, all Knowledge consists) of any thing *following* out of a First Principle, unless he have a Clear and Distinct Knowledge of that Principle *it self*; But *Cartesius*, when, in the Progress of his Thoughts, he came to the settling *Ego cogito* (or *Ego sum*) for his First Principle, had *no* Clear and Distinct *Idea* of that Principle *it self*; therefore he could have *no* Clear and Distinct *Idea* of any thing which *follow'd* out of that Principle; and, consequently, all that *Method to Science* laid by him is Useless to that End, and Fruitless. The *Minor* (which onely can need proof) is thus manifested. For, he had not, as soon as he had arriv'd at that Principle, as yet any Clear and Distinct Knowledge of the *Subject* of that Principle (or Proposition) [*Ego*] and therefore he had no such Knowledge of the Proposition or Principle *it self*. The Antecedent is confess'd by himself in the words immediately following the place lately cited, viz. [*Nondum tamen satis intelligo quisnam sim ego ille qui jam necessariò sum*]²⁸ and thence he proceeds to find, *after* he had found his First Principle, what *Ego* means, and at length concludes²⁹ that he was *precisè res Cogitans, Mens, Ratio, &c.* which Clear and Distinct Conception of himself he had not *before*, tho' he pretended he knew his *First Principle*. Again, when he was newly come to the Knowledge of that First Principle, he is put to know nothing but barely *that*; nor could he gather this Clear Knowledge of *himself* from that Principle *alone*, while it was yet Unknown. It were worth our Enquiry then, *how*, and *whence* he had this Clear and Distinct Knowledge of *himself*.

²⁷ Sic.

²⁸ Nearly verbatim of 2nd Meditation, §4, and does not depart in meaning: "Nondum verò satis..." According to Ian Johnston's translation, "But I do not yet understand enough about what this I is, which now necessarily exists"

²⁹ Sic.

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He concludes the Soul to be a Distinct Thing from the Body, because the *Idea* he has of *it*, and of its Properties and Affections are *clearly different* from the *Idea*, he has of the *Body*, and its Modifications. By which 'tis most Evident that, for want of Logick, he reflects not on the Difference between the *Nature*, and the *Suppositum* which *has the Nature in it*; that is, between the *Essence* or *Nature*, and the *Ens* or *Thing*. For, if he did, he would have seen that from the having *Different*, nay Contradictory *Ideas* of two distinct *NATURES*, it does not necessarily follow that they must be *two THINGS*, meaning by *Thing* the *Suppositum*. Surely he has a vastly Different *Idea* of the Divine and Human Natures, and yet will grant that they were both in *One Suppositum*, or (which is the same in an Intelligent Being) in the same *Person*. And, I am sure, if he holds the Incarnation, he must renounce this Principle of his, that whenever he has distinct *Ideas* of *two Natures*, there must be *Two Individual Things* or *Suppositums*. It being one of the most Chief and most Fundamental Articles of our Christian Faith, that there is in *Christ* our Saviour but *One Hypostasis* or *Suppositum*; tho' the *Essences* and *Properties* of the Divine and Humane *Nature*, and the *Ideas* (as he calls it) of them, do still keep their Exact Distinction, and remain *Unconfounded*; and that, whoever holds otherwise, and makes them two *Suppositums*, does (in the Christian Phrase) *Solvere Christum*, 1 Jo. 4.3.³⁰

I have not time to reckon up, even hintingly, the many Absurdities that spring from this ill-coherent Position of theirs. But, I will keep to this very Maxim of his, and demonstrate that, even according to *that*, Man, which must be meant by the Pronoun [*Ego*] is truly *one thing* consisting of Soul and Body, and not a mere *Mens*. To show this, I deny that he has a Clear and Distinct *Idea* of *himself*, unless he conceives himself to be a *Rational thing*; or, as he calls himself, *Ratio*; nor can he clearly conceive himself to be a *Rational Thing*, but he must conceive himself to be a Thing that infers *new* Knowledges out of *foregoing* ones, leasurably, or with succession of Time, which belongs properly to *Bodies* and *Bodily Motion*. Wherefore, something of *Corporeal*, Extended, or Divisible is found in the Clear and Distinct *Idea* of *Ego*, or *Himself*, if he be a *Ratio* or *Rational Thing*; for, were he merely a *Mens* or *Spirit*, his Operations would be *Indivisible*, Simultaneous and *Unsuccessive*, as is abundantly demonstrated in divers places of the following Treatise; particularly in my Seventh Demonstration, Book 3. Lesson 7.

Among the other points, he brings as possible to be yet doubted of, he puts this for one, that *a Four-squar'd thing has in it four sides and no more*; of which he pretends he may yet doubt, because some most Powerful Agent may possibly make that appear to him to be so, tho' it be not true in reality. Now, 'tis the very *Notion* or *Essence* of a *Quadratum*, to have *but four sides*; and, therefore, the Proposition affirming that it has *just four sides*, is *perfectly Identical*, and the same as to say, *What has but four sides, has but four sides*. It being then impossible any thing can be more Certain, or more Evident than an Identical Proposition; I would ask why he might not as well be *Deceivable* in his First Principle [*Cogito ergo sum*] as in that Self-evident Proposition! Or, if he pretends that Proposition, [*Ego sum cogitans*] is more Evident than the other; then, since all Evidence of the Truth of any Proposition, consists in the *Close* and *Clear* Connexion of its Terms, I would demand of him or his Scholars, whether there be any Connexion of Terms *more Close* and *more Clear*, than there is of those found in an Identical

³⁰ Latin: "to dissolve Christ," i.e., to break up or separate into parts. The phrase came from the Latin Vulgate of the Biblical passage 1 John 4:3, "et omnis spiritus qui solvit Jesum, ex Deo non est, et hic est antichristus, de quo audistis quoniam venit, et nunc jam in mundo est." It was frequently cited in debates about heretics regarding Christology – views that divided Jesus in heterodox ways. The phrase is likely not original, as the Greek manuscripts say, "not confess Jesus" (μη ὁμολογεῖ τὸν Ἰησοῦν). The ESV, which prioritizes the Greek manuscripts, says, "and every spirit that does not confess Jesus is not from God. This is the spirit of the antichrist which you heard was coming and now is in the world already." An example of the phrase *Solvere Christum* in use, see Thomas Aquinas's *Summa Gentiles*, Part II, Prologue.

Proposition, which affirms *the Same is the Same with it self*? Or, if they say there *is*, then to know of them in what that Evidence consists, or *how* it comes to be *more Evident*?

To make way towards the settling his beloved and self-pleasing *Ideas*; he falls to Doubt of the Certainty of all our Senses in order to Knowledge; and that not onely as a Supposition for Discourse sake, as he pretended to doubt of other things, but really and seriously; and his Scholar *Malbranche*³¹ assures us, *the Eyes* (and the same he says of the *other* senses) *are not given us to judge of the Truth of Things, but onely to discern those things which may either Profit, or injure us*; and *all over*, he makes them improper Means to attain Knowledge by.³² Which Tenet of theirs lies open to many Exceptions. For,

First, The Reason *Cartesius* assigns, *viz. [Prudentiae est nunquam illis planè confidere qui nos vel semel deceperunt. 'Tis a part of Prudence not to trust them at all, who have so much as once deceiv'd us]*³³ is utterly unworthy so Great a Man: For, it discredits all *Nature*, for some *few* Men's *Morality*; which is a strange Argument for a Philosopher. He that has *but once* deceiv'd us *designedly*, is presum'd to have done it out of Knavery; and consequently, may not deserve to be trusted the second time, because 'tis to be fear'd he is still dispos'd to do the same again: But, what is this to *Corporeal Nature*, in which (taking in all circumstances) things are carry'd on from *Proper Causes* to *Proper Effects*. Weak men are sometimes deceiv'd by their Senses; but Speculative or Learned men, who penetrate the Reasons *how* the Senses came to misinform them, are aware of those undue circumstances, and by that means easily prevent the being led by them into Errour.

2dly, No wise man builds his *Judgments* barely on the Impressions made on his Senses, being taught by their *Reason*, as well as by the Senses *themselves* better circumstanced (that is, by *Experience*) that they *do* sometime, deceive us. Whence, they reserve in their Minds certain κριτήρια,³⁴ in *what* circumstances we *may* truly give Credit to their Testimony, in *what*, not. Now, since *Exceptio firmat Regulam*,³⁵ to say their Information is to be Excepted against in *such* Circumstances, is to acknowledge that in all others they are to be trusted.

3dly, As Art does preserve the Learned from being Deceiv'd by the Shortness of the Senses in some Cases, so (as was said lately) the Senses themselves do generally correct the False Judgments they may have occasion'd in Weak People. For example, (to use some of the Instances they object,) a *Brand* whirled round represents a *Circle of Fire*; a *Stick* in the Water looks *Crooked*; a *Square* Tower seen a far off appears *Round*, and *Great Bodies* *Little*. But when the Seer comes *near* the Brand, the Tower and those Great Bodies, or beholds the Stick *out of* the Water, he having now a more exact View of them in better Circumstances, is inform'd certainly by the same Sense, (and, if need be, by others conspiring with it,) that the *former* representations were not sincere; whence he easily corrects his former Mistakes. Why then must the Senses be quite discarded as Useless Servants for Knowledge, and be branded for constant Lyers and Deceivers? since, if we apply them as we ought, they are the Proper Means to make us correct these too forward Judgments, which in improper Circumstances

³¹ B. 1. Ch. 6.

³² Nicholas Malebranche (1638-1715) was a French philosopher, following Descartes and the Neoplatonic philosophy of St. Augustine, especially Illuminationism: all knowledge is received through God's active illumination of the mind.

³³ Latin quote is verbatim from 1st Meditation, §3. Sergeant's English rendering might not be a faithful translation, however: "not to trust them *at all*, who..." versus "not to trust them *entirely*, who..." The former (Sergeant's) suggests a disallowance of *any* trust, whereas the latter logically allows *less than full* trust.

³⁴ Greek: "Criteria."

³⁵ Latin: "The exception affirms the rule."

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they may have occasion'd. Nay, they *advance* our Knowledge accidentally even when they happen to *misinform* us; by stirring us up to enquire whence it came, that the right Impressions on them, from the Objects, which were Customary, was thus perverted; which, doubtless has been the Cause of very many New Knowledges in Nature.

4thly, What is all this to *Science*, or to our purpose? For in the *Method to Science*, we neither *need*, nor *do* build our *JUDGMENTS* on the Senses *alone*. All we require is, that they convey into our Knowing Power right *APPREHENSIONS* or *NOTIONS* of the things in Nature: And, this 'tis Evident they must do; for tho', as they object, a Large Square Steeple seen a far off seems *Round* and *Little*; and therefore who *Judges* it such is Deceiv'd; yet it imprints truly in my Mind the Notion of *Little* and *Round*; and, 'tis on these unmistakable *NOTIONS* all our Science is built; and our *Judging* right in our Speculations is chiefly grounded on other Principles, as will be seen hereafter.

Lastly, Themselves must either grant the Certainty of those Impressions on the Senses, or they must confess all their *Ideas* are nothing worth. For, since they hold that the Objects imprint *Motions* on the Fibres of the Senses, which, making such a Report (as it were) to the Soul, the Proper and ³⁶*Ingenit Ideas* of such a Body are either Excited in the Soul, or else are, as *Cartesius* elsewhere expresses it, *Elicited*, that is *Produced* by it, upon the hint given it by such a Motion; in case the Impressions causing such Motions be not Sincere, and do not truly inform her, a *wrong Idea* may come to be made use of, and so they can never have any certain Knowledge of any thing.

Having thus got rid of the Senses giving us notice of *outward* things, by imprinting Notions in them, which Experience teaches us is the *Ordinary* Way of Knowing any thing; it follows of course, that they must recurr to *Extraordinary* ways by *Inward* means, or to *Inward Light*; which is the Method of Fanaticks in Religion, when they have rejected the *Ordinary* ways of believing their Proper Teachers. And, hence, the *Cartesians* tell us, they know there is a *God*, by the Divine *Idea* of himself Which he has imprinted in them; which is in other Terms, to say, that they have it by³⁷ *Divine Revelation*; for Knowledge, according to them, being caus'd in them by those *Ideas*, nay, consisting formally in thoir³⁸ having the *Ideas* of things in them; and *GOD* giving them those *Ideas* without the help of *Second* Causes, it follows that *GOD* is the Immediate Cause of all our Knowledge; and, so, no thanks at all to the things in Nature, or to Natural Agents. These Ideas I can observe by *Cartesius's* Discourse, are either of *Propositions*, or else *Simple Ideas*. Of the former they say, that whatever we clearly and distinctly *conceive to be*, is *true*. By which if they mean no more but that whatever we *know to be*, is; or that we cannot truly know that to *be* which *is not*, nothing is more certain or more Evident by Common Sense; onely they run counter in their Discourse, and make not the *Understanding* to be True, because the Outward *Thing* is so, but they argue that the Thing is therefore *thus* or *thus*, because the *Idea* in the Understanding is *such* or *such*; and, so, they seem to make Truth consist, not in the Conformity of the *Understanding* to the *Thing*, but in the *Thing's* being Conformable to the *Idea* in my *Understanding*; as *Cartesius* himself affirms in his *Answer to the Instances of Gassendus*.³⁹

How solidly he argues from *Simple Ideas* may be seen by his Demonstration of a Deity, which he concludes to *be*, because he has an *Idea* of a Being that has *all* Perfections in it, amongst which *Existence* is one; which *Idea* he contends he could never have had from the Things without us, and

³⁶ Medit. 3.

³⁷ Sic.

³⁸ Sic. Expected "their."

³⁹ Pierre Gassendi (1592–1655) was a French Epicurean philosopher and Catholic priest. He tried to show atomism and Christian doctrines were compatible. Descartes published Gassendi's objections to the *Meditations* along with his replies.

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therefore it must have been imprinted by *GOD* himself Immediately. In making which proof passable, tho' *Cartesius* exerts the utmost of his Great Wit, yet this plain Discourse will manifest how untoward and Inconclusive it is. I can have a Notion⁴⁰ or Idea of *Finis*, of *non*, and of *Perfection*, and *Thing*, and *All*, and lastly of *Existence*; and had I not such distinct *Ideas* of all these, I could not understand the Meaning of those Words; for an *Idea* can be nothing but what's *meant* by those Words. Having distinct *Ideas* of all these, I can *compound* an *Idea* pf⁴¹ all these, or frame an *Idea* of *a thing that has all Perfections in it*, and *Existence* among the rest: And this *Idea* is *in* my Mind, and the Effect purely *of my Mind*, already imbu'd with those Simple *Ideas*, and Compounding them; for I had it not from any one Thing *directly*, nor did I gather it by Discourse from the Natures of Things I was pre-acquainted with. But how comes it, or how can he argue that because I have such an *Idea* fram'd by *my Mind*, it must exist *without my Mind*, or have a Reality *there*: unless my Mind could *Coyn* or *Create* Beings at her pleasure, as oft as I have a desire to compound such *Ideas* together? He plays wittily upon the word [*Existence*.] But we may consider the Notion of *Existence*, or (which is all one) know the *Meaning* of that Word, and yet abstract whether it does *actually* put its *Formal Effect*, that is, whether that *Existence* is *exercis'd* or not *exercis'd* in the thing: which consideration alone spoils his whole Argument: Let us put a parallel. I have a complex *Idea* of these Words, *My Debtor will pay me a Hundred Pounds to Morrow, at Ten a Clock, at his Goldsmiths*; that is, I have in my Mind the *Meaning* of all these Words; and *Existence* is necessarily involv'd in the Meaning of *those words*, for they signifie Determinate Persons, Time, Place, and Action, all which involve *Existence*; will it therefore follow, that that Action of Paying me Money *will be*, because my *Idea* includes the *Existence* of that *Action*, so determinately circumstanc'd? Yet upon his Knowledge of a Deity by this Demonstration, depends, by his Discourse, all the Knowledge he has of any Truth, except perhaps of *Ego Cogito*. What need was there to run after Whimseys coyn'd in the Mint of our own Mind, to Demonstrate a *Deity*, when there are so many Clear Demonstrations of it from solid Grounds in Nature?

It may seem harsh that I should resemble, the⁴² *Cartesian* Method to *Fanaticism*, or pretend they bring a kind of *Enthusiasm* into Philosophy. Let the so much applauded *Malbranche* be my Compurgator. That very Ingenious and Eloquent Person, who has a peculiar Talent of talking Nonsense as prettily and plausibly as any Man I ever read, in his Preface to the First Volume of his *Search after Truth*, acquaints us with many Extraordinary things, which would no doubt (as *Bayes*⁴³ says) very much *Elevate* and *Surprize* an ordinary Reader. In Common, he confounds all our *Moral* and *Christian* Knowledges, which are immediately ordain'd to raise us towards Heaven, and advance *Virtue* and *Sanctity*, with the *Speculative* Knowledges belonging to meer *Philosophy*; and most untowardly misapplies the sayings of the Scriptures and Fathers, which were never meant for his purpose, but in order to *Devotion*, or *Mystical Theology*, (nay to the Beatifical State of *GOD*'s manifesting his Divine Essence to the Saints in Heaven) to the Maxims and Methods by which we are to attain *Human Science*. In particular, speaking his own sense, according to the *Cartesian* Doctrine; he tells us, *we must judge of things by the pure Ideas of the Mind*; whereas, I should rather have thought, that we ought to guide our *Thoughts*, and judge of *them*, by the Conformity they have to the *Things* in *Nature*: since we

⁴⁰ Sic. Expected "Notion."

⁴¹ Sic. Expected "of."

⁴² Corrected per errata sheet's intended mark (however, errata mentions page 46, line 19, but this was by my count page 47, line 19). Original: "tho'."

⁴³ Mr. Bayes was a character in the satirical play *The Rehearsal* (1672) by George Villiers, Viscount of Buckingham. The play centers on the poet laureate, Mr. Bayes, as directs the actors how they are to perform. However, does not know the plot or style of the play, and derides the actors who question his misdirection and confusion. The phrase "to elevate and surprise" is uttered by the characters Mr. Johnson and Mr. Smith, but it conveys the sentiment of Mr. Bayes's own view on art, "for the chief Art in Poetry is to elevate your expectation, and then bring you off some extraordinary way."

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are *sure* Creative Wisdom made *them*, and implanted Truth *in them*; whereas, 'tis *Uncertain* whether GOD or our Whimsical Fancies gave us our *Ideas*; and, 'tis certain they are the Off-spring of the later, if they be not conformable to the Things without us.

He tells us farther that, *All Sciences are learned by the Attention of the Mind, which is nothing but its Return and Conversion towards God, who onely can teach us Truth by the Manifestation of his Substance.* I am heartily glad to know, that *Euclid* and *Archimedes* were converted to God, and that they were so infinitely Happy as to see *God's Substance* (which is his Essence) so *manifestly*. He proceeds, *Men must look within themselves, and draw near unto the Light that shines there continually, that their Reason may be the more Illuminated.* — *The Mind ought to examin all Human Sciences by the Pure Light of Truth which guides it, without hearkening to the False, and confused Testimonies of the Senses.* — *Those that hear us do not learn the Truths we speak to their Ears, unless he that discover'd them to us,* (he means GOD the Giver of *Ideas*) *do reveal them at the same time to the Mind.* So that all Science *it seems*, comes by *Divine Revelation.* To what end then are Teachers, Professours, Schools and Universities, if, when we have done what we can by all our *Teaching and Learning*, nothing but *Divine Revelation* must do the business, or gain us any Science. But now he advances to a higher point. *The Mind* (says he) is *immediately, and after a very strict manner* United to God; *nay, after a stricter and more Essential manner than with the Body.* Now, if this be true, I dare affirm that the Mind is *more* United to God *Naturally*, than our Saviour's Humanity was *Supernaturally* and *Miraculously*. For, This was but United *Hypostatically*, or according to the *Suppositum* or *Person* of the Eternal Word; whereas, by this new Philosophy, every Human Mind is United *Essentially* to God, that is to the Godhead it self. For, to be united *Essentially* is for one *Essence* to be united to another *Essence*, that is, to be *one* or the *same* Essence with the *Divine Essence*. Was ever such *Quakerism* heard of among Philosophers! Or, plain honest Human Reason so subtiliz'd and exhal'd into Mystick Theology, by Spiritual Alchemy!

Yet, to say True, this is very Consonant to the Doctrine of *Ideas*. They slight the Instruction of Nature, they scorn to be beholding to their Senses, and Outwards Objects; which forces them upon *Introversion*, and to observe (as the same Authour says) what *Eternal Truth tells us in the Recesses of our Reason*; that is, in their Darling *Ideas*.

Now common Reason ever taught me, and every Man who did but reflect upon what passes within his Understanding, that the Proper and Effectual way to gain a Clear and Distinct Knowledge of our Simple Notions, is to make *DEFINITIONS* of them; and there are most Certain *Rules of Art*, how those Definitions may be fram'd. But, this was too Ordinary a way to please Minds so Extraordinarily Elevated as these Gentlemen pretend to be bless'd with. The highest Flights of Nature do flag, it seems, too low for their Supernatural pitch, nor can reach the Degrees of their Elevation above our dull Horizon. They are *Inspir'd* with Heaven implanted *Ideas*; and, so, they have no more to do but retire their Thoughts into the *Inward Recesses* of their Mind, embellish'd and guilded with these Shining Innate *Ideas*, and their work is done without any need of *Definitions* made by sublunary Art. Sometimes I am apt to think, that they had recourse to those Spiritual Pourtraitures, out of despair of explicating any other way the *Essences* of Things, or in what they consisted; and, I fear two of our Learned men lately mention'd, apprehend them to be Inscrutable and In-explicable. Whereas, speaking of Essences in Common, I do assure them, that nothing can be *plainer*; and that every Clown were he interrogated orderly, could give us the true *Essences*, or (which is the same) the true *Natures* of the things he is conversant with. For, whatever makes Mankind *call* and *esteem* any Bodies, *such* or *such* Things in Distinction from *all others*, is truly their *Essence*; or, (to speak in the Language of a Philosopher) let but Matter be *determin'd* by such a Complexion of Accidents, with that Harmony or Proportion of parts, connected with that

Constancy, that it is fit to act a Distinct part upon Nature's stage, or perform its Primary Operation; that Complexion of Accidents, (I say) is truly the Essence of that Body, or the Form that constitutes it such an *Ens*, or such a Part of, or in, *Nature*.

Perhaps the Cartesians will say, they allow Definitions to make their *Ideas* Clear and Distinct. But how can this cohere? *Definitions* are the Effects of *Art*, whereas these *Ideas* are imprinted by God's Hand who gave them their Nature, and ⁴⁴ *Cartesius* says expressly, they are *Ingenitae*.⁴⁵ This being so, and *GOD*'s immediate Works being *Perfect*, and those *Ideas* being intended to give them Knowledge, they can need nothing to make them more Clear and Distinct; nor consequently can the Users of them have any occasion for Definitions, unless perhaps to explain their *Ideas* to us; who think we have a firmer *Basis* to build them on, than those *Ideas* of theirs. *Nature* gives the *Ground*, and *Art*, the *Rules* to make them: And they are such necessary Instruments to true and solid Science, that I could wish for the Improvement of Knowledge, that our Universities would appoint a Committee of Learned Men to compile a *Dictionary of Definitions* for the Notions we use in all parts of Philosophy whatever. *Monsieur de Furetiere*⁴⁶ has attempted to perform this for all words whatever, in Three Volumes; Out of which may be Collected those that make for our purpose; which being, by the Joynt-labour and Concurrence of the Persons deputed, Examined; if faulty, Amended, and propos'd to the World; it could not fail of advancing Science highly. In carrying forward such a Noble Work, and so Beneficial to Mankind,⁴⁷ I should willingly contribute my *Quota* of Endeavours, nor think my pains better bestow'd in any thing I know of. For Definitions explicating or unfolding the *Nature of the Thing*, and all *Proper Causes* and *Effects* being so nearly *ally'd* to the Nature of the Thing, it follows that there lies involv'd in the Definitions, all Essential and Proper Middle Terms, to demonstrate whatever belongs to the Notion Defin'd, if Right Logick and studious Industry be not wanting.

He blames St. *Austin*,⁴⁸ and wishes he had not attributed to External Bodies all the sensible *Qualities* we perceive by their means. And why? Because (says he) they are not clearly contain'd in the Idea he had of Matter. What Idea St. *Austin* had of Matter is little to purpose; but, if he proceeded consequently to his Thoughts, he could not conceive the *First Matter* to be such as they put theirs to be. For, what Man of Common Sense can frame any *Idea* of a Thing that has onely *Extension* in it; but is not to any degree either *Dense* or *Rare*, *Easie* or *Hard to be Divided*, *Fluid* nor *Solid*, *Soft* nor *Hard? &c.* And, if their Quaint *Ideas* and Clear and Distinct Conceptions, which seem to be the Ground of all their Witty Discourses, or Divine Revelations (as *Malbranche* calls them) of Science, be no Wiser or Solider than *this*, which is, or should be the chief Subject of their Physicks, I shall dare to affirm, that they are in plain Terms most ridiculous and most unintelligible Fopperies; as I have shown at large in my *Appendix*. And, indeed, how should we make any Clear Idea of their Matter when themselves speak Contradictions concerning it; as may be seen hereafter, *p.* 417. where I shall hope I have demonstrated that their Forc'd Silence, Open Prevarications, and perfect Inconsistency in telling us the Intrinsic Nature of that First Matter of theirs, has render'd them utterly Incapable of explicating any Body in Nature. Nor can we need any greater Confirmation, that their Natural Philosophy is utterly Unprincipled and Unaccountable in the most Essential part of it, than to observe that neither *Cartesius* himself, nor

⁴⁴ Medit 3.

⁴⁵ Latin. That is, *innate*.

⁴⁶ Antoine Furetière (1619–1688) was a French churchman, writer, and lexicographer.

⁴⁷ Sic. Expected "Mankind."

⁴⁸ St. Augustine of Hippo (354–430). Alternative spelling.

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Regius,⁴⁹ *Rohault*,⁵⁰ *Regis*,⁵¹ *Le Grand*, nor any of that School I have met with, have (as I *must* think) been *Able* to give us any Light of it; since they neither Attempt, nor Mention it; which shows they are at an utter Loss about the Primordial Constitution of their First Matter; of which, notwithstanding, they acknowledge all their *Three Elements*, and, consequently, all Nature was made.

These few Particulars (omitting innumerable others) I have thought fit to hint, to show that the *Method to Science*, which the Great *Cartesius* follows is utterly Incompetent to attain it, and that the Scheme of his Doctrine is merely a piece of Wit. That which gives it most Credit is, that, his Suppositions granted, he proceeds consequently, in the subsequent parts of it, which are purely Mathematical. But, what signifies that, if he neither observes True *Logick* in laying his *Principles*; nor *Nature* in his *Physicks*, which he cannot pretend to do, unless he gives us a particular account of the Intrinsic Constitution of his First Matter, upon which all depends. A Task, I say again, his Followers neither will ever attempt, nor can possibly perform by his Principles, as is shown at large in my Appendix.

Yet it must be confess'd, that those kind of Discourses are very Plausible and Taking with the *Middling* sort of Readers; and with such who are much pleas'd with a Melodious Gingle of Words, prettily laid together with Neat Eloquence, Quaint Wit, and Unusual Remarks. For those kind of Embellishments do divert the Reader, make the Authours pass for Curious men, and bear a fine Appearance of Truth; till they come to be scann'd Exactly, and grasp'd close by Severe Reason reducing them to *Principles* and *Connexion of Terms*. Which done, it will be found that they afford to the Learner who sincerely seeks for Truth, nothing but certain *Bright Flashes* or *Cornuscations*; which do indeed for a time dazle the Fancy, but they settle in the Judgment no *Constant Steady Light* to direct them in their Way to true *Science*. Farther, I must declare, for the Honour of our English *Genius*, that, tho' we do not match the French in the Finery, Gayity, and Neatness of their delivering their Conceptions (a Talent in which they are very Excellent) any more than we do in our Outward *Garb*, and *Dress*; yet, that there are more Solid Productions, well built Truths, and more Judicious and Ingenious Thoughts of his own in our Learned Countryman Mr. *Locke's* Treatise, Entitled, *An Essay concerning Human Understanding*,⁵² than (as far as I have observ'd) is found in great Multitudes of such slight Discoursers put together.

We are come now to consider the Other pretended *Method to Science*, which is the Way of *Experiments* or *Induction*. Concerning which, (not to repeat what I have occasionally, by way of *Reason*, alledg'd against it in my following Book) I need say no more, but that *Matter of Fact* shows evidently, that this Method, *alone*, and Unassisted by *Principles*, is utterly Incompetent or Unable to beget *Science*. For, what one Universal Conclusion in Natural Philosophy, (in knowing which kind of Truths *Science* consists) has been Demonstrated by *Experiments*, since the the time that Great man, Sir *Francis Bacon*, writ his *Natural History*?⁵³ The very Title of which laborious Work shows, that himself did not think *Science* was attainable by that Method. For, if we reflect well on what manner such pieces are writ, we

⁴⁹ Hendrik de Roy (1598–1679), perhaps better known by the Latin name Henricus Regius, was a Dutch philosopher and correspondent with Descartes.

⁵⁰ Jacques Rohault (1618–1672) was a French Cartesian philosopher.

⁵¹ Pierre Sylvain Régis (1632–1707) was a French Cartesian philosopher.

⁵² John Locke (1632–1704) was an English philosopher and physician. Sergeant's other works deal explicitly with Locke, e.g., *Solid Philosophy*. In addition to the *Essay*, Locke's political philosophy was also influential.

⁵³ Sir Francis Bacon (1561–1626) was an English philosopher and politician. He is seen as a major figure in the scientific revolution. The work "Natural history" probably refers to *Historia Naturalis* (1622), though there are other works by similar name that were also influential.

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shall find that it is, (as he calls it) meerly *Historical*, and Narrative of *Particular* Observations; from which to deduce *Universal* Conclusions is against plain Logick, and Common Sense. To aim at *Science* by such a *Method*, may be resembled to the Study of finding out the Philosopher's Stone. The Chymist lights on many Useful and Promising things by the way which feed him with *false hopes*, and decoy him *farther*; but he still falls short of his *End*. What man of any *past*, or of our *present* Curious Age, did ever so excell *in those* Industrious and Ingenious Researches, as that Honour of our Nation, the Incomparable Mr. *Boyle*?⁵⁴ yet after he had ransack'd all the hidden Recesses of Nature, as far as that Way could carry him, he was still a *Sceptick* in his *Principles* of Natural Philosophy; nor could, with the utmost Inquisitiveness, practic'd by so great a Wit, arrive at any Certain Knowledge whether there was a *Vacuum* or no: And certainly, we can expect no Science from such a Method that can give us no Certain Knowledge, whether in such a Space there be *Something*, or *Nothing*: which, of all others, should be the most easily *Distinguishable* and *Knowable*. Lastly, we may observe, that when an *Experiment*, or (which is the same) a *Matter of Fact* in Nature is discover'd, we are never the nearer knowing what is the *Proper Cause* of such an *Effect*, into which we may certainly *refund* it; which, and onely which, is the Work of *SCIENCE*. For, *Gassendus* will explicate it according to *his* Principles, *Cartesius*, according to *his*; the Noble Sir *Kenelin Digby*,⁵⁵ and his most Learned Master. *Albius*,⁵⁶ (whom I Judge to have follow'd the true *Aristotelian* Principles) according to *theirs*; So that, after all, the assigning the True Natural *Cause* for that Effect, and explicating it right, must be Decided by way of *Reason*; that is, by Demonstrating first whose *Principles* of Natural Philosophy are *True* and *Solid*; and onely He or They, who can approve *their* Principles to be *such*, can pretend to explicate that Natural Production right by resolving it into its Proper Causes, or to have *Science* how 'tis done; and, however the Experimental Men may be highly Commendable in other Respects, yet onely those who can lay just Claim to *True* Principles, and make out their Title to them, can be truly held Natural *PHILOSOPHERS*. Which sufficiently shows that the Way of *Experiments* cannot be a True *METHOD TO SCIENCE*.

But to leave other Men's Failings, and Return home to my Self. To obviate the *Superficial* ways of Reason, so magnify'd by other Speculators, I have endeavour'd to take the quite *Contrary Method*; and have laid my Discourses as *deep* as I could *possibly*; and, perhaps, it will be thought I have *overdone* in those about *Identical Propositions*; for which yet I shall hope, the Reasons I have given there for that procedure, will bear me out and justifie me. For the same inducement I have very frequently drawn my Arguments from *Metaphysicks*; being well assured that such *Mediums* do make the Dicourses, built on them, approach nearest to *Self-evidence*. Nor do I fear it should be objected, that, in a *Logical* Treatise, I bring such Instances and Corollaries as entrench upon, and make an In-road into divers *other* Sciences. Rather, I must profess that I held it a precise *Duty* in my Circumstances; because *Logick*, or the *Art of Reasoning*, being a Common Instrument to attain *all* Science, I was to show how it was, upon occasion, to be Apply'd to as many of them as I could; so I do not make unreasonable Excursions to hunt for them in Foreign Subjects, but that they light Naturally in my way. Lastly, I thought it became a Lover of Peace and Union among Christians to endeavour they should not wrangle about *Equivocal Words*, so their *Meanings* be justifiable.

In a word, 'tis *Connexion of Terms* which I onely esteem as Proper to advance *Science*. Where I find not *such Connexion*, and the Discourse grounded on *Self-evident Principles*, or (which is the same) on the

⁵⁴ Robert Boyle (1627–1691) was an Anglo-Irish philosopher, chemist, and theologian. He is perhaps best known for his influence on modern chemistry.

⁵⁵ Sir Kenelm Digby (1603–1665) was an English philosopher and Catholic theologian.

⁵⁶ Thomas White (1593–1676), known also by the Latin name Albius, was an English philosopher and Catholic theologian. He also went by the pseudonym Blackloe, and had a small following ("Blackloists").

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Metaphysical Verity of the Subject, which engages the *Nature* of the Thing, I neither expect *Science* can be gain'd, nor the *Method to Science* Establish'd. But, this done, I make account both the one and the other may be hoped for. How well I have behav'd my self in attempting this, is left to the Judgment of those who are the Proper Umpires in such Matters, I mean your selves.

Your True Honourer

and Humble Servant,

J. S.

The Method to Science

Book I.

Lesson I. *Of Notions, or the very First Ground on which all Science is built.*

1. We experience, that Impressions are made upon our Senses, and that those Impressions are Different, according to the different Nature of the Objects that imprint them.
2. We experience also, that those Impressions do not stay in the *Outward* Senses, but reach the *Soul*, and effect *it*.
3. Every thing being received according to the nature of the Subject that receives it, and the nature of the Soul being a Capacity of Knowledge; hence, those Impressions must affect the Soul, as to cause some kind of Knowledge in her, how rude and Imperfect soever it may yet be.
4. The Impressions from the Objects that affect the Senses, and by them the Soul, do carry the very *Nature* of those Objects along with them, and imprint them on the Soul: which Prints, or, as it were, Stamps, as received in the Understanding, we call **Notions**.
5. Wherefore *Notions* are the First and Rudest Draughts of Knowledge; being most *Simple*, and Naturally wrought in the Soul by the strokes of occurring Objects, without any Industry or Active Concurrence on our part.
6. That these *Notions* are the very *Natures* of the Thing, or the *Thing* it self existing in us *intellectually*, and not a bare *Idea* or Similitude of it, appears hence evidently, that when we say interiorly, or judge *A Stone is hard*, we do not intend to affirm, That the *Likeness* or *Idea* of a Stone is *hard*, but the very *Stone it self*. And were it not so, the Proposition would be *false*; (for the Similitude of a Stone in our *Mind* is *not Hard*;) whereas yet we are assur'd that Proposition is *True*.
7. Again, we experience, that we *consider*, *judge*, and *discourse* of the very *Thing it self*, and of its very *Nature*; which (these being Interior or Immanent Acts, bred and perfected *within* our Soul) we could not do, unless the *Objects* of those Acts, or the very *Things* themselves were *there*.
8. Lastly, It cannot be deny'd, but that we have in our Soul the full and compleat Sense of *this* Proposition, and Notions of every distinct part of it, *viz.* [*There is in me the Idea or Likeness of a Stone.*] Therefore there is *in* me something signified by the word [*Stone*] not only distinct from *Idea* and *Likeness*, but moreover Relatively *Opposite* to it; which can be nothing but *the very Stone it self*.
9. Nor need it cause and Wonder, that the same *Ens* or *Thing* may have diverse *Manners* of Existing; one Corporeal, the other Intellectual or Spiritual; since the Thing (*v.g. Peter*)⁵⁷ abstracts even from Existence *it self*; for 'tis not found in the Notion or Meaning of that word, that the Thing signified by it *Exists*, or *not Exists*; much more than does the Notion of *Thing* abstract from (that is, is Indifferent to) all *Manners* of Existing.
10. The words *Notion*, *Simple Apprehension*, *Conception*, and *Meaning*, are all synonymous terms. They are called *Notions*, because they are the Parts or Elements of Knowledge; which, put and consider'd together, make *Cognition*, which is Proper and Compleat Knowledge. They are call'd *Simple Apprehension*, to distinguish them from *Judgment*, which are compounded of *more*

⁵⁷ See Book 3. Less. 7. Sect. 3, 4.

Notions, and belong to the *Second* Operation of our Understanding. Or rather, because by them we simply or barely *Apprehend*, that is, lay hold of, or take into us the thing, about which we afterwards Judge or Discourse. They are call'd *Meanings*, because they affect the *Mind*, which only can *mean* or *intend*; or else, in relation to the Words whose *Meanings* they are. They are called *Conceptions*, in order to the Power, which, impregnated by the Objection, *conceives* or (as it were) *breeds* them as the *Embryo's* of Knowledge. Lastly, they are said to be *the Natures of the Things*, because (as was shewn) they are such essentially and formally; in nothing differing from them, but only that they connote a new *Manner of Existing*, which⁵⁸ is Extrinsic to the Thing, and to the *Nature* or *Essence* of it.

The word [Idea] is the least proper, because it seems to signifie a bare *Similitude*; unless the Users of it would express themselves to take it in the sence in which we take the word [Notion] here; or, as we use to understand it when we say, that the *Idea's* of all things were in the Divine Intellect before they were created; that is, their very *Essences*.

11. *Notions* are called *Simple Apprehensions*, not from their Fewness of the words that express them, nor from their not having any Grammatical Composition or *Syntax* in them: but, from the nature or manner of this Operation of our Understanding. For, since (as was said) they are called *Simple Apprehensions*, because by them we simply or barely apprehend or lay hold of the Nature of the Thing intellectually; it matters not how *many* or how *few* the words are, so we do no more than merely *Apprehend* or *Take* the Meaning of the Words, or the Notions, into our minds, without *Judging* or *Discoursing* of them. Whence, we may have a *simple Apprehension* of a long Sentence, nay, of a whole Sermon or a great Book as long as we do not set our selves to *judge* or *Discourse* of the Truth or Falsehood of what's said or writ; but purely to *Apprehend* the Sence or Meaning of the Speaker or Writer.
12. *Notions* being the Natures of the Things in us, have neither Truth nor Falsehood in them *formally*; since they do neither *affirm* or *deny* (only which⁵⁹ Speeches are capable of *Formal* Verity or Falsity) any more than does the Thing it self as it stands in Nature, or out of the Understanding.
13. All the Verity they have is in their *Metaphysical* Verity, or their *being truly what they are*. And they partake this from the *Idea's* in the Divine Understanding, from which they unerringly flow, and which are essentially Unchangeable. By which we see how the God of Truth is the sole Author of all the Truth that is in us, and how he does (ordinarily) communicate it to us, *viz.* by *Fixing* unalterably the Natures or *Essences* of Things; from which, being *thus Establish'd* and imprinted on our Minds by our Senses, all Science and Truth in us have their Certainty originally.
14. All true *Science* being thus built on the Immovable Stability of the Essences or Natures of Created Beings, it follows necessarily, that all Discourses that are not Agreeable to the Natures of Things, and *Grounded* on them, are Frothy, Incoherent, and False, and if pursued home, must be found to have a Contradiction for their First Principle, in regard they make the Natures of the Things *to be what they are not*.
15. Wherefore *Notions* being the Natures of the Things in our Understanding, the Method to pursue True Science is, to attend and hold heedfully and steadily to those *Notions* which the Things without us have imprinted or stamp'd in our Minds; and to be very careful lest Imaginations (which are the Offsprings of Fancy, and do oft misrepresent the Thing) do

⁵⁸ B. 3. L. 7. S. 4, 6.

⁵⁹ Corrected per errata sheet. Original: "with."

delude us, or the Equivocation of Words draw us aside, and make us deviate from those Genuine and Nature instill'd Notions.

Corollaries.

Corol. I. Hence is seen how Unreasonable the Scepticks are who endeavour to undermine all Science, by pretending that all our Notions are Uncertain. For they being caus'd by Natural Impressions on our Senses, those Men may as well pretend, that Water does not wet, or Fire burn, as that the Objects work not their several Effects upon our Senses. If they contend, that, every Man's individual Temper being different, our Notions must therefore differ *to some Degree* in every Man, they oppose not us, who say the same; nor will this break any square, in our Discoursing and our Understanding one another; for few Men (perhaps none) can reach these Individual Differences, nor consequently *mean* them or intend to speak of them when they discourse. But, if they say they are not the same in all Men (whose Senses of imagination are not disordered by some Accidental Disease) substantially and *in the main*; then, besides what has been now alledged, they are confuted by this, that Mankind has now for some thousands of Years held Conversation with one another, yet it was never observ'd that they could not understand one anothers Meaning in Discourse about Natural Objects; or if any hap'd to occur which was Ambiguous, that they could not make their *Notions* known by Explications; or if there had been some notable variation in their *Notions*, (as when to Icteric⁶⁰ persons, all things seem yellow, or sweet things bitter to depraved Tasts) the Mistake can easily be made manifest and corrected by the Standard of the Generality of Mankind, who assure them of their Misapprehension; and of Learned Men particularly, who find the Cause of their Mistake to proceed from some Disease perverting Nature, or some Circumstances of the unduly-proposed Object, or of the *Medium*; or from our Inability to reach to some minute Considerations belonging to its Composition, Figure. &c. which hinder not our having Science of it in other Cases.

Corol. II. Hence also is shewn the Vanity of that Tenet that maintains the Pre-existence of Souls, as far as it depends on this Ground, That Knowledges are only *Excited* or Awaken'd (as it were) by the Objects working on the Senses, and not *Imprinted* there by them. For, this Ground shakes, by manifesting the Ways and Means laid by Nature to *beget* those Knowledges in the Soul, and convey them thither from the Objects. Besides, (which overthrows all their *Hypothesis*) the Knowledge that I am *hic & nunc* thus affected, cannot with any sence be pretended to have been Pre-existent to the Time and Place in which that Particular Knowledge was made; since neither what⁶¹ Time nor (perhaps) Place was then in Being. Whence it follows, that the Soul can gain *some* new Knowledges, and this by the Senses; and if *any* or *some*, why not, with equal reason, *all* that the same Senses can receive from Objects imprinted in her; which (as far as it depends on this way of instilling Knowledge) may reach in a manner all Nature, and by the assistance of Reflexion, Discourse and Art improving it, may stretch it self much farther.

Corol. III. From this whole Discourse it appears, that whatever other Method of attaining Science some may propose, however it may seem witty, and one piece of their Doctrine be consonant to the other, and all of them consequent to the Principles they lay; yet it will, I say, evidently appear, that the way they take can never be that which GOD and Nature have

⁶⁰ Icteric is a dated term referring to jaundice (Latin 'icterus', means *jaundice*).

⁶¹ Sic. Probably 'that'.

laid to ingraft Knowledge in us. Whence, tho' such Discourers may shew much Art, yet, in reality, and if it be examin'd to the bottom, all their Plausible Contexture and Explication of their own Scheme, will be found no better than the *running pretty strains of Division upon no Ground*; since their pretended Knowledges do not begin with, nor grow up orderly from the Natures of the Things themselves, or from our *Natural Notions*, which are the *Seeds of Science*.

Corol. IV. Our Discourse here abstracts from that Question, Whether sensible Qualities are Inherent in the *Object* or in the *Sentient*? It is enough for my purpose that the Objects work upon the Senses, so as to imprint by their means several Notions in the Mind. Yet, I do not see how Mr. *Hobbs*⁶² proves (for he does not so much as attempt it) that Light coming from the Object does not carry away with it some Particles of it; since we experience, that the Sun beams dry up great Ponds, which they could not do, unless they did, when reflected, dip their dry Wings in that moist Element, and return with some Particles of Water into the Air; which, when multiply'd, are condensed afterwards into Clouds: And I believe it will be granted, that the Sun-beams reflected from the Moon bring along with them moist Vapours. Much less is it conceivable, that in Smells and Tastes nothing at all of the *Nature* of those Objects should be convey'd by the Nerves to the Brain, but only a certain kind of *Motion*. 'Tis not my task to defend the Opinions of Schoolmen, nor those of vulgar Philosophers, which he impugns, but to mind my own business. Tho' had I a mind to lose a little time, it were easie to shew, that he seems to mistake all-along our *Perceptions* for what is *perceiv'd* of the Object: And I might as easily deny, that Colour (for example) is *nothing but Light*; and affirm that 'tis such a disposition in the surface of a Body, Figur'd thus or thus with Parts and Pores, as is apt to reflect more or less of the Light, and then to assert, that that Disposition of the Surface is truly and really *Inherent* in the *Object* or Body it self, —*sed haec obiter*.

Lesson II. *Of the Distinction of Natural Notions, and of the Reducing them under Ten Common Heads.*

1. Every individual Thing not only (as was said)⁶³ imprints a Notion of it self in our Minds, but *many* diverse Notions, according to the Various Impressions it makes upon the same or diverse Senses. This is manifest by Experience; for we find that an Orange (for example) causes in us the several Notions of Yellow, Heavy, Round, Juicy, Hard, &c.
2. We can consider *One* of those Notions, without considering the *Others*. For we experience, that we can *abstract* the Notion of *Round* from the notion of *Heavy*, (or any of the rest) and Consider it *apart*, and Discourse of it accordingly.

Note, That since the Object or Thing in our Understanding is capable of being consider'd diversly, hence [*Notion*] gets the name of [*Considerability*] and diverse *Notions* are said to be diverse *Considerabilities* of the Thing; which yet is no more but *the same Thing as diversly consider'd*.

3. Whether or no there be any Knower of a superiour Order, that can at one Intuitive View comprehend the whole thing, yet 'tis certain that our Soul, in this state, can have no Science

⁶² Thomas Hobbes, 1588-1679, was polymath and philosopher, perhaps best known for his materialist physics, contractarian political philosophy, and unorthodox theism.

⁶³ Less. 1. S. 1, 2.

of any thing, otherwise than by these *Abstracted Notions*. For since⁶⁴ our Notions are the *Ground* of all our Knowledge or Science, and (as will be seen shortly) we have *no Notion* of any Object, but by Impressions on the *Senses*, and those Impressions do *differently* affect us, and so breed *Different* or *Abstracted Notions*; 'tis manifest that we can no otherwise know any thing here, but by *Different*, that is, *Abstracted*, Partial or Inadequate *Notions*.

4. 'Tis necessary to Science, that it be *Distinct* and *Clear*, and not *Gross* and *Confused*. This is evident from the very Terms; for *Science* signifies a *Distinct* and *Clear* Knowledge.
5. Our Soul cannot in this state wield *more* Notions *at once*, nor *consider* them, or *Discourse clearly* of them *together*; or rather, indeed, *not at all*. This will appear evidently, by an easie reflexion on our Interior: For, we shall find, that we can Discourse of each *single* abstracted Notion in an Orange viz. on its Bigness, Roundness, Colour, Tast, &c. But if we would go about to Consider or Discourse of us Roundness and Tast both together, (and the same may be said of any *other* two that are Disparate, or not included one in the other) we shall find our selves at a loss, and in Confusion, not knowing how to begin, nor how to proceed.
6. We cannot in this state know, even singly, *every* particular Considerability found in the thing: For, tho' (for example) we can by our Common Sight discern the Colour or Figure of a thing, or of its Grosser parts, yet a Microscope will discover to us innumerable Particularities which escap'd our Common View; and had we a Glass that magnified more, there would be found still more and more Particularities than did appear when we observ'd it formerly. Wherefore, since every New Observation we can possibly make begets a New Notion in us,⁶⁵ and all our Knowledge is grounded on our Notions, we can no more know the last Considerability, which is in the thing, than we can know the least Part that is to be found in Quantity, or in the Differences of Figure, Colour, and other Respects which each of those very least parts may have; and therefore they are not All knowable by us in this state.
7. Much less can we, in this state, know *perfectly*, or discourse *scientifically* of any *Whole* Individual thing, or (as the Schools call it) the *Suppositum*, taken *in bulk*. For, ⁶⁶ since all the Considerabilities that integrate it, and consequently the Notions it begets in us, are blended confusedly in the entire Notion of the *Suppositum* or Thing. Again, since these are⁶⁷ innumerable, and many of them Unknowable by us; it follows, that *no one* of them (that is, *Nothing* in that whole *Suppositum*) can be *distinctly* or *clearly* known, while we discourse of that which has them all *in bulk*; that is, while we discourse of them *all at once*; and consequently, the Notion of the *Suppositum*, which contains them all, cannot be *clearly* or *perfectly* known by us, nor discoursed of *scientifically*.
8. Wherefore we cannot know in this state any *One entire* Thing perfectly, since we can never have any perfect Science of it,⁶⁸ either taking it *in bulk*,⁶⁹ or by Detail.
9. Wherefore all we can do in this state, is to glean from the Objects by our Senses so many Notions of them as may suffice to distinguish them from one another; and may serve for our Common Use, Needful Speculation; or, lastly, for our Contemplation.
10. Notwithstanding this, the Science attainable in this State may arrive to be in a manner *Infinit*. For, since our Notions⁷⁰ are the very *Natures* of the Things, and the⁷¹ *Natures* of the Things

⁶⁴ Less. 1. Sect. 13, 14, 15.

⁶⁵ L. 1. S. 13, 14, 15.

⁶⁶ The marginal note appears to be missing.

⁶⁷ Sect. 6.

⁶⁸ S. 7.

⁶⁹ S. 6.

⁷⁰ L. 1. S. 6, 7, 8.

⁷¹ L. 1. S. 13, 14.

are the Seeds of all Science, and diverse Truths spring from them, and other Truths do still follow by Connexion with the former; and,⁷² since no stint is assignable of the Connexion of Truths, or of our Deduction of one Truth from another; it follows that there is no Bound or Limit of our Science attainable here, but that (if Art and Industry be used) it may be in a manner *Infinit*.

11. 'Tis a most Fundamental Errour to fancy that there are many kinds of *little Things* in the Object, corresponding to all the different Notions or Considerations which we make of it. For, since the least Particle that is in it does ground diverse Notions of it, and every various Consideration of each Particle, either according to what is Intrinsecal or Extrinsecal to it, does still beget *more*. Again, since no Particle can be so small, but we can *conceive* or have distinct Notions of Two Halves, and many other proportionate Parts in it, and the Particles that are or may be conceiv'd to be in Quantitative Things are Numberless; it follows, that, were all the Distinct Considerabilities in the Object distinct Things, we could never pitch upon any of those Things (they still including others in them) which we could say is *One* or *Undivided in its self*; nor consequently could we know what *Ens* or *Thing* meant in Corporeal or Quantitative Things, with which we converse; which would Fundamentally destroy and pervert all Human Speech and Discourse about *any Thing*, and make all Science impossible.
12. From what's said 'tis deduced, that it is one necessary and main Part of the **Method to Science**, to *distinguish* our Notions *Clearly*, and to *keep* them distinct *Carefully*. For,⁷³ since all Science is grounded on our *Notions*, and Science must be *Clear*, and this cannot be⁷⁴ if any *Two* of them be confounded, or taken together *at once*; it is manifest, that 'tis one necessary and main part of the **Method to Science**, to *distinguish* our Notions *Clearly*, and to *keep* them distinct *carefully*.
13. The best way to do this, is to rank all our Notions under distinct common Heads. For, this done, it will be easie to know, to which of those *common Heads* they belong; and those common Heads being easily distinguish't from one another, because they differ *most vastly*, or (as the Schools phrase it) *toto genere*, it will follow that the several Notions *comprized* under each of those Heads, must likewise, to a fair degree, be clearly known to be *Distinct* also.
14. There is but one onely Notion that is *perfectly Absolute*, viz. that of *Existence*, and all the rest are in some manner or other, *Respective*. For, since all Notions that are, must be either of the *Thing it self*, or of what *relates* or *belongs* to it, and the Thing it self *relates* to *Existence*, of which (since only a Thing can be) it is a *Capacity*; and *Existence*, as being the last Actuality conceivable in the Line of Being, *relates* to no *other* or *farther* Notion; it follows that only the Notion of Existence is *perfectly Absolute*, and all the rest are some way or other *Respective*.
15. Whence it follows, that the Notion of *Existence* is imprinted in the Soul before any other in priority of Nature. For, since⁷⁵ all other Notions are *Respective*, and so consist in some (at least confused or rude) Comparisons, as it were, of that Notion to what it respects; to have which is much *harder* than to have that which is perfectly *Absolute*, more Simple and not Comparative at all; hence the Notion of *Existence* is the most Easie, and therefore the first in priority of nature. Again, since (as ⁷⁶ will be shewn hereafter) the substance of all *Operation* is nothing but the *Existence* of the Object imprinted on the Patient, and the Soul must have a Notion of the *Operation* made upon her, that is, a Notion of the *Existence* of the thing

⁷² See B.3. L.4. S.12, 13, 14.

⁷³ L. 1. S. 13, 14.

⁷⁴ S. 5.

⁷⁵ Sect. 14.

⁷⁶ Less. 8. Sect. 7.

imprinting it; it follows necessarily, that the Notion of the *Existence* of that thing is first in her.

16. From this last Reason it is evinced, that the Notion of the Man's own Existence is wrought in the Soul before the Notion of things *without him*, and this by the Man himself as his own Object, and is not imprinted by Outward ones. For ⁷⁷ since the Soul has Notions of Objects, not by Emission of its Virtue to them, but by their being Receiv'd in it, and Existing in it Intellectually; nor could it have a Notion of them, that is, they could not *exist in* the Soul, without its having a Notion first (in priority of Nature) of *its own* or the *Man's* Existence; it follows, that the Notion of the Man's Existence comes into the Soul before the Notion of other things, and consequently that it is imprinted by the Man himself, as his own Object, and is not caused by Outward ones. Again, since the Existence of the Man is Naturally *in him*, and consequently *in the Soul*, (when she has a Notion of him) after its manner, that is, intellectually; it follows, that it has (as it were) *Naturally* a Notion of the Man's Existence, and consequently, before it has the Notion of any other thing.

Note 1. To explicate *how* this is done, and why it *must* be so, Anatomists tell us, that the *Embryo* lies in a manner *round* in the Womb; whence some parts of it do continually and necessarily touch some others. Wherefore as soon as the Soul is infus'd, and it is now from a meer Animal become a *Man*, and has got an Understanding Power capable to receive *Notions* of Objects; those Touches or Impressions of some parts of himself upon others, do naturally affect the Sense, and by it the Soul, and beget a blind Notion there of the *Man*; and by a natural kind of Consciousness or Experience, that he *Operates* thus upon himself,⁷⁸ of his own *Existence*.

Note 2d. Hence follows, against the *Cartesians*, that there is no kind of Necessity of *Innate Idea's*: For, having once got, by this means, the Notion of *Existence*, and all other Notions being *Respective* or *Comparative* to it; and the Soul being of its own nature a Comparative Power, since (as will be seen hereafter) both our Acts of Judging and of Discoursing are Comparative Acts; hence the Soul becomes provided with Means to have all other Natural Notions whatever, by what it has from the Object, and by it self. But of this Point more towards the end of this Lesson. Only it is to be remark'd, that it is not here intended that the Soul has only the Notion of Existence alone, and *afterwards* others; for at the same time it has the Notion of the *Man existing*, and existing *thus* by his *operating thus*. We only discourse which of those Notions is first in priority of Nature, that is, of its own Nature most Knowable or Perceptible.

17. All other Notions of the Thing besides Existence, being *Respective*, are either of something *Intrinsically* belonging to it, or else of something *Extrinsically* refer'd to it by our Understanding. This is evident; for we can have no Notion of *Non-Ens*, or *Nothing*, nor consequently of what belongs to it.
18. *Intrinsecal* Notions are but Four. For, since Existence is the only *Absolute* Notion, and can be refer'd to no other, all other Notions must either Immediately or Medately refer to *it*; Wherefore all *Intrinsecal* Notions must either refer the Thing it self immediately to its Existence, by considering the *Ens* to be of such an *Essence*, as is⁷⁹ capable to recieve it; and

⁷⁷ Less. 1. Sect. 1, 3, 5.

⁷⁸ L. 8. S. 1.

⁷⁹ Corrected per errata sheet. Original: "as it is."

then *Essence* being the Immediate Power to *Existence*, they are Essential Notions, and belong to that Common Head we call *Ens* or **Substance**. Or else they refer the Thing to some *Common* Manner or Modification (that is, Consideration) of it, in which *all* things we converse with do agree; that is, to its Bigness or **Quantity**. Or else they refer the thing to some Modification or Consideration belonging to its own *peculiar* Nature, denoting how it is *well* or *ill* dispos'd in that respect; which Common Head is called **Quality**. Or, lastly, they refer some one *Individuum*, according to something Intrinsecal to it, to another *Individuum*, which constitutes the Common Head of **Relation**. And more Common Heads of Intrinsecal Respects cannot be invented; therefore there are only Four Common Heads of *Intrinsecal Notions*.

19. Those Notions that refer not something that is Intrinsecal to the thing, but what's *Extrinsecal* to it, are conceiv'd to apply that Extrinsecal to it either by way of *Motion*, or *in Rest*. If by way of *Motion*, then, since Motion has two terms, it may be consider'd either as coming from the *Mover*, and 'tis the Notion of **Action**; or as affecting the thing *Moved*, and then 'tis called **Passion**. And, because the most Regular and most Equable, Motion, to our apprehension is that of the Sun, call'd *Time*, and therefore all Sublunary Motions must bear a proportion to it, and be measur'd by it, being perform'd while such a proportionable part of it was Flowing; and Mankind is forced to need and make use of such a *Measure* to Adjust, Proportion, and Design all their Motions or Actions by, and to know the determinate distance of them from known and notorious Periods; hence there must be a Common Head of the time *When* those Motions were perform'd, which we call **Quando**.

If the Extrinsecal application be conceiv'd to be made to the Subject or thing *in Rest*, then, either that Extrinsecal thing is conceiv'd to be barely apply'd to the *whole*, that is, to be Immediate to it, or merely to *Contain* it, which grounds the Notion, and answers to the Question *Where*, or **Ubi**: Or, it denotes some certain determinate Manners *how* it is apply'd to the whole or to some parts of it; and then either the whole, or at least some Parts of the Subject or thing, must be conceiv'd to be ply'd and accommodated to the parts of the Extrinsecal thing, and 'tis call'd its Site or **Situation**; or else the Extrinsecal thing, or its parts, are conceiv'd to be Fitted, Ply'd, or Accommodated to the Subject or Thing, and then 'tis call'd **Habit**.

20. These ten Common Heads are call'd **Predicaments**, that is, Common Receptacles, which *Contain*, and whence we may draw, all our *Predicates* for the Common Subject, *Thing*: which we may briefly exemplifie thus: Peter₁, tho' but a yard₂ and half high, yet a Valiant₃ Subject₄, fought₅ and was wounded₆ yesterday₇, in₈ the Field, standing₉ upon his guard, armed₁₀.
21. All these Notions, under whatever Head, if they be Corporeal ones, are *Natural* and *Common* to all Mankind. For, since they are made by Impressions on the Senses, which are Common to all Mankind, it follows, that the Notions which are the Effects of those Impressions, must be such also; since the same Causes upon the same-natur'd Subjects, must work the same Effects.
22. Our Soul has in it a Power of *Compounding* those several Notions together, of *Considering* them diverse ways, of *Reflecting* on its own Thoughts and Affections; and, lastly, of joyning a *Negative* to its Natural Notions if there be occasion; such as are the Notions of Indivisible, Immaterial, Incorruptible, Unactive, Insignificant, &c. which particularly happens when we would strive to frame Notions of spiritual Things. All which is manifest by plain Experience, if we reflect never so little on what passes in our own Interiour.
23. No Notions can be imagin'd that do not arise from one of these Heads: For *Corporeal Notions* are imprinted directly; *Spiritual Notions* by *Reflexion* on our Mind, and on its Operations or Affections; or else by joyning a *Negative* to our Positive natural Notions. And *Mix'd* or

Compound Notions are framed by joyning our former simple Notions. Wherefore, since there can be nothing imagin'd which is not either Corporeal, Spiritual, or Mix'd, or Compounded of Former Notions, 'tis manifest, that all the Notions we have or can have, do arise from one of those Heads.

24. Wherefore 'tis hence farther shewn, that there is no necessity at all of making some Notions to be *Innate*; and consequently that Conceit of the *Cartesians* is Groundless, who affirm, That by a *Motion* made on the Senses, the Soul, by an unknown Vertue peculiar to its self, Excites or awakens such and such an *Innate Idea*, which till then lay dormant in it, because they find that that Motion⁸⁰ is nothing like to the *Idea* it excites: For, first, how do they prove that only Motion is communicated to the Brain from the Object, or, that that Motion does not carry along with it different-natur'd Particles or Effluviiums of these several Bodies, which are (as it were) little Models of their Nature? It is certain this passes thus in the grosser Senses, and no more is requisite to do it in the subtiler, but that the Particles emitted be more subtil; which cannot shock the Fancy or Reason of a Natural Philosopher, who knows well into what almost-infinite smallness Body is Divisible: And, of all Men in the World, the Cartesians should not be startled at it: whose Principles do allow lesser Particles than those Effluviiums, and to pass thro' far lesser Pores than those within the Nerves, or even than such as are in the substance of the Nerves themselves. Now, this being granted, the whole contexture of this Doctrine of ours has a clear Coherence. For, such Particles bearing the nature of the thing along with them, are apt, when they are carried to the Seat of Knowledge, to breed in the Mind, or convey into it the Nature, (or an Intellectual Notion) of the Thing it self. To do which, there can need no more, than that every thing (according to the Maxim) be receiv'd according to the Nature or Manner of the Receiver; viz. that those Effluviiums, by affecting the Body Corporeally, do affect the Soul Intellectually.
25. Secondly, How is it conceivable, or any way Explicable, that a Motion, which they confess is utterly Unlike the *Idea* in the Mind, should be the Proper Exciter of such an *Idea*? Indeed, were those Motions of the Nature of our *Signs*, that are voluntarily agreed on and fore-known to the Users of them, they might have a Power to make such a peculiar Excitation of those *Ideas*, as our Words do now; or as any odd and disagreeing Things are made use of by us when we practise the Art of Memory. But here things are quite otherwise; for we have no Foreknowledge either by Agreement, nor by our voluntary Designation, that such Motions shall excite such *Idea's* or *Notions*; nor, as is confess'd, are they Naturally alike; wherefore it is altogether inexplicable how they should ever come to excite such particular *Idea's*. Add, That this hidden Virtue in the Soul, to make such a particular *Idea* start up as soon as that Motion is made in the Nerve, is both said *gratis*, and is as Obscure as an Occult Quality; and so far from Explicable, that even themselves (as far as I can learn) have not so much as *attempted* to explain it: but it seems to be in part taken up *gratis*, to make good their Doctrine of innate *Idea's*, as the Tenet of such *Idea's* is to prove the Soul is a distinct Thing from the Body. Lastly, Their Argument drawn from Experience, that the *Idea* in the Mind is quite different from that Impression in the Senses or any Bodily Faculty, is shewn to be Inconclusive, by alledging, (as was said lately) that the Nature of the Object found in those emitted Particles, and the Nature of it found in the Soul Intellectually (or as standing under Notion) are the *self-same*, and not so *Unlike* as they imagin. Add, That their Argument faulters in this too, that the makers of it did not duly reflect, when they advanced it, on that 'foresaid Axiom,

⁸⁰ Corrected per errata sheet. Original: "Notion."

Quicquid recipitur, recipitur ad modum recipientis.⁸¹ For, had they done this, they could not have wonder'd that an Affection of the Body (which is imprinted *directly*) and an Affection of the Soul which is spiritual (and known only by Reflexion) should have a Different Appearance: The two Manners of Existing, with which the same Nature is vested, differing *toto genere*,⁸² that is as far as *Body* and *Spirit* (their subjects) can distance them.

To explicate this more fully, and to shew the difference between Corporeal and Spiritual *Idea*'s, I offer to their thoughts this Reflexion concerning the distinct nature of a *Phantasm*, which is a *Corporeal Resemblance*, and the nature of the thing in the *Mind* (that is its *Notion*) express'd by a *Definition*, which is *Intellectual* and *Spiritual*. The Phantasm or Corporeal Resemblance of a Man is a kind of Picture of a thing with two Legs, two Arms, such a Face, with a Head placed uprightly, that grows, moves itself, &c. Let us regard next the *Definition* of a Man, or rather (which is, abating the Expression, the same) the *Notion* of him; which is, that he is a *Rational Creature*; and we shall easily discern of how different a shape it is from the other; how it abstracts from many Corporeal Qualities, Figures of the Parts, and other Considerations, which were Essential Ingredients to the Picture or *Phantasm*, and not at all Essential to *It*, nor found in the *Definition*; and how some Considerations too are added in the *Definition*, or imply'd in it (as to *Apprehend, Judge, Discourse, &c.*) which no more belong to the *Phantasm*, than it did to *Zeuxis's* Grapes, to have the Definition of the *Fruit of such a Vegetable* predicated of them. In a word, one of them is a kind of Portraicture, *outwardly* resembling; the other speaks the most *Intrinsecal Essence* of the thing *Defin'd*. The one signifies *Bodily Parts* belonging to such an Animal, and therefore is *Corporeal*: the other does not signify, but *is* the Nature *signified*; and this too by *Words* which denote to us the *Mind* or *Meaning* (that is, the *Notion*) of the speaker; which is therefore *Spiritual*, at least in part. Whence the Compleat Essence of *Man* could not be understood, nor a Definition of it fram'd, without making use of some of these *Notions* or *Idea's*, which are made by our Understanding, *reflecting* upon its own *Spiritual* Operations.

Lesson III. *How these Common Heads of Notions are to be Divided.*

1. THE *Differences* that divide each Common Head must be *Intrinsecal* to it. For, since⁸³ we cannot discourse of two *Disparate* Notions at once; and since were those Heads divided by Differences that are *Extrinsecal* to the Common *Genus*, (or taken from *another* Head) each *Species* of it would consist of two *Disparate* Notions; hence it is absolutely necessary to Science that the Differences which divide these Common Heads be such as belong to *no other* Common Head, but be *within* the Limits of that Head, or *Intrinsecal* to it. Again, since the *Difference* is most *Formal* in constituting the *Species*, and the *Genus* only *Material*; were the Differences *Extrinsecal* or Borrow'd from *another* Head, it would follow, that all the *Species* of the Head divided by such Differences would belong to another Head, *viz.* to *that* Head whence those Differences are taken: Which would put all our Notions into Confusion, and involve a direct Contradiction, as making *Substances* to be *Quantities, Qualities, &c.*
2. *Intrinsecal* Differences can be no other but *more* and *less* of the Common Notion: For since, being *Intrinsecal*,⁸⁴ they cannot be taken from any *other* Head, it follows, that they must

⁸¹ Latin: "Whatever is received is received according to the manner of the receiver." 'Quicquid' is an alternative spelling of 'quidquid.'

⁸² Latin: 'entirely'; 'on the whole'; 'in all of its kind.'

⁸³ Less. 2. Sect. 5.

⁸⁴ S. 1.

partake of the *Common* Notion of *their own* respective Heads. Again, since, if they did partake of the *Common Notion* Equally, they would not *differ* in that Notion, and so would not be *Differences* of it; it follows, that they must partake of it *Unequally*; that is, they must be *more* and *less* of the *Common Notion*.

3. Hence the *Common Notion* of *Ens*, Thing or *Substance* being that which is *capable of Existence*, is Immediately, *Intrinsecally*, or *Essentially* divided into what's *more* and *less* capable of Existence. Wherefore,
4. *Divisible* and *Indivisible*, which constitute *Body* and *Spirit*, are the proper and *intrinsecal* Differences of the *Common Head* of **Substance**: For, since Actual Division of the Entity makes the thing to be no longer *indivisum in se*,⁸⁵ that is, to be *unum*; that is, to be *Ens*; that is, to be *capable of Existence*; it follows, that that *Ens* which is *Divisible* (or *Body*) is *less* capable of Existence, that is, has *less* of the nature of *Ens* or *Substance*; and the *Ens* that is *Indivisible* (or *Spirit*) has *more*. Again, since Things *Divisible*, or *Bodies*, can only have their *own* Being or Existence, whereas Things *indivisible*, or *Spirits*, are capable of being *Other* things also, or of having in them the Natures and Existences of all the things they *know*; hence they have a *greater* Capacity of Existence than *Bodies* have; since they have enough for themselves, and can impart it to Millions of *Other* things besides; and, consequently, *Body* and *Spirit* are constituted by *Divisible* and *Indivisible*, as by the proper, immediate, and *Intrinsecal* Differences that divide *Substance* or *Ens*.
5. The *Divisibility* and *Indivisibility* that are the *Intrinsecal* Differences of **Ens**, are not those of being *Quantitative* and *not Quantitative*. For, were it so, it would follow, that some *Intrinsecal* Differences of *Ens* in *Common* would be taken from some *other* Head, *viz.* that of *Quantity*, and⁸⁶ so, the Differences being what's most Formal in the *Species*, hence those *Species* of *Ens* would rather be under *that* Head than *its own*. Again, that *Divisibility*, which is of *Quantity*, may oftentimes be put into Act, and yet the *same Ens* remain; *v. g.* a Man may lose the *Quantity* of an Arm; a Tree, of a Branch, &c. and yet remain still the same *Things*; whereas, if *Quantitative Divisibility* were the *Intrinsecal* Difference which constituted it *such an Ens*, *Quantitative Division* must by consequence make it cease to be *that Ens*.
Moreover, since *Quantity* (as will be ⁸⁷ shortly seen) is *Divisibility*, and *Divisibility* in *Unity*, in case *Quantity* did *Intrinsecally* divide *Ens*, and constitute *Body*, where-ever there were *Quantity* there would be *Unity* under that notion; and so *all* *Quantitative* things would be but *one Ens* or *one Body*; which is the highest absurdity. Therefore the *Divisibility* and *Indivisibility* which are the *intrinsecal* Differences of *Ens*, are not those of being *Quantitative* and *not Quantitative*.
6. Therefore the *Divisibility* and *Indivisibility* which divide **Ens** *Intrinsecally*, must be the *Divisibility* and *Indivisibility* of the Constituents of *Ens*, as such; that is, the *Divisibility* of it into *Matter* and *Form*, and *Indivisibility* of it into such Constituent parts: Which differences do *Essentially* divide the *Genus* of *Ens*, and constitute the *species* of *Body* and *Spirit*. For, since we see *Bodies* *chang'd* into one another, and therefore, the former *Body* had really somewhat in it determining it to be actually *what it was*, which we call the *Form*; and somewhat by which it *could be Another*, which we call the *Power* to be another, or *Matter*. Again, since we see that the *Form*, which made the *former* Thing be what it was, is *gone* when 'tis made *Another* Thing, and a *New* *Form* succeeds into the same *Matter*; hence we can frame diverse Conceptions of *Body*, which belong to it as such an *Ens*, *viz.* *Matter* and *Form*; and have a Ground in Nature to say there is a *Real* divisibility between them. Wherefore since that *Ens* call'd *Body*, by being

⁸⁵ Latin: 'undivided in itself'

⁸⁶ S. 1.

