'A dissertation of the new and Moderne New Philosofye'

&

'Notes of Dr. North'.

BL Add MS 32514
(ff 1r - 1v, 7v - 9r, 61r - 125v
&
167r - 227v)[1]

UPDATED/REVIEWED ----

"And Now before wee advance further, It will not be amiss
to take some accº of the Drs studys, Relate what we know of them, ..."

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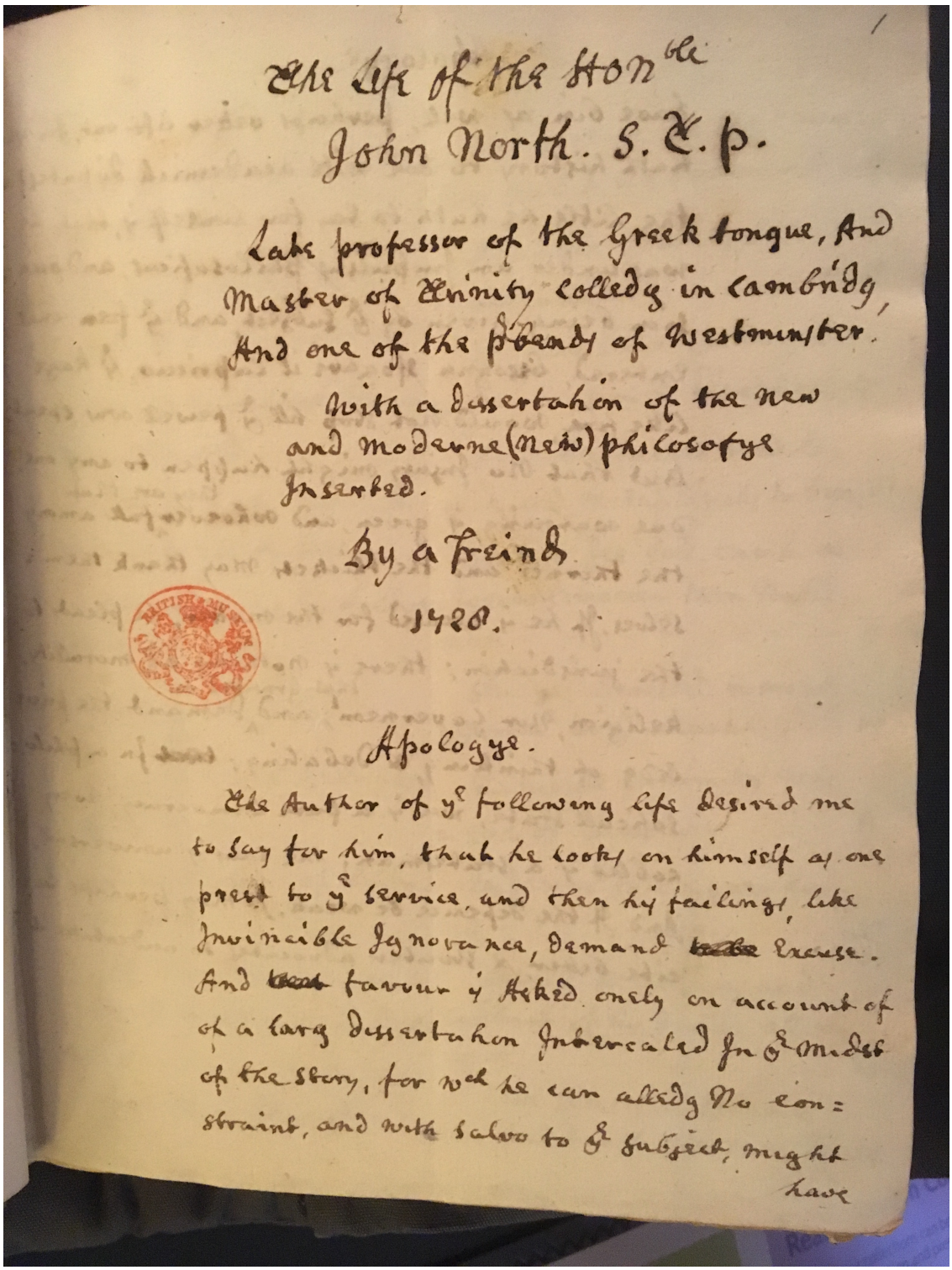
[1] Bound volume; external measurement, 170x212mm; made up of sheets 155x204mm, folded vertically twice, i.e., into four columns, the LHS fold being the margin. All the sheets are of the same high quality, opaque paper. The whole is written in brown/black ink. Occasional imprinting of wet sections of ink onto the opposite page (e.g., from f. 75r onto f. 74v) suggest that, at least during the editing stage, the text was already stacked, if not stitched into a brochure. See also further comments on appearance and condition in the footnotes, below. The whole is written in RN's hand. Notes on paper/watermarks from Chan, M. & Kassler, J. C., *Roger North Materials for a Chronology of His Writings, Checklist No. 1, North Papers Vol. 1*, Kensington, N.S.W., 1989: ff. 1-166, Pro Patria (1) (1726-28); ff. 167-224, Arms/DL (1706-10); ff. 225-227, ?Lion/H (1708-10); other leaves Arms/IV (1) (1708-26) (note that these are the authors' own descriptors).



The life of the Hon^ble
John North. S.T.P.

Late professor of the Greek tongue, And
Master of Trinity colledg in Cambridg,
And one of the Prbends of Westminster.

With a dissertation of the new
and moderne (new) philosophye
inserted.

