

# The Method to Science

(1696)

## BOOK III, LESSONS I-X, APPENDIX

JOHN SERGEANT (1622-1707)

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## Editor's Preface to the First Edition of Book III

This work is part of a larger effort for making John Sergeant's philosophical and theological texts available in full, electronically. 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, one might say, to a fault. 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 corresponding to notes. My own annotations are also in footnotes, clarifying lesser-known Latin phrases, archaisms, or references to historical figures.

Though I do not intend to endorse John Sergeant's philosophy or theology expressed below, my hope is that this edition becomes a resource that spurs on scholarship of lesser-known figures in the Early Modern period.

I imagine that I may have introduced errors of my own, despite my efforts to be rigorous. So, 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](mailto:jonathan.vajda@gmail.com)) or on my website ([jonathanvajda.com](http://jonathanvajda.com)).

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## The Method to Science

### 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 *Premises*) 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 *Premises*, (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 *Premises*, 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 Premises (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 *rightly*, no more is requisit but to place rightly the *Middle Term* in the Premises. 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 *Premises*; 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,<sup>1</sup> 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,

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<sup>1</sup> B. 2. L. 1. S. 14.

Or from these,  
 Virtue is Laudable,  
 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 Identical 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.<sup>2</sup>
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 *Premisses* 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 *Premisses*.
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.

<sup>2</sup> Table 1. Sergeant's use of medieval mnemonics for logically valid syllogisms.

Mnemonic	Quantity and Quality	Example
<u>Barbara</u>	A – Universal Affirmative A – Universal Affirmative A – Universal Affirmative	All red pandas are mammals. All mammals are animals. All red pandas are animals.
<u>Celarent</u>	E – Universal Negative A – Universal Affirmative E – Universal Negative	No mammals are fish. All red pandas are mammals. No red pandas are fish.
<u>Darii</u>	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.

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 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 Affirmative*<sup>3</sup> 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

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<sup>3</sup> 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 Premisses.* Because, otherwise, both the Premisses would be *Particulars*; from which (as was proved §. 16.) no Conclusion can follow.

19. *The Conclusion always follows the worsser part*; that is, it must be Negative or Particular, if either of the Premisses be such. The reason of the former is, because, if either of the Premisses 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*<sup>4</sup> 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 infers 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*.

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<sup>4</sup> Epicurus (ca. 3rd century BC) was an ancient Greek atomist philosopher.

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 est nunc*.<sup>5</sup>

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 *Hypothetical* 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.

For example this Hypothetical,

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

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<sup>5</sup> Latin: 'Here and now.'

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 Perplext and Intricate, which obstructs the attainment of it.
2. Such a *Middle Term* as is Proper to conjoyn 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 conjoyn 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 than 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*, 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 *Premisses*. 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 reï*<sup>6</sup> 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. <sup>7</sup>The 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 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*,<sup>8</sup> but being, either expresly, 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*, *Sensituum*, are found *in part* to be Formally in the Entire Notion of *Homo*.

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<sup>6</sup> Latin: 'According to the nature of the thing.'

<sup>7</sup> There is no section labeled '11.'

<sup>8</sup> Latin: 'An Ethiopian is black.'

The Art of *Dividing* right is requisite 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 Knowledge is taken from the Nature of the Thing; and, therefore all *Distinct* and Clear Knowledge (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 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 [*Virtuo*] 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 Knowledge is had of

the Truth of [*Virtue is Laudable*] that is, 'tis the Proposition; Evidently 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 Knowledge agreed on by all Mankind in their Natural Thoughts, through Converse with those Natural Objects, is sufficient: For this is a *Solid* Knowledge, 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 *Bases*; 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 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 Error 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 *Expressly*; 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 defalk'd<sup>9</sup> 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 Error 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 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.

<sup>9</sup> Archaic: 'defalk' meant *to cut off, reduce, or subtract*. Thus, "the least part removed from it makes it to be *no Totum*."

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 enow<sup>10</sup> 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 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 *Difficultly accommodated to the bounds of another*; which are the very Definitions, which that great Observer of Nature, *Aristotle*, gives us of those two Qualities.

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<sup>10</sup> Archaic: a variant of 'enough.'

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*<sup>11</sup> —

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 the <sup>12</sup> *Existence* of such a Cause (which is sutable 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 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 Infer 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.

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<sup>11</sup> Latin: "Sus Minervam [docet]" = "A pig [is teaching] Minerva." The idiom refers to someone teaching without understanding what he teaches.