⁸⁷ Less. 4., Sect. 2, 4

divisible into *Matter* and *Form*, becomes liable to have the *Form*, that constituted it such an *Ens*, separated from the *Matter*, and so to lose its being the *same Ens* it was, and incapable of existing any longer; and, for the same reason, a *Spirit*, by its *not* being divisible into *Matter* and *Form*, has *not* in its *Essence* any Principle giving it a Capacity *not to Exist*, as had the other; but *has* in its self, or rather *is* of its self a more simple and more perfect kind of *Unity*, and consequently a more Noble kind of *Entity* or Capacity of existing, than is the other; Therefore the *Divisibility* and *Indivisibility* which divide *Ens* Intrinsically, must be the *Divisibility* and *Indivisibility* of it into *Matter* and *Form*; which we call *Metaphysical Divisibility*, because it is the divisibility of the parts of *Ens* as such; that is, of *Ens* under the Notion of *Ens*.

7. For the same Reason given above, (Sect. 1, 2.) *Mixt* and *Simple* are the *Intrinsecal* Differences of **Body**: For, since *Simple* Bodies, which we call *Elements*, have in them but the Nature or *Essence* of *One* kind of Body only, and *Mixt* Bodies have both the nature of *That* Kind, and of *other* Elements besides; it is manifest that they divide the Common Notion of Body by *more* and *less*, which are *Intrinsecal* Differences.
8. For the same reason **Mixt Body** is divided into *Living* Bodies, and not *Living* by *Intrinsecal* Differences; because Those are *more* mixt, These *less*.
9. For the same Reason, a **Living Body**, being that which has a Principle of Motion in it self, is divided, as by *Intrinsecal* Differences into **Animal**, which is *more* Living, or *more moving it self* (*viz.* by every slight Impression on the Senses) and **Plant**, or *Vegetable*, which is *less-moving it self*.
10. For the same Reason, **Animal**, which is a Body moving it self by Impression on the Senses, is intrinsically divided into **Brutes**, which do *thus* move themselves onely to a set *Determinate* number of Actions, which is to be *less moving it self* by impressions on the Senses; and **Man**, who by his Reason and Knowledge is apt to move himself to a kind of *Universality* of Action, which is to be *more* moving himself by means of such impressions.
11. For the same Reason, **Man**, or *Rational Animal*, is divided intrinsically and essentially into those who have *more* and *less* the Faculty or Power of *Reasoning*; who are, therefore, properly and essentially *more* and *less* **Men**.

Note, That Common Logicians, because we cannot descend or reach to those particular intrinsecal Differences which constitute *Individuals*, do therefore make [*Man*] the *lowest species*: But 'tis one thing what may serve for Logical Speculation; another, what the nature of the thing bears, and the right division of the Commoner Notion by *Intrinsecal* differences requires: Wherefore, tho' not able to discern the intermediate *Species*, and (as far as I have observ'd) not reflecting that *more* and *less* of the common Notion do make the *Intrinsecal* and *Essential* Differences that constitute its *Species*, Common Logicians do content themselves to put *Individuums* immediately under *Man*, and thence mistake *Man* to have no *Essential* Differences at all, but *Accidental* ones only; yet 'tis manifest, that, since all *Individuums* are diverse *Entia* or Things, and **Essence** does formally Constitute an *Ens*, the Differences that constitute diverse *Entia* must necessarily be **Essential**. So that amongst *Men* there may be many Degrees of *more* or *less* Rational, constituting diverse under-*Species* of **Man**, could we have light to distinguish them; as well as there are diverse *species* of Dogs, Horses, Trees, and Flowers.

12. *Particular* or *Singular* Things are properly call'd **Individuums**, because they cannot be divided into more of the same Notion, as all others in the same Line could. For *Socrates* cannot be

divided into more that have the particular Nature of *Socrates* in them, as *Man* could into more that have the Common Nature of *Man*.

13. *Individuals* only are properly and compleatly *Entia* or *Things*, and capable of existing. For, since the Notion of *Thing* is [*Capable of Existing*] and all Notions that are *superiour* to the *Individuum* are Inadequate or *Partial Notions* of it, as is manifest; and the *Individuum* is the *Whole*, as comprizing all those Parts; and no Part can exist by its *own* Virtue, or *out of* the whole; in regard it would then be of it self a *whole Ens* and not a *Part* onely; it follows, that *onely Individuals* are properly and compleatly *Entia* or *capable of Existing*.
14. *Individuals* are the proper Subject or *Suppositum* of all other Notions or Natures both of its own Line, and of all the rest. For, ⁸⁸ since *Individuals* onely are properly *Things*, or capable of Existing; it follows, that both all in its *own* Line, and much more in *all* the *other* Lines (which have not at all in their *peculiar* Notions any Order or Title to Existence) must exist and subsist in *Individuals*, as in their *suppositum* or subject; which *lends* them to be, and *sustains* them in *Being*.

COROLLARIES.

Cor. I. Hence, 'tis Logically demonstrated that every *individual Man* is but *One Ens* or *Thing*; since he descends Lineally from that Common Head by intrinsecal Differences of *more* and *less*, which constitute him truly *One* in that Line; that is, one *Ens*, or one *Thing*. Whence the contrary Position ravels all the Well-Order'd Frame of Human Notions, and the Division of them by intrinsecal Differences; which (as ⁸⁹ has been shewn) must needs put all our thoughts into Confusion, and wholly obstruct the Way to *Science*. Nor matters it that there are *two* contrary *Natures* in him, *Corporeal* and *Spiritual*; since the Notion of *Ens* is not the Notion of the *Nature*,⁹⁰ but of the *suppositum* which *has* the nature *in it*. Add, that the notion of *Ens* is indifferent to *both* *Natures*; and therefore, if they may be co-ordinate to *one* End, and that it wrong no other Principle, they may both club into *one Thing*, and compound *one Ens*: As appears in the *Incarnation*, in which the Second *Person* of the Trinity assum'd Human Nature, and joyn'd it to it self in the same *suppositum*.

Cor. II. The Notion of *Rational* (which is in some sort truly *Spiritual*) may be *Co-ordinate* to the Notion of some kind of *Body*. For, since *Animal* is directly subsum'd under the Notion of *Body*, and the Notion of *Animal* (or of a *Thing* moving it self by Impressions on the Senses) is Intrinsecally divided by *less-moving* it self thus, which constitutes *Brutes*; and *more-moving* it self thus, which is manifestly done by its being *Rational*, that is in part *spiritual*; It follows, that the Notion of *Rational* or *Spiritual* may be Co-ordinate to some *Body*, (*viz.* to *Animal*) as one of the Proper and Intrinsecal Differences of that *Genus*, as is shewn above.

Cor. III. Notwithstanding *Man* cannot be *both* *Body* and *Spirit formally*. For, then he must necessarily be *Two* Entities in distinct Lines of Substance; the one under the *Genus* of *Body*, the other of *Spirit*. Whence, he would be *Unum* and *non-Unum*, in the same regard, or according to the same Formal Notion; that is, he would be *Ens* and *non Ens*; and consist *formally* of two *Things* as perfectly distinct as an *Angel* and an *Ape*; and even be more monstrous than a *Hircocervus* or *Chimaera*; because he would be *formally*, that is *essentially*, made

⁸⁸ Sect. 13.

⁸⁹ L. 2. Sect. 12, 13.

⁹⁰ Sect. 14.

up of two more-generically-opposit Things than these are conceiv'd to be. Wherefore, the Notion of *Man* being deduced by Intrinsic Differences from the *Genus* of *Body*, he is *formally a Body*, tho' his Soul be of a *spiritual* Nature, which makes him *virtually a Spirit*. Whence also, the *manner* of *Existence* following from what's *Formal* in the Thing, he has, *in this* State, a *Corporeal Manner* of Existence; as appears by his gleaning Knowledge by the Senses; his being Measurable by Quantity, Alterable by Corporeal Qualities; nay, even his peculiar and proper Action of *Discourse* attends the slow pace of Fancy and Bodily Motion; none of which could be competent to a Pure *Spirit* that exists *after a Spiritual and Indivisible* manner. Nor does this more prejudice the Spiritual Nature of a Soul that it exists and works in some regards after the manner of a Body, than it does prejudice the Nature of a *Body*, (a Stone, for example) that it exists in us *spiritually*; as it does when we *know* it, or have the *Notion* or *Nature* of it in our Understanding.

Cor. IV. Hence is seen what Notions do formally belong to the Line of *Substance*, or to *Ens* as *Ens*, viz: the several *species* of it descending downwards from the Common Head, till we come to the *Individuum*; which therefore is a *complete Ens*, as including all those Superiour or *partial* Notions; and ⁹¹ therefore *it* only is in proper speech, an *Ens* or *Thing*, in regard It onely being ultimately determin'd to be *This* or *That*, only It is, by consequence, *capable of existing*, which is the Definition of *Ens*. Whence all Potential or Indeterminate Notions of *Ens*, such as are *Ens*, *Corpus*, *Vivens*, or *Animal* in *Common*, are, for the same reason, *incapable of Existing*, otherwise than as they are Parts of the complete *Ens* or *Individuum*; and therefore they are phras'd by the Schools, *Substantiae Secundae*,⁹² and the *Individuum Substantia Prima*.⁹³ Lower than the *Individuum* in the Line of *Ens* we cannot go, nor can any Notion be superadded to it that belong Properly to *Ens*, but that of *Existence*, of which *Ens* is a *Capacity*. Whence we do not call Existence a *Form* (or *Act*), for This joyn'd with the *Matter* (or *Power*) does constitute that compound *Ens* call'd *Body*, and, therefore, are both presuppos'd to *Existence*; but we call it the *last Formality* of every created *Ens*, because it has no Potentiality at all in that Line, but is *Pure Actuality*; and therefore most resembles GOD, our Creator and the sole Giver of It, whose very Essence is *Self-Existence*.

Cor. V. All those Notions before said, taking them *precisely* as determining the common Notion of *Ens*, and belonging to *it* (even to the last *Actuality* of it [Existence] inclusively) are *Metaphysical* Notions: The proper Object of which Science is *Ens*; not taken as it abstracts from *Existence*, but as it abstracts from all the *other Predicaments* or common Heads of Notions; that is, from all *Matter* and *Motion*, and all Modes or Manners of them. For which Reason *Existence*, which *more perfectly* abstracts from both, does *more formally* belong to the Object of Metaphysics.

Lesson IV. Some Considerations belonging to those Ten Heads of Notions, or to the Ten Predicaments in Common.

1. THE last Nine Predicaments, call'd *Accidents*, are not truly *Things*, nor (of themselves) capable of existence; and therefore they are onely Capable of *Being* by their Identity with Substance.

⁹¹ The marginal note appears to be missing.

⁹² Latin: 'secondary substances'.

⁹³ Latin: 'primary substance'.

For, since ⁹⁴ we cannot *clearly* know anything but by framing *diverse* Notions or Considerations of it,⁹⁵ and all the Notions we have are divided into Ten common Heads,⁹⁶ and it hinders the way to Science, if we keep not the Distinction of those Heads unmingled: Wherefore, it being manifest and undeniable, that among those Heads there is one which is truly the Notion of *Ens* or *Thing*, that is, of [*Capable of Existing*] viz. that of *Substance*. Hence, in case we should conceive, or put all the rest to be also *Entities* or *Things*, or of themselves *capable of Existence*, we should confound and jumble all the Common Heads of our Notions together; which would fundamentally destroy all *possibility of Science*, even while we are laying it.

2. Notwithstanding this, the Notions or Natures of those Nine Heads are not *Fictitious*, or fram'd *gratis* by our Understanding, but real Affections or Modifications of the Thing. For, since ⁹⁷ we cannot comprehend *all* that is in the thing *at once*, but are forced to make diverse Considerations of it; nor could we do this unless the thing were diversly Considerable; it follows, that these Nine Heads (as well as the First) are diverse Considerabilities of the *same Thing*; that is, the real Thing *it self* as diversly consider'd or conceiv'd by us; and therefore, since they are not *Things* by virtue of their distinct Notions, and yet are really the *Thing diversly* consider'd (which takes nothing from their *Reality*) it is left that they must be *Real Affections*, Modifications, Respects or Determinations of it, and not *meer Nothings* or *Fictitious*; but, (as we may say) *somewhat of the Thing*, or belonging to it; which Logicians phrase to be a *Thing* in an *Analogical* or *Secondary* sense.
3. The *Distinction* of these Considerabilities is partly taken from the *Understanding*, partly from *Nature* it self. For, since the diverse Considerabilities of the Thing⁹⁸ are not so many little Entities found in it, but the *same thing* diversly conceiv'd; the distinction of them cannot be taken from the Thing it self, *singly considered*. On the other side,⁹⁹ since our Understanding is naturally *apt* to make diverse Abstract Notions of the Thing; nay, is *forced* to do it because it cannot discourse clearly of more of them together, much less of the whole *suppositum*; and, that the Impressions on the Senses which cause those Notions are naturally *diverse*; and, that the Causes in Nature do often work upon the *suppositum* or thing, according to some *one* Notion or Considerability of it, and not according to *another*: for example, on its Figure, and not on its Colour; on its Locality or Situation, and not on its Substance; hence ample occasion is ministred to the Understanding to consider it *diversly*; that is, to make diverse Conceptions or Notions of it. Wherefore the distinction of these Considerabilities is partly taken from the Understanding, partly from *Nature* it self; Nature affording *Ground* and *Occasion* for the Understanding to make this Distinction, and the Understanding making it *formally*.
4. Hence follows, that the only way to acquire solid Knowledge of the *Nature of Things*, or (which is the same) of those *Nature-imprinted Notions*, is, not to frame high-flying speculations of them, beaten out of our own Brain, or coin'd by our own Wit: but, to gain by attentive Reflexion, the *true* and genuine *Meaning* of those *Words*, which the Generality of Mankind, or the Vulgar, make use of to signifie those Notions: For, this known,¹⁰⁰ the Meaning of the

⁹⁴ L. 1. S. 3, 4, 5.

⁹⁵ L. 2. S. 17, 18, 19, 20.

⁹⁶ L. 2. S. 4, 5.

⁹⁷ L. 2. S. 5, 7.

⁹⁸ L. 2. S. 5, 11.

⁹⁹ L. 1. S. 3, 5, 7.

¹⁰⁰ L. 1. S. 6.

Word being the Meaning or Notion of those that *use* it, and their¹⁰¹ Notion being the *Nature* of the Thing, it follows, that the *Nature* of the Thing will be known likewise. Wherefore, this is the best Test to know which Speculations are *Aiery*, which *solid* and Grounded on *Nature*. For Instance.

To know what is properly meant by the word [*Thing*], ask an honest Country fellow (as my self did once to satisfie a Sceptick) how many Things lye upon the Table; and we shall see that he will readily reckon up all the *individual Substances*, and be ready to swear there are no more: Which shews, that Nature teaches him that only an *individual Substance* is truly and properly a **Thing**. This done, tell him he has not reckon'd *all* the Things there, but has omitted Bigness, Whiteness, Roundness, &c. which are not *Nothings*, but *Things*, and really there. Which done, you will find you have blunder'd him, by putting him to *distinguish*, which he is not good at: Yet, for all that, he will stand to his former Answer, and tell you, These are not *such* Things as we call *Things*; and that in reckoning up the Other things, he reckon'd up Those into the bargain. Which rude Answer contains the sum of this present Discourse; *viz.* that only *Individual Substances* are truly *Things*; the others *somewhat* of the *Thing*, or belonging to it; and that they are no otherwise *things*, but as they are *it*, or *somewhat of it*; and consequently *are not*, or have *no Existence* of their *own*, but *its*.

5. *Artificial* things are in *no One* of these Heads. For, since Artificial things are either *more* things join'd together, or some *one* Natural Body, not as it stands in *Nature*, but as vested with a new *artificial* Form, introduced by *Art*; it cannot have *one* Notion; nor, consequently, can it be comprized under any *one* Head. Nor are these *Notions Common to all Mankind*; nor, lastly, are they constituted by *Essential* or *Intrinsecal* Differences in the Line of *Ens*, but such as are *Accidental* or *Extrinsecal*, and generally by their Figures or Situation of their Parts.
6. What's *Infinitt* can be in none of these Heads. For, since an *Infinitt Ens* (for example) involves in its self all that is or can belong to the *Notion* of *Ens*, and can be but *One*, in regard, were there *more*, one of them would have *something* of Entity in it which the other *has not*, and so they would *limit* one another, and both of them would be Finite; it follows, that what's *Infinite* can neither be a *Common Head* it self, because it can have *no Particular Infinites* under it; nor can it be a *Particular* under that Common Head, because it could have no *Genus* to it, nor *Intrinsecal* Differences to divide that *Genus*, and to constitute a *Distinct* *Infinitt* from the *other*.
7. *Ens*, diversly conceiv'd, is the *Adequate* Object of our Understanding, working naturally. This is evident from the whole Scheme of our Discourse concerning the Ten Common Heads of all our *Notions*, shewing they are nothing but diverse Conceptions of *Ens*.
8. Hence we can have no proper *Notion* of a pure *Non-Entity*; not only for the Reason now given, but also, because a *Non-Ens* could never make any impression on our Senses, and thence convey its *Notion* into our Minds.
9. For the same reason we can have no proper and *direct* *Notions* of *Indivisibles* or *Points*, or of what's purely *Negative* of *Ens*, or of any real Affection of *Ens*, taking them as purely Negative, without connotating the Subject, or the *Thing*; whose notion only is truly *Positive*. For (as has been shown) all our Conceptions are *Notions* of the Things as conceiv'd by us; which when, by a *Reflex* Act, we consider to be *Limited*, and to reach *no farther* under such or such a Notion, we abstract *Limitedness* from the *Real Notion*; and because we can have no Conception but under the notion of *Ens*, we are forced to use an *improper* Notion, and conceive it as a kind of *Ens*; even tho' at the same time wise Reflecters judge and say, 'tis *none* of it self, or, as totally abstracted from the *Thing*. In which case no harm is done by our barely *Apprehending* it so, for 'tis *Natural*, and we cannot help it; but if, not distinguishing our

¹⁰¹ L. 1. S. 6, 7, 8.

Manner of Conceiving from what is found in the Thing, we come to judge that to be an *Entity* which, by the Thing's reaching *no farther*, is evident that of it self 'tis none; or to be Diverse Entities because our *Conceptions* are different, it will certainly pervert all our Discourses, and make them Aiery, Fantastical, and Contradictory.

10. Hence it is a most Intolerable Error, to make Imaginary *Space*, or an Immense *Vacuum* beyond the World to *Exist*; and, by consequence to belong to some one of those Common Heads. For, the word *Vacuum* must either be taken as a *Concrete*, and then it must signifie a Subject or *Ens* which has an Accident in it call'd *Vacuity*; in which case, since none says that that *Ens* is a *Spirit*; nor can it be a Body, being put to be *beyond the World*, that is, beyond the *whole* Mass of Bodies; it follows, that it is *no Ens at all*, but a meer *Nothing*; and so, to put a Nothing to *be*, is against Common Sence, the Light of Nature, and the very First Principle of our Understanding; for it puts that to *be*, which, being *no Ens*, is *not capable to be*; that is, it puts a perfect Impossibility or Contradiction. Or else it is a meer *Abstract* Term, and means a *Vacuity*; and then the Asserters of it must put a *Form* to *bee* without any *Matter* or *Subject* inform'd by it; which wanting, it can be *no Form*; or an *Accident* to subsist without any *Subject*, which makes it *no Accident*; since an *Accident* is that which does *accidere substantiae*,¹⁰² or is *Adventitious* to it. Again, the Name they give it, *viz. Imaginary Space*, by which they distinguish it from *Real Space*, confesses it not to be *in re*, but only in *our Imagination*: Which words can have no sence, unless they mean, that the Imagination is the *Only Subject* in which it subsists. Wherefore, to speak consequently, they ought to say, that our Imagination, in which only it has any Being, is some infinitely-extended Thing *beyond the World*; for *there* they put this Imaginary Space to *bee*; but this is so notorious a Banger, that they dare not say this neither; and, therefore, they can make no piece of their Tenet cohere, nor make any Sence of their own Words. But let them wriggle what way they will, their putting it to be *without the World*, and yet not to exist *in re*, but *in our Imagination* only, which is *within the World*, is so full fraught with variety of Contradictions, that they cannot even name it or talk of it, without speaking palpable Nonsense at every step of their Discourse. Moreover, they deny it to be a *Thing*, and yet they attribute to it the Properties of a *Real Thing*, by making it have *assignable Parts* in it; as also to be Extended, Measurable, &c. which is the highest strain of Contradiction imaginable. For, since *Ens* and *Non-Ens* do differ more than *toto genere*,¹⁰³ and as far as Contradiction can distance them; whatever is affirm'd of an *Ens* must necessarily be deny'd of *Non-Ens*; so that, if a *Thing* (a Body for example) can be extended, measur'd, pass'd through, or mov'd in; it must necessarily be affirm'd, that a *Non-Ens* cannot be mov'd in, extended, measur'd, or have Parts. Lastly, *Imaginary Space* or *Vacuum* never affected our Senses; and therefore, since we can have no distinct Notion of it from outward Objects, neither can it, consequently, belong to any of those Common Heads of Notions; whence follows that one of these Heads, which gives Being to all the other, being **Ens**, *Imaginary Space* and *Vacuum* are meer *Nothings*.

Note 1. That this Discourse equally concludes against *Vacuum within the World*. For that Imagin'd Space would neither be Body nor Spirit, Subject nor Accident; and therefore it must be merely Nothing. Nor, consequently, could it be Measur'd, Extended, Mov'd in, &c.

¹⁰² Latin: occur in a subject; literally, 'to fall or happen upon' a substance.

¹⁰³ Latin: 'entirely' or 'in all its kind'.

Note 2. That these two Tenets being overthrown, the whole *Epicurean* Hypothesis,¹⁰⁴ built on them, falls to the Ground, and needs no farther Confutation.

11. Hence 'tis Logically demonstrated, that there can be no Protuberancy in the outmost Superficies of the World; for, were this so, there would be some Distance between the Extream Surface and that Protuberancy; and that distance could be Measurable, Divisible, &c. which would make *Non-Ens* to be *Ens*.
12. This Humour of Fancy, or of ill-govern'd Reason, making *Entities* of *Non-Entities*; and conceiting every Negative, purely as such, to be a *Thing*, because we cannot conceive *Nothings* but as *Things*, destroys *all Science*, and makes it Chimerical. For, every *Species* in Nature includes a Negation of all other *Species*, and every Individuum in the World of all other Individuums: at which rate we should have far more *Nothings* in the World than *Things*, if we come to put all those Negations to *bee*. It were very proper, but withal very pleasant, if such Men of Fancy would, in pursuance of their *Tenet*, frame us a new No-Logick of their own, and put *Non-Ens* in Common to be the First Head of their Negative Notions; and then divide it by *more* of *Non-ens* that is, *No-Body*, and *Less* of it, or *no Spirit*; and then descend to its proper Individuums. as *Non-Petrus*, *Non-Ioannes*, *Non-Bucephalus*, &c. This would be consequent to their Fantastick *Tenet*. But, even then they must be forc'd to contradict themselves, and confess, that as *Non-ens* means *not capable of existing*; so, by the same reason, they ought to make *Non-Corpus* to be *Non-quantum*, *Non-quale*, *Non-passivum*, *Non-locabile*, &c. which would spoil all their Positions of *Vacuum* and *Imaginary Space*. So certain it is that all Errors, pursu'd home to their bad Principles, will still confute themselves. Hence the distinction some make of *Ens* into *Ens-Positivum*, *Privativum*, and *Negativum*, is no wiser than was the saying of the Fanatick Preacher in Ben's Play. *viz.* That *he had three Lights in him; a Great Light, a Little Light, and No Light at all*.
13. We have no *Natural Notion*, nor *Ground*, from Nature, of an **Union**, as they call it. For, the Asserters of it, neither make it the *Action* that unites two things or parts, nor the *Effect* of that Action wrought upon the Subject, that is, *their being united*, (which hinders it from belonging to the Common Heads of Action or Passion) but an Intervening Little Entity, whose nature it is to *tye them together*. And, since such a Notion was never imprinted by our Senses, 'tis plain it can be no *Natural Notion* as those in the Predicaments are, nor belong to any of those Common Heads. Nor can it be collected by Reason; for since the *Matter*, before the Union be made, is Ultimately dispos'd by Nature to receive the *Form*, and the *Form* is *Proper*, and by the course of Causes, *Necessary* to be received into the *Matter thus disposed*, there can need nothing to Unite them (as they call it) but the Efficient, making the *Form result* from such Matter as was fitted for it and requir'd it, which is to be *in it*; any more than, if Fire be apt to burn what's Combustible, and what's Combustible be perfectly fit to be burnt by Fire, there can need any thing but *Application*, to burn it, or (which in their Phrase is the same) to *unite* the Form of Fire to the Matter of the Wood. This Conceit therefore of those little Entities, call'd *Unions*, to tack things together at every turn, is a meer *Chimera* coin'd by Fancy; and seems to be borrow'd from those mens observing that two Things, unapt otherwise to cohere, (diverse pieces of Wood, for example) do need Glew, or Pitch, or some such tenacious stuff, to fix them together; whence, by an Unsuitable and Ill-grounded Metaphor, they translate it to the Uniting the parts of *Natural Entities*; which, by the wise Conduct of

¹⁰⁴ Followers of the ancient Greek philosopher Epicurus (ca. 3rd century BC) held that the world consists of matter (*atoms*) and void (*vacuum*). Epicurean physics hypothesized empty space as being required for matter to move at all, since matter would otherwise collide with other matter with such constancy so as not to move.

the Author of Nature, are always *ready* for an Union e're they come to be made *One*, and can need nothing at all to unite them or make them *One* Entitatively. *Union* therefore is the *Effect* of the Action of Uniting, or the same with their *being united* or their *Unity*, and not an Intermediating Entity; since whatever Things or Parts are *naturally United* do cling together into one Entity by a kind of spontaneous Inclination; and by means of the antecedent Dispositions requiring the Form, are such good Friends of themselves beforehand, that there can need nothing to Reconcile them. Besides, this Conceit is ill-grounded in another respect; for, the Inventers of it make account that those *Unible Parts* were, before they were united, *Two Things*; whereas, in reality, there was but *One Thing*, dispos'd to be chang'd into another, by sitting the Matter to receive a new Form. Which Discourse may be apply'd to those who ask, How, or by what means, the Soul and Body were United or made *One Thing*? To which the proper Answer is, *They were never Two Things*.

14. We can have no One Notion of a *Transcendent*; for, since Transcendents are those that run through *all* or *many* of the Predicaments, and the Predicaments are so many Heads of Notions *Generically distinct*; it is impossible to have any *one* Notion of *Transcendents*; Again, there is no *more common Genus*, which can be divided into those Ten Heads, as its *Species*, by Intrinsic Differences; but those several *Summa Genera* are distinguish'd from one another by their own Common Notions. Whence the Words that signifie them, whether *Unum*, *Verum*, *Bonum*, *Idem*, *Diversum*, or what ever they be, are the most Equivocal of any that can be imagin'd, and have a vastly different signification as apply'd to the Notions in each of those Heads.
15. No **Part** of an *Ens* can belong to any Predicament: For a *Part* of an *Ens* is no more an *Ens*, than a part of an Apple is an Apple: Nor, can Parts have *Intrinsic Differences* in the Line of *Substance*; for such *Differences* would with the *Genus* make the Part to be a *Totum* in that Line.

Corol. I. Hence by the way, we may frame a Logical Demonstration against *Actual Parts* in a Compound. For, were they Actually Distinct, they must have each of them Matter and Form of its own; which being the proper Constituents of such an *Ens*, each of them would be such an *Ens* or a *Body*; and so they would have each of them, a Title to *Existence*, which is the proper Notion of a compleat *Ens*; and by consequence each *Part* would be a *Whole*.

16. The Notions of *Genus*, *Species*, and the Terms of Art, fram'd by the Reflexion of our Understanding, are not Things distinct from the Notions of *Ens*, *Corpus*, *Vivens*, &c. which Logicians call by those Names; nor are they in any of those Common Heads. For, First, ⁽¹⁰⁵as will appear) these Notions are but *Parts* of the *Individuum*, which is the *whole Ens*. Next Terms of *Art* are made by Men of Art, who are *Reflecters*, and not *directly* imprinted by *Nature*, or Common to all Mankind: For which Reason we must learn the Meaning of those Words, and, consequently, those Notions themselves, from *Learned Men*, and not from the *Generality*.
17. Notwithstanding, it must be Granted, That *Nature* gives our Understanding *Hints* or *Ground* to frame such Artificial Conceptions; without which they would be Fictitious and Chimerical: For Example, by observing that all the Men we ever knew, do proceed to Action upon *some Reason* or *other*; hence, we frame a Common Notion of a *species* or Kind, call'd a *Rational Thing*; and, observing farther, that Beasts as well as Men have *Senses*, and are excited and *mov'd* by means of them; hence we frame a *Higher* Notion, common to both the Kinds of Man and Beast, and call it a *Genus*; and so still upwards. Nature all along affording us some *Ground* of framing Universal Notions, and the Understanding making and framing them

¹⁰⁵ S. 18.

actually. And, where these Notions were *bred*, there they *dwell* or *exist*; for, *out of* the Understanding, and in Nature, there is nothing but *Individuals*.

18. Note, that the Notions of *Genus*, *Species*, &c. as abstracted and rais'd to a Common pitch by Men of Art, or Logicians, reflecting on the Agreement of *more* under that one Notion, are (as such) *Wholes*; but, as consider'd in the *Ens* or *Individuum*, and as causing our Natural Notions of them, they are but *Parts*, and the Individuum is the *Whole*, in respect of them: For, since the *whole* is that which is *larger* than *some parts* are, or rather which comprehends *all* the Parts; it follows, that those Notions, thus abstractedly consider'd, being (according to the condition they have in our Understanding) *larger* than the Inferiour Notions, and comprehending *all* under them, are therefore certain kinds of Wholes, *as thus consider'd*. On the other side, since only *Individuums* are truly the Compleat and Whole *Entia*, as being only *Capable of Existing*; and the Notions of *Ens*, *Corpus*, *Vivens*, *Animal*, *Homo*, are but *Partial* and *Inadequate* Notions of the *Individuum*; it follows, that the *Individuum* does, in reality, comprehend what answers to the Notions of *each* or *all* of them: wherefore, *thus consider'd*, (that is, as they stand in Nature) they are but *Parts*, and the Individuum is the *Whole*.

Lesson V. *Of the Common Head called Quantity.*

1. **Quantity** may either be consider'd *Mathematically*, as abstracted from Motion, and meerly *Extending* the Body, as it were, in *Rest*; or *Physically*, as affecting Body, its Subject, in order to *Motion*; that is, as to *natural Action* and *Passion*. This needs no Proof, since it is Evident that Quantity may be consider'd both these ways, and we experience that we can both these ways consider it.
2. The Essential Notion of Quantity is *Divisibility* into Parts; and, *such* a Divisibility as that each of its Parts, after Division, becomes a *Whole*. For, since the Essential Notion of it cannot consist in its having Matter and Form, which make it an *Ens*, and so fit it for Existence (as it was in a Divisible *Substance* or ¹⁰⁶ *Body*) the *Essence* of it (such as it is) must be taken from some Consideration belonging to its *own* single Abstracted Notion, and from that in the first place that best expresses its Metaphysical *Unity*. And, since nothing can be said to be *Divisible*, or capable to be made *more*, but it must be said *eo ipso* to be Actually and truly *One*; therefore *Divisibility*, or a Capacity to be made *more*, is the very Notion of its *Unity*, only connotating that 'tis *such* an Unity as makes its subject Capable to be made *more*, or dissolved by *Division* into Parts. Again,¹⁰⁷ as was said above, and will more evidently be shown hereafter, that is the true Notion of any Nature to which the Sayings of Mankind do agree: But *Divisibility* is thus shown to be the Notion of *Quantity*. For example, ask what a Mile is, it will be answer'd, That it has so many Furlongs, Paces, or Yards in it. Ask what a Yard is, it will be answer'd, It consists of so many Feet; and so of the rest. And when we come to so small a Quantity, that we can no more give an account of it, or assign the *parts* into which it is divisible, we find our selves at a plunge, and know not how to define it, but seem to have lost the Notion of it. Therefore, however Extension, Measurability, and such others, may truly belong to Quantity as its *Properties*, yet only *Divisibility* is its Primary and Essential Notion, because 'tis this only denotes its *Unity*. And, since it is not a Divisibility into such parts as could not remain *Wholes* after their separation, such as were *Matter* and *Form*, which are the Essential parts of *Substance*; hence the *Divisibility* which Quantity gives to its Subject

¹⁰⁶ L. 3. Sect. 5.

¹⁰⁷ L. 4. S. 4.

must be *such* as makes it remain *so many Wholes* after the Division is made; as Experience also shews us.

3. Quantity is adequately divided into *Continu'd*, or Coherent; and *Discrete*, or *Number*. For, since 'tis impossible to ask any Question concerning the Quantity of Things, but either *how Many* they are, if *more* Things; or, *how great* it is, (that is *how much* there is of it) if it be but *One* thing; 'tis evident that Mankind has no Notion of any other kind of Quantity but of *Discrete* and *Continu'd*; and, therefore, the Division of Quantity into these two *Species* is *Adequate*. Note, that *Discrete* Quantity is *less* Quantity than *Continu'd*, because 'tis *less Divisible*; or rather 'tis not so properly Quantity as is the other, because it has no *Unity* to distinguish it from a mere Confused *Multitude* of Ones but by means of the Understanding, conceiving it to be so many Units terminated by the *last*; yet, because *Plurality* and *Paucity* are *More* and *Less* of any one Determinate Number, and that there is a Ground in Nature for our Understanding to consider *many* Scatter'd *Ones* and comprehend or bind them together into one Notion, and that such Notions are useful or necessary to Mankind; therefore this Order'd Multitude of *discrete* or *shatter'd* Ones, call'd *Number*, is rightly placed in the Predicament of Quantity. For, tis to be noted, that when 'tis said Quantity is *Divisibilis in semper Divisibilia*,¹⁰⁸ it was not meant of Quantity in Common, or *all* Quantity, but only of that *Species* of Quantity call'd *Continued*.
4. The Unity proper to Extended Quantity is *Continuity* of its parts; For, if the parts of this sort of Quantity be *Discontin'd*, either *Nothing* (or *vacuum*) comes between them, and then they are still *Continu'd* against the Supposition; for Nothing can *do* nothing and therefore cannot *discontinue* the Parts of Quantity. Or else some *Body* comes between them and *Discontinues* them; and then, since all Bodies bring their *own* Quantities along with them, however the Bodies, A. and B. are distanced by C's coming between them, because every Body has its determinate bounds and Limits; yet, the *Quantity* of those three Bodies, precisely consider'd, has *none*, but goes on Smoothly in the self same tenour thro' the whole Mass of Body, whether those Bodies be *Different* or the *Same*; without Notches or Nicks butting and bounding it here and there, or in the least diversifying it; what ever Variety is found in the Figure, Colour, Hardness, Softness or in any other consideration belonging to those Bodies. Again, since this *Species* of Quantity has its peculiar Notion, Nature, or Essence, it must have some kind of *Unity* too peculiar to it self: But, none is imaginable except *Continuity*, nor does any so directly subsume under the notion of Quantity, which is *Divisibility* or *Unity* of its potential parts, or sute so exactly with it. Nay, were the parts of Quantity *discontin'd* quantitatively, they would be *divided* quantitatively, that is, not *Divisible* or *One*; that is *none*, or *Not-Quantity*, against the Supposition. Therefore the *Unity* proper to this *Species* of Quantity is *Continuity* of its parts.

Corol. I. Therefore the Quantity of the whole World is *One Uninterrupted Continuity*, and the *World* it self (speaking of Quantitative Unity) *One Great Continuum*.

5. *Quantity*, according to its precise Notion, cannot be *Essential* to Body, because it can neither be the *Genus* of it, nor the *Intrinsecal* Difference that constitutes it; as is prov'd ¹⁰⁹ above.
6. Yet Quantity, *Materially* consider'd, and not according to its precise and formal notion of *Divisibility*, may (as it were) *per accidens* contribute to the Essence of *Individual* Bodies. For, since nothing is truly and perfectly *Ens*, or Capable of Existence, but *Individuals*; nor (since

¹⁰⁸ Latin: 'Divisible in always divisible things'; i.e., infinitely divisible.

¹⁰⁹ L. 3. S. 1, 2.

Thing in common cannot exist) can any thing be *Capable of Existing*, but by being ultimately *Determined*, and thence compleatly fitted to be *This* or *That*; and this Determination, distinguishing one *Individuum* from all others, is perform'd by means of such a particular Complexion of Accidents as fits them for their *Primary Operation* for which Nature ordain'd them; and this Complexion of Accidents is either of Quantity, or else (as is shewn in Physicks) of different modifications of Quantity; it follows, that Quantity, *materially* consider'd, and not according to its *Formal* notion of *Divisibility*, may (as it were) by Accident contribute to the Essence of Individual Bodies.

7. The Intrinsic Differences of Quantity are *more* and *less* of the Notion of Quantity. This is prov'd¹¹⁰ formerly, when we treated of the Division of Substance; and the reason given there holds equally here.
8. The Proper *Species* of Quantity, *mathematically* consider'd, or as it abstracts from *Motion*, are *Longitude*, *Latitude*, and *Profundity*; otherwise call'd *Linea*, *Superficies*, and *Corpus*. For, it is evident that Latitude is *another* sort of Quantity, and has more of that Notion in it than Longitude has; and that Profundity is a *different* sort of Quantity, and has in it *more* of Quantity, thus consider'd, than either of the other, as containing in it self all the *three* Dimensions.
9. Therefore, the *Intrinsic* Differences of each of these continued Quantities (consider'd Mathematically, as abstracted from all Order to Motion) are Divisibility into *greater* or into *lesser* determinate parts: For, since the Notion of Quantity is *Divisibility*, and Divisibility respects the *Parts* into which it may be divided; and this respect cannot be to Indeterminate parts into which it may be divided, they being (as *Euclid* has demonstrated) *Infinite*, as well in the greatest as the least Quantities, so that they cannot have *any* differences, *thus* considered; wherefore Divisibility into *Greater* and *Lesser* parts, being the Intrinsic Differences of all *such* Quantities, in regard that the Greater have *more* of the Immediate Generical Notion, or of that kind of Quantity, in them; the smaller, *less* of it; and Divisibility into parts which are *Determinate*, may bear the Notion of *Greater* or *lesser* Divisibility, which Divisibility into *Potential* parts (as was said) *cannot*; it follows that Divisibility into *Greater* and *Lesser* Determinate parts are the *Intrinsic* Differences of this kind of Quantity, *Mathematically* consider'd. Besides, *Greater* and *Lesser* bear in their Notions some *Proportion* between those parts; which cannot be conceiv'd unless those Parts be *Determinate*.
10. The Proper and Intrinsic Differences of Continued Quantity consider'd *Physically*, or in Order to *Motion*; that is, Affecting it's subject as apt to be wrought upon by Natural Causes, are *more* or *less* Divisible or *capable to be wrought upon* and divided by those Causes. This is evident from the very same Reason, supposing Intrinsic Differences to be onely *more* or *less* of the immediate common *Notion*, or of the *Genus* they are to divide.
11. The *More* and *Less* Divisibility of *Continu'd* Quantity *thus* consider'd, is to be *more easily* or *less easily* wrought upon or divided by Natural Agents. For, since Quantity, *thus* consider'd, does not respect the *Parts* it contains or may be divided into, but the *Causes* in Nature, and their *Operation* upon its Subject, *Body*; it follows, that the Notion of its being *more* or *less* Divisible, as thus consider'd, can only mean *more* or *less* susceptible of the Efficiency of Natural Causes; that is, *more easily* or *less easily* Divisible by the said Causes; which is to be *Rare* and *Dense*.
12. The Division of Continu'd Quantity into *Permanent* and *Successive*, is made by *Accidental* Differences, and not by *Essential* ones, as were the former Divisions of it: For, since to *move* and to *stand still* are Accidental to Quantity, and have no respect to that Generical Notion, as *more* and *less* of it, as had the other Differences above mentioned; it follows, that these

¹¹⁰ Less. 7. Sect. 1, 2.

Differences are Accidental to their Generical Notion, and not *Essential* or *Intrinsecal* to it. Again, *more* and *less*, which are *Intrinsecal* Differences, signifie some *Proportion* or *Comparison* of one to the other, which can have no place in *Permanent* and *Successive Quantities*; for, what sense bears it to say, that a *Yard* is as Long as an *Hour*? Wherefore, since it is a most certain Maxim, That *Comparisons are made of things which are of the same Genus or kind* (which by the way shews, that *Intrinsecal* Differences of any *Genus* or *Kind* are *Comparative Notions*, or *More* and *Less* of it) 'tis Evident that Continu'd *Quantity* is not a Proper *Genus* to them, as *such*; nor They Proper *Species* of it, or constituted such under it by *Intrinsecal* Differences; but each of them is the very *Genus* it self of Continu'd *Quantity*, consider'd under diverse States altogether disparate; and one of them, *viz.* *Successive*, connotating the Predicament of *Action*, the other seeming rather to hold on the side of meer *Quantity*; tho' that Common Head does, in rigour, Abstract from *both* those States.

13. The Division of *Permanent* Continu'd *Quantity* into *Extensive*, containing the three *Species*¹¹¹ above mentioned; and *Intensive* or *Weight*, is yet more defective than the other: For, first, part of the *Genus* it self (*viz.* *Permanent*) is *Accidental* to *Quantity*. Next, (there being no Natural Propension one way or other Inherent in Bodies while *in Rest*, (as is shown in Physicks) *Weight* must be taken for an Actual tendency downwards; and so it belongs to the Predicament of *Action* or *Passion*, according as the Body that weighs is consider'd either as prest upon by the *superiour* body, or pressing that *below* it. Whence, whatever else we can conceive of the *Notion* of *Weight* in any Body is nothing else but its *Density*; for this makes it apt to receive the full Impression of the descending Ayr, and *better* and *more swiftly* cut the *medium*, when its Motion is once determin'd; whereas *Rare* Bodies suffer the descending Particles to slip thro' them, and do but dully and slowly divide the *Medium* thro' which they are to pass in their descent. But of this more in Physicks.
14. *Infinet* Discrete *Quantity*, that is *Infinet* *Number* cannot belong to the Predicament of *Quantity*; For then, it must either have the place there of a *Genus*, or of a *Species*; whereas it can be *neither*, because the Generical Notion would in that case be Common to *more* *Infinet* Numbers as its *Species*, which is a Contradiction: For, since each of these *Species*, being *Infinet* in such a line, or under such a Notion, must comprehend All that can be in *that* Line, they would *each* of them contain the *whole* Line of Number; and so each of them would be of as large a Notion as their *Genus*; nor would they, in that case, be *Different* from one another in that Line, because one of them can have nothing which the other has not; nor consequently can they be diverse *Species*, nor can *Infinet* *Quantity* be their *Genus*. Besides, two *Infinets*, under what Notion soever, *limit*, and so *destroy* one another: nor can it be solv'd by saying, that *Quantity* may be divided into *Finit* and *Infinet*, and that *Species* that is *Infinet* be but *one*, or have *no more* of its kind but its single self; for, since *Infinet* in any Notion includes All that can belong to that Notion, nothing of the *Genus* would be left for its fellow-*species* to partake of; which makes *Finite* *Number* to be *no Species*. Lastly, As the Differences of *Continu'd* *Quantity* were *Greater* or *Lesser* determinate parts, so the Differences of *Number* must be *More* or *Fewer* determinate parts; which can bear no Sense if one of the *species* have *All*, or be *Endless* or Indeterminate.
15. Hence 'tis Logically demonstrated that *Infinet* *Number* is *Impossible* and Contradictory; since it contradicts the Methods and Maxims of all our Natural Notions. For, were it put, it ought to belong to the Common Head of *Quantity*, which we see is in many regards Implicatory. Add, That as no *Ens* is capable of Existence unless it be first Ultimately determin'd to be *This* or *That*; so no *Affection* of *Ens*, v. g. *Number*, can possibly *exist* in Things, unless it be determin'd

¹¹¹ Sect. 8.

in its own Line to be *This* or *That* Number; which is here forbidden it by the very Notion of *Infinity*, which signifies *Indeterminate*.

16. Therefore *Continu'd Quantity*, for the same reason, cannot be *Infinity*; that is, there cannot be an *Infinity* *Extent* or Expansion of Body; for, then the Subject would verify it, that there must be in it an *Infinity* Number of Yards, which is now prov'd Impossible.
17. For the same reason there cannot have been *Infinity* *Time*; for then, again, there must have been an *Infinity* Number, *viz.* of Hours. Again, let us put Time to have been *Infinity*, that is, never to have begun; then there must have succeeded an *Infinity* Number of *Hours*; wherefore in that whole Collection of Hours there must either have been *some one* hour distant from *this* present hour by *Infinity* Intermediate ones, or *no one* Hour thus distant. If *no one*, then the whole Collection of Hours (consisting of *Ones*) is *Finite*: If *some one* Hour be distant from this *present one* by *Infinity* Intermediate ones, then we are forc'd to put an *Infinity* which has *two* *Ends*, *viz.* *that* Hour said to be *Infinitely long ago*, and *this* present Hour that *now* passes; that is, we must put an *Infinity* to be *Finite*.

Corol. I. Hence is demonstrated, that the Course of Nature, consisting in *Motion*, had a *Beginning* or *First Motion*; therefore a *First-Mover*, therefore some *Spiritual Nature*; as ¹¹² will be demonstrated hereafter.

LESSON VI. *Of the Common Head of Quality.*

1. THE Notion of Substance being *What* a Thing is; and that of *Quantity*, *how Great* it is, or how much there is of it; the Common Notion of *Quality*, (as was said above, and indeed as the very word imports) is *how* a thing is in respect to its *own* peculiar nature; that is, whether it *be so as it should be or no*. This will be farther Evident from the whole following Discourse.
2. Wherefore there must be so many Common Kinds or *Species* of *Quality* as there may be Common Considerations of *How* a thing is in regard to its own peculiar nature.
3. Wherefore, seeing the Subject may be *thus* Consider'd, either according to its *Intrinsecals*, or according to *Extrinsecals*, to which it may be refer'd: And, if to *Intrinsecals*, then, either according to some Perfection or Imperfection of its *Intrinsecal* *Temperature* or Constitution, which we call *Habit*, if Permanent; or *Disposition*, if Transitory; or to its outward Shape conceiv'd to inhere in it, call'd *Figure*. If it be consider'd according to *Extrinsecals*, then, either according to the Causes from which it may *suffer* or be *variable*, which we call *Passible Quality*, if steady; or *Passion*, if sudden and fleeting; or to the *Effects* or *Operations* it may or may not produce; which we name its *Power* or *Impotency*: Hence *Quality* in common is divided into Four Kinds and no more; nor can more sorts of Answers to the Question, *How a Thing is*, be invented or imagin'd.

Examples of the Questions proper to *Quality* are such as these: How do you? To which is Answer'd, *Sick* or in *Health*, well or ill dispos'd. How is he as to his Understanding? *Learned* or *Ignorant*; which Answers we call *Habits* or *Dispositions*. How is he as to his Walking, or using his Natural Faculties? To which we answer, *well able* to walk, or *Lame*, &c. which signify his *Power* or *Impotency*. How is the Milk that's over the Fire, or the Bread in the Oven? To which is answer'd, *Hot* or *Cold*; *Dough-bak'd* or *Enough*: which are *Passible Qualities*. How is he affected to me? To which is answer'd, *Angry*, which is *Passion*. Lastly, it may be ask'd, How he is as to his *outward shape*? To which is answer'd, *well* or *ill shap'd*, *Handsome* or *Ugly*, which *Quality* is call'd *Figure*.

¹¹² B. 3. L. 6. S. 4.

4. The Intrinsic Differences of *more* or *less* in this Common Head of *Quality*, are more properly to be call'd *Better* and *Worse* qualified, since they fall into the same as *more* and *less*; only the *latter* Expressions sute better, having a *qualifying* sense.
5. Wherefore *Power* and *Impotency* are the *First Species* of *Quality*, because they spring immediately out of the *Essence* as it's *Properties*, and most nearly¹¹³ concern it as to making it *Better* or *Worse*; as also, because they most *dispose* or *indispose* the Subject to the substance (as it were) of it's Natural Operations. *Habit* and *Disposition* are the *Second*; because they Supervene to the Power, and only give it a *better* or *worse* Facility or Difficulty to Operate. *Passible Quality* and *Passion*, taken as such, are the *Third*; because, taken as such, they meerly qualify the Subject to be *Passive* or *Alterable* by another. I say, *taken as such*, that is, as *Passible*; for, if they be consider'd as *Active*, as Heat in Fire is conceiv'd to be apt to *effect* Heat in another thing, then 'tis a calefactive *Virtue*, and has the Notion of *Power*. Lastly, *Figure* has the least share of the Notion of *Quality*, because it onely regards the *Outward* Lineaments and Appearance, which are the sleightest of all other *Qualities*. Though it may sometimes, (especially in Organical Bodies and their several parts,) contribute to their *Power* or *Impotency*; as an *Acute Figure* in Dense Bodies makes them better divide the Ayre, and other Bodies, adding thus an *Accidental* perfection to their *Power* of *Dividing*; and *Splay-footedness* hinders the *Power* of *Walking*, whereas *Straightness* helps it. *Accidental*, I say, for the, Essential Notion of *Figure* is onely to *terminate* thus, or thus the Quantity of Bodies, as will be shewn hereafter.
6. Wherefore, the Intrinsic Differences of *Quality* being to make the Subject of them *better* or *worse*, hence most *Qualities* may admit of several *Degrees* in each of it's *Species*, or, as the Schools phrase it, may be *Intended* or *Remitted*; whereas neither *Substance* nor *Quantity* can. Not *Substance*; because, as we no sooner step out of the *Notion* of *Ens* in common but we plunge into *Non-Ens*, so we cannot depart from the Essential *Notion* of *Hoc Ens*,¹¹⁴ but we must fall into *Non-hoc-Ens* or Another *Ens*. Not *Quantity*; for, let us design any particular or determinate *Species* of *Quantity* (a *Yard* for example) and but in the least Increase or Diminish it quantitatively, and immediately it becomes *no yard* but of an other *Species* really, tho' perhaps so little may be added or detracted that we may want a Name for it.
7. *Power* differs from *Habit* also in this that Powers are *Natural*, and spring out of the Essences of things as their *Properties*; as the Power of Walking, Seeing, Hearing, Fancying, Understanding, Willing, Heating, Dividing, &c. Whereas *Habits* are generally, Acquir'd by frequent Acts. In things Inanimate, and Vegetables, and in some sort of Animals they are properly call'd *Virtues*; thus we say such a Mineral or Herb has the *Virtue* of Drying, Cooling, Healing, Cauterizing, Poisoning. In Animals, they are call'd *Natural Faculties*; as those of Seeing Walking, Flying, &c. Where the word *Faculty* is not taken in the same Sense in which we use it, when we tell one he *has got a Faculty* of doing this or that, meaning thereby a *Facility* or *Habit* of doing it, but for the *Power it self* which is to be facilitated by that *Habit*. The *Privations* or want of those Powers due to Nature we call *Impotences*; as Deafness, Blindness, Doltishness, &c. Which signify Inabilities to perform such Operations as we ought, were the Subjects Qualify'd as they should be.
8. *Habits* are generally Acquir'd by *Acts*: yet some may seem to be had by *Nature*: as Healthfulness and Sickliness. Of the former we use to say such a one *has got a Habit* of Dancing, Drinking, Brawling, Swearing, Praying, &c. Of which sort are all kind of *Skill's* in moving the Body, and all *Arts* and *Sciences* qualifying the *Mind*, and their Opposites: All which we shall find to be Perfections or Imperfections, belonging either to the particular Nature of

¹¹³ Corrected per errata sheet. Original: "meerly."

¹¹⁴ Latin: 'this being' or 'this thing'.

the *Body*, as Dancing, Pronouncing, &c. or else suitable or disagreeable to the peculiar Temper of the *Mind*, which is *Reason*; such as are Sciences, Virtues, Vices, Ignorance, &c. But those that are *Innate*, and have withal some constant Ground of *Stability* by the steady or fixt course of Causes, are rather call'd *States* or *Conditions* than *Habits*; such as are Original Justice, Original Sin, Impeccableness in the Saints in Heaven, Obdurateness in Sin in the Divels; and, Healthfulness or Sickliness, if it comes out of a Man's *Natural* Constitution. All which, tho' less properly *Habits* than those that are *Acquir'd*, yet *Habit* having in it's *Notion* a kind of Constancy, we do therefore from their *Steady* manner of working, denominate *Habitual* Propensions, Dispositions, Affections, or Determinations of the Subjects, and *reduce* them to the *Species* of *Habit*.

9. Those Natural Affections of *Body*, consider'd as apt to render the Subject, not to be determinately *This* or *That* in the Line of *Ens*; nor *Bigger* or *Lesser*, but only *Alterable* thus or thus, without changing the Entity, are for the most part *Passible Qualities*. This is manifest; For considering them thus, there is *no* Predicament but that of *Quality*, nor any *Species* of Quality but *This*, under which they can be rank't. Under the *Genus* of *Passible Quality* are particularly The Four First Qualities, *Heat*, *Coldness*, *Moisture*, *Dryness*; and the Second, (and perhaps Third) Qualities compounded of these, with a variety almost Infinit, of which more in Physicks.
10. All *Passible Qualities* are Objects of the Senses, Otherwise they would not be Natural Notions, nor belong to any Common Head; and, consequently, we could not *discourse* or *think* of them, which yet we experience we do.
11. Yet 'tis not the Consideration of them as the Objects of our Senses which *Constitutes* them, nor Essentially *Distinguishes* them. This is evident, for their Essence, as Qualities, must be taken from their manner of affecting their own Subject, and thence giving us ground of denominating it diversly, or framing distinct Notions of it. Besides, to be an *Object* of any *Power*, can, as such, be Essential to Nothing; because it is perfectly *Extrinsecal* to the *Thing* or it's *Power* to which 'tis an Object; as will be farther seen when we come to treat of the Predicament of ¹¹⁵ *Relation*. Wherefore, the Division of this *Species* of of Quality into Visible, Audible, Tangible, &c. is *Accidental* to Quality and far from *Intrinsecal* or Essential.
12. Notwithstanding what is said above, some Qualities may *contribute* to the Essence of a Thing, and so be in part *Essential*. For, since (as is shewn in Metaphysicks) the Complexion of Accidents, and of some Qualities, among the rest, do *determine* a Thing to be *This* and Distinct from all *others*, and withal *fit* it for its *Primary Operation*; and consequently do help to constitute the Essence of an Individual Body as part of it's *Form*; *Passible Qualities*, in particular, may contribute to the Essence of a Thing; or be *in part*, and, as joyn'd with Quantity, Essential to it. Yet so, that each of these consider'd *Alone* is an *Accident*: but *all* of them taken together and as clubbing to *determin* the matter *ultimately* to be *This*, they are to be consider'd not as *meerly* Quantitative, nor as Qualificative, but as belonging to the *Substantial Form*.
13. No other *Species* of Quality but *Passible Qualities* has this Prerogative, Not *Power*. For Powers are *Properties*; and, so, are conceiv'd to *follow* the Essence constituted, and *presuppose* it; much less *Habits*, for they supervene to the Natural Powers. And least of all Figure, for this is *Extrinsecal* to the Constitution of the Body; however in Organical Bodies they may help to determine the *Species* or *Individuum*.
14. *Figure* is nothing but the Termination of the Quantity of a Body, or (which is the same) *Body thus Terminated*. For, since *Figure* is nothing but *such* a *Superficies*, and the *Superficies* is the

¹¹⁵ L. 7. S. 10, 11.

Termination of *Profundity* which is the proper Quantity of *Body*; it follows that *Figure* is nothing else but the Termination of the Quantity of *Body*. Again, if we look narrowly into particular Figures, we shall find them nothing but that the Quantity goes no further, or ends, *here* and *there*. Whence the Figure of it must necessarily be *thus* and *thus*. And this is all can be made of it as it is distinguish'd from the *Body* it self or its *Quantity*; however we are prone to conceit it, as 'tis distinct from *Body*, to be a kind of *Ens*.

15. Figure alone is Incapable of *more* or *Less* in the same *Species*. For, since Figure is the Termination of the Quantity of *Body*, and Quantity being Divisibility, the Termination or *No-fartherness* of Quantity must be *no Quantity*, and therefore *Indivisible*, and there can be no *Degrees* in *Indivisibles*; it follows that Figure is not capable of *more* and *less* within the same *Species*, but every Alteration of the *Figure* is a *New Species* of it.
16. Hence the Termination of the *Self-same* Quantity (tho' being oft-times Imperceptible, it happens to be Nameless,) after *Several Manners* make so many *particular Figures*. For example, the self same Quantity, (*viz.* a Pint of Water,) may be put into a Round viol and a Square or Oval one; which being terminated after a particular manner, do make so many particular kinds of Figures.

Corol. I. Hence is seen that there is a *Real Divisibility* (that is such a Notional one as is *grounded* in Nature) between *Quantity* and *Figure*; since the subject may be chang'd according to Figure and *not* according to *Quantity*, of which we can have no better nor more familiar Instance than a Pastry-Cook's forming the same quantity of Dow into a Pye, and a Lid for it, or into Pyes of several Figures.

17. The Termination of the Quantity of *Body*, being the Outside, that Circumscribes and *Comprehends* all the *Body* enclos'd in it, which is the *Containing* it; the *Species* of Figure, simply speaking, must be *More* or *less* a Capacity to *contain* *Body*; that is, to *Contain more* or *less* of it. Hence a Round Figure is the *best*, a Quadrate *Worse*, and a Parallelogram *still worse* than the former: I say, simply speaking; or regarding *Body in common*; for otherwise, if the nature of some sorts of *Bodies* (Organical Ones for Example) requires such a determinate Figure, then that Figure is *Better* or *Worse*, which approaches *more* or *less* to such a Figure as best sues with that Nature, fits it best for its Operations, and makes the Symmetry with its other parts most perfect. Things endow'd with this Quality we use to call *Well shaped* or *Handsome*; which, with fit *Colours* rightly placed in the respective Parts, make up that amiable Quality we call *Beauty*.
18. All Corporeal Qualities are in reality the very Particles or Parts of *Body*. This has been prov'd¹¹⁶ above, where it was shewn, that Accidents are not *Entities*, nor can exist of themselves, but meerly by their Identity with their *subject*.
19. Wherefore Corporeal *Powers* are nothing but several Mixt Parts, so contriv'd and Organiz'd, as enable the Compounds to perform such and such Operations. Corporeal *Habits* are nothing but the same Parts by *Use* and Bending to and fro made plyable, and, so, apt to perform them *more easily*. The *Passible Qualities* are the same Parts as rendring the Subject either perfectly or imperfectly *Divisible* or Capable to be Alter'd by Natural Causes. *Figure* can the least be thought to have any Being of its own, since it is onely the Termination of Quantity which is it self but a Determination of *Body*.

Corol. I. Hence is evident that all the Qualities that affect our *Senses* are nothing but the minute and subtil particles or *Effluvioms* of *Bodies*; sent out from them, and lighting on those most

¹¹⁶ L. 4. S. 1.

tender and sensible Receivers, and affecting them agreeably or disagreeably to the nature of the Subjects. And the same may be said of the Ideas lodg'd in the Fancy or Imaginative Power it self. Nor will this be hard to conceive if we reflect attentively, how Quantitative particles may be still *less* and *less*, almost Infinitely.

Corol. II. Nor will it hence follow, that *Cartesians* and *Aristotelians* agree in the main about the Explication of Nature, in regard they do both of them hold, that there is nothing but their¹¹⁷ Matter or Substance thus or thus Modify'd. For, the *Aristotelians* give an account of there *Minima Naturalia*; they make them *Mixt* Bodies; they reduce them to their First or Original Mixture; and shew the *Intrinsecal* Temperature or *Constitution* of their *Subject*, or the *Inform'd Matter* of which they consist, from the Conjunction of the highest and most known Notions in nature, *viz.* of that *matter* and *Quantity* diversly proportion'd; whence arise the Natures of *Rarity* and *Density* in the First *species* of Bodies. None of which the *Cartesians* do; nor can they by their Principles reach the Explication of their *First Matter*, or render any tolerable account of it; whether it is *Dense* or *Rare*, *Hard* or *Soft*, &c. as will be more amply demonstrated in the *Appendix*.

20. Nothing more obstructs the way to Natural Science than the doctrin of Vulgar Philosophers, That *Qualities* are certain Kinds of *little Entities*, which of themselves have a diminutive sort of Being, and are able to produce such and such Effects. For example, Ask them how a Bell works that effect upon my Ear which we call *Sound*; they'll tell you there is a Quality in the Bell call'd *Sonoreity*, whose nature it is to make a Sound. Ask how a Green thing makes such a pleasing Impression on my Eye; they'll answer, There is a certain Quality in it call'd *Greenness*, whose nature 'tis to work such an Effect; and so of the rest. Which ridiculous Method *explicates nothing*, but makes the Silliest old wife as good a Philosopher as the most Learned Naturalist, if she can but name the *Word* that Signifies that *Quality*. Next, it makes Learners rest easily *contented*, and well appay'd with a meer *Word*; whence they will grow Negligent and Careless to take pains to look into the Natures of the Things; or else (if they have any wit in them,) to *despair* of all knowledge of Nature, by seeing their Masters so profoundly Ignorant, and so Superficially Learned. And lastly, it hinders Learners from *Seeing*, or even endeavouring to see, the Natural *Proportion* and *Alliance* between *Proper Causes* and their *Effects*; and inclines them to take purely *upon trust* the whole Administration of Nature, and all Consequence of one thing from another, which renders all natural Science *precarious*. For, 'tis not *Science*, unless we use our *own Eyes*, and *see* the point Demonstrated. *Jurare in verba*¹¹⁸—is (in such cases) the *Fool's Oath*; and is, in plain terms, to swear the Devoting or giving up our Reason to a Slothful Contentedness never to grow *Wiser*.

LESSON VII. *Of the Common Head of Relation.*

1. THE Notion of *Relation* being *what* one Individual Thing *is*, if *compar'd to another*, there must be some *Real Ground* of it in the thing Referr'd, which is the *Reason* of our Referring it, and by which formally we do thus Refer it: For otherwise Relation would be a Chimerical and

¹¹⁷ Corrected per errata sheet. Original: "the."

¹¹⁸ Latin: 'to swear in words' [of allegiance], for example to a master. The motto of the Royal Society of London 'nullius in verba' is to refuse to be beholden to someone or take someone's word for a matter. It is a modified form of a phrase that appears in Horace's *Epistle*, Book 1, Epistle 1, lines 14-15.

Fictitious Notion; and not a *Real* or *Natural* one, common to all Mankind, and held by them to be *such*; which yet we experience, by our daily Converse with them, *it is*.

2. This Ground cannot be their having *Disparate* or *Disagreeing Notions* in them, or their being of Disparate Orders, which have nothing to do with one another: For, we find that we cannot *Refer* or compare *Green* and *Hard*, *Youthful* and *Transparent*, *Hot* and *Triangular*, nor any other *disparate Notions*; nor yet a *Writer* and a *Ploughshare*, a *Father* and a *Mill-stone*, a *Brother* and a *Handsaw*, &c. because they are in *Disparate Orders*, and have no Respect to one another, *grounding* our Referring them or Comparing them together, as have a *Writer* and a *Writing*, a *Father* and a *Son*, a *Baker* and *Bread*, &c.
3. Wherefore the *Ground* of Relation must either be some Notion agreeing to *both* the things related, that is, found to belong to *both*, either Intrinsically or Extrinsically, or else their having Communication with one another by way of natural *Action* and *Passion*. This is prov'd by the former Section, and is evident, because there can be no other Considerations by which they can be order'd to one another, or be of the same Order, but their having some Intrinsecal Notion common to both, or else their Acting and Suffering upon and from one another, which is an Extrinsecal Consideration.
4. Relations of the *first* sort, which have one and the *same* Notion in them, are of as many kinds as there are Heads of Notions, since all these have a kind of Nature or Notion in them, and so some kind of *Transcendent* Unity. Thus, if they have the same Nature or Essence in them which belongs to the Common Head of *Substance*, the Relation between them is call'd *Identity*, which is their being of *one* and the *same* kind of *Entity*. If of one and the same Notion of *Quantity*, 'tis call'd *Equality*, which is their being of one and the same *Quantity*: If of *Quality*, 'tis call'd *Likeness*: if of *Action*, (singly consider'd) they are call'd *Co-actors*, as Fellow-Souldiers, Fellow-Servants, &c. If of *Passion* (singly consider'd) Fellow-Sufferers, Fellow-Martyrs, &c. If of *Place*, (or *Ubi*) Bed-fellows, Chamber-fellows, Townsmen, Country-men, &c. If of *Time*, Contemporaries, Co-eve, or born at the same time. If of *Habit*, Fellow-Mourners, Fellow-Curassiers, Fellow-Souldiers of the Blew or Grey Regiment. If of *Situation*, Fellow-Assessors or Sitters; tho' such as this seldom occur. Nay there may be a Relation grounded on having the same notion even of *Relation* in them; as Parents or Fellow-begetters.
5. Of the second sort grounded on *Action* and *Passion*, *not singly* consider'd, but with an Order to one another, or *as Inferring one another*, are such as these, *viz.* Father and Son, Master and Servant, Prince and Subject, Tutor and Pupil; which are grounded on the *Actions* and *Passions* of Begetting and being Begotten, Commanding and being Commanded, Governing and being Governed, Teaching and being Taught, &c.
6. In both these sorts of Relations the things Referr'd must have their *Correlates*; that is, there must be a mutual Relation on both sides. In the former of them, because there is the *selfsame* Ground or Reason of Referring in *one* as in the *other*, *viz.* that one *same Notion*, Common or Belonging to *Both*, to wit, the same Essence, same Quantity, same Quality, same Relation, same Place, same Time, same sort of Action and Passion, same Situation, and the same Habit.
7. This Agreeing and Corresponding of the two things thus Related in those of the *former* kind of Relation, must be meant to be their Agreeing in the same *Abstracted* and *Common* or Specifical Notion, and not in the same *Individual* one. For, otherwise two Men could not have *Identity* in their *Individual* Essence, since then they would be the *same* and *not the same*, that is, *Unum* and *Non-unum*: And, for the same reason, *Intrinsecal Accidents* being Identify'd with the Subjects in which they inhere, and having no Entity but *theirs*, they can have no Individuality but *by them*, and so the same *Individual* Intrinsecal Accident cannot be Common to *two* Subjects or Substances, but must be Individually *Two*, as *They* are. Whence the

Relations grounded on them must be upon their being the same in *Species* or Kind, and not *Individually*. Which reason holds equally for those Relations that are grounded on *Action*, *Passion*, and *Situation*, and the rest: For, two things cannot be in one Individual *place* (that is, in a place capable to hold but one Individual thing) without Penetration of Bodies: Nor is it possible, in the course of Natural Causes, that *two* should be *born* or *dye* at the same precise *Time*, that is, in such a portion of *Time* as is terminated by the same Instants: Nor can Two wear the same Individual Arms, &c. at once. Wherefore it must be meant, that the Notion common to both must be an abstracted or *specific* Notion, and not the *Individual*.