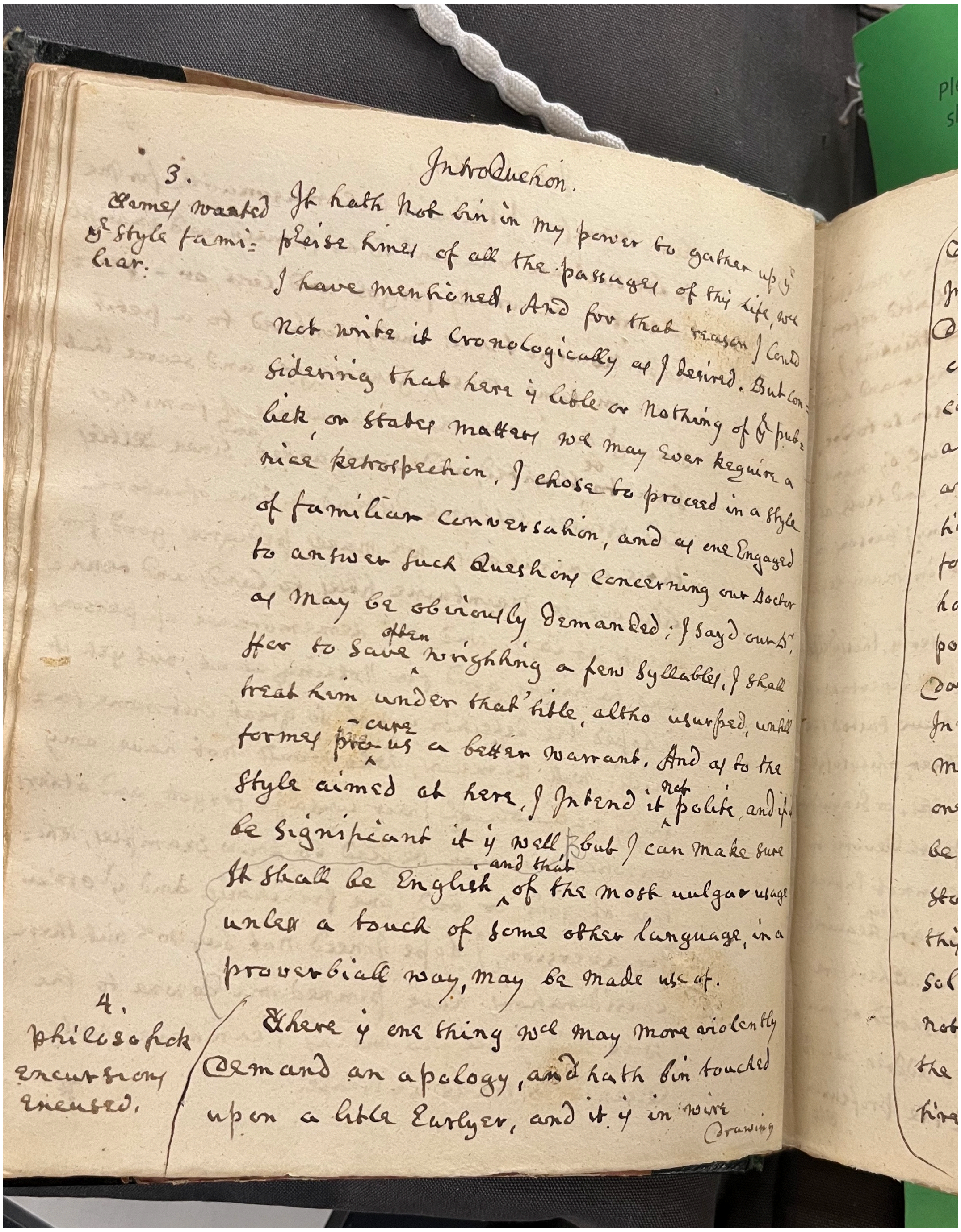
By a freind.

1720.

Apologye.

The Author of y^e following life desired me
to say for him, that he looks on himself as one
prest to y^e service, and then his failings, like
Invincible Ignorance, demand Excuse.
And favour y^t asked only on account of
of a large dissertation inserted in y^e middst
of the story, for wch he can alledg No con=
straint, and with salvo to y^e subject, might
have

figure 1. The title and Apologye, f. 1r.


3. Introduction.

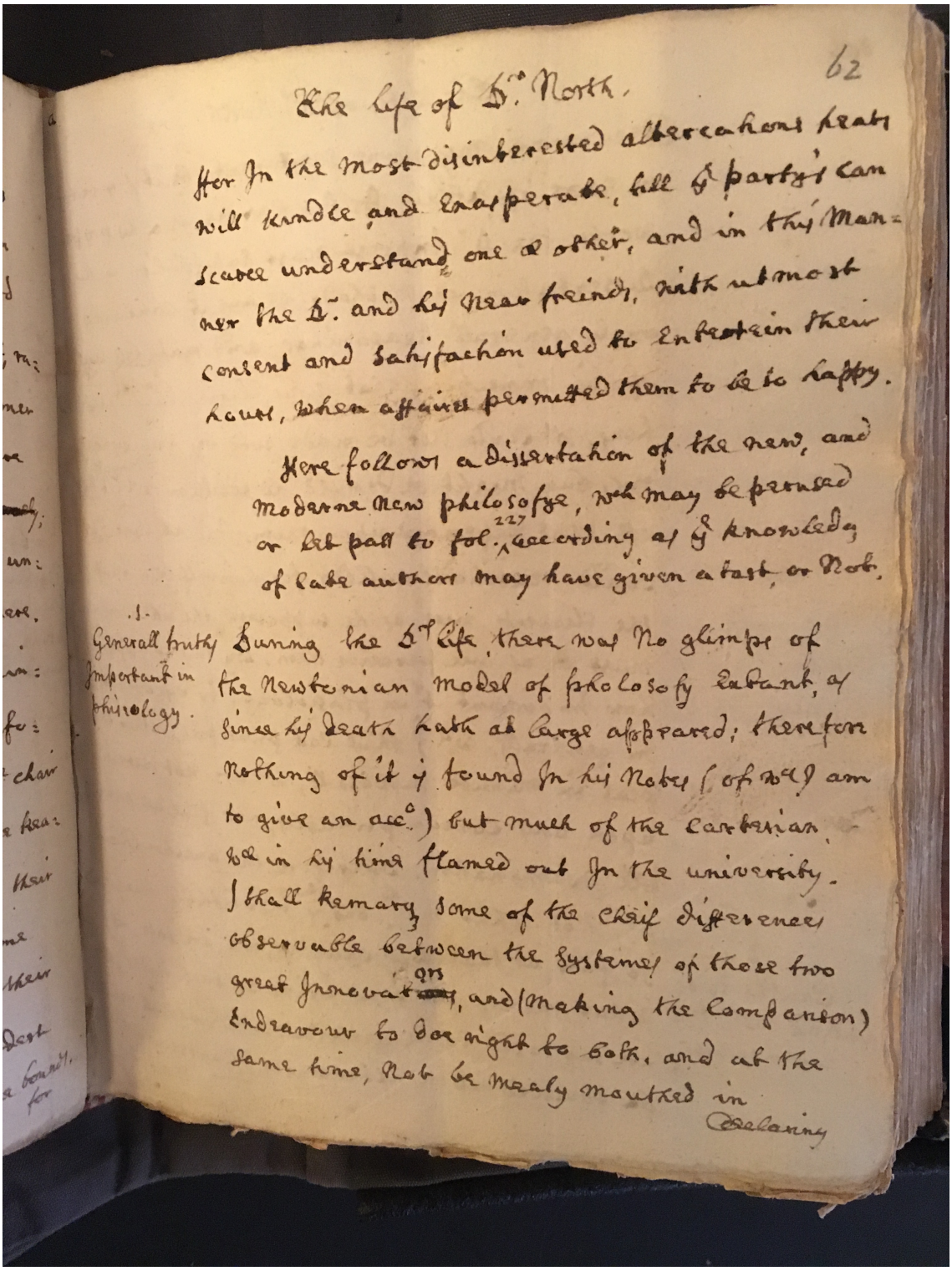
Clames wanted of Style familiar.