<sup>12</sup> B. I. L. 8. §. 7.

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 inferr 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 a tone view, comprehend entirely the Metaphysical verity of the *whole Thing*, and all that is in it, which we express by an Identical 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*,<sup>13</sup> 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;

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<sup>13</sup> The highest of the lowest.

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 <sup>14</sup> *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 <sup>15</sup> 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 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*<sup>16</sup> 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*<sup>17</sup> 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

<sup>14</sup> See B. 1. L. 8. §. 8.

<sup>15</sup> Apparently missing marginal note.

<sup>16</sup> Latin: 'whether something exists;' framed as a question, it is, "does it exist?"

<sup>17</sup> Latin: 'what exists;' framed as a question, it is, "what exists?" or "what is it?"

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. <sup>18</sup>The Course of Nature is carry'd on by *Efficient Causes* and *Effects*; For since a First Cause being suppos'd who is *Ininitely 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 Distinguisht 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 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

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<sup>18</sup> The original labeling does not have a '3'. It seems implied.

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 merely *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 kind of Efficient Cause of Another of them. For it is Evident that the 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 *Disregates* 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,<sup>19</sup> 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*.<sup>20</sup>

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*,<sup>21</sup> as the Schools phrase it; that is, if *nothing binders*; 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 the Schools Phrase is)<sup>22</sup> 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*.

<sup>19</sup> One of the four humors thought to contribute to health and mood—specifically, anger—in ancient medicine.

<sup>20</sup> 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.'

<sup>21</sup> Latin: 'Strictly speaking.'

<sup>22</sup> Latin: 'Fourth mode,' i.e., the fourth mode of predication, which is *per se* or *properly said of*.

*Corol. II.*<sup>23</sup> 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*;<sup>24</sup> 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.

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

<sup>23</sup> Sic. “Corol. XI” would be expected.

<sup>24</sup> Latin: ‘Things refuse to be governed poorly,’ or ‘things refuse to follow bad regulations.’

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 *Postulatums*.<sup>25</sup> 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 leasurely 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*.

### Thesis I.

*Infinet Number is Impossible.*

Demonstration First.

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

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<sup>25</sup> Sic. 'Postulatums.'

- ba- All Infinit 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 Infinit 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 *Specificical*. Whence, such a Notion as Infinit Number would be under that Common Head (as 'tis evident Discrete Quantity *is* under Quantity) and yet it would *not* be under it, because Infinit 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 Infinit Number is a *Number*, nor is it *less* a Number for it's being Infinit, but *more*.

The same *Minor*, as to it's Second part, *viz.* that Infinit 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 Infinit Number is a Notion that is not comprehended in each of the Species of Discrete Quantity therefore
- rent- No infinit 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 *Infinit* Discrete Quantity or Infinit 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 Infinit 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 *Infini*t to be *Finite*.

**The same Thesis**

*Infini*t 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 *Infini*t Number consists of *Infini*t *Ones*.

- Da- Whatever Tenet puts *some One* to be Infinitely distant in the Line of Number from *Another One* assignable, or puts an *Infini*tth *One*, puts a Contradiction; but
- ri- The Tenet of an *Infini*t Number puts *some One* to be Infinitely distant in the Line of Number from *Another One* assignable, or an *Infini*tth *One*; therefore
- i- The Tenet of an *Infini*t Number puts a Contradiction.

7. The *Major* is self-evident, for it clearly puts àn *Infini*t or *Endless* Number, to have *Two Ends*; viz. *this One* assignable, and that *other One* Suppos'd Infinitely distant from it, or the *Infini*tth *One*.
8. The *Minor* is also Evident. For, since, by the Axiom, all Number, even tho' *Infini*t, consists of *One's* as it's constituent parts, if *no One* be an *Infini*tth, then *every one* is a *Finite*t; and so (*all* the parts being the *whole*) that Whole, or the *Infini*t 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.*<sup>26</sup>

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
- rent<sup>27</sup>- No Quantity can consist of a *Finite* Number of *Indivisibles*.

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<sup>26</sup> See Ed. note on Lesson 5, Section 10, and the application below in Proposition III, Barbara.

<sup>27</sup> Axi. I.

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 *Infini*t Number of Indivisibles.

- Ce- No One Indivisible added to Another can make Quantity; but  
 la-<sup>28</sup> All *Infini*t Number of Indivisibles *Consists* of, or *is* One Indivisible added to Another: Therefore  
 rent- No *Infini*t Number of Indivisibles can make Quantity.