8. The Relations of the later sort become¹¹⁹ Mutual upon another score, *viz.* because *Action* and its proper *Passion* corresponding to it, do *infer one another*; For, nothing can *Act*, but it must Act upon *something* that receives that Action, or *suffers* by it; nor *suffer* or be Acted upon, but by something that *Acts* on it.
9. There is a Third Mix'd sort of Relation, call'd, *Of the thing Measured to the Measure*; that is, when the Thing Related *depends* for its *Essence* or its *Perfection*, on *Another*, and that other does not at all depend for either on *it*. For Example, When a Picture is drawn from the Prototype, it depends on the Prototype for its Perfection, and is, as it were, *Measur'd* by it, in regard 'tis only so far *Good* or *Bad* as it resembles the Man it was drawn for; but the *Prototype* or the *Man*, gets Nothing, nor is in the least Better or Worse, by having a Picture drawn from him. Again, there is a common Notion of Lineaments and Colour found in *both*, which makes it seem to partake of the first sort of Relation; also the Prototype, by imprinting an Idea of it self in the Painter, enables him in some sort to draw him, and so contributes something to that Action which gives it to partake of the Second Kind: so that this Kind of Relation seems to be *Mixt* of the *other two*, and yet (as will be shown) is perfectly of *Neither*.
10. This kind of Relation is not *Mutual*, but is found only on the side of the thing *measured*: For, since the *Measure* (*v. g.* the Prototype) has no natural Order of Agency or Patiency by which it respects the Picture, because the Man is not a Thing naturally ordain'd to work upon the Fancy of the Painter so to render him, a perfect Efficient cause of the Picture, as Fire is Ordain'd to Heat, a Master to Command, &c. Nor is there a true *Unity of Form*, to wit, of Colour and Figure, in *both*, but only some Counterfeit Resemblance of them; whence we cannot, without speaking nonsense, say, *The Man is like his Picture*, as we can that the Picture is *like the Man*, or that two white Walls are *like one another*, nor (as was said) does the *Man* receive any degree of Perfection or Imperfection by being *pictur'd*; it follows, that there is *no* Ground or Reason on the *Man's* side to make him Related to his Picture; wherefore he has no *Real* Relation to it at all, but only a *Verbal* one, consisting in the Grammatical chiming of the word *pictured* to *picture*.
11. Of this sort are the Relations between all our *Powers*, whether Corporeal or Intellectual, to their *Objects*; for the very Essence and Nature of those Powers is to *see*, *hear*, or *understand* the Objects: and the Perfections of the Powers in their several kinds, are *Measured* and rated by their doing this *Better* or *Worse*; whereas the *Objects* are never the *Better* by being *seen*, *heard*, or *known*. Wherefore there wants on those Objects side a *Real Ground*, and therefore a *Real Relation* to our *Powers*; however, the words *Seer* and *Seen*, *Knower* and *Known*, do answer one another, as if they were *proper* Agents and Patients, and Order'd mutually to each other.
12. Of this sort too is the Relation between GOD, as *Creator*, and his *Creatures*. For, seeing the Creature has received all it has, or can have, from its Creator; that is, has to be an *Ens*, and not a meer Nothing from the Essential *Ideas* it had from all Eternity in the Divine Understanding; and was put afterwards into Actual Being or *Existence*, and is conserv'd in the

¹¹⁹ Corrected per errata sheet. Original: "became."

same by his continual Influence; and has besides¹²⁰ all its Accidental Perfections and Conveniences, by the course of Causes, laid by his Divine Providence (all which is demonstrated in Metaphysicks): Hence there is all the Ground imaginable of a *Real* Relation on the Creature's part towards GOD. On the other side, since GOD gains *no* kind of perfection by making Creatures, nor is intrinsically better in the least by his Creating them, there can be *no Ground* at all of a *Real* Relation on GOD's side to the Creature, but only a *Verbal* Sound of [*Creator*] answering Grammatically to *Creature*, as *Creature* does to *Creator*. So important a thing it is in Philosophy not to be deluded by Articulate Ayr, or meer Characters, but to look deeply and attentively into the *Thing* it self, and to guide our Thoughts by what we find *there*, lest we come to frame Mock-notions out of our Fancy which Nature never gave us.

Corol. I. Hence follows, that all the Expressions of the Holy Scripture of a *Pact* or *Covenant* between *God* and Creatures, That, upon their behaving themselves thus and thus, he enters an *Obligation* of doing thus or thus towards them; the which do, consequently, put *God* and the Creature upon the *same* rank of *Agency* and *Patiency*: It follows, I say, that such Expressions are purely *Metaphorical*, and far from *Proper* or Literally *True*, but are spoken *humano more*,¹²¹ or in accommodation to our Human Actions and Manners of Proceeding. For, on *God's* side there is nothing but his Infinit Wisdom and Goodness, carrying on Supernatural Good Dispositions to conformable Effects, as he does Natural Dispositions to Effects suitable to the Nature of such things. Which Rectitude of his Will being *Essential* to him, and consequently Independent on Creatures or their Actions, had produc'd the *same* Effects whether he had made any such Covenant or no. And the same may be said proportionably of *God's* Promising, Threatening, Commanding, Requiring Satisfaction, Accepting the Payment of it, and such-like; which tho' *Metaphorical*, are notwithstanding *True*, amount to the same, and induce the same Effects, tho' in a more sovereign way, and more becoming *God's* Infinit Majesty, than the Gross Capacity of the Generality of Mankind (for whose sake those low Conceptions and Expressions were us'd) can apprehend.

13. There is yet another sort of Mutual Relations, which are partly *Artificial*, partly *Natural*; such as are those of *Genus* and *Species*, *Antecedent* and *Consequent*, *Subject* and *Predicate*, *Premisses* and *Conclusion*, &c. These are partly *Natural*, in regard our *Understanding* has its distinct Nature or Notion, as well as Whiteness, Action or any other Ground of Relation hitherto spoken of; and these are grounded on the *Manner of the Objects existing in our Understanding*; where they are as truly *Universal* and *Particular*, *Subject* and *Predicate*, &c. as the Wall is White, or the Quantity a Yard, &c. And they are also partly *Artificial*, because Artists in Logick, who *reflect* on the things as they are in our Minds, do make use of such to *clear* their Notions, *predicate* them of one another, and discourse of them exactly.
14. Wherefore those Logicians who call them *Relationes Rationis*,¹²² meaning to oppose them by that Expression to *Real* Relations, seem to forget that the ¹²³ *Understanding* and its manner of working are *Real*; whereas they have more of *Entity*, and consequently of *Reality*, in them than Bodies, and their Powers or Manners of Working have; and, consequently, those

¹²⁰ Corrected per errata sheet. Original: "has, besides."

¹²¹ Latin: 'from human custom'.

¹²² Latin: 'relations of reason'.

¹²³ L. 3. S. 6.

Relations are far more *Real* than those which are grounded on *Corporeal* Powers and their Operations.

15. The *Substance* (as it were) of *Relation* consists in that *Immediate Ground* which is the Reason of our referring one thing to another. For, 'tis Evident, that 'tis the *Thing it self* in my Mind which is Referr'd, and not the *Act* of the *Mind* Referring it. For example; Two *White* things have *Unity* of Form, or the *same* Notion in them, which makes them Really Alike *of themselves*, were they in a Comparing Power, that could actually Referr them and denominate them Relatively as their Nature requires; so that it is not the *Act* of my Understanding which made the white Walls really *Alike*, but their *own Natures* which are the Object of my Act; by means notwithstanding of the Comparative Act of my Understanding, which they inform'd, as a *necessary Condition* to relate them *actually*, and without which they had each of them had but the *Absolute* Notion of *White*, and not the *Relative* one of being *Alike*.

Corol. II. Hence we have some light given us how there may be True and *Real* Relations in *God*, Knowing and Loving himself; and, how they *depend* and *not depend* on our Understanding.

16. The Intrinsic Differences of Relation being *more* and *less*, and our Act adding *nothing* to the *Substance* of the Relation, they must be taken from the Greater or Lesser *Ground* or *Reason* why the thing is referr'd to another. Hence our greatest Relation is to *God*, because all the good we have or can have does entirely Referr us to him. Upon which therefore is founded all our Religious Respects, and our Duties of Serving, Obeying and Adoring him. Next follows the Relation of a *Husband* to a *Wife*, who is (in some manner) the same Individual with himself. After them comes our Relation to our *Parents*, who concurr'd to our Being, gave us Education, and provided for our Subsistence. Then to *Mankind*, to whom we are Related by Identity of Nature; to our *Country*, our *King*, and other *Superiours*, according to their several Ranks; to our *Kinsfolks*, *Neighbours*, &c. from which Relations arise several Duties in proportion to the *more* or *less* important Reason or Ground that makes them more or less *nearer* or *remotely* Related to us.

LESSON VIII. *Of the Common Heads of Action and Passion.*

1. THERE are Two, and but Two, Common Heads of Extrinsicals conceiv'd to be apply'd to one another by way of *Motion*. For, since Motion has *two* Terms, *viz.* that thing from whence it *comes*, and that to which it *reaches*, and these are *distinct* Considerations; hence we have Two Common Heads of one Extrinsic thing conceiv'd to be apply'd to another by way of Motion. Nor can there be *more*; for Motion, consider'd (as it were) in the Midway between those Terms, has no Notion but that of *meer* Motion; whence it is the very Notion of *Successive Quantity*, and belongs clearly to *that* Common Head, and therefore cannot belong to *another*, or constitute a *new* one.
2. The Notion of *Motion* is the most Imperfect of all our Notions, and most approaching to Non-Entity. For, since *Motion*, as it superadds to the Extensive Quantity of its Subject, is wholly made up of *not being* in this place, or that; or, of *not being still here* and *not being yet there*; nor has any thing of *Permanency*, which is in a manner the same Notion with *Actual Being*; it follows, that, besides the Common disadvantage other Accidents are liable to, of having no Entity of their *own* but what's *borrow'd* of their Subjects, it has moreover this, that neither it self, nor any *part* of it self, *exists* so much as for one Moment. Wherefore *Ens* being a

Capacity of Existence, Motion seems to be (in a manner) incapable of Existence, or a *Non-Entity*; and this out of its own *peculiar Nature* or *Notion*. Again, since in every part of Motion the thing moved is in a space *bigger* than it self, and *Place* (as will be shewn ¹²⁴ hereafter) properly such, is but *Equal* to the thing it contains, and not *bigger* than it, hence Motion hinders its Subject to be, properly speaking, *in any place*, that is *any where*, which amongst Bodies seems next akin to *not being at all*. Lastly, Motion is destructive of Actual Being in those things that are arriv'd to their full state of perfection; which shews its nature to be in some sense directly opposit to the Notion of *Being*, which has some kind of *Constancy* and *Stability* in it. Nor can it be said that it gives Actual Being or *Existence* to the *new* Entities it helps to produce, for Existence¹²⁵ is the proper Effect of *Self-Existence* or the *First Cause*. Wherefore the Notion of *Motion* is the *most* Imperfect of all our Notions, and *most* approaching to *Non-Entity*.

Corol. I. Hence is demonstrated that, since every Agent produces an Effect suitable to its *own Nature*, and therefore an Agent *infinitely perfect* cannot be the *Immediate Cause* of what's *most Imperfect*; therefore Motion, being both *most imperfect*, and withal most *disagreeable*, nay, directly *contrary*, to *God's Nature*, which is pure Self-Existence and *Essentially Immovable* and *Unchangable*, was not *immediately* caus'd by *God*, but by ¹²⁶ some *imperfect Agent*, or some Creature, that is, by such a Cause as *of it self* is a *Non-Entity*.

3. The Notion of *Action*, as it superadds to meer Motion is, the *Exercise of a Power*, which is *Effective* of something. For, since to *Act* is to *Do*, and to *do Nothing* is *not to do*, it follows, that to *Act* is to *Do something*; but to *do something* presupposes a *Power* to do it; and this so as not to stay in the Notion of meer *Power*; for, if it stays *there*, it *only* denominates the Thing *Able to do*, which (again) is *not to do*; wherefore *Action* is not the Notion of a sluggish Power, but of a Power *Exerted* and *Exercis'd*, that is, *Effecting* something; whence the Power is call'd *Effective*, the Action *Efficiency*, and the Something it does is term'd an *Effect*. All which superadd to the notion of *meer Motion*.
4. The Primary and Chief *Natural Action* is *Division*. For, since Substance is the Subject of all Accidents; and, which being changed, all the Accidents do suffer a change with it; hence *that* Action that works upon a Body according to the *Substantial* Notion of it, has *more* of Action in it, as working a *Greater Effect*: But *Division* makes *Two Things* of *One*, and so destroys the former *Unum* or *Ens*, and makes *Two* new ones, therefore *Division* is the Primary and Chief of all other Natural Actions.

Note, That this is to be understood of Perfect Division, which makes the thing *Divided*, and is therefore only properly to be call'd *Division*; for, Imperfect Division only alters the *Figure*. It may be objected, That Rarefaction and Condensation, if they be in a great degree, change the Substance as well as Division does. *Answ.* This arises out of the nature of some particular sort of Bodies, and not out of the precise Notion of those Actions: For, 'tis evident that Rarefaction and Condensation import no more in their Notion but the *altering* the Subject according to some *Quality*; whereas *Division* imports directly the taking away the *Unity* of the Thing, and consequently its *Entity*. Again, meer Rarefaction does not change the Substance, but the *Degree* of it, when it comes to great height; and every Body admits Rarefaction a long time without losing its former Essence; whereas Division consists in an *Indivisible*, so that the

¹²⁴ Less. 3. Sect. 9.

¹²⁵ Book 3. L. 7. S.5. Prop 6,7.

¹²⁶ See B.3. L 6. S.4.

Divisum esse is *esse aliud*, or *esse duo ex uno*;¹²⁷ whereas the *Rarefactum esse* may be without any such Effect following it.

5. *Rarefaction* and *Condensation* are the *next* Actions in Dignity: For, since (as was proved above) Rarity and Density are the *First* Intrinsic Differences of *Quantity*, as it affects Body (in order to natural Action and Passion, it follows, that those natural Actions that cause Rarity or Density, are the *next* in dignity to *Division*, which works more upon *Divisibility* their *Genus*.
6. These *three* sorts of Action take up the whole Head of *Natural Action*. For, since the *Genus* and its two *Differences* must needs comprehend all under any common Head, as being Adequate to it, and *Division* answers to Divisibility, the *Genus*, and *Rarefaction*, and *Condensation* to the Intrinsic Differences of *more* or *less* thus Divisible; it follows, that *these three* sorts of Action do take up *all* that Head, so that there cannot be *any kind* of Natural Action, which is not reducible to some of these, or not comprehended under them. Besides, all the First and Second *Passible Qualities*, which generally are the Immediate Objects of Natural Actions, are comprehended in, or spring out of, Rarity and Density; as will be seen in Physicks.
7. The *Formal Virtue* of Acting, or working any Effect, which we call its *Causality*, is the Agent's *being what it is*, or its very *Existence* apply'd by Motion to the Patient, and Communicated to it, or (as it were) imprinted on it. For, since no particular Agent in Nature can do *every* thing whatever, the reason why such *particular* Causes work such *particular* Effects must spring hence, that the Effect has something in its Nature that is like the Cause, comes *from it*, and is *Communicated* to the Patient, or *partak'd* by it. Whence come those Vulgar Axioms, *Operari sequitur esse*,¹²⁸ *Every thing acts as it is*; An *Effect* is a *participation of the immediate Cause*, &c. Thus the Cause or Reason why Water moistens, is because it is moist in it self, and imparts that Quality to another thing. The reason why a Seal makes such an Impression, is; because *it self* is of such a stamp. The reason why *God* Creates, or is the Cause of *Being*, is, because Being is *Essential* to him.

Corol. II. Hence Motion is only requisit to *apply* the Virtue or *Existence* of the Agent to the Matter or Patient; but the *Substance* of the Effect springs from the Cause's *being what it is*: Whence it happens, that the Effect from the same Causes is more or less perfect, according as the *Existence* of a Cause which is of such a Nature or Essence, or more or fewer *parts* of it, are apply'd *better* or *worse* to the Patient, or to *more* or *fewer* parts of it, by a *feebler* or *smarter* Motion.

8. It follows from this discourse that there must be *Four* Sorts of Causes necessarily belonging to every Effect in Nature, *viz.* There must be an *Acter* which we call the *Efficient* Cause; a *Subject* for the Acter to work upon, called the *Material* Cause. The *Effect* wrought in that Matter or Receiv'd in it, which makes it otherwise than it was before, and therefore has the Notion of some *Form* newly accruing to it; which constitutes the *Formal* Cause. And, since Corporeal Action is *Motion*, and no *Body* can move *it self*, and therefore all Motion in Nature must be *caus'd* (either Mediatly or Immediately) by something that is *not a Body*, that is, by a *Spiritual* or *Intelligent* Being: and such Agents do *design* or *act* for an *End*; therefore, there must also be a *Final* Cause to make those Agents to move Bodies, and make them act as they do in every particular Action tho' never so minute; which grounds our Notion of *Providence* adequately Governing the World even as to the least circumstance of it. Wherefore, there are to every Action in Nature *Four* Causes necessarily requisit; which will afford Reflecters ample

¹²⁷ Latin: 'to be divided' is 'to be other', or 'to be two out of one'.

¹²⁸ Latin: 'to work follows to be'; in other words, each thing acts according to its nature.

occasion for Speculation and Contemplation. For example, When I write a Letter, the *Efficient* Cause is my Self; the *Material* Cause, Paper, which *receives* the Effect of my Writing; The *Formal* Cause, the Characters received in the Paper; the *Final* Cause, to gratify my Friend, treat of Business, or acquaint him with News.

9. There is no *Fifth* Cause call'd an *Idea*, as *Plato* affirms. For, either that *Idea* is conceiv'd as introduced in the matter and Receiv'd there, and then 'tis clearly a *Formal* Cause: or, as 'tis in the *Mind* of the Artificer; and then it concurs to make him an *Efficient* Cause; for without such an *Idea* he could not produce such an Artificial Effect.
10. *Operation* has not the same Notion with *Action*, but is *Indifferent* to Action and Passion, or rather a kind of *Neutral* Notion made up of both. For example, *Notions* or *Simple Apprehensions* are said to be the First *Operation* of our Understanding, tho' the Soul in having them is purely *Passive*. So also my Acts of *Discoursing*, *Willing* &c. are call'd *Operations*, tho' they be both *perform'd* by my Soul and *Receiv'd* in it; Whence they have a kind of *Neutral* Notion, such as have *Curro*, *ardeo*, and such-like, taking such words not in a Grammatical, but in a Philosophical and Natural Sense. Of which kind are all *Immanent* Actions or Acts; And, therefore, these are not so properly call'd *Actions*, as *Operations*, in order to what they have of *Effective* in them; or else *Acts*, because they *Actuate* or *Inform* the Subject *in which* they are as well *Received*, as they are *Produced* by it. Whence *Action*, in the Proper and Obvious Sense, signifies the Efficiency of a Natural Cause; which has a *Transitive* Notion, and inferrs *Passion*; and, consequently, some *Effect* in the Extrinsic Subject it lights on.
Note, That since *Action* inferrs *Passion*, and refers to it, hence whatever is discoursed here of *Action*, may, by turning the Tables (as it were) or considering Motion in order to its *other* Term, be understood likewise of *Passion*; for which reason we treat of both those Heads in the same Discourse.

LESSON IX. *Of the Common Head of Ubi or Where.*

1. **UBI** or *Where* signifying [*in what Place*] the Notion of *Place*, must first be rightly understood e're we can have a right Notion of the Common Head call'd *Ubi*. And the word [*Place*] being no Artificial Term but a Natural one, and us'd by all Mankind, we are to learn the true and proper meaning of it from the Users of it; that is, we must take the Notion of *Place*, not from men of *Art* or *Speculators*, but from the *Vulgar*, and the surest way to do this, is to gather their Sense by *reflecting* on their Sayings and known Intentions.
2. Since then the *Vulgar* agree naturally to say a thing is *in* a *Place*; the Notion of *Place* is to be a *Container* of the thing that is *in it*; and, withal, *such* a Container as is not *Intrinsic* to the Thing of which 'tis enquir'd where it is, but *Extrinsic* to it; for it would be very odd and dissatisfactory, and look like a *Jest*, if when we are ask'd, *Where* such a man *is*? we should Answer, *He is in his Skin*. Whence, pursuing these Natural Apprehensions of theirs exactly, we shall find, that the *Proper Place* of any Body must be *Another* Body that is *Immediate* and *Equal* to it; for were it *Distant* from it, and so, *Unequal* to it, or too wide for it, then (since there is no *Vacuum*) that too-large Container would be a *Common Place* to other Bodies as well as *it*, and so would not be its *Proper Place*, (which was the Question that was ask'd) since it would be no more *Its Place* than that *others*, but a *Common Place* to both; which, therefore, would be no competent Answer to the Question where *It* was? Whence, by Reflexion, we shall discover, that *Place*, in proper and exact speech, is the *Ambient Superficies of the next Body*; for, this is *Immediate*, and therefore *Equal* to it, because an Indivisible (such as the Superficies is in respect to Body) can add *no* Quantity to it or make the Container *Unequal* to the thing

Contained. But 'tis to be observed, that the *Vulgar*, whose only aim it is to *find* a thing by asking for its Place, do not reflect oftentimes upon their own Notion, or as it were *refine* it to an Exactness, but content themselves to know *near* what Visible thing that which they look for is placed; as on the Cup-board, behind the door, under the Beds-feet, &c. which is a Slubberd¹²⁹ or Imperfect Notion of *Place*, even according to their own Sayings; for these do put the thing sought for to be *in* that Place, whereas perhaps many *other* things are *on* the Cup-board, or *near* the Bed's feet, as well as the thing sought for.

3. Again, since the Intention of Mankind in asking *Where* a Thing is? can be no other but to know how to *find* it, it follows that *Place* must be certainly *Knowable*, that is, such as does not it self need *seeking for*. Nor could it be such if it were still Subject to be *Remov'd*; for then we should be at a loss both to find *It* and *other* things *by it*: and our selves would be at the same plunge as are those that practise the Art of Memory; who, being to range the things they would remember in set Places their Fancy had design'd, do affix them to Stools, Chairs, Brooms, and such like; which being taken away and *Remov'd*, they have lost the Memory of the thing their Fancy had placed there; wherefore *Place* must have as much *Immobility* as may Serve for our *finding* a thing, so that our Enquiry *where*, or in what Place the thing is, be not defeated; and no more is requisit. All *farther* *Immobility* being nothing to the purpose mankind intended, and therefore was no part of their Notion of *Place*.
4. Wherefore, there is no Necessity of having recourse to *Imaginary Space* or *Subsistent Dimensions*, to find something which is *Immoveable Absolutely*, which some do upon this account, because all things in Nature are subject to *motion*. For, we experience, that we can *find* any thing that we can have necessity to use or know well enough without recurring thither. Besides, *Place* must be *more* *Knowable* then the thing we look for; whereas, these *Imaginary Ubies* are not *Distinguishable* or *Knowable at all*. So that such wild Conceits as these are Extravagant even to madness. We have prov'd *Vacuum* to be purely *Nothing*, and consequently *Unknowable*; and, therefore, to be in a *Vacuum* is to be in *no place* or *no where*. And, as for *Subsistent Dimensions*, 'tis a plain Contradiction upon another score; because it puts *Quantity* to be *Substance*, and capable of subsisting *alone* or without a Subject.
5. 'Tis not much less ridiculous to invent little Entities call'd *Ubies* for Bodies, or for Spirits (which are incapable of being in place) of which we can give no account. For, since the surface of the containing Body, in a Determinate distance from some Parts of the House, the Town, the Country, or the World, which to our apprehension are *fixt*, answers all Questions that can be proposed about the *Place* of a thing, and we can be furnisht with this by our *Natural* Notions; it follows, that all other far-fetcht Conceits, invented to explicate *Place*, are Needless and Senseless. Such strange extravagancies capering wits are apt to fall into, when they relinquish Nature and the *Solid* Notions she imprints in them, to follow meer *Fancy*, the mint of a thousand ungrounded Capricio's and Chimera's.
6. Examples of *Ubi* may be such as this. *Quest. Where, or in what Place, lives Dr. H.? Answ. In Kings-street. Q. Where is that Kings-street? A. In high Holborn. Q. Where is Holborn? A. At the West end of London. Q. Where is London? A. About the middle of England. Q. Where is England? A. In such a part of Europe. Q. Where is Europe? A. In the Northwest part of the Earth. And, farther than this (or rather not so far) none of the Generality of Mankind can have occasion to enquire; tho' perhaps Artists, or Geographers and Astronomers, may; nor needs there any more Immobility to be ascertain'd, to find out where that Skilful Doctor lives, since this may serve our purpose of finding him. And we may do this easily, (let the whole Earth move round never so swiftly) by getting an Answer to some of these Questions,*

¹²⁹ Archaic: 'to slubber' means 'to work hastily or carelessly'.

without the help of Imaginary Space, Subsistent Dimensions, or those little Entities call'd *Ubies*, which no mortal Man's Eyes ever saw, or any man of Sense could ever understand.

Corol. I. Hence it is a Contradiction to say the World is *in Place*, since it Contains *all* Space, and, consequently, *all* Place in its self, and therefore is Contain'd by *none*; which (as was shewn) is requisit to the Notion of being *in Place*; nor is there any necessity or sense it should; unless we should Fancy that some ultra-mundane Traveller bewilder'd in Imaginary Space, should be put to it to ask some of the Chimera's there, which is the way to the World?

Corol. II. Hence is seen, that the *Concave Superficies* of a Body, consider'd as affecting its own Subject, is in the Head of Quantity; but, as *Containing* another Body, and connotating a respect to some other things, so fixt and known, that by knowing them and It, we may know *where* the thing contain'd is; it constitutes the Common Head of *Ubi*, and consequently of *Place*.

Corol. III. 'Tis seen also that Angels are not properly *in Place*, nor consequently have properly any *Ubi*; since they have nothing in them which can have any Commensuration to a *Superficies*, or be Contain'd within it. Wherefore their being *in Place* can only be understood of their *working* upon Bodies which *are in Place*.

7. From what is said it will appear, that the true and proper Notion of *Ubi* is not *Place* it self, but *the being in* such or such a *Place*; that is, it consists formally in the Application of one Extrinsic thing to another, *in Rest*; viz. of the Body Contain'd to the *Superficies* of the Body Containing, with a Connotation of the respects above-mentioned. Yet, because *to be in a Place* includes *Place* in its Notion, it was proper and necessary to treat of it under this Head, seeing it belong'd to it *Formally*, and to *Quantity* only *Materially*.

LESSON X. *Of the Common Head of Quando or When.*

1. There is some Motion that is *Even* and *Regular*, at least to our Apprehension; and withal *Knowable* to all Mankind. For, every man sees that the Sun moves (at least it appears so to us) and if there be any Irregularity or Unevenness in its Motion, yet it is to us Undiscernable.
2. Therefore this *Regular* and *Known* Motion is fit to be a *Measure* to all our other Motions. For, since there are but three things Requisite to compleat the Notion of a *Measure*, viz. that it be apt to bear a Proportion to the Thing Measured, and to be *compar'd* to it, which all Motions have from being *Quantities* of the same kind, viz. being *Successive Quantity*; and that its Quantity be *more Known* than the Quantity of the thing Measured; and, lastly, that it be *fix'd* or *Constantly* the same, that so it may be a Standard to the others; and, since the Motion of the Sun has both these last Properties, as well as it has the First from its being of the *same Kind* of Quantity with *other* Motions, therefore this *proportionable*, *known*, and *even* Motion of the Sun is every way fit to be a *Measure* to all our *less* known and *less* regular Motions; which kind of Measure we call *Time*.
3. Hence Motion may be consider'd three several ways, and thence ground three several Notions: One, as it respects the *parts* into which it is Divisible, and its peculiar manner of having *no two* Parts *at once*; the former of which gives it the Notion of *Quantity*, the latter to be of that *Species* of Quantity call'd *Successive*. Next, it may be consider'd as it respects the two *Terms* or Things, viz. that from which it *begins*, and that on which it *lights* and where it *ends* its Career; which Considerations of Motion ground Action and Passion: And, lastly, it may be

consider'd as bearing a *proportion* to *other* Motions, and as having such other Properties as fit it to *Measure* them; and Motion, as conceiv'd to be furnish'd with these Requisites to Measure all others, is that which we properly call *Time*.

4. The Notion of *Time* is a *Natural* Notion, and *Common* to all Mankind. This is evident; For all Mankind, the Rudest as well as the most Learned, (as we find by their expressions) *has* that Notion, must *need* it, and does *use* it.
5. Tho' the Notion of *Time* be clearly grounded in Nature, yet it needs some help of the Understanding to make it *completely* and *actually* a Measure: For, when I write an hour (for example) that motion of Writing was really perform'd while the Sun did run the four and twentieth part of his Diurnal course; and so, that Motion of my Pen was *in reality* proportion'd to such a part of Time. On the other side, since every particular Measure bears in its Notion to be determinately *thus much*, and there is no Determination in Nature of any part of the Sun's Motion, nor any part of it *at once*, and only my Understanding divides its Annual and Diurnal Motion into so many Proportionate and Determinate parts; and (tho' the Motion it self be perpetually fleeting) yet it resumes so much of it into one Determinate and Constant Notion (*viz.* of an Hour) without which Determination it could not actually be a *Measure*; therefore, tho' the Notion of *Time* be clearly *grounded* in Nature, yet it needs some help of the Understanding to make it *completely* and *actually* a Measure.
6. The Notion of *Time* depends on our Understanding in the same manner that *Relation* did: For, the Ground, Reason, and Substance of Times being a *Measure*, is found in Nature; and yet the otherwise-Indeterminate parts of the Sun's Motion must be made Determinate by our comprizing so much of them at once into one Notion, and then *considering* them as Proportion'd, that is, by our *Referring* or *Comparing* them to *other* Motions, e're they can be Actually a *Measure*.
7. Hence may be collected, that the True and Genuin Notion of the Common Head of *Quando* or *When*, is not the meer precise Notion of *Time it self*, but of *being in such* a determinate *part* of Time; that is, its Notion consists in the Application of the Extrinsecal Motion of the Sun to Sublunary (or perhaps in Artists who reach further) to subsolar or supersolar Motions; and the Answer to *Quando* tells us to what part of Time they belong, or are conceiv'd to be Apply'd. For example, these Expressions; *I writ yesterday*, *I will come to morrow*, *I will speak with you within an hour*, and such-like, do Apply our Past, Present, or Future Actions to some different part of Time. Yet, because their being perform'd *in such a Time* includes *Time* in its Notion; and that Time, tho' it be *materially* Successive Quantity, yet taking it *formally*, 'tis not consider'd in order to its *own* Subject, of which it is an Intrinsecal Accident, but in order to *Another*, it was necessary to treat of it under *this* Head; since taken thus *formally* it can belong to *this*, and cannot to *any other*.

Corol. I. Hence 'tis a meer *Chimera*, and as senseless as that of Imaginary Space to fancy Time *before* or *after* the World. For, it is in direct terms to put Motion and Time to *be* when they *are not*, which is, to put it *to be and not be at once*.

Corol. II. For the same reason meer *Being*, without Order to *Motion*, has nothing to do with *Time*, nor can be said to be *in it*, or *subject to it*, or *measurable by it*. For *Being*, precisely as such, has no *parts* by which it may be proportion'd to the Sun's Motion, or Commensurable to it: Wherefore, to fancy God's Eternity (which consists in the most Absolute Impossibility of his not-being) to be Commensurate to an Infinit flux of Time, is a Groundless and Senseless Imagination. Tho' his never-altering *Being* does, even for its being such, eminently include all

Possible *Time* and all *Differences* of Time, Past, Present, and Future, and this concenter'd in it all at once.

Corol. III. For the like reason the *Internal* Operations of Spirits being *Indivisible* and *Instantaneous*, can have no Commensuration to the Motion of the Sun, or to Time; tho' their *External* Operation upon Bodies may; correspondently to what is said before of their being *in Place*.

8. The Questions of *Quando*, and their proper Answers, are such as these; When was Christ born? *Ans.* 1696 Years ago. When will there be a Leap-year? *Ans.* This Year. When did *Mustapha*¹³⁰ the Turkish Emperor begin his Reign? *Ans.* The last Year.
9. The Differences of *Quando* are *Past*, *Present* and *Future*. Tho' the Present is not in reality, it being an Instant and Indivisible; yet, since our Understanding can *comprise* such a portion of Time into one Notion, and consider it, and conceive it, and thence speak of it by a participle of the Present Tense, and as one entire Part of Time, and say '*tis Running*, till as much as we had fram'd a Notion of were run out or ended; hence we can truly say, something *is doing* this present Age, Year, Month, Day and Hour, nay, this very Moment, taking *Moment* for some short Indeterminate part of Time.
10. The Differences of Past and Future are *more* and *less* distant from the Present prefix'd Time; for *Past* signifies *before it*, *Future*, *after it*. Inferiour Differences also must be taken from some determinate point, (as it were) as, from the Creation, the first Olympiad, the Birth of our Saviour, &c.

Note, That it is very nicely to be remark'd, that when *Questions* are ask'd, by *how much* or *how little* of *Time*? the Answer belongs to the Predicament of *Successive Quantity*; whence an Age, a Year, a Month, &c. are *Quantitative* Notions, divided by *more* and *less* of Successive Quantity or Motion, and constituted by them; and only what answers precisely to *When*, belongs to this Predicament of *Quando*. Thus, if we ask *how long Time* it is *since* the Invasion of *William the Conqueror*,¹³¹ the Answer is, Six hundred and thirty years; which is a quantitative Notion consisting of both Continu'd and Discrete Quantity. But if you ask, *When* was the first Olympiad? the Answer will be, In the three thousandth two hundredth twenty eighth year from the Creation;¹³² and so it will belong to this Head; for then it formally signifies, that the Motion or Action of the Games in the first Olympiad were celebrated while such a part of the Sun's Motion was passing. The Predicaments of *Situation* and *Habit* are of little use, therefore not worth the dilating on them.

LESSON XI. *Of the Expression of Our Notions by Words.*

1. NOtions being (as was said) the *Meanings of Words*, it comes next to be examin'd, what Advantage or Disadvantage may accrue to *Science*, by the expressing our Notions by *Words*, either distinctly or confusedly. If the word have but *one* Sense or Signification, either taken alone or as apply'd to other Notions, 'tis said to be *Univocal*, or to be spoken *Univocally* of them; because *Vox* or *Word* differing from meer *Sound* in this, that a *Voice* is apt to express our Inward *Sense*, *Mind*, or *Notion*, so that *Sense* seems to be the *Form* or *Soul* of a Word, and

¹³⁰ Mustafa II, 1664-1703, was Sultan of the Ottoman Empire from 1695-1703.

¹³¹ William I, 1028-1087, became the first Norman monarch in England in 1066, during the Norman Conquest of the Anglo-Saxons from 1066-1075.

¹³² The traditional dating of the first Olympic games in ancient Greece is 776 BC. Implied by Sergeant's calculation, God would have created the world about 4004 BC, and so he would have thought the Earth was at that time 5,700 years old.

Sound only the *material* part or (as it were) the *Body* of it: Hence a Word is said to be *Univocal*, when it has but *One Sence* or Meaning, and *Equivocal* when it has or may have *more*.

2. Since, as ¹³³ was prov'd above, Notions are the *Natures* of the things in our Understanding, and so can have no Falsity, in regard they have their *Metaphysical* Verity; that is, they *are what they are*, and cannot be *other* than they are; nor can they have *Formal* Falsity, for this consists in the *Compounding* two Notions together by Affirming or Denying, neither of which is found in Notions or *Simple* Apprehensions, which are *not* thus Compounded; hence *no Error* can possibly proceed from the *Notions*, but all *Truth*; wherefore, were all Words *Univocal*, and had but *One* Notion or Meaning, there could be no more possibility of Error from *Words* than there could be from the *Notions* themselves, which are signified by those Words. Wherefore, on the contrary, if words be *Equivocal*, that is, Ambiguous, or liable to be taken in a *double Meaning*, or (which is the same) to signifie *diverse Notions*, and it happen that some of the persons that use them do take them in *one* sense, others in *another*, they must necessarily speak and discourse of *different* things, and, so fall into *different sentiments*, and contradict one another.
3. Hence, supposing the Persons be *sincere*, and that there be no Fault in their *Will*, most of the Contests and Wranglings in the World do arise from the *Equivocal* Meaning of Words: For, since the Use of Words is Common to all Mankind, and most Single Words are Equivocal, and the Contexture of them, or the whole Clause, may also be oftentimes taken in a different sense; hence, unless the double sense of the Words be Clear'd and Distinguish'd, Innumerable and Endless Contests must necessarily happen from the *Equivocal* Meaning of those Words.
4. *Written* Words are far more liable to those Inconveniencies than words *Spoken*, especially if the Authors of those Written Words be *Dead*, and no Certain way of Interpreting them be agreed on by all Parties. For, if an Equivocation happen in Words *spoken*, the Speaker, if *alive*, may easily come to see he is misunderstood, and by a Pertinent Distinction shewing the *double* sense of the Word, and in *which* of the senses he means it, may come to a right understanding with his Opposit; which is Impossible in *Written* Words, when the Author is *Dead*, and there is no Certain way of Interpreting those words Agreed on; as it happens in the followers of *Aristotle* or any other Dead Authors.

Corol. I. This *Method* or way of Interpreting such Words must either be Evident of it self, or made Evident by Proof; and it must, besides, be Agreed by both the contending Parties. *Evident*, because it is a kind of *Principle* to find out the true sence of the Author. And it must be *Agreed on*; for otherwise the Principle not been yielded to, all Contests which depend upon that Principle must remain *Undecided*, and end (if they ever do so) in a meer Logomachy or *Word-skirmish*.

5. For the same reason, even the same person, if he be deluded by the Ambiguous Sound of a Word, and, thro' Inadvertence or want of Skill to keep his Thoughts steady, happen to take it now in *one* sense, now in *another*, must necessarily *blunder* in his Discourse, and speak Incoherently. For, since the true Notion of the Thing does Ground all our Knowledge of it, and all our Discourses concerning it; it follows, that he who proceeds now upon *one* Notion, then upon *another*, must needs vary and hobble in his Discourse, and talk Incoherently; having no Certain and Fixt Notion affording him Light to guide his Steps to the *same End*, or take the *right Way* to it.

¹³³ B. 1. L. 1.

6. The Meaning of those words that express *Natural* Notions is to be taken from the *Vulgar*, and the sense of *Artificial* Words from Men who are *Learned* in those respective Arts: For, the signification of Words can only be taken from the Authors and Users of them; which in the former sort of Words is the *Vulgar*; in the later, *Men of Art*.
7. Hence Criticisms, generally speaking, are Incompetent to give us the *Certain* Sense of Words. For, Criticks do very frequently ground the Sense of Words upon Etymologies, or the Derivation of them from other words: Or else, on the Sense in which some few learned Writers do take them; both which are Fallacious Rules to know their Sense *certainly*. The former, because the Reason *why* the word was Impos'd, and the Sense *it self* of those words are many times Different Notions: For example, a Stone (as some of them tell us) is in Latin nam'd *Lapis, a laedendo pedes*,¹³⁴ but the *Notion* or signification of that word is the *very Substance* it self of such a Body. Nor is the latter Rule competent to give us the true Meanings of those words that express Natural Notions; first, because those Learned Men use to speak Learnedly or Rhetorically with Tropes and Figures, and affect to deliver their thoughts neatly and finely, with quaint Phrases, Allusions, Metaphors, and other knacks of Language; all which are so many Deviations from the *Natural* manner of Expression Common to all Mankind, and, consequently, Unsuitable to our *Natural* Conceptions. Besides that, a *Few* Authors suffice the Criticks to build their Observations upon; All which falls infinitely short of that Certainty and Plainness which the *Common* and *Constant Use* of the Generality of Mankind, or the *Vulgar*, affords us.
8. *Equivocal* Words are either Simply and *Absolutely* such, which we call Equivocal *by chance*, or *Relatively*, which we call Equivocal *by design*. Absolutely, when there is no kind of Reason or Ground why the same word should have two different senses; as when [*Far*] in English signifies *a great way*; in Latin, *Bread-Corn*; or any word in one Language happens meerly casually to have a different Signification in another. In which sort of Equivocation there can be no danger to Science, those two Senses of the Word being so vastly disparate: *Relatively*, when there is *some* kind of Ground *why* the same word should be *transferr'd* from one Notion to another. And this may be done for two different reasons. One, when it is referr'd to another for some *Connexion* with them as Cause and Effect; as, when the word [*Healthful*] which properly belongs to an *Animal*, is; transferr'd to *Meat*, because it is the *Cause* of Health in the Animal; and to *Urine*, because it is an *Effect* of its Health, and therefore a Natural *Sign* of it. Or, as when we say there is much *Art* in such a Picture or Poem, it means the *Effect* of Art; for *Art* in proper speech is to be found only in the Understanding of the Artificer. The other Reason of the words being Transferr'd from one to another, and consequently, Referr'd back to it again, is, when this is done for some *Proportion* or *Resemblance* between them: As, when we say of a *good Governour*, that he is the *Pilot* of the Common-wealth, to steer it into a safe Harbour, and preserve it from splitting upon the Rocks of Division. Where the word [*Pilot*] which in the First and Proper Meaning signifies a *Director* of a Ship, is transferr'd to a *Governor*, because he does the same *in Proportion* in a Common-wealth which the other does in a Ship. Thus *Tranquility*, which is properly said of the *Sea* in a *Calm*, is Transferr'd to a *State* or *Kingdom*, because its *Peaceable* Condition resembles or bears a kind of *Proportion* to the Undisturb'd Quiet found in a Calm Sea.
9. Words Transferr'd to another for some Proportion or Resemblance between them are call'd *Metaphors*, or *Metaphorical*; and the best Metaphors are, when the thing, from which 'tis Transferr'd, is Eminent under that Notion we intend to express. As when we call a Valiant

¹³⁴ Latin roughly means: 'harming the feet'; the folk etymology is that 'laedendo pedes' was shortened to 'la' + 'pis', and thus 'lapis'. Thanks to classical languages scholar Samuel Stahl for his assistance.

Man a *Lyon*, and a Meek man a *Lamb*; because *Courage* and *Mildness* are Eminent in those *Animals*. A Continu'd Metaphor is call'd an *Allegory*. As, in the Example lately given, the word *Pilot*, *steer*, *harbour*, *splitting* and *Rocks*, are all Metaphors, and therefore the whole speech is *Allegorical*.

10. There is no Danger nor Detriment to Science that such words are us'd in *Common Speech*, or *Loose Rhetorical Discourses*; but they are exceedingly pernicious to it when we are treating of *Dogmatical Tenets*, and searching for Truth out of the Words of *Written Authors*. For, since those Metaphors, however they be *True* while understood to be meant in Proportion and Resemblance onely, yet are *Literally False*; and in delivering Doctrines or *Dogmatical Tenets* only *Litteral Truth* is aim'd at; and, if the Reader happen to take a Metaphorical Expression for a Literal one, he will most certainly embrace an *Errour* for a *Truth*; or, if he takes a word Literally meant for a Metaphor, he will take a Truth for an Errour; hence, it must Needs be most pernicious to Science not to distinguish between the *Metaphorical* and *Literal* sense of the words, but mistake one for the other. And, therefore, unless some Certain Rule be Establish't, by which we may be ascertain'd when *Written Words* are to be taken *Literally*, when *Metaphorically*, 'tis impossible to be Certain of any Truth meerly by those Written Words.
11. Those Words which are Transferr'd from *Corporeal* to *Spiritual* Natures are, by far, more highly Metaphorical than can be any Transferr'd from one *Body* to another; and therefore, the Misunderstanding them must needs be very destructive to Science: For, since Corporeal and Spiritual are the First *Species* of *Ens*, and the Division of that *Genus* into those *Species* is made by the *Contradictory* Differences of Divisible and Indivisible; it follows demonstratively, that whatever, except the precise Notion of *Ens*, is properly Affirm'd of *Body* must be properly Deny'd of *Spirit*: and therefore the words Transferr'd from Bodies to Spirits which are in *Different Lines* are far more Improper than those which are Tranferr'd from *one Body* to *another*; they being in the *same Line*, and so less Disparate.

Corol. II. Hence is confirm'd the former doctrine that Spirits are not *in place*; nor are Themselves, or their Spiritual Actions, Subject to *Time* or Commensurable *to it*, &c. Since all these may properly be *said* of *Bodies*; and therefore must properly be *deny'd* of *Spirits*.

Corol. III. From the two last Sections it follows evidently that no *Dogmatical Tenet* can be prov'd from Books that treat of *Spiritual* Natures, or of such considerations as belong to them, unless some *Certain Rule* be first Establish't by which the Reader may know when the words are to be taken *literally*, when *Metaphorically* in this or that place; once a Mistake in this may make the Reader embrace a Falshood for a Truth, or a Truth for a Falshood in matters of greatest Importance. For example, this Proposition,¹³⁵ [*God is mov'd by our prayers*] is Literally False; for to be *Moved is to be Chang'd*, and **God** is Essentially *unchangeable*. Wherefore, it is only True in a Metaphorical Sence; and the Word [*moved*] is a metaphor of the last sort, viz. of Words transferr'd to another for some *Proportion* or *Resemblance* between them; and, so, the true sense is this; **God**, tho' Unmov'd in himself, yet acts in the same manner towards him that prays to him, as a good *Man* here (who is *properly Mov'd*) would act towards one that Petitions him.

Corol. IV. Hence also is demonstrated that all the Names and Words we can use when we speak of the *Divine Nature* and its Attributes, are in the *highest* manner Metaphorical and Improper.

¹³⁵ Corrected per errata sheet. Original: "Proportion."

For, since we can no other wise name or *speak* of a thing but as we *Conceive* it, and all our Conceptions are Notions taken from *Natural* Objects, and onely said of *them* with Propriety; and no otherwise said of *Created Spirits* but onely Metaphorically; and that *God's* Infinite Perfections do far more excel *Created Spirits*, than those Spirits do *Bodies*; it follows that all the Names and Words we can make use of to speak of the Divine Nature and its Attributes, are in the *highest* manner Metaphorical and Improper: as may be farther shewn in Metaphysicks.

12. The Word *Ens*, as apply'd to *Substantial* and *Accidental* Notions is of the *former* sort of Equivocal words, and *Analogically* spoken of them; that is, *first* and *properly*, of Substance; and *Secondarily* or *Improperly* of Accidents. For, since (as was shewn above) *Ens* signifies *Capable of being*, and none of the Accidents is *of itself* Capable of Being, but onely comes to have some Title to Existence by the *Substance*, from whose Being they have entirely all the Being they have, and that *Its* being: it follows that the word *Ens* must be *Analogically* said of them; that is, Properly of Substance, and Improperly of Accidents.
13. Since it appears, from what is said hitherto, that the Equivocation of words is most highly Prejudicial to Science, it is one necessary part of of the **Method to Science** to detect the Snares it lays in the way of our Discourse, that we may avoid them. And this may be done.
14. First, by observing the *Explication* we make of the Word that is apply'd to different Notions, that so we may know which is the *proper* Signification of it. For, by doing this we shall certainly find that the *less proper* Notion, when the word is explicated, will still include the Notion of the *Proper* one, and bear up to it. As if we would Explicate the word *Strong* as 'tis spoken of Ale or Wine, we shall be forced to say (if we be put to express our selves Literally, and tell what it means) that as he is call'd a *Strong Man*, who is able to overthrow his Enemy, so we call Wine or Beer *Strong* when it is able to overpower our Brain. Or, if we call a man *Hard-hearted*, it would be explicated thus, that his Humour is as *Hard* and *Inflexible*, considering the Temper of a Rational Creature which ought to be mov'd by Reason, as *Hard* things, which are very difficult to bend, are among Natural Bodies; for which reason they sometimes call such men [*Stony-hearted*] or [*Iron-hearted*]; in both which we see that [*Strength*] is properly in *Man*, and *Hardness* in such Bodies as *Stone* or *Iron*, and improperly in *Wine* or the *Heart*. And the same may be observ'd in the word [*Pilot*] apply'd to a *Governour*; in [*Moved*] apply'd to **God**; in [*Healthful*] to Meat or Urine. Thus the word [*Religious Honour, Worship or Respect*] is first and properly apprehended as belonging or Due to **God**, the sole End and Author of *all* Religion, and Analogically or Improperly to *Holy Persons*, either on Earth or in Heaven, as his Servants; and to *Sacred Books, Pictures, and Churches*, as either Causing, Exciting, Increasing or Belonging to the *Religious Honour* due properly to *Him* Alone. Whence *Religious Honour* given to any other things cannot be Explicated, but in Reference to *God*, the only proper Object of Religion; which therefore will be found Included in the Explication of that Religious Honour which is given to any thing else. And yet what Endless Squabbles, Contests and Animositities has this one Equivocation produced, while Passionate or Ignorant men will needs take the word [*Religious*] when spoken of those Different things, to be *Univocal*, which is most clearly *Analogical*.
15. The next way is, to observe the Notions any way Connected in our Common Speech with that Word whose Equivocalness we doubt of; that is, to consider the Causes, Effects, Antecedents, Consequents, Contraries, its Superiour and Inferiour Notions, its Circumstances, &c. For, if some or any of these do *not* agree to the Meaning of any Word when spoken of *more* things, or found in diverse Contexts, then we may be sure 'tis spoken in *diverse Senses*, and is Equivocal; and then, by the foregoing Rule we may certainly come to know its proper Signification. So, in the Notion of *Religious Honour* apply'd to **God** as

properly due to him, and Adoration of him, the chief part of which is an humble Acknowledgment of him to be our Creator, Redeemer, Sanctifier, the Supreme Lord of Heaven and Earth, the Searcher of Hearts, and Judge of all our Actions, &c. none of these are possible to be Connected, or Agree to any of the other Improperly called Objects of Religious Worship: So, when we stile any Eminent Person for Learning [*a Great Man*] we shall easily find it is Equivocal and Improper, because *Greatness* means, in Proper Speech, *much of Quantity*, and has that Common Head for its *Genus*; whereas a *very Little Man* in Quantity may be *Great* in the sence in which we meant it.

16. The Third way is, to attend to what True *Science* or Faith teach us. For, since one Truth cannot contradict another, therefore we may be assur'd, that, in case we be Certain that what the Writer meant is *True*, his Words must be taken in that sence which is Agreeable to *True Science*, or Faith. Hence, when it is said that **God** made two *Great Lights*, the Sun and the Moon, it being Evident by *Science*, that *Other Stars* are incomparably Greater than the Moon, hence the words [*Great Lights*] in that place, cannot be meant of Great *in it self*, but as to their *Appearance to us*. But, care is to be taken that we have *true Science* of the thing exprest by such words, and that the Subject be not such as exceeds our pitch of Knowledge.
17. The *Context* may help much to give us the right Notion of the Words; especially when the *Literal* Truth is aim'd at, *Axioms* and evident *Principles* are laid, and the Discourse is perfectly *Connected* or Coherent. For, in that case the Symmetry found in the parts of the whole Discourse forbids any word to be taken in a *wrong* signification; as we experience in Mathematicks and other Close Discourses.
18. The *Intention* of the Author, and the *Argument* and *Scope* of the Book, avail much to direct us to the right sence of those words in it which are most Material and Significant. For, the Notions meant by such words are as it were the *steps* which lye level all the way, and lead to the End at which the Author aim'd them; and, therefore, cannot easily permit a Deviation from their true Sence, or suffer their Meaning to be mistaken.
19. The Words in which *Laws* are conceiv'd are best interpreted by the *Common Practice* of those who are subject to those Laws. For, since those Laws are the *Causes* of the Common Practice, and the Common Practice is the *Effect* of those Laws, hence the *sence* of the *Laws* is demonstrated by the Common Practice *a posteriori*.
20. But the very best and most assured way to detect and avoid Equivocation in all words whatever, is to observe and examin, whether *the same Definition* agrees to the word as found in diverse places: For, since the *Definition* consists of a Determinate *Genus*, and its Intrinsic or Proper Differences, it must needs give us the *precise Notion* or Meaning of the Word; since, if it be either under any Other *Genus*, or constituted by any Other *Differences*, the Essence which they constitute must needs be a *different Essence*; and, therefore, the Word which signifies it, must necessarily have *another Meaning* or *Notion*.

Corol. V. Words being invented to express *Sense* or *Meaning*, it follows, that those Words that have *many* Senses, and all of them *True* and coherent to one another, have the highest perfection that Words can possibly have. Wherefore those passages in Holy Scripture that bear both a *Literal*, *Tropological* (or Moral) *Analogical* and *Anagogical sence* (or several of them) are of a more sublime nature than other Words are, and argue, that they were endited ¹³⁶ by a Divine Author.

¹³⁶ Alternate form of 'indited' or 'indicted', in the sence of *written* or *composed*.

Book II. Of the Second Operation of Our Understanding, or Judgments

Lesson I. *Of the Nature of Judgments, or Propositions in Common; of their Parts; of the Ground of their Verification; and of the several Manners of Predicating.*

1. Having treated of *Notions*, and of their Clear *Distinction* and *Expression*, to that degree as may be sufficient for *Science*, it follows of course that we treat next of *Cognition*, or the putting together of Notions; and this not joyning them together on any fashion, by rote as it were, in our *Memory*, as a School-boy gets a Latin Sentence without book, the meaning of whose words he understands and revolves in his Mind, but regards not whether it be *True* or *no*; nor yet, the putting them together according to Grammatical Congruity, as is this Sentence, [*Virtue and Vice are both equally Laudable*] in which the *Words* do Cohere indeed according to Grammar Rules, but the *Sence* is False, and Incoherent: But (as the word [*Cognition*] imports) it must be the Connecting or Joyning them together, in order to *Knowledge*; that is, with an Application of our Knowing Power to see whether they ought to be thus put together or no; or, (which is the same) whether the Proposition be *True*.
2. Wherefore, since we cannot *know* any thing to *be so*, but what *is truly so*, it follows, that all Knowledge must be of some *Verity* or *Truth*; and this not of a Truth which is *materially such*, or repeated in our Mind, (for this amounts to no more but a Complex *Notion* or Apprehension) but to make up the Notion of *Knowledge*, we must *see* the Notions of which that Truth does *Formally* consist, to be *truly* and *indeed* Connected. As, when we say [*A Stone is Hard*] we must *see* that what's meant by [*Stone*] and by [*Hard*] are some way or other Connected in the *Thing*; or, otherwise (all *Truths* being taken from the things) we cannot be said to *Know* it to be *True*.
3. *Judging*, in proper speech is not meerly and precisely the *Seeing* or *Knowing* that the Notions are Connected, but the *Saying Interiourly* or *Assenting* heartily that they *are so*. Otherwise, since nothing can be *Known to be so*, but what *is so*, it would follow that there would be no *False Judgments*. Wherefore, *Judging* adds to the meer notion of *Knowledge*, that it is the subduing of all Hesitation, or the *Fixure* of our Intellective Faculty about the Verity or Falsity of any thing. Whence *Judging* is the *Effect* immediately and necessarily resulting from our *Knowledge* that the Notions are really Connected, when 'tis a *True Judgment*; or else from our only *Conceiting* them to be Connected, when the Judgment is *False*. Whence, this is a right consequence, I *see* or know the Notions cohere, therefore I judge the Saying or Sentence that signifies they are connected to be *True*; which is the Method that all Rational or Judicious men take: Whereas Passionate or Ignorant men, who are blindly addicted to their own Sentiment, take the Contrary way; and will have the Notions to *cohere*, and the Proposition to be *True*, because they had prejudg'd it so upon some other Motive than the *seeing* that the Terms themselves were indeed connected.

It will be objected, that Knowledge also *fixes* our Understanding; and, therefore, Knowing is Judging. I answer, That to *fix* the Understanding so as to acquiesce to what it sees, is to make it *Judge*; but the Notion of *Knowing* is compleated in the bare *Seeing* the Terms Connected, and is terminated in regarding the Object or the Proposition that is Known: But *Judging* superadds to it, that it is moreover the yielding to reject all farther disquisition, and *adhering*

firmly to that Knowledge; which (tho' the distinction between them be nice and delicate) is *another* Consideration superadded to meer *Knowing*, and sinks and rivets the Object more deeply and unremovably in the Soul. Lastly, the Intuitive *Knowledge* of Pure Spirits is True *Knowledge*; but it is not made by our way of *Judging*, in regard they neither Abstract, nor Compound or Divide Notions.

4. Hence is seen that to make *Judgments* of things out of True Knowledge, is the Greatest Natural Perfection our Soul is capable of. For, since nothing can be *Known* to be so but what *is so*, or *True*; all Judgments resulting from True Knowledge not onely fill our Mind with *Truths*, but are, moreover, a Firm Adhesion to Truths and the Secure Possession of those incomparable Endowments, which are the Best Perfections of our Understanding, and make us like the **God of Truth**. Nor ends the Advantage we gain by Truth in meer *Speculation*; but, *Truth* excluding from its notion *all Possible Errour*, it makes it Impossible we should ever embrace any Errour while we thus Judge. Which, since *Omnis peccans ignorat*,¹³⁷ and that every Sinner (as the Proverb is) *has his blind side*; must therefore, if Truth be *Express* in our Understanding, and *kept awake* there, Preserve such a mind from Sin; and by making right and Lively Judgments of our Present and Future State, and of our several Duties here, most certainly bring us to Eternal Happiness hereafter.
5. That *Speech* that Connects Notions in order to Knowledge, or Expresses a Judgment, is call'd a *Proposition*; that is, such a Speech as proposes the Notions, and puts them into such a Frame or Posture of Connexion, as best serves for us to Judge whether they are *really* Connected or no. Whence it must consist of *three* parts, *viz.* that *which* is Affirm'd or Deny'd of another, which in an Artificial term we call *Predicated*, and that notion the *Predicate*. That of *which* 'tis Affirm'd or Deny'd, call'd the *Subject*. and that Notion which *signifies* their Connexion, call'd the *Copula*. The two first are also call'd the *Terms* or *Extremes* of a Proposition; whence all *Truth* is said to consist in the *Connexion of the Terms*; and, if the Terms be not found to *cohere*, the Proposition is justly held to be *False*.
6. Since Propositions may be both in the *Mind* and in *Words*, and the *Meanings* of the Words are the same with our *Notions*; it follows hence (so the words be not Equivocal) that *Mental* and *Verbal* Propositions are the same thing; so that it is, in reality, all one to treat them under either of these Considerations. Therefore, in regard we must use *Words* in our Discourses concerning Propositions, and many times Artificial ones, we shall treat of them indifferently as taken in *either* condition; and sometimes use the Word [*Judgments*] sometimes [*Propositions*] as it lights. Only let it be remember'd, that Judgments are onely in the Mind *Formally* and *Truly*; and in *Verbal* Propositions, only as in *Signs* of the *Mental* ones. Tho' even taking them as in our Understanding, they have, even *there*, their *Subject*, *Copula* and *Predicate*, as well as when they are Pronounced, or Writ in *Words*.

Corol. I. Hence is deduc't, that the rude Vulgar, nay, even Children who cannot Speak or Discourse, may have *Mental* Propositions, and Consequently what answers to *Subject*, *Copula* and *Predicate* in their Understandings; tho' they cannot Reflect or Distinguish them, and (as it were) dissect and Anatomize their own Thoughts and Inward Acts, as do *Men of Art*. For Example, when a Clown Knows or Judges that there is such a place as *London*, or a Child that what it sees *is Milk*; they have in their Minds the *True*, tho *Rough*, draught of these two Propositions, [*London is Existent*] and [*this is Milk*] and, consequently, of what corresponded to the several parts of those Propositions, after a *Natural* manner; tho they cannot yet lick

¹³⁷ Latin: 'every sinner is ignorant;' i.e., everyone who sins is acting out of ignorance. This (or a similar variant) was commonplace, appearing in the works of Thomas Aquinas (e.g., *Commentary on the Epistle to the Colossians*) among others.

their rude Embryo Judgments into Form, or bring them to a perfect shape, by distinguishing in them these several parts.

Corol. II. Hence also, tho' we cannot know the precise time in which Children begin to judge, yet we may be assured it must be as soon as they have *Cognition* or Knowledge of Common and Familiar Objects, and of their Agreeableness to their own Nature. And, first of all, of that which is *next* to them and *most* Knowable, *Viz.* that *themselves exist*; as will be seen hereafter. The reason is, because *Judgments* are the Immediate *Effects* resulting out of *Knowledge*; and, therefore, as soon as they *know* any object is Agreeable or disagreeable to them, or that it *Exists*, they cannot but *Judge* so after their dull fashion.

6. ¹³⁸To proceed. As the Metaphysical Verity (of which onely our Notions are capable) is taken from the *Things*, and Consists in *their being* truly *what they are*: so the *Formal* Verity of our Judgments must be also taken from the *Thing's being* such as we Judge it to be; Whence Truth is by some defin'd to the *Conformity of the understanding to the Thing*, wherefore, when we affirm the Thing to be *This* or *That*, or to be *such* or *such*, the true Meaning of that Affirmation is, that what corresponds to both those Notions of the Subject and Predicate is found or *exists* in the same *Thing* or *Being*; and, were not this so, it would be *False* to affirm that *one* of them *is* the *other*.
7. Wherefore the meaning of the word [*is*] which is the *Copula*, is this, that those Words are Fundamentally Connected in the *same Thing* and Identify'd with it Materially; however those Notions themselves be Formally Different, provided they be not Impossible;¹³⁹ for then the Proposition must, for the reason now given, be necessarily *False*. As when we say [*a Stone is Hard*] the Truth of that Proposition consists in this, that the Nature of [*hard*] is found in that Thing or *Suppositum* call'd a *Stone*, and is in part Identify'd with it; however the Notions of *Stone* and *Hard* be Formally Distinct. Or, (which is the same) it is as much as to say, that that Thing which is *Stone* is the same thing that is *Hard*.
8. The Copula [*is*] has alwayes the sense now given, except when we are to Speak of *Nothings* which (the adequate Object of our understanding being *Ens*) we are forc'd to apprehend as *Things*, even when at the same time we Judge them to be *otherwise*. As when we say [*Imaginary Species a Chimera*] and yet, even then, it expresses a kind of Identity of the *two Nothings*, and affirms them to be the *same Nonsense*, and that to put a *Space* or Quantity to be *no* Quantity: or to put a *Non-Ens* to be *Ens* is Contradictory and ridiculous. And, indeed, these kind of Propositions are in effect no more than to say, that *Non-Ens*, *Non est Ens*, or, What is not Capable of Being cannot be.
9. The Copula [*is*] is the most proper to give us a Clear Intellectual Light; and, by consequence to fix our Judgment. First, because the Notion of *is*, or Actual Being, is impossible to admit any Explication (and therefore 'tis self-known) as any one may evidently experience, if he goes about to *Explain* it; for he will find that he must be forc'd to put *is*, or some word that imports Actual Being in its Explication; which makes the Explication to be none, but leaves it as obscure as it was before; nay, *more* Obscure than formerly by adding other Notions more Obscure than it self was. For example, Ask what it is to *be* or Exist, all that can be said of it is, that 'tis *Esse extra Causas*; where (*Esse* being the same with *Existere*) we vainly endeavour to explicate the *same thing* by *its self*; and to make it look like an Explication, we add *extra Causas*, which two Notions are *less* Clear than *Esse it self* was. 2dly, The Notion of

¹³⁸ The numbering is original. There are two different paragraphs labeled 'section 6.'

¹³⁹ That is, not simultaneously possible; incompatible, or inconsistent.

[is] is most *Determinate* of its own nature, and so most *Fixt* of it's self; and, therefore, most proper to *fix* the Judgment. 3dly, Because all other Notions having some Potentiality and Indifferency in them, are (as it were) wavering between two or more Notions; call'd Differences. Whereas the Notion of [is] having none, is only Absolutely *Steady*, Immoveable or Undeterminable to any other Notion. Lastly, Because hence, in Literal, and not Figurative, Speeches, the word that expresses this Notion, can never be *Equivocal*, since 'tis impossible to distinguish it into this or that sence; all *Distinguishing* or *Differencing* Notions being evidently *more Formal*, Actual and Determinate than the Notion *to be Distinguisht*: which is in this case, Impossible.

10. To proceed: There being (as was said) a Real Relation between those Notions which are the Subject and Predicate, the later being really in the understanding as That *which is said* of the Former, and the Former that of *which 'tis said*; and Relation being necessarily compleated and actually such, by the Act of a *Comparing Power*; it follows, that every Judgment is a *Referring* or *Comparing* one of those Notions to the other, and (by means of the *Copula*) of *both* of them to the same Stock of *Being* on which they are engrafted, or the same *Ens*; where they are Entitatively Connected (or the same Materially) before they are *Seen* or *Judg'd* to be so by our understanding.
11. It is sufficient that the two Terms be *Materially* the same, or Identify'd with the same *Ens*, when the Subject is a *Concrete*; whether it be *Substantially* a Concrete, that is, consisting of the Nature and the Suppositum, as when we say *Petrus* or *Homo* is *Animal*. Or *Accidentally*; as when we say *Album est Dulce*. But in *Abstract* Notions, they must, *besides this*, be moreover the same *Essentially* or *Formally*; that is, they must not only be found in the same Material *Ens* or thing, but those very Notions themselves must have the same *Formality*, either in part, or in whole, in our Understanding. In Whole, as when we say *Petreitas est Petreitas*, *Quantitas est Divisibilitas*; In part, as, when we say, *Petreitas est Humanitas* or *Animalitas*; for then *Humanitas* and *Animalitas* are as Essential to *Petreitas*, and *Petreitas* as much *includes* and *is* the Subject of their Notions and of its own Differences besides, as *Petrus* *does* or *is* of the Notions of *Homo* or *Animal*.
12. An *Abstract* and a *Concrete* Term can never be Subject and Predicate in the same Proposition; tho' never so Essential to one another; For an Abstract Notion, out of the very Nature of its Abstraction, is formally a *Part*; and a *Concrete* Notion in respect to it a *Whole*; and a Part, tho' taken *materially*, it may *belong* to the same *Ens* which is a Whole, and be the same *Thing* with it; yet taken *formally*, it cannot; for then a *Whole* would be Formally a *Part*, and a *Part* Formally a *Whole*. Hence we cannot say *Petreitas est Petrus*, or *Petrus est Petreitas*, &c. Hence also this Proposition *Quantitas est Quanta* (and such like) is False; for *Quanta* being a Concrete, signifies the Subject which has Quantity in it; and it is False to say that Quantity *alone* is Quantity and its Subject *too*.
13. From what's said above we may gather, that there may be diverse manners of Predicating or referring one Notion to another, and they are reckon'd by *Porphyrius* to be *Five*, called by the Schools **Predicables**; that is, several *Manners* how one Notion may be predicated of another. Whose Pardon we must beg, if following the Dictates of Reason, which we Judge Evident, and not the Track beaten by others, we dissent from them, and assign *Six*. The *first* is, when the *whole* Notion is Predicated of the *whole*, as when we say [Quantity is Divisibility.] [A Whole¹⁴⁰ consists of all its parts; or, when we Predicate the *Definition* of the Notion *Defin'd*, as, [Man is a Rational Animal]; or, all the Dividing Members of the Notion Divided. And this Manner we call *Entirely Identical*; that is, the predicated of the same Whole *Notion* wholly of it

¹⁴⁰ Corrected per errata sheet. Original: "A. Whole."

self. In the rest of a *Part* only is Predicated of the *whole*; and then the Predicate is either *Essential* to the Subject, or *not*. If *Essential*, then it either predicates *that part* of his Nature which (in the common acceptation of Mankind not reaching to inferiour Differences) is *immediately Superiour* to it, and is thought to denote the *whole* Essence of the thing, and then 'tis call'd a **Species**; as, *Petrus est Homo*. Or, but some *lesser* part of its Essence; as, *Petrus est Animal, Vivens* or *Substantia*, which are call'd the **Genus** or Generical Notion. And both these (as also the first) are said to be predicated in *Quid*, because they are *Essential* Predicates and answer *differently*, tho' *imperfectly* and but in part to the Question made by *Quid*. As ask, *Quid est Petrus*, we answer appositely, *Homo, Animal, Vivens, &c.* Or else the Predicate is that *Compart* which *distinguishes* the *Genus* *Essentially* from others of the same Common kind, and constitutes it in an inferiour Class under the Common Notion; and is therefore Referr'd to what it thus constituted, as its *Essential Difference*; as, *Homo est Rationalis*. And, this supposes the Question made by *Quid*, or *what Thing*, and answers to a *further* Question, *What kind of Thing*. And therefore, 'tis said to be predicated not meerly in *quale*, for then it might have been a meer Quality, and not *Essential*; but in *Quale quid*, as both giving account of the *particular* Nature of the Thing, as also of its belonging to the *Essence* of it. If the Predicate be *not Essential*, then either one notion is Referr'd to another, and Predicated of it (not as any Part of its Essence, but yet) as more or less *Connected* with it, as an *Effect* or *Sign* of it; as, Capable of Admiring, or the being affected with Musick, Proportion, or Beauty, are Connected with *Rational* Nature or *Man*, and referr'd to him accordingly, that is Predicated of him as a **Property**. Thus *Combustive* or *Rarefactive* are *Connected* with Fire; *Opacous* with *Earth*; and referr'd to those Subjects, or predicated of them as **Properties**. Or, lastly, the Predicate is Compar'd or Referr'd to the Subject, as having *no* kind of (at least known) *Connexion* with the Essence, but meerly *casually* belonging to it; or, as *Indifferent* to the Essence whether it belong to it or no. As *Armed, Placed, Situated, &c.* belongs to *Man* or *Body*; and then 'tis said to be predicated as an *Accident*, that is, as affecting him only *Casually* and *Accidentally*.

Note 1. That in this last Predicable only the *Manner how* it is Predicated or Compar'd to the Subject is consider'd, and not the *Nature* of that which is Predicated; nor, whether it be a *substantial* Notion, or, whether it does belong to some one of the *other Nine* Accidents, so it be but *Casually* or *Accidentally* belonging to the Subject, or Referr'd to it; for *Wooden, Golden, and Earthen* are all Predicated as Accidents, or *Accidentally*, of *Cup* (for 'tis still *equally* a Cup, whether it be made of any of *those*, or of any *other* matter tho' Wood, Gold, and Earth be *substantial* Notions. Whence the word (*Accident*) does not here signifie what *Inheres* in the Substance, as it does in those *Predicamental Accidents* which are *Intrinsecal* ones; but that which belongs to a Subject *by Chance* or *Casuality*; so that the Notion of the Subject is preserved *entire*, whether it *has* it, or has it *not*.

Note 2. That since it was clearly the Intention of him who invented these Predicables, and of those who follow'd him and us'd them, to comprehend *all* the Different Manners how Notions could be Predicated of their Subjects; and, the being Predicated as a *whole* of the *whole*, is most evidently *one* Manner of Predicating, and *Distinct* from the Five they assign'd; it is manifest, that their Account of the Predicables was Defective, and our Supplying it Rational and Necessary. Add, that they omitted *that Predicable*, or Manner of Predicating, which, if it were not the *most Useful*, at least it was the *Chief* and *First* in Dignity, all the *First Principles* having (as will be shewn hereafter) this Manner of Predication, and consequently having Title to belong to this Predicable. Besides that, scarce any thing can be so Useful to Science as are those *First Principles*, and the *Definition's* being Predicated of the Thing

Defin'd; These being the Propositions which give us chiefly all our *Certainty*, and all the *Ground*, to Scientifical Knowledge.