It hath Not bin in my power to gather up ye precise times of all the passages of this life, wch I have mentioned, And for that reason I could Not write it Cronologically as I desired. But considering that here is little or Nothing of ye publick, or states matters wch may ever require a nice retrospection, I chose to proceed in a Style of familiar conversation, and as one Engaged to answer such Questions concerning our Doctor as may be obviously demanded; I sayd our Dr. ffor to save often wrighting a few Syllables, I shall treat him under that title, altho usurped, untill formes procure us a better warrant. And as to the Style aimed at here, I Intend it not polite, and if it be significant it is well, but I can make sure It shall be English and that of the most vulgar usage unless a touch of some other language, in a proverbiall way, may be made use of.

4. Philosophick excursions excused.

There is one thing wch may more violently demand an apology, and hath bin touched upon a little Earlyer, and it is in wire drawing

figure 2. The marking up of f. 7r. and subsequent pages, (*see* note 10, below).



The life of Dr. North.

ffor In the most disinterested altercations heats will kindle, and exasperate, till the partys can scarce understand one another, and in this Manner the Dr. and his neer freinds, with utmost consent and satisfaction used to Entertain their hours, when affaires permitted them to be so happy.

Here follows a dissertation of the new, and Moderne new philosofye, wch may be perused or let pass to fol. 227, according as the knowledg of sd author may have given a tast, or Not.

1.
Generall truths Important in philosophy.

During the Drs life, there was No glimps of the Newtonian model of philosofy Extant, as since his death hath at Large appeared; therefore Nothing of it is found In his Notes (of wch I am to give an acc.) but much of the Cartesian, wch in his time flamed out In the university. I shall remark some of the chief differences observable between the systemes of those two great Innovators, and (making the Comparison) Endeavour to do right to both, and at the same time, Not be Nearly mouthed in

Declaring

[1][2]

The Life of the Hon^{ble}
John North. S. T. P.[3]

Late professor of the Greek tongue, And
Master of Trinity Colledg in Cambridg,
And one of the p^{r}bends of Westminster.

With a dissertation of the New
and Moderne (New) philosofye
Inserted.

By a Freind

<BM stamp, red>

1728

Apologye.

The Author of y^{e} following life desired me
to Say for him,[4] that he looks on himself as one
prest to y^{e} service, and then his failings, like
Invincible Ignorance, demand ~~to be~~ Excuse.[5]
And ~~that~~ favour is Asked onely on account of
of a larg dissertation Intercaled In y^{e} Midst
of the story, for w^{ch} he can alledg No con=
straint, and with salvo to y^{e} subject,[6] might
have

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[2] The entire volume has been numbered, in pencil, by the BM/BL curators. I indicate their numbers by means of [square] brackets on the top RHS of rectos; I use their folio numbers for reference. There are a several original sheets, unmarked, unnumbered, ready-folded (see note 1), both at the front, and (uncut) at the back of the Life and dissertation. The Life and dissertation (fols 1 - 166) is followed by 'Notes of Dr. North' (fols 167 - 227). Although bound together, and obviously related, the two texts are not a single whole, the 'Notes of Dr. North' appear to be an earlier composition (see previous note). There is another version of the Notes, an earlier draft, in BL Add MS 32517 (see appendix to accompanying essay). In the front colophon there is an inscription in pencil: 'This Volume contains the Life of D^{r} Jn North as printed or ~~nerly~~ nearly so; but the Notes, which Occupy about 120 pages at the end, are not printed'.

[3] i.e., Sanctae Theologiae Professor, i.e., Professor of Sacred Theology.

[4] This is in RN's handwriting ...

[5] When something is erased or crossed out then I have ~~crossed it out~~, and when something is inserted then I have used /this formula\. RN frequently erases by washing out (I suppose with spit on his finger, though he may have had a sponge or rag to hand ...) or scraping out errors (presumably with a penknife). Sometimes he overwrites the washed/scraped space, and sometimes he writes alongside, or above the space. Washing/scraping seems more often to occur during composition, whereas crossing out and inserting another word above appears more often to occur during revision. Where I have found the washed/scraped text illegible (which is usually the case) then I have represented it with crossed-out dots ~~.....~~.

[6] i.e., 'saving', i.e. respecting, the subject or matter in hand, i.e., the life of John North.

have bin as well, perhaps better left out, ffor wh[at][7]
hath history to doe with academick disputes? and
the Litle he hath to Say for himself is, that he
was under an Impulsus philosoficus,[8] and occa=
sion being given by y^e^ subject, and y^e^ pen once
entered, b~~i~~esogna sfogare il Capriccio,[9] y^e^ Rage
like fire, would not stop till y^e^ fewell was spent.
But that no Injury might happen to any one,
due warning is given, and whoever /they are that\ falls~~s~~ among
the thornes, and the thickets may thank them=
selves. If he is accused for the matter, he pleads to
the jurisdiction; there is nothing ag^t^ morallity,
Religion, Nor Governem^t^; and /that Granted he\ demands the prive=
ledg of thinking, & debating; ~~that~~ In a philo=
soficall state, w^ch^ is a pure Democracy, Every
cobler is a statesman; the Caus is universall,
And If the defence be weak. It may perhaps ex=
cite better, & stouter advocates to undertake it.

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[7] Water damage has erased the letters 'at'.

[8] i.e., 'urged on by philosophy'.

[9] i.e., 'the need to give vent to the thought/caprice', a rare use of Italian following close upon the use of the Italian word 'salvo' on the previous page.

4.
philosofick
excursions
excused.[10]

[...]