10. The *Minor* is Evident; for all Number (tho' *Infini*t) consists of Ones; that is, of One added to another. Add that 'tis demonstrated above that all *Infini*t 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 *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.

- Da<sup>29</sup>- Whatever makes Quantity consist of *Infini*t Indivisibles contradicts the Nature of Quantity. But  
 ri- That Position which makes all the parts of Quantity Actually Distinct, makes Quantity consist of *Infini*t Indivisibles, therefore

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<sup>28</sup> Prop. I.

<sup>29</sup> Prop. 2.

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  
 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 *Infini 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 [*Infini Motion, or Infini 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*.

Da<sup>30</sup>- 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.

Da<sup>31</sup>- 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 *Immediatly* by the First Cause nor by a *Body*; Therefore

i- The first Motion in Nature must have been caus'd *Immediatly* 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.

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<sup>30</sup> Ax. 1.

<sup>31</sup> Ax. 4.

19. Fe- No <sup>32</sup> being that is *Essentially Unchangeable*, and whose Nature is *directly contrary* to the Nature of Change, can be the Immediate Cause of <sup>33</sup> *Change or Motion*; nor, consequently, of the *First Motion* in Nature, but
- ri- The First Being is <sup>34</sup> *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, <sup>35</sup> 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.

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*.

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<sup>32</sup> Ax. 2.

<sup>33</sup> Ax. 3.

<sup>34</sup> Ax. 5.

<sup>35</sup> Ax. 2.

2. The Minor is Evident. For we can truly say that [*Petrus est*]<sup>36</sup> while he is Living; and as truly say of the same *Peter*, that [*Fuit*]<sup>37</sup> 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*;<sup>38</sup> 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 radicated<sup>39</sup> in his Nature as he is a *Creature*, that it sticks to it, and inclines him to it, even while he *is*.

Proposition IV.

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.

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<sup>36</sup> Latin: “Peter is.”

<sup>37</sup> Latin: “He was.”

<sup>38</sup> Latin: “Stone, oak, Bucephalus (the horse of Alexander the Great), Peter, Raphael.”

<sup>39</sup> Deep-seated, taken root.

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*.<sup>40</sup>) 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 <sup>41</sup> 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*.

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

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<sup>40</sup> Latin: "Out of indifference nothing follows." This means, roughly, that nothing happens unless there is a tendency one way rather than the other.

<sup>41</sup> Prop. 5. 6.

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* 'tis 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.

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) <sup>42</sup> 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.

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<sup>42</sup> Ax. 6

For, since no <sup>43</sup> Operation of Body is without *Local* Motion; and <sup>44</sup> 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 <sup>45</sup> 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. <sup>46</sup> 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 <sup>47</sup> 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 the *First* Instant,<sup>48</sup> 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: Wherefore <sup>49</sup> the Effect *Begun*, and, the Subject being Indivisible, <sup>50</sup> *Ended* in the very *First* Instant, in case their 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

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<sup>43</sup> Prop. 1.

<sup>44</sup> Prop. 2.

<sup>45</sup> Ax. 5.

<sup>46</sup> Ax. 3.

<sup>47</sup> Ax. 6.

<sup>48</sup> Prop. 4.

<sup>49</sup> Ax. 1.

<sup>50</sup> Ax. 2.

Application they can be imagin'd to have to one another is by *Knowledge* and *Will*. But they had the same Knowledge 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* Knowledge 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*, because <sup>51</sup> 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*, <sup>52</sup> 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 very <sup>53</sup> 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, and <sup>54</sup> 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 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

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<sup>51</sup> Ax. 1. 2.

<sup>52</sup> Prop. 5.

<sup>53</sup> Prop. 5.

<sup>54</sup> Ax. 3.

*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 <sup>55</sup> no Change can be made without the working of *Some Cause*; and no <sup>56</sup> *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; <sup>57</sup> and <sup>58</sup> '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 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

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<sup>55</sup> Ax. 5.

<sup>56</sup> Prop. 2. 3.

<sup>57</sup> Prop. 4. 5. 6. 7.

<sup>58</sup> Prop. 8.

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 Faln<sup>59</sup> 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 Faculty which permitted them to *fall*, leaving them likewise in a *Pliableness* 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 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

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<sup>59</sup> Sic. 'Fallen,' i.e., corrupt and evildoing.

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*<sup>60</sup> 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: <sup>61</sup> 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 owe 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*,<sup>62</sup> 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 mane 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

<sup>60</sup> Latin: "of the same kind."