14. When the Notions of the two Terms are of an *Unequal* Extent, the Subject of the Proposition ought to be the *Inferiour* or *more Particular* Notion, and the Predicate that which is the *superiour* or *more Common* one. For, since, when the *Notions* are not entirely the same, and the *Whole* Predicated of the *Whole*, they can belong to one another, but *in part*, and the Predicate is conceived (even as to its whole *Notion*) to be something belonging to the Subject to which 'tis Attributed, and as it were *receiv'd* in it; and, that this hinders not the Subject from having *many other Notions* belonging to it as well as *That*; hence, the Subject is conceiv'd to be a kind of a *Whole*, in respect of the Predicate, and the Predicate but a *Part*, in respect of *it*. Again, since (as was shewn formerly) all the *Superiour* and *Larger Notions* are but *Parts* of the Inferiour ones, the Lowest (*v. g. Peter*) comprizing in it self Actually *all* the Superiour ones (*v. g. Man, Animal, Vivens, Corpus, and Ens*) and adding, over and above, other *Notions* to them which *Particularize* or *Individuate* it: it follows, that when two notions are of an unequal size, the Superior, which is the *Partial* notion, ought to have the place of the *Predicate*; and the Inferior, which contains in it self both what corresponds to *it*, and also to other superior and *Partial Notions*, and therefore is a kind of *whole* in respect of them, ought to have the Place of the *Subject*; since a *Whole* cannot be properly said to belong to a *Part*, (or to be Receiv'd in it) but a *Part* in the *Whole*. And, Nature it self seems to abet the Reason now given; for it sounds naturally to say, *Peter is a Man*; but most absurdly and unnaturally to say, *A Man is Peter*. Nor matters it that the Superior Notion is a *Whole* in the way of *Abstraction*, and the inferior but a *Part* of it as *thus consider'd*; for the Copula [*is*] by which all Predication is made, does not necessarily express *what* or *how* the Notions are in their *Abstracted* state, where they are only Potential, and (as such) only found in the *Mind*, and made meerly by our manner of understanding; but what passes *Actually* in the *Thing* in which the Notions of the Predicate and Subject are to be the same *Ens* or *Actually Identify'd*. And, 'tis Evident, (as was now shewn) that in the Thing, whether it be *without* or *within* our Understanding, there goes *more* to make up the Nature or Notion of the *Inferior* than there does to make up that of the *Superior* Notion.
15. However, the Predicate has of it self a *Large* sense, taken *alone* and Abstractedly; yet, when attributed to the Subject, it is restrain'd by It to mean only such a proportional *part* of its Notion as befits the Subject to receive. Thus, when we say, *Petrus est Homo* or *Animal*, it cannot be meant that he is *Homo* or *Animal* at large or in common; (for, were it so, *Peter* might as well be a *Brute* as a *Man*) but *one Determinate Man* or *Animal*. And the same passes in the *Thing*, as it does in our *Understanding*. For, tho' *Albedo* taken alone may reach all the *whiteness* in the World, yet apply it to a Subject, by saying *Paries est Albus*, 'tis restrain'd to signifie only some part of *Albedo* in common, or as much of it as affects the Wall: Whence, thus consider'd, it means only *Haec Albedo*, or *Albedo Parietis*; that is, so much of Whiteness as is in the Wall, and no more.
16. Thus much of the *Nature* or *Essence* of *single* Propositions; their *Quantity* and *Quality* come next to be consider'd.¹⁴¹ As for the former, either the Predicate is referr'd to *more* Particulars, as they agree in *one* Common notion; as, *Every Man is an Animal*, and then 'tis call'd an *Universal* Proposition. Or to some *one* only; and this either Indeterminately; as, *some Man is wise*; and then 'tis call'd a *Particular* Proposition: or determinately; as, *Socrates was the son of*

¹⁴¹ Here and in the following sections Sergeant explains categorical propositions and the traditional square of opposition.

Sophronisus;¹⁴² and then 'tis called a *Singular* Proposition. These need no Reflexions on them, it suffices to *name* them (they being Artificial Words) and to explicate what we mean by them: Only we may note, that in regard the Subject is as it were the *Matter*, and Matter is properly determinable by *Quantity*, the words expressing the *Quantity* of the Proposition can only be apply'd to the Subject; as *Nature* also will inform us.

17. The *Quality* of a Proposition, is either its being Affirmative or Negative, which can need no farther Remarks. Or lastly, its being Evident or Inevident: And Evidence is Two fold; *Self-evidence* and *Evidence by Deduction* or Proof; of both which hereafter.

Note that the Negative particle [*non*] must affect the *Copula*, and not either of the *Terms*; otherwise it is no Proposition, or a Speech predicating one Notion of another; in regard such a Speech wants *one* of the *three* Notions; as, *Petrus est non-brutum*; or, *Non-homo est Bucephalus*: For, the Particle [*Non*] destroys the Positive Notions of *Brutum* and *Homo*, and puts no other in their stead.

18. If Propositions be *Compar'd to one-another*, they are either *Equivalent* in sence, or *Opposit*. Equivalents have no difficulty in them. Opposits are either *Contradictories* which affirm and deny the same *in all respects*; as, *Petrus hic & nunc currit*, *Petrus hic & nunc non currit*;¹⁴³ or *Contraries*, which are the Extremes in any kind, having *middle* Notions between them; as *White* and *Black* are in Colours. Whence these Propositions, *All Men are wise*, *No Man is wise*, are said to be *Contraries*, because they are *Extremely distant*, and have *middle* Propositions between them, *viz.* *Some Man is wise*, *Some Man is not wise*; which Differ or are Oppos'd only according to their *Quality*; the one being *Affirmative*, the other *Negative*; for, the Quantity in both is the same; whence they are call'd *Particularly Opposit*. But, if one Proposition be an *Universal Affirmative*, and be oppos'd to a *Middle* Proposition that is *Negative*, as *Omnis homo est sapiens*, *Aliquis homo non est sapiens*;¹⁴⁴ or, if it be an *Universal Negative*, and be oppos'd to a *Particular Affirmative*, as *Nullus homo est sapiens*, *Aliquis homo est sapiens*;¹⁴⁵ then they are said to be *Subcontraries*, because the one of them opposes the other not *fully*, as do *Omnis homo est sapiens*, *Nullus homo est sapiens*;¹⁴⁶ but *in part* only. *Singular* Propositions have no Opposition but that of *Contradiction*, which happens when one *affirms* what the other *denies* of the *same* Subject *in all respects*, as was said above.

Lesson II. Of Self-Evident Propositions, or First Principles.

1. SINCE, as was said, Judgments or Propositions may be *True* or *False*, and in laying the *Method to Science* we can have no occasion to Speak of *False* Judgments, but in order to the avoiding them, which is easily done, if we settle the Knowledge of the *True* ones; hence that which concerns us, is, to treat of *True* Judgments or *Truths*; and, in the first place, of Those Propositions or Judgments that are the *First Truths* which we call **First Principles**. Again, since all Propositions are either Evident or Inevident, and Inevident or *Obscure* ones cannot avail us in our quest of *Science*, it follows, that only *Evident* Propositions are to be treated of, or made use of by those who aim at Scientifical Knowledge. Wherefore, since all

¹⁴² Corrected per errata sheet. Original: "Sophronisens."

¹⁴³ Latin: 'Peter is running here and now;' 'Peter is not running here and now.'

¹⁴⁴ Latin: 'Every man is wise;' 'some man is not wise.'

¹⁴⁵ Latin: 'No man is wise;' 'some man is wise.'

¹⁴⁶ Latin: 'Every man is wise;' 'No man is wise.'

Propositions or Judgments that are Evident must either be *Self-evident*, or *made evident*, which is done by way of *Proof*, and these Latter must depend on the Former for their Evidence, we are therefore to begin with the Former which are *Self-evident*.

2. All *First Principles*, as being the First Truths must be *Self-evident* Propositions. This is manifest from the very Terms. For, being the *First* they can have no other *before* them, out of which they may be *Deduc'd* or *made Evident*; or, into which their Evidence, if *lesser*, may be *Resolv'd*. Wherefore they must either not be Evident *at all*, which would destroy all Possibility of *any* Evidence, or they must be *Self-evident*.
 3. Our Knowledges may either be consider'd according to the Order by which they are *Generated* in us *at first*, or according to the *Dependance* of one Truth on another, and the *Resolving* them finally into First and Self-evident Principles. The Former of these is the way that *Nature* takes to instill Useful Knowledges into us, when as yet we know nothing; the Later is the Method which Art makes use of to polish and promote those Rude and Short Knowledges had from Nature; then to *link* many of those Knowledges together; and lastly, to render them *Exact* and *Evident* by *Resolving* them into First or Self-evident Principles; to do which, we call to beget **Science**, or to frame a *Science* of them. The Former comes by *Experience* Unreflectingly; the Later is attain'd by Study and *Reflexion*. And 'tis of this *Later* sort of Knowledge, and its First Principles, we intend to treat in this and the next Lesson; reserving the Former Consideration of *how* and in *what manner* Knowledge is first Generated, till Lesson IV.
 4. The *Self-Evidence* belonging to First Principles consists in this, that the two Terms must be *Formally Identical*. For, since (as was shewn above) the Terms in every Ordinary and Inferior Proposition, nay, in every Conclusion that is *True*, must be *materially* the same, and so the Proposition it self *materially Identical*, it follows, that the Terms of the First Principles, which ought to be *more* evident than They, as being *Self-evident*, must be *Formally Identical*.
 5. The Terms of the First Principles must not only be Formally Identical *in sense*, or be the same Formal Notion; but it is, moreover, most convenient that they be such in the *Expression* also; that is, 'tis fit that the Subject and Predicate in those Propositions should be the *same Word* taken in the *same sence*. For, since First Principles must be the most Evident, and the most Clearly Expressive if Truth that can be imagin'd, and not liable to the least Mistake; and Words are subject to Equivocation, which is apt to breed Mistake, Obscurity and Error; hence, First Principles should not only be Formally Identical *in sense*; as when we say, *Homo est Animal Rationale*;¹⁴⁷ but it is most Convenient they should be such in *Expression* too; as, *Homo est Homo*,¹⁴⁸ *Idem est Idem sibi ipsi*,¹⁴⁹ *Quod est est*,¹⁵⁰ &c. For then, whatever Distinction (in case of Ambiguity) affects the Predicate, must also affect the Subject; and so the Proposition will not only remain still most *Formally*, but also most Evidently, in *every regard*, Identical.
- Note*, That tho' this be most Convenient, yet it may suffice that the Terms, when explicated are reducible to the same Formal Expression by the same Word; as when we say [*A Whole is Greater than a part*] For, a *Whole* being that which *consists of Parts*, and a thing *being* that of which it *consists*; hence, a Whole is All its Parts: that is, is *one part and more than one part*, whence, the Proportion is reducible to this, [*what's more than a part is more than a part*] which is not onely *most Formally*, but besides *most Evidently* Identical.

¹⁴⁷ Latin: 'Man is a rational animal.'

¹⁴⁸ Latin: 'A man is a man.'

¹⁴⁹ Latin: 'A thing is the same with itself.'

¹⁵⁰ Latin: 'Whatever is is.'

6. This Proposition [*Self-Existence is Self-existence*] is, *of it self*, most Supremely Self-Evident, For if the meaning of the word [*self*] which is Joyn'd with Existence be but understood, and that the Addition of this word to *Existence* be not meant to signify any the least *Composition* in it but the most simple and most Uncompounded Actuality that can be imagin'd; then the same Formality in every respect is predicated *Intirely* of the *same*, and so 'tis also *most perfectly* Self-evident. And 'tis *most Supremely* such, because it expresses the Existence of the **Deity**, which is Infinitely more Simple, and more necessarily *it self* than any Created Existence can be. Again, since every thing, the more *Potential* it is, is *more Confused*; that is, *less distinct* and *less Intelligible*; and, the *more Actual* it is, the *more Intelligible*; and the Divine Nature, which is meant by *Self-Existence*, is a most infinitely *Pure Actuality*; it follows, that this proposition [*Self-Existence is Self-Existence*] is, *of its self*, the *most supremely Self-evident Proposition* that can be Imagin'd.
7. This Proposition [*what is is*] or [*Existence is Existence*] is the most Self-evident Proposition that can be imagin'd to be taken from *Created* things. For, since *Existence* is the most Evident Notion that can be found amongst all our Notions that can be had from Creatures, that Proposition must needs be the most Evident, (and consequently, amongst Self-evident ones, the *most Self-evident*) in which not only the Notion of the *Copula*, but of the *Subject* and *Predicate* too, is *Existence*. Again, since the Clearness of all Truths whatever depends on the Connexion of the Terms by the word [*is*] it follows, that unless the Nature or Notion of *Existence* be first immovably Fix'd or Establish'd, to be Coherent with its self, that is, unless this Proposition *What is is*, or *Existence is Existence*, be Self-evident, no Proposition whatever could be Absolutely Certain, Clear, or Coherent; and so, there would be no *possibility* of any Truth, Certainty, or Evidence in the World. Lastly, since both the *Essences* of things, and the *Existence* they have are in the Divine Understanding, and the *Essences* which are only *Capacities of Being*, belong to things as they are *Limited*, or *apt* to be *Created*, that is, belong to them according to the Notion of *Creatures*; which being only *Potential* as to *Being*, they can have no Claim thence to *actual* Being or Existence, but meerly by the Free Gift of Him who is Essential Being; hence the Nature of the Existence of Creatures, and their *being such* is taken purely from **God's** side, and holds entirely of him. Whence it is *most actual*, and most *Like him*; that is, most defecated from all Alloy of Potentiality, most Pure, most Intelligibly Clear, and most Establish'd, above whatever else we can conceive in Creatures; and therefore, *It* alone is able to give Certainty, Clear Light, and Establishment to all other Truths.
8. Equivalent to the Former, or perfectly Identified with it, (abating the putting it in a diverse Logical Frame) is this Proposition, [*Existence is not Non-Existence*] or which is in effect the same, [*'Tis impossible the same thing should be and not be at once.*] For, if the Notion of *Existence* and *Non-Existence* could at once belong to the same Subject, then, since the Notion of *Existence*, as being most Simple and most Actual, can admit of no Distinction of being *in part* Existence, and *in part* Non-Existence; that is, of being in part such, in part not-such, as *Potential* Notions can; it would follow, that the *entire* and most simple Notion of *Existence* is *Non-Existence*; which is directly contradictory to this Principle now mentioned, and consequently, to the equivalent Proposition [*What is is*]; whence it would be unavoidably consequent, that all we could say must necessarily be *False*, because the *Notion* of Existence, by which only we can *affirm* or *say*, would involve a Contradiction in its own Bowels, as being Indifferent to *Being* and *not Being*, or rather as being *both* of them.

Note, That the same may be said, in some proportion, (that is, as to the Extent of their own *Notion*) of all Propositions that are equivalent to First Principles in any *particular* Subjects; as

of *Homo est homo*,¹⁵¹ *Aequale est aequale sibi*,¹⁵² &c. to which are equivalent *Homo non est non homo*,¹⁵³ *Aequale non est non aequale sibi*,¹⁵⁴ &c. For, the same Inconveniences would follow in all Discourses upon those particular Subjects, as did in *all* Discourses *whatever*, by wronging the former Self-evident and Universal Propositions; that is, *all* that could be said of such Subjects would be Incoherent, Contradictory and *False*.

9. The next Self-evident Proposition is that of (*Ens is Ens*.) For, since the notion of *Ens* is most *nearly* ally'd to Existence, being wholly order'd to it, and a *Capacity* of it, it follows, that that Proposition which predicates *Ens* of *Ens*, is the next, in Self-Evidence, to those which predicate *Existence* of *Existence*.
10. Hence all propositions consisting of particular *Notions* that subsume under *Ens*, that is, such propositions which affirm that particular *Notion* or *Nature* to be *what it is*, are likewise Self-evident: For, since *Ens*, taken as Undistinguish'd, or in its whole Latitude, has the force of an *Universal*, and is equivalent to *all*; and an *Universal* engages *every* particular under it, of which it consists; so that if the terms expressing those particulars be not Self-coherent and Self-evident, it would follow, that neither would the terms of this proposition [*Ens is Ens*] be such: Hence all propositions consisting of *particular Notions*, that subsume directly under *Ens*, must be likewise Self-evident. Again, since the proposition (*Ens is Ens*) is for no other reason Self-evident, but because the *Notions* of the two terms are every way *formally Identical*; and this reason is found in those propositions, the notions of whose terms *subsume* under *Ens*; it follows, that *these* also must, for the same reason, be likewise Self-evident.

Corol. I. Hence *Homo est Homo*, *Quantitas est Quantitas*, &c. being Self-evident, are the *First Principles* to all Discourses treating about the Nature of *Man* or *Quantity*; that is, they are the *last* and most *Clear* propositions in that Matter or Subject, into which all that can be said of *Man* or *Quantity* is finally resolv'd; and, moreover, the *Test* of the Truth or Falshood of all that can be said of them. So that if any part of those Discourses do hap to violate those Principles, that is, if it deviates from those Natures, or does, by consequence, make *Man not to be Man*, or *Quantity not to be Quantity*, 'tis most evidently convicted of *Falsity*: As, on the other side, if those Discourses do proceed *Agreeably* to these Principles, it must most certainly and evidently be *True*.

Corol. II. It is not meant here, that these last-mentioned self-evident Propositions do follow the former by way of *Proof* or *Deduction*; but we are only enquiring what Propositions in the resolving of Truths into their Principles are most Self-evident; and therefore, *in priority of Nature*, presupposed to the other, and imply'd in them, as those without the Certainty and Evidence of which no Certainty or Evidence *at all* could be had of any of the *others* which are thus *ImPLY'd*, or *Contain'd* in the former, and engage their Verity (as it were) *a posteriori*. As if *Homo*, which is a particular *Ens*, be not that particular *Ens* or *Homo*; then, neither is *Ens Ens*, nor *Existencia Existencia*, because there is the same reason for the Former to be Self-evident as for these Later, tho' not altogether in the same *degree*.

Corol. III. From the Self-evidence and Truth of that Proposition *Self-existence is Self-existence*, and from the *Ground* of *Verity* in all Propositions whatever that are *True*, we may demonstrate the Existence of a **Deity**. For, since not only our Simple Notions or Apprehensions are taken from the Things, but also all Connexions of those Notions or Propositions are therefore *True*, because what's meant by the two Terms exists in the *same Thing*, so that neither this

¹⁵¹ Latin: 'A man is a man.'

¹⁵² Latin: 'An equal is equal to itself.'

¹⁵³ Latin: 'No man is not man.'

¹⁵⁴ Latin: 'An equal is not unequal to itself.'

Proposition [*A Stone is hard*] could be True, unless what's meant by *Stone* and *Hard* were found in the same Entity; nor even could this Self-evident Proposition (*Homo est Homo*) be True, unless there were something, or *such* a thing as, by being Fix'd in its determinate Nature, or by being *the same with it self*, had thence a power to *verifie* it; it follows, that neither could this Self-evident Proposition [*Self-existence is Self-existence*] be True, unless there were some *most Actual Being*, which, by being most perfectly the same with it self, did *verifie* that Proposition. But such an Actual Being can only be the *Deity*, there is therefore a **Deity**.

It may be reply'd, That we can *compound* Notions, and joyn *Self* to *Existence*; which done, this Compound Notion, having such a nature in our Understanding, has, consequently, a determinate Nature or Actual Being in our *Mind only*, and thence a kind of Metaphysical Unity or Verity *there*, which gives it to be predicated of it self; so that there is no necessity that such a Thing should be put to be *in re* to *verifie* it. 'Tis answer'd, That our Argument is not grounded *meerly* upon our having such a Notion; for we do not argue as *Cartesius*¹⁵⁵ does, upon the *Notion* or *Idea* of such a Subject; but we grant, that we may Compound such a one, and yet remain *Uncertain* whether that Nature *be* or *not*; but our Argument proceeds *also*, and *chiefly*, upon our *Verifying* that Proposition, which is done *formally* by the *Copula*; and I affirm, that the Copula [*is*] could not *verifie* it, unless there were something *out of the Understanding* that oblig'd us to do so; which I explain thus: This Copula sometimes *meerly* puts together *Fictitious Notions*, or *Non-Entities*, which (all Truth being grounded on *Ens* or the *Thing*) have consequently direct *Opposition* to Being, and therefore *Falsity* in their very Natures, or rather No-natures; as, when we say [*Imaginary Space is a Chimaera*], for then, indeed, the Connexion is *meerly* in our *Understanding*, there being no *Thing*, nor any Terms, which have an *Entitative Notion* to be Connected or *Verify'd*: or rather indeed there was *no* Connexion *at all*; but, as the Terms were *Mock-things*, so they could only have a *Mock-Connexion*. In all other Cases, since the Copula [*is*] cannot signifie *nothing at all*, (for this would make it a *meer Sound* and no *Word*) it can only signifie the *Actual Existence* or *Co-existence* of what's meant by the Terms, in the *same Thing*; and this (as was ¹⁵⁶ said) whether that Co-existence be only Material or Formal. And, should it be deny'd that the Copula [*is*] has this signification, we can never know any thing which we say, or can say, is *true*; because we can never *know*, nor *see*, that the Notions are Agreeable or *Conformable to the Thing*. Since then the notion of *Self-existence* is so far from having *Non-existence* in its Notion (as the others had *Non-ens*) that it is the most perfect in that kind that can be imagin'd; the 'foresaid Proposition could not be *true*, unless there were *actually* something that has, in that Supreme Manner, Metaphysical *Verity* and *Unity* in it self, to *verifie* it. In the same manner as [*Homo est homo*] could never have been True, had there not been Something which had such a Metaphysical Unity and Verity in its self, as grounded that Proposition. So that the Objecter must either find more significations and uses of the word [*is*] than we have assign'd (which is impossible) or alledge, that the Notion of *Self-existence* is *Chimerical*, or Destructive of Existence, as *Non-Ens* is of *Ens*, which is as absurd as the other; or, he must be *forced* to grant our Conclusion, and acknowledge our Argument to be a true Logical Demonstration.

I know it will run in the Objecter's Fancy, that we can connect Notions which our selves have coin'd; but he may easily correct these Misconceits, by reflecting, that this Proposition is *True*; and that Truth must not be grounded on our Aiery Fancies, but on the solid Nature of

¹⁵⁵ René Descartes (1695-1650) argued mind and body were two different kinds of substance. He held the view that one's access to objects, such as a book or one's own body, is mediated and represented by *ideas*. An idea is a mode of a thinking substance (a way of thinking, or a quality of a mind). See also B. 1. L. 2. Note 2d and S. 24; and B. 2. L. 4. S. 1.

¹⁵⁶ L. 1. S. 7, & 11.

the *Thing* to which it is a *Conformity*. I know too he will fancy that the Copula [*is*] has an Office of *meerly Connecting* without any reference to the *Existence* of the Thing which is its proper signification; but he may see the Folly of such a Conceit, if he but consider that we cannot *with truth* conjoyn Notions in our *Minds* that are not Conjoyn'd beforehand in the *Thing*; and that when the Notions are of some *Positive Being*, or such as are not Chimerical and Contradictory, the Copula [*is*] must signifie *Exists*, and does but say *in our Mind* what *is in the thing*, if the Saying be *true*. Also, that that *Copula* cannot divest it self of *all sence* while it conjoyns such Terms; and he will do more than Miracle to invent any other for it but that of *Exists*.

It may yet be further Objected, that these Propositions (*Rosa est Rosa*, *Animal est Animal*¹⁵⁷) and such-like, are still *True*, tho' their Subjects do not *actually Exist* when we thus Predicate of them; and that therefore it is not necessary the Copula (*est*) should always signifie *Existence*, even tho' the Notions of the Terms be *Positive Entities*. 'Tis answer'd, that either the Subjects (*Rosa*) and (*Animal*) mean the *Individuals* of those Natures; and then, if once they are perish'd, the Propositions are *False*; for *haec Rosa* is no longer *Rosa*, nor is *hoc Animal* *Animal*, when they are corrupted or turn'd into another thing. Or else these words mean the *Abstracted Notions* of *Rosa* and *Animal*; and then, since Abstracted Natures, or *Universals*, do (as such) no where exist but in *the Understanding*, they have their Actual Existence where they *ought* to have it; and the Copula [*est*] signifies they have their Existence *there*; and so the Proposition is *True*. And it is to be farther noted, that they could not have been even *there*, unless there had *actually been* diverse Individuals from which they might be Abstracted. But now, in our Case, it is quite otherwise; for *Self-existence* being the *simplest* Notion that can be conceiv'd, nay, *more Actual* than any Notion of *Existence* found in Creatures, it is Impossible there should be any *abstracted* notion of it; both because that Abstracted Notion would have *Potentiality* in it, which would destroy that Notion, and make it Chimerical and Self-Contradictory; as also, because (as Metaphysicks demonstrate) *Self-Existence* is Unlimited or Infinit in Existence, and so, can be but *One*. Wherefore the Copula (*est*) does not *meerly Conjoyn* such Positive Notions, but always signifies *Existence*, when the Notions it connects are not *Chimerical* or *Opposit* to Existence, as *Non-Ens* is to *Ens*; and consequently, if this Proposition [*Self-existence is Self-existence*] be *True*, there must *Actually be*, and this *out of our Understanding*, some Being that verifies it, which can be nothing but the **Deity**.

It may be ask'd, What is to be said of these Propositions, such a Thing is *Possible* or *Future*. 'Tis answer'd, the word [*Possible*] signifies *possible to be*, or *capable of Being*, which is the very notion of *Ens*; and so, it means that such a Possible thing is an *Ens*; and then it might be true, could we Frame such a Proposition of a thing *meerly possible*, which is Impossible; for, if the thing be only [*possible to be*] it *never was*; and so (all our Notions being taken from the *Thing*) we could have *no Notion* of it; and therefore the Proposition would be *none*, since we want that Notion that makes the *Subject*. The Proposition [such a thing is *Future*] is in rigor *False*, (for that which *is not at all*, can have nothing predicated of it) and it can only be *True*, as it signifies that there are *determinate Causes* laid to *produce* it: which is to say, *those Causes are*, and so the Copula [*est*] still signifies *Existence*.

11. To settle this main point, that *First Principles* must be such Propositions as are *most formally Identical*, in the manner declared above, many other Proofs may be alledged; as, that Contradictions are the *First of Falshoods*; therefore those Propositions that are directly *Opposit* to them must be the *First Truths* or *First Principles*: But only Propositions thus perfectly Identical are directly Opposit to Contradictions; Therefore *these only* are the First Truths or

¹⁵⁷ Latin: 'Red is red,' 'Animal is animal.' Recall that for Sergeant accidents are not *Ens*, but belong to or inhere in *Ens*.

First Principles. To prove the *Minor*, we shall find by reflexion, that the two Contradictory propositions are comprizable into one which is equivalent to both; as to (*Peter here and now runs, Peter here and now runs not*) is equivalent (*what here and now runs, does not here and now run*). Whence is seen clearly, that only *such* Identical propositions are directly opposit to Contradictions; since Man's Wit cannot invent a proposition directly Opposit to (*what runs runs not*) but (*what runs runs*) which is perfectly Identical. Add, that all *Fault* consisting in this, that 'tis a *Privation* of the Opposit *Good*, Contradictions would not be at all *Faulty*, but that they violate the Truth of Identical propositions, (as has been now proved) since there are no *other* Truths which they directly and formally Oppose or destroy.

12. Again, as will be seen hereafter, to *Conclude* is to shew the Terms of the Conclusion to be Connected, by their being Connected with a *Third* or *Middle* Term in the Premisses. But, how can we shew that *Middle* Term is *really connected* with those Two *other* Terms in the Premisses? By finding still another Middle Term to be connected with the Terms of the proposition to be proved. And, how far must this go on? Endlessly! or no? If Endlessly, it is impossible any thing should *ever* come to be prov'd; if not, then we must come to some proposition whose Terms are so Connected that *no* Middle Term can *come between* them; that is, such as *cannot* be *Connected* by means of Another; that is, which *cannot* be *prov'd* or *made evident*; that is, which are *self-connected* or *self-evident*; that is, which are *formally Identical*. To enforce this, we may observe that the *more Remote* the Terms of a proposition are from Formal Identity, the *less evident* they are, and the *more proof* they require; as also, that they grow still nearer to Evidence, according to the *degree* of their *Approaching* to be Formally the *same*. Wherefore, since all Approach of *Distant* things ends in their *Conjoyning* and Centering in the *same*; 'tis manifest that all Approach of Distant Notions ends in their being the *same in Notion*, or in a proposition Formally Identical, as in a First and Self-evident Principle.
13. Besides, all *Causality*, or the whole Course of Nature, is finally refunded into this Self-evident Principle, that *Things are such as they are*, that is, *are what they are*. For, since an Effect is a Participation of something that is in the Cause; and the Cause, as such, is that which imparts or communicates something it has to the Matter on which it works its Effect. Again, since the Effect *is such* as the Cause *is*, as to that which is imparted to it; and if the Cause be of *another* sort, the Effect still *varies* accordingly; there can be no doubt but that *Causality* is the Imprinting the *Existence* of that Essence or *Thing* which is the *Cause*, upon the *Matter*. Whence follows evidently, that the very Notion of *Natural Causality*, and the whole Efficacy of it, consists in the Causes *existing* (that is *being what it is*). Only *Motion* is added as a Common Requisit to apply that *Existing* Cause better or worse; which is refunded into a Nature Superiour to Body; as will be shewn ¹⁵⁸ hereafter.
14. Lastly, **God** himself has exprest his own Supreme Essence by this Identical Proposition *Ego Sum qui Sum*; ¹⁵⁹ that is, *I exist* (or *am*) *Existence*. Which is the same, in a manner, with (*Self existence is Self-Existence*) Which, therefore, is the *First Increated Truth*; as 'tis the *First Created* one that (*what is is*) or *A thing is what it is*; which is therefore *True*, because **God** *is what He is*; or, because *Self-existence is Self-existence*. From which Divine and Sovereign Verity all our *Created* First Principles derive their *Truth*. For, were not *This* True, all our Identical Proposition and First Principles would all be *False*: in regard they have their Verity from the Natures of the *Things*, and of our *Understanding*; neither of which could have their Metaphysical Verity, nor, consequently, could they ground or be capable of any Truth at all, if *Self-Existence*, their Cause, were not *Self-Existence*, and thence Unlimited in Power, Wisdome

¹⁵⁸ B. 3. L. 7.

¹⁵⁹ Latin: 'I am who I am.' This refers to the divine name 'YHWH' revealed to Moses at the burning bush (Exodus 3:14).

and Goodness to Create and Conserve those Beings which are the Foundation of *all* the Truth we *have* or *can have*. The Reader is desired to refer this Section, to the Third Corollary, and to consider them well together, because they mutually give Light to one another. And, if we rightly consider it, as the Proposition (*Homo est Homo*) is onely the reducing the Metaphysical Verity of *Homo* into a *Formal Truth*; so (*Self Existence is self-Existence*) is the same in respect of the *Sovereign Metaphysical Verity* of the Divine Nature.

- Corol.* IV. Hence is seen that an Atheist can have no perfectly Certain Knowledge or Evidence of any thing; but that, by denying his Maker, he deservedly comes to lose the best Perfection of his own Nature. For, if a Sceptick should put him to prove that things have any Metaphysical Verity in them grounding our first Principles, and, consequently, all our Knowledge; and object, that for any thing he knows, Things are Chimerical, and so contriv'd as to beget in us *False Judgments*; he is utterly at a loss through his denying a *First Cause*: whose Unchangeable and Essential Truth and Goodness has *Establisht* their Natures to be Unalterably *what they are*: whence onely any Certain and Evident Knowledge of them is possible to be attain'd.
15. *Definitions*, tho' very useful to Science, are *not* Self evident; nor are those Propositions that Predicate the Definition of the Notion Defin'd, *First Principles*. For, Self-evident Principles, by force of their very Terms, do oblige the Understanding to assent, which such Propositions do *not*. Again, *Art* is requisit to make such Definitions as are *Proper* and *Adjusted* to the Thing Defin'd; whereas *First Principles* must *antecede* all Art, and be known by the *Natural Light* of our Understanding. Besides, the *Possibility of being defin'd*, goes before the Definition; which *Possibility* the Thing has from its Metaphysical Verity, determining it to be *This* and *no other*. For, if the thing *were not* truly *what it is*, it could not be *explain'd* to be *what it is*; were it not *One*, that is, Undivided in its self and Divided from all others; it could not be compriz'd in *one* Definition; and, if it were not Determinately of *this* or *that* Nature, it's certain, Bounds and Limits could not be drawn, which is done by the Definition. Whence 'tis manifest, that that proposition which affirms, that a Thing *is what it is*, is the *First Principle* and *Ground* to all Definitions: and therefore *Definitions* themselves are not *First Principles*.
16. This is further evinc'd, because, *Words* being liable to Equivocalness, where there are *more* words (as there are in Definitions) there is *more* room for Equivocation; which Inconvenience appears no where more than in the known Definition of *Man*: For, there wants not many Witty, (or rather half-witted) Discoursers, who *Distinguish*, that make¹⁶⁰ *Ambiguous*, the Word [Rational] and do not stick to maintain that *Man is Rational*, or (*Concluding* being the Proper Act of Reason) can Conclude Evidently in *Lines* and *Numbers*, but not in *Logick*, *Physicks*, *Ethicks* or *Metaphysicks*, much less in *Theology*; and, by this means they cramp the Definition to less than half the sense the words contain. There are others too, who make Brutes *Rational* in *many* things (and they make *Men* to be Rational but in *some*) and so quite destroy the said Definition by Enlarging and Ampliating it, and making it Common and Indifferent to *Man* and *Beast*; and not apply'd to either of them *adequately*, but only in *some Degree* onely: And yet the same men, even tho' perfect Scepticks, would not dispute the Truth of this Proposition, *A Man is a Man*. Wherefore, since 'tis directly against the nature of First Principles to be *Disputable*, *Definitions* cannot be *First Principles*; and, consequently, only Propositions *most perfectly Identical* can be such.
17. There is another kind of Self-evidence call'd *Practical*, which is *Inferiour* to this we have hitherto spoken of, and Proper to the *Vulgar*. This is call'd *Self-evidence*, not because its Evidence is seen in the very Notion of the *Terms*, as was the *other*, but because it is bred or instill'd from the Things themselves *without Speculation* or Study, by a *Practical* converse with

¹⁶⁰ Corrected per errata sheet. Original: "is makes."

those things. Thus the Vulgar *know* evidently what is *Moist, Dry, Hard, &c.* as well as the best Philosophers, tho' they cannot *define* them as the others can. Nay, the best Philosophers (as will be seen hereafter) must learn from *their* Sayings how to make their Definitions of all such Natural Notions. Thus they know *Evidently* (tho' *Naturally*) the force of Witnessing Authority, when 'tis *Universal*, and of *Sensible* Matters of Fact: For example, They know there was such a one as Queen *Elizabeth*, or the Long Civil War in *England*, for, they know Men could not be deceiv'd themselves in knowing such things, and that they could not All universally conspire to deceive their Children in attesting such a Falshood; or, if they had had a mind to it, they know that the Cheat must needs have been discover'd by some among so many thousands.

Note, That this is call'd *Evidence*, because, tho' it be a *Rude* Knowledge, yet it is a *True* one; and 'tis the Work of Learned men to *Polish* by Art those *rough* Draughts of Evidence which the Vulgar have by a Natural way; as will be farther seen hereafter.

18. Those Speculations only being well grounded which are according to *Nature*, it will add a great confirmation to this new piece of Doctrine, that *First Principles are Identical Propositions* (and help withal to satisfie some superficial Readers, who perhaps may think such Speculations Aiery) to shew that the Nature-instructed Vulgar do abet this Doctrine, and make use of Propositions *exactly Identical*, when they would express themselves to stand finally to some Truth which they judge to be *most Evident*. For example, if you would force a Clown to *deny* a thing which he is *sure of*, or *knows* to be *True*; he will tell you soberly, and (if you press him much) angrily, that *Truth is Truth*, or that he is sure *A Spade is a Spade*, or that *he knows what he knows*; or, if it be in a point belonging to Justice, that *Right is Right*, and he brings these as Evidences from whence he can never be driven. Which signifies clearly, that such Truths as these are Judg'd by him *Self-evident*, and to be the Principles which naturally *determin* and *fix* him in an Immovable Adherence to the point, as the *Ultimate Ressort* and Reason of his Perswasion; that is, Nature teaches him to have recourse to these, as to his First Principles.
19. The *other* Test, by which to examin the Truth of this Discourse of ours about First Principles, is to desire the Objecter to settle some First Principles of his *own*, after *his* Fashion; which done, it will manifestly appear, that, if he takes any *other* way, either his First Principles will not be Self-evident *at all*, which yet First Principles must be; or, in case he pretends them such, he will not be able to tell you or explicate in what that *Self-evidence* of *theirs* consists; or else, he will produce such as he will tell you he will undertake to *prove* to be Evident, which (since what's *Prov'd* is *concluded*) will be the same as to offer to obtrude upon us *Conclusions* instead of *First Principles*. Or, lastly, they will be *meer Fancies* of his *own*, put together prettily, and exprest wittily and plausibly; which, when they are divested of their gay Dress, and their naked sence is laid open, will be either meer *voluntary Talk* or *plain Nonsense* in *cuerpo*.¹⁶¹ Into which Fault of Groundless and boldly and Magisterially pronounced (tho' wittily exprest) Assertions, and the Imposing them upon us for Principles, the Author of the *Leviathan*¹⁶² does fall very frequently; and I could wish all his Followers would please to examin all his Principles by this Test, and they would quickly discover how strangely they fall short of *Self-Evidence*, that is, of the Nature of *First Principles*. Or, in case they judge I have stated ill the Nature of *First Principles*, I should take it for a Favour, if they would vouchsafe me an Answer to my several Reasons for my Doctrin, as to this point, in this Lesson and the

¹⁶¹ Spanish idiom: Naked, without clothes; literally, 'in body.'

¹⁶² Thomas Hobbes. See note on Book 1, Lesson 1, Corol. 4.

next; and, in a full Discourse, settle *their own* First Principles, and shew me my Error; which, I am very confident, they will never think fit to *Attempt*.

Lesson III. *That First Principles are Identical Propositions prov'd by Instances. The Use that is to be made of them. Also of some other Propositions, either in whole or in part, Formally Identical; and of the Reducing of Inferiour Truths to Self-evident Propositions.*

1. THAT the First Principles in Metaphysics are Identical Propositions, has already ¹⁶³ been clear'd. It remains to shew they are such *in other* Sciences also. We will begin with *Physicks*. The First Principle that grounds that whole Science, according to some Modern Philosophers, is, [*Corpus est Quantum*],¹⁶⁴ in which tho' the Subject and Predicate do indeed differ Grammatically, the one of them being Substantively the other Adjectively express'd, yet if we rifle the Words to get out the Inward Sense, (as Philosophers ought) we shall find that, since all the Essential Differences they allow between a *Body* and a *Spirit*, is this only, that *That* is Divisible, *This* Indivisible, as also, that Quantity and Divisibility into Integral parts are (with them) the *same* Notion; it will appear Evidently,¹⁶⁵ that, according to them, this Proposition [*Body is Quantitative*] is perfectly equivalent to this [*What's Divisible is Divisible*] which is every way Identical. I say, *with them*, for they deny all Metaphysical Divisibility of Body into *Matter* and *Form*¹⁶⁶ by denying all Formal Mutation. The same Discourse holds, if they put for their First Principle [*Corpus est Extensum*]; for, in that Supposition, they hold that *Extension* is the Notion that Intrinsically constitutes *Body* or *Matter*, and differences it Essentially from *Spirit*. Whence the Proposition [*Corpus est Extensum*] is the same as [*Ens Extensum est Ens Extensum*, or *Corpus est Corpus*] which are most Formally Identical.
2. That the First Principle which grounds all Ratiocination in *Logick* is an Identical Proposition, will be shewn hereafter, Sect. 10. when we come to shew the *Use* of First Principles.
3. The First principle that grounds all *Ethicks*, or Morality, is, [*A Will is a Will*]. For, since all Morality (at least in its practice) consists in Acting *for an End*, and no man acts for an End but because it appears to him a Good, and therefore *an appearing Good* is the proper Object of that Active Power call'd the *Will*; and Powers are specified by their proper Objects, and have their Essences from them; it is as certain the Will cannot act when there *appears* to the Man *no Good*, and that it will act for what appears to him, taking him as thus Dispos'd, *hic & nunc* a Good, as it is that *A Will is a Will*.

Object. This takes away the *Freedom* of the Will, to tie it up to First Principles, or pretend that its Actions can be reduc'd to Rules of Science or Demonstration; for, this seems to hamper it, and lay a *Necessity* upon it, which destroys its *Free* Nature.

I answer, that the Will has a Nature of *its own*, which it can no more forgo than *Homo* can not be *Homo*. Whenever then there is but *one Appearing Good*, the Will is *not free* in that circumstance, because in such a Case its *Essence* is engag'd; and 'tis not in the power of the Will to chuse whether it will be *its self* or no. In all other Cases where its *Essence* is *not* engag'd the Will is *free*, provided there be on the Object's side Variety enough for Choice: Yet, in the former Case, those Acts of the Will, tho' not *free*, are *Voluntary*, because they are

¹⁶³ Less. 2. Sect. 6, 7, 8, 9.

¹⁶⁴ Latin: 'Body is how much' or 'body is amount.'

¹⁶⁵ Sic. 'Evidently.'

¹⁶⁶ See *Appendix*.

more according to what's Essential to it, or to its very Nature; and would, if the Will did not bear it self accordingly, make the *Will* to be *no Will*.

Corol. I. Hence is seen, that the only solid way to perfect our Souls in *Christian Morality* or *True Virtue*, is by Wise Judgments or Frequentation of Devout Thoughts and Actions, to gain a Lively and Hearty Conceit of the Transcendent Excellency of Heavenly Goods, and of the Vileness of all Temporary Goods in comparison, since 'tis the very Nature of our *Will* to pursue that with her Interiour Acts which *appears lively* to be the Greater Good; that is, to be *hic & nunc*, a Good to him that wills.

4. Lastly, to omit others, the First Principles in *Mathematicks* are Identical. For example; At our first entrance into *Euclid*, we are met with those Famous and Useful Principles: *Those things that are Equal to the same, are Equal to one another. If Equals be added to Equals, the Wholes are Equal. If Equals be taken away from Equals, the Remainders are Equal. Those which are twice as big as the same, are Equals. Those which are Halves of the same are Equals.* All which are in effect but this Identical Proposition [*Aequale est aequale sibi*]; or else diverse Inferiour Identicals, subsuming under that Common one, as *Homo est homo* does under *Ens est ens*. For example, this Proposition [*If Equals be added to Equals, the Wholes are Equal*] is that common Identical Proposition thrice (as it were) Repeated; and is plainly as much as to say, the two supposed Equals are Equal to one another: the two Equals added are Equal to one another; and so the two Equal *Wholes*, made up of both those Equal *parts*, are Equal to one another. There are many other such Identical Propositions on which that great Mathematician builds as on his Principles; and among the rest [*A Whole is greater than a part of it self*] which I have shewn above to be, in sence. *Formally Identical*.
5. As for the *Use* that may be made of First Principles; First, they cannot be the *Conclusion*, for that is the thing *to be proved*, and First Principles are *above Proof*, as not being to be *made Evident*, because they are *Self-evident*. Nor can they be either of the *Premises*; for (as will be more clearly shewn hereafter) the Middle Term must be Connected with *one* of the Terms of the Conclusion in *one* of the Premises, and with the *other* Term in the *other*; which could not be, if the self same Notion were us'd twice in one of those Premises; for then the Syllogism must either be fram'd thus, [*Omnis Homo est Homo, Aliquod Animal est rationale, ergo aliquod Rationale est Homo*]¹⁶⁷; or thus, [*Nullus Homo est Irrationalis; sed aliquis Homo est Homo, ergo Aliquod irrationale non est Homo.*]¹⁶⁸ where we see (to omit other faults) that the Notion of *Homo* is taken thrice, whereas in a Legitimate Syllogism no Term ought to be taken more than twice; and, so the whole Discourse is Preternatural and Absurd.
6. Hence follows, that since the *Use* of First Principles cannot be the bringing down or *deducing* Truths, which are yet unknown, *from them*; therefore the Use of them must consist in the bringing up or *Reducing* Truths *to them*; which is done by Resolving less-clear Truths into *others* still Clearer, till we arise to those which are the Clearest of all, that is, to *Self-evident Principles*; to shew which by Instances, or lay open the way how this is done, is not proper for this place, but belongs to the next Book, where we shall treat of Rigorous Discourse or Demonstration.
7. To make this use of First Principles is no more, in effect, but to attend heedfully to the *Nature* of the *Thing*, and not to *deviate* from it. This is Evident; for, to *Deviate* in a Discourse about *Homo* or *Corpus*, from their Natures, is, by consequence, to make *Homo* not to be *Homo*, and *Corpus* not to be *Corpus*; which Propositions are Contradictory to *Homo est Homo* and *Corpus est Corpus*, which are the First Principles in those Discourses.

¹⁶⁷ Latin: 'Every man is a man; some animal is rational; therefore, some rational (thing) is a man.'

¹⁶⁸ Latin: 'No man is irrational; but some man is a man; therefore, some irrational (thing) is not a man.'

8. *Quaere*. It may be ask'd, if there be no more in the business but to attend to the Metaphysical Verity or Nature of the *Thing*, why we keep such a pother¹⁶⁹ about putting it into such nice, and dry, and seemingly Insignificant Identical Propositions, since we may attend to our Notion, or the Nature of the Thing, without framing Formal Propositions about it, or saying *It is what it is?* 'Tis answer'd, Because all our *Discourses* are made up of *Propositions*, without which we cannot *say* or *affirm* any thing; and therefore those Sayings into which we do finally resolve their Evidence and Truth, as into what's most true and evident, must be *Propositions* also. Besides, Self-evident Propositions, which advance the *Metaphysical* Verity of the thing into *Formal* Verity, do reflect and redouble (as it were) the Notion of it upon it self by expressing its *being what it is*; and thence gives an advantage to our bare Single Notion, by not only *having had* (as had the Single Notion) its Metaphysical Verity in it, but by *expressing* that Metaphysical Verity, so as to make it more fit to be discours'd of.
9. Tho' First Principles cannot be any Proposition in a Legitimate or Regular Syllogism, yet this hinders not but that those particular Identical Propositions which subsume under *Ens est Ens*,¹⁷⁰ may in some sort and improperly be Deducible from that Common one. For, since a *Common Notion*, taken without restriction, is Equivalent to an *Universal*, and includes *All* that have that Notion, and *All* includes and signifies *Every* particular one, as a Whole does its parts; hence follows, that if *Ens* be *Ens*, then *Homo* is *Homo*, *Lapis* is *Lapis*; and the same may be said of every particular thing that is comprehended under that Universal.

Note, That this is not perform'd by virtue of those Terms orderly plac'd and connected, as 'tis done in a Syllogism; but by vertue of some Logical Maxims applying or referring the Common propositions to those particular Identical ones, as appears in the proof of this last Section.

Corol. II. Hence is seen how Metaphysicks give the Principles to all *Inferiour* Sciences that treat of *particular Subjects*; and how they establish both the Truth, Certainty and Evidence of those respective Principles.

10. The other main Use of First Principles is to Establish all our Ratiocination or Deduction of *New* Truths out of *others* formerly known: this is evident, because all Inference, Concluding or Proving is perform'd by Identifying the *two* terms of the proposition to be Concluded with a *Middle* term in the premisses; and if it be found that they are both of them the same *with it*, it is thence Inferred that they are the same *with one another*, and that the Conclusion is *true*. But, what if that Middle term be not the same with its *own self*, but *Divided within it self*? Why then it must certainly follow, that we could Inferred or prove Nothing: For if that Middle term were divided in it self, as *Hirco-cervus*,¹⁷¹ *Chimera*,¹⁷² and all Non-Entities are, then *one* of the terms of the proposition to be prov'd might be Identify'd with it according to *one* of those Considerations, and the *other* term Identify'd with it according to the *other*; and so, it would not follow that the terms of the Propositions to be proved are at all *Identified* or Connected in the *Conclusion* by being both of them Identified with it in the *Premisses*; but rather it will follow, that they would be *Diversify'd* or Unconnected, because that Middle term had Diversity and not Identity in it self. Wherefore all the Force of Inference, nay, all possibility of Concluding or proving any thing is entirely grounded on this Self-evident proposition, *Idem est Idem sibi ipsi*, or, *a Thing is the same with it self*. Which shews how Useful First principles are, and how they are both the First Truths *in themselves*; and, besides, the

¹⁶⁹ Archaic: 'commotion' or 'stirring.'

¹⁷⁰ See B. 2. L. 2. Corol. 2.

¹⁷¹ A mythical goat-stag.

¹⁷² A mythical chimera was a mixture of different animals such as a lion, goat, and snake.

Bottom-Ground to *all Others* which are not Evident in themselves, but need *Proof* to make them so; how Dry and Insignificant soever they may appear at first sight, or seem ridiculous to Superficial Talkers, or some Men of more Witt and Fancy than of Exact Speculation.

Corol. III. Hence is seen that the *Light of Reason* or the Light by which we draw New knowledges out of foregoing ones, is the Light that shines in this Self-evident proposition: *A thing is the same with it's self.*

Corol. IV. Hence also, if the Terms be Univocally understood, and do agree to the Middle Term in the Premisses, we may be as Infallibly Certain our Conclusion is True as we are that *The same is the same with it self.* Which will give a great Encouragement, to the Laborious Pursuers of True Science, and comfort the pains they take in Seeking after Truth.

Corol. V. Hence, lastly, if any Discourse be so fram'd as to *thwart* this First Principle or *clash* with it: 'tis Self-evidently Absur'd, False and Contradictory; as will be particularly seen when we come to treat of *Discourse* or *Ratiocination*.

11. There are other Propositions which are, either in the *whole* or *in part*, Formally Identical, tho' not *most* Formally: that is, such as have the same Formal Notion *in whole*, or *in part*; and therefore are, upon a slight reflexion, *Evident*, tho' not *self-evident* from the very Terms, as were First Principles. Of the first sort are those whose Predicates belong to the First Predicable, in which the whole Notion is predicated of the Whole. And these are either Definitions (of which we have spoken above) as when we say *Homo est Animal Rationale*; or the Members of such Divisions as are made by Contradictory Differences. For since there can be no *Middle* or Third between two Contradictory Notions, and therefore the Dividing parts, if Contradictory, do take up *all* the Parts of the *whole*, and consequently (abating the manner of Expression) are perfectly and Intirely the *Whole it self*; it follows, that such parts, taken Divisively, are predicated of the Notion Divided as the *Whole* of the *Whole*. For example, *Animal* is divided into *Rational* and *Irrational* (that is, *not-Rational*) and Number into *Even* and *Odd*, (that is, *not-even*). Whence in those Propositions, [Animal is either Rational or Irrational] and (Number is either Even or Odd) *all* the Parts or the *whole* is predicated of the Whole, and the Propositions are *Formally Identical* and Evident in the manner explicated in our former Note.

Note 2. That these are call'd *Formally Identical*, because they are Evident by their own Terms when they are once Explained; without needing any Formal Proof for the Learned to discern the Connexion of those Terms; onely there is requir'd some slight Reflexion on certain Common Maxims, known by the Light of Nature: such as is that a thing either *is* or *is not*, and that therefore there can be *no Middle* between them; and that *All* the Parts are the Whole. They are also Self-evident *Practically* (that is Evident without Study) to the Vulgar, because they cannot but know those maxims by their Mother-wit. In like manner as they know also the Substance of the *Definition* of those Notions they are conversant with, if plainly and fully exprest; tho they cannot compile or frame it Artificially: whence they will heartily *acknowledge* it to be *true* when 'tis thus propos'd to them, finding the *Notion* or *Sense* of it in their own Understanding.

12. Propositions whose Terms are Formal *in part* are those whose Predicates belong to the second, third and fourth Predicables; that is, such as are predicated as the *Genus Species* and *Difference*; for all these do *in part* belong essentially to the Thing or *Individuum*; as *Petrus est Animal, Homo, Rationalis*. They belong to it *Essentially*; because they are deduc'd by *Intrinsecal*

Differences in the same Line:¹⁷³ *In part*, because the Thing or Individuum (*v. g. Peter*) comprehends both *them*, and *more* than them, *viz.* his *Individual Essence*.

13. Those Propositions whose Predicates belong to the Fifth Predicable (*viz. Properties*) are neither in Part nor in Whole Formally Identical, and therefore not Evident; tho' they are oftentimes easily reducible to Evidence. For, since such Predicates are not of the *same Line* as the Thing is, but in *another*, they cannot be at all Essential to it, or any direct part of its Formal Notion or Definition; and, so, not at all Evident from the Terms, but must be *made so* by *Proof*. Yet, since all Deduction or Proof is made by *Connexion* of Notions, and those Notions (or what corresponds to them) must be *Connected* in the Thing e're they can be so in our Understanding; and *Properties* are more nearly ally'd to the Essence than *other* Accidents, as resulting necessarily from it, or being immediately Connected with it; hence they are, by consequence, most easily *Proveable* to belong truly to the Thing; and therefore very fit to be made use of in Demonstrations.
 14. Of this sort are all Propositions whose Predicates are *Proper Causes* and *Effects*; and, more immediately, the *Powers* or Virtues by which they *Act* on others, or *Suffer* from others; as will be seen when we come to treat of Demonstration.
 15. Propositions whose Predicates belong to the *last* Predicable are utterly Inevident, and, as such, not easily Evidenceable. For, since (as was shewn ¹⁷⁴ above) such Predicates do belong to the Subject but *by chance*, or as their very name imports, *by Accident*; and *Chance* signifies a Cause which we do *not see* or *know*; it follows, that the Connexion of such Predicates with the Subject can never be *known* by Reason, or *prov'd* that they *must* belong to it, because we can never know *all* the Causes that concur'd to make them belong to it. Wherefore such Propositions are utterly *Inevident*, nor (as they are *Accidents* or Unconnected with the Essence) easily Evidenceable by way of Reason, that they *must* belong to them; however they may be known to belong actually to them *hic & nunc* by *Sense* or *Experience*. Such Predicates are mostly those of the six last Predicaments, and many Quantities, Qualities, and Relations.
 16. Notwithstanding, those Propositions which have such Accidental Predicates, were *all* the Causes by which they hap to belong to the Subject perfectly known, might be perfectly Evident and Demonstrable. For, as we can Demonstrate *one* Effect that needs but *one* Cause to put it, from that *single* Cause; so, did we know *all* the Causes that concur'd to any Effect which is brought about by *many* Causes, we could certainly *conclude* and *know* such an Effect would follow; in which case the Predicate would be no longer an *Accident*, but the *Proper Effect* of that Complex of Causes; nor would the Proposition it self be any longer merely *Accidental*.
- Corol. VI.* Hence there is nothing *Contingent* or *Accidental* to *God*, but all Events, tho' never so minute or so odd, are *Equally* Certain to him, as the most Immediate Effect of the most *Proper* and most *Necessary* Causes; because he lays and comprehends the *whole Series* of Causes that concur to bring about every *least* Effect.

¹⁷³ The line here appears to refer to the branching diagram of subclass relations, called the Tree of Porphyry. The tree organizes categories from most generic to most specific. A line branches apart when subclasses on the same level can be distinguished from each other—called 'specific difference'; e.g., 'animal' has two subclasses, 'rational' and 'non-rational.' By methodology, what counts as a specific difference must be essential to the thing in question.

¹⁷⁴ B. 2. S. 13.

Lesson IV. *Of the Generating of Knowledge in us, and of the Method how this is perform'd.*

Hitherto of *Knowledges* or *Judgments*, according to their *Dependence* on one another, and their being *Resolv'd Artificially* into First Principles. Our next task is, to consider them according to the Order they are *instill'd* into us *Naturally*.

1. The Soul, or the Understanding, is at first void of *all* kind of Knowledge, or *Rasa Tabula*.¹⁷⁵ For, since the Author of Nature does nothing in vain, nor acts needlessly, he puts no Effects immediately, or without Second Causes, when there *are* Causes laid by him to produce them; and, since we experience that Causes *are* laid by Him, apt to imprint Notions in us; and that the Nature of our Soul being evidently Comparative, we can *compare* those Notions, and can see how they *Agree* or *Disagree*, which is to *know*: Hence, in case the Soul had any Notions or Knowledges *infus'd* into her *otherwise* than by those Causes, it would frustrate and make void that Course of natural Agents which is apt to beget Knowledge in us, and make Nature contradict her self. Again, since we experience that we know no more than we have *Notions* of, and that we can *compare* those Notions, and can know *all* things we *have* Notions of and do thus rightly *Compare*; and, that *both* those effects do follow naturally from the Impressions of Objects, and from the nature of the Soul; it falls into the same Absurdity, to affirm, that those Causes do only *Excite*, and not *Beget* Knowledge in us. Lastly, the contrary Opinion supposes the Soul to be an *Ens* before the Body, or at least *distinct* from it; and then 'tis both Unconceivable and Inexplicable how they can ever come to be *United* so as to compound *one Ens*. For, this cannot be done *Quantitatively*, as is evident, nor by their *Acting* together, as the *Cartesians* hold; both because all *Action* presupposes the *Being* of a thing; whence they must be *one Ens* before they can *Act as one Ens*; as also, because the Line or predicament of *Action* is¹⁷⁶ distinct from that of *Ens*, and Extrinsecal to it, and so cannot¹⁷⁷ Intrinsically constitute those Joynt-Acters *One Ens* or Thing. Nor can it be conceiv'd that the Body, if it be not *one Ens* with the Soul, can act with it otherwise than as its *Instrument*; and it would be most Absurd, to say that my Hand and Pen are *one thing* because they jointly concur in their different ways, to the Action of Writing. Wherefore the Soul *has* no Antecedent Knowledge, but is a *Rasa Tabula*, capable to *receive* such Impressions as beget Knowledge in her.
2. The *First Judgment* in order of Nature the Soul has, is, that *its self* or the *Man exists*. For, since (as¹⁷⁸ was shewn) the First Notions the Soul has are of the *Man* himself, and of his *Existence*, and¹⁷⁹ all Judgments are made by Compounding or *Comparing* of Notions; it follows, that the most Obvious, most Easie, most Natural, and consequently the First Judgment, in priority of Nature, that a Man has when he is ripe to judge, is, that *Himself is*, or [*I am*].
3. The next Judgment is, that [*He is struck*] or affected by some Object without him; for, since the Course of Nature is *Motion*, and therefore Objects are continually *moving* where the Man is, and, so, do light and act on his *Senses*, that is, do work Experimental Knowledge in him that he is *acted upon* or *struck* by them, it follows, that he must, after he comes to frame Judgments, necessarily and frequently *know*, and, consequently, *Judge he is struck*. Nor can this be the first Judgment, both for the Reason lately given Sect. 2. as also because in this

¹⁷⁵ Latin: 'Blank slate.'

¹⁷⁶ Book 1. L. 2. S. 18.

¹⁷⁷ Book 1. L. 3. S. 1.

¹⁷⁸ Book 1. L. 2. S. 16.

¹⁷⁹ Book 2. L. 1. S. 10.

Proposition [*I am struck*] the Proposition [*I am*] is most Simple, and manifestly antecedes [*I am struck*]; the Notion of [*struck*] being clearly superadded to it.

4. The next Knowledge or next Judgment to the former, in order of Nature, is, [*I am struck thus*] or Affected after *such* a manner. For, the Notion of [*I am struck*] is more Simple, and so, antecedes [*I am struck thus*] which superadds to it: Whence this proposition is prov'd by the same reason that was brought for the third Section.
5. These Judgments had, we are furnish'd by Nature with Means of Knowing in some measure the *Distinct* Natures of *all* things that affect us. For, since we get all our Notions or the Natures of things into us by Impressions from Objects; and by *such* Impressions, or by their affecting us *thus* or *thus*, their *Different* Natures; that is, Knowledge how those things *Differ* from one another; and Differences *do constitute* the Nature of the thing by Distinguishing it from all others; 'tis manifest that from the Judgment or Knowledge that we are struck *thus* and *thus* by *these* and *these* Objects, we are furnish'd with means of Knowing, in some measure, the *Distinct* Natures of all things that affect us, and of our *own* Bodies in the first place. And our *Soul* having the power of *Comparing* them to themselves, and to *Other* Natures that are also in her, we hence become capable of framing Innumerable *Judgments* concerning them, or *Knowledges* of them.
6. These Knowledges of all things that affect our Senses being gain'd, to a fair degree, by the Different Impressions of Objects, are made more Express, and Improv'd very much by *Study* and *Reflexion*. For, since Study and Reflexion are not the *Inventing* New or Counterfeit Notions or Natures of our own coining, but the *Receiving* frequently, and minding heedfully the true and solid Notions of the things which Nature had imprinted there before; it follows, that, as in Corporeal Sight, by our Regarding the Object frequently, wistly and attentively, we come to observe more and more in it; so, by often Reflecting on and Revolving Intellectual Objects, or the Natures of things *in us*, the Eye of our Mind must needs *look deeper* into them, make *new* Discoveries of diverse Considerations in them which escap'd a *single* Cursory view, and gain *more* exact and *more* penetrative Knowledge of them.
7. By *Methods* of Discoursing or Ratiocination made evident by Maxims of *Art*, this Improvement of Knowledge (were not *vita brevis*¹⁸⁰) might come to be in a manner *Infini*t. For, all this is perform'd by Evident Connexion of Terms, both in *some* propositions which are Truths, and the deducing others by necessary consequence from *them*, and so forwards. Since then there is no *stint* assignable of the Connexion of Truths, and (as will be shewn hereafter) there are Rules or Maxims of *Art* to teach us *how* to connect Terms Aptly and Evidently; it follows, that there can be *no Bounds* of the Improvement of Knowledge.
8. From what's said above, 'tis manifest that this proposition [*Ego cogito*] cannot be the *first-known* Truth whence all our Science is *Generated*;¹⁸¹ for, since this proposition (*Ego cogito*) if put entirely or explicitly as it ought, is (*Ego sum cogitans*) and in the order of Nature the proposition (*Ego sum*) is antecedent to (*Ego sum cogitans*) and more simple than it; so that if *it* be not suppos'd to be known, the *other* cannot possibly be known; 'tis most Evident that (*Cogito*) or (*Ego cogito*) or, which is the same (*Ego sum cogitans*) cannot be the first-known Proposition or First Truth that can be laid in the Method of *Generating Science*.
9. The proposition (*Ego sum cogitans*) is *less* clear and evident than many other propositions that have for their predicate Notions directly imprinted on our Senses such as are; I am *Heated*,

¹⁸⁰ Latin: 'brief life;' if life were not short.

¹⁸¹ In view here is René Descartes' famous argument, "I think, therefore I am" (*Cogito, ergo sum*). The Cogito is given both in his *Discourses on the Method*, part four (1637), and the *Meditations on First Philosophy*, second meditation (1641). He argued that this proposition cannot be doubted, and that it provides a suitable foundation up on which all science may be built.

Hurt, Extended, Moving, &c. For, since all our first-known notions (the Soul being *Rasa Tabula*) come by Impressions of Objects on our Senses, those propositions are *most Clear* whose predicates are the Immediate Effects of those Impressions, and, joyn'd with *Ego sum* (which is the first Judgment) do compound those propositions. But such are the predicates abovesaid, and not the predicate (*Cogitans*). Therefore the proposition (*Ego sum Cogitans*) is less clear than are the propositions which have those directly imprinted Notions for their Predicates. That the other predicates are notions *more known* than is *Cogitans*, I prove thus. The notion of *Cogitans* is *Spiritual*, and therefore could not be imprinted in the Soul by a *Direct* stroke of the Object on the Senses, as are the Others, but must be known by *Reflexion*; but what is known by Reflexion is less easily and less early known, that is *less Evident* to us, taking us as not yet imbued with *other* Knowledges, than that which is known by *Experience* or *Directly*; therefore the notion of (*Cogitans*) is less known than are those other predicates; and consequently this proposition (*Ego sum Cogitans*) is less Clear than the propositions (*Ego sum Extensus, vulneratus, movens, &c.* Again, were the predicate (*Cogitans*) known experimentally, or by Impressions on the Sense, which it is not at all but as it is joyn'd with the Imagination (the most Fallacious Faculty we have) co-operating with the Understanding; nay, were it an Affection of the *Man*, and its Notion directly imprinted in him, and, so, as easily and early known as any of the rest; yet the proposition (*Ego sum Cogitans*) could not be the First or Second in the Order of *Knowable*: for, since (as was shewn) [*I am struck or Affected*] antecedes [*I am affected thus*] or have *such* an affection in me, and *Cogitans* is not barely to be Affected by Objects, but to have *such* a manner of Affection; hence the proposition (*I am affected by Objects*) is more Simple, and therefore, in priority of Nature, precedes (*I am affected thus*) or (*I am Thinking*) and is more Clear than *it*.

11. ¹⁸²Hence the proposition (*Ego cogito*) is also *less Certain* than multitudes of *other* propositions, whose predicates are experimentally known by Direct Impressions on the Senses. For Certainty follows Evidence as its *Proper Cause*, as Judging does Knowing. Wherefore, if that proposition be *less Evident*, it is also *less Certain*.
12. If it be alledg'd, that it is Certain by way of *Evident Proof* that this proposition (*Ego cogito*) is the most absolutely firm Ground we can rely on to generate and principiate all our other Knowledges, because tho' we would voluntarily divest our selves of all other Knowledges, and call them into doubt; that is, were all the rest *Uncertain*, and my self *Insecure* whether I think *True* or *False* in holding them; yet it is Unquestionably Certain, and Impossible to be doubted of, but that, whether I think *right* or *wrong*, still I *think*; whence follows, that the proposition (*Ego cogito*) seems to be a firm *basis* to ground all the rest upon. I answer, that the whole Discourse seems to me to be a Paralogism, and a kind of *Fallacy of non causa pro causa*; ¹⁸³ for, the Question is not whether it be not more Certain that I *think* than that I think *wrong* or *right*; for, 'tis granted that this proposition [*I think*] is more Simple, and therefore antecedes, and is presuppos'd to the propositions [*I think right* or *wrong*, or *thus* and *thus*] and, consequently, it is more Evident and more Certain than *These* are. But the true point is, whether I am more Certain that I *think at all*, than that I am Certain that *I am*; since if it be not presuppos'd that *I am*, 'tis most Certain that it is Impossible that I should be Certain that *I am thinking*, or any thing like it. The Objecter then slides over the Certainty of this proposition (*I think*) as compar'd with the proposition (*I am*) and other Judgments experimentally known; and compares it with other propositions subsequent to (*I think*). Wherefore he first *supposes* it to be most Certain, that is, more Certain than *they* are, and

¹⁸² Original numbering. There is no section labeled 'section 10'.

¹⁸³ An informal fallacy alternatively called 'false cause;' Latin: 'non-cause for cause.'

- prefers it *before* all others, without Comparing it with *those others*; which is to suppose it so *gratis*, and (which is yet more strange) he grounds all Knowledge whatever upon it.
13. 'Tis yet a worse Error, that whereas *Ens* or Being is the *Basis* of all other Notions, so that if no *Thing* be, *They* cannot be; the Alledger, by arguing thus [*Cogito ergo sum*] does by a strange *Hysteron proteron*,¹⁸⁴ put an *Operation* to be *Antecedent* to *Being* it self; and that [*to be Thinking*] is a more Simple, Clear, and Distinct Notion than [*to be*]. And then, from an *Operation* found out or suppos'd, he concludes the very Notion of *Being* it self to *be* in the *Thing*. Nay, which is yet more odd, he supposes the Notion of Knowledge of Himself, imported by the Word (*Ego*) and supposes that *Ens* (or *Ego*) to *be*, as is signified by the *Copula* (*Sum*); nay more, he supposes that *Ens*, or (*himself*) not onely to *be*, but moreover to *be such*, viz. *Operating* or *Thinking*, which most evidently speak or imply *Existence*; and when he has done all this, he *Infers* thence, (contrary to our 3d. & 4th. *Sect.*) the *simple being* of that which he had not onely put to *be* and *be known*; but, which he had over and above put to *be* (or *be known*) to *be such*: that is to *be Operating* or *Thinking*.
 14. Hence, this Method of Generating Science is Unnatural, Preposterous and Self-contradictory. Tis *Unnatural*, first because the way Nature takes to Beget Knowledge in us is not by divesting our selves of all other Knowledges to find out what's most Certain: but, she at first instils Knowledge into us by a Natural way of *Imprinting* Notions in our Mind, and our *Comparing* them; and thence letting us *See* whether they Agree or Disagree: 2^{ly}, because it strains Nature to fancy our selves Ignorant of many Clear Truths which the goodness of the same Nature forces us to assent to as Evident. And, 3^{ly}, because [*I am*] is according to the Order of Nature Antecedent to [*I am Thinking*]. Tis *Preposterous*, because it argues from Compound Judgments which are *less known*, to infer whats *more Simple*, and, so, *more known*. And lastly, tis *Self contradictory*, because it supposes that to *bee* or to *be known*; which, as yet according to that doctrine *is not*, or *is not known*: but is to be *Concluded*, that is, *made known*; as is shewn Section 13th.
 15. *Hypothetical Philosophy*, which is grounded on Suppositions; and *beggs* that such and such things may be yielded and then it will explicate all Nature, is built on *meer Fancy*, and is unworthy the name of *Philosophy*. For, since it belongs to a Philosopher to Resolve all Truths into their Principles, and all Natural Effects into their Proper Causes; and, finally, (if need be) into their *first Principles* or *First Causes*: and a Hypothetical Philosopher can never perform this Duty which is most Essential to a Philosopher; in regard the *First Grounds* he layes are barely *begg'd* or *Supposed*; that is neither *self-Evident* nor *made Evident* by way of Proof: Hence, Hypothetical Philosophy is utterly unworthy the name of Philosophy; since all its Assertions and Conclusions, if driven home, are resolved finally into *Precarious Suppositions*. Again, since all Speculation is Aiery and Fantastical that is not grounded on the Things as they are found in *Nature*, and such Discoursers do not finally build their Discourses on the Natures of the Things as they *find* them to be, but on their being such as they *suppose* them or *would have* them to be; it follows, that the whole Scheme of their Doctrine and all the speculations they advance, how Ingenious so ever they may appear, are far from Solid, and, in reality Groundless, Aiery and Fantastical.
 16. Hence follows, that who ever *supposes* any Principle or Proposition that influences his Explication of Nature, or of Natural Effects which are apt to be produced by Natural Causes, and demonstrated by them: whether that Principle be that Matter is divided into such or such parts, or that it is moved in *such* a manner; That it continues its motion without a Natural Motive Cause continually acting on it, notwithstanding that it still meets with

¹⁸⁴ Greek: 'later earlier;' i.e., what is last is put out of order by being ahead.

Rubbs from other parts of Matter which it breaks asunder; That there are such Figures of it's Parts; or *such* Qualities affecting the Subject and giving it a Virtue of Operating *thus* or *thus*; That there are multitudes of little Entities, brought in to serve a present turn when the Discourser is at a plunge; or Atomes, pursuing and over taking their fellows, and clinging together conveniently for his purpose: without giving a reason *why* and *how* they must do so, (as is the manner of the *Epicureans*) or, what ever other useful Expedient he supposes to carry on the Clockwork of his Scheme; such a man is *no true Philosopher*.