There is one thing w^ch^ may more violently
demand an apology, ~~...~~ /and\[11] hath bin touched
upon a litle Earlyer, and it is in wire
drawing

[10] Sections 4 and 5 of the Introduction, that is, the parts here transcribed, are marked by an inked line, apparently contemporary with the composition of the text, running down the LHS in the margin (*see* figure 2, above). The final part of the paragraph preceding section 4 is marked in pencil with a similar line that begins with a 'delete' mark and which runs down to join the inked line, which might either indicate the original editor's intention to exclude text from that point, or a later scholar's noting of what was and was not included in, say, the first printed edition. Both the 1744 edition and Jessopp exclude all of the text between the delete mark and the end of section 5 (North, R., *The Life of the Honourable Sir Dudley North, Knt. etc.*, London, 1744, p. 234; North, R., ed Jessopp, A., *The Lives of ... In Three Volumes*, London, 1890. vol. 2, p. 270). Neither published edition includes the dissertation. Even Peter Millard in his otherwise faithful transcription of the material in this MS (*General Preface & Life of Dr John North*, University of Toronto Press, 1984) leaves out the dissertation - which is why I have gone to the trouble of including it. The inked line in the margin can be found at various other points in the MS, indicating text also excluded from the printed versions (although in these cases, the text *was* included in Millard's edition). On f. 47v a disparaging comment regarding the Greek learning of the clergy is marked up and excluded, as is the transcription of a Congratulationary Poem in Latin and its translation into English on ff. 47r.-50r; a brief apology for the dissertation on f. 56r is marked, and was excluded. On f. 135v a mention of JN's morbid obsessions, and several recollections relating to Lady North, are marked and excluded, as are some further notes on JN's obsessions regarding his health, also a recollection of a joke played by RN on his brother on fols 137v-138r (in fact, more material that that marked up has been left out, e.g. everything from the beginning of section 138).

[11] Washed/scraped out and overwritten.

drawing the state of Naturall philosofye
Into a Comparison of the Earlyer & later E=
dition of it, and back Into a disquisition of prin=
ciples. As for y^e^ latter I know ~~know~~ /not\ how I Shall
come off, ffor the speculation Requires Such an
absolute Interdict of all manner of p^r^judice
and that so positive and universall, that I ques=
tion whither humane kind is capable to con=
forme in it. I am sure Aristotle Cartes & Newton
have failed; I have Indeavoured upon their pro=
positions, to hold up as tightly as I might, but
doe not ans^r^ for My self, as to what most think
Invincible. I may fear what I have proffered
may be mistaken for an Hypothesis, but I mean
onely to State things so, as must be admitted to
be true, in all Hypotheses. And I am forced to
stand ag^t^ the powerfull negatives; as that
this, that, and twenty things Cannot otherwise be
solved. But I let them Rest in peace,[12] and doe
not doubdt, but In y^e^ Same method of thinking
the cheif secrets in Nature; as Motion in pleno,[13]
fire, Explosions, continuity, &c. In proper Ess~~ys~~ /ays\
may

[12] Isaac Newton (1642-1727) had died in the previous year, joining Aristotle (384-322BCE) and Descartes (1596-1650) in peaceful rest - if that is what is implied by this turn of phrase ...

[13] i.e., motion within a fullness, that is, within the the ubiquitous aether of the universe-without-vacuum , which model RN defends against Newton's notion of empty space.

May be Explained so as not to seem as now they doe almost miraculous. But as I hinted before to pʳvent the fatigue of over much thinking, I have given fair warning of yᵉ danger, and how it May be avoided; And I have Reason so to doe, being Conscious of augmenting yᵉ Evil, by many obscure, and Inadequate expressions; and those al= most unavoidable, becaus few (if any) persons in yᵉ world think by yᵉ same, and Not in many Res= pects different Ideas.

5. The subject extream dif= ficult, & accep= ted by few.

The Infelicity of the whole matter is, that yᵉ life may be accepted by many, but such dissertation's by .... /very\[14] few, and those onely who have tasted the Newtonian, to Say Nothing of other, philosofye. And ..... /- it\ may be some accademicks, or Singular vertuosi, who are for yᵉ most part devotes to their Idoll.[15] And as for others, I cannot Expect that Such Imane[16] abstractions as are /here\ Required Should Ever Enter Into their heads. Therefore whoever dealls in such Matter's, should be qua= lifyed by a good Latine style, to address onely to such as are (as I may say) of the profession.

The

[14] Washed/scraped out and overwritten, also line 14, below.

[15] 'Idol' was the word (famously) introduced by Bacon to disparage what he considered the false ideas of mankind, and especially those false notions of researchers into natural philosophy; see note on f. 91v, below.

[16] i.e., immane: huge, enormous.

The Stress will fall upon the Meaning of words; and arts have those, whereof ye Sence is agreed upon ~~by all~~, and may not well be translated, becaus words must be used in translation's that are Not of Import so Nicely accorded; And it is No new no= tion that philosofers are deviously Inclined to use words Instead of things, And Can never give a good answer to the word; what? Therefore the application should be to thing's, wch being once truely Conceived, May be tollerably Expressed in all vernacular languages, borrowing onely some of the termes, ye sence of wch is Generall by artists aggreed upon. But yet I am sensible the difficulty of Expression is so great, that my Eng= lish will fall Short of a due Insinuation of Ideas, Therefore these papers, shall lye linearum preda,[17] to be perused onely by Candid freinds, who will make allowances to one that, to pass his time, ploughs with a quill, and who will expect No better cropp, then the barren soyl will afford.

[17] I read this as 'linearum preda' which I translate as: 'stolen lines'.

[...]

69.
Master of ye (then) New. philosofie, and Managed disputes.

As for the New philosofy, whereof Monsr Des Cartes was the Celebrated Author; the Dr. made himself Master of it, so farr that he Could shew wherein it was coincident & wherein it Differed from the Ancient sects, & ~~wherein it Coincided~~, and So brought it In= to connexion, persuant to ye Designe of his Intended history of philosofy. But he did Not set up for a Dogmatist In particulars, and chose to keep ye volant, free to discours and censure as he from time to time thought fitt

De

Declining all Ipse dixit,[18] or taking sides
as of a Sect or party; In his Conversation
upon these Subjects, he kept to ye Method
of the scools, where solvit, or Non solvit,[19] ra=
ther then true of fals carry's it; tho ye former
are Not the Criterium of ye latter, for there
~~may be~~ May be many solvits, but one truth ~~onely~~;
And it May happen that, according to our un=
derstandings, that /that\ one truth /In our Judgmt\ Shall Not
Solvere.
Among his vertuoso-freinds, and acquain=
tance, he loved to Sparr Questions and fo=
ment disputes, and then whipp Into ye chair
as Moderator, siding as he thought the Rea=
son swayed; And they must look well to their
hitts, for a fals or weak reason/-ing\ Seldome
Escaped him, and they must make good their
arguments, or Let goe their hold. His hardest
task was to keep his disputants in due bounds.
for

[18] i.e., 'he said it himself', implying a dogmatic statement, i.e., on the authority of the speaker.