<sup>61</sup> B. 2. L. 6. §§. 8, 9, 10.

<sup>62</sup> Latin: "a human way" or "a human custom."

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 *inferr* 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-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.<sup>63</sup> 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*,<sup>64</sup> *He that assents hastily is light*

<sup>63</sup> Disgraceful, worthy of scorn.

<sup>64</sup> Quote comes from the deuterocanonical text *Wisdom of Sirach* (also known as *Ecclesiasticus*), 19:4.

*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 its 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 it is*] 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 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 its *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 requisite *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 <sup>65</sup> *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.
  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 *Intrinsic* *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 *Intrinsic Mediums*, or by

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<sup>65</sup> §. 14.

*Extrinsical* ones; that is by *Another Authority*; and the same question recurs, How we are Certain of the Knowledge and Veracity of that *other Authority*, and so *in infinitum*. Whence we must come to be certain of the Knowledge 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 Knowledge 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 appositly<sup>66</sup> 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.
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 knowledg 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

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<sup>66</sup> "Appropriately" or "aptly."

they perfect those Entities *Intrinsically*, or give them some perfection in their Intrinsic 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 *Intrinsic* 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 *vivá voce*,<sup>67</sup> 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 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 Treason<sup>68</sup> 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

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<sup>67</sup> Latin idiom: "by word of mouth."

<sup>68</sup> 'Powder Treason' refers to an attempted regicide of James I on the 5<sup>th</sup> of November, 1605. The failure is commemorated annually on Guy Fawkes Night (named after one of the participants of the plot).

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 *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, meerly *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 8<sup>th</sup>. a *Julius Caesar*, 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. <sup>69</sup>Hence 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.

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

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<sup>69</sup> Sic. Expected is section "31."

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 Knowledge 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* Suspence are *more* and *Less* seemingly Distant from, or Approaching to, the Actual Being of the Thing. For this Indifferent Suspence, 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 Suspence 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 <sup>70</sup> 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 Retraction; 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.
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.

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<sup>70</sup> L. 8. §. 30.

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 *Wilifful 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 Catachrestical<sup>71</sup> *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 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

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<sup>71</sup> Means: misuse or misapplication of a term.

Infallibly *as the Thing is*: it follows demonstratively that *Certainty*, which *determines* and *fixes* our Understanding by such a Knowledge, or a Knowledge 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 abhor'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 *Erronious* 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* 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 Parallogism.*

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 Defendent 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 <sup>72</sup> 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 Defendent 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 Defendent 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.
  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.

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<sup>72</sup> B. 2. L. 2.

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.<sup>73</sup> 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 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

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<sup>73</sup> Non-plussed: perplexed, to be at a loss in speech.

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 not 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*? 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 *whicb*, 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 Establish't 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 Gramarical 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.

Where,<sup>74</sup> 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

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<sup>74</sup> B. 2. L. 2. §. 5.

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 *Murther*, and the other causes *Drunkeness*. 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 *Commotions*, 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 *amis*s, to recur to the *true point*, and to Conclude the Contradictory to the Defendents 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 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 falsly 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 Fifth<sup>75</sup> 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 are<sup>76</sup> not Two and Three *formally*, but only *materially*: In which sense *Aristotle* said that *Bis tria non sunt sex*.

16. The Seventh Fallacy is when the Opponent argues *à dicto secundum quid ad dictum simpliciter*.<sup>77</sup> 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 Prefers 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

<sup>75</sup> Sic. Expected is "Sixth."

<sup>76</sup> See B. 3. L. 6. §. 6.

<sup>77</sup> Latin: "according to what [it really is], from a saying [taken too] simply;" i.e., to conclude without qualifications from an unqualified statement.

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 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 Intrinsic 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*.<sup>78</sup> 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,<sup>79</sup> 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* 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.

<sup>78</sup> B. 1. Lesson last.

<sup>79</sup> See B. 2. L. 1. §. 15.

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, cogs 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 Intrinsic* 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 *Intrinsic* 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 *Intrinsic*; or a *Change* of the Thing according to somewhat that is truly conceiv'd to be *in it*.

That all Formal  
Mutations are  
Intrinsic.

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 so 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.

*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*.

9. <sup>80</sup> 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

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<sup>80</sup> Sic. Expected is “10.”

*The Doctrin of the Antiperipateticks is unprincipled.*

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 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.
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

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

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*) be a Hotch-potch of the most Refined Nonsense, in every particular Sentence, and almost in every word; notwithstanding the Explications and Patronage which *Gassendus*,<sup>81</sup> *Lucretius*,<sup>82</sup> and our Dr. *Charleton*<sup>83</sup> 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*<sup>84</sup> 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

<sup>81</sup> 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.