17. Likewise, who ever layes for his Ground what neither is nor can be: viz. Vacuum, Imaginary Space, Subsistent Dimensions, Infinit Expansion of Continu'd Quantity. Infinit Number of Atomes and suchlike, can be no true Philosopher; since they (as do the former) Resolve things finally into their own Unprov'd and Ridiculous Suppositions: and would have us accept their *Groundless Fancies* for *First Principles*; when as many times the contrary to these is clearly demonstrable.
18. Whoever proceeds meerly upon *Experiments* and *Induction*, and cannot assign *Proper Causes* for the Effects or Matters of Fact they *see* done; how ever their Inquisitiveness into Nature may merit Commendation, and oblige Artificers and Practical men by many useful Observations; and, in some measure, help Speculative Men also, who do make use of Principles, to find out more easily the Proper Causes of many Effects: from which Industrious Researches into Nature, such men may deserve the name of *Virtuosi*, or Curious and Ingenious persons; yet since (as will be shewn hereafter) they cannot, by that Method *alone*, without making use of *Principles*, refund *Effects* into their *Proper Causes*, nor give the *true reason* of the Effects they Experience; nor Deduce so much as *one* Scientifical Conclusion; they cannot, in true speech, be call'd *Men of Science* or *Philosophers*.
19. Those of the Vulgar who have good Mother-witts, and addict themselves to think *much* and *attentively* of some certain Natural Objects, may, by *Practical Self-evidence*, well improv'd, arrive to such a true Knowledge of the *Causes* of things, as may rank them in the *next* Class of Knowers to *Scientifical* Men, or true Philosophers. For, such Men, by an Innate or Casual Addiction of their Thoughts to some particular sorts of Natures; and by industrious and frequent consideration of them, joyn'd with a natural Sagacity to penetrate them, and natural Logick to discourse them in their thoughts; are furnish'd with all the Materials (as it were) that are requisite to *Science*: Nor, while they attend to the Natures of the Things, can they want First Principles by which to guide their thoughts; so that, they onely want *Maxims of Art* to put their Thoughts into the posture of Science, to make them more firm, distinct and express, and to improve them by drawing new Consequences from them: Wherefore such Acute Men (some of which are found in every Country and every Age,) by having their Knowledge grounded on *solid Nature*, may far exceed *Hypothetical* Philosophers, or any of the others before-mentioned, in *True Knowledge*; and, so, come nearer the being true Philosophers than any of them; nay, than Great Artists and Reputed Scholars; though they caper in the Ayr never so nimbly and quaintly with School-Terms, Distinctions, and Witty and Congruous Explications of their own Schemes; if they do not *begin with*, and *build upon*, Good Honest *Solid Nature*.

Book III. *Of the Third Operation of our Understanding, Discourse; and of the Effects and Defects of it.*

Lesson I. *Of Artificial Discourse, the Force of Consequence, and of the only Right Figure of a Syllogism.*

1. Discourse may either mean *Common Reasoning* us'd by *all* Mankind in their Ordinary Conversation, or by *some* in Rhetorical Speeches; which may fitly be call'd *Loose Discourse*. Or, it may mean that *Artificial* way of Reasoning, which consists in such a Connexion of Terms in two Propositions, call'd the *Major* and *Minor* (or the *Premisses*) as that a *Third* Proposition, call'd the *Conclusion*, must naturally and necessarily *follow* from them; which may be properly nam'd *Contracted* or *Strict Discourse*, and by *Logicians* is call'd a *Syllogism*.
2. This following or Consequence of such a Proposition out of two others, is call'd Inference, Deduction, Concluding, Argumentation and Proving. So that the Essence of a Syllogism consists as formally in the *Consequence* of that Proposition, which is Concluded from the Premisses, (expressed by the Illative Particle [*ergo*] as the Essence of a Proposition does in the *Copula* that connects its Terms, and Predicates or says something of another.
3. Wherefore, since, if the *Consequence*, in which consists the Essence and all the Force and Nerves of Discourse, be not Clear and Evident, there could be no Certainty or Evidence of any thing that needs to be *made known* or *concluded*; and, so, our Faculty of Exact Reasoning would have been given us to no purpose: hence 'tis manifest that, however one *Proposition* may be *made known* by others that are Connected and Consequential to one another; yet, the *Consequence* it self cannot be *prov'd* or made clear by *another* Consequence; for the Question would still return *how*, and in virtue of *what*, that Consequence which made the *other* Evident is Evident *it self*; and so *in infinitum*. Whence it follows, that the *Evidence* of all Consequences whatever, must be built on something in a *higher* manner Evident than any *Consequence* or Proof can make it; that is, on a *Self-evident* or *Identical Proposition*, as will be shown hereafter.
4. Hence we may gather manifestly, that a Syllogism can have but *Three* Terms in it; *Two* of which are given us in the Proposition to be Concluded; and the *Third* is that Middle Term, by finding *which* to be Identify'd with the *other Two* in the Premisses, we come to be assur'd, by virtue of the self-evident Proposition hinted above, that they are Identify'd in the *Conclusion*; or, which is the same, that the Conclusion is True.
5. From what's said it appears that a Syllogism is the *Test* of all other Discourses; by reducing them to which their Truth is to be *try'd*. For, since whatever is *most* Perfect in its Kind, ought to be the Standard or Test by which to *Measure* and *try* the Perfection of all others of the same Kind; and a Syllogism is the best and most firmly grounded Act of our Natural Reason, made exact by *Art* which is to perfect *Nature*; and therefore absolutely the very Best that can be in its Kind, or the *best Discourse*; it follows that 'tis to be the true *Test* and *Standard* of all other Discourses; to which the *Verity*, *Sense* or *Coherence* of all the rest are to be *reduc'd*, and to be *try'd* by it.

Corol. I. Hence, 'tis of very Excellent Use for Young Wits to exercise themselves in Reducing *loose* Discourses to *strict* ones, or Syllogisms; For, by endeavouring this, they will, to their Admiration, find how Shallow and far from Evident the Grounds; how precarious, unprov'd, and oft-times contradictory the particular Assertions; and how Open and Incoherent the Contexture and Consequences are in many Rhetorical Discourses and Speeches; which, drest up in fine Language and embellisht with little Tropes and Figures,

and other pretty Tricks of Wit and Fancy, did before look very plausible, and made a gay Appearance of most Excellent Sense. Perhaps scarce any one Expedient can be invented that is more useful to advance Truth, beat down Error, and keep the Generality of Mankind from being deluded, than thus to *divest* such empty Discourses of their Glossy *Out-side*; and to let them see how deformed a Hag Errour will appear to the Eye of Reason, when expos'd stark-naked. Whereas, on the other side, 'tis the Glory of Truth to be stript of these Ornamental Trifles; for by this means her Native Beauty and the Symmetry of all her parts will appear more Amiable in the Eye of those who do sincerely affect her.

6. From the third §. it manifestly follows, that, the *Consequence* of a Syllogism having a *self-evident* Proposition for its *Basis*, if upon severe examination, we find that any Discourse does indeed bear that Test, and can be Reduc'd to a rigorous Syllogism; and the Premisses (which the Consequence supposes to be True) be really *so*, or can be by this Method *prov'd* True; it follows, I say, that we may be as perfectly assur'd as that *we are* that the Conclusion is Consequent, and True; and, that sooner, may all the Material World crumble into Incoherent Atoms, or relapse into the Abyss of Nothingness, than that any Conclusion, *thus deduced*, can be False; since, if it could, then that Identical Proposition, on which the Consequence is grounded, would be False; and, so a Contradiction would be True; which falsifies the Metaphysical Verity of Creatures, and of the *Ideas* of them in the Divine Understanding; which would consequently shock the Wisdom, and even the Essence of the *Godhead* it self: For *self-existence* might *not be self-existence* if a Contradiction might be True.

Corol. II. Were that which is said here, and some other main Hinges of Science, which occur in this Treatise, duely consider'd and well penetrated, it might be hoped, that they would to a fair degree cure the Disease of Scepticism, so Epidemical among our late Wits. For, even the worst of Scepticks will grant that an *Identical* Proposition *must be True*; and he may see here, that by this Doctrin both *First Principles* must be *such*, and that all force of *Consequence* also (which two are the main Pillars of Science) must be *grounded on such*.

7. This last §. requires and supposes that none of the *Words* which are to signifie any of the three Terms be taken there Equivocally. For, if any of them be taken now in *one* sense, now in *another*, that is, if any of these words have, in the same Syllogism, *two* Meanings or Notions; then, however the Sound or Character of that Word may seem the same in a *Verbal* Syllogism, and make a show of its having only *Three* Terms; yet, in a *Mental* Syllogism, (which only is Formally and Essentially such) there are *Four* Notions of the Extremes, that is, *four Terms*. Wherefore such a Discourse (if it be indeed at all such, and not a meer Blunder) is a *Paralogism*, or a False and Deceitful Argumentation, and not a *Syllogism*; because a Syllogism ought to be apt to prove the Connexion of *Two* Terms by their joint-Connexion with a *Third*, and therefore can consist but of *Three* Terms.
8. It is most requisite also that a Syllogism be fram'd after the *best Manner*, which is done by disposing all its parts in such a *Figure* as may make the Connexion of the Middle Term with the other Two *most Clear*; For, we experience that the placing the Words *apthly*, renders every Common Discourse clearer; much more is it requisite in so Nice and Exact a Discourse as a *Syllogism* is, where there are but *Three* Terms to be placed.
9. To place the Parts of a Syllogism *right*, no more is requisit but to place rightly the *Middle Term* in the Premisses. For, the Proposition that is to be Concluded or Prov'd, and consequently the order of its Terms, is given us to our hands, and already determin'd; and the *Copula* must of necessity still keep its own place. So that nothing more can be requir'd but to place *rightly* the *Middle Term* in the *Premisses*; for, that done, the Place of the other two Terms, conjoyn'd with it there, must (as will appear presently) be likewise necessarily determin'd; and, so, *all* the parts of the Syllogism will be placed and ordered as they ought to be.

10. The *Middle Term* is then placed rightly, when 'tis placed *in the Middle*, or between those other two Terms which it is to conjoyn with one another. This is evident by the Light of Nature; for, were it not *joyn'd to both*, it could not be the Means of *conjoyning* them; nor could it be joyn'd to both, unless its Notion were in the *middle* or *between both*.
11. Hence the *Middle Term* must be *Inferiour* in Notion to *one* of those Terms, and *Superiour* to the *other*. For, since (as has been shown above) Notions do arise orderly from the Inferiour to the Superiour ones; it follows, that that Notion is in the *Middle* between other two which is Inferiour to *one* of those Notions and Superiour to the *other*.
12. Wherefore the middle Term must, in the two Propositions which are the Premisses, be the *Subject* to *one* of the Terms, and the *Predicate* to the *other*. For, since the middle Term must be Inferiour in Notion to one of those Terms, and Superiour to the *other*, and the Inferiour or Narrower Notion, by virtue of its place,¹⁸⁵ is to be the *Subject*, and the Superiour and Larger Notion the *Predicate*; it follows that the Middle Term must be the Subject in one of the Premisses, and the Predicate in the other.

For Example, in this Syllogism.

Virtue is Laudable,
 Courtesy is a Virtue, therefore
 Courtesy is Laudable.

The Proposition (Courtesy is Laudable) is the Conclusion, and to be Proved; and so, the placing of it's Terms is already determin'd: The middle Term [Virtue] is plac'd *in the middle*, being *subject* to, or *under* Laudable in the *Major*, and *above* or *Superiour* to Courtesy in the *Minor*.

13. Tho' the place of the Terms of the *Conclusion* were not determin'd, yet the reason lately given would determin it. For if Laudable be *above* Virtue, and Virtue *above* Courtesy, it must follow *à fortiori* tht Laudable must be above Courtesie, which is the lowest of the Three; or, that *Laudable* must be the *Predicate* in the Conclusion.
14. Wherefore the *other* two Figures are Unnatural and Monstrous; For, since Nature has shown us that what conjoyns two Notions ought to be placed in the middle between them, it is *against* Nature and Reason to place it either *above* them *both*, as is done in that they call the *Second Figure*, or *under* them *both*, as is done in that Figure they call the *Third*.
15. Hence no determinate Conclusion can follow in either of the last Figures from the disposal of the parts in the Syllogism: For, since as appears § 13. the Extreme which is predicated of the middle Term in the *Major*, has thence a title to be the Predicate in the Conclusion, because it is above the Middle Term, which is the *Predicate* or *above* the *other* Extreme in the *Minor*; it follows that, if the Middle Term be *twice above* or *twice below* the other two Terms in the Premisses, that Reason ceases; and, so, it is left indifferent which of the other two Terms is to be the Subject or Predicate in the Conclusion; and the Indeterminate Conclusion follows not from the Artificial Form of the Syllogism, but meerly from the material Identity of all the three Terms; or from this, that their Notions are found in the same *Ens*. Wherefore from these Premisses,

Some Laudable thing is Virtue,
 Courtesy is a Virtue,
 Or from these,
 Virtue is Laudable,

¹⁸⁵ B. 2. L. 1. S. 14.

Some Virtue is Courtesy,
The Conclusion might either be, Therefore
Courtesy is Laudable, or
Some Laudable thing is Courtesy.

So that to argue on that fashion, or to make use of these awkward Figures, is not to know certainly the End or Conclusion we aim at, but to shoot our bolt at no determinate Mark, since no determinate Conclusion can in that case follow.

16. From these eight last §§. it is manifest that nothing can be more Unnatural and more Inartificial, than to invent two *other* Figures, and then to study how to lay many Elaborate Rules how to *reduce* them again to the *First*. For, it will appear by our last Discourse, that this is no better than to use our Wits to contrive how to *Erre* and *goe out of the way*; and, when that's done, to take twice as much pains in shewing how we may *get into it again*; whenas we might easily have *stay'd* in the *right* way when we were *in it*, and have sav'd all that Mis-spent Labour.
17. Wherefore, if an Adversary puts a Syllogism in *Baroco* or *Bocardo*, or in any Mood of the two last mishapen Figures, the Respondent ought, by the Reason here given, to shew him plainly, and then tell him roundly, that his Syllogism is Illogical and Inartificial, and require of him to mend it. And, if the Opponent, to justify his proceeding, alledges Universal Custom of the Schools, then to tell him smartly that *no Authority, Custome or Prescription ought to be allow'd as a Just Plea against Reason in Matters subject to Reason*; And that *Art ought to perfect, and not to pervert Nature*. Nor can the Arguer have any Just Reason to make use of those two last Figures, since (as will shortly be shown) *all* Questions *what ever* may be prov'd in the *First Figure*. Nay, he will be convicted of seeking to *blunder* and *obscure* Truth, and not to *clear* it; since he leaves a plain and easie path of Reasoning for an Intricate and Perplext one.

Lesson II. *Of the several Manners or Moods of a Syllogism; and of the Laws of Concluding.*

1. THE Right Figure or *Position* of the *Lesser* Parts of a Syllogism, (*viz.* it's *Terms*) being shown to be but *one*, and the force of it's *Consequence*, in which consists it's Essence, being still the same; the Variety of Syllogisms, or the several sorts or *Moods* of them can only be taken from its *greater* Parts, the Propositions, or from something belonging to them. This is manifest, because there is nothing, besides *these*, from which the Distinction of those Moods can be taken.
2. The *Moods* of Syllogisms may be in part taken from the *Quantity* of the several Propositions. For, since the Essence of a Syllogism, or the force of Consequence does consist in the Connexion or Identification of *Two* Terms with a *Third*; and, to be *universally* or *particularly* Identify'd, are evidently divers *Manners* of being Identify'd; 'Tis manifest that the variety of Syllogisms may be in part taken from the *Quantity* of the Propositions.
3. The *Moods*, or several manners of Syllogisms must be taken also *in part* from the Propositions being *Affirmative* or *Negative*: For, since Affirmative Propositions do express the Agreement of the two Extremes with the Middle Term, and those which are Negative their Disagreement with it; and this Agreement or Disagreement with it have equal Influence upon the *Consequence*, and diversifie it, or make it follow after a *diverse manner*; it follows that the *Moods* or *Manners* of a Syllogism must also be taken from those Propositions being *Affirmative* or *Negative*.

4. As it is self-evident that *the same is the same with it self*; so it is *equally* self-evident that what is Different or *Diverse* from another is *not the same* with it, or different from it. This is Evident both by the Rule of Contraries, as also because this Proposition is Identical¹⁸⁶ as well as the other.
5. The Quantity and Quality which ought to be in the several Propositions of the Syllogisms of each Mood, are by a kind of Art of Memory, signifi'd by these four words, *Barbara, Celarent, Darii, Ferio* in which the three *Syllables* correspond to the three Propositions found in a Syllogism; and the *Vowels* in each Syllable tell us the Quantity and Quality of each Proposition. A and E signifying an Universal Affirmative and Negative; I and O a Particular Affirmative and Negative.¹⁸⁷
6. We are also to reflect on what was shown above, that, in the way of Predication, an Universal is consider'd as a kind of *Whole* in respect of the Particulars contain'd under it, and the Particulars are conceiv'd to be *Parts* of that Whole; whence an Universal Proposition expresses the Identity of its Terms in the *Whole* or *Totally*, and a Particular one but in *part*.
7. The distinction of *Moods* may also in some part be taken from the *Conclusions* in the several Syllogisms. For, since those Conclusions are all of them Propositions, and all Propositions (Singular ones excepted, as not belonging to Science) must be either Universal Affirmatives or Universal Negatives, Particular Affirmatives, or Particular Negatives; and the *Vowels* in the *last* Syllable of those four Words do answer to all these several *Conclusions*, and the two *Vowels* in the two *former* Syllables of each word do tell us of what Nature the *Premises* must be, if we would conclude *such* Propositions: it follows that the number of those several *Moods*, or several manners of Concluding, may, in some sort, be taken from the Propositions that are to be prov'd or *Concluded*, as from the *End* we aim at, and by which we are to contrive or cast our *Premises*.
8. Hence, as we shew'd before there ought to be but *one* Figure, so 'tis shown here, that there can be no more *Moods* of that Figure Necessary but these Four now mentioned; because these do fully direct us (as far as concerns the Form of a Syllogism) how to *Conclude* or Prove all the several Questions or *Theses* that can be ask'd, or propos'd to be Prov'd. And, since all these *Moods* do belong to that which they call the *First Figure*, hence also, by the way, is farther confirmed what we prov'd above, that there cannot need, and therefore ought not to be, any more than *that one* Figure.
9. But, because in treating of the *Method to Science*, we ought not to deviate from that Method our selves while we are shewing it to others; hence, we become oblig'd not barely to tell the

¹⁸⁶ Corrected per errata sheet. Original: "Proposition is Indentical."

¹⁸⁷ Table 1. Sergeant's use of medieval mnemonics for logically valid syllogisms.

Mnemonic	Quantity and Quality	Example
<u>Bar</u> bara	A – Universal Affirmative A – Universal Affirmative A – Universal Affirmative	All red pandas are mammals. All mammals are animals. All red pandas are animals.
<u>Cel</u> arent	E – Universal Negative A – Universal Affirmative E – Universal Negative	No mammals are fish. All red pandas are mammals. No red pandas are fish.
<u>Dari</u> i	A – Universal Affirmative I – Particular Affirmative I – Particular Affirmative	All red pandas are mammals. Some pets are red pandas. Some pets are mammals.
<u>Ferio</u>	E – Universal Negative I – Particular Affirmative O – Particular Negative	No red pandas are fish. Some pets are red pandas. Some pets are not fish.

Reader, as it were by rote, how the Syllogisms in each Mood *do* conclude, or by pretty Inventions to help their *Memory* how to do this; but we are bound to inform their Understanding, and to shew them *why* such Premisses must necessarily infer such Conclusions as those four Words do hint to us; or, which is in a manner the same, *why* or *for what reason* such Conclusions *must* follow from such Premisses.

10. As the substance of the Connexion of the Terms in the Conclusion depends wholly on the Connexion of them with the Middle Term in the Premisses, so the *Degree* of their Connexion in the Conclusion must depend on the *Degree* of their Connexion with it in the said Premisses. This is evident, because all the Connexions those *Extremes* have, is from their Connexion with the *Medium*; wherefore, if they be *more* Connected with the Middle Term in the Premisses, they must be *more* Connected with one another in the Conclusion; if *less*, less Connected.
11. Hence, from two Premisses which are both of them Universal Affirmatives must follow a Conclusion *Universally Affirmative*; because the Middle Term in the Premisses was *Totally* or *Universally* the same with *one* of the *Extremes*, and the *other* Extreme *Totally* or *Universally* the same with it; whence follows, that those Extremes must be *Totally* or *Universally* the same with one another in the Conclusion. For example.

Bar- Every Body is Divisible,
 ba- Every Atome is a Body, therefore
 ra- Every Atome is Divisible.

12. When one of the Extremes is Universally *deny'd* of the *Medium* in the *Major*, and the *Medium* Universally *Affirm'd* of the other in the *Minor*, the Conclusion must be an *Universal Negative*. For, were the Extremes to *any* degree the same in the Conclusion, when one of them is *Totally the same* with the *Medium* in the *Minor*, and *Totally not the same* with it in the *Major*, it would follow that the Middle Term would be (in part at least) *not the same with it's self*, as being in part *Identify'd* with two Extremes, which are *not* Identify'd *at all*. For Example.

Ce— no Indivisible thing is Corruptible,
 la— Every Spirit is an Indivisible thing, therefore
 rent— No Spirit is Corruptible

13. When one of the Premisses affirms Universally, the other Particularly, the Conclusion must be a *particular Affirmative*. For tho' one of the Extremes be Universally or *Totally* connected with the *Medium*, yet the other Extreme is but Particularly or *in part* Connected with it: and so, it can never infer the *Total* Connexion of them, nor can the Conclusion be an Universal Affirmative¹⁸⁸ because they were not *to that degree* Connected with the *Medium* in the Premisses. For Example,

Da— Every Good Man is Charitable,
 ri— Some Rich Man is a Good Man; Therefore
 i— Some Rich Man is Charitable.

14. When one of the Extremes is Universally *deny'd* of the *Medium*, and the *Medium* particularly affirm'd of the other Extreme, the Conclusion must be a *particular Negative*. For, were the

¹⁸⁸ See §. 10.

Terms *Totally* the same in the *Minor*, as it was in *Celarent*, then the Terms of the Conclusion had been *not at all* the same, but *Universally deny'd* of one another as it was there; wherefore, being but *in part* the same in the *Minor*, they can only be *in part* not the same in the Conclusion. For Example,

Fe- No harmful thing is to be used,
 ri— Some Mirth is a harmful thing, therefore
 o— Some Mirth is not to be used.

From these Grounds, the Reason may be given for diverse Maxims or Axioms, commonly used by Logicians, concerning this present matter; telling us *when* and *how* the Conclusions follow or not follow; such as are,

15. *From two Universal Negatives nothing follows.* Because neither Extreme is Connected with the *Medium*, either *in whole* or *in part*; nor, from this that two Notions are different from a Third, is it consequent that they *are* or *are not* the same thing with one another. Wherefore, a Syllogism being such an Artificial and perfectly order'd Discourse, that, putting the Premisses to be True, the Conclusion must be True also, such as *this* (and the same may be said in part of those other that follow) wanting that due Connexion of the Terms which is Essential to a Syllogism; are not *Syllogisms*, but *Paralogisms*, *v. g.*

No Brute is Rational
 No Man is a Brute; Therefore
 No Man is Rational

16. *From two particular Propositions nothing follows.* For a Particular Proposition expressing but *some part* of the whole Notion of the Middle Term with which it is joyn'd, and there being *more parts* in that whole Notion, *one* of the Extremes may be united with it according to *one part* or Consideration of it, and the *other* according to *another part*; in which case it cannot follow they are united *at all* with one another in the Conclusion: *v. g.*

Some Man is a Fool.
 Some Wise Man is a Man, Therefore
 Some Wise Man is a Fool

Where *some Man*, the *Medium*, is taken for a diverse Part as it were, of Man in common; and so the Medium, as considered according to it's Parts which are *Diverse*, is not *One* it self: nor, consequently, can it unite others by it's being *one* or *the same with it's self*, which is the Fundamental Ground of all Consequence.

Corol. Hence follows immediatly that one of the Premisses must be an *Universal*, else nothing is Concluded. Which deserves Remarking, this being useful to confute some *Wrong* Methods to Science.

17. *A Negative Conclusion cannot be deduced from Affirmative Premisses.* Because, if the Extremes were *the same* with the *Medium* in the Premisses, and *not the same* with one another in the Conclusion, it would follow that the Middle Term is *the same* and *not the same with it self*; or else, that the Connexion or Inconnexion of the Terms in the Conclusion is not to be taken from the Connexion or Inconnexion with the Middle Term in the Premisses, which utterly subverts all Ground of Discoursing.

18. *The Conclusion cannot be Universal, unless the Medium be once taken Universally in the Premises.*
Because, otherwise, both the Premises would be *Particulars*; from which (as was proved §. 16.) no Conclusion can follow.
19. *The Conclusion always follows the worser part*; that is, it must be Negative or Particular, if either of the Premises be such. The reason of the former is, because, if either of the Premises be Negative, then the Medium is not the same with *one* of the Terms of the Conclusion; and, therefore, it can never be the cause of Identifying them *both*, which is done by inferring an Affirmative Conclusion. The reason of the latter is, because if it be only *in part* the same with one of the Extremes, it cannot prove those Extremes to be *wholly* the same, which can only be done by their being united with it *universally*; for it can give no greater degree of Connexion to the two Extremes than it self has with them, as was shown §. 10.
These Maxims or Positions being shown to be Rational, and necessarily Consequent to the Grounds of Rigorous or Syllogistical Discoursing, we proceed in our intended Method.
20. A *Singular* Proposition may supply the Place of a *Particular* one in the *Minor* of *Darii* and *Ferio*. For a *Singular* or Individual Notion is, in reality, some part of the Common Notion; and the words [Some Man] or [Some Men] do signify some Individual Man, or Men; wherefore, abating the manner of the Indeterminate Expression, the *sense* is the same in both. Hence these are right Syllogisms and Conclusive.

Da- Every Philosopher resolves Effects into their Proper Causes,
ri — *Aristotle* is a Philosopher; therefore
i — *Aristotle* resolves Effects into their Proper Causes.

Fe- No Man who supposes his Grounds *gratis* is a Philosopher,
ri — *Epicurus* supposes his Grounds *gratis*; therefore,
o — *Epicurus* is not a Philosopher.

21. Expository Syllogisms, that consist of Singular Propositions are true and perfect Syllogisms. For, since a Syllogism is such a Discourse as from the Clear Connexion of a Middle Notion with the two Extremes inferrs the Connexion of those Extremes with one another, and Singulars have *their Notions* as well as Universals, and may be connected with one another; it follows that (in case these Discourses be not Faulty in other respects) they cannot, from the regard of their consisting wholly of Singulars, be degraded from being true and perfect Syllogisms. v. g.

Tom Long brought me a Letter
This Man is *Tom Long*; Therefore
This Man brought me a Letter.

22. Such Syllogisms do not advance Science. For, since we experience that our Soul is not only Capable of having Universal Notions, but that 'tis her peculiar Nature to *Abstract*, that is, to draw Singular Notions to Universal ones; and, since Notions are the *Ground* of *all* Knowledge, and, consequently, Universal Notions of Universal Knowledges; and Science is a Perfection of our Mind according to her Nature; and, therefore, does dilate and enlarge her Natural Capacity by Extending it to the Knowledge of *Universal* Truths: Wherefore, since, on the other side, an Expository Syllogism, as consisting of *Singulars*; can Conclude, or gain the Soul knowledge of no more but some *one Singular*, it Cramps, Contracts or makes *Narrow* her

Natural Capacity; whence it follows, that such Syllogisms are far from *Perfecting* the Soul, or from generating *Science*, which is her *Natural Perfection*.

23. Hence follows, that such Syllogisms are good for *Use* and *Practise*, and only for That: For, since such Syllogisms are True Discourses, and, therefore, are not *wholly in vain*, but must be good for *something*; Wherefore, since they conduce not at all to *Speculation* or generating *Science*; it follows that they must be good for *Use* or *Practise*, and for that *only*. Again, since all Outward Action, Use and Practise is wholly employ'd about such Subjects as *Exist*, and nothing Exists but *Suppositums*, *Individuums*, or *Singulars*; it follows, that Singulars are the *Proper* Subjects of Artificers, or such as work Outwardly upon *Determinate* Matters; and the Knowledge of the Nature of those Singulars is Useful and Necessary for such men; for, by this, they know how to *work* upon those Subjects and Manage them accordingly. For example, an Architect by knowing the certain Quantities and Proportions of his Materials (Wood, Brick, or Stone,) may build a House; but he cannot, without the Science of Mathematicks, have a Clear knowledge (out of the Natures of those Quantities) *why* it must be so *always*, though it *hit* to do so once, or *hic & nunc*.¹⁸⁹

Note that *Practical Self evidence* may oftentimes (as was shown formerly) in a great Measure supply here the place of *Science*, and Operate like it; though it can never arrive to that *Clear* and *Grounded* Penetration into the *reasons* of such, Actions as is found in Scientifical Men.

24. Hence, the way of arguing by *Induction* can never breed *Science*. First, because out of pure Particulars nothing follows. Next, because to Argue from some *Part* or *Parts* to the *Whole*, is Inconsequent. Wherefore, we cannot thence Inferred an *Universal* Proposition or gain Science of any *Nature*, unless we could enumerate all the Singulars in the World, that is, *all the Parts* so to make up an Equivalent to the Whole, which is Impossible.
25. Hence follows immediatly that some *Universal* Proposition must be taken in if we would Conclude any thing from a *Singular* one. This has been amply Show'd above; and, accordingly, in Mathematicks *Universal* Maxims and Axioms use to be first laid, without which nothing in any Subject can be known scientifically.
26. Further, 'tis collected from our former Discourse that *Hypotheticall* or Conditional Syllogisms are, in proper Speech, no Legitimate Syllogisms; nor, consequently, can they generate *Science*, but by seeing, in common and confusedly, they are the same in sense with *Categorical* ones. For, since we cannot see Evidently the Truth of any Conclusion or have *Science* of it, but by seeing Evidently the Connexion of the Two Extremes with the Middle Term; and, this cannot be seen Evidently unless all the Terms be postured in their *right place*, as is done in the First Figure; therefore, since neither this Clear Position of the Terms, nor any thing like it, is found in Hypothetical Syllogisms, they are not in proper Speech, Syllogisms; any more than are some sort of more concise Rhetorical Discourses, which have oftentimes *virtually* the sense of a Categorical Syllogism in them, though the parts of it be disjoyned and out of that due Order that ought to be in a Syllogism.
27. Wherefore all *Hypothetical* Syllogisms ought in Disputes to be reduced to Categorical ones. For, the *Major* neither absolutely affirms nor denies; and therefore cannot be absolutely either affirm'd or deny'd. Next, the same *Major* proposition has a kind of Consequence in its single self; and so is a kind of imperfect Syllogism even taken alone. 3ly. It does not identify it's Terms; and, lastly, unless they be reduced to Categorical ones, the Figure of its parts cannot clearly appear.
28. The way to reduce them is to vary the phrase or tenour of the Words, still keeping the same sense.

¹⁸⁹ Corrected per errata sheet. Original: "hic est nunc." Moreover, the Latin means, "here and now."

For example this Hypothetical,

(If Science be a perfection of the mind it ought to be sought after.

But Science is a perfection of the Mind; Therefore Science ought to be sought after.)

May easily be reduced to a Categorical Syllogism in *Barbara* thus.

What ever is a perfection of the Mind ought to be look'd after.

But all Science is a perfection of the mind, therefore

All Science ought to be look'd after.

29. For some of the same reasons *Disjunctive* Syllogisms ought to be reduced to *Categorical* ones, as

It is either Day or Night.

But it is not day;

Therefore 'Tis Night.

30. Which may be reduced to a Categorical in *Darii* thus.

Da- What ever time is not Day is Night

ri — This present time is not Day, therefore

i — This present time is Night.

Lesson III. *Of the Matter of a Conclusive Syllogism; or, what Middle Term is proper for Demonstration.*

1. THE *right Manner* of framing a Conclusive Syllogism, or of drawing a *Consequence* right, which is the *Form* of it, being thus laid open from its Grounds; there remains no more to be done as to the Attainment of Science, but to shew what is the proper *Matter* of such a rigorous Discourse: For, since the *Matter* and *Form* do constitute the whole Essence or Nature of every thing; if both these be made known, there can nothing more be wanting for us to conclude or prove Evidently; which is the sole end and aim of the *whole* Art of Logick. Wherefore, all the elaborate Rules that occur in common Logicians, which conduce not to this end, are Frivolous, and meerly invented for vain Show and Ostentation; and are so far from advancing Science, that they pester the way to it by making in more Perplex and Intricate, which obstructs the attainment of it.
2. Such a *Middle Term* as is Proper to conjoin the other two is the *only Matter* of a Conclusive Syllogism. For; since there can be in a Lawful Syllogism but Three Terms, and Two of them are given to our hands in the *Thesis* to be proved, and the right Placing of those Terms belongs to the *Form* of it; there is no Consideration left that can be conceiv'd to be the *Matter* of it, or which, joyn'd with the Former, makes it Evidently Conclude, but such a *Middle Term* which is apt to conjoin the other Two in the Conclusion.
3. Wherefore, such a Term being found and order'd in the *right Form*, nothing more can be requir'd to gain Science of any Proposition whatever. For, this done, the Conclusion so necessarily follows, that it is as Impossible it should not be True as it is that an Identical Proposition should be False; or (which is the same) that a Contradiction should be True, which are the highest Impossibilities. Wherefore, since to have *Science* of any thing, is to know evidently the thing *is so* and *cannot but be so*, and this is known by the means now mentioned; it follows that no thing more can be requir'd to gain Science of any Proposition whatever.

4. Hence such a Syllogism is *Demonstrative*, and to produce or frame such a Syllogism is to *Demonstrate*: For, since a Demonstration bears in its Notion that it must be the most Certain and most Evident Proof than¹⁹⁰ can be; and *no* Proof can be more Certain than that which renders it absolutely *Impossible* the Conclusion should not be True; nor more Evident than that which engages immediately the highest Evidence of an Identical Proposition; and all this (as has been prov'd) is found in a Syllogism consisting of *such* a Matter and *such* a Form, it follows that such a Syllogism is a *Demonstrative* one, and that to Prove by such a Syllogism is to *Demonstrate*.
5. All *Middle Terms* that are Proper for Demonstration must be taken Originally from the *Nature* of the *Thing* or from it's Metaphysical Verity, For, since all Inferiour Truths are therefore such because they are finally resolvable into Identical Propositions which are the First Truths; that is, because those First Truths are *virtually* in them; and Identical propositions are therefore true (because the thing *is what it is*, in which consists its Metaphysical verity; it follows that the Verity of all Inferiour Truths (such as are the Premisses) on whose Truth all Demonstration and Truth of the Conclusion necessarily depends, is taken originally from the Metaphysical verity of the Subject and Predicate. Again, since (as has been shown) the force of all Consequence is grounded on this that the Middle Term *is the same with it's self*, or *what it is*; It follows that the Force of all Middle Terms that any way conduce to Demonstration must be taken originally from the Nature of the Thing, or from it's Metaphysical Verity.
6. We can have no Demonstration of the Whole Thing taken *in gross*. For, the Whole Thing, as was said, may be consider'd diverse wayes, and so ground many Notions, and contains in it confusedly what corresponds to all those Notions we can frame of it; since then we cannot have *at once* a Distinct and Clear knowledg of what corresponds formally to any two Notions, it follows that we can have no Demonstration (or Distinct and Clear Knowledg) of the whole thing taken *in Gross*.
7. Wherefore, if we would demonstrate the Nature of the Thing according to what's Essential to it, we must take in pieces, Unfold, Explicate, and, as it were, Detail the Thing into it's *Essential Parts*, that so we may look more clearly thro' it's Nature or Essence; which is done by *Definitions* of the *Whole* first, and then of it's several Essential Parts, till we come to those Parts of it which are most known, or to the Common Head. For, we experience that we have but a Confused Notion of a Thing while it is exprest but in *One Word*; but, when Many Words are used to tell the Nature of it, our knowledg of it grows Clearer, and still more Clear and Distinct after each of those Words also has It's Meaning told, or is *Defind*. For Example, ask what such a Thing is, it is answer'd a *Man*; which gives us, indeed, a True but a Confused Knowledg of it. Whence we may have occasion to ask *farther* what is a *Man*? and the Answer is a *Rational Animal*; which clears the Notion of Man to a fair degree. But, the word *Animal* is also Confused, tho' less than *Homo* was; wherefore, to gain a more Distinct Knowledg of it, we set our selves to define *It*, and we find it to be a *Living* or Self-moving Thing that is *Sensitive*, or which is mov'd by Impression on the Senses. And thus still to gain Clearer Light of more and more Essential Notions or Considerations of *Man*, we may drive on farther the Definitions of the ascending *Genus* till we come to *Ens* or *Substantia*, which is the Supreme in that Line, (and the Clearest of any except *Existence*) which stints our quest. By which way of defining still upwards, we gain many Distinct Notions of *Man's Essence*, which were before confusedly blended in the single word [*Man*]. And, were the Collateral Differences, which constitute the Inferiour notions to *Ens*, Defin'd too as well as each *Genus*,

¹⁹⁰ Corrected per errata sheet. Original: "than."

descending in a right Line from it, we should gain a most Distinct and clear Essential Notion of *Man*.

8. It remains to define the Difference [*Rational*] which is the other Essential Notion that compounds the Entire Notion of *Man*. If we ask then what *Reason* is, it will be answer'd that it is a Faculty of Deducing some new knowledg out of foregoing ones; or (to express it in the Language of Art) to draw a Proposition call'd the *Conclusion* from two other true ones call'd the *Premises*. To know more distinctly what this Definition means, we may ask what a *Proposition* is, and what *True* means, and it will be answered that a Proposition is defin'd, A Speech by which one Notion is Affirm'd (or Deny'd) of another. Next, ask what a *Notion* is and we are answer'd by the Definition of it, that a Notion is *the very Thing as conceiv'd by us*, or, the Thing as existing in our Understanding. Ask what *True* is, it is answer'd, it is the *Conformity* of what is in our *Mind* to the *Thing* without us. Ask what *Affirming* is, it is answered, it is the *Comparing* one of the Terms of the Proposition to the *other*, or seeing they both agree in the same *Ens*. Ask what *Deducing* is, and 'tis answer'd 'tis a *Comparing* two Terms to a *Third*, and seeing them to be the same *with it*, and thence the same with *one another*; All which being known, we shall have gain'd the Distinct and Clear Notion of *Reasoning* or *Exact Discoursing*, and consequently of *Rationality*, the Power which produces that Act.
9. Hence Proper Middle Terms may be taken from the Line of *Ens* (and the same may be said of any other Common Head) for Demonstrations of any Truth that belongs Essentially to any Notion or Nature in those respective Lines. For they are taken from the Definitions, afforded us by the *Genus* and *Difference* in each Line, both parts of which Definitions are *Essential*.
10. Tho' when it happens otherwise it wrongs not the Demonstration, yet this is best done when the Superiour Notion is predicated of that which is the *Immediate* Inferiour, and that Inferiour of the Notion *immediately* under it. For then the Middle Term is not by our Choice or Ordering, but *ex naturâ rei*¹⁹¹ placed in the middle between them. as

Every Animal is a Living thing,
Every Man is an Animal, therefore
Every Man is a Living thing.

Every Man is an Animal.
Peter is a Man, therefore
Peter is an Animal.

10. ¹⁹²The same may be said when any of the *Intrinsecal* Differences is used for the Middle Term; even tho' it be *Remote*, in the same Line, from one of the Extremes; as

Every Sensitive thing is an Animal,
Every Worm is a Sensitive thing; Therefore
Every Worm is an Animal.

The same holds in all the rest, whether they be Generical or Differential Notions; whether Immediate or Mediate. For, the same Reason concludes for *one* as for the *other*. viz. because

¹⁹¹ Latin: 'According to the nature of the thing.'

¹⁹² There is no section labeled '11.'

all such are *Essential* Predicates; and, being found in the same Essence, are not only Identify'd in the same Thing *materially*, as is done when in a true Proposition the Subjects and Predicates are in Distinct Lines as *Æthiops est niger*,¹⁹³ but being, either expressly, or by consequence, Included in some part of the Definition, the *Formality* of one is, in *some* part, the *Formality* of the others; as the Notions of *Ens*, *Corpus*, *Mixtum*, *Vivens*, *Sensitivum*,¹⁹⁴ are found *in part* to be Formally in the Entire Notion of *Homo*.

The Art of *Dividing* right is requisit to make exact Definitions. Because the *Genus* and one of the *Proper Differences* that divide that Common Notion do constitute and integrate the Definition.

Note that the *Genus* must be Immediate; because, otherwise, it confounds the Intermediate Notions with the *Species*; and, so, gives a less-distinct Conception of the Notion to be defin'd. Hence, *Ens* or *Vivens Rationale* is not a good Definition of *Homo*; because *Ens* and *Vivens* do but Confusedly, or *in part*, speak the Notion or Nature of *Animal*. Nor is *Rationale* the Proper and Immediate Difference of *Ens* and *Vivens*.

12. Hence *Dichotomy*, or a Division made by *two* Members, is the *best*. For, in such a Division, the Parts, if rightly exprest, may be most easily seen to be *Equivalent* to the Whole.

That Dichotomy in which the Members are *Contradictory* is the very best Division that can be imagin'd. As that of *Ens* into *Divisible* and *Indivisible*; (that is not-Divisible) of *Animal* into *Rational* and *Irrational*; (that is not-Rational) of *Number*, into *Odd* and *Even* (or not-Odd) For, since there can be no Middle between Contradictories, it is Evident there can be no more Members than *Two*; and, consequently, that those Two parts are Equivalent to the Whole.

13. The *Whole* Definition, and *All* the Members of a Division that is rightly made, (if taken together,) may be a proper *Medium* for a Demonstration. For both of these, taken together, are Equivalent to the *Whole* Notion Defin'd and Divided; and may as well be a Middle Term as that Whole Notion exprest by *one* word, as by *Man*. *Animal*, &c. v. g.

Every Rational Animal is capable of Science,
Every Clown is a Rational Animal, therefore
Every Clown is Capable of Science.

What-ever is either Even or Odd is capable of Proportion,
All Number is either Even or Odd, therefore
All Number is capable of Proportion.

14. Out of what has been proved 'tis seen that *Definitions* are one of the *Best Instruments* or Best Means to attain *Science*. For, since all Knowledg is taken from the Nature of the Thing; and, therefore all *Distinct* and Clear Knowledg (such as *Science* ought to be) from the nature of the Thing *distinctly* and *clearly* represented; and this (as has been shown) is done by Definitions; it follows that *Definitions* are one of the *Best Instruments* or *Best Means* to attain to Science.
15. Another use to be made of Definitions in order to Demonstration is this; when two Notions, by being *Remote*, seem in a manner *Disparate*, and, so, the Proposition is *Obscure*; we are to pursue home the Definitions of *each* of the Terms till something that is *Formally Identical* appears in *both* of them, Which done, all farther disquisition ceases, and the Point is demonstrated. For example; If we would prove that Virtue is Laudable, we shall find that the word [*Laudable*] signifies [*deserving to be spoke well of*] and Practical Self-Evidence, as well as

¹⁹³ Latin: 'An Ethiopian is black.'

¹⁹⁴ Corrected per errata sheet. Original: "Sensituum."

Reason, telling us, that, our Speech being nothing but Signes agreed on by Mankind to express their *thoughts*, that thing deserves to be *spoken well of* which deserves to be *thought well of*; and that what's according to the true Nature of him that speaks or thinks, or to true Reason, deserves to be judg'd by him *Right and Good*, that is, *thought well of*, To which add that *Virtue* is nothing but a Disposition to Act according to *True Reason*, it comes to appear that [*Virtue*] and [*Laudable*] have something couch't in their notions that is *Formally Identical*; and that this Proposition, [*Virtue is Laudable*] is full as Certain as that *What's according to right Reason is according to right Reason, or what's Laudable is Laudable*; which seen, perfect Knowledg is had of the Truth of [*Virtue is Laudable*] that is, 'tis Evidently¹⁹⁵ Concluded or Demonstrated.

Note hence that, in Resolving Truths thus into first Principles, *Rigorous* Definitions do not alwayes need, but Explications of the two Notions (or of the Meaning of the Words that express the two Terms) may serve, so they be *True and Solid*; since no more is necessary in this case but to resolve the Inferiour Truths, and the Notions that compound them, into Superiour ones. For which reason also Practical Self-evidence, or a Knowledg agreed on by all Mankind in their Natural Thoughts, through Converse with those Natural Objects, is sufficient: For this is a *Solid* Knowledg, tho' it be not lick't into Artificial shape. Whence it may Suffice oftentimes without Framing the Demonstration, coucht in these Discourses, into a Syllogistick Method; unless the *Form* of the Discourse be *Deny'd*.

16. Hence follows, that *All Truths* have at the bottom *Identical Propositions*, and are Grounded on them. For, since all Truths are therefore such, because they are Conformable to the Nature of the Thing, or to *its being what it is*, which is express'd by an Identical Proposition; it follows that all Truths have at the bottom Identical Propositions and are Grounded on them.
17. Hence every *Error* has at the bottom a perfect *Contradiction*, and is grounded on *it*. For, since all Truths, as being Conformable to the Nature of the Thing, are grounded on the things *being what it is*, and so have an Identical Proposition for their *Basis*;¹⁹⁶ therefore, for the same reason, every Error, being a Dis-conformity to the Thing, or a Deviation from its *being what it is*, must be Grounded on this, as its first Principle, that the Thing *is not what it is*, which is a perfect Contradiction.
18. Hence follows necessarily, that, if Art and Industry be not wanting, Every *Truth* is Reducible to a *Self evident* or an *Identical Proposition*, and every *Error* to a *Contradiction*. For, since these (as has been prov'd) are the *Bases* or bottom-Principles of all Truths and Falshoods; and all Inferiour Propositions derive all their Truth or Falshood from the First Truths or Falshoods, that is, from Identical Propositions or Contradictions; it follows that, either *no* Truth or Falshood can be finally *known*, or be *Knowable* or Provable to be *such*; or else they must be Reducible either to Identical Propositions or to Contradictions, as the Tests of their Truth or Falsity.

Corol. I. Hence follows that, all *Learning* being *Knowledge*, those Men only ought to be accounted, Absolutely speaking, True *Schollars* or perfectly *Learned*, who can thus settle Truth and confute Error; that is, thus *Demonstrate* the Conformity of the Position he maintains to the *Nature of the Thing*, or the Disconformity of his Adversaries *Thesis* to the *Essence* of the Subject under Dispute. By which it will appear how Unjustly many Men are esteem'd *Learned*, by the Generality, meerly for their having read a Multitude of Authors: Since the *Former* know the *Truth* of the *Things*, or of the *Subjects* discours'd of; *These* only know it to be True, that such and such Authors, *say* thus or thus. *Those* are such *Schollars* as have *God and Nature* for their *Masters*. These are only the Schollars of *meer Men*; who, if they take not this way, speak out of

¹⁹⁵ Corrected per errata sheet. Original: "'tis the Proposition, Evidently."

¹⁹⁶ Corrected per errata sheet. Original: "Bases."

Fancy, which is Ungrounded, and therefore Various and Inconstant: Whence, such Men of Reading use to fill their Heads with a gallimowfry of thrums ends of Sayings glean'd from diverse Logicians or Philosophers discoursing *thus* or *thus*; but if you put them to *Demonstrate* any point, or to Reduce it to its First Principles, they are utterly at a Loss. A certain Sign they do not, in true speech, *know* any thing.

Corol. II. Were the Method of *Reducing Truths*, as is abovesaid, well settled, *Probability* in Speculatives (which is the *bane of Science*) would be quite dash'd out of countenance, and sham'd out of the Schools. To do which, how highly it conduces to the Advancement of *Science*, is easily discernible by the dimmest Eye.

Lesson IV. *How every Truth is to be Reduced to an Identical Proposition; and consequently, every Errour to a Contradiction; What Consequences follow thence of one Truth being in another; and of the Science of Pure Spirits.*

1. TO Reduce any Truth to an Identical Proposition is nothing but to show clearly that, if you *deny* such a *Truth*, you must, by consequence, deny the *Identical* one which is proper to that Subject, and expresses its *being what it is*. For, since the Reducing Inferiour Truths in any Subject to those which are Supreme or Identical is perform'd by way of *Discourse* or drawing Consequences; and, it is Evident that those Propositions which are *Inferiour* Truths, and the *Supreme* ones cannot be the same *Formally* and *Expresly*; it follows that they can only be the same *Virtually*, or as one Truth is *Included* in another. Wherefore as *Deducing* is nothing but Deriving *downwards* the verity which was in some *Higher* Truths to the *Inferiour* ones; so *Reducing* is the carrying *upwards* or *Resolving* those *Inferiour* Truths into those *Higher* ones on which they Depend, and the showing them to be *by consequence* the Same; or that the Inferiour *Thesis* must needs be True, if the Identical or Supreme one be *so*; and that the Supreme one *cannot* be True, unless the Inferiour one be such *also*: So that the verity of the *Supreme* Truth does *by consequence* stand engag'd in the Patronage of the *Inferiour* one.

Lemma. All Essences consist in an *Indivisible*. For, since Essence is the Form of the *Ens*, and *Ens* that which is *Capable of Existing*, and nothing can *Exist* but that which is Ultimately determin'd in the line of *Ens*, and distinguish'd from all others in that Line; and, any *Essential* Predicate taken away, it wants *Part* of its Essence, that is, *Part* of that which was to constitute it such an *Ens*, and distinguish it from all others, that is, which Determin it to be *This*; it follows that the Notion of *Ens* or *Essence* requires a *Totality* of all its Essential parts: But a *Totality* (since the least part defalkt¹⁹⁷ from it makes it to be *no Totum*) consists in an *Indivisibility*; therefore All Essences consist in an *Indivisible*.

2. Hence an easie way is chalkt out how to Reduce any Truth to an Identical Proposition or any Errour to a Contradiction. For, let but the Subject of the Discourse (*Homo* for example) be *Defin'd*, and the two parts of its Definition be Defin'd *likewise*, and so forwards; we shall have gain'd a clear and distinct Notion of the Subject, and of all its Essential parts. If, then, the Discourse be about the Nature or Essence of *Homo*; all the Divisions of the parts of that Essence, which are *Common* Notions, being (as they ought) made by Contradictory Differences, and this from the Notion of *Ens* to the very Notion Discours'd of; consequently, that Discourse must either evidently *clash* with and *Contradict* some one of those *Essential* Parts, or Agree to them *All*. If it contradicts any *one* of them, then, since Essences

¹⁹⁷ Archaic: 'defalk' meant *to cut off, reduce, or subtract*. Thus, "the least part removed from it makes it to be *no Totum*."

consist in an Indivisible, it does, by consequence, destroy the *whole* Essence of the Subject, and make *homo* not to be *homo*; and, if it Agrees with *All* its parts, then, since, *All the parts* are evidently the *whole*, 'tis by consequence *as Certain* as it is that *Homo* is *Homo*; since to say that *Homo* is an *Ens*, and such an *Ens* as is *Corpus*, and such a *Corpus* as is *Compounded*, and such a *Compound* Body as is *Vivens*, and such a *Vivens*, as is *Sensitive* or an *Animal*, and such an *Animal* as can have *Notions* in it, and can *Compare* one Notion to another, and two to a *Third*, is evidently to say in Equivalent Terms *Homo est Homo*:

3. Another Method of Resolving all Truths into Identical Propositions is to Define both the Subject and Predicate, and to pursue their Definitions till some Notion that is perfectly Identical appears in both; as is Instanced in this proposition [Virtue is Laudable] in the last Lesson §. 15.
4. Moreover, all Conclusions formally *as such*, that is, considering them as Inferred or Concluded, are resolv'd finally into this Identical Proposition, [*The same is the same with its self*] as has been demonstrated above B. 2. L. 3. §. 10.
5. Wherefore, the Method being settled of Reducing to Identical Propositions both *Inferiour* Truths, which are the *Premises*; and, also the Necessity of the *Following* of the Conclusions from their respective Premises, which is the *Consequence*; it is hard to conceive what can be farther wanting to the *Method to Science*; so these Rules be thorowly penetrated, and industriously put in Practice.
6. All Truths *whatever* that concern the Essences of things, if we have but Notions of the Terms of the Propositions which express them, do come within the Compass of this Method, and are *Demonstrable*. For, since *all* Truths, whose Terms we understand, do consist of Notions; and, its not hard to know to what *Common Head* those Notions do belong, nor insuperably hard to *Divide* by Proper Differences that Common Head; nor the less General Notions under that Head, till we come to the very Notions whose Connexion is in question; it follows, that *all* Propositions belonging to *any* Head, are, for the same reason, *equally* Reducible to their Proper *Identicals*; since all the Predicates in the nine last Common Heads, which are Analogically *Entia*, have also their Analogical *Essences*; of which we can have as *clear* and *distinct* Notions as we have of the First Common Head which is properly *Ens*; and, so we can as easily define their Abstract Notions as we can the other, (or rather much more easily) and consequently Reduce them to their Identicals.
7. Hence we can Discourse Scientifically, or have true *Science*, not only of *Quantities*, which are the Subject of Mathematicks; but, with *equal* reason, of *Virtues* and *Vices*, which are the Subject of Ethicks. For, we can equally Abstract the Notions of the several *Virtues*, have a *Distinct* Conception of them, equally *define* them, and by that means equally Reduce them to their Identicals. And the same may be said of other Qualities that affect our Senses very distinctly, as Heat, Cold, Moist, Dry: &c.

Note, that in such as these, if it be too laborious to arrive at their Definitions by dividing the Common *Genus*, as it often happens when the Dividing Members are more than Two, and are not Contradictory to one another; then we may frame our Definitions of them by observing the carriage of the *Vulgar* towards them, or their Sayings concerning them, For such Qualities, being sensible ones, are the Objects of the Senses of *Mankind*, and do imprint Lively and Distinct Notions of themselves *in all men*. Wherefore their *Sayings* being the Effect of the true Notions they have of them, they (if enow¹⁹⁸ of them be collected) must give us the true *Notion* of them; or which is all one, of what they *mean* by the Word that expresses them, which is equivalent in Sense to a perfect Definition. For example, when they speak of

¹⁹⁸ Archaic: a variant of 'enough.'

those Qualities we call *Dry* and *Moist*, we shall observe that they are solicitous lest *Moist* things should squander and run about, and therefore they are careful themselves to put such things in some Receptacle or Vessel that may keep them from doing so; or they bid their Servants do it. On the Contrary, they bid them set *Dry* things on the Cupboard, or on a Shelf; and never put them in a Vessel, or be at the needless labour of pounding them into a Pot or Tub, out of fear they should squander about. Which sayings and behaviour of theirs gives us the Definitions of both those Qualities; *viz.* that *Moist* is that which *difficultly keeps its own bounds* or Figure, and *is easily accommodated to the bounds of another thing*; and *Dry* is that which *easily retains its own bounds* or Figure, and *is Difficulty accommodated to the bounds of another*; which are the very Definitions, which that great Observer of Nature, *Aristotle*, gives us of those two Qualities.

Note II. Whence we may, with a humble Acknowledgment and Thanks, reflect on the Infinite Goodness of the *God* of Truth, who unenviously bestows knowledge on all, who will dispose themselves to receive it; that, where-ever Art, by reason of our Shortness, is at a plunge, he supplies it by Practical Self-evidence, or the naturally instill'd Knowledge of the Vulgar: whence it is a high Pride in the greatest *Men of Art*, to conceit that they are above being still the *Children of Nature*; whereas 'tis the best Title they have to True and *Solid* Learning. — *Sus Minervam*¹⁹⁹ —

8. All Conclusions are *virtually* in the Premisses; For, since the Premisses, by Means of the *Middle Term* and the *right Placing* of it, have in them the whole force of the *Consequence*; and the Consequence cannot be of *nothing* but must be of some Determinate Proposition, which can be nothing but the *Conclusion*; it follows that all Conclusions are *virtually* in the Premisses. Again, since, before we Conclude Determinately and Expressly we must know *what* to Conclude, and we know *what* to Conclude by knowing the Premisses, and the Conclusion is that Proposition which is to be Concluded; it follows evidently that, since we *know* the Conclusion, e'er we Actually Inferred and Express it, to be *in* the Premisses, it is *there* virtually.
9. All *Deduced* Truths are *virtually* in one another. For, since all Deduced Truths are *Conclusions*, and the Conclusions are *virtually* in the Premisses; and the same reason holds for *all* the *following* Conclusions as for the *first*, or for one *single* one; it follows that, let there be never so many orderly-succeeding Syllogisms necessary to prove any point, the Conclusions are still *in* the Premisses and the *following* ones *in* those that went *before* them.
10. All Truths are *virtually* in the *Identical Propositions*; and, consequently, in the *Definitions*. For since all Truths are *taken from* the Nature of the Things, and from their Metaphysical verity, and consequently are in the Nature of the Thing fundamentally; and This is Contain'd and Express in the *whole* by Identical Propositions, and *in all its parts* by the Definitions; it follows that all Truths are Virtually contain'd in *Identical Propositions*, and, consequently, in the *Definitions*.
11. From what's lately said, 'tis evinced that, if a Middle Term be taken which is a *Proper Cause* or *Proper Effect*, the Conclusion is seen to be *in* the Premisses. For, though the Proper Causes and Effects be not the very *Essence* of the Thing; yet, since an Effect is a Participation of the Cause, and so is apt to manifest the *Nature* of the Proper Cause that produced it; and, the Operation of a Proper Cause is nothing but the²⁰⁰ *Existence* of such a Cause (which is suitable to its *Essence*) imprinted upon the Patient; hence, such *Mediums* do Demonstrably and Mutually infer one another; and therefore nothing hinders, but that the Conclusions may be

¹⁹⁹ Latin: "Sus Minervam [docet]" = "A pig [is teaching] Minerva." The idiom refers to someone teaching without understanding what he teaches.

²⁰⁰ B. I. L. 8. §. 7.

seen to be *in* the Premisses as well in *such* Syllogisms as in those which have an *Essential* Notion for their Middle Term.

12. Hence all Natural Truths, and this throughout the whole Course of Nature, from the very Creation, are *virtually* in one another, For, since, as will be more clearly seen hereafter, all those Natural Effects were Demonstrative of their Proper Causes, and those Causes Demonstrative of their proper Effects; and this from the First starting of Nature into Motion; and so were apt to Inferred one another *all along*; that is, new Conclusions were still apt to spring from such Middle Terms Connected with the two Extremes in the Premisses; and, consequently, the Truth of those Conclusions were all along *Virtually* in those several Premisses; it follows that all Natural Truths are *in one another*, and this throughout the whole *Series* or Course of Nature from the very Creation.
13. Hence, had we liv'd in every Place, and in every part of Time, *where* and *when* those several Causes wrought those several Effects, and had been endowed with Capacity Sufficient for such a performance, and not been diverted with other thoughts from Application to that work; we might have *actually* Demonstrated those Effects by their Proper Causes or those Causes by their Proper Effects, through the whole *Series* or Course of the World, from the beginning to the end; except Miracle had alter'd that Natural Course. For, in that case, *all* those Subjects had afforded us Matter or fit *Mediums* for Demonstration, as well as any *single* Subject does now; Wherefore, if we had had wit enough to demonstrate as aforesaid, and that wit sufficiently apply'd in every circumstance, it had been done.
14. Hence every Soul separated from the Body that knows any *one* Natural Truth knows *all* Nature, and this *all at once*, at the *first* Instant of her Separation. For, since all Nature is carry'd on by Proper Causes, and Proper Effects, and those Mutually inferred one another; that is, the Truth grounded on the *one* is seen to be in the Truth grounded on the *other*, as being *Virtually in one another*, and we experience that the Capacity of the Soul to know Truths is not *fill'd* by knowing *many* Truths, but is *Enlarged* and Enabled to know still *more*; and, being clear of the Body, she is not distracted by Objects working upon the Senses and the Fancy, but intimately and necessarily present to *her self*, and, consequently, to what is *in her self*; and so is Addicted, Apply'd and Naturally Necessitated to know the Nature of her *Body*, and, consequently of her self, as being the *Form* of that Body, and fitted for it; and, *by* her self to know *all* the Truths *Connected* with the Knowledge of her self, that is (as was shown) *all* Nature; and this, not Successively, *one* Truth *after another*, as she did when she was in the Body and needed the Fancy, and so accommodated her manner of working to its *slow pace*, but, being now a Pure Spirit and Indivisible, and so not commensurable to Time, or to *before* and *after*, which are the Differences of Time, she is to know *all* she *could* know in the first instant she was a Pure Spirit, that is, at the Instant of her Separation. These things being evidently so, it follows that every Soul separated from the Body, that knew *any one* Natural Truth, knows *all* Nature, and this, *all at once*, in the *first* instant of her Separation. But of this more hereafter.

Corol. I. Hence we may frame some imperfect Conception how *our* Science differs from that of *Angels*, and how Angels must know things *Intuitively*. For, since they have *no Senses*, they can have no Abstracted Notions by different Impressions from the Objects on the Senses; nor, consequently, can they *Compound* any two Notions to frame a Proposition; much less can they *Discourse*, or Compare Two Notions to a Third, and so deduce thence *New* Knowledges, call'd *Conclusions*. It is left therefore, that they must at one²⁰¹ view, comprehend entirely the Metaphysical verity of the *whole Thing*, and all that is in it, which we express by an Identical

²⁰¹ Corrected per errata sheet. Original: "a tone."

Proposition. Whence this Knowledge or *Intuition* of theirs, abating the Composition found in an Identical Proposition (which too is the *least* that is Imaginable) is the nearest a-kin to that which we have of these Identicals. By which we see that the *Supremum Infimi*,²⁰² in respect of an Angel's and Man's manner of Knowledge, is (as the Order of Entities requires) contiguous as it were, to that which is *Superiour* to it.

Corol. II. Hence also is seen how a Separated Soul knows all things after a *different manner* than Angels do. For, though the *Substance* of a Separated Soul's Operation be Intuitive, as is the Angels; yet, because her natural Genius led and forced her *here* to *discourse* and gather one Truth by another, that is, to see one Truth *in* another; hence, she *retains* a modification or a kind of tang of the Discoursiveness she had *here*, though she cannot in that State *exercise* it; and that, though she cannot then actually deduce new Truths, yet she sees all Truths as Deducible from one another, or following one another by Consequence.

15. We may frame some imperfect conception how this passes by this course Similitude. When we look upon a Picture call'd a *Prospective*, all the parts of it are *equally near* our Eye *in themselves*, and we see them too *all at once*; yet, they appear to us as if *one* of them were farther of than *another*, even to a vast distance; observing still a perfect Order and *decorum* in their greater Propinquity or Remoteness, according as those parts are *more* or *less* Shadowed or Luminous. So the Soul knows *all at once* whatever is Knowable by her, and they are *equally near* the Eye of her understanding; yet, because of her acquiring them *here* by way of *Discourse*, that is, by proceeding from more-Clear to less Clear Truths, she sees them *as following one another*, or, as it were, *beyond one another*; because they were not to her in this state so clear as the other *in themselves*, but *depending* on the *others* for their Evidence.

Lesson V. *Of other Mediums for Demonstration taken from the Four Causes.*

1. There must necessarily be ²⁰³ *Four Causes* concurring to every Effect in Nature. For, since Nothing can do Nothing, it follows that Nothing can be *Done*, unless there be *something* that Does or Acts, that is unless there be an *Efficient Cause*. Which Efficient must act *upon something* or some *Patient*, which is the *Matter* on which it works, or the *Material Cause*. And it must work something *in* that Matter, which, being Received *in it*, must be some *Form* (either Substantial or Accidental) which must consequently concur to that Action *Formally*, or be the *Formal Cause* of it. And, since the Orderer of all Nature, or the First Cause, is an *Intelligent Being* and not *Blind Chance*, (for what's *Blind* can *Order* nothing) and this First Cause is the Adequate *Governour* of the World, and, being an Intelligent Being acts *Seeingly* or *with design*, that is, with prospect of some *End* in every thing that is done, how great or *minute* soever; and every Intelligent Creature that administers the World, in their several Stations, under him, (whether they be Angels or Men) do, for the same reason, act *Designingly* too; that is, do propose to themselves some *end*, Good, Reason or Motive for which they Act, and without which 'tis against their Nature to Act; and since Metaphysicks do clearly Demonstrate that the Immediate action of the First Cause is only to give *Being*, and ²⁰⁴ the Oeconomy of the World is administred Immediately by other Intelligent Beings under him; hence, there must be a *Final cause* too for every Effect that is done in the World, how small and inconsiderable soever it may seem. Wherefore, there must necessarily be *Four Causes* concurring to *every* Effect in Nature, *viz.* The *Efficient, Material, Formal, and Final*. For Example, in my Action of

²⁰² The highest of the lowest.

²⁰³ See B. 1. L. 8. §. 8.

²⁰⁴ Apparently missing marginal note.

Writing a Letter, the *Efficient* Cause is my self: the *Material* Cause, is the Paper; the *Formal*, the Characters drawn in the Paper; and the *Final*, to gratify my friend, acquaint him with News, &c.

2. Hence we can demonstrate the *An est*²⁰⁵ of those Four Causes in the whole Mass of Corporeal Nature, how Remote soever it is from us; and that they *must* concur to every Effect, tho' we do not know the *Quid est*²⁰⁶ of them. The first part of our *Thesis* is proved; For, since the *An est* of all those Causes, or that there *must be* such four Causes necessarily concurring to every Effect, follows out of the nature of *Action*, from the Subject's being *Quantitative* and consequently *variable* Substantially or Accidentally, and from the Supreme Agent's being *Intelligent*; and these are equally found in *all* parts of the Universe, how Remote soever they be, or in the whole Mass of Bodies; it follows that the same Causes do concur to every Effect *all over* the World, as they do in those Bodies *near us*, and with whose Operations we are acquainted. The Second part is evident, since the knowledg of the *An est* or [*that there is something*] may it be known by Experience, tho' we know not *what* that thing is; as we experience when we hit casually upon something in the dark, or run against it, tho' we neither see or know *what* that thing is; or, when we see a thing a far off, we know *that* that thing *is*, tho' as yet we know not *what it is*.
3. ²⁰⁷The Course of Nature is carry'd on by *Efficient* Causes and *Effects*; For since a First Cause being suppos'd who is *Infinitely Wise*, he Administers his workmanship, the World, after the *wisest* and *best* manner; which is, that the contexture of the whole be not *loose* and *slack*, but perfectly Coherent; nor can this be done, among an infinit variety of Bodies, by any other means (so as to make up the Course of Nature) but by making Effects *necessarily* follow from their Causes; since, if that were not, the Course of Nature would be at a stand, and need the Artificers hand at every turn to make it go on, which argues an Imperfection in the Workmanship it self: it follows, that the Course of Nature must be carry'd on by *Efficient Causes* and *Effects*.
4. The Course of Nature must be carry'd on by *such* Efficient Causes and Effects as are *proper* to one another. For, were not these causes and Effects *Proper* to one another, *any* thing might *do any thing*, or *suffer from any thing*: v. g. Fire might both heat, and cool, and moisten; and Water might be as combustible as dry Wood, and so of all the rest. In which case no man could tell how to Order his Actions, or what Efficient Cause, or what Matter, *rather than another*, he is to make use of to produce any Effect; nor, consequently, since such Essences are ordain'd for such and such *Ends*, could the Essences or Natures of things be Known or Distinguish'd more than in Outward Appearance.
5. Hence follows immediately that every such Proper Efficient Cause put to be *Actually Causing*, must most necessarily produce it's Proper Effect. For since to *Cause* is to *do* and to do nothing is *not to do*, what is Actually causing must cause *something* or produce *some* Effect. And this Effect must be a *Proper* one as has been prov'd. §. 4.
6. All the Efficient Causes in Nature *are* Actually causing. For, since the Virtue or *Power* of working is in the Efficient Cause it self, as being nothing but it's *Existence*, and the Matter to be wrought upon is *Quantitative*, that is, of it's own nature either Perfectly or Imperfectly Divisible, and Variable innumerable Manners of ways according to it's Qualities; nor can it have an *Infinite* Power of *resisting* the Efficiency of the *least* Cause, hence, it is apt to have an

²⁰⁵ Corrected per errata sheet. Original: "An eft of." Moreover, the phrase is Latin: 'whether something exists;' framed as a question, it is, "does it exist?"

²⁰⁶ Latin: 'what exists;' framed as a question, it is, "what exists?" or "what is it?"

²⁰⁷ The original labeling does not have a '3'. It seems implied.

Impression made upon it *to some degree* by any Quantitative Agent, provided there be but Immediate Application of the Agent to the Patient, and that it is *prest* upon it: But, there being no *vacuum*, immediate Application of one Natural Body to another must needs be throughout *all* Nature; and the Course of Nature consisting in *Motion*, one Body must necessarily *press* upon that which is *next* it. From all which it follows evidently that *all* the Efficient Causes in Nature are *Actually Causing*.

7. From these Discourses 'tis evident that we can Demonstrate Proper Effects from Proper Efficient Causes, which we call Demonstrating *à priori*; and Proper Efficient Causes from Proper Effects, which is call'd Demonstrating *à posteriori*. For, since a *Cause* and a *Reason* do onely differ in this, that the word [Cause] speaks the thing as it is in *Nature*, and [Reason] the same thing as 'tis in our *understanding*; and Proper Causes and Effects in Nature are necessarily *connected* to one another, and, consequently, do *Infer* one another naturally; it follows, that those Causes (and, for the same reason Effects) as they are *in our Understanding* must be the *Reason why one infers the other* in our Understanding: Whence follows, that those Causes and Effects can be us'd as *Proper Middle Terms* to *Infer* or *Conclude* one another. And, that Proofs made by such *Mediums* are *Demonstrative* is clear; for no Proof can be more Clear than that which is Grounded on those Notions or Natures being *connected Naturally* and, *so* Connected that it is Impossible it should be otherwise; as 'tis shown these are §. §. 5. and 6.
8. This is farther confirm'd, because, Two Bodies that are Immediate, do *Act* and *Re-act*, or are (in some respect) *mutually* Causes and Effects to one another: For since their Existences (which is their Power of Acting) are immediately Apply'd; and by the Course of Nature, consisting in Motion, *prest* upon one another; and no Natural Agent is of *Infinite* Power, nor consequently can it subdue all the Resistance of the Patient in an *Instant*; it follows that, till one of them be, by degrees, *totally* subdu'd, the Resisting Body must necessarily, for the reason given, *Re-act* upon it; whence they will be, to *some* degree or in *some* respect, *Mutual* Causes and Effects in regard of *each other*.