[19] i.e., 'he/that solves it ... he/that does not solve it'.

ffor In the most disinterested altercations heats will kindle, and exasperate, till ye party's can scarce understand one & other, and in this Man= ner the Dr. and his Near freinds, with utmost consent and satisfaction used to Entertein their hours, when affaires permitted them to be so happy.

Here follows a dissertation of the new, and Moderne New philosofye, wch may be perused or let pass to fol. /227\ according as ye knowledg of late authors may have given a tast, or Not.

.1. Generall truths Important in Phisiology.

During the Drs life, there was No glimps of the Newtonian model of pholosophy Extant, as since his death hath at large appeared; therefore nothing of it is found In his Notes (of wch I am to give an accº.) but much of the Cartesian, Wch in his time flamed out In the university. I shall Remarq some of the Cheif differences observable between the systemes of these two great Innovat~~ions~~/ors\, and (making the Comparison) Endeavour to doe right to both, and at the same time, Not be mealy mouthed in declaring

[20] From this page RN ceases 'numerical numbering' (the previous page was numbered with three different numbers ...). Throughout the dissertation he uses an alphabetical system. He returns to a numerical system at the end of the dissertation on f. 126 r (which was his page number 227). Sometimes he forgets to insert a number/letter, or he mistakes his numbering, both with pages and lists.

declaring my owne sentiments, be it for better
or wors, of Either. As for Cartesius & his proper
works, the Dr. Exprest most satisfaction in his
Dissertation de Methodo, becaus it contained
onely generall Reasonings, and made less acco
of his principia, that is his Elementary descrip=
tions, wch could Not be made good by any discove=
rys, but might be denyed ad libitum. Wch /denyall\ let fall
all that depended upon them. And all that he
could reasonably alledg for himself, was that If
the Elements were as he supposeth, the phenomenon
must be as we perceive them. By this it appears
how Important it /is\ in phisiology, to discover truths
In generalls, wch I shall Call principles, rather then
deal in Minute supposalls, wch are Not susteined
upon any Comon principles, and flye all sensi-
ble examination. Therefore the question should
be, Not what may /be\ but /what\ is Indubitably true; and
.2. So far as that will carry us, wee are safe; By
Truths to be what mean's wee may arrive at such truths, wch
had onely thru are supposed to be generall or universall, will
Experiment be touched upon afterwards. |_[21] Cartesius
Doubdted

[21] i.e., a paragraph break. After completing the text of the Life and dissertation, RN edited it. As he did so he made further minor corrections and inserted numbered headings in the margin (most of his brackets were inserted during this revision). Where he had not already indicated sections by a new paragraph and a line-break, he inserted this editing mark. The numbering of the subheadings begins once again in the dissertation - in the Life up to this point he had already numbered subheadings up to number 69 (f. 61r). RN's numbering is not (is never ...) perfectly consistent, even within the dissertation, as will be seen below. An index for the whole of the Life and dissertation was inserted between the 'Apologye' and the 'Introduction' (fols 2r. - 5v.). This does not quite correspond to the text as we find it, but indicates that there was ongoing revision and rationalisation as RN worked on his text.

Doubdted, and the scepticks deny Every thing,
and urge that wee have No means's to arrive
at any truths; These disputants are to be Lett pass
as one would avoid Impertinents. The Ideas wee
have of things by perception, are certeinely
true, as wee perceive them, Even dreams, and
Lunaticismes are truely perceived, but it doth
Not follow that the things themselves exist, as
we perceive ~~perceive~~ them; And as to forme or
manner, they seldome are so, and often there
is nothing without us to answer our Ideas, but
they become Evanid, and Nothing Reall Remaines.
Yet that wee doe perceive is true, And the error
is In our Judgm̲t[22] or opinion, ~~..~~ /that\[23] things without
us subsist like our Ideas of them; ~~...~~ /wch opinion\ in
substance, or manner is allwais fals, Except
wherein it is Rectifyed by Experiments. that is
by Reiterated /and diversifyed\ perceptions of the same things, of
wch the Ideas conforme in all, and so are layd up
in memory for truths. by this means Gold is known
from Gilding, and the like, and Nothing is specifically
knowne to be true, as it seems, but thro Experiment.

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[22] RN uses a macron over the 'm' in his abbreviation, I use an underline to represent that here and elsewhere, and also with any other consonants where a macron is not available, see, e.g., below, f. 77r, line 20.

[23] Washed/scraped out and overwritten, see also line 15, below.

3

In Mathks: truth is but supposed In phisicks it is Reall.

The accumulation and Memory of these appro=
ved Ideas Makes out all Science wee have of things
In the world. But there is a great difference be=
tween the Sciences Naturall, and Mathematicall.
ffor the Latter Require Not that the subjects Should
be really true as the professors prsume, but onely
that it is possible that they ~~...~~ /may\[24] be true; ffor when
they argue from supposed Lines, planes, circles and
solid body's of various figures, there is Not Really
Exposed any one of /those\ criticall formes in ye whole uni=
vers. and all the benefit they have of their experi=
ence is that such are possible, and being vertually
conteined in Every mass, as a statue in ye logg,
might Come forth, If God Almighty were pleased so
to order: And Since Every thing possible may be
justly supposed true, their Reasonings are also
just, and their demonstrations Incontestable. &
Therein Lyes the pride of those sciences. But the
naturallist cannot argue, or prtend to give the
Reason's of any thing, without dependance
upon what is, not onely possible, but /Really\
existent

[24] Washed/scraped out and overwritten.

Existent in the world: Therefore his work is first
to Investigate what things Really Exist, and to
distinguish them from phantômes, and fictitious
Inventions; The former, Whatever becomes of the
others, being universally true, are to be accoun=
ted his principles; And /(as I sayd)\ ye mean's of adjusting these
principles, is the same whereby all other Knowledg
is Gathered, Experience. ffor If any one property
is found to agree with Every thing, and In every
Examination, as Impenetrability to substances,
there is reason to take that for a principle, and
by way of Induction, to Conclude that whatever
Is Inconsistent with that principle is fals, or sup=
positious /as when property's vary or are deprivable\. Now
considering that the principles
of the mathematitians, out of wch they spin their
demonstrations, are not Extant in ye World, but
would be as true, If the whole world were annihi=
lated; and that those of the phi/sio\~~lo~~logers are ye
reall world it self, and is or may be Exposed to
our sensitive facultys, I wonder the Great Author
Should Intitule his book, principia Naturalis
philosofia

philosofiæ Mathematica, since there are no prin=
ciples Comon to both sciences, unless posse and Esse
mean one and the same thing.