<sup>82</sup> Titus Lucretius Carus (1<sup>st</sup> cent. BC) was Roman Epicurean philosopher and poet.

<sup>83</sup> Probably Walter Charleton (1619–1707), a philosopher and member of the Royal Society.

<sup>84</sup> 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*.

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 infer 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

*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 *Intrinsically* 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 *Intrinsical*, 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 Extrinsic Mutation is both Nonsense, and Incompetence.

17. <sup>85</sup>Perhaps 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 *Extrinsic* 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 *Extrinsic 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 *Extrinsic* Change means or implies a Change in some *Extrinsic* Thing which is really and *Intrinsically* Changed: and which, by being *thus* Changed, give an *Extrinsic* Denomination to *Another Thing*, which is all they can mean by these words [*Extrinsic Change*] As when the Wall is Extrinsicly denominated [*Seen*] from the Act of my *Seeing* Power, my *Eye* is Intrinsically Chang'd by having that *Act*, and thence gives that Extrinsic Denomination to the Wall: And if the words [*Extrinsicly Chang'd*] have not this meaning, they can have *no Sense*, but are altogether Inexplicable. To be *Cloath'd*, is an Extrinsic

<sup>85</sup> 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.

Denomination to the man on whom Cloaths are put: But then the Cloaths suffer an Intrinsic 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 *Extrinsical 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 Intrinsic 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*, and therefore an *Intrinsic* 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*,<sup>86</sup>] 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 *Intrinsic* 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.

<sup>86</sup> Latin: "The same thing, which remains the same, will always do the same."

*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*,<sup>87</sup> in regard that, as thus consider'd, 'tis a meer *Power* to be any of them, or all of them, that is, 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

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<sup>87</sup> 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 *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.

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* 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*<sup>88</sup>] is meant Evidently of *Extension*; in regard that the least imaginable Extension being Added or Abstracted from the former, must necessarily vary the *Species*.

<sup>88</sup> 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*,<sup>89</sup> 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 *Infinately* 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 *Infinately* 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

<sup>89</sup> 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 made 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*,<sup>90</sup> 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

<sup>90</sup> 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 *anteced* 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<sup>ch</sup> 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 *Molicelle* (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 *Effluiums* 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 Primogential 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 every 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*<sup>91</sup> 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,<sup>92</sup> tells us that their *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

<sup>91</sup> Entire Body of Philosophy Part 4. Ch. 4. §. 1.  
Sic. Expected is "Mr. Le Grand."

<sup>92</sup> Ib. ch. 6. §. 6.

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 *Crumb'l'd* or *Shatter'd* into such very small dust by *Rubbing*. Yet the same Author<sup>93</sup> tells us the particles of their First Elements are *slender and Flexible accomodate themselves to the Figures of the Bodies they are contiguous to*. 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 Act 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.
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

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<sup>93</sup> *Ib.* §. 6.

is merely an Extrinsic Notion; we may hence clearly discover, that they do not *use* the words [*Form*] and [*Intrinsic*] 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 expressly<sup>94</sup> 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 Essenee.<sup>95</sup>
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 Noble Effects; and consequently, to sute and proportion what *Supervenies* to what *Præ-exists*; and the *Embryo* in our case Præexists, 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

<sup>94</sup> Part 4. Chap. 3. §. 24.

<sup>95</sup> Sic. Expected "Essence."

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 <sup>96</sup> *ex immundo semine*.<sup>97</sup> 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 Præexistence 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. <sup>98</sup>But, 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*? It is 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 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; they so, ought, if they

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<sup>96</sup> Job 14. 4

<sup>97</sup> 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](http://vulgate.org)), "Who can make him clean that is conceived of unclean seed? is it not thou who only art?"

<sup>98</sup> Sic. Expected is "42."

go to work Logically and consequentially, to say that *Particular Extensions* of that Matter which come along with those Particles, does give a *particular Essence* to each of those compounds which are made of that Matter; and so make the General 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 Scyon<sup>99</sup>- 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*.<sup>100</sup> Our ingenious Country-man, Mr. *Locke*,<sup>101</sup> 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 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

<sup>99</sup> Archaic: scion. A shoot of a plant that viable, as for grafting.

<sup>100</sup> An Essay concerning Humane Understanding. B. 2. Ch. 27.

<sup>101</sup> 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.

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 concerding *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.**