Corol. I. The carrying on this Connected Course of Natural Causes is called *Providence*; and, as joyn'd with a Course of Supernatural ones (Interiour and Exteriour) perfecting and strengthening the Will all along to the very end, and ripening Souls for Bliss (which we call Grace) is that which is truly meant by *Predestination*; which sounds so terribly and is such a Bugbear to those that mis-understand it.

Corol. II. Every Step of this Order of Causes has *Entity* or *Goodness* in it. For it is manifestly the Causing of *Something* by *Something*.

Corol. III. Therefore 'tis directly *against* the natural of the First Cause to cause, or lay any cause, for *Sin*. For, *Sin* (formally as such) has *no* kind of Entity or Goodness in it, either Metaphysical, Physical or Moral; but is formally a meer *Privation* of some Entity or Goodness which ought to be in an Intelligent Creature; whence it comes that, by *falling-short* here in using the *Means*, that Creature falls short *hereafter* of attaining the *End*, which is only attainable by such Means. To explicate which high Points fully is left to *Solid Divines*. I mean such as do not guide themselves by *meer Words*, but by *Reason* and *Good Sense*.

Corol. IV. Hence follows also that, were all the Efficient Causes that produce any Effect, *known* to us, we could have no *Accidental* Predications, nor consequently any *Opinions*; but the Effect would still be equally *Demonstrable* from the *Complexion* of those Causes, as it is now from some one *single* Efficient, as was hinted formerly.

Corol. V. Hence, to one that comprehends the Complexion of *all* Causes, there could be *no Chance*; nor could such a Man have any Ground for such a Notion; For, *Chance* (as the common use of the word tells us) signifies an *Unseen* or *Unforeseen* Cause; whereas no Cause

is *Unseen* to him who sees *Demonstratively* how all Natural Effects *follow* all along from the Causes, and that they *cannot but follow* from such Causes.

Corol. VI. Hence, tho' we know not particularly the *Quid est* of this Exact Order of the World, or the Course of Nature, because we Comprehend not *all* Causes, nor know what Cause or Causes did *all a long* produce such Effects; yet, since we know and can demonstrate the *An est* of this Order, or that the Course of Nature *is* still carry'd on by Proper Causes and Effects; hence, we can demonstrate there is no such thing as that Chimerical Cause, call'd *Chance*, governing the World; which Fantastick whimsy is imputed to the *Epicureans*.

Corol. 7. Hence we can Demonstrate that every the least motion of a Fly or an Insect, the Figure of every leaf of a Tree, or grain of Sand on the Sea Shore, do come within the Compass of this Course of Nature, or *Gods* Providence; which neglects not the least of his Creatures, but has a Superintendency *over all*. Which Considerations, tho' they may at first sight seem Incredible and paradoxical, and Stun our Reason; yet, after that, by recourse to our Principles, we have recover'd our dazled sight, and clearly *see* they *must be True*, will exceedingly conduce to raise our Souls connaturally to deep Contemplations of *Gods* Infinit Wisdom, Goodness and Providence and ground in us a perfect Resignation to his Will in all occurrences; and let us see and be asham'd of our froward, proud, peevish and selfish humour, which nothing will content but the having the Whole Course of Nature alter'd *for our sakes*; as if the World were made meerly *for us*, or that Causes should not have their Proper Effects. Which being a Contradiction, is therefore, as Unreasonable and Foolish as it is in a Man, that wants Money, to be angry that Two and Three Shillings do not make Forty.

Corol. VIII. Hence, none can have just occasion to grumble at *God's* Providence for Ill Successes. For, since we know *à priori* that *God*, he being Infinitely wise, casts the whole Frame of the World, or the Course of Causes, in the *most perfect* and *best* Order; to wish we should be otherwise, after we see that *no* Causes can bring our endeavouring it to Effect, is to wish the Whole World should be *worse* for the Interest of one Inconsiderable piece of it: which is against Common sense and the Light of Nature to expect from a *Common Governour*, who is to provide in the first place for the *Common Good*; and is even against the Judgment and Generous Practice of diverse Heathens, who for the Common Good of a *Small part* of the World, (their *own Country*) have not car'd to ruine their Private Concerns, nay to Sacrifice their Lives.

Corol. IX. On this Doctrine is grounded the Duty of *Gratitude* we owe to God for all the Good we have, of what nature soever. For, it is hence seen demonstratively, that *God* is as much the Giver of that Good, by laying such a steady Course of innumerable Causes to convey it to us, as if he had given it by his own hand Immediately; nay, it ought more to increase our Gratitude, to see that he has Ordered such an Infinity of Causes, from the beginning of the World, to be Instrumental to our Good.

Corol. X. Hence, lastly, is shewn the Wisdome of Christianity; which instructs all its Followers to express in their Common Language, and to put in practise all the Substance of those Truths, which we have, with so much labour, Speculatively Demonstrated. As when they say that, Every thing that happens is *Gods* Will; pray his Will may be done; Resign to it; Acknowledg that all the Good they have comes from *God*, thank him for it, free him from all Imputation of Injustice when any Harm lights to them, and bear it with a Humble Patience, &c.

9. There is a certain Order, or priority of Nature, in our Notions taken from the *same* subject, by which one of them (or which is the same, the Subject as grounding one of those Notions) is conceiv'd to be a kind²⁰⁸ of Efficient Cause of Another of them. For it is Evident that the

²⁰⁸ Corrected per errata sheet. Original: "be kind."

First Efficiency of Fire is the making that smart Impression on our Feeling Sense which we call *Heating*; out of which, if continu'd, it follows that it *dissipates* or *shatters* asunder all the parts of the mixt Body on which it works. To which 'tis Consequent, that it *Disgregates* the *Heterogeneous* parts of it, and *Congregates* the *Homogeneous* ones; from which latter Effects of Heating, as being most obvious and discernible to Mankind, *Aristotle* takes his Definition of *Hot* things. Thus, out of Rationality springs a Solid and Serious Content in Discovering new Truths, which are the Natural Perfection of a Soul; and, from this Content a greater degree of the *Love* of seeing still *more* Truths. Thus Risibility springs from Rationality; the Object of which is not a Solid Food, nourishing and dilating the Soul as is this later, which causes some increase of Science in her; but as it were a kind of Light *Repast* and *Recreation* to her, sprung from the Observing some trifling particulars which were *Odd*, *Aukward*, and *Sudden* or Unexpected, and withal *not Harmful* or Contristating.

10. In those Subjects which have many Accidents in them, we must Separate those *Accidents* from the *Subject*, and consider attentively according to *which* of them it produces *such* an Effect; which found, we shall discover a *Proper Cause* and its *Proper Effect*. For example, put case we experience Aloes purges Choler,²⁰⁹ we must separate its Colour, Smell, Hardness, Bitter Tast, and the rest of its Accidents, and endeavour to find out, according to *which* of them it produces that Effect; and if we can find it does this precisely *as Bitter*, we shall discover that Bitterness is the proper Medicine against Choler; and thence we can gain this Certain Knowledge, and establish this Universal Conclusion, that *Every Bitter Thing* is good against Choler; according to that Solid Maxim in Logick, *A Quatenus ad Omne valet consequentia*.²¹⁰

Note, That Induction in such cases gives great light to a Man already well vers'd in *Natural Principles*. But, this former Maxim must be Understood with this *Proviso* that it be meant to hold *per se loquendo*,²¹¹ as the Schools phrase it; that is, if *nothing hinders*; as it does often in the Practise of Physick. For, in Mixt Bodies there is a Strange Variety and Medly of Accidents or Qualities; divers of which are of a *Disparate* and sometimes of a *Sub-contrary* or Contrary nature to one another; so that it requires a great Sagacity to add to them such other Mixts as may obviate their Interfering, and make the intended Effect follow. Thus much of Demonstration from the thing as it is *Active*, or from the *Efficient*; which is the *first* of the Four Causes.

11. Demonstrations may be taken also from the *Matter* or *Material Cause*, that is from the Thing or Subject, as it is *Passive*. For, from the *Divisibility* of a Thing (whether that Divisibility be Metaphysical, or Physical) we may demonstrate the *Corruptibility* of it; which, necessarily *following* out of the Thing as 'tis Divisible, is therefore a *Property* of it. Thus, capable of *Admiring* is a *Property* necessarily Inferring *Rationality* in it's Subject: Admiration being nothing but a Suspension of the Rational Faculty at a stand, or non-plust, to find a Reason for the thing it admires; whence it inferrs demonstratively a *Power of Reasoning*, capable to act or exercise it self in *other* things. Of this kind are all Passive Properties, which are *quarto modo* (as

²⁰⁹ One of the four humors thought to contribute to health and mood—specifically, anger—in ancient medicine.

²¹⁰ Latin: Idiom is somewhat unclear to me and I welcome correction. Cross-referencing other authors in the same period, they seem to use this phrase to mean like treatment is valid for like cases insofar as what is under consideration is essential to those cases. Sergeant uses it in a proof below (Lesson VI, Thesis II, Proposition III), which may illuminate its meaning. A rough literal approximation, 'The logical consequence is good, so far as for any.' This seems to mean *the reasoning works for any in the same kind*. It appears to have a similar structure as "if it applies to X because X is a Y, then it applies to any individual that is a Y, for the same reason", e.g., 'If Peter is a made in the image of God because Peter is a human, then Mary is also made in the image of God as well, because she also is a human.'

²¹¹ Latin: 'Strictly speaking.'

the Schools Phrase is)²¹² or *properly* such: For, these springing necessarily or immediatly out of the Essence, are, by consequence, Naturally Connected with it, and the Essence with them; whence they are *Proper Mediums* to inferr demonstratively such an Essence *à Posteriori*, and the Essence a fit *Medium* to demonstrate them *à priori*.

12. That Demonstrations may be taken from the *Formal Cause* or from the Subject as 'tis Formally and Essentially such, has been shewn above Lesson. 3. §§. 7. and 8. where it was manifested that the Middle Notions in the Gradual Line, giving us the parts that were included in the Definition, are *Proper Middle Terms* to *connect* demonstratively the Inferiour and Superiour Notions.

13. The Causality of the Final cause consisting in this, that *it moves the Efficient to act*, this Cause can have no place but in *Intelligent Beings*. This is Evident, because only such can *know* an End or consequently *aim at it*, or work *for it*.

*Corol. II.*²¹³ Wherefore, when 'tis said that such an Effect (v. g. the following of water in a Pump) happens in Nature *ne detur vacuum*, that Nature *flies from* or *abhors vacuum*; that (as *Aristotle* acutely speculated) *Entia nolunt malè gubernari*;²¹⁴ and such like; the true Meaning of those Sayings can only be this, that 'tis highly against the Nature of the *First Intelligent Being* who created the World, and of the *Inferior* ones (Angels) who manage it under him, that Ground should be laid in Nature for a *Contradiction* to be *True*, or that the Course of Nature should be contriv'd in a *bad method* or carry'd on after an *absurd manner*.

Corol. XII. Hence, these sayings, thus rightly understood, have in them the force of a *Nobler* and *more Solid* Demonstration from the *Final Cause*, than can be taken from any Corporeal Efficients and Effects, though they be never so Proper to one another. For, these Sayings engage the Nature of the *Supreme Cause*, and of the *Noblest* causes under him; and which, had they not Rectitude in their Understandings, Wills and Operations, *all* Nature would be *wrong*, and ground or beget in us nothing but *Error*. The Demonstration stands thus. The Immediate *End* of those Causes is that the World should be Order'd *Wisely*, that is, so as that the *Things* should be a *Ground for Truth*; therefore 'tis most highly Impossible there *can* be any Ground for a *Contradiction*, in Things which the *First Cause* did make, and the *others* do manage: But, were there a *vacuum* there would be Ground for a *Contradiction*. *Ergo, &c.*

Corol. XIII. Hence, we may with pity remark the Ignorance, Folly or rather Phrenzy of those gross Speculators, who, by allowing nothing but the *Course of Nature*, are forc'd by their Impious and Foolish Tenet to speak of *Insensible* things, as if they were *Intelligent*. 'Tis something pardonable in Lovers, when they speak to Trees, Rivers, and Mountains to vent the Passion that be-mads them; but 'tis shameful in Pretenders to Philosophy, who are to reduce Natural Effects to their Causes, and to speak of both *literally* as they *are*. Yet, such and so apply'd, must be the Common language of meer Naturalists, who look no higher than *Matter*, and talk of *Great Nature*, or the *Soul of the World*, and such windy whimsies, *Ordering* things thus and thus, that is Designing an End; *Hating* and *Abhorring this* thing, *Affecting* another. Which yet, all the while, they deny to be *Intelligent* things, lest they should grant a *First Being* making Nature, and *Spiritual Second Causes* carrying on the Course of it, and *Moving* it regularly. Nor Matters it that *we* had now and than to use the same Language; for we do acknowledge it to be *Improper*, and can reduce it to a *Litteral* Sense agreeing to the Natures of those things manag'd by such Governors, which these Men cannot.

²¹² Latin: 'Fourth mode,' i.e., the fourth mode of predication, which is *per se* or *properly said of*.

²¹³ Sic. "Corol. XI" would be expected.

²¹⁴ Latin: 'Things refuse to be governed poorly,' or 'things refuse to follow bad regulations.'

14. There can be no *Final Cause* in respect to *GOD*. For *End* and *Good* being the same, and *GOD* being Infinitely Perfect and Infinitely Happy in Himself, there can *no Good* accrue to him from any thing out of himself, or from Creatures, and so they cannot have the Notion of an *End* in respect to him. Wherefore, when it is said that *GOD* aims at the Good of his Creatures, or that to Govern the World *wisely* is his *End*; the meaning of these words is only this, that he acts *as becomes his Wisdom*, or (his Wisdom being his Essence) he *acts as he is*.
15. Speaking of Mankind, we can demonstrate some *Acts* of his *Will* from the *Final Cause* supposed, and a *Final Cause* from the supposed *Acts* of his Will. For, since the Will is a *Power*, and all Powers are specify'd or have their particular *Essence* from the respect they have to such or such *Objects*; and the Object of the Will is an *Appearing Good*, it follows that it is Essential to the Will to act for an Appearing Good, Wherefore, if we can demonstrate (as we may often) that such a particular Object must (all things consider'd) *appear a Good* to a Man in such circumstances; it will both follow *à priori* that, if his Will *acts*, it is for an Appearing Good; and also *à posteriori*, that, if there be an Appearing Good, there will follow an *Act* of his Will. The Proof of both is plain, For, since the Will is a *Power* to Act for an Appearing Good, if it did not (in due circumstance) *act for it*, it would follow that *the Will is not a Will*; or else it must follow, that an Appearing Good is not the *Object* of the Will. Whence, since it can have no other Object Imaginable, it would follow again that the Will is *no Power*; and consequently, *no Will*. Nor does this take away the *Liberty* of the Will, which is exercis'd in Chusing *one* out of *many*, but establisheth the *Essence* of it.

Corol. 14. Hence the most easie and most connaturall way to manage or treat with Mankind, is, to make that, which you would bring them to do, *appear* to be their *Good*; for then they will be sure to obey. And if, either thro' Perversness or Delusion by others, they will *not* be brought to see that which is for the *Common Good* to be *their own*, there is no way left but to Over-awe them with *fear*; that so, at least, it may *appear* to them a *Good* to avoid Punishment.

Lesson VI. *Several Instances of Demonstration.*

1. THE *Method* of *Demonstrating* is two-fold; the One Is perform'd by Exact *Syllogisms* in right *Mood* and *Figure*. The other by laying first certain *Maxims*, *Axioms*, or *Pestulatum*s.²¹⁵ and then proving the *Theses* by the Concatenation of many Propositions orderly succeeding one another, which is the way *Euclid* takes. For this later way may be full as solid as the other, tho' it looks not so Artificially; provided it's several Consequences be *Immediate*, and nothing be assum'd which is not some way Evident. This way also is *Shorter*, and more fit to comprize *much* Truth, or many Syllogisms, in a *little room*. The other way is Clearer at *first sight*. This is more fit for *Writers*, whose Productions may be scann'd leasurly by multitudes of Readers and Examiners. That, is proper for Disputants in the Schools, who are to Argue or Answer upon the Spot: and ought to be so well verst in the Rules of Art as to be ready to act the part of Opponent or Respondent *ex tempore*, and without Studying. Amongst the other differences between them this is one, that if an obstinate Adversary denies any Link, in the Demonstration of the Second kind, to be connected to the Other part of the Chain, recourse must be forcibly had to the Syllogistick Method, to convince him by plain Self-evident Principles of our Understanding, on which all *Force of Consequence* is built, We shall give here some few Examples, of either Method. The first of which is purely *Logical*; the Second, *Arithmetical*: The Third and Fourth, *Physical*: The Fifth, Sixth, and Seventh, *Metaphysical*.

²¹⁵ Sic. 'Postulatum'.

Thesis I.

Infini Number is Impossible.

Demonstration First.

Bar- Whatever involves a Contradiction is Impossible; but
ba- All Infini Number involves a Contradiction; therefore
ra- All Infini Number is Impossible.

The *Minor* is thus prov'd.

Bar- Whatever Notion compriz'd under any of the Common heads is neither the *Genus* of it's Particular Kind, nor any *Species* under that *Genus*, involves a Contradiction, but
ba- All Infini Number (it being *Discrete Quantity*) is Compriz'd under one of the Common Heads, and yet is neither the *Generical* Notion of Discrete Quantity, nor any *Species* of it; therefore
ra- All Infini Number involves a Contradiction.

2. The Major is evident. For all the Notions of any Common Head, till we come to the bottom of that Scale, are either *Generical* or *Specific*. Whence, such a Notion as Infini Number would be under that Common Head (as 'tis evident Discrete Quantity *is* under Quantity) and yet it would *not* be under it, because Infini Number is neither the *Genus* of Discrete Quantity, nor any *Species* of it.

The *Minor* likewise as to it's First part is most Evident, because Infini Number is a *Number*, nor is it *less* a Number for it's being Infini, but *more*.

The same *Minor*, as to it's Second part, *viz.* that Infini Number cannot be the *Genus*, or the *whole* Notion of Discrete Quantity, is thus prov'd.

Ce- No Notion that is not Comprehended in *each* of it's *Species* can be a Generical Notion or a *Genus*; but
la- Every Infini Number is a Notion that is not comprehended in each of the Species of Discrete Quantity therefore
rent- No infin Number can be the Generical Notion of Discrete Quantity.

3. The Major is Evident. For the *Genus* or Superiour Notion is but a *Part* of the Inferiour or the *Species*, and a Part must necessarily be Comprehended in the *Whole*. And, accordingly, we find the whole Notion and Definition of *Animal* to be in *Homo*, of *Corpus* in *Vivens*, and of *Ens* in all under it.
4. This last Minor is likewise most evident: For *Ten* and *Twenty* are *Species* of Discrete Quantity, being both of them *Numbers*; and yet 'tis impossible that the Notion of *Infini* Discrete Quantity or Infini Number, should be found in each of these; which yet it must be, if Infinite Quantity be their *Genus*.
5. The Former *Minor*, according to it's Third part, *viz.* that Infini Number can be no *Species* of Number or Discrete Quantity, is thus prov'd.

Ce- No *Species* comprehends all that is in it's *fellow-Species*, but leaves it somewhat which it self has not; but

- la- Every Infinit Number comprehends all that is in it's *fellow-Species*, and does not leave it somewhat which it self had not; therefore
rent. No Infinit Number can be a *Species* of Discrete Quantity.
6. The *Minor* is prov'd: For, Essential Differences that constitute the *Species*, are *more* and *less* of the *Genus*, and not *All* and *None*. And, as for the *Formal* part of the several *Species* of Number, they are Constituted formally by some *one* Unity shutting up the rest; otherwise those *Species* had had no *Distinct* Notion, being *Indeterminate*: *v. g.* *Ten* and *Twenty* are Formally such *Species* of Number, because there is a Tenth Unity and a Twentieth in them, shutting up or Determining (that is Terminating) those Unities which were presupposed. Wherefore, for the same reason, if Infinit Number be a *Distinct Species*, it must have, besides It's other Material Constituents, something belonging to it's own Intrinsic and *Particular* nature, constituting it *formally* of such a *Species*; which can be nothing but an *Infinitth* one, Determining or Terminating it in the Line of Number; which is a clear contradiction and makes an *Infinit* to be *Finite*.

The same Thesis

Infinit Number is impossible.

Demonstration Second.

- Axiom. Units are the Elements of which all Number consists, *v. g.* The Number of Twenty is Twenty *Ones*, The Number of a Hundred is a Hundred *Ones*; and for the same reason, an *Infinit* Number consists of Infinit *Ones*.
- Da- Whatever Tenet puts *some One* to be Infinitely distant in the Line of Number from *Another One* assignable, or puts an *Infinitth One*, puts a Contradiction; but
ri- The Tenet of an Infinit Number puts *some One* to be Infinitly distant in the Line of Number from *Another One* assignable, or an *Infinitth One*; therefore
i- The Tenet of an Infinit Number puts a Contradiction.
7. The *Major* is self-evident, for it clearly puts an *Infinit* or *Endless* Number, to have *Two Ends*; viz. *this One* assignable, and that *other One* Suppos'd Infinitely distant from it, or the *Infinitth One*.
8. The *Minor* is also Evident. For, since, by the Axiom, all Number, even tho' Infinit, consists of *One's* as it's constituent parts, if *no One* be an *Infinitth*, then *every one* is a *Finith*; and so (*all* the parts being the *whole*) that Whole, or the Infinit Number it self, *must be Finite which is a Contradiction*.

Thesis II.

All Continu'd Quantity is one Whole consisting of Potential, or still Divisible, Parts.

Demonstration III.

- Axiom I. Quantity is Divisible without end, This is suppos'd prov'd by *Euclid*, Element. Lib. 6. Prop. 10th.
- Axiom II. What is *Actually distinct* in any Line, is *determinate* in that Line. All Act coming from the Form; which being Determinate it self, makes those Subjects in which it is Determinate likewise.

Axiom III. A *Quatenus ad omne valet consequentia*.²¹⁶

Proposition I.

Quantity cannot be compounded of a *Finite* Number of Indivisibles.

- Co- Nothing that is *Infinitely* Divisible can consist of a *Finite* Number of Indivisibles;
but
la- All Quantity is *Infinitely* Divisible, therefore
rent²¹⁷- No Quantity can consist of a *Finite* Number of Indivisibles.

9. The *Major* is evident, For, putting it to consist of a Finite Number of Indivisibles, (*Ten* for example,) when 'tis Divided into those *Ten*, it can be no longer Divisible, and so no Quantity, by the Ax. I.

Proposition II.

Quantity cannot be compounded of an *Infinet* Number of Indivisibles.

- Ce- No One Indivisible added to Another can make Quantity; but
la-²¹⁸ All *Infinet* Number of Indivisibles *Consists* of, or *is* One Indivisible added to Another: Therefore
rent- No *Infinet* Number of Indivisibles can make Quantity.

10. The *Minor* is Evident; for all Number (tho' *Infinet*) consists of Ones; that is, of One added to another. Add that 'tis demonstrated above that all *Infinet* Number is Impossible.

Proposition III.

If any *two* parts of Quantity be Actually distinct,
All the parts must be Actually distinct also.

- Bar- What ever springs out of the precise nature of Quantity must be equally found *where ever* there is Quantity, or throughout *all the parts* of Quantity, by Axiom 3*d*. But
ba- All Actual Distinction of the parts of Quantity (if put in any *two*) springs out of the precise Notion of Quantity, therefore
ra- All Actual Distinction of the parts of Quantity (if put in any *two*) must be equally found *wherever* there is Quantity, or throughout *all the parts* of Quantity.

11. The *Minor* is proved; for, all Unity and Distinction in any Line follows out of the Entity to which it is peculiar, that is, in our case, out of the Entity or *Essence* of Quantity. Again, this Actual Distinction of Quantitative parts cannot spring from Substance; for this has no Distinction of parts, but that of *Matter* and *Form*. Nor out of any *other* Line; for all those do

²¹⁶ See Ed. note on Lesson 5, Section 10, and the application below in Proposition III, Barbara.

²¹⁷ Axi. I.

²¹⁸ Prop. I.

presuppose Quantity, and spring from it as the Primary Affection of Body; therefore, if any *two parts* of Quantity *be actually Distinct*, that Distinction must proceed from the Nature of Quantity it self.

12. Now, that *all* the parts of Quantity should be Actually Distinct, destroys the Nature of Quantity, and is Contradictory; is thus proved.

- Da²¹⁹- Whatever makes Quantity consist of Infinit Indivisibles contradicts the Nature of Quantity. But
- ri- That Position which makes all the parts of Quantity Actually Distinct, makes Quantity consist of Infinit Indivisibles, therefore
- i- That Position which makes all the parts of Quantity, actually Distinct, contradicts the nature of Quantity.

13. The Minor is Evident; For, those things which are Actually *Distinct* quantitatively may be *Divided* quantitatively; or rather are *already so*; as those which are Actually Distinct in the Line of *Substance*, are Distinct Substances or Distinct *things* in that Line, Wherefore, since the Nature of such a Subject, as they put Quantity to be, does bear it, let us suppose Quantity divided into all it's Actual parts it can be divided into; that is, into *All*, they being *all* of them suppos'd Actually Distinct; it is manifest there could remain only Infinit Indivisibles. They must be *Indivisible*, because it is supposed to be Divided into *all* it *could* be Divided into; and they must be *Infinit*, for Divisibility that is but Finite, would contradict *Euclid's* Clear and most Approved Demonstration. Besides, it would follow hence, that if *all* the parts of Quantity were *Actually Distinct*, each of them must be *Determinate* in the line of Quantity; Wherefore, they being also *Infinit* in Number (for a *Finite* Number of parts makes Quantity not to be Divisible Infinitely against *Euclid's* Demonstration) it would follow that each least Quantity would be of *Infinit Extension*; for the *least* Determinate Quantity, Infinit times repeated, makes an *Infinit* Extension.

14. Hence is evinced our Main Demonstration, that, since Continu'd Quantity is neither compounded of a *Finit*, nor of an *Infinit* Number of Indivisibles, nor of *Actual parts*, it is made up of *Potential* parts: that is, there is but *One Actual Whole* in the Line of Quantity; and this Whole is *Divisible without end*.

Corol. I. Hence is farther demonstrated the Unity of the whole World as to it's Quantity; or which is the same, the Continuity of the whole imaginable Mass of Body.

Corol. II. Hence is demonstrated likewise that all *Vacuum*, and *Epicurus's* Scheme of *Plenum* and *Vacuum* are Contradictory: As likewise that there cannot possibly be more Worlds than One; the very Nature of *Quantity* being but *One whole*, Divisible still into its *Potential* parts, or parts *still farther Divisible*.

Thesis III.

15. *Successive Quantity or Motion, and, consequently, the Course of Nature, could not have been ab Æterno, but must have had a Beginning.*

Demonstration IV.

Bar- All Infinit Motion or Time is Impossible, but

²¹⁹ Prop. 2.

- ba- All Duration of Motion *ab Æterno* must have been for an Infinit Time, therefore
- ra- All Duration of Motion *ab æterno* is Impossible.

The *Minor* is Self-evident; The *Major* is thus prov'd.

- Bar- All Infinit Time must be an Infinit *Number* of Determinate Parts of Time, v. g. Infinit Hours; but
- ba- All Infinit Number of the Determinate parts of Time is Impossible; Therefore
- ra- All Infinit Time is Impossible.

16. The *Major* is clearly Evident; for, were the Number of the Determinate parts of Time *Finite*, then *all the Parts* (which are equivalent to the *Whole*) being Finite, the Whole must likewise be Finite,
The Minor is prov'd above Demonstration 1. and 2. where it was demonstrated that all *Infinit Number* is Impossible.
17. Whence is Demonstrated our main Thesis, that *Time, Motion*, or the *Course of Nature* had a beginning. Whence many useful Conclusions may be drawn against Heathens and Atheists. Note, that 'tis the same as to our Argument, whether there be an Infinit Number of parts of Time, which are *Actually Determin'd* and Measur'd, or no; 'tis sufficient the Subject [*Infinit Motion*, or *Infinit Time*] bears the having such a Determination made, by having that in it which corresponds to all those Infinit Determinate parts; for this necessarily induces and enforces a Contradiction.

Thesis IV.

There are Spiritual Beings, which we call Angels.

Demonstration V.

- Axiom. 1. What *acts*, *is*.
- 2. Every thing acts *as* it is; and, *à fortiori*, cannot act *directly contrary* to what it is, especially as an Immediate Agent.
 - 3. Motion is *Change*
 - 4. There are no Created Beings, but either Divisible or Indivisible ones, that is Body or Spirit.
 - 5. The First Being is Essentially *Unchangeable*.

- Da²²⁰- Whatever must be the Immediate Cause of some Effect *acts*, and, consequently, *is*: but
- ri- An Angel must be the Immediate Cause of some Effect; *viz.* of the *First Motion* in Nature, therefore
 - i- An Angel *acts*; and, consequently *is*,

18. The Minor is thus prov'd.

²²⁰ Ax. 1.

- Da²²¹- Every Effect that can neither be caused *Immediately* by the First Cause nor by a Body: must have been caus'd *immediatly* by a Created Spirit or an *Angel*; But
- ri- The First Motion in Nature is an Effect which could not have been caus'd *Immediately* by the First Cause nor by a *Body*; Therefore
- i- The first Motion in Nature must have been caus'd *Immediately* by an *Angel*, and, consequently, an Angel *acts & is*.

The former part of the *Minor*, viz. that the first Motion could not be caus'd immediately by the *First Cause*, is thus demonstrated.

19. Fe- No ²²² being that is *Essentially Unchangeable*, and whose Nature is *directly contrary* to the Nature of Change, can be the Immediate Cause of ²²³ *Change* or *Motion*; nor, consequently, of the *First Motion* in Nature, but
- ri- The First Being is ²²⁴ *Essentially Unchangeable*, and his Nature is *directly contrary* to the Nature of Change or Motion; therefore
- i- The First Being cannot be the *Immediate* Cause of Motion or Change; nor, consequently, of the *First Motion* in Nature.

20. The latter part of the former *Minor*, viz. that a *Body* could not have been the *Immediate* Cause of the First Motion in Nature, is thus prov'd.

- Ce- Nothing that, antecedently to the First Motion, was not-Moving, or in Rest, ²²⁵ could have been the *Immediate* Cause of the First Motion in Nature, but
- la- Every Body antecedently to the First Motion in Nature was not-Moving, or in Rest; therefore
- rent- No Body could have been the *Immediate* Cause of the First Motion in Nature.

Note that this Demonstration supposes a *First Motion* in Nature, which was prov'd. Demonstration 4.

Lesson VII. *Other Instances of Demonstration.*

Thesis V.

There is a First Self-Existent Being; or a Deity.

Demonstration VI.

Proposition I.

²²¹ Ax. 4.

²²² Ax. 2.

²²³ Ax. 3. [Editor note: Errata sheet mentions that "Cause of" to be corrected here on line 1 of page 301 (this line). Different copies of the text have 'o' and others have 'of'; the latter seems to have the 'f' in 'of' inserted (it is raised slightly on the page).]

²²⁴ Ax. 5.

²²⁵ Ax. 2.

The Notion or Nature of *Ens* and of *Existent* in Creatures,
(and consequently of *Essence* and *Existence*) are *Distinct*.

- Da- Every Notion of which [*Existent*] and [*not-existent*] may be truly predicated is *Different* from the Notion of *Existent*; But
- ri- The Notion of *Ens* (in its First and Proper Signification, taken for an Individual Substance) is a Notion of which *Existent* and *not-existent* may be predicated; therefore
- i — The Notion of *Ens* (thus understood) is *different* from the Notion of *Existent*; and, consequently, the Notions of *Essence* and *Existence* are also *Distinct*.
2. The Minor is Evident. For we can truly say that [*Petrus est*]²²⁶ while he is Living; and as truly say of the same *Peter*, that [*Fuit*]²²⁷ or [*non-est*] when he is *Dead*.
3. The *Major* is no less Evident; For, when we say [*Petrus est*] or [*Peter is Existent*] were the notion of the Predicate [*Existent*] the same with [*Peter*] the Subject, the Proposition would be (in sense) *formally Identical*, and the same as ‘tis to say, [what’s *Existent* is *Existent*] Wherefore, when we say [*Petrus non est*] or *Peter is not-Existent*, *Peter* Signifying the same as *Existent*, it would be the same as if we said, *what’s Existent is not Existent*, which is a Contradiction.

Proposition II.

4. The Notion of *Ens* Abstracts from *Existence*, or is Indifferent to *it* and to Non-existence.

This needs no farther Proof? For, in the two Propositions lately mention’d, *Existent* and *not Existent* are truly predicated of the same *Ens* viz. *Peter*; which could not be, unless the Subject [*Peter*] did Abstract from *both*, or were *Indifferent* to both. Besides, all the Words which we use to express the Notions or Natures of any Created *Ens* whatever, do so perfectly Abstract from Existence, that it is neither Express, Imply’d, nor in the least Hinted in them; as appears in the words, *Lapis*, *Quercus*, *Bucephalus*, *Petrus*, *Raphael*,²²⁸ which give us not the least light or intimation that they are *Existent* or *not-Existent*.

Proposition III.

5. Were there any Inclination in Created Entities to *one* more than to the *other*, it seems to be rather to *Not-being*; than to *Being*.

For, since *Peter*, even tho’ possess of *Actual Being*, is still *no less* capable of Not-being; it seems as if he had a particular Natural Tendency to *Not-being*; because, tho’ supported *Formally* (as it were) by it’s Opposit [*Actual Existence*] he is notwithstanding, *no less* a Capacity of Not-existing; his Original nothingness being so radicated²²⁹ in his Nature as he is a *Creature*, that it sticks to it, and inclines him to it, even while he *is*.

Proposition IV.

²²⁶ Latin: “Peter is.”

²²⁷ Latin: “He was.”

²²⁸ Latin: “Stone, oak, Bucephalus (the horse of Alexander the Great), Peter, Raphael.”

²²⁹ Deep-seated, taken root.

6. Existence is no ways *Intrinsic* to any Created *Ens*; either Essentially, or as an Affection springing out of it's Essence.

This has been demonstrated Prop. 2d. and 3d. Because Every nature *requires* all it's *Intrinsic*s, and what follows out of them, or is *Connected* with them; and is not Indifferent to *have* them or *not have* them, as *Ens* is to *have* or *not have* Existence.

Proposition V.

7. All Created things have their Existence from something that is Extrinsic to them.

For, whatever has any thing and not from *it's self*, or from it's own *Intrinsic Nature*, must have it from *Another*, or from something that is *Extrinsic* to it; there being no *Third* sort of Cause imaginable, which is neither Intrinsic nor Extrinsic; that is, which is neither *it's self* nor *Another*.

Proposition VI.

8. No *Created Ens* can give Existence to another, For tho' (as was shown formerly) the virtue by which the *Ens* operates be the Existence of that *Ens*; yet it can work no otherwise than *as* the *Thing* it self *is*, or according to the Nature of the Thing, which has that Existence; whose Nature it actually Imprints (as it were) on the Subject, as we find in Fire heating, in Water moistning, and in the whole Line of Universal Causality. Again, since the whole Line of Causality also bears that no Cause can act unless it be first Determin'd, and, as it were Appropriated to work such an Effect, (whence come those establish'd Maxims that the Course of Nature is carry'd on by Proper Causes to Proper Effects, and *Ex indifferente nihil sequitur*.²³⁰) Therefore, seeing (Prop. 2.) The *Created Ens* to which such an Existence belongs, and, consequently, the Nature or Essence of that *Ens*, Abstracts from all Existence; and is perfectly Indifferent even to it's *own*, and much more to the Existence of any *other Ens*; it follows demonstratively that no *Created Ens* can give Existence to another, or be the Proper Cause of it. Therefore

Proposition VII.

9. There must be some *Uncreated Cause* that gives Existence to all Created Entities.

This is already ²³¹ Evident; since no Created Entity can have it's Existence either from it's *own* Intrinsic Nature, or from any *other* Creature.

Proposition VIII.

10. This *Uncreated Cause* of all Existence must be Self-Existent; that is, his *Essence* must be his *Existence*.

²³⁰ Latin: "Out of indifference nothing follows." This means, roughly, that nothing happens unless there is a tendency one way rather than the other.

²³¹ Prop. 5. 6.

For, were his Essence *Indifferent* to Existence, or *Existence Accidental* to him and not Essential, he would *need* Another Cause to give him Existence, for the same reason Creatures do, and, so He would not be *Uncreated*.

Therefore there is a First Self-existent Being or a *DEITY*.

Corol. III. Hence it is seen that all that Created Causes operate upon Entities, grown to maturity is to dispose to the *not being* of the things they work upon; by Altering the Matter so that, out of those Alterations brought to such a point, the Body ceases to be any longer of such a Nature or Kind; and consequently loses it's Existence. At which Instant the Providence of the First Being so Orders his World, that those Determinations of Matter, which were Inconsistent with the Former *Ens*, should be Proper for the *New Ens* that is to succeed; to which in the very First Instant the other ceases to *be*, and this new one is Ultimately Determin'd to be *this*, He, by his Bountiful and Steady Emanation of *Being*, gives it such a peculiar *Existence* as is Commensurated and Proper to it's *Essence*.

Thesis VI.

An Angel cannot undergo any Change after the First Instant of it's Being.

Demonstration VII.

- Axiom 1. If Agent and Patient be perfectly fitted as to the nature of Agent and Patient, there needs no more to *begin* the Effect, actually but Application.
2. If Agent and Patient be perfectly fitted as to the nature of Agent and Patient, and the Effect be *Indivisible*, there needs no more to *begin* and *end*, that is to *Compleat* the Effect at once, but Application.
 3. An *Indivisible* Effect cannot be perform'd by *piecemeal* or *by parts*.
 4. Every thing *operates* as it *is*.
 5. No Change can be made without the Operation of *some* Cause.
 6. A Pure Spirit *is not* Quantitative, a Body *is*.

Proposition I.

No Corporeal Operation is without Local Motion.

For, since Ax. 4. Every thing *operates* as it *is*, what is Quantitative operates Quantitatively; but, nothing can operate Quantitatively, or *exercise* it's²³² Quantity, when it perfectly *rests* according to it's Quantity, that is, *moves not* according to it's Quantity: It follows, then, that to Operate Quantitatively is to *move* according to Quantity. Wherefore, since nothing can *move* according to it's Quantity, but either *Intrinsically*, by having it's Quantity made *greater* or *less*; or *Extrinsically*, that is, by having it's Quantity (unmov'd as to it's *own* parts or *it's self*) *mov'd* towards Another; and both these do evidently require some kind of Local Motion; 'tis Evident likewise, that No Corporeal Operation is without Local Motion.

Proposition II.

²³² Corrected per errata sheet. Original: "'tis."

13. That an Angel is not susceptible of *Local Motion*.

For, since *Motion* is *Mutation*; and, consequently, *Local Motion*, *Mutation* or *Change* according to *Place*; and *Change* of *Place* does necessarily require *some Space*, and *Space* is *Quantity*; it follows, that *Local Motion* cannot be made in a Subject which has *no Quantity*. But Angels (they being Pure Spirits) ²³³ are not Quantitative; therefore they are not Susceptible of *Local Motion*, or capable of having *Local Motion* made *in them*.

Proposition III.

15. That no Body can cause a Change in an Angel.

For, since no ²³⁴ Operation of Body is without *Local Motion*; and ²³⁵ an Angel (it being a Pure Spirit) is not susceptible of *Local Motion*; it follows, that neither is it Susceptible of the Operation of Body. But ²³⁶ No Cause can change any thing unless that Cause *operates upon it*; Therefore no *Body* can cause any Change in an *Angel*.

Proposition IV.

16. That an Angel cannot change *it self* after the First Instant.

For, since a Cause, the *self same* in all respects, if the Patient be likewise the *self same*, and the Application also the *self same*, produces the *self-same* Effect equally in any time assignable that is sufficient for such an Effect; and an Angel, put to act upon it self or *change* it self *after* the first Instant, is put to be the self-same, as to its being a Cause in every Instant *before it acts*; as likewise to be the *self-same* Patient in all respects, and the Application of it self to its self cannot but be Equal; it follows that in any time sufficient for the *same* Effect it will produce the *same* Effect, that is, *act* upon it self or *change* it self. ²³⁷ Wherefore, since an Effect in an Indivisible subject is Indivisible, that is, Impossible not to be *all at once*, or in *one Instant*; and an Angel, being a Pure Spirit, is ²³⁸ an Indivisible Subject; tis Evident that this Effect, or the Action of that Spirit upon it self, would be equally made in *every* Instant in case it were not *already* made; that is, can only be made in the *First Instant*. Wherefore an Angel cannot change it self *after* the First Instant.

Proposition V.

17. If there were only Two Angels Existent, *one* of them could not act upon the *other* after the very First Instant of their Being.

Let there be only *Two* Angels, the one whereof can work upon the other; and let the Agent be A: the Patient B: and, because they are suppos'd not to act in the First Instant, but after some Duration, let the Duration assign'd be C; the Instant at the end of that Duration in which they first work D. Since neither A. nor B. are able to work upon themselves except in

²³³ Ax. 6

²³⁴ Prop. 1.

²³⁵ Prop. 2.

²³⁶ Ax. 5.

²³⁷ Ax. 3.

²³⁸ Ax. 6.

the *First* Instant,²³⁹ and (as is suppos'd) one works not upon the other till the Instant D: they must necessarily remain in *all* respects the *same* they were in the First Instant till the Instant D; that is, for the whole Intermediat Duration C: Therefore they are equally fitted in point of Agent and Patient in *each* (nay in the very *First*) Instant of the Duration C: as they are in the Instant D; But in the Instant D, in which they acted, they were in *all* points *fitted* to act; therefore, they were also in all points perfectly fitted to act in the very first Instant of the Duration C: Wherefore²⁴⁰ the Effect *Begun*, and, the Subject being Indivisible,²⁴¹ *Ended* in the very *First* Instant, in case there²⁴² wanted not Application of the perfectly-ready Agent to the perfectly-dispos'd Patient. But there wanted not Application in the very First Instant; For, since *Quantitative* Application, or Propinquity, is not competent to Pure Spirits; *all* the Application they can be imagin'd to have to one another is by *Knowledg* and *Will*. But they had the same Knowledg and Will for the Whole Duration antecedent, because they are suppos'd *Unchang'd* and perfectly the *same* for that whole Duration. And, tho' they had not had it formerly, the Argument returns with the same force; that they could not have had this *new* Knowledg and Will from *Themselves* in any part of that Duration, nor from a *Body*, and therefore they must have had it from *another Spirit*; and this in the *First Instant*, because²⁴³ that Other was then perfectly apt to give it, This perfectly apt to receive it. And, consequently, If there were only *Two* Angels Existent one of them could not act upon the other *after* the very *First* Instant of their Being.

Proposition VI.

18. Put any multitude of Angels, how great soever, all that they can work upon one another will be perform'd in the *First* Instant of their Being.

For, since, where there are only *Two*,²⁴⁴ one must therefore act upon the other in the *First* Instant or *not at all*, because all the imaginable Concurrents to that Action were then *adequately* put; the rest also, where there are more, will for the same reason be wrought upon in the same Instant, in case the Causes of that Action be then *adequately* put. But they are all Adequately put in the same First Instant; For the second Angel that acts either is a perfect Agent, and perfectly apply'd by what it has *of it self*, or by what it has *from another*; wherefore, since it can never want what it has *of it self*, or by it's self, it cannot want any thing to work upon the Third, unless it be to be wrought upon by the First, and so be fitted to work upon the Third, but this is done in the very²⁴⁵ first Instant, wherefore also the Third will, for the same reason, be wrought upon in the self-same Instant. Again, since the Third cannot be imagin'd to want any thing to enable it to work upon the Fourth, but to be chang'd by the Second, and this was done as was now shown, in the First Instant; the Causes of changing the Fourth were *adequately* put in the same Instant too, and²⁴⁶ consequently the Effect. And, since how far soever we proceed, the same reason holds, *viz.* that the Effects are still *Indivisible*, and all the Causes of each immediately succeeding Effect, still *adequately* put in the

²³⁹ Prop. 4.

²⁴⁰ Ax. 1.

²⁴¹ Ax. 2.

²⁴² Corrected per errata sheet. Original: "their."

²⁴³ Ax. 1. 2.

²⁴⁴ Prop. 5.

²⁴⁵ Prop. 5.

²⁴⁶ Ax. 3.

first Instant, it will follow, that the Effects will still be put in the *same* Instant, by the same necessity that the Effect of the First up on the Second was put in the *First* Instant of their Being; Therefore, all whatever any Multitude of Angels, how great soever, can work upon one another is perform'd in the *First* Instant of their Being.

Proposition VII.

19. That 'tis Infinitely more Impossible an Angel should be chang'd by *God* after the first Instant, than by any other Spirit.

For, since the Angel is in the same manner capable of Change, as far as concerns *it's self* or it's *own power* to be changed, whether God or any other Spirit be to change it, on that side precisely there is a perfect Equality. Wherefore seeing, on the other side, 'tis infinitely more Impossible that GOD should not have *Power* to change her in the First Instant, than that any *other* Spirit should not have such a Power; and Infinitely more Impossible that GOD should not, *of himself*, be ultimately *dispos'd to act* where the nature of the thing is capable of it, his Nature being *Pure Actuality*. Also, since 'tis Infinitely more Impossible that GOD should, after some Duration, receive any Change in himself, fitting him to produce that Effect, than that any *other* Spirit should; And, lastly, since 'tis Infinitely more Impossible his Active Power should not be *Apply'd* to the Patient; both in regard he most necessarily and comprehensively *knows* it, and most *intimately*, by himself, conserves it in Being. Wherefore, since from these Considerations or Reasons, however Infinitely short in *Creatures*, it is concluded to be Impossible that even any *Other* Spirit, if it should change an Angel *at all*, should not change it in the *First* Instant, and these Considerations or Reasons are found to be in GOD with Infinitely greater Advantage; it is Evident that 'tis Infinitely more Impossible that GOD, if he change an Angel at all, should not change it in the *first* Instant, that is, should change it in the Intermediate Duration; than that any other Spirit should.

Proposition IX.

20. That 'tis absolutely Impossible an Angel should be Changed after the First Instant of it's Being.

18. For, since ²⁴⁷ no Change can be made without the working of *Some Cause*; and no ²⁴⁸ *Body* can work upon an Angel, and all that *it self* or any *other Created* Spirit can work upon it, must necessarily be in the very First Instant of it's Being; ²⁴⁹ and ²⁵⁰ 'tis much more Impossible GOD should work upon it, unless in the First Instant, than that any *Created* Spirit should; and there can be no Cause possible or Imaginable besides *GOD, Created Spirits, or Bodies*; it follows that there can be *no Cause at all* to work upon an Angel, or to Change it *after* the First Instant of it's Being; and, therefore, it can undergo no Change after that *First Instant*.

ADVERTISEMENT.

1. THIS last Conclusion may seem a strange Paradox to some Readers, whose Reason and Principles have not rais'd them above Fancy. But not to insist farther on the Evidence of our

²⁴⁷ Ax. 5.

²⁴⁸ Prop. 2. 3.

²⁴⁹ Prop. 4. 5. 6. 7.

²⁵⁰ Prop. 8.

Consequences from Undeniable Principles, which have forced the Necessity of our Conclusion, such men are desir'd to reflect that [*Ens*] being divided as by it's Proper Differences, by [*Divisible*] and [*Indivisible*] and these Differences being Contradictory to one another; it follows that [*Body*] and [*Spirit*] which are the *Species* constituted by those Differences, do agree in nothing *at all* but in the Common and *Generical* notion of *Ens*; or in this that they are, both of them, *Capable of Being*. Whence, 'tis Logically demonstrated that they must *Differ*, nay *contradictorily disagree*, in every thing else; so that whatever else is Affirm'd literally of the one must be deny'd of the other. Wherefore, since we can truly and literally *Affirm* that *Body* is Quantitative, Corruptible, in Place mov'd Locally, Chang'd by Time or Subject to it, Capable of Succession, or of *Before* and *After* which are the Differences of time &c. we must be forced with equal Truth Literally to *Deny* all these of Pure Spirits or Angels, because none of these do belong to the Common Generical Notion of *Ens*, but to that *Difference* which constitutes that *Species* call'd *Body*; and, therefore, the Contradictory to all these, and amongst them to be *Unsuccessive* in it's Operations, must be predicated of the other *Species*, call'd *Spirit*.

It will, I doubt not, be much wonder'd at too, that the Devils should be Damn'd in the First Instant of their being; which looks as if they were *Created* in the state of Damnation; A thing certainly, most Unworthy *GOD*, who is Essentially and Infinitely Good. But, their wonder will cease if they reflect that those Bad Angels had *far more* Knowledg, and consequently more perfect Deliberation (such as they can have) in that one Single Instant than We could have had tho' we have been a thousand years Considering and Deliberating e'er we had made our Choice of our last End, and fix our Resolution to adhere to it Finally. So that it never lay in the power of any Man to have so Clear a Knowledg of his Duty, and so perfect and full sight of all the Motives to continue in that Duty, as the Devil and his Angels had in that one Instant. Whence, the Crime of *Lucifer*, and his Adherents, was a Sin of pure Malice, and not mere Frailty, or mixt with Frailty; much less of Inadvertence, Speculative Ignorance, or suggested by the Soul's deprav'd Companion, the Body; as are the Sins of the Generality of Mankind, some Inconsiderable number of them excepted, whose Souls are thorowly poison'd with Spiritual Sin's peculiar to the Devil; such as are Spiritual Pride, Malice, Envy or such like; which wicked Sinners are therefore, even while here, so many Limbs (as it were) of the Devil, and very difficult to be brought to any Repentance. And this is the reason why *GOD*'s Wisdom, Goodness and Justice laid so many Miracles of Mercy to save poor *weak* Mankind; and left the Faln²⁵¹ Angels in the sad condition, in which they had so wilfully and desperately engulft themselves. Wisely and Justly placing it in the Order of Causes, that that Sin, which was so perfectly, and (in despite of all Motives to the contrary) so Wilfully Resolute, should be Irretractable; whereas, on the other side, Sins of mere Frailty are not hard to be repented of, when the alluring circumstance is past and gone; The same Frailty²⁵² which permitted them to *fall*, leaving them likewise in a *Pliability* to reform and retract what their Reason, abus'd by Passion, had; perhaps either by surprize or after much struggling, (that is half unwillingly) yielded to.

Corol. I. Hence, abstracting from Faith and Theology) 'tis Demonstrated against the *Originists*, by Reason reflecting on the nature of Things, that the Devils are to be *Eternally Damn'd*; and *how*, and *why* 'tis Impossible their Hell should have an End. For, they cannot be saved without Repentance, nor repent without having some *new* Motive which they either *knew* not

²⁵¹ Sic. 'Fallen,' i.e., corrupt and evildoing.

²⁵² Corrected per errata sheet. Original: "Faculty."

of before, or did not well *consider* of it. Neither of which can have place here; for, since they acquire no New Knowledg either by the Senses, or by Discourse, it follows that they have all in the first Instant that is due to their Natures; that is they know *all* they could possibly know, and out of that Knowledg made their Full and Final Choice. Nor can there be *Consideration* in a Knower that sees all things by *Simple Intuition*. For, *Consideration* is the *Comparing* one Motive with another, and therefore 'tis an Operation Proper to that Knower that works by *Abstracted* Notions or *Considerations* of the Thing. Whence it is most Improper and Incompetent to such an Intelligent Being as knows *all as once* by way of *Simple Intuition*.

Corol. II. Tho' all that can concern the Internal Operations of Angels was finished in an *Instant*, yet we may, for all that, conceive certain *Priorities of Nature*, in the Course or Process (as it were) of what belongs to them in that First Instant. *v. g.* We can conceive them to *be*; and to be *Good* according to their Essence and Existence, as coming Immediately out of God's hand, ere we conceive their own Depraved Will made them *Bad*. We can conceive them to know *Themselves* ere they knew *in* and *by* Themselves the whole Angelical Order, and the whole Course of Nature. We can conceive them to know Themselves as *most fit* (under God) to preside over Humane Nature, ere they knew that *a Man*, by the Incarnation of the Word was to be their *Head*, and (as it were) take their office out of their hands, and be Lord of *themselves* too; We can conceive them to know *This* (which was the cause of their Aversion from GOD) ere we can conceive them to *have had* that Aversion from him, for his thus Ordering things. We can conceive *Lucifer*, their Ring-leader, to *have had* that Aversion ere he *propos'd* his Seditious thoughts to other Angels, to debauch them from their Allegiance. We can conceive him to *have* Debaucht them, ere we conceive the Contrast and Battle *was* between *Michael* and his Loyal Angels, and *Lucifer* with his Rebellious Troops. Lastly, we can conceive this Battel fought, ere the latter black Squadrons were cast down from their Sublime Height into Hell. All these, I say, may be Conceiv'd to have had certain Priorities of Nature to one another, such as those Causes and Effects use to have which are in the *same Instant*: So that this *Single* Instant of theirs is, (tho not *Formally*, yet) *virtually*, and in order to the many Indivisible Effects producible in it, Equivalent or (as we use to say) *as good as* a Long *Series* of our Time: Not by way of Quantitative *Commensuration* of one to the other, but by the *Eminency* of the *Angelical Duration* or *Æviterernity*, which is of a Superiour Nature to Body, and consequently Bodily Motion or Time; and Comprehending it *all* Indivisibly and Instantaneously.

Corol. III. Hence it follows, that the Several Instants which Divines put in Angelical Actions, and particularly in *Lucifer* and his Fiends, before their Fall, can be *no way* Solidly explicated and conformably to the nature of *Pure Spirits*, but by those Priorities of Nature: For since Comparisons can only be made of those Natures which are *ejusdem generis*²⁵³ we cannot Compare, or Commensurate those Actions which are *Spiritual* to the Succession found in the Actions of Bodies, which are Measurable by Time, any more than we can their *Essence* to the *Nature* of a *Body*; and it would be an *odd* Comparison to say, an Angel is as Knowing as a Horse is Strong, or as a Wall is Hard: Wherefore, [Before] and [After] which are Differences of Time or Successive Motion, can never be with good Sense apply'd to the Operations of Pure Spirits. Again, should we allow such Instants Succeeding one another, it would avail nothing:²⁵⁴ For, since one Indivisible added to another cannot make a thing *Greater*, nor, consequently, a Duration *Longer*; the putting *many* of them advances no farther than the *First* Indivisible or the *First Instant*. Add, that even those Divines who put diverse Instants, do all

²⁵³ Latin: "of the same kind."

²⁵⁴ B. 2. L. 6. §§. 8, 9, 10.

own²⁵⁵ our Principles, that Angels are *Indivisible Substances* (for did they hold them *Corporeal*, as some of the Fathers did, I should not wonder at their Inconsistency) but they are frightened from the Conclusions that Naturally and Necessarily follow thence; either because they vainly fear Scripture-Texts, expressing things *humano more*,²⁵⁶ or in Accomodation to our low Conceptions, cannot otherwise be verified; or else, because those Conclusions too much shock their Fancy by their seeming Extravagancy; or lastly, because they are willing to gratifie and please the Fancy of the Vulgar which is startled at such uncouth propositions: And this is one main²⁵⁷ Hindrance to the Advancement of Science, when men are afraid of their own Conclusions; because the herd of vulgar Philosophers will dislike and decry them: A Fault which, I hope, I have not been Guilty of in this former Treatise; but have both *avoided* it my self, and have Indeavour'd to *prevent* it in others; by holding firmly, and directing others to hold to the right Notions or Natures of the things, and to pursue steadily the Consequences that do naturally Issue from them; how Aukward soever the Conclusions may seem, to those who take their Measures from *Fancy* how to frame their *Rules of Logick*, which are to direct their *Reason*.

Lesson VIII. *Of Opinion and Faith.*

1. *Science* being grounded on *Intrinsical Mediums*, and on such as are Proper or *Immediately* Connected with the Extremes, whence it has to be *Evident*; it follows, that those *Mediums* which are either *Extrinsical* to the thing, or *Common* ones cannot beget *Science*, but some *Inevident* or *Obscure* kinds of Light, call'd *Faith* and *Opinion*: The former of which is grounded on an *Extrinsical Medium* call'd Witnessing Authority or *Testimony*; the Later, on *Remote* or *Common Mediums*; which seem to *bend* or lean *towards* the Conclusion, but do not by any Maxim of true Logick *reach* it, or *infern* it; Examples of both may be these.

2. That which is Attested unanimously by such a Multitude of Witnesses, and so Circumstanc'd, that they can neither be Mistaken in it Themselves, nor Conspire to deceive others is true;
But
That there is such a City as *Rome* is attested by such a multitude of Witnesses, and so Circumstanc'd, that they can neither be Mistaken in it Themselves, nor Conspire to deceive others;
therefore
That there is such a City as *Rome* is True.

What's Promis'd will be; but
That my Debtor will pay me money to morrow is what's promis'd;
therefore
That my Debtor will pay me money to morrow will be;

Where Omitting the Former at present, the *Medium* [what's Promis'd] is a Common Notion in respect of *Paying*; whence we use to say, *All Promises are either Broken or Kept*: Besides, 'tis far from being *Proper* or *Immediate* to the Effect of *Paying*; in regard that multitudes of Cross-

²⁵⁵ Corrected per errata sheet. Original: "owe."

²⁵⁶ Latin: "a human way" or "a human custom."

²⁵⁷ Corrected per errata sheet. Original: "mane."

causes may intervene, hindering that Effect from following, tho' never so really intended; whereas taking a *Proper Effect* [viz. my Chambers being Enlightn'd] prov'd by it's Proper Cause [the Suns darting it's Rayes in through my Window] at which rate all the Course of Nature, and all the Demonstrations that might be fram'd of it all along, do hang together, nothing can intervene to hinder it; the *Efficiency* of the *Cause* being still the *Putting* the *Effect*.

3. *Common Mediums* not being immediate but Remote, are not in true Speech *Mediums* apt to Connect the Extremes. For, since what Connects two others must it self be Connected with them *both*; and what is *Connected* to two things must be *Immediate* to them both; it follows, that a *Common* Notion, not being *Immediate* to the Two Extremes, cannot Connect them; and, so, cannot be in proper Speech, or Univocally, a Middle Term with that *which is Immediate*.
4. Wherefore, all *Assent* to a Conclusion from a *Common Medium* is a Deviation from Humane Nature; and, consequently, Opprobrious.²⁵⁸ Whence comes the Proverb *Turpe est opinari*, 'tis Shameful to Assent upon Uncertain and Inconclusive *Mediums*, such as are *Common* ones. To which agrees that saying of Holy Writ, *Qui credit citò levis est corde*,²⁵⁹ *He that assents hastily is light of heart*; that is Inconstant or Unsteady in his Thoughts and Actions. Whence also he that *adheres stiffly* upon Opinionative Grounds incurs the Note of being an *Opiniatre*. The reason is, because, Reason being Man's Nature, so that as Brutes are led by *Sense* so he is led by some *Reason* (good or bad) in all his Actions, and True Reason being a Power to draw True Conclusions out of True Premisses; hence, every Assent Involves (as it were practically) that *the thing is True for such a Reason*; which Proposition is False if that Reason, for which he assents, does not *Conclude* it True, as *Common Mediums* do not. Wherefore, Reason being the true Nature given us by *GOD*; and Truth the Perfection of that Nature, all Assents upon Incompetent or Inconclusive Grounds do doubly injure our Nature; First, as to its *Essence*, by Concluding unduely; next, as to it's Perfection, in making it embrace a *Falshood*; and, *such a Falshood* as makes it liable to fall into many others, by imbuing the understanding with a *wrong Method* of Reasoning; whence he lies expos'd, by leaving the paths of Right Reason, to the Disrepute of being either *Passionate* or *Ignorant*.
5. They who do *Assent* upon such an Inconclusive *Medium*, notwithstanding that they *see it is* Inconclusive, are convinc'd to be Deserters of Humane Nature, and led blindly by *Passion*. For, since all Reasoning is built upon First Principles, they who come nearest the *Denying First Principles*, do *radically* (as it were) put off and abdicate their Whole Nature; But such Assenters come as near as is possible to the *Denying First Principles*; for they *Assent*, that is, they *Judge* or say interiourly, the Conclusion is *True*, or that the thing *is*; and yet they *see* at the same time, that the Reason, on which *only* they relie for that Assent, does *not Conclude* it to *be*; that is, they see *it may not be*, notwithstanding that Reason: which is to Assent or Judge that *to be*, which yet, at the same time, they Judge *may not be*: which is *in Substance*, though not in *Direct Terms*, (Nature not permitting such a palpable Contradiction to settle in a Subject made to see *Truth*) as 'tis to Deny the First Principle [*what is, is*²⁶⁰] or, *It is Impossible a Thing should be and not be at once*.

Corol. I. Hence, such Men are convinc'd to bely their *own* knowledge, to be False to *themselves*, Self-condemn'd, highly Passionate, Prejudic'd and Govern'd by meer Will; that is, to be *blindly Willful*; which is the Greatest and most Unnatural Depravation, that a *Spiritual* or *Knowing* Nature is capable of. Wherefore, they are Justly held to be disposed for any Ill that a

²⁵⁸ Disgraceful, worthy of scorn.

²⁵⁹ Quote comes from the deuterocanonical text *Wisdom of Sirach* (also known as *Ecclesiasticus*), 19:4.

²⁶⁰ Corrected per errata sheet. Original: "what it is."

Depraved Soul can desire. Which ought to make every prudent Man wary in his Conversing or Negotiating with them, if he cannot well avoid them totally; since, having renounced the Conduct of Evident Reason, *no* Reason can manage them, nor the wisest Man give any guess at what they will do, or whether the *blind* Impulse of Ungovernable *Passion* will hurry them.

6. Whatever Allowance may be made for *Weak* or *Ignorant* People, there can be *no* Excuse for a *Learned* Man if he Assents upon a *Common* or *Inconclusive Medium*. Because there can be *no* Necessity Imaginable that can compel him to *Interiour Assent*, as (perhaps) there may be to force him to *Outward* Actions; in regard God has given us a Faculty of *Suspending* our Assent till we see Evidence; lest our Weakness or Carelessness should at every turn precipitate us into *Error*.
7. From what has been said, 'tis seen that *Common Mediums* can, at most, but prove a thing *Probable* or *likely to be*; which may consist with it's *not-being* or *being False*. The Former part is prov'd, because *Proper Mediums* only make the Conclusion *Certain*; and therefore such as *these* can only render it *Probable* or *Likely*. The Second part is prov'd by every days Experience, which shows us how often we are Deceiv'd in *Likelihoods* or *Probabilities*, even though Great ones; and that the Contrary *frequently* happens to what such slight Grounds made us *expect*.
8. When those who are Invincibly Ignorant do assent upon such *Common Mediums*, it leaves no Note upon them more than that of *Weakness* and *Ignorance*; For, since such Men do, as is suppos'd, use the *best* of their Understanding, their Erring does not spring from the Obliquity or Byass of their *Wills* perverting their Light of Reason, which secures their Morality Untainted.
9. Tho' we ought not to Act thus *Interiorly*, or Assent, upon *Inconclusive Mediums*; yet Probability is very often enough to make us act *Exteriorly* when those Actions are *Necessary* to be done; even though they be subject to great hazard. Thus Merchants venture their Effects to Sea, even in the time of War, because their State of life requires it; yet, even then, they must have Evidence that 'tis *best to venture*; otherwise their Reason is some way Defective. So that Humane Nature still Obliges all Men to Act upon *some Evidence*.
10. In Cases of Conscience, and Law-suits, which are only *Probable*, and in which Interest is concern'd; the safest way is first to purge our Affections from Coveting that which is perhaps our Neighbours; next, not to trust to Casuists whom we apprehend to have *Large Cases favourable to our Interest*; nor to make choice of a Lawyer who is a Crafty Knave; but rather one who is reputed Honest, so he be Intelligent. For, while we proceed thus, the Will and Conscience is kept *Clear*; however the Decision of the matter may hap to be *Unjust*.
11. Thus far of *Opinion: FAITH* or *Belief* (speaking of Human Faith to which our Circumstances determin our Discourse) is built on *Human Testimony* or *Witnessing Authority*. To which ere we ought to yield Assent, two things are Prerequisite, *viz.* That we be Certain it *could certainly know* the things it Attests, and that it *speaks truly* when it does Attest them: that is, there are requisit *Knowledg* and *Veracity* in the Attesters.
12. If we certainly know that the Attesters *knew* the thing, and did not only *fancy* they knew it, it is most Certain the thing *is so as they knew* it to be; For, since to *know* a thing is to have the thing in our Understanding as it is in it self, and none can *know* what is *not Knowable*, or *is not*: it follows, that all Knowledg of the Thing's *Being*, or of it's being *thus* or *thus*, does most certainly Infer that thing to be as the Asserters *knew it to be*.
13. Care is to be had that the Attesters did *truly* Know the Thing and not only *fancy* they knew it when they knew it *not*. For, since Mankind is often deceiv'd in *thinking* they know, and only *True Knowledg* in the Attesters can ground our Second-hand Knowledg that *it is*, grounded on

their Knowing it to be; it follows, that we must be *sure* those Attesters *could not err* in knowing that thing, ere we can Rationally *believe* them.

14. Wherefore no Testimony built on their Knowing *Speculative* Points can have any force upon our Understanding or Oblige it to Belief. For, since we experience that even Learned Men do often err in their Speculations, either thro' Inadvertency, the Obscurity or Perplexedness of the Object, Ambiguity of Words, Dread of some Authority which over-aws their Reason, or, lastly, thro' want of *Logick* or a Right Method how to manage their Thoughts: It follows, that we cannot be Sure that they *do not* err, or that they do *truly know* Speculative Points; nor, consequently, can we be Certain that the thing is *truly so* as they pretend to *know it is*. All the power they have over us is, to make us prudently wary not to oppose such Speculators, but upon Evident Reason: especially if they be *many* and of Repute; but much more if they pretend to go upon *Intrinsical Mediums*; in which the Mistake is both *seldom*, and quickly *discover'd* if brought to the Test.

Corol. II. Hence no Credit at all is to be given to such Reasoners who do not so much as *pretend* to Demonstrate, tho never *so many*. For such men do not so much as *affirm* themselves to be *Knowers*, or that the thing is Certainly *so* as they *deem it to be*; and, so, they can have no kind of Authority, even tho' their Speculative thoughts were a thing Attestable. Whence we may establish this Maxim, *viz.* That *No Reasoner* (precisely as such) *has any kind of Authority but by virtue of the Reason he produces*; that is, the *Reason*, which he alledges, and not his *Saying* or Word ought to have any force *at all* upon our Understanding.

15. Wherefore *Testimony* has for it's Object either *Particular* things, or *Matters of Fact* necessarily knowable by Mankind, using their Common and Frequent *Sensations*, or relying on *Unerrable Experience*. For since *Universal* Notions are the Object of Speculation, and men ²⁶¹ *may err* in their Speculations; *Universals* cannot be the Objects of *Witnessing* Authority or *Testimony*, but *Particulars* only. Again, since *every* Particular is not obvious to Sense, but *many* of them are so Circumstanc'd, Insensible, or Remote, that we can have no *Certain* Experience of them; it follows that only *such* Particular Objects or *Matters of Fact*, as make a lively and Certain Impression on the *Senses*, are those which can be Attested or be the Object of *Testimony*.
16. Experience may be so Circumstanced, that it is Impossible the thing Experienced should be *otherwise*. For, since the Senses of Mankind, in due circumstances, are as apt to convey sincere Impressions of Sensible Objects into our Minds, as other Natural Causes to produce their Effects, they being design'd and fitted by *God* and Nature for that end: it follows, that (if other Circumstances be agreeable) it is Impossible but they should give us such Experiential Knowledg of Sensible Matters of Fact, or Particulars, as may *assure* us of the things *being as* we Experience it. The Circumstances requir'd to this Absolute Assurance is, that the Object propos'd be of a thing Subject to Sense; that it be within a Convenient Distance; and, that the Impression be not hindred or perverted by an Inconvenient *Medium*. Hence, we can be absolutely Certain what House or Street we live in, of our Acquaintance, or Employment, who reigns in such a year; and of Notable Actions, Universally Knowable, that happen'd in such or such a time; lastly, of Multitudes of Private Actions, familiarly known to our selves only.
17. Besides *Knowledg* in the Attester, there is also requisit Veracity in him to ground *Human Faith*. For, let the Attester *know* the Object never so well, if we cannot be Certain he tells us *True* when he *says* he knows it, his Original Knowledg cannot have any Effect on us, or beget a Second-hand Knowledg in us, derivable from his Pretended Knowledg of that Object.

²⁶¹ §. 14.