4.
All eventually Incertein.

In Naturall Science there falls a distinction be=
tween things, and Events; the former have reall
Existence, and are the true principia Naturalis
philosophia. but Events or Consequences are affir=
med by Induction onely, wch admitts No absolute
certeinty, Much less what is too often prtended,
Demonstration. These being in ye Rank of Conjectu=
ralls, Are Regarded in all conceivable degrees of
probabillity. between absolute, and No certeinty.
As that the Sun will rise to Morrow, what neerer
to absolute certeinty? it is Now Equinox there=
fore it will rain, what further from it? The Mean
of these is the Enterteinmt of ye vertuosi, Whose
cheif care should be Not to misplace conjec=
tures. Some of low probabillity In ye place of
higher, and debasing /others\ into More doubdt ... /then\[25]
there is Caus for; and affirming with Improper
assurance , wch Inducing /an arbitrary negation and consequently\
contempt, spoyls all.

the

[25] Washed/scraped out and overwritten.

The use here of our reason, is to place Conjectu=
ralls In their proper Climax of probability; Now
It will be asked, how is that to be done? I answere
by application of analogys, congruitys, and Much
Naturall history, or Experiences, vulgar or ex=
-otick, Not without an affection to truth, and de=
fyance of the mortall Evill prjudice, These duely
exercised will culminate a Naturall philoso=
fer. I have Extended this braunch, becaus I porpos /now\
to drop it ~~however Becaus~~ /for\ the following discourses
are designed to Insist onely on things existent
and Not Eventuall; or Such as I shall style prin=
ciples, and would be the Same if all sensitive
and rationall things in ye univers were deprived.

5.
distinction &
Indistinction
are not of things
but /of\ our
capactys

Having once acquired /the Idea\ of body universally ex=
istent, Impenetrable and Independent of all our
sensation or thinking, another partition springs
up, wch devides the univers between things distin=
guishable, and indistinguishable. Wch devision Res=
pects Not the Matter of the world, for that in all Mag=
nitudes hath the same property's, but our facultys

or

or power of perceiving, wch being limited, Creates
that partition. All judgmt of magnitude is by the
standard of our owne persons, Thing's Much grea=
ter then ~~.. .....~~ /or selves\[26] are exalted with ye titles, of Im=
mens, Incompara/=rehensi=\ble & ye like, and In the way of
deminuation, there are proper apellatives, and when
Refined beyond all possibillity of our perceiving
them, wch is ye State of all Elementary Ingredients
of Compound bodys, they become Imaginary, and are
comonly styled parts, or particles, but in truth are
6. Solid bodys, with all the propertys that belong uni=
Indistinction versally to body; |_ This Indistinction produceth new
makes Ideas phenomena, and very different from those arising
Not Reall. from any perceptibles, and /also\ from truth, wch Creates
abundance of prjudices and Errors In Naturall
philosofy; for objects become Confused, and falsifie
our understandings; aggregates seem Individualls;
compounds, simples; Time or pulses, Continuance;
fluidity, continuum solutum,[27] and ye like, with other
complexitys to us Indistinct, makes some fancy
that there are secrets, or strange natures absconded
in

[26] Washed/scraped out and overwritten.

[27] i.e., 'a continous solution'.

in the Indistinguishable world; Hence come the
vain principles of the Chimists, and the Moderne
attractors, of wch afterwards;[28] and the Remarkable
phenomena of fluids, fire, smoak, mist, and pul=
verizations, that Reside Not In ye Minutes of any
of those combinations of particles, but In ye Mind
or Imagination onely, and Resulting from the /Indistinguishable\
com=
mixture of them; as if Confusion became an object /of sence\

7. Actuall Infini=ty of matter subdevided.

The Minuteness of Elementary ingredients,
or as some have Loved to speak, Corpuscles,
probably run's out to actuall Infinity, and
there is No Reason to Conclude a minimum
all wch Manner of Conceiving Imply's No Con=
tradiction, and in ye various agitations of Mat=
-ter, all Spaces have /still of the [more?]\ ~~.....~~ /minutes\[29] at
hand to supply
them, as I shall further observe, When I Consider
the Case of motion. In ye mean time it is No
disparagemt to our understandings, that the
Elementary world is not exposed to Sence, for
when Infinity is mentioned, propose any ad=
vancemt /of\ ye ~~.....~~ /faculty\, and Minuteness shall flye
beyond it

[28] *See* the note below, f. 91v. By 'the Chimists' RN means the Alchemists, the followers of Paracelsius (*see* note on f. 91v, below). Like Robert Boyle (1627-91), he was sceptical about their claims, and at varous points in his writings he commends Boyle's *The Sceptical Chymist: or Chymico-Physical Doubts & Paradoxes, etc*, London, 1661 (e.g., BL Add. MS 32546, f. 228v.). By 'the Moderne attractors' he means, of course, Newton and his followers, whose ideas are the principle target of most of this dissertation. The word 'moderne' here emphasises one of his key arguments, which is that Newton and the attractors were merely returning to and updating the magical thinking of Aristotle, whom RN characterises as attributing anthropomorphic 'qualities' and desires to matter ... such as 'attraction'.

[29] Washed/scraped out and overwritten; also in line 21, below.

beyond it. It is No shame therefore to profess Igno=
rance, (as the literati, in any thing, are vile loath
to doe) When our length's will not Reach the pro=
fundity of Minuteness.[30] If it be asked, what then
are wee to doe? thro all up? I answer, Nothing
less; for within ye lines of our facultys, as In the
limits of possibillity, and probability, there is
Scope Enough to Imploy our understandings;
And to an Inquiry, what methods in such Cases
are to be taken? I ansr. to work by Imaginations,
that is to Conceiv Minute matter Magnifyed,
and then Examine what the Effects of Such Matter,
Supposing it agitated, as wee may conceive it
In the proper minute's, ~~..~~ /to\[31] be; for the difference is
onely secundum majus Et minus;[32] With this consi=
deration onely, that swiftness is found among Mi=
nutes, that is comon magnitudes, especially charged
with Gravity, Can scarce be conceived; Here is Im=
ploy Enough for a judicious Imagination, But I
know the many despise this method /of philosofizing\ terming it
the Corpuscular Hypothesis, wch they say Cannot
Resolve

[30] The development of the microscope and the popularisation of the discoveries enabled by it in such books as Robert Hooke's *Micrographia* (Royal Society, London,1665; Robert Hooke, 1635-1703), had undermined any naive confidence in the unaided senses as the ultimate arbiter of what did and did not exist in the world.

[31] Washed/scraped out and overwritten.

[32] i.e., 'according to their size'.

Resolve all phisicall Querys;[33] Not Considering that
most If Not all of them, (striktly), are Irresolvable.
I should be Glad If upon true principles any other
were found out sufficient for the porpose, but
If any such are offered, It is desired they may
be built upon Reallitys, and Not (and Not as ye Mode now
is) ~~and Not~~ upon prcarious Suppositions & hard
words, or by an ancienter title, Quallity's.

8
Indistinction produceth harmony, &c.

A further Inconvenience, or rather seminary
of prjudice, is that a Confusion of Indistinct objects
creates a New scene of Ideas strong & lively, of
Wch (as hath bin touched) No grain is to be found
in the object, or Elsewhere, but in ye Compass of
our Imaginative faculty, and there Exquisitely
affecting our Spirits/~~...~~ /are\[34] prsumed to Reside altogether in ye
object\ of this sort are, Harmony
colours, odors, tasts, & ye like /wch have subsistence onely In our
Imagination\. How Much of the
Sensible world is to be Ranked among these phan=
tasmata? Wee have but one Instance that hath
afforded a clear discovery of the true Ingredients
occasioning such an Idea; and that is Harmony
wch hath bin in ye world ~~as profound~~ a Mistery
as

[33] Descartes, Spinoza (1632-77), Newton, Locke (1632-1704) and, of course, RN himself, all followed Epicurus in employing an 'atomic' or 'corpuscular' theory of matter. Robert Greene (1678-1730) and George Berkley (1685-1753), two notable Tory critics of Newton, argued vociferously against the concept. It might be possible in this and the following section to read some echo of or analogy to Locke's notion of simple and complex ideas in the separation of the domains of 'Nature' and 'Imagination'. For RN, colour, harmony and odour are responses of the human observer's imagination, not self-evident qualities of the nature of the thing observed. Colour, or any other aspect of sight, was a response of the imagination to a natural, mechanical stimulus. RN did not believe, as Newton did, that light was a material (of some kind ...) emanating from a source, but rather a vibration in the aether of the plenum, which worked upon the eye in the same way that sound waves in the air worked upon the eardrum. This assumption lay at the heart of his criticism of Newton's optics and, as we read below, RN awaits the discovery or invention of the instruments that will reveal the process, disentangle the 'confusion' and prove him right. Thus he argues that colour is not a thing-already-there in white light, something *in nature*, but a human response to natural stimulae, an effect *in the imagination* - and so consequently Newton's experiment with the prism must be an error. 'Query' was a term used and popularised by Newton in successive editions of his *Opticks* (from 1704, see note on f. 68r, below). Newton used speculative appendices (Queries, Scholia) in his main works to explore and explain his hypotheses. It seems plausible that RN would be alert to the associations set off by his employment of the same word.

[34] Washed/scraped out and overwritten.

profound as any that Ever troubled the ancient
philosofers, as appears by their puzzling about ye
Subject, Intricating rather then Explaining it by
groundless numerations. But Now a discovery is
had of a clear anatomy, and distinctions, by wch
It appear's what belongs to Nature & what to I=
magination; The former whereof /in truth\ is Nothing but
pure pulsation; Not unlike ye strokes of a smiths
hammer, wch /being\ Indiscernably swift, & Isocronous
give a musicall tone, and others added in cer=
tein order, and proportion, give us harmony, and
In short the whole rapture Injoyed by ye Lovers
of that devine Energye, ~~.....~~ /flows out\[35] /of\ mere pulsation.

~~...~~ /One\ might Illustrate away all prjudices of this
kind by bringing forward the Comon Remarques
of wounds and torture whereof the Idea of pain
or anything like it, is Not to be /found\ In the Instru=
9. ments, but In ye perception /onely\ the other Is nothing
The like dis= but loco Motion of the parts |_ It were well If in
coverys wan= the perplext InStance of light and Colours wee
ted of light. had ~~a not~~ Such discovery. All that Can be Sayd yet
is that the Images are Excited by modifyed pulses
upon

[35] Washed/scraped out and overwritten, as also in the following line.

upon the Organ. And More will not appear 'till
some happy discovery shews us the Anatome of
such blended pulsation's, as hath bin had In the
Case of Harmony. How much /out\ of the right way is it
(as in ye Optica)[36] to hold forth that all Colours are
contained in pure light, consisting of Corporeall
Emanations, called Rays, perpetually flowing
Every way from the Luminary, as from a Center,
wch Ray's being, as to Colours, heterogenerall, and
differently Refrangible, are by Refraction Separa=
ted in pencills of the severall /colours & so layed\ one by another
and thereby Exhibi/-te\ to us ye Colours apart wch were
blended together before. But how can these solid
Ray's in a room Illuminated dart from Every point
to Every other point of it crossing ye air & themselves
perpetually, and yet ye Rectitude of them not be
disturbed? and since light are Ray's, & those /are\ light.
how Comes it that when no Rays are Concerned, a
finger at the corner of ones Eye, Excites a luminous
Image at the opposite Corner, and a Rude stroke
is sayd to strike fire out of ye Suffer/-ers\ Eyes? these
Instances argue that light is but a materiall touch
upon

[36] Newton's 'Optica' was published in English as *Opticks: or, A Treatise of the Reflexions, Refractions, Inflexions and Colours of Light*, in 1704, and in Latin as *Optice, sive, De reflexionibus, refractionibus, inflexionibus & coloribus lucis : libri tres*, two years later. *See*, also, note on f. 83r below.

upon the sensible part of the eye, how/so\ever with
force it Comes to fall upon it. And that the luminary
is a Caus of such touch, but Not by such dartings
thro all space directly, as is pʳtended, wᶜʰ seems ab=
solutely Impossible, but by some other tremolous
means yet unknown; ~~And t~~ /T\[37]he want of a discovery
of that force, and the manner of it, was /allways matter of\
complaint
~~. . . .~~ /and I\ may say /is yet\ despaired oft. And untill that
arrives,
wee must be content /to opine\ In generall, that (as was Noted
of Harmony) light consists of modifyed pulses, and
the Imagination supplys the Ideas.

10.
progress of philosofy, Re= turnes to ye Same.