18. No Authority deserves Assent farther then Reason gives it to deserve. For, let us take *two* Authorities, one that of a whole Town, the other of a Knight of the Post; and (since our Nature allows us that Privilege) let it be ask'd *why* the Latter is not to be credited as much as the Former? and the answer will be, *For such a Reason*. So that *Reason*, in Common, is the Ground of our Believing *at all*, as well as of our believing *one* Authority rather than *Another*. And, this because Reason is our Nature given us by *GOD*; and, therefore, every Act of our Soul that is not *for* some Reason and *according to* Reason, is totally *without Reason*; that is Unnatural, that is Irrational, that is Brutal or Unbecoming a *Man*.
19. Wherefore no Man can be oblig'd to believe *beyond* the Motive he has to believe. For, that *degree* of Belief that is *beyond* the Motive or the Reason, as far as it is *beyond* the Reason is Evidently *without Reason*, or *Irrational*. Whence follows that our Reason is to give us our *Grounds* of Belief, both as to the Knowledg and the Veracity of the Attesters. For otherwise our Belief would have *no Reason at all* for the *Grounds* it is to rely upon, and so would be perfectly *Irrational*.
- Corol. III.* Wherefore, since *God* governs his Creatures according to the Nature he has given them; he does not Command us to Assent absolutely upon any Authority which may either *be Deceiv'd* or *Deceive us*. For, otherwise, men may be led into Errour by obeying *GOD's* Command; that is, since *GOD* laid that Command, by *GOD* Himself.
20. Wherefore both the *Knowledg* and *Veracity* of the Attesters must be Knowable by *Intrinsical Mediums* taken from the Nature of the Thing; and those must be also *Conclusive* ones. For, their Knowledg and Veracity must either be made known by *Intrinsical Mediums*, or by *Extrinsical* ones; that is by *Another Authority*; and the same question recurs, How we are Certain of the Knowledg and Veracity of that *other* Authority, and so *in infinitum*. Whence we must come to be certain of the Knowledg and Veracity of Authority by *Intrinsical Mediums*, or we can have *no Ground at all* to believe any Authority. Moreover, the proper work of Reason is to *Demonstrate*, which is done by *Intrinsical Mediums*; and, unless they be *Conclusive*, they prove *nothing*, and so are *good for nothing*.
21. The Knowledg of the *First Attesters* is ascertain'd by what has been prov'd. §. §. 15.16. Their *Veracity* must be prov'd by shewing there *could be no Apparent Good* to move their Wills to deceive us; and the *best* proof (omitting the Impossibility of joyning in such an Universal Conspiracy to deceive, the Certain loss of their Credit to tell a Lie against Notorious Matters of Fact &c.) is the *seen* Impossibility of Compassing their Immediate End, which was to *Deceive*. Which reason is grounded on this, that no *one* man, who is not perfectly Frantick, acts for an End that he *plainly sees* Impossible to be compassed. For example, to fly to the Moon, or to swim over *Thames* upon a Pig of Lead. Thus it is Demonstrable that all *England* could not Conspire to deceive those born since, in asserting to them that there was a King *Charles* the First, or a Long Parliament which rais'd a Civil War here; because they *must see* it is impossible to gain Belief of it, which was their *Immediate* End; (whatever *farther* End they might propose to themselves) So many Records, Practices, Laws, and other Consequences Issuing thence, giving them the Lie; besides the Histories of our own and other Countries; and the Concatenation of Causes and Effects in the Political part of our Neighbouring Nations, all conspiring unanimously and appositly²⁶² to detect the Cheat. Wherefore, the End being Evidently Impossible to be atchiev'd; it could never be an *Apparent good* to them in such a case to *act for such* an End, or to attempt to deceive us by Attesting it; and, therefore, they *could not tell such* a Lie in *such* a Case; therefore they were *Veracious* while they Attested it.

²⁶² "Appropriately" or "aptly."

22. Tho' both the Knowledge and Veracity of the Attesters be Demonstrated, and, Consequently, the thing Attested by them be most Certainly and necessarily True; yet our *Assent* to the Truth of that thing is neither *Science* nor *Opinion*. It cannot be *Opinion*, because the *Medium* that begets Opinion is not *Necessarily* Connected with the Extremes, as is found here. Nor can it be *Science*, because our Knowledge of the thing is not taken from the *Thing it self* that is attested, causing such a Notion or Impression in us *directly* by it's self, or by Reflex Knowledges upon those Direct ones (on which kind of Impressions all *Science* is built) but it is a Knowledge *Reflected* to us from *Another's Knowledge* of it, or a kind of Second-hand Knowledge. Nor is the Knowledge which even the Attesters had of the Object at First-hand, a *Proper Effect* of the *Ens* or *Thing* which is the Object of that Knowledge. Nor is the Thing, as an Object, the *Proper Cause* of that Knowledge; only which can beget *Science*. For, a *Proper Cause* has a *Real Order* or Relation, to it's *Proper Effect*; whereas the *Objects* have no Real Relation at all to the *Senses* or our Knowing Power, as was shown above where we treated of *Relation*; By which we may farther more clearly discover the *Essential* Differences between *Science*, *Faith*, and *Opinion*.

It may be objected that Intelligibility is a *Property* of *Ens*; therefore every *Ens* is a *Proper Cause* of Knowledge. 'Tis answer'd that it is only a Property of *Ens* Negatively (as it were) in regard nothing can be understood but *Ens*; *Non Ens* not being able to cause any knowledge in us. Or, it may mean that 'tis only a Property of *Ens* in order to an *Extrinsical* thing, not a *true* Property, Perfecting it Intrinsically; as Properties due to a thing by Nature, and Springing from their Essences, do. It may be objected farther that all Natural Powers are true Properties tho' they respect *Extrinsical* things on which they are to work. 'Tis answer'd, that they perfect those Entities *Intrinsically*, or give them some perfection in their Intrinsical Nature, which, Intelligibility does not; for nothing is Intrinsically *better*, or *otherwise* than it would be, for being *Known* or *Understood*. To explicate this better, we may consider that every Entity, being a *Part* of the World, has some Office or Place there, and some part which it is to act on the Stage of Nature. And, accordingly, Metaphysicks teach us that every Body is constituted such by it's having some *Primary Operation*, which 'tis fitted to produce; as Fire to heat, Water to Cool, &c. Whence, what ever fits it for such an Operation is either Essential to it, or a Property immediately Connected with it's Essence; such as are those Natural Powers objected. Now 'tis Evident that those Powers do perfect each Nature *Intrinsically*; since without them it would be *Imperfect* and *Impotent* to perform that which it was Essentially Ordain'd for; and so the whole course of Nature, carry'd on by such Proper Causes to Proper Effects, would be quite out of frame and Order; whereas, 'tis manifest it would suffer no detriment at all in it self, whether those Proper Causes or Effects were *Understood* or no. Which shows that their being *Known* by the First Attesters, or *made known* to us by their Knowing them, is not a *Proper Effect* of those Causes, nor *Intrinsical* to them as they are parts of Corporeal Nature, but Accidental to them as such; but yet *so* Accidental that it is *Inseparable* from them; and, so, does *Necessarily* infer the Conclusion.

23. *Testimony* on which Human Faith relies, is adequately divided into *Living* and *Dead*; that is into such Attesters as speak *vivâ voce*,²⁶³ and those that speak by *Writing*. Because there is no Common or Ordinary way but *Speech* and *Written* or *Printed Characters* by which Men can relate *Matters of Fact* to others, or *testify* to them their Knowledge of such things.
24. Matters of fact done long ago, if very Concerning to have the Knowledge of them Continu'd, and that they were *known* at first by the Experience of a *great* portion of Mankind, may be made known to us who live *now*, by a Delivery of them down from the foregoing Age to the

²⁶³ Latin idiom: "by word of mouth."

succeeding One. Which *Continued* Testimony or Delivery of them is call'd *Tradition*. For, since the Generality of First Attesters, who liv'd in the same time when they happen'd, could not but *know* them; and the Continual Concern of them could not but still prompt and provoke *Foregoers* to speak of them to their *Descendents*; it follows, that the *Continuance* of those Causes may still *continue* the same Effect, and bring the Knowledge of them down to our times.

25. *Practise*, if *Frequent*, and *Obligatory* to be Continu'd, will most certainly bring down the *Tradition* of Former Matters of Fact. This is Evident; for it is Impossible that the Martyrdom of King *Charles* the First, or the horrid Powder Treason²⁶⁴ should ever be forgotten, if the Anniversary of them have a Continu'd Obligation of celebrating such Matters of Fact *but once a Year*; much more, were such Practises *often* repeated.
26. Such a Tradition of *such* Matters of Fact is *Equally* Certain tho' the thing Attested had happen'd some Thousands of Years ago, as if it had happen'd but an Hundred Years since. For, since it is equally *Easie* for the succeeding Age to understand the Attesters, Witnessing still all along that they had been *told* it, as it was to understand the First Attesters relating they had *seen* it; Their Testimony, as far as concerns their *Knowledge* of what was transmitted, has *equal* force as had the *First* Attestation: And, since the Wills of the Intermediate Attesters had the same Object (*viz.* an *Apparent Good*) which they could not desert or go against, or act without it, and an Evident Impossibility *could not be* an Apparent Good; and it was equally acting for an Evident Impossibility, to conspire to say they had such a thing Universally Testify'd to them by their Fore-fathers, or to hope to gain Belief of it, if it had not been so Attested; their *Veracity*, in Attesting they thus received it, was no less *Assur'd*. Wherefore, the same Causes being put all along in *each* succeeding Age as were *at the first*, the same Effect of Delivering it down with the *same* Certainty, must still be Continu'd, though for some thousands of Years.
27. No *Dead* Testimony or *History* has any Authority, but by virtue of *Living* Testimony or *Tradition*. For, since Falshoods may be *Written* or *Printed* as well as Truths, it follows that nothing is therefore of any Authority, because 'tis Written or Printed. Wherefore, no *Book* or *History* can Authenticate *another* Book; whence follows that, if it have any Authority, it must have it from *Living* Authority or *Tradition*, continuing down to us the Consent of the World, from the time that Author *Writ*, or the matters of Fact it relates were *done*, that the things it relates are True *in the main*; and, consequently, that the Book that relates them deserves Credit, or is (as we use to say) an *Authentick History*. For example, had a Romance, (soberly penn'd,) and *Curtius's* History been found in a Trunk for many Hundreds of Years after they were writ; and the Tradition of the former Ages had been perfectly *Silent* concerning them *both*, and the *Matters* they relate; we must either have taken both of them for a *Romance*, or both for a *True History*; being destitute of any Light to make the least difference between them.
28. Tradition not only authenticates *Books* in the *bulk*, but it gives moreover the *distinct degrees* of Credibility to divers passages in the same Book already authenticated *in gross*. For no wise Man can give the same degree of Credibility to *Alexander's* cutting the *Gordian Knot*, or to his speaking such and such words to *Hephastion* or *Parmenio*, as he is *forc'd* to give to his Conquest of *Asia*: And why? all of them being Equally in the Books? Certainly, because the latter being Visible, Remarkable, and of great Concern to Innumerable Attesters of it at first, so vast a source of Original Attesters did, consequently, carry down a Matter of fact so hugely

²⁶⁴ 'Powder Treason' refers to an attempted regicide of James I on the 5th of November, 1605. The failure is commemorated annually on Guy Fawkes Night (named after one of the participants of the plot).

Notorious with a *vast sway*; whereas the others, being *particulars*, of small Concern or Note, and seen or heard but by a *few* at first, wanted a *strong* Tradition to recommend them for Certain Truths. Whence, (for ought we know,) they were grounded and writ upon *Hearsay*, as our News and many particular Actions and Sayings of Great Men are now adays, which oftentimes prove False.

29. Hence appears, that Historical Faith, merely *as Historical*, that is, in passages *Unabetted* by Tradition, is not Absolutely Certain, but is liable to be False or Erroneous, and so is not without some Degree of Levity to be *absolutely Assented to*; tho' we cannot generally with prudence Contradict them, but let them pass as if they were Truths, till some good occasion awakens our Doubt of them: The reason is given, in our last Paragraph, from this, that all Particulars are of slight Credit that were not Abetted by a *Large* and *well-grounded* Tradition.
30. Tradition thus qualify'd as is above-said, *viz.* So that the Matters of Fact were Certainly Experienced by *very great* Multitudes of the First Attesters; that they were of *great* or *universal Concern*, and so prompting them still to relate them to the next Age; that they were Abetted by some *obligatory Practise*; and, lastly Impossible to gain a Belief, if they had not *been*; and thence, *Obliging* the Attesters to Veracity: *Such* a Tradition, I say, is *more than Morally*, that is, *Absolutely Certain*. To omit the foregoing reasons, which have evinc'd the force of each of these particulars. This will be Evidently *seen*, or rather *Experientially felt*; by Reflecting on our own Interiour; and by observing how *Nature* works in Mankind and *forces* them *to Assent firmly* to the points which such a Tradition recommends, and to *Suspend* as to the other. For Instance; Let us take some Particular that is only *Morally Certain*; as, that I shall not dye this Night; or, that when I walk abroad a Tile shall not fall from a House, and kill me; or, that the House I live in shall not fall down and crush me; or such like. I find at first sight, that these are *highly Unlikely*, because it *very seldom* happens; and many reasons may occur why *I think* it will not be; Yet if I severely call to account my most Serious and Deliberate thoughts to find any *Absolutely Certain* Reason, why that may not happen to me which has happen'd to others; I shall perceive that I can find *none* such. Whence, I can entertain *some Degree of Suspence*, whether it may not possibly happen to me or no; which *restrains* me from Assenting *absolutely* that it *will not*. This duely reflected on, let us propose to our selves Another Particular, to be scann'd likewise by our most strictly-examining Thoughts: *viz.* whether there was a *Henry the 8th.* a *Julius Casar*, or that *Alexander* conquer'd *Asia*. Which being propos'd to our Examination, let us again consult our Thoughts, and put on the most Sceptical Disquisitiveness we are able, to find out some reason, why these may not *possibly* be False, as well as the others might. And, in despight of all our most Exact search, and our utmost endeavours to put our selves upon *doubting* of these said particulars, we shall still find the Affirmative of *each* of them writ in our Breast in such *Indelible* Characters, and so *Solidly* Imprinted there by Nature (I say, by *Nature*, for that Certainty was not Acquir'd by *Study* and *Speculation*) that we can never be able to invent *any* kind of Reason that can breed in us the *least degree of Suspence*, as to the Verity of these, and such like Matters of Fact; or *unfix* us from our *most stedfast* Adherence to them as *most Certain Truths*. Which shows Evidently that the former were only *Morally Certain*, that is, had *some* Contingency in them, and so, might *possibly* be otherwise than we, till we came to reflect, *deem'd* them; whereas those Latter were *more than Morally*, that is *Absolutely Certain*; because, after the most accurate Reflexion, we could not invent, and heartily embrace, *any* Ground or Reason to admit the *least Suspence* as to their Truth; nor *how* or *why* they might *possibly* be False, or (which is the same) that the Testimony or *Tradition* for them could be *Fallacious*.

Corol. IV. Hence we may make a farther Discovery of the force of Practical Self-evidence instill'd by Nature without Study: and, that it is a *solid* Knowledge of the *An est* of the thing Attested, and, consequently, of the Conclusive Force of Tradition, as also of many other Truths; the *Quid est* of which (or the Grounds on which our Rational Nature Unreflectingly, and as it were, *at unawares* proceeded,) is to be Demonstrated by Learned Men, looking exactly into *Intrinsecal Mediums*; and thence discovering how this Effect, *viz.* such a *Firm Adhesion*, was wrought in us Connaturally; or *why* such an Authority *could not* deceive us in Attesting such Particulars.

Note, That some of these Matters of Fact now mention'd, do fall short as to some of the best Qualifications found in diverse *other* Traditions; *viz.* as to that of their being *Practical*. Which gives us farther light to discern the Incomparable Strength of *Tradition*, and how every way Impossible it is it should deceive us, were it furnisht with all the Advantages it might have.

13. ²⁶⁵Hence is seen that *Opinionative Faith* is as much Irrational as *Opinion* was shown to be, taking it as Oppos'd to *Science*; for example.

What an Old Wife said is True

That she saw a Spright is what an Old Wife said; therefore

That she saw a Spright is True.

²⁶⁵ Sic. Expected is section "31."

Lesson IX. Of Assent, Suspence, Certainty and Uncertainty.

1. THE Notion of Potentiality, Indifferency, Indetermination, and Uncertainty, *as conceiv'd to be in the Thing*, are one and the *same*; For, if the Thing be consider'd meerly as a *Power* to be *This* or *That*, or to be *thus* or *thus*, 'tis evident from the Terms that it is not (as thus conceiv'd,) Actually, Particularly, Determinately or Certainly *this*, or *thus*; since all Difference, Determination, and, consequently, Certainty in the *thing* (which, if well reflected on, *are* no more but it's *being what it is*) do spring from the *Act* or *Form*; as all Potentiality, Indifferency, Indetermination and Uncertainty of being *this*, or being *thus*, does from the *Matter*.
2. Existence, as being the *Last Actuality*, takes away all Potentiality, Indifferency, and Uncertainty of being *this*, or *thus* that can possibly be in the Thing. This is as Evident as 'tis that Perfect Light takes away Darkness, or, that any Opposit is Inconsistent with the other Opposit in the same kind; or, to come nearer our point, that *what is*, has, while *it is*, lost all Potentiality or Power of *not being* while it is.
3. Wherefore, considering the Thing *as it is in our Understanding*, it remains *Indeterminate* and *Uncertain* to us; that is, our Understanding, which is Inform'd by it, is *Potential* or *Indeterminate* it self; and consequently, *we* are *Uncertain Intellectually* till we *see it is*. The reason is, because all our Knowledg is *Intirely* and Adequately taken from the *Thing*, which makes the Understanding Conformable to it according to the degree of Clearness or Obscurity whereby it is represented to us, or affects us: Whence follows, that, when we *see* the Existence of the Thing, or that *it is*, our Understanding is *ultimately Determinate*, that is, we are *Absolutely Certain*.
4. Wherefore, on the contrary, while we see the Thing *may not be* for ought we know, our Understanding is Indeterminate as to it's *Being*; that is, we must remain *Uncertain* that *it is*. For, 'tis against a First Principle of our Understanding, that the Thing *may not be* and *be* at once.
5. Wherefore, [*Assent*] being the Judging that a thing *is*, all that passes in us (if we act Rationally) is *Suspence* till we come to a Proof that Concludes *it is*. This is manifest from the Terms; For the Words [*Suspending of Assent*] do show that, take away *all* Suspence, *Assent* succeeds: and, consequently, that (unless it so happens that we see a thing to be clearly False) *all* is *Suspence* till we come at *Assent*.
6. Wherefore all Common and Remote *Mediums*, which are only apt to ground *Opinion*, being unable to conclude the Thing *is*; they are, consequently, unable to *Determin* the Understanding that the Thing is, and, therefore, they must leave it (if it works rationally) in *some degree* of Suspence; Indetermination or (which is the same) in *Uncertainty*. This is Evident; because such Proofs do reach only to show the thing *Likely to be*, which falls short of it's Being *really* and *Indeed*; for *Likelihood to be* is not the Notion of *Being*, since [what *is*, most *Certainly is*] which goes beyond *all* Likelihoods, how great soever they may be imagin'd to be.
7. Suspence may be consider'd as Indifferently *hovering* between the Things *being* or *not being*, or without Inclining to *either* of them. For, sometimes we have *no* kind of Reason inclining us to the Likelihood of the *one* more than of the *other*. As we experience it happens to us as to our Determining whether the Number of the Stars be Even or Odd.
8. Hence Assent consists in an *Indivisible* (as does also *Dissent*, or a Judgment that the thing *is not*) but all *Suspence* is *Divisible* or Capable of Different *Degrees*. The former part is Evident, because it's proper Object, [*is*] or [*being*] is Indivisible, as is also the Object of Dissent [*is not*], whereas the Objects of *Suspence* are seeming Distances from the things being *so* Actually, or Approaches towards it; or in Dissent, Approaches towards it's seeming *not to be so*; that is, Removes from it's *being so*.

9. The Differences of this perfectly *Indifferent* Suspense are *more* and *Less* seemingly Distant from, or Approaching to, the Actual Being of the Thing. For this Indifferent Suspense, by it's being Indifferent, is a kind of *Genus* to the others, and abstracts from them both; and therefore, the Differences of it must be *more* and *less* in that kind.

Corol. I. The Disinclining towards Assent or Inclining towards Dissent that the thing *is*, is call'd *Doubt*; and, if the Being of that Thing is our *Good*, it grounds that Passion call'd *Fear* of loosing it. And, the Inclining towards Assent in such a Case, or Disinclining to Dissent, causes a disposition in the Understanding *opposit to Doubt*; which, (tho we want a name for it) is a certain chearing Glimpse in the Understanding, which was in perfect Darkness before, and grounds that Passion which we call *Hope*. Both which Passions are Rational or Irrational, according as the *Likelihoods* on which they are built are *Great* or *Slight*.

10. Those Different Inclinations or Propensions of the Understanding towards the Things *being* or *not being* may be taken from Innumerable Heads: *viz.* From the meer Frequency or Seldomness of the things Happening; from Historical Relations unabett'd by Tradition; from Rumour and Common Talk; from Writers of Uncertain Authority, or proceeding upon Speculation or Opinion; from the Multitude of such Authors as do not so much as *pretend* to know, yet are of great Name or Authority; from the bare Sentiments of Antiquity; from relying on our Nurses, Parents or Tutors; from Medals, Monuments, Inscriptions, Fables, &c. From Misconceits deluding our Fancy; from Equivocation of words; from Interest and Prejudice; from ill-agreeing Observations made by our selves of the same happening in a like case; from Mistakes of Proper Causes, &c. All which agree in this that they are *Common* or *Remote Mediums*.
11. Some Degrees of Suspense are so *small* and Indiscernable, that they are not easie to be discover'd, so that they *counterfeit* an Assent even in the Wisest, and cause a *Real* Assent in Weak People. Such as are the Instances of Moral Certainty mention'd ²⁶⁶ above.
12. The way to discover whether they be *Assents* or *Suspences* is to *Reflect* on our own Interiour, and to study better our careless thoughts, by asking our selves what *Certain Ground* we had for them. For, 'tis Evident that we have many Effects wrought in us by *Nature*, which, for want of Reflexion, we are not aware of; in regard our Thoughts, and the several natures of them, cannot possibly be known but by *Reflexion*. For, to use our former Example, we seem to Assent Absolutely that we shall *not dye* this Night; and even the Wisest Men, if they be now in perfect health, do seem to take it to be altogether *Certain*, or (to speak more properly) that themselves are Absolutely Certain of it; yet, upon recourse to their Grounds, finding themselves unable to fathom the *Series* of Hidden Causes and the multitude of Casualties that may occur, which they habitually knew *before-hand* that they did not certainly know; we shall find that, notwithstanding this *seeming* Assent of theirs, they yet retain'd some small *Degree* of Suspence whether it might happen or no, which hinder'd them from truly Assenting.
13. From what's said it appears that *Certainty* is a Qualification of Assent, giving it it's best perfection by *Securing* it from *Error*; and making it, at the same time, Incapable of *ever* admitting the *least* Degree of Suspence. For, since our Assent may hap to be, and oft-times is, upon Irrational and Inconclusive Grounds; which expose it, when discover'd, to the shame of a future Retractation; but *Certain* Assent, cannot be liable to that Hazard and Inconvenience, because what's *Certain to us*, is *True beyond all Peradventure*; it is evident that *Certainty* superadds to Assent the *highest* Perfection that can be.

²⁶⁶ L. 8. §. 30.

14. Certainty may either be consider'd as it is in the *Object* or the *Thing*; or else, as it is in the *Subject* or *Person* who is Ascertain'd by by that *Object*.
15. Certainty on the *Objects* side is nothing but the Things being Determinately *what it is*, or *as it is*. This is in a manner Self-evident; For every thing that *is*, is *Determinate*; and it's being Fixt to be *such*, is to be *Certainly* such of it's own Nature; independently on any thing but on the First Cause Establishing that Nature *to be what it is*; or ordering it, by Second Causes, to be *as it is*.
16. Certainty on the *Subject's* side is the Conformity of our Understanding to this Objective Certainty. For, we can neither be Certain nor Uncertain without Reasons or Motives; and those must either be taken from the Establish'd or Certain Nature of the *Things*, or they can be *no Reasons*.
17. Wherefore, when we discourse or dispute about the *Certainty* of any Point, it can only be meant of Certainty in the *Subject*, or of Certainty *to us*: for, of Certainty on the *Object's* side, or that the Thing is Certainly or Determinately *what it is*, there can be no Dispute.

Corol. II. Hence, *Certainty* being the Determination of the *Understanding*, which is to be led by *Reason*; all Determination of our Understanding which springs from the *Will*, and not from *Reason*, is not to be call'd *Certainty*, but *Resolvedness* or *Wiliful Adhesion*.

18. Wherefore 'tis most Irrational, and a most senseless Abuse of the word [*Certainty*] to ground it on the Subjects or the Person's *own Perswasion* that the thing is so, and not on the Thing it *self*. For, since our Soul is of her self *Tabula rasa*, all our Knowledg, and the Firmness or Solidity of our Knowledg, that is our *Certainty*, must either be taken from the Things that are *without us*, or (since *Nature* can have no other Method but that;) it must be inspir'd *Supernaturally*. Wherefore, such a Fantastick and Catachrestical²⁶⁷ *Certainty*, is convinc'd to be nothing in those men that are capable of weighing Reasons, but a Self-conceited *Resolution* to hold or think thus, and to Stick to it, out of meer *Wilfulness* (its true and only Ground) in defiance of all Reason, and of the Natures of Things which do ground *all* our Reason.
19. Hence follows, that that Certainty they Nick-name [*Moral*] is in reality, *Uncertainty*. For, since all Certainty has for it's Object or Cause the Existence of the Thing on which all true Assent is grounded; and this, consisting in an *Indivisible* has *no Degrees*; it follows that as when you step never so little out of the Notion of [is] which is its Object, you plunge into [is not] so you no sooner relinquish (tho' never so little) the true Notion of *Certainty* but you fall into *Uncertainty*, in regard the Object of it permits *no degrees* of passing from *one* to the *other*, or Approaching to it nearer by little and little. Wherefore, since Moral Certainty imports some *Diminution* of True Certainty, it must necessarily be *some kind*, or *some degree* of Uncertainty, Whence to say [*I am morally certain of a Thing*] is, in rigour, the same Nonsense as it is to say *I am Uncertainly Certain*, or (which is consequent to it) *I ignorantly know*, *I suspendingly* or hoveringly *Assent*, *I diffidently believe* or can *probably demonstrate*. Wherefore, when in common speech men use to say they are *morally certain*, 'tis a Catachrestical phrase, and signifies only that the thing is *highly likely*, or that they *Incline strongly* to think 'tis True.
20. Hence follows, that *Certainty* and *Infallibility* are all one, or the *self-same* Notion. For, since Nothing sounds more contrary to the Common Sense of Mankind than to say, we are *Certain of any thing peradventure*, Certainty must be such a *Fixure* of the Mind, as to the Existence of the Thing, as is *beyond* all Peradventures of being Deceiv'd in that thing, or beyond all Contingency that it may happen to be otherwise than we are Certain *it is*. Again, since

²⁶⁷ Means: misuse or misapplication of a term.

Certainty is the Immediate Effect of our Knowledge of the Thing, and the thing is *Infallibly*, what *it self is*; and our knowledg of a Thing (it being Essentially a Conformity to that thing) is Infallibly *as the Thing is*: it follows demonstratively that *Certainty*, which *determins* and *fixes* our Understanding by such a Knowledg, or a Knowledg so grounded, must be likewise *Infallible*. Lastly, (to omit many other Conclusive Proofs) If Infallibility and Certainty be not the *same* Notion, then they are *different* Notions; that is, [Infallible] is one of the *Differences* of Certainty, distinguishing it from other sorts or *Species* of Certainty; wherefore there must (in that supposition) be another *species* of Certainty which is *not Infallible*; that is, (since what is not Infallible must be Fallible) there must be another *Species* of Certainty which is *Fallible Certainty*; But this is against the *Common Sense* and Language of Mankind; nor can there be greater Nonsense than to say, *I am Fallibly Certain* of such a Thing; nor, (though there could not want occasions to use such words) was it ever *heard* or *read* since the Creation that any man did ever joyn these two words [*Fallibly* and *Certain*] together in their Discourses and Writings. Therefore, [Infallible] is not a *Difference* of Certainty as its *Genus* or (which the same) a Notion *Different* from it; whence 'tis Logically demonstrated that it is the *same* Notion with it, or that *Certainty* and *Infallibility* are all one.

Quære. Why is [Infallible] then added to [Certainty] if it have no *Different* Signification from it, or do not add *some degree* of Certainty to it? Or why does Mankind use such a needless Tautology? 'Tis answer'd; We may observe that though to say *I am Infallibly Certain of such a Thing*, suites very well with the Notions and the Sense and Language of Mankind, yet men never use it but when some Circumstance requires it to put others out of all *possible Doubt* of the Thing in question: And then Nature puts them upon Redoubling, as it were, their Words or Expressions to assure them of their Certainty of that Thing. Thus in such Cases, they use to say, *I know it, I tell you once again, I know it to be so*; or, they think it not enough to say barely *I saw it*, or *I heard it*, but they express themselves thus, *I saw it with my own eyes*; or *I heard it with my own ears*; which, were it not on such an occasion, would seem foolish and Tautological; since no man can see but *with his own Eyes*, nor hear but *with his own Ears*: Or, it may be answer'd that some men use in such occasions to joyn [Infallible] to [Certainty] to signifie *True Certainty*, and to distinguish it from that *Mock-Certainty* call'd *Moral*; which must be a *Fallible Certainty* if it be *any Certainty at all*, that is, an *Uncertain Certainty*. Whence, since Mankind never us'd such a phrase as *Fallibly Certain*, though they might have had many occasions to do so, had it not been Chimerical and Nonsense, and against their Natural Notion of Certainty; we may hence farther demonstrate (in confirmation of our 19th. Sect.) that *Moral Certainty*, being (if any) a *Fallible Certainty*, is *no kind of Certainty at all*; and that 'tis as great Non-sense to say *Morally Certain* (meaning by those words such a Certainty as we may be Deceiv'd in) as to say *Fallibly Certain*; and it would be as much abhorr'd by Mankind, were not the Phrase cloak'd, and the sense of it clouded by the Unintelligible Notion of the word [Moral] which, as they use it, has no *determinate* Bounds; and so it cannot be *Defin'd*, nor Consequently *distinctly Understood*. Nor (as far as I have observ'd) do we read such an Expression in the Antient Latin Authors, either Heathens or Christians, but the word *Verisimilitude* or *Likelihood* only; which is not so apt to impose upon Learners or Readers; till some late Speculators being most of them *Sceptical*, and blundering between Certainty and Uncertainty, invented this odd Mixture call'd *Moral Certainty*, which should be partly the *one*, partly the *other*. To which they were forced by their bad Speculation, and the Care of their Credit: For, it was highly opprobrious to say they had *No Certainty at all* in their Writings; and it was Impossible for such Superficial Discourers to show any thing *truly Certain*, because they durst not undertake to *Demonstrate* any thing; and, therefore, to uphold their Repute on

some fashion, they were oblig'd to advance this Ambidextrous Notion of *Moral Certainty*, which might be either *Certain* or *Uncertain* as occasion serv'd. Whereas, (as has been shown above) they might with full as much reason have invented a Compound of [*is*] and [*is not*] which would have done a great kindness to Scepticism, and have been a most excellent ground to verifie Contradictions. Nor is this spoken in the air; Diverse of them have made many great steps towards this Heroick Exploit to un-man Mankind by their putting *Vacuum*, Imaginary Space, Subsistent Dimensions, Negative Entities and such Chimæras to have a *being*; tho', either directly or by consequence, they have been manifested to be *Pure Nothings*. And as they dealt with the Notion of *Ens* by confounding it with *Non Entities*, so they labour hard to do the same with the Notion of *Existence* too, as is seen above. For they are utterly destroying the Notion of [*is*] and the Truth of this Proposition [*what is, is*] while all their Sceptical Discourses would have those best Perfections of our Understanding (I mean Certainties) that are Immediately grounded on, and correspond to, the *being* of the Thing, to be *possible not to be* as the thing *is*, or *possible to be False*; which they must be, if the Notion of *Certainty* may be compounded with *Moral*.

21. No Testimony that is *Fallible* in what it attests, can prove the thing Attested by it to be *True*. For, since *Knowledge* in the Attester is necessary to ground all Attestation, and give it any Weight; and a Testimony that is *Fallible* in what it attests, *may be Deceiv'd* in what it attests; it cannot be said to *Know* that thing it Attests, because all knowledge consists in *this* that the Understanding be *Formally*, that is *Infallibly*, as the *Thing is*. Whence follows that, how firmly soever such Attesters may *deem* or *opine* that the Thing is *highly Likely* to be *True*; yet they cannot be said to *know*, really and indeed, that the Thing *is True*. Whence 'tis Concluded that such Attesters can never prove the *Truth* of that thing: Truth, *Fundamentally* consider'd, consisting in an *Indivisible*, as being the *Existence* of the thing Known; and *Formal Truth* (or Truth *in us*) being the Conformity of our Understanding to the Thing *thus Existing*; and, therefore, consisting likewise in an *Indivisible*. Which sets it above all *Gradual Approaches* of Likelihood, or Probability of *being so*; nay, above all Possibility of *not being so*, that is, of being False. Again, they who are *Fallible* in the thing they Attest *may be deceiv'd* in that thing; that is, may be in an *Error*; and so what is built on their Testimony may be *Erroneous*²⁶⁸ or *False*. But *what's True cannot be False*; therefore a *Fallible* Testimony cannot be a Ground or Reason to prove a Thing, no better Attested, to be *True*.

Note that this Proposition [what is True cannot be False] does hold in *all Truths*, but those which are in *materia contingenti*; as, when we say to day [it Rains] this Proposition may be False *to morrow*, when it is *Fair*; because the *Matter* or Subject, *viz.* the Temper of the Air on which it is built, is *Alter'd*. But, this Exception has no place in *Speculative Truths*; which Abstract from such Contingency, and are grounded on our *Natural* Notions, or the Natures of things and their Metaphysical Verity, which *cannot Alter*.

22. Therefore no *Fallible* Testimony can deserve *Assent* to what it Attests or says. For, since a *Fallible* Testimony may attest a Falshood, and Falshoods do deprave the Understanding, and to Assent to a Falshood is a certain and Actual Depravation of it; and, therefore, to Assent to a thing that *may be false* is to *hazard* to deprave it; and none ought to *hazard* such an Injury to his Soul, especially when there is no necessity of doing himself that harm, or of *Assenting* in such a Case; both because *GOD* and Nature have furnish'd us with a Faculty of *Suspending* till we have *Evidence*; as also, because no *Outward Force* can *impel* us to Assent; nor any *Interiour Force*, but that of *Clear Evidence*; and a Motive that *may be False* (as *Fallible* Testimony

²⁶⁸ Corrected per errata sheet. Original: "Erronious."

may) cannot lay Claim to *Clear Evidence*, either of it's self, or of its Grounds. It follows that such a Testimony cannot deserve our *hazarding* to embrace an *Error*; nor, consequently, to make us Assent upon its Attestation.

Lesson X. *Of Disputation, and Paralogism.*

Disputation must be fitted to the Occasions, and to the Ends, we aim at; which may be either to *clear Truth* by combating our Adversary with *down-right Reason*; or only to gain a *Victory* over the Defendant by *Stratagem*. The manners of Disputing may be shown by putting Four Cases or Circumstances which vary the Method of it.

1. When the Defendant holds a *False Thesis*, the way to convince him will not be Difficult, if the Doctrin deliver'd above be well consider'd and dexterously made use of. For, if a fit Middle Term be taken and rightly placed, the Conclusion will necessarily follow against him; so that he will be certainly overthrown, and his Cause lost. But, if the Disputant be so Skilful as to Reduce his Discourse to Identical Propositions, he will not have the face to own his Position any longer; the First Lights of Nature standing so Evidently against him.
2. To know in what Mood we are to frame our Syllogism, we must take the Proposition which is Contradictory to the Defendants Tenet; and, by the Certain Rules given as ²⁶⁹ above, it will be easie to know in which of the Four Moods such a Conclusion is to be prov'd. For Example, suppose the Defendant holds that [Some Body is Unchangeable] you must take and prove the Contradictory to it, *viz.* [No Body is Unchangeable] which being an Universal Negative, and withal the Proposition which is to be the Conclusion, it can only be prov'd in *Celarent*; as

Ce- No Divisible thing is Unchangeable; but
la- Every Body is a Divisible thing; therefore
rent- No Body is Unchangeable.

3. The same Method must be taken if the Defendant absolutely denies any of the Premisses of the First Syllogism, or any of the Succeeding ones; or, if, by Distinguishing, he alters the more Universal or Ambiguous Proposition, to a more Determinate one; Only you must not now take the Contradictory to it, as you did at first, for then it was your *Adversary's* Proposition which you were to *disprove*, now 'tis your *own* which you are to *prove*; and, therefore, you must take your Measures now from it self. For example; if he Denies the *Minor*, which was an Universal Affirmative, you must prove it in *Barbara*, thus.

Every Quantitative thing is Divisible, but
Every Body is a Quantitative thing; therefore
Every Body is Divisible.

4. Besides the having a *Middle Term*, and knowing in what *Form* to argue, some other Rules must be Observ'd.

²⁶⁹ B. 2. L. 2.

1. Get an Exact *Notion* of the Terms of the Proposition under debate; that is, consider well in *what* Common Head they are, and *how defin'd*; which is the same as to look attentively into the Nature of the Thing. For this will best furnish you with Proper *Mediums*.
2. Agree before-hand with the Defendent about the Meaning of the Words which express those Terms; which is the most Solid way of *Stating the Question*, and of avoiding Wordish Distinctions.
3. See the *Mediums* be *Proper* or *Immediate*; otherwise, not being well connected, they cannot *Conclude* certainly, although the Form be *right*.
4. Take heed of Equivocation of Words; For, otherwise, you will hazard to be carry'd aside from the True State of the Question, and lose sight of the true Nature of the Thing by mistaking one Notion for another; and, so, you will be certainly non-plust.²⁷⁰ And, the *longer* you dispute, the *farther* still you will *err*.
5. Observe well the Doctrin of *Dividing* right, and be sure that each Member of the Distinction he brings, has in it the true Notion of the Term Divided or Distinguisht. Otherwise he will baffle and confound you with impertinent Distinctions, introduce a new Question, and put you besides your Argument. For example, if he distinguishes Space into *Real* and *Imaginary*, and obtains of you to admit Imaginary Space for *one kind* of Space (which is in reality Nothing) he will defeat your Argument, and put you to fight against the Air; while, by getting you to admit *Non ens* for *Ens*, he may answer or say any thing. You have lost all your strength when you forego *Nature*, and suffer your Natural Notions to be *perverted*. The same may be said of the Distinction of *Ens* into *Positivum* and *Negativum* which is plainly to distinguish *Ens*, into *Ens* and *Non Ens*.
6. When the Defendent grants any thing, then to lay up in careful memory his own Concessions, and make use of them against him to force him to *admit Truth* or *retract*. For, otherwise, he may perhaps in the beginning of the Dispute yield candidly to diverse things; which, afterwards, when he finds himself pincht and reduced to streights, he will flatly deny.
7. To be true to your Cause, and to seek the Victory of *Truth* over *Error*, rather than your *own* over your *Adversary*; that is, to *hold* him still *to the Point*, and to pursue the Eviction of that; and not, leaving that pursuit, to catch the Adversary at advantages, and follow on that game to show him Weak and Self-contradictory; (tho' it is not amiss to hint, and then wave it) as is the less-laudable way of those who fall to argue *ad hominem*. Yet, if the repute of the Person happens to weigh more with his Followers than the Strength of his Reasons, and that he is held *Obstinate* and to want Candour; it may be a Duty to Truth, and to the Cause, to Expose him to Contempt by Baffling him.
8. To reflect that, tho' the Words in Common have the same Sence; yet, as standing in the Context, it may have diverse Constructions, and so cause that Fallacy we call *Amphibology*.
9. That not only *Single* words and Sentences may be Ambiguous, but there may lurk an Equivocation even in the *Connexion* it self; as when the Middle Term is Accidentally joyn'd to one Extreme by [*is*] and Essentially to another.

Thus far of Disputation when the Defendent holds a *False Tenet*; which is the only Method an Honest Man, whose sole End is to evince Truth and beat down Error, ought to take. The following ways are more becoming vain *Sophisters*, whose aim it is to *combat Truth* on any

²⁷⁰ Non-plussed: perplexed, to be at a loss in speech.

Fashion. Yet, 'tis fit that Honest Men should know them, that they may know how to avoid the Ambushes and Snares of Truth's Enemy.

5. The second Case then is when the Defendent holds a *True* point. v. g. [that *there are Angels*] and yet holds a *False* one Inconsistent with it. v. g. that [That which is *no where* (or in no place) *is not*.] The Disputant, if crafty, may make use of this False *Thesis* to overthrow the True one, Thus

Nothing that is in *no where* (or in no place) *is*; but
All Angels are *no where*; therefore
No Angels *are*.

6. The Third Case is, when the Defendent does not hold an Inconsistent *Thesis*, yet he is Ignorant of the *Antecedents* and *Consequents* of his Tenet. In which case, if the Defendent can be brought to *deny* some Truth necessarily Connected with his *Thesis*, he will be forc'd to deny the *Thesis* it self. As, put case the Defendent holds that *GOD*, our Creator, is Infinitely Perfect in himself; yet, through want of Logick, is Ignorant that *GOD* has no *Real* Relation to Creatures; and therefore that the word [*Creator*] apply'd to him is meerly an Extrinsecal Denomination, and no ways Intrinsically perfecting Him or affecting him; such a Man may be in danger of foregoing his Christian Tenet by this Argument.

Fe- Nothing that depends on another for some Perfection
is Infinitely perfect in it self: but
ri- *GOD* depends on Creatures for his being
a *Creator*, which is *some* Perfection in him; therefore
a- *GOD* is not Infinitely Perfect in Himself.

7. The Fourth is, when the Defendent Understands only his *own Thesis*, and is in a manner Ignorant of *all others*. For example; Let us suppose that some Defendent by the Language of Christianity, with which he is imbu'd, or by some Solid Discourse he has accidentally heard, and (though not Learned yet) having a good Mother-wit is made well Understand, does hold that *GOD* is *Unchangeable*; but yet, being not us'd to Disputes or Speculative Reflexions, he is little verst in other points; as in the Nature of *Christian Language* in Spiritual Points, of which, consequently, we have no Natural Notions; and therefore is not aware that all our Words we use when we speak of them are Equivocal and Improper; and, especially, when we speak of *GOD*, *highly Metaphorical*. Such a man, no better qualify'd, may be stumbled and perhaps made forego that Evident and True Tenet by a Contentious alledging things very Forrein which he is not²⁷¹ skilful in, and then backing them with Authority, on this manner. What is not *GOD Pleas'd* when we do well, and when we Sin becomes *displeas'd*; that is, *changes* from being Pleas'd to be Angry; and, when we repent, is he not *Pleas'd again*? Will or dare you deny that which Scripture, Fathers, Catechisms, Prayer-books, and Sermons do so often inculcate, and the Consent of all good Christians does Unanimously and Constantly avow? Why are we afraid of *Sinning*, but for fear of losing *GOD's* Favour, and of a Friend making him become our Enemy? Will any but a Heretick deny this? Again; is not *GOD* Omnipotent? cannot he do all things? 'Tis an Article of our Creed he both *is* and *can*; since then *to change Himself* is to do *Something*; will you *stint* *GOD's* Omnipotence, and say there is Something he *cannot do*?

²⁷¹ Corrected per errata sheet. Original: "which he not."

Such Insulting Talk as this, tho' there be never a wise word in it, working upon the Weakness of half-witted People, may hap to make them forego their True Tenet; and even fright them to renounce their Faith out of Fear of renouncing it.

Corol. I. These three last Cases inform us how dangerous it is that any man be allowed to be *Truth's Champion*, and to undertake her cause, unless he be thorow-pac'd in Logick, and such other knowledges as are requisit to defend her; lest Truth it self Suffer for the Confident Weakness of the Unable Undertaker.

Corol. II. This last Case belongs to such Disputants, who, to maintain Absurd and Impossible things, do use to argue from Divine Omnipotence; by alledging and magnifying *which*, they hope to fright the Piety of a well-meaning, but *weak*, Defendent to admit any thing though never so Senseless or Ridiculous. The way to answer these men, is to show the Effect to be contrary to our Natural Notions, and, consequently, to the Wise Conduct of the World, which was the Cause of those Notions; And, therefore, what *GOD can do*, or *cannot do*, is nothing to the purpose, unless the thing in question be Agreeable to his *Wisdom* and *Goodness*, which determin his *Power* to act; and without which it cannot be that he should act. Whence it is generally more Safe, more Edifying, and more Proper, to say in such Cases; that *it cannot be that GOD should will to do such a thing*, than bluntly to say *GOD cannot do it*. For, This flatly *limits* Omnipotency; That only *restrains* its exerting it self *hic & nunc* because of some Attribute of the Divine Nature to which 'tis Disagreeable. I say *Generally*; For oft times such Discourses would have GOD's Power to do perfect Contradictions; that is, to *undo* the Natures of things Establisht by himself; which is *not to do*. As in the Instance of his *Changing Himself*; which is the same in Effect as *not being Himself*. Or, when they say, *GOD* has a Power to *Annihilate*; For, since Powers are specify'd by their Objects, and *Non-ens* (which can *do nothing* in any kind, nor consequently *specify* a Power) is the Object of Annihilation; a Power to *Annihilate* is to be *no Power*. And 'tis as ill to say *GOD* can *suspend* his Action of Conserving; for this takes away from *GOD* his *Goodness*, or the Redundancy, Exuberancy or Communicativeness of Being; which is Essential to him, and was the Sole Cause of the *Creation*.

Thus far of *Disputation* it self or True Syllogisms. The *Faults* of it come next to be consider'd, which are call'd *Fallacies*, or *Paralogisms*.

8. *Fallacies* are of two sorts. Those which arise out of *Words*; which happens when the Ambiguity of some Single word, or of some Words put together, do lead us into a Mistake of the Thing. And those which are *not* in the *Words*, but arise out of the *Thing* or the *Sense*; and thence, make us mistake the *Thing* and the *Words* too.
9. Those of the Former sort are, almost all, little Grammatical²⁷² Quibbles; and it would do too much honour to them, to spend labour to *name* them, being too open of themselves to need Exposing. Those which are less discernable and worth Remark are such as this.

He that says you are an Animal says true, but
He that says you are an Ass says you are an Animal: Therefore
He that says you are an Ass says true.

²⁷² Corrected per errata sheet. Original: "Gramarical."

Where,²⁷³ as has been particularly shown above, the word [*Animal*] is taken in diverse Senses; for in this Proposition [*Peter is an Animal*] it is restrain'd by the Subject to signify *one* Individual Animal and of *such a kind*, viz. *Rational*; But, in the Proposition [*An Ass is an Animal*] it is restrain'd to signify an Animal of *Another* kind, viz. *Irrational*. whence 'tis *no* Syllogism, because it has *Four Terms*.

10. Of these Fallacies which are *not* grounded on the Ambiguity of the *Words*, but are built on the *Thing* or the *Sense*; the First worth remarking is that call'd the Fallacy *ex Accidente*; which happens when the Middle Term is only Accidentally connected with the Extremes, and not *per se*, or out of its *own Nature*, As,

Bar-	Whatever breeds stirs in a Common-Wealth is bad; but
ba-	All Religion breeds stirs in a Common-Wealth; therefore
ra-	All Religion is bad.

The Common answer is to distinguish the *Major* and *Minor* both; and to say, that what breeds Stirs *out of its own Nature*, is Bad; but not that which breeds them *Accidentally*; for, otherwise a Sword and Wine must be *bad*, because the one sometimes helps to commit *Murder*, and the other causes *Drunkenness*. But, the more Solid way, and which bears up best to Logical Grounds; is to *deny* it to be a *Syllogism*; because, though the *Form* of it be Legitimate, yet the *Matter* or the *Middle Term*, is *not so*. For, a Syllogism being a Speech contriv'd by True Logicians to Conclude a Third Proposition out of the Premises, so as by Connexion of the *Medium* with the Extremes, we may *know* it to be Certainly True (for that which leaves us *Uncertain* leaves us *Ignorant*) it follows, that the Middle Term must be either a Notion *Essentially* Connected with the Extremes, or else as a Proper Cause or Effect of it; neither of which it can be if it be but *Accidentally* belonging to them. We may Note here how *Accidental* Mediums are *Common* and *Remote* ones, or such as beget *Opinion*: For, between *Religion* and *Commutations*, intervene Perversity of will, Disregard of Virtue, Irrational Assents upon Opinionative Ground, Pride, and Faction against Church Governours, who would bind them to good Principles and Religious Duties, Interest &c. All which, or some (if not most) of them, are the *Proper* and *Immediate* Causes of Dissention; at least, *nearer* and *more* Proper Causes of it than Religion it self; the Principles of which do Oblige men to the preservation of Peace and Unity.

11. The Second is called *Ignoratio Elenchi*, which, in easier Language, is the attempting to *prove* what's *not in question*; or, putting upon our Adversary to hold a Tenet he never own'd nor held; as it usually passes among Passionate Discourses and Scolds, when they object to others what they neither held nor thought, that they may the more easily confute them or render them Odious. This is avoided in disputes by *Stating the Question right*, and by *Agreeing* before-hand in the Signification of the *Words* in which the Question is conceiv'd; as was recommended in the second and third Rule. Or, if this be not done before the Dispute begins, it is answer'd by saying *Transeat totum*, and forcing the Adversary, weary with aiming his blows *amiss*, to recur to the *true point*, and to Conclude the Contradictory to the Defendants Tenet; which was his *only* Duty, and ought to have been done *at first*.
12. The Third is, *Begging the Question*, or *Supposing* that which should have been *Prov'd*. Which is manifestly faulty: For the Premises must be Clearer than the Conclusion; which they cannot be if the *Proof*, in *whole* or *in part*, is as Unknown and Obscure as is the Conclusion it self; as it must be if it is barely *Suppos'd*; and begg'd *gratis*. Of which Fallacy therefore all the whole

²⁷³ B. 2. L. 2. §. 5.

Body of *Hypothetical Philosophy* is Guilty, as also that Fallacy call'd *An Ill Enumeration of the Parts*, as follows here.

13. The Fourth is that of an Imperfect or Incomplete Division, which happens when 'tis falsely pretended that the thing in Question must be *one* of those which are Nominated; or, that it must be perform'd *one* of the ways Assign'd; when, perhaps, there is *Another* way how that thing may be done, which was never assign'd, but either Unthought of or Neglected. As, if it should be asserted that Motion must either happen by Atoms descending in an Immense *Vacuum*, or by the Impression of so much Motion in the Mass of Matter at First by GOD, and his Continuing it ever since; when as a third way may be assign'd, *viz.* that a *Created Intelligent Being* Causes, and all along, Continues, the Motion of the first-moved Bodies, which move the rest. This Fallacy is defeated by *Denying* the Proposition, which contains the Enumeration of all those Causes or Manners of Action; and, by *Obliging* the Disputant to show his Division to be *Adequate*.
14. The Fifth is called *non causa pro causa*. That is, in plain terms, the bringing a *Medium* that does not Conclude; or the pretending the Conclusion follows from a *Medium* that cannot necessarily infer it. This Fallacy, if it must be call'd so, happens chiefly to Experimental Philosophers; who, going by meer Induction, and laying no Evident or Certain Principles of Nature, *a priori*, to guide their Thoughts by, but Hypothetical ones only; do, hence, refund all the Effects of Nature into false-pretended Causes; whence every man who sets up a *new Scheme*, does still assign new Reasons or Causes, according to which he strives to Explicate Nature, and into which he endeavours to Resolve all the several Productions and Effects of it. But, why this should be call'd a *Fallacy*, I cannot comprehend. At this rate every Argument that does not Conclude may be call'd a *Fallacy*. For, since the Premisses in a Demonstrative Syllogism are the *Cause* of the Conclusion; whoever argues *ill*, argues *Fallaciously*; and assigns a wrong Cause, by producing an Incompetent *Medium*. But, in case the Disputant puts it upon the Defendent to have made use of such a Ground as he never meant, it is then enough to *deny* it; and put him to *prove* that that was *indeed* his Ground, as was pretended.
15. The Sixth²⁷⁴ is the Arguing from what's taken in a *Divided sense*, as if it were taken in a *Compound sense* or *conjoynthly*; or from what's taken in a *compound sense* or *conjoynthly* to infer the same thing in a *Divided sense*; Example of the Former is this,

He that is actually sitting may Walk,
Peter is actually sitting; therefore
Peter actually sitting (or while he sits) may walk.

Where the *Major* is False, unless Sitting and Walking be taken *Divisively*; and mean that he who sits *now*, may Walk *hereafter*. An Example of the later may be this.

Two and Three are Even and Odd.
Five is Two and Three: Therefore
Five is Even and Odd.

Where the *Major* is False, unless Two and Three be taken *Divisively*, whereas in the *Minor* they are taken *Conjoynthly*. Or, it may be said that Five are²⁷⁵ not Two and Three *formally*, but only *materially*: In which sense *Aristotle* said that *Bis tria non sunt sex*.

²⁷⁴ Corrected per errata sheet. Original: "Fifth."

²⁷⁵ See B. 3. L. 6. §. 6.

16. The Seventh Fallacy is when the Opponent argues *à dicto secundum quid ad dictum simpliciter*.²⁷⁶ Which kind of Fallacy is the Erroneous Principle that begets the Vice of *Pride*, and therefore is peculiar to all Proud People. For the sin of Pride does not consist in Knowing what Endowments any one *truly has*, or Esteeming himself as having such Endowments; for this is a Truth; and did he not *know* it, and what degree of Perfection it adds to him, he would neither strive to perfect himself, nor know how much he is particularly bound to Love and Thank GOD, who bestow'd on him those Accomplishments or Advantages above others. But Pride, (as all other Vices have) has a *Lye* for it's Principle; and consists in this, that a Proud Person *over values* himself, and Preferrs himself *Absolutely* before all others; that is, *Concludes* himself to be the very *Best*, or *Better* than others, and to deserve more Esteem than they, because he is Good or Estimable *secundum quid*, or in some particular which is far short of rendring him so highly Estimable. Thus, some self-conceited Lady Esteems or Concludes her self to be the Best Woman in all the Country, because she has a New-fashion'd Gown, or is Finer, Handsomer, or Richer than others. Thus a proud²⁷⁷ King or Lord prefers himself *absolutely* before all others, because he has more Power, or can reckon up more Titles than others can. Thus a Great Scholar who is *Proud*, values himself *absolutely* to be Better than those who are Unlearned. Whereas a Poor, Ignorant, Ragged Beggar, who has more Virtue or Love of GOD in him, has more Intrinsick Worth in him, and is, *absolutely speaking*, more Valuable than any or all of them; notwithstanding their Gayness, Beauty, Riches, Knowledge, Honour and Power. All the rest are but only Good *secundum quid*, and he is for his Sanctity, Good and Valuable *simpliciter*.
17. Thus much concerning those Fallacies that are worth noting; if, indeed, any of them do much deserve it. For, I cannot discern but that, if the Rules for *Distinguishing* our Notions, of *Predicating* one of them of another, and lastly the Right Methods of *Arguing*, both as to the *Matter* and *Form* of Syllogisms, were observ'd Exactly; there is nothing in them that can require the treating of them so elaborately, or making such a pother about them as Authors do. The Agreeing with our Adversary about the Meaning of the Words in which the Question is conceiv'd, forestalls those Fallacies of *Ignoratio Elenchi*, and that of *Begging the Question*.²⁷⁸ The Doctrin given above how to detect the *Equivocation* of Single Words, will prevent any advantage that can be taken from the Ambiguity of the Terms; and the Rules of *Predicating*, by shewing how a word that is Univocal, taken single, may become Equivocal by being joyn'd to Different Subjects, will defeat all Stratagems that lurk secretly in such Propositions,²⁷⁹ as is seen in the First Fallacy §. 9. The Doctrin of using only such Middle Terms as are either *Essential*, or *Proper Causes* and *Effects*, renders Ineffectual the Fallacy *ex Accidenti*; as also those of *Non causa pro causâ*, and *à dicto secundum quid ad dictum simpliciter*. The Common Doctrin concerning *Division*, *viz.* that it's Members be *Adequate* to the Notion Divided, makes void and insignificant, that Fallacy call'd *mala Enumeratio partium*. In a word, let but the Rules given here be warily observ'd, and it will scarce be possible the Defender of Truth should be circumvented by any Fallacious manner of *Arguing*, but it will either be seen that the Terms are Ambiguous, or (which generally happens) it will be found that the Syllogism has *Four Terms*; and, so, is no Legitimate Syllogism. The subtlest of them seems to be the First. For the *single word* [*Animal*] seems to be taken in the *same sense*, both in the *Major*

²⁷⁶ Latin: "according to what [it really is], from a saying [taken too] simply;" i.e., to conclude without qualifications from an unqualified statement.

²⁷⁷ Corrected per errata sheet. Original: "A King or Lord."

²⁷⁸ B. 1. Lesson last.

²⁷⁹ See B. 2. L. 1. §. 15.

and *Minor*, and has the *same Definition* in both places; and yet, by reason of the Different *Subjects*, it is not Predicated in the *same sense*, but according to *Different Parts* of it's *Intire Notion* or Signification; whence the Syllogism has Four Terms *in sense*; that is, in reality, or *in our Mind*, where Syllogisms are only *Properly* and *Formally*; however the Word [*Animal*] be the same *materially*.

18. The Syllogism which is imply'd in every Practical Judgment of a *Sinner*, has *Four Terms*, or else one of the Premisses which he grants to himself is *False*; and therefore both *It* and the Action that proceeds from it, is a Deviation from Right Reason, and a Perversion of Human Nature. *v. g.*

Justice is to be done,
That Satisfaction be taken of my Enemy who injur'd me,
is Justice; Therefore
That Satisfaction is to be taken by my self of my Enemy,
is to be done, or I may revenge my self.

19. Where the *Major* is True, so is the *Minor*; but when the injur'd person comes to conclude, instead of the true Conclusion [Therefore that Satisfaction be taken of him that injur'd me is to be done] which abstracts from *Who* is to take that Satisfaction or Revenge, whether *Himself* or the *Magistrate*, who is the Overseer of the Laws and the Proper Revenger of Injuries, his Passion, and not Right Reason, coggs in a Fourth Term, not found in the Premisses, *viz.* Satisfaction is to be taken [*by my self.*] And the same may be observ'd in the Practical Judgment of any other Sinner, whether their Sin be Theft, Incontinency, Rebellion, &c.

Corol. III. Hence, all *Right Reasoning*, which causes *Science* and *Truth*, is also, of its own nature, the Parent of *Virtue*; and can dictate nothing but what tends to True Morality. As, on the contrary, all *False Reasoning*, does naturally and necessarily beget *Error*; and, by means of *Error*, leads to *Vice*.

Appendix

The Grand Controversy Concerning Formal Mutation Decided In favour of the Peripatetick School.

The Question between Peripateticks and Antiperipateticks, stated in common.

1. The main Hinge on which the greatest Contests between the Peripateticks and Anti-Peripateticks turn, is, Whether or no there be that Composition and Division in Natural Bodies, call'd *Formal*; and, consequently, FORMAL MUTATION. The Corpuscularian Philosophers and Atomists deny there is any Mutation in the Thing it self, either in the *Whole* or any *Part* of it; and they affirm that there is only an Extrinsecal Application of Particles Figur'd, Mov'd and Plac'd in various manners; and, consequently, that the whole Contexture of Natural Bodies is a meer *Mechanism*. On the contrary, the Peripateticks (by which word I do not mean the Common School-men, but those who take pains to understand *Aristotle*, either by his own Books, or by his First Interpreters) do grant some kind of Particles and *Minima Naturalia*; that is, some Least Size of Bodies, which are (generally) no farther Divisible because there want Natural Causes *little enough* to pass between their parts and divide them; but they say, moreover, that there is not only *Local* or *Situal* (which are *Extrinsecal*) but also *Intrinsecal* or *Formal* Composition and Division, and, consequently *Formal Mutation* in them, either in *Whole* or in *Part*; that is, a Change in them according to the *Form*, and not according to the *Matter* or *Subject*; and they deny that any Solid Discourse or Explication either of Nature or Transnaturals (which we call Metaphysicks) can possibly be made, unless this be admitted.

The Grounds of the Peripatetick Doctrin concerning Matter and Form.

2. The Parts of which they affirm all the Essences or Natures, of all those Entities we converse with, are Compounded, they call *Act* and *Power*, or *Form* and *Matter*; whether those be *Essential* or *Accidental*. And, they put the *Matter* and *Essential Form* to be necessarily found in every Body, and in each of the most minute and insensible Atomes and Particles that can be imagin'd. The reason they give for this Assertion is, because each of them is a *Distinct Ens* from the Others, in regard it can subsist *alone*, and so, *is Capable* of a *Distinct Being*: whence they conceive there must be Somewhat in every Body and every Atome, by which it is *Distinguisht* from all Others, and somewhat in which it *Agrees* with them. That which *Distinguishes* them they call the *Form*, and that in which they *Agree*, the *Matter*. And they think that, however their Adversaries may quarrel the *Words*, yet they must allow the *Sense*: Nature and daily Experience teaching us that *One Thing is made of Another*, which cannot be, unless Somewhat of it *remains*, and Somewhat be *lost*. For, otherwise, one Thing could not truly be said to be *made of another*; but the Former *Ens*, of which *Nothing remains*, would be *Annihilated*; and the *Ens* or Body, newly produced, would be *made of Nothing*; that is, *Created*.

The mistake of the Anti-peripateticks concerning Matter and Form.

3. Now, when the Peripateticks speak of *Matter* and *Form*, and that each thing is *Compounded* of these; and consequently, that there is some kind of *Divisibility* or Difference between them; the Corpuscularians, who fancy nothing but Particles commodiously laid together, are presently apt to conceit that those *Parts* (as it were) that Compound a Body, are meant to be *two* certain kinds of *Things* joyn'd together into *One*; and, if this be deny'd, they are ready to conclude, that they are either two *Nothings*, or at least that

they leave us in the dark, and at a loss how to distinguish *Things* from *Nothings*: and thence object that this doctrin of *Matter* and *Form* cannot explicate any thing, or make a man one Jot the wiser. And, indeed, in case the Asserters of them did stay in these Common Expressions, and not draw many Clear Consequences from them, giving a farther account of them, the bare *Saying* there are such Parts *so named*, would be as Insignificant as to talk of *Occult Qualities*.

The true Doctrin of
the Peripateticks
concerning Formal
Composition

4. To rectify this Misconceit of theirs, sprung from a just Prejudice against meer School-terms, the *Aristotelians* defend themselves, by declaring their Meaning to be that *One* and the *same* Thing does ground those *diverse* Notions of it self in us. That the Fæcundity (as it were) of the *Thing*, not being Comprehensible at one *view* by our short Sighted Understanding, which knows nothing *here* but by Impressions on our Senses, which are *Distinct* and of *many* sorts, forces us to frame *Inadequate* or *Partial*

Conceptions of it. And, because we cannot *Speak* of a thing otherwise than as we *Conceive* it, hence we can truly say, *One* of those Notions or Conceptions of the Thing *is not the other*, which yet means no more, but that that Thing *as thus Conceived*, is not the same Thing *as otherwise Conceived*; or that the Thing, as working by my Sense upon my Understanding *thus*, is not the Thing as working by the same or another Sense upon my Understanding *otherwise*. Whence, because what *corresponds* to *both* these Conceptions or Notions is found in the same Thing, hence they affirm that there is a certain kind of *Composition* of them both, in the Thing it self; which is no more, in reality, but that there is found in that Thing what corresponds to, and grounds, both these Conceptions.

The true Doctrin of
the Peripateticks
concerning Formal
Divisibility and
Formal Mutation,
which are Essential.

5. Farther, they declare, that, since Nature shows us that the Thing may be *Changed* according to *somewhat in it* that answers to *One* of these Conceptions, Notions, or Natures, and *not Chang'd* according to what answers to the *Other*; hence, we must be forced to grant that there is a kind of *Divisibility* between them in the Thing, answering to the foresaid Composition; and consequently, a Capacity of *Formal Mutation*, by which the Thing may be *Chang'd* according to *one* of them, viz. the *Form*, and *not* Chang'd according to the *Matter*. Whether that Form remains or no after such a Change is Another Point, and Extrinsical to our present business.

The same Doctrine
declar'd by an
instance.

6. For Instance; We experience that that Thing we call (*Wood*) is Chang'd into Another Thing call'd (*Fire*;) and, therefore, unless we will say that *Wood* is *Annihilated* and *Fire Created* in its room (which we are forbid to do by the very Notion of its being *Chang'd into another*) there must have been Somewhat in *Wood* by which it was Actually *Such* a Thing *before* the Change was made, and which is *Lost* by its being Chang'd into *Fire*; and also

Somewhat *in it* which remains *in the Fire* into which 'tis Chang'd. The Former they call the *Form*, the Later the *Matter*; and thence conclude there must have been a Composition of *Matter* and *Form* in the *Wood*. And, since all Mankind agrees that *Wood* is *One Thing* and *Fire* Another *Thing*, hence, (*Essence* being the Form that constitutes an *Ens*, or makes it Formally a *Thing*) they do farther affirm, that that which was in *Fire*, and made us denominate it such a *Thing* or *Ens*, is an *Essential Form*. And, because the *Matter* of the *Wood* *had*, (or rather *was*) a *Power* to have such a Form as made it now to be *Wood*, (and also a *Power* to be afterwards *Fire*) hence they say that that Thing, *Ens* or Substance we call'd *Wood*, did consist of *Matter* and *Form*, or was *Compounded* of them; that is, *Wood* had truly *in it* what corresponded to both these Natures or Notions. Lastly, because *Wood* was Chang'd according to *One* of them only, viz. the *Form*, hence they conclude there was *Formal Mutation* made in the *Wood*; which,

therefore, was a Change according to somewhat that was *most Intrinsecal* to it; because it chang'd it's *Essence* by making it become *Another Thing*; and, consequently, that Change was an Essential one. Thus much of the Doctrin of the Peripateticks concerning *Formal Composition* and *Mutation* which is *Essential*.

Of that other Formal Composition and Mutation which is Accidental.

7. But, besides this *Formal Composition*, and the *Divisibility* of that Essential part call'd the *Form* from the *Matter*, which we have now spoken of, there is moreover, (say the Peripateticks) another sort of *Formal Composition* and *Mutation*, which is *Accidental*. For even the Intire Thing, consisting of *Matter* and the *Essential Form*, has many *Accidental Forms* or Modifications *in it*, which are also truly *Intrinsecal* to the Thing, tho' not *Essential* to it. Which *Forms* are Compounded with the *Intire Thing* as with the *Matter* or *Subject* of them. For example; We say a piece of Wood is Round, Hard, Long, Green, and such like; and, therefore, since Wood has in it, besides it's *Essential Form*, these *Accidental Forms* of Hardness, Length, &c. there is therefore a Real Composition of *Wood* (which is a Complete *Ens*, and their Subject) with these *supervening* Forms; because the Thing has really in it what grounds and answers to all these several Conceptions. Farther (say they) there is, consequently, a Real *Divisibility* between the Wood and these Additional Forms; in regard the Causes in Nature can *work* upon and *Change* the Wood according to it's Length, Roundness, Hardness, &c. and yet not change the *Nature* or *Essence* of Wood. Therefore (say the Peripateticks) the Wood, which is the Subject, can be *Chang'd* according to these *Accidental* Forms; that is, there may be *Formal Mutation* in it according to those *Accidental* Notions or Natures, tho' it remains *Substantially* and *Essentially* the *same*. And, since the *Form*, of what nature soever it be, is conceiv'd to be *in* the Subject, hence (say they) both these sorts of *Formal Mutation* are also *Intrinsecal*; or a Change of the Thing according to somewhat that is truly conceiv'd to be *in it*.

That all Formal Mutations are Intrinsecal.

8. I expect that all this Discourse will look like Gibberish to the Corpuscularians, whose thoughts beat upon nothing but upon Particles thus Figur'd, Moved and Situated; and all the while they read this, they will be conceiting how dextrously all this may be explicated to be perform'd by their Hypothesis; and therefore how needless it is to have recourse to such abstruse Speculations as are those about *Matter* and *Essential Forms* that are *Intrinsecal*; and, especially, to such unintelligible points as *Formal Composition* and *Mutation*. But I must beg their Patience to suspend their thoughts till we come to the *Proof* of *Formal Mutation*, which we are not yet got to. What we are *now* about, is barely to declare and lay open the Scheme of the *Aristotelian* Doctrin; resting confident that in the sequel of this Discourse, the main point we have undertaken will be forced upon them with such Evidence, that it will be unavoidably necessary to admit it. In the mean time the *Aristotelians*, with no²⁸⁰ less Assurance than they use Confidence, do peremptorily challenge their thoughts, and bring them as Witnesses against themselves, if ever they reflected on the Common Rudiments of True Logick, and they set upon them thus.

²⁸⁰ Corrected per errata sheet. Original: "so."

*The Peripatetical
Doctrin prov'd from
Logick and the
known Method of
Discoursing.*

9. It must be granted that we cannot have *Science* of any thing but by means of *Discourse*; That the most Exact, and most Evident *Discourses* are those we call *Syllogisms*: That Syllogisms are resolved into *Propositions*; and Propositions into *Two Terms*, and a *Copula* that connects them: That all that we can say of those *Parts* of a Proposition is, that they are *Notions*, or *Meanings* of the Words that express them: That, therefore, all Discourse is built on the right putting together of these *Notions*, and can be built on nothing else, nor made on *any other* fashion: That no Discourse can be Solid

but what is grounded on the *Natures of the Things* themselves: without which they must necessarily be Aiery and Chimerical, and impossible to beget Knowledge: That, for this reason, our Notions, which ground all our Discourse and Knowledge, are the *very Natures* of the *Things* without us, existing Spiritually in our Understanding; That our Operations of *Apprehending*, *Judging*, and *Discoursing* of the *Natures of Things* being *Immanent*, or Perform'd and Perfected *within us*, the *Objects* of those Operations, or the *very Natures of the Things*, must be likewise *within us*: That 'tis Evident by Experience that we do make *Diverse* Conceptions or Notions of the *same* Thing; that is, all the Operations of our Mind are built on those *Partial* and *Inadequate* Notions of the Thing about which we are to *Discourse*: That we can frame a *great Number* of these Abstracted or Partial Notions of the *same* Thing, and many of them *Intrinsecal* ones: That, therefore, that Thing must have *in it* what *corresponds* to all those several Notions; which we call *Formal Composition*: That, hence, there is a *Divisibility* in the Thing as grounding *one* of those Notions from the same thing as grounding *Another* of them, by reason that Natural Causes are apt to *work* upon the Thing according to that *in it* (or that *part* of it, as it were) which is *thus* conceiv'd, and yet *not* work upon it according to what *in it* is *otherwise* conceiv'd, or, to what grounds a *different* Notion. Whence they make account is inferr'd this Grand Conclusion, that therefore *There is* FORMAL MUTATION, in regard it can be wrought upon according to that *in it* which corresponds to the Notion of FORM, and *not* to that *in it* which answers to the Notion of *Matter*: Whence follows unavoidably that there is *Formal Composition*, *Divisibility* and *Mutation in it*, as is above explained. Which Conclusion must necessarily follow, if they allow (as they must) this *Method* of Discoursing; each part of which has been made good in the foregoing Treatise. And the *Aristotelians* presume it is altogether Impossible for them to assign *any other* that can bear the least show of *Sense* or *Coherence*.

*The Doctrin of the
Antiperipateticks is
unprincipled.*

9. ²⁸¹ The Peripatetick School has yet another great Exception against the *Corpuscularians*; which is, that, because their Schemes do not take their rise from our solid *Natural Notions*, made by Impressions of the Things upon our *Senses*, and thence convey'd to the Mind; they come by this means to have little regard to the *Nature of the Things*, or to their *Metaphysical Verity*, the only Firm and Deep-laid Ground of all Knowledge. Through which neglect having render'd themselves Incapable of laying any First on Self-evident Principles, (taken from our most Firm and most Radical Conceptions of the Thing, and Predicated of it accordingly) to which they may finally reduce their Discourses; hence, they are forced to coin to themselves Principles from their *own Wit* and *Fancy*: Out of which they contrive certain *Hypotheses*; which granted, they hope they can make some congruous Explication of Nature. By which manner of proceeding, their Systems of Natural Philosophy, being Grounded on such *Supposed Principles*, is merely *Conditional* or *Hypothetical*. Whence, they not only disable themselves from *Concluding* any thing, or Advancing *Science*; but, instead of doing this, which is the Duty of a

²⁸¹ Sic. Expected is "10."

Philosopher, they breed an utter *Despair* of it, and introduce meer Scepticism. To pursue the Truth of which is not our Task at present, nor suits it with our intended Brevity.

*The Last Charge
made good.*

10. Yet to show the Justice of this Objection, it may suffice to remark at present, that neither does *Epicurus* regard the *Intrinsecal Nature* of his *Plenum* or *Atomes*, or go about to show *why* they must be so Infractil, nor *in what* their more than Adamantin Hardness consists; nor *how* the *Potential* parts of these *Atomes* do come to have such an insuperably-Firm Coherence. Nor yet does *Cartesius* explicate to us *of what Nature* his *First Mass of Matter* is; *what Degree* of Consistency or Density it has; and, if *any* (as it must have *some* or *other*) *why* it was to be of that Density, or *in what* that Density consists. Which shows that neither of them regarded or minded the *Intrinsecal Nature* of their *First Matter*; tho' this must needs have had great Influence on the Oeconomy of the World, and have afforded us much Light to know the Constitution and Temper of Natural Bodies, and consequently of their Proper Causes and Effects; as also of many *Intrinsecal* Modifications of them, highly conducing to give account of, and explicate the Operations of Natural Agents. The only thing they seem to have regarded was the *Extension* of their *First Matter*, and the Motion, Figure and Situation of it's parts; which are *Extrinsical* or *Common* Considerations; but to give any account of what *Intrinsecal* or *Essential* Nature that *Matter* was, they are perfectly silent. They suppose it to *be*, but they do not so much as *Suppose* it to be of *such* or *such* an *Intrinsical* Nature; which yet they must be bound to do, since all *Extrinsical* respects came by *Motion*, which was not yet begun. Or, if *Epicurus* does, by making his *Atomes* Infractil, 'tis both said *gratis*; and, besides, he gives us no Account in *what* that Quality of Indissoluble Hardness consists, or how it is to be Explicated.

11. Hence the Peripateticks alledge that, however the Authors of those Sects are men of Great Wits and strong Brains, (for 'tis not a Task for Ordinary Capacities to undertake a Design that fathoms and comprehends *all Nature*) yet they can never begin with Evident *Categorical* Propositions and *First Principles*, or carry on their Discourses so as to bear the Test of True Logick; but, either their *Principles* must be far from Self-evident, and must *need Proof*, which is against the nature of First Principles; or else their *Consequences* must be *Loose* and *Slack*. And the only way to refute this Objection is, for some of their School to put it to the Trial by laying their Principles, and, proceeding forwards, to draw all along Evident Conclusions without intermingling their own Suppositions. But the Peripateticks are very Confident they neither *can do* this, nor will ever *Attempt* it. I mean so as to carry it along with Connexion and Evidence; in which *Spinoza*, tho' perhaps the best Writer of the *Cartesian* School falls, very short, and pieces out his Discourse with many unprov'd Suppositions; as is hinted above in my Preface.

*The Indirect Methods
us'd by the
Antiperipateticks.*

12. And hence it is that the *Corpuscularians*, being forced by their Cause to decline such a severe Method, strive to avail themselves and uphold their Cause by Witty Discourses, Smooth Language, Clear Expressions, Apt Similitudes, Ingenious Experiments that bear a Semblance of Agreeing with their Doctrin, and such like Stratagems, to make a Plausible Show of *Science*. But their Chief Reliance is on the Facil and Familiar Appearances to *Fancy*; with which they court that *Delusive* and easily *Deluded* Faculty: And, to this end, they gratifie it with such Proposals as are apt to sink into it most pleasingly; such as are Particles of Matter, whose Variety of Imaginary Figures, and the Diverse Positions of them, they, without Study, quickly apprehend. And conceiting that all is done when they have thus Fancy'd or Apprehended *them*, they argue thus; If these Pores and Parts will do the business, what need is there of those Abstruse and Metaphysical Speculations of *Formal Composition* and *Mutation*,

and those many *Intrinsical Changes*, of which *Fancy*, can frame no Idea's or Shapes. And, indeed, such high Points seem to that Superficial Faculty *Mysterious Whimsies*; they disgust it with the Laboriousness of comprehending them; and persuade men of *Fancy* 'tis Impossible to explicate Nature by such Principles, because they are rais'd beyond *it's* reach. And, indeed, if Nature could be solidly explicated by a kind of Contessellation of Particles, *Fancy* would have (as it never has) *Some Reason*. But, if, upon Examination, we come to find that such Schemes go no deeper than the *Surface* of the Essences of Things, that they can never reach to the Bottom-Principles of Nature, nor give Solid Satisfaction of the true Intrinsical Natures of any thing, to the *Judgment* attending to Maxims of *Evident Reason*, and to *true Logick*; then we must be forc'd to follow the *Aristotelian Doctrin*, and have Recourse to *Intrinsical* and *Formal Mutation*; especially, if the *Necessity* of Allowing it shall happen to be Demonstrated.

The summ of
Epicurus his
Doctrin.

13. To do which being our present Work, we will begin with *Epicurus*, a Scholar of the First Class in the School of *Democritus*. This Philosopher (if we may call him so) puts Innumerable Atomes, or rather (contrary to a Clear Demonstration) an *Actually Infinit* Number of them, and of an Infinit Number of Figures, descending in an Infinit *Imaginary Space* or *Vacuity*; some of them *downwards*, some of them *overthwart* (according as his *Hypothesis* had occasion) that so they might overtake their fellow-Atomes. With which, clinging together by virtue of their meer Figures, they compound several Worlds, and every particular Body in each of those Worlds. That Natural Bodies become *Rare* or *Dense*, according as they have in them *more* or *fewer* of those Atomes, or (as they call it) *Plenum*, in proportion to the *Vacuum*. Thus much in common of his *Hypothesis*; which, were the circumstance proper, it were easie to show, (besides it being *Unprov'd*) to be²⁸² a Hotch-potch of the most Refined Nonsense, in every particular Sentence, and almost in every word; notwithstanding the Explications and Patronage which *Gassendus*,²⁸³ *Lucretius*,²⁸⁴ and our Dr. *Charleton*²⁸⁵ have lent him. While I am speaking of his Tenet, I note here by the way, that by the *Indivisibility* of his Atomes, he means *Insuperable Hardness* or *Absolute Infractilness*; and not that they consist in a *Point*, or want *Extension*; as he is understood by Mr. *Le Grand*²⁸⁶ in his *Entire Body of Philosophy*, Part 4. c. 4. §. 6. For, to think that, since he makes them of several Figures, there should want *room* or *space* to admit Division, could not be meant by such men as *Epicurus* or *Gassendus*. But, to return to our business, what concerns us at present is this, that let him contrive his Scheme as he pleases (for, in such Fantastick Philosophy, all is as *pleases Fancy, the Painter*) yet he must be forced to grant *Intrinsecal* and FORMAL MUTATION, even while he most industriously strives to avoid it. At least, tho', perhaps, his Followers will not own the *Conclusion*, yet they must allow the Grounds of it, or the Principles that ought to inerr it.

That the Epicurean
Atomes are Formally
Changeable.

14. To show which we ask, Are all his Atomes of the *same Matter*? He must grant it; for he allows no difference between them, but that of *Figure*. Again, each of those Atomes must be granted to be an *Ens* or *Thing*, because it *can* and *does* Exist *alone*; and, to be a *Distinct Ens* from all the *Other* Atomes; for, otherwise, all his several Atomes might be but *One Ens* or *One Atome*; which is both a flat Contradiction, and, besides, quite destroys his own

²⁸² Corrected per errata sheet. Original: "be."

²⁸³ Pierre Gassendi (1592–1655) was a French Epicurean philosopher and Catholic priest. See note 40 above.

²⁸⁴ Titus Lucretius Carus (1st cent. BC) was Roman Epicurean philosopher and poet.

²⁸⁵ Probably Walter Charleton (1619–1707), a philosopher and member of the Royal Society.

²⁸⁶ Antoine Le Grand (1629–1699) was a Cartesian philosopher and Catholic theologian. The reference is to his 1694 work entitled *An Entire Body of Philosophy, According to the Principles of the Famous Renate des Cartes, in Three Books, I The Institution; II The History of Nature; III Dissertation on Brutes*.

Hypothesis. Wherefore, each Atome must have something *in it*, that makes it a *Distinct Ens*, or distinguishes it from all the rest; which cannot be the *Matter* of the Atome; for That is *Common* to them *All*; and what is *Common to all*, cannot *distinguish One from Another*. And, if there be Somewhat in each Atome that makes it a *Distinct Ens*, then (*Essence* being that which formally constitutes an *Ens*;) it gives it a *Distinct Essence*, or distinguishes it *Essentially*; which is what the *Aristotelians* mean by an *Essential Form*. So that they are at unawares, in despite of their own Doctrine, become (thus far) *Aristotelians*.

15. To proceed; Therefore it is not Impossible but each Atome may be *Chang'd* according to the *Form*, and not according to the *Matter*; that is, each Atome is Capable of *Formal Mutation*. Which I thus demonstrate,

Whatever does not imply a Contradiction is not Impossible; but
The putting each Atome to be Chang'd another to the *Form*, and not
according to the *Matter*; does not imply a Contradiction; therefore
The putting each Atome to be thus Chang'd is not Impossible.

The *Minor*, only which can need Proof, is thus Evidenc'd. For, since a Contradiction is no where but *in our Understanding*, there can be no Contradiction unless the *Same* be *Affirm'd* and *Deny'd Secundum Idem*, or according to the same Notion or Respect, in our Understanding. But, this cannot be in our case: For the Notions of the *Matter* and *Form* of each Atome (as has been in the last §. Metaphysically demonstrated from the natures of *Idem* and *Diversum*) are *Distinct* Notions that is, Distinct Considerations, Regards or Respects of the same Thing; and therefore, to Affirm that the Atome is *Chang'd* according to *One* of those Different Regards or Notions, *viz.* the *Form*, and *Not-chang'd* according to the *Other*, *viz.* the *Matter*, has not the least show of Affirming and Denying *secundum idem*; nor, consequently, the least show of a Contradiction. Wherefore it is evidently Demonstrable from plain Logick, acknowledg'd by all Mankind, that it is Possible each Atom should be Chang'd according to the *Form* or *Formally Chang'd*; whence, if there be Causes in Nature sufficient to change it, it will be Actually *Chang'd* or *Broken*; that is, it will undergo such a Mutation as is not only *Formal*, but *Essential*; because the *former* Ens is no more when *Two* Entities are made of it. It remains then only to examin whether there be sufficient Causes in Nature to work this Change, supposing each Atom of it's own Nature Changeable, as has been demonstrated.

*That those Atomes
de facto are
Formally chang'd.*

16. In order to which we are to reflect that *Epicurus* puts those Atomes of his to be of all imaginable Figures: Wherefore, there must be some of them like Needles, ending in the smallest Point that can be conceiv'd. Others full of Pores or very small holes, into which some of these sharpest Points will light; and the more bulky part of the Atome not being able to enter it, that Point will remain Wedg'd in that Pore or Cavity. Now this Point of the

Atome may be so almost infinitely Slender, that the least Impulse of other Atomes, crouding and pressing upon it, may be able to break it; much more, when it happens (as it needs must) that the vast weight of Mountains or a great Part of the Body of the Earth do press with a Transverse or Side-motion upon that Atome. In which case, it will be impossible to conceive how that smallest Point, perhaps a million of times less than a Hair can be able to resist such a stupendious Pressure. The same may be said of those Atomes made like our Hooks, clasping with another Hooked one, when a very strong Divulsive force, able to rend Rocks asunder, tears the Compound several ways; as when Mines of Gun-powder blow up Castles or Mountains. Wherefore, since (as has been shown) the Atome is Capable of being Broken, that is, Capable to be *Intrinsecally* or *Formally* Chang'd, and there are Causes sufficient to break

it; it follows that (whatever *Epicurus* does extravagantly, and against the Sense of Mankind, *suppose*) his Atomes would be *de facto* Broken; that is *Two* Entities would be made *anew*, and the *Unity* (that is the *Entity*) of the Former *Ens* or Atome would be destroy'd; and, consequently, there must be not only *Intrinsecal*, but *Essential*, that is, the Greatest of *Formal Mutations*, made in his Atomes.

The same
demonstrated from
this infallible
Maxim, that all our
Notions are taken
from the Things.

17. The same is Demonstrated from the Notion of *Mutation* it self, and the *Effects* it causes in our Understanding. I discourse thus, Our *Words* express our *Notions*, and our *Notions* (unless they be Fictitious) are taken from the *Thing*. Wherefore, unless there be *some Change* or other in the *Thing*, our *Notions*, and, consequently, our Expressions and Denominations, must still be the *same*. But, when *Local Motion* of the Atom is made in the *Vacuum*, we must be forced to speak of it or Denominate it *diversly*, and to say it is now *Here*, now *There*, or in *another place* than it was before; for, otherwise, it could not be said truly to be *mov'd Locally* if it *did* not *change Place*. There *must*

then be some *Novelty* or some *Change* in some *Thing* or other to ground this *New* Notion, which causes this *New* Denomination. Themselves will not say 'tis in the *Vacuum*; and, should they say so, it would be perfect *Nonsense*; for the *Vacuum*, being *nothing*, cannot be *Capable of Change*; Therefore this *Novelty* or *Change* must be in the *Atome*. Otherwise, did *all the Causes* whatever remain the *Same*, the *same Effect*, viz. the *same Notion* and the *same Denomination*, and not a *Different* one, must ensue; or else there would be an *Effect* (viz. this *New Notion* and *Denomination*) *without any Cause*, which is Impossible. Wherefore 'tis Logically Demonstrated that there must be *Formal Mutation* made in the Atome.

The alledging
Extrinsecal
Mutation is both
Nonsense, and
Incompetence.

17. ²⁸⁷Perhaps they will say (for such Discourers think they have given a sufficient Answer if they can but give us a *New Word*) there is only an *Extrinsecal* Change made by the Application of the parts in the Atom to Different parts of the *Vacuum*. But first a *Vacuum* can have *no parts*, much less any *Difference* of Parts. Next, an *Extrinsecal Change* is a most Improper Expression, and signifies a *Thing* may be *Chang'd*, and yet *no Change in it*. But, suppose we should admit those Words, yet themselves must say an *Extrinsecal Change* means or implies a Change in some *Extrinsecal* Thing

which is really and *Intrinsically* Changed: and which, by being *thus* Changed, gives²⁸⁸ an *Extrinsecal* Denomination to *Another Thing*; which is all they can mean by these words [*Extrinsecal Change*] As when the Wall is Extrinsecally denominated [*Seen*] from the Act of my *Seeing* Power, my *Eye* is Intrinsically Chang'd by having that *Act*, and thence gives that Extrinsecal Denomination to the Wall: And if the words [*Extrinsecally Chang'd*] have not this meaning, they can have *no Sense*, but are altogether Inexplicable. To be *Cloath'd*, is an Extrinsecal Denomination to the man on whom Cloaths are put: But then the Cloaths suffer an Intrinsecal Change of their Figure, and perhaps their Quantity, by being fitted and acomodated to the Body of that man, and the Air suffers the same while the Action or Motion of Cloathing is perform'd. To be *Mov'd Locally* is an *Extrinsecal Denomination* to the Body that is *Moved*: but then, *Local Motion* being a Division of the *Medium* through which that Motion is made, there is an Intrinsecal Change in the *Medium* Divided, and a *New* Continuity of the *parts* of the thing *Moved*, to *New* parts of the *Medium*, is acquir'd; which is a *Quantitative*,

²⁸⁷ Sic. Expected is "18." Oddly, the text previews the next page with "18. Perhaps" at the bottom of section 17; yet on the page that the body text is shown, the label 17 is repeated.

²⁸⁸ Corrected per errata sheet. Original: "give." Errata mentions line 19, but by my lights this makes no sense. I have corrected from line 15.

and therefore an *Intrinsical* Mutation; whence the *Extrinsical* Denomination of [*Moved*] accrues to the Moved Body. Besides, it is scarce possible in Nature, where there can be no *Action* without some Degree of *Reaction*, but the Body it self that is *Moved* must undergo some small Change. But now, in the Scheme of *Epicurus* his Philosophy, all things are quite otherwise; since neither the *Vacuum*, nor the Atoms (and he puts nothing else) even according to his own Doctrin, are in the least degree Capable of Change: Wherefore he is convinced to Deny this Self-evident Maxim [*Idem, manens idem, semper facit idem*,²⁸⁹] while he must affirm that there can be a *New Effect*, (viz. that *New Notion* and *Denomination*) without any *Novelty* or *Change* in the *Cause*, or the *Thing*; that is, he must put a *New Effect* without any *New Cause*; or (which is the same) *an Effect without a Cause*.

The Cartesians are forced by their own Doctrine to admit Formal Mutation.

18. But, leaving him, and turning our Discourse to our Modern *Corpuscularians*, the *Cartesians*: These Philosophers tell us the Particles of their *Matter* are Crumbled or Shattered by *Rubbing against one another*. Wherefore their *Matter*, and each Part of it was *One Thing* before it was Moved, and now is by Motion become *Many Things*. Nor can it be deny'd, but that All of them were Entities *before* their Motion; since both that Whole Mass of *Matter*, and each of the first Divided *Parts*, were (antecedently to the *Division*) *Capable of Existing* apart, and pre-suppos'd to the Division as the Subject of it. Wherefore, both that Whole Bulk of *Matter*, and each of those *Parts*, by losing their *Unity* did *eo ipso* lose their *Entity* too; and, consequently, the respective Forms that constituted them such Entities; which is the Greatest *Formal* and *Intrinsical* Mutation that can be; and far Greater, even by their own Doctrin, than could be made afterwards, according to any Accident or Modification of those foresaid Entities.

19. Again, since Motion cannot be made in an Instant, that Mass of *Matter* must be granted to have been *Created*, that is, to have had *Being*, antecedently, in Priority of Nature, to Motion. Wherefore, it had in that Instant some kind of *Intrinsecal* Nature; and somewhat *in it* which made it to be of that Nature: Hence I argue thus; that *Nature* and the *Form* that constituted it, is either *Lost* when it came to be Divided, and then it was *Intrinsecally* and *Formally* Chang'd: Or else it retain'd that Nature *after* it was Divided; and then 'tis Manifest that that Mass was Diminisht, that is Chang'd according to its *Extension* (in regard the *Greater Extension* of that Original Mass was now made *Less*) and yet was *Unchang'd* according to its Nature. Let them take which of these they please, they must unavoidably yield there was *Formal* Mutation; in the former case, of its *Essence*; in the Later of its *Extension*; and a *Formal Divisibility* in it, either of its *Form* from its *Matter*; or of its *Extension* from its *Nature* or *Essence*; in regard it was by Motion, Chang'd according to the *One*, and not according to the *Other*. But, now, in case they make (as they do) *Extension* to be the Essential Form of that *Matter*, *Formal* Mutation is made more Unavoidable, and must be granted even by themselves.

The Cartesians can give no account of their First Matter.

20. To understand the force of this Demonstration more Clearly, it is to be noted that the *Cartesians* do not make their First Matter to be only an Abstracted Conception of an *Ens* or Body, as it has in it a Power to have a *Form* and so to be a *Thing*, as the *Aristotelians* do; for which reason they rightly, and acutely Define, or rather Describe it, as thus Abstracted by our consideration, to be *Neq; Quid, neq; Quantum, neq; Quale, neq; aliquod aliud eorum quibus Ens determinatur*,²⁹⁰ in regard that, as thus consider'd, 'tis a meer *Power* to be any

²⁸⁹ Latin: "The same thing, which remains the same, will always do the same."

²⁹⁰ Latin. Sic: "Neq;" to be read "Neque." That is, "Neque Quid, neque Quantum, neque Quale, neque aliquod aliud eorum quibus Ens determinatur," which is a description of prime matter, "Neither *what*, nor *how*, nor *what kind*, nor any

of them, or all of them, that is, 'tis²⁹¹ none of them *Actually*. But they put their first Matter to be *Inform'd*; otherwise they could not put it to have *Extension* in it, which must necessarily be granted to be a *Form* either Essentially Constituting it, or some *Accident* or Modification of some *Thing* that has a Substantial Form. Whence, they must hold that their First Matter is an *Ens* or Compleat *Thing*, that is, Compleatly *Capable of Existing*, which appears farther by its Terminating the Action of *Creation*; the peculiar Effect of which is to give *Actual Being*; which concludes it to have been Compleat under the Notion of *Ens*; since it is Self-evident that that *cannot Actually be, which is not Capable to be*; that is, which is not an *Ens*. This Note reflected on, it is manifest it must have a Nature of its own, and Somewhat in it to constitute that Nature, or some Essential Form; and so is *Formally Mutable* (whether *Extension* be that Form or no) as is deduced by our Argument. §. 19.

21. To come up closer to them, and enforce the Evidence of our Argument to a Nonplusage of their Cause, we ask, Of what kind of Consistency was that Original Matter, into which GOD (according to them) did infuse the first Motion, and so Divided it. The very Terms tells us that it must have been of it's own Nature either *Easie* or *Hard* to be Divided, nor do we ask the precise *Degree*; Let them say 'tis either *One* or the *Other*, or a Middle Degree between both, we are so reasonable it shall serve the turn. It being then indifferent to our Question, in this perfect silence of theirs we will guess as well as we can at what they *should* say as most congruous to their Doctrin; and so we will suppose it to be *Dense*. We enquire next *in what* consists this Modification or Affection of it call'd *Density*? or how they will *explicate* it? Motion had not yet begun in that Instant in which it first *was*, by the Means of which they put all Qualities (and *this* amongst the rest) to be Produced. If they should say) which yet I do not read they do, nor so much as speak of it as 'tis found in their First Matter) that it consists in the *Rest* of it's Parts. 'Tis reply'd first that that Matter has as yet *no Parts*, for these are made by Motion, which was not in that Instant begun. Or, if they mean only it's Potential parts, or (which is the same) that One Actual *Whole*; not to pose them by what virtue those Potential parts do formally *cohere*, which without making Divisibility (which is Quantitative *Unity* or *Continuity*) the *Essence* of Quantity is impossible to explicate; the Question returns and we demand *how Firmly* those parts do cling together; that is, *how Dense* that *Whole* was, and *in what* it's Density consisted! which we affirm must have been either *in it's* Intrinsical Nature or such a degree of Consistency (which is in it's being to such a degree *more or less* Divisible by Natural Causes) or in Nothing. Again, if Density consisted in the *Rest* of it's Parts, and there was most *perfect Rest* before there was any Motion, then the Density of it must have surpassed *all Degrees*; and, therefore it must have been of the Nature of *Epicurus* his Atomes; that is, Insuperably and *Essentially* Incapable of being Divided; which they must not say who make their Elements made by the *Rubbing* of some parts of the Matter against the others. Besides, in that supposition GOD, as the Author of Nature, had offer'd Violence to his own Creation, by *Dividing* it immediately at first. Lastly, that *Matter* was of it's own nature Indifferent to be *Mov'd* or *not-Mov'd*, that is, Indifferent to *Rest* or *Motion*; for Being and Extension abstract from both; whereas in our case, *Density* (and the same may be said had it been *Rare*) being *Natural* to it, and not Adventitious or Accidental by the Operation of External Causes; it could not have been *Indifferent* to it; since every thing necessarily *Requires*

other of those things by which Being is determined." I interpret Sergeant to say that, according to the best account of prima matter, it has no distinctive qualities (essential or accidental forms) by which it is individuated, yet those modern Epicureans suppose atoms *qua* prime matter to have *some* qualities and *some* form already. If prime matter is a substance, and every substance has a form, then prime matter has a form; this seems like nonsense to a follower of Hylomorphism.

²⁹¹ Corrected per errata sheet. Original: "that is, none."

what is *Natural* to it self. Nor is a Thing, meerly by it's being in *Rest*, of *another Nature*. To understand this more clearly, let us consider this Proposition [*That Thing call'd the First Matter is in Rest*] 'tis about the Essence or Nature or Intrinsic Quality of the *Subject* of this Proposition we are Enquiring; to which supervenes that Accidental Predicate of *being in Rest*. Wherefore, to be *in Rest* does not *alter* the Intrinsicals of their *First Matter*, but *presupposes* them; and, therefore, all it's Intrinsicals must have belong'd to it of it's own nature, whether it had happen'd to be *in Rest*, or in *Motion*.

*This 'tis impossibility
the Cartesians
should explicate
Density in their First
Matter, because they
deny Formal
Mutation.*

22. *Density* then in their First Matter cannot be explicated by *Rest*, nor, consequently, *Rarity* by *Motion*. Let us search then farther in what we can conceive it to consist, or how it may be Explicated. Now, we are to note, that all *Particular* Natures or Notions, are to be *Explicated* by more *Common* and General ones, if we go to work like Philosophers; for all Grounds and Principles are made up of such Notions as are Common or *Universal* ones; and, to Explicate Particulars by *other Particulars*, is the way of Proceeding by Similitudes; which may serve sometimes to Elucidate, but never to *Prove* or to Resolve any thing or Notion into its Formal Cause, which belongs properly to Philosophers. We find then, abstracting from Rest and Motion,

which are *Accidental* to that Matter, no Notion or Nature in it that can be Superiour to Density and Rarity, but the *Essence* of it, that is, that *Thing* it Self call'd the First Matter, and its *Quantity*. And *Quantity* may be consider'd two ways; Either as affecting the Body meerly in order to *its Self*; or else in order to the *Causes* that may work upon it; The Former we call *Extension*, the latter, *Divisibility* (physically consider'd.) Now, Density cannot any way be Explicated by *Extension* as that in which it consists, as is most Evident; in regard a Body may be *Equally Extended*, whether it be *Rare* or *Dense*; nor is any thing therefore *Rarer* or *Denser* because it is *Longer* or *Shorter*. Let us apply then our Consideration to *Divisibility*, taken in the sense spoken off lately, *viz.* as making its Subject apt to be wrought upon or Divided by Natural Causes; and the Proper and Intrinsic Differences of every Common Notion being *More* and *Less*, and it being also Evident from the very Notions, and from the Consent of Mankind, that we call those Bodies [*Dense*] which are *Less Easy* to be Divided, or *Less Divisible*; and those [*Rare*] which are *more Divisible* or *more Easy* to be Divided, we are in a fair way to find out clearly what *Rarity* and *Density* do consist in; *viz.* *Rarity* in an Excess or greater Proportion of Quantity (thus consider'd) to the Matter or Subject of it; and *Density* in a *Lesser* Proportion of the same Quantity to the Matter; that is, to the Subject of it according to the Notion of it as *Matter*. Nor, does this more strain our Reason to conceive this various participation of the same Accident [*Quantity*] than it does to conceive a Thing to partake the Quality of Whiteness *Unequally*, and be *More* or *Less* White. For that Maxim of [*Quantitas non suscipit magis & minus*²⁹²] is meant Evidently of *Extension*; in regard that the least imaginable Extension being Added or Abstracted from the former, must necessarily vary the *Species*.

²⁹² The maxim comes from Aristotle's *Categories*, On Quantity (Chapter 6); and the wording comes from the Latin translation by Boethius, meaning, "Quantity is not capable of the more and less."

Formal Mutation
demonstrated from the
Transmutation of
Rare and Dense
things into one
another.

23. That we may bear up more directly to our main *Thesis*: Since *Rarity*, or else *Density* must necessarily be in their *First Matter*, (for it is impossible to conceive it to be *at all* Divisible by Natural Causes but it must be either *Easily* or *Hardly* Divisible by them) if we joyn to this that *Contraria* (according to the Maxim) *sunt circa idem subjectum*,²⁹³ it will and must follow that the same Matter (whether *theirs* or *ours*) that had a Power in it to be *Less* Divisible or *Dense*, had also a Power in it to be *More* Divisible or *Rare*; and this not only in the First Matter it self, but also in every particular Body in Nature *made of it*, and which has the nature of that Matter *in it*: whence results this Conclusion,

that *Rare Bodies* are *Transmutable* into *Dense*, and *Dense* into *Rare*; and that, therefore, there is *Formal Mutation* in Bodies according to these two *Primary Qualities*; and, consequently, according to all *Secondary Qualities* too; which (as will be demonstrated in Physicks) are made up of those *Primary* ones. So that most of the Effects in Nature are carry'd on by *Formal Mutation*; nor consequently, can Nature be ever rightly Explicated by the Deniers of such a *Formal Change*.

24. Let it be well noted that I speak not in this last Discourse of *Contradictories*, which have no Middle between them, and therefore cannot have the same Matter or Subject, or make it Changeable from one to the other; as, because Body is Divisible, it does not follow that the same Subject can be Chang'd to Indivisible. What I discourse of, and from whence, in part, I drew my Argument was, from the nature of *Contraries*, which are two Extremes under the same kind of Quality, and therefore have Middling Qualities between both; by passing through which, as by Degrees or Steps, the Body is Transmutable from one of them into the other. And the reason is, because neither Extreme is *Infinitely* such, and therefore has necessarily some Mixture of the Opposit Quality and is (as it were) *Allay'd* by it; so that it comes to be Finite under that Notion. Whence the Subject which has *one* of those Extreme Qualities, becomes a Capacity of Admitting the *other* Extreme. And therefore *Epicurus* seems to go to work more like a Philosopher, in this point, than the *Cartesians*, by supposing his Atoms *Essentially* that is *Infinitely* Dense or Incapable to be Broken or Divided; tho' in most other things he falls very much short of *Cartesius* his Clear Wit, by his building in a manner *wholly* on Suppositions; and, those too, the most Extravagant ones an ill-grounded Judgment could stumble into.

That there are
Proper Agents in
Nature to Condense
and Rarify.

25. They will ask how or by what means can a Dense body be chang'd into a Rare one, or a Rare into a Dense; or, what Causes do we find in Nature Proper to produce such an Effect? And, it must be confest the Question is very Pertinent. For to put the Operations of Rarefaction and Condensation without any Proper Agents to cause those Operations, is a thing unbecoming a Philosopher. We answer then, that all *Compressive* and *Divulsive* Agents, which we experience are Frequent and almost continually

working in Nature, are as Proper to work upon Quantity *as such*, and to make the Subject of it Rarer or Denser, as *Dealbation* is to work upon a Subject as 'tis *Colourable*, or *Combustion* upon a thing as 'tis *Combustible*, or any other Action to produce or inferr it's Proper Effects, or, to cause the Passions that correspond to it. Nor can there be any Notion or Consideration found in a Body on which those two Actions of *Compression* and *Divulsion*, can be conceiv'd to work *properly* and *precisely* but on it's Quantity or Divisibility, in order to make the same Matter have *more* or *less* Quantity in it; or to make a Body that is *Compressed* or *Drawn* several ways to be *Formally* Chang'd in those respects. So that we must either say that

²⁹³ Latin: "Contraries are about the same subject."

those two Common Words, importing *Natural Actions*, and us'd by all Mankind, to have no sense in them, or they must allow them their Proper Effects, which are to *Shrink* or *Dilate* the Quantity of the thing, which is to make it *Rarer* or *Denser*. Granting them that sometimes and even very often those Effects are perform'd by the Intromission and Extrusion of subtil particles of other Bodies, (which as the very Terms show, are improperly call'd Rarefaction and Condensation;) whenever any Natural Body is Prest or Stretched *on all sides* by other Bodies closely besieging it, if Quantity be capable of those Effects as is demonstrated above §. 15. it is, the Proper Effects of such kinds of Operations must ensue, and the Body enclos'd, will be to *some* degree *Condens'd* or *Rarefy'd*.

The Cartesians
Hypothesis is
Præternatural.

26. Now, had *Cartesius* put these two First Qualities in the Matter Created by God *in the Beginning*, so that some parts of it had been Created Dense, some Rare, Nature had been furnisht with Immediate Causes to make Division or Motion *connaturally*, (supposing them set on work, or mov'd first by some Superiour Agent) in regard *Dense* Bodies are naturally apt to Divide *Rare* ones, and *Rare* ones naturally apt to be Divided by those which are *Dense*. Nor had he then needed to assign to *Essential Being* whose Nature is Unchangeable, and in which there is no *Transmutatio aut Vicissitudinis obumbratio*,²⁹⁴ that is, *neither Change nor Shadow of Change*, a Drudgery so Mis-becoming his Essence, as to be the *Immediate Cause of Motion or Change*. Hence I argue: Since neither to be *Easily* nor *Hardly* Divisible, is the Essence of that First Matter, in regard it was *Compleat* in the line of *Ens*, and terminated the Action of *Creation*, and so could have subsisted whether it had been *Rare* or *Dense*, or, tho' it had not been Divided at all, there is manifestly a Divisibility between the Essence of that Matter and its Rarity or Density; and therefore, by the same argument we brought formerly against *Epicurus*, that Matter might have been Chang'd according to either of those Qualities, and not according to its *Essence*, and yet no Contradiction ensue; which demonstrates it to be *Possible*. Again, that Matter being Indifferent to either Rarity or Density, had GOD Created some part of it *Rare*, some *Dense*, the course of Nature (as was lately shown) had gone on more connaturally: Wherefore, since GOD, as the Author of Nature, and abstracting from Miracle, does always act most connaturally or agreeably to the Nature of Things; it follows that he *did actually* order that *some* parts of the First Matter, of which the World was to be *Form'd*, should be Rarer, and some Denser than *Others*, and not of an Uniform or homogeneous Nature. And, accordingly, we are taught by Holy Writt, that in the Beginning there was Earth, Water, and Air. And, if the *Cartesians* will needs make their First Matter Uniform, and that GOD must move it *immediately*, 'tis justly Requir'd of them to show this Tenet of theirs, most Agreeable to the Natures of the Things: I mean to the nature of *GOD* whom they put to be the *Immediate Cause* of the First Motion; and to the Nature of Matter, the Patient; and not overleap and slide over the *Proof* of both these main Points and *suppose* them; and this, not because they can even *pretend* that those suppositions do suit best with the Natures of the Things themselves; but, meerly, because it best serves to introduce and carry on the Scheme of Doctrin they had resolv'd on.

That there is also
Mutation according
to Accidental
Forms.

27. From *Essential* Mutation of Things in Nature, or their losing their *Substantial Form*, we come now to demonstrate that there is moreover Mutation in them according to those Forms which are *Accidental*. In order to which we will premise this Consideration taught us by daily Experience, that No Body becomes *Another Thing* in an Instant, but is *Alter'd* or *Dispos'd* before hand ere it comes to Suffer an *Essential Change*. For example; A piece

²⁹⁴ James c. 1. v. 17.

of Wood ere it comes, by perfect Division, to be made *two* Things of *One*, is first *Alter'd* according to its *Figure*, that is, Cleft or Nick'd. Before the same Wood is turn'd into Fire, it is first *Heated*; that is, it has that Accidental Form call'd the Quality of *Heat* first introduced into it; and so in all the rest respectively. Which Changes not being *Essential* ones, in regard they *antecede* the Change of the *Entity* as *Dispositions* to it, they must be *Accidental* ones; and this, according to Quantity, Quality or Relation, which are all the Accidental Notions we have of the Thing that are *Intrinsecal* to it. Now, if we admit those *Previous* Alterations and Dispositions, we cannot avoid the admitting *Mutation* of the Subject according to those *Forms*. Wax, by melting is *Rarifi'd*, that is, *Chang'd* as to its former *Density*. A *Man* or *Horse* loses a Limb, and consequently their former *Quantity* and *Figure* too; and yet they are the same Individual Man and Horse. A Husband loses that Relation when his Wife dies, and yet is the same *Man* he was. So that here is most manifestly a Divisibility between the Natures of Essences of those Things, and these *Intrinsecal Accidents* or *Accidental Forms*; and the Subjects are evidently *Chang'd* by Natural Causes according to *These*, and not according to its Essence or Nature; that is, the Subject undergoes so many *Formal Mutations* that are *Accidental*. And, let them *explicate* these Terms as they please after their own odd manner, they shall never avoid the Conclusion, if they do put the *Subject* or *Body* to be truly an *Ens*, and that it may be *otherwise than it was*, and yet not Immediately cease to be *that Ens*; either of which to deny were to bid defiance to Mankind and to Common Sense.

28. I know it will be repli'd, that all Natural Bodies are *Compound* Entities, or made up of many little Particles; which, put together, Mov'd and Plac'd Commodiously, do enable them to perform those several Operations peculiar to each; and that these do occasion our saying in our common Speech, it is *such an Ens*. And that, therefore, all our Discourse concerning Formal Mutation falls to the Ground; since all may be Explicated by the Taking away, Adding, Ordering and Moving those Particles after such or such a manner. But, this comes not up to the Point, nor can serve them to escape our Argument, but rather plunges them into a more manifest and Direct Contradiction. For, admit that each *Compound Ens* (as they are pleas'd to call those *Many* Entities) or at least a great part of it, be made up of those little Particles; I am still to ask them whether those Particles do really conspire to make it *One Thing* or no, after the Composition? that is, whether *after* the Composition there remains only *One Actual* Thing, or *Many Actual* Things or Entities? If the First, then our Discourse proceeds with the same Force; for then, since this *One Ens* or Body is Dissolvable or Corruptible, it must (as was prov'd above) have somewhat in it that remains in the Compound w^{ch} is to be made out of it, which we call *Matter*, and Somewhat which Formally Constituted the Former Body to be *what it was*, and consequently, which does *not* remain in the *New* One; which is what we call the *Form*. And, because it did not cease to be or was Corrupted in an *Instant*, the Former Subject or Body admitted of *Alterations* first; and, consequently, there was *Mutation* in it, both according to those *Substantial* and those *Accidental Forms*. But, if they say, (as I fear they will, because they *must*) that after Composition there is no *Ens* which is truly *One* but *Many*; or, if they say that, after Composition, there is *One* and *Many* which are properly and Formally Entities; then they must say that the *same Thing* is both *One* according to the Notion of *Ens*, and yet *not One* according to the Notion of *Ens*, which is a plain Contradiction; for it Affirms and Denies Contradictories of the Thing according to the *same respect*. Whereas in the *Aristotelian* Doctrin, there is but *One Ens* Actually, tho' made up of Potential Parts which have a Formal Divisibility between them; or (which is the same) *One Thing* apt to verify different Conceptions and Notions; which (as was said above) partly because we cannot comprehend it all at once, partly because Natural Causes do change it according to *One* Respect and not according to *Another*, we are naturally forced to

make of it. Now, to make the Subject consist of *Potential* parts, Destroys not the *Unity* of the *Compounded Ens* but Establishes it; for, to say it is *Potentially Many*, is the same as to say it is *Actually One*; and, to Compound an *Ens* of *Potential Parts* proper to the Notion of *Ens*, neither of which were *One Actual Part* before, is to make that *Ens* truly *One* tho' it had no other Title to be *One* of its own nature: For, to compound an *Ens* of Entitative parts neither of which is *of its Self* an *Ens*, is as plainly to make *One Ens* as words can express.

29. But, to put them past this Evasion and all hopes of eluding the force of our Discourse by alledging that Natural Bodies are *Compounds*, I have purposely drawn my Chief Arguments from the Atomes or *Molicellæ* (as *Gassendus* calls them) of *Epicurus*, and from that Original Mass of *Matter*, of which the *Cartesians* affirm their Elements were made, which the Antiperipateticks must be forced to confess are perfectly *Uncompounded*. And, I farther alledge, that as *Many Quantums* cannot compound *One Quantum* unless they be *United Quantitatively*; so neither can *Many Entities* (such those Distinct Atomes and Particles must be) compound *One Ens*, unless they be *United Entitatively*. Wherefore those parts can be only *Potentially* in the Compound (as our *Matter* and its *Essential* and *Accidental Forms* are) for, were they *Actually* there, they would be *Entitatively Many*. Whence the *Ens*, made up of those *Many Actual Entities*, could not be *Entitatively Unum* or one *Ens*; but it would be an *Unum* which is *Divisum in se*; and which is worst, (to compleat the Nonsense and make it a perfect Contradiction) it would be in the *same* respect *Divisum in se* in which it is *Unum* or *Indivisum in se*, viz. *in ratione Entis*; which is to be perfectly Chimerical.
30. Thus they come off, and so must every one, who guides himself by the sound of Words without looking attentively into their Sense. For, the Word [*Compounded*] is in reality a kind of Transcendent, and therefore in the highest manner *Equivocal*; whence, while out of slightness of Reasoning and not heeding where the Question pinches, they take the word in an *Univocal* signification, they come to apprehend that the compounding many Entities together according to some *Extrinsecal* respects (such as are Situation, Motion, joynt-Action and such like,) is the same as to compound them according to that most *Intrinsecal* respect call'd *Substance*; and is sufficient to make them *One Entitatively*, or *One Ens*.
31. And let it be noted that this Discourse equally confutes their Position of the Soul's being a Distinct Thing from the Body, which leads them into Innumerable Errours. And, the absurdity in making These Two to be *One Compound Thing*, is far greater than to make *One Body* compounded of those Particles; in regard the *Ranging* of *Particles* may at least, make *One Artificial Compound*, (v. g. a House) tho' not a *Natural* one; whereas a Spirit and a Body are forbid by their natures to have any such *Artificial* or Mechanical Contexture; but must unavoidably, when the Asserters of this Tenet have shifted and explicated all they can, remain *Two Actual Things*; and, moreover, *such Two*, as are *toto genere* Distinct; nor, consequently, can they, either by the Natural or Artificial Names us'd by Mankind, be signify'd by *One Word*; or be called *A Man*; as the former Compounds could be called a *House*, or a *Clock*. And I defy all the wit of Man to invent any way how *Two such Actual Things* can have any Coalition into *One Natural thing*, or have an *Entitative Union*, but by being join'd together as *Act* and *Power*, that is, as *Matter* and *Form*; which are the *Potential Parts* of an *Ens*, and therefore are apt to compound *One Ens*, in regard neither of them is a *Thing Actually*.
32. And indeed if we look more narrowly into the Doctrin of the Deniers of Formal Mutation (the Antiperipateticks) we shall find that they have Perplex't and render'd Obscure the most Common, Easie, Obvious, Useful and Necessary Notion which Mankind has or can have, viz. the Notion of a *Thing*. For I cannot discern that they make their First Mass of Matter to be *One Natural Thing*, unless they fancy it to be a kind of *Idea Platonica* of *Body*, existing

Indeterminately or in *Common*: For they put the *Form* of it to be *Extension*, and they make this Extension to be *Indeterminate*, that is *not-Particular*; that is, to be Extension in *Common*. Nor can we learn of them *what kind* of Thing it is, more than that it is barely thus *Extended*: Which tells us, indeed that it has Quantity, but gives us no light of it's Intrinsic Nature or Entity; that is, they never explicate to us *of what nature* that thing is which is *Extended*. And what man living can conceive a Body which has neither Figure, or Colour, Density or Rarity, Heat or Cold, Hardness or Softness in it, but merely Extension? Again, I cannot see that they put those little *Particles*, made by Motion out of that Matter, to be *Natural Things*, tho' they do Actually and Distinctly exist in Nature; because they make them *Principia* or *Elementa Rerum Naturalium*; and the *Elements* of which *Things* are made can no more, with good Sense, be called *Things*, than Letters, which are the Elements of Words, can be said to be *Words*. The *Compound*, made up of those Particles, they do, indeed, expressly own to be a *Thing*, but, by making it consist of *Many Things*, (I mean those Particles) each of which has a peculiar Actual Existence of its own, and which are not United or made *One* according to the Notion of *Ens*, but only according to the Notion of some *Accident* which is Extrinsic to the Notion of *Ens* and differs from it *toto genere*, they cannot with any show of Reason, call such a *Compound A Thing*, or *One Thing*. Whence, according to their *Hypothesis*; we can have no Clear Light what is to be called a *Thing*, or what the word [*Thing*] means. As for our Four *Elements* (which perhaps they will object) they either are found *Pure*, and *out of* the Compound; and then having an Actual Existence of their own, they are truly *Things*. Or they do *not*, and then they are *Potential* parts of the Compound in which they are; which, and only which, *Exists* by *One* Actual Existence, which shows it to be *One Thing*; and not by *Many*, as *their* Compound does, which makes it *Many Things*; at least such Things as they will allow those Elements or Particles to be.

33. But to give them what Satisfaction we may without Injury to Truth, and withal to Clear the true *Aristotelian* doctrine from the prejudices taken from the bad speculations of those Schoolmen, who make Accidents so many little Entities distinct from Substances, we will confess that many of those Forms we call *Qualities*, are *Effluvia* or Particles sent out from other Bodies; which, while they *transiently* affect that Body on which they light, they retain their own Distinct Entities, and are call'd the Particles or Vertue of the Emittent Body affecting another Body that is Passive from them. But, when they gain a Permanency there, and, by Continuity of Quantity, or Similitude of Nature, or any other Cause, they come to be naturally *United to it*, and assist it in its Proper Operation, they lose their Actual Entity and Unity which they had formerly, and become a *Potential Part* of the Subject that was Passive from them, and Exist and Subsist *in it*. And; because the Notion of [*Form*] is to be *Receiv'd* in the Subject or Matter, and those Particles *advene* to it already Existing, they are hence call'd *Accidental Forms of it*; and either give it such an Alterableness as is agreeable to their nature, as is seen in Passible Qualities; or, sometimes, if they suit with the Primogenial Constitution of that Body, they strengthen and belong to some Habit, Disposition, Power or Property of it; and piece out (as it were) those Qualities, and, in some degree or other denominate the Subject thus or thus *Qualify'd*.
34. But to make it yet more manifest how industriously the *Cartesians* do wave the giving any account of their First Matter, of which notwithstanding they hold *all* their three *Elements*, and consequently *all Nature*, was made, we will take notice of one prevarication of theirs more; which does evidently bewray at what a plunge they are about it; by omitting that Consideration, which, even by their own Doctrine, was the Chiefest and most Necessary. They affirm that Matter of theirs to have been Divided first by God into greater parts, which

again being *moved* or jumbled one against another, did *shave* or *wear* off very²⁹⁵ small particles of several sorts of which their First Element was made: *Division* then was the first and Principal Physical Action, and that which most conduced to frame all Nature: Nay, in case there be no *Vacuum*, (as they grant there is not) it is manifest that the First Motion, and which was exercis'd *Immediately* upon their Matter, as also all the following Motions exercis'd upon the said Matter, was *Division*. Now, *Divisibility* of the Matter being the Proper Power that answers to the Act of *Division*, or (which is the same) to *Motion*, and withal directly speaking the nature of their Matter as apt to be wrought upon by those Causes: how was it possible they should slip over that, and regard only the *Extension* of it? *Divisibility* is a Natural Notion, and imports an Order to Natural Action; whereas *Extension* is a dull sluggish Notion, and meerly Mathematical; that is, it does Abstract from Action and Motion both; For an Extended thing is never the more or less Extended whether it *Moves or stands still*, but its whole Nature and Notion is taken up in affecting its own Subject, or Extending it, *equally* and *all one* whether it *Acts* or *not acts*. But, the reason of this willful neglect is this, that, tho' they grant it to have been Divided, yet, should they tell us it was thus *Divisible*, Common Reason would lead us to pose them with asking whether it were *Easily* or *Hardly* Divisible, that is *Rare* or *Dense*, of which Qualities in their Matter, antecedently to Motion, and the Contexture of the particles made by that Motion, their Principles can give no kind of account, nor possibly explicate them.

35. I am apt to think that they foresaw this Rub in their way, which hindred the Currency of all their Doctrin of Physicks; and, seeing they could *not remove* it, they very fairly let it alone; Yet, for a show they take notice of the *Word*, but they turn it to a quite different *Sense*. For Mr. *Le Grand*²⁹⁶ coming to give us account of the *Divisibility* of this Matter, where it was the Proper place to acquaint us to what degree it was Divisible into particles by Natural Causes, he starts aside to tell us that, being Quantitative, 'tis Divisible *in Infinitum*, which is quite besides our purpose. This is a *Mathematical* Divisibility; whereas a *Physical* Divisibility, or a disposition to be divided by the Motion of the first-made parts, is only that which can concern his Scheme or do it any service. For had it been insuperably *Dense* or *Hard* (as *Epicurus* fancies his Atomes) they could not have been Divided at all, nor consequently, his Three Elements have been made. Or, had it been *Rare* or *Soft*, one part would have stuck to another, and could not have been shatter'd and crumbled into those most subtil parts which make his First Element. To declare then *how* and of *what nature* it was, *in this respect*, should have been one of the First Principles in his Physicks, his whole *Hypothesis* depending on it; whereas it was not a straw's matter whether it were Divisible *in Infinitum* or no, so it were but Divisible into parts little enough to make their First Element and the rest. I must then, in behalf of Truth, declare that their Avoiding this point, so necessary to their own Scheme, and to the explication of Nature, is a most manifest prevarication, arising hence that they cannot, notwithstanding they are Men of great Wit, make *any sense* of it according to their Principles.
36. But tho' they do not treat of the Divisibility of their Matter *de professo* and *purposefully*, as they ought, yet it is scarce possible but they must, against their Wills, be forc'd to say something at unawares of the Intrinsecal Nature of their Matter as either Easily or Hardly Divisible, while they go about to explicate themselves. Errour then being the best Confuter of it self, let us see what they say of it. The Ingenious Gentleman, now mention'd,²⁹⁷ tells us that their

²⁹⁵ Corrected per errata sheet. Original: "every."

²⁹⁶ Entire Body of Philosophy Part 4. Ch. 4. §. 1.

Sic. Expected is "Mr. Le Grand."

²⁹⁷ Ib. ch. 6. §. 6.

First Element is made of Particles, which, like shavings. are rubbed off by Motion from Bodies. Now, since their Matter is held by them to be Homogeneous or Uniform, a man would verily think by those expressions, that the Nature of their Matter is *Dense, Hard* or (in a Manner) *Friable* or *Crumbling*. For what is *Rare, Soft* and *Tenacious*, cannot be conceiv'd Proper or Fit to be *Crumbld* or *Shatter'd* into such very small dust by *Rubbing*. Yet the same Author ²⁹⁸ tells us the particles of their First Elements are *Slender, Flexible, and*²⁹⁹ *accomodate themselves to the Figures of the Bodies they are contiguous.*³⁰⁰ By which expressions one would verily imagine them to be *Fluid, Soft, Moist* or *Yielding*, rather than of a *Solid* or *Hard* Nature, for only such can accomodate themselves to other Bodies on all occasions. So that he makes it at once to be both *Hard* and *Soft*; as being very apt to *break*, and yet at the same time very apt to *ply* and *bow* too; that is, he puts *Contrary* qualities in the same Uniform Matter: Which shews manifestly that they know not what to make of it, nor how to speak coherently concerning it; and, withal, that, (which is the true Genius of Hypothetical Philosophers) they blow and sup at once; and *say any thing* that suites with their present occasion. It was for their turn to make them *very Flexible*, for otherwise it had been impossible to avoid *Vacuum*, whenas Millions of those Atomes were jumbled together; which, had they been Solid, had retain'd their Figure, and then *Vacuum* must have fill'd the little Interstices: And, it was very fitting too they should be *Hard* and *Friable*; otherwise they could never have been Shatter'd by *Rubbing* into such minute dust, as they had design'd to make their First Element of. So that they play fast and loose with their Reader; and, no wonder we know not where to have them, when they do not know where they are themselves.

37. The same untoward way they take in expressing themselves, sometimes as if they and we did perfectly agree in our sentiments. And because the Goodness of our common Reason teaches us that the *Nature* of a Thing is *in it*, they do therefore allow our well-meant words, and talk of *Intrinsecal Forms* both *Essential* and *Accidental*; which granted they cannot deny Formal Mutation. Mr. *Le Grand* Part 6. cap. 24. § 9, 10, 11. gives us all these good words, tho' he chuses sometimes *rather* to use the word [*Modification*] than [*Form*] and in his § 10, 11. he discourses altogether as if he were an *Aristotelian*. But, alas! what trust is to be given to meer *Words*! For, coming to the § 12. he tells us plainly his true Meaning, which is as opposit to ours (tho' using the same Words) as the two Poles are to one another, viz. *that in the Generation of Plants and Beasts a new Substance is no more produced, than in the Framing a Statue, or building a House*: which he there exemplifies in some particulars, and then concludes that *Generation is nothing but the Translation or new Ranging of the parts of the Matter*, and that *This is alike in Natural and Artifieial Compositions*. But, by his leave, if he that builds a House does not know the *Intrinsecal* temperament or Consistency of his materials, viz. that *Stones are Dense or Hard*, and therefore most fit to be the Foundation; that *Wood is Dense*, and *Lighter*, and so more fit for the Superstructures: Lastly, that *Mortar is Soft* at first, but *Hard* when it comes to be dry, and so is most fit to bind the Stones together; I am afraid that if he be ignorant of these and such like particulars, he will make but a ruinous and bungling piece of work of it, tho' he be never so well verst in the Art³⁰¹ of ranging the parts of the several Materials artificially or mathematically. And, as has been shown, no man living, no not themselves, can give any account of the Consistency of their *Matter*, which is the only Material of which they build (pardon the Bull they force us to) their *Natural-Artificial* Structures.

²⁹⁸ *Ib.* §. 6.

²⁹⁹ Corrected per errata sheet. Original: "slender and Flexible."

³⁰⁰ Corrected per errata sheet. Original: "contiguous to."

³⁰¹ Corrected per errata sheet. Original: "Act."

38. This then being his true sense, and, consequently, the true doctrin (if we may believe him) of the *Cartesian* School; and the word [*Form*] bearing in its notion that it is *in* the Matter, and therefore is *Intrinsecal* to the Thing, and makes it either *Another* if it be an Essential Form; or Intrinsecally *otherwise* or *Alter'd*, if it be an *Accidental* one; and, it being likewise Evident that the *Ranging the parts of Matter*, is only an Outward Application of them to one another, which is merely an Extrinsecal Notion; we may hence clearly discover, that they do not *use* the words [*Form*] and [*Intrinsecal*] in a proper and Natural sense, but utterly pervert and *abuse* them.
39. By these expressions of his lately mention'd, and their putting nothing but *Extension* in their Matter, which abstracts from Motion and Natural Action, one would think they intended, in stead of Physicks to give us a piece of meer Mathematicks, for bare *Extension* fits it for no other Science. Nor are we mistaken in thinking so; for he tells us expresly³⁰² that *Natural Philosophy is one part of the Mathematicks*. Tho' the Abstraction which, in the place now mention'd, he assigns to Quantity as a *Genus*, is very odd and Illogical; For the Abstraction of Quantity from the *Thing* or from *Motion*, is an Abstraction of the *Accident* from the *Subject*, or from *Another Accident*; and therefore is quite another kind of Abstraction than that of the *Genus* from the *species*; and it looks as if they hanker'd after *Plato's* exploded conceit of a *Subsistent Universal*; and that they would have their *First Matter*, contrary to all Logick and good sense, to be a *Body in Common*; and therefore the *Genus* to all particular Bodies: Nor can any thing sound more awkwardly then to make a *Mathematical* Treatise of *Physicks*. But *Cartesius* was a Greater Master of Mathematicks than he was of Physicks; and therefore had a vast Design to reduce all Nature and all Philosophy within the Purlew of his own Art; in which it must be confest he was very Excellent.
40. But, to lay yet a Greater Force upon their backwardness to admit a Formal Change in Bodies, we come now to more Palpable and Plain Instances, not fetch'd from Metaphysicks but from obvious Effects in Nature; which every man sees, and themselves cannot but acknowledg. Let us then take into our consideration a young lately-planted Oak growing in a Nursery; which in the space of a hundred years, spreads it self into a vast Tree; dilating it's large and massy Branches on all sides, and over-shadowing a spacious Extent of Ground. Can any man deny but that this is the *same Thing*, or the *same Tree* it was at first? And yet 'tis most evidently *not the same* in *Quantity*, it being now a thousand times Greater than it was formerly. 'Tis manifest then that here is a Real Divisibility between it's Quantity and it's Entity or Substance; and a Real *Mutation* according to the *Form* of the Quantity, and not according to the Notions of *Ens* or *Thing*. The same may be said of an *Infant* grown up to be a *Man*; which, when 'tis now Bigger in Quantity, should they deny to be the *same Thing* or the *same Man*, it would make mad work in the World by taking away Titles of Inheritances, and altering the Right of Succession. The Infant might, perhaps, retain his Title for some very small time; but the Identity of it being lost by the accruing of new Matter and new Quantity, he has forfeited his Estate, e'er he comes at age to understand or manage it, by losing his Essence.³⁰³
41. I know that our late Philosophers will hope to evade this last Instance by alledging that the Numerical Identity of a Man springs from his having the same *Soul*. Which Tenet, (were it proper to confute it here) would prove as Unreasonable and ill-grounded as any of the rest. I only note, on the by, that, as it becomes God's Wisdom, as he is Author of Nature, to carry on the Course of Causes by fitting Dispositions to the Production of farther and more

³⁰² Part 4. Chap. 3. §. 24.

³⁰³ Sic. Expected "Essence."

Noble Effects; and consequently, to sute and proportion what *Supervenies* to what *Præ-exists*; and the *Embryo* in our case *Præ-exists*, and, by having such Dispositions in it as made it fit to concur (on it's part) to work Rationally *to such a Degree*, made it require to have for it's *Form such a Rational Soul* joyn'd with it, and, thence, determin'd the Author of Nature to infuse it; it follows that the thing is quite contrary to what they imagin; viz. that the Soul was to be adjusted and proportion'd to the Exigency of the Bodily part; and that, therefore the Soul is Determinately *such*, or of such a Determinate *Degree of Rationality* (which Essentially and Numerically distinguishes *Souls*, and *Men*, from one another) as was fit to be infus'd into and work with such a Body. And were not this so, it would be impossible to explicate how Original Sin is connaturally transfus'd from *Adam*, or how the Soul becomes tainted by being united to a Body made ³⁰⁴ *ex immundo semine*.³⁰⁵ But, this is not the only ill Consequence that springs from this Extravagant Tenet of the Soul's being a Distinct Thing from the Body, or that Man is in reality compounded of Two Actual Things, and therefore not to be placed in any one Line of the Predicament of Ens or *Substance*. For, that odd Opinion does, besides, very much favour (at least, very well consist with) the *Præ-existence* of Souls: Because, if the Soul be not proportion'd to the Disposition of the Corporeal part of Man, and so, be truly the *Form* of it, but a kind of *Assistant Spirit*, only apt to joyn with it, and promote it in it's Operations, it might as well Exist *before* the Body as *after* it. Whence it will be very hard for them to assign any solid Reason from the Nature of such a Spirit, (since it might indifferently fit *other* Bodies or assist more of them) why there might not be also a Transmigration of Souls from one Man to another; for it would be, in that case, no more but shifting their Office and *assisting* now *one* of them then *Another*. Not to mention how this Doctrin (as is discourst in the Preface) tends to introduce a kind of Fanaticism into the Philosophy Schools, by making all their thoughts run upon nothing but Spiritual Conceits and Innate Ideas, and having a Spiritual communication with God, when they know any Natural Truth, after an unintelligible manner. Not considering that Man, in this Mortal State here, is truly one part or piece of Nature; and subject to the Impressions of Natural Causes affecting him, both as to his Corporeal and Spiritual Capacity, according to the Different Natures of those Different Recipients.

41. ³⁰⁶But, to return whence we diverted; Letting Man and his Individuality alone, what can they say to the former Instance of a young Oak (or of any other Vegetable or *Animal*) increast to it's Full Growth, which all Mankind agrees to be still the *same Thing*, and yet *not the same in Quantity*? Is it³⁰⁷ not hence unanswerably Evident, that there is a Formal Mutation according to it's *Quantity* and not according to it's Entity, and therefore a Formal Composition and Divisibility in it according to those two Respects? They cannot say they are the same *Physically*, or the same Physical Compound: For, since all Natural Bodies, according to their Doctrin, are made *solely* of their First Matter, or of the Particles made of it; where there is incomparably *more* Matter, there must be a *New-Compound* or a *New Body*; in regard *more* and *less* must be the Differences of every Notion in the same Line, as has been demonstrated: Wherefore *more* or *less* of the *Matter* (it being inform'd, and, so truly an *Ens* or a *Body*) ought to outweigh, in constituting Particular Bodies or Entities, all consideration of Accidental Notions or Modifications of it, which are not properly Entities but only Modes of *Ens*. 'Tis a

³⁰⁴ Job 14. 4

³⁰⁵ Latin: "(out) of unclean seed." Reference to Job 14:4 in the Latin Vulgate, "Quis potest facere mundum de immundo conceptum semine? nonne tu qui solus es?" which translated into English is (per vulgate.org), "Who can make him clean that is conceived of unclean seed? is it not thou who only art?"

³⁰⁶ Sic. Expected is "42."

³⁰⁷ Corrected per errata sheet. Original: "It is."

Folly to alledg the Figure or Extension of those Particles; for, if the Subjects, (I mean the Particles) be not the *same*, all the Accidents which belong to those Numerically different Subjects, must be Numerically different likewise; and, so, cannot constitute a Thing to be Numerically *One*, but only add more Numerical Things to it to make it Numerically *Many* *Extension* is held by them to be the *only Essential* Form of their Matter; so they³⁰⁸ ought, if they go to work Logically and consequentially, to say that *Particular Extensions* of that Matter which come along with those Particles, do³⁰⁹ give a *particular Essence* to each of those compounds which are made of that Matter; and so make the Generical Notion hold in every *Species* and *Individuum* of that common Body; as *Entity* which is the Form of *Ens* is found in every Individual Thing in the whole world; and not to make the Essential Difference of those Bodies consist in such respects as are *not Essential*. They will tell us of many Modifications of each Compound: But they should consider that Modifications of the *Thing* or *Subject* do *supervene* to it; and therefore the Thing must first be supposed to *be*, e'er it can be capable to be *Modify'd*; and it looks odd to talk of Modifying what *is not*, or of modifying a *Nothing*. Yet tho' it strains good sense, they tell us of other *Essential Modifications* of the Matter in each Compound; as if *Res* were not, by all Mankind and by the Light of Nature, *presuppos'd* to *Modus rei*. But this *Catachesis* they are forced to by their pique against Essential *Forms*; the Sense of which the Goodness of Rational Nature forces them to admit; tho' out of Aversion to the *Word*, they generally change it into a *worse*.

42. Their last Evasion then is to say that those Vegetables and *Animals* are the same *Morally*. And, indeed, they cannot in all humane Language pick out a blinder Word, and of a more ambiguous Signification; and therefore, 'tis most Proper to make use of for a subterfuge against Clear Reason. I never yet could hear of any man that could *define* it; and it is as easy for the Taylor in the Fable to fit the Moon with a Coat, as to fit *it* with a Definition. But, we will do what we can to show the different senses it may have in our circumstances; and that none of them can serve their purpose. Either then [*to be Morally the same*] Signifies that the *Thing* does *seem* to us to be the same, tho' it be not so *Really*. But, this comes over to us instead of opposing us; for, our Question is what *is*, and not what *seems*; nor is such an Expression to be Tolerated amongst Philosophers, whose Duty 'tis to consider what passes *Really* in Nature, and not what only *Appears* so. Or else, these words must mean that the *Thing* is *not considerably* Chang'd; and therefore, 'tis, *morally speaking*, the *Same*. But, this is most evidently False; for, the over-grown Oak has a thousand times more Quantity in it, and, consequently, according to them, more Matter added to it than it had while it was but a Scyon³¹⁰- Wherefore, it must be *more than Morally*, that is, *Considerably* Chang'd according to its Quantity, and yet, *not at all* Chang'd as it is an *Ens* or *Thing*. And this is all I can imagin the Antiperipateticks can any way plead to escape the force of our Argument for *Formal Mutation*.³¹¹ Our ingenious Country-man, Mr. *Locke*,³¹² goes more solidly to work, by making it *to be the same Plant* as long as it partakes *of the same Life, in a like continuing Organization, conformable to that sort of Plants*. For, Life speaks something *Intrinsecal* and *Essential*, (which the meer *Ranging of Particles* thus or thus, does not) unless we will say that a Watch or Clock *lives*; And therefore it argues some Formal Mutation of the Matter, while it is disposed, fitted and (as it were) *digested* so as to continue that Life by Nourishing the Vegetable. For, it will seem incredible to

³⁰⁸ Corrected per errata sheet. Original: "they so,..."

³⁰⁹ Corrected per errata sheet. Original: "does."

³¹⁰ Archaic: scion. A shoot of a plant that viable, as for grafting.

³¹¹ An Essay concerning Humane Understanding, B. 2. Ch. 27.

³¹² Corrected per errata sheet. Original: "Locke." This correction is surprising. Moreover, John Locke (1632-1704) was an English philosopher and physician. See note 53 above.

any Considerer, that Particles of all sorts should be found, in such vast Quantities, in every little spot of Ground where so many several Plants and Trees do grow, as are *Proper* to each, and *Sufficient* to nourish them up, till they increase to such a Prodigious Bigness. yet, this must be asserted, if *Formal Mutation* be deny'd. But, *I* can by no means allow what he says there that the *Principium Individuationis is Existence*. For, since Created Entities have not *Existence* from their being *Entia* or Things, or (which is the same) *Individuums*: all we can say of them is that they are *Capable of Existing*; and this they must have antecedently, in priority of Nature, to their *Actual Existence*. Wherefore their Individuation must be *presuppos'd* to Existence; and, so, cannot depend on it as on its Principle. Again, since *Plato's* Flash of *Ideas* existing in *common*, is now hist out of all Schools (if indeed that Excellent Man meant them as his Opposers apprehend him,) and that neither Man nor Horse *in Common* can Exist, but it must be determinately, and particularly *This* or *That* Man, Horse, &c. It must be suppos'd to be constituted Determinately *This* or *That Individuum* ere it can be *Capable* of Existing. Wherefore *Existence* is an Accidental Formality, supervening to the Individuum already Determin'd and made fit to Exist, that is, to the Individuum *already Constituted*; and therefore Existence cannot cause nor constitute it. Had I leasure, and were the place Proper, I would show my respects to the Learned Author by giving him my thoughts of his Chapter concerning *Identity and Diversity*; for it is an Important Subject, and I see it is treated by him more elaborately than are some other parts of that worthy Book.

43. Lastly, to say no more of Formal Mutation in *Bodies*, let us cast a short view upon what passes in *Spiritual* Natures. When a Soul that before was *Ignorant* becomes *Knowing*, or a Wicked Soul *Virtuous*, can it be deny'd that those Souls are Chang'd according to that Form call'd *Quality*, and yet remain the same according to their *Essence*? Surely, they cannot say that this is done by *New Atomes* aggregated to that Soul, or by any other of those odd Requisites they put to induce a new Accidental Form. And, if not, they must see and confess that *Formal Mutation* is, beyond all Dispute, found in Spiritual Natures. Much more then may it have place in *Bodies*; which, being Subject to *Motion*, which is *Essentially Change*, are, consequently, of a nature far more Changeable than Spiritual Beings are. What can be answer'd to those pressing Arguments I cannot in their behalf imagine; nor, I am confident, can themselves give any Reply that is *Solid*, or taken from the known and acknowledg'd Natures of *Things*; however they may shuffle it off wittily, by throwing in some Unprov'd Supposition, plainly exprest; and endeavouring to make that pass upon their Readers. But 'tis Impossible they should even attempt to perform this by bearing up to any Evident Principles, or by Deductions connected by such Principles, or Reducible to them: only which can satisfy the *Judgments* of Learned Considerers and true Philosophers.

From what is said hitherto is Establisht this Grand Conclusion, that FORMAL MUTATION *must unavoidably be granted*. Which evinc't, all the *Corpuscularian* and Atomical *Hypotheses* fall to the ground, and can need no farther Confutation.

FINIS.

Errata

Editor's note:

In this synthetic text edition, I have corrected all according to this errata sheet (except where marked otherwise), and put the original wording in the footnote above.

The Errata's in the Preface.

Pref. P. 26. l. 15. *out* of. P. 28. l. 19. *cast* about. P. 46. l. 19. *the* Cartesian.

Corrections of the Errata.

Page 5. Line 8. onely *which*. P. 18. l. 10. as is. P. 21. l. 18. that *Motion*. P. 62. l. 6. most *nearby*. P. 69. l. 23. but *their*. P. 75. l. 1. become. P. 77. l. 6. has besides. P. 106. l. 2. *False*. P. 107. l. 17. Proposition. P. 122. l. 31. A whole. P. 128. l. 12. *Sophroniscus*. P. 147. l. 18. make. P. 236. l. 16. Proposition is Identical. P. 245. l. 27. *& nunc*. P. 250. l. 5. *that* can. P. 255. l. 7. *Sensitivum*. P. 257. l. 30. 'tis Evidently. P. 258. l. ult. *Basis*. P. 270. l. 31. at one. P. 273. l. 33. *est* of. P. 281. l. 27. be *a* kind. P. 301. l. 1. Cause of. P. 308. l. 20. exercise *it's*. P. 311. l. 25. there. P. 318. l. 18. Frailty which. P. 321. l. 23. all own. P. 322. l. 3. main. P. 326. l. 1. *what is, is*. P. 354. l. 20. Erroneous. P. 362. l. 13. he *is* not. P. 364. l. 30. Grammatical. P. 369. l. 13. The *Sixth*. P. 370. l. 34. a *proud*. P. 381. l. 17. with *no*. P. 388. l. 3. *to* be. P. 393. l. 19. gives:³¹³ P. 414. l. 26. *very* small. P. 417. l. 22. *Slender, Flexible and*. l. 24. contiguous. P. 419. l. 25. *Art*. P. 424. l. 18. Is it. P. 425. l. 13. so they. l. 16. do. P. 427. l. 7. *Locke*. P. 273. l. 17. *and* seeing.³¹⁴ P. 396. l. 21. that is, 'tis.

³¹³ I cannot make sense of this correction. See the note in-text.

³¹⁴ I cannot make sense of this correction.