The Restless humour, ambition or pride of see=
ming to know all things, hath stimulated philo=
Soficall men in all ages, to Controvert and (in
deed, or pʳtens) to Improve upon all that went be=
fore them. there was a time when the atomists pʳvai=
led; they dealt in Essentialls, till for want of faculty's
(as must needs happen,) they were at a non plus;
Aristo/t\le took the advantage, and /contemptuously\ Calling them
phisici, came on with his science of words, apt
for dispute and (verbo tenus)[38] to Resolve all
questions

[37] Washed/scraped out; also below, on line 8, where also overwritten.

[38] i.e., 'as far as the meaning of the word goes'.

questions, /And\ overturned[39]/i\/-ng\ them, ~~and~~ Erected a New
philosofick dominion, wch Lasted some ages; and
by vertue of his great Name, and authority, pr=
vailed agt all other sects; and at length, became a
favorite of some Ruling Ecclesiasticks, ~~.... .....~~ /who for\[40]
for politick Ends gave him, and his followers (the
peripaticks) the Intire Governemt of philosofy in
the Christian academyes, and scools; And during all
that time, the knowledg of things was little Re=
garded, but Names, formes, and dry distinctions (fewell
for endess Controversie) busyed the whole order
of Learned men; untill by Mean's of some brighter
spiritts, as Bacon, Ramus, Gassendus, & others gave
light to the latter times, And at ~~.....~~ /Length\ Des Cartes
wholly Confounded that phalanx of words, and
made way for a generall application to the
Study, Not of words, but of things, and this Cours
hath prvailed, untill want of faculty's, as before
of the Atomists, hath stopt the carrere, and then /againe\
Thinking ~~.....~~ /came to\ a Non-plus; and all Science /hath now\
~~.....~~ /diverted\ Into Natural History, and Geometry,
And ~~now~~ one would Not have Expected ~~.....~~ /a\
Relaps

[39] Washed/scraped out, partly overwritten.

[40] Washed/scraped out and overwritten, as in lines 14, 20, 21 and 22 below.

Relaps, and that under these amendmts another sect should have Sprung up, and prætending Rectifications and Improvemts, ~~and~~ borrowing of the former Some Egregious truths, with Incomparable subtilety and Contrivance, have broke Into the method of Reallity's, and in great measure Resto= red a verball philosofy, under the most Improper title of Geometry. for so the late devotes to at= traction, and vivication of certein occasionall powers, have done, and with an high hand of au= thority persist in it.

11.
Great Names countenance vain philosofy

I doe not set up my Self here to undervalue either of these great men, who Cannot be Enough Eulogized. But it must be Considered that No man that Ever Lived upon Earth Ever was, or will be Intirely free from oversights or prjudices; And the Greatest philosofers have not bin alike Learned or skillfull, at least Not in all branches of knowledg. Some have bin good phisiologers, but Indifferent in geomet... /ers\,[41] others Incomparable Geometers, and Imperfect phisiologists; and the

[41] Washed/scraped out and overwritten.

the old adage out of Tully - amica veritas,[42] will
Excuse the Liberty of following truth in all its paths,
and as Close at the heels as may be, however it may
brush upon the sides of other persuers. It is well
known that Aristotle had a genius in most sci=
ences transcending his Contemporarys, and Even his
phisicke, (however fatall to true knowledg of Nature)
was a wonderfull contrivance, and by his great
Name held up in Repute, untill ye Moderne Witts
Exposed, (to use a scool terme) the Nothing=
nesses of it. And Now lately wee have had a ge=
nius greater then Aristotles, a culminated geo=
meter, but so begotten to the methods of that sci=
ence (his master peice), that In his phisicks he
hath stumbled upon divers vain & prcarious prin=
ciples, yet the name and authority of his vast
abillitys in other Respects, hath swept Into his
party the Ruling vertuosi, who all doe ~~....~~ /but just\[43]
jurare in verba,[44] and ~~have and~~ with such a zeal /have\
propagated all-powerfull attraction, that to differ /in a scrupule\
is No less then Heresie; There are certein
symptomes

[42] i.e., 'truth a friend', referring to the commonplace 'Amicus Plato, sed magis amica veritas', i.e., 'Plato is a friend, but truth a greater friend'. RN's reference to 'Tully' (i.e., Marcua Tullius Cicero, 106-43BCE) may be a specific reference to *Tusculanae Disputationes*, I, xvii, as the literature suggests, but may also be an unspecific allusion to Cicero's writings on friendship. The phrase is usually associated with Aristotle, understood to be a paraphrase of a passage in the *Nichomachean Ethics* (1096a11–15). It is most unlikely that RN knew that Newton had used a version of this very phrase as a motto to one of his student notebooks (*see* Guerlac, H., 'Amicus Plato and Other Friends', *Journal of the History of Ideas*, Vol. 39, No. 4 (Oct. - Dec., 1978), pp. 627-633); Newton's usage is another example revealing the ubiquity of the phrase in this period.

[43] Washed/scraped out and overwritten.

[44] Short for 'jurare in verba magistri', i.e., 'swear by the words of the master' (i.e., argue by assertion of authority, a characteristic of scholastic argument).

Symptomes of Inconvenience as to truth, in the Method, to wch I shall have More to say afterwards but in ye mean time, that all the Confused Idea-Men as Quacks, Surgeons, phisitians, Astrologers, Moun= tebanks and Impostors run Into it; becaus it puts Words In their Mouths, and furnisheth answers to Every demand, to wch they have nothing reasonable Els to say; As ask a Surgeon, what makes bones; he answers, the parts attract one and other; and so the phisitians as to ye state of humors In the body; Ask a vertuoso, what makes the particles of Solids Cohere? and he will ansr Mutuall at= traction. It is tedious to Mention any more of these subterfuges, It is enough to point out some of the many unphilosoficall turnes, that are advanced under ye bandera of great Names, as If Witt had the Comand of truth, and that the latter must stand aside, to make way for sofistry & subtile Inventions.

12. Wherein Cartes excelled & wher= in he failed.

De Cartes who, as I sayd, finished in his time the downfall of the Qualitarian philosofy shewed

No Small Care of his universall principles, wch in
the Main are sound, becaus he Enterteined None
that he Conceived might be doubdted, or fall ob=
noxious to affected denyall. ~~...~~ /But\[45] then /he\ was so
fond to think that Ex probabili[46] he might assigne
formes and activitys to his (Supposed but) Indis=
tinguishable Elementary Matter, and thereby to
to Resolve all Naturall Questions; And there he
notoriously failed. for who was bound to admitt /his\
Globuli, & Interstitiall /particles\ formed and sometimes
Striated, and ye like Incognita? and then ~~what~~
what became of all his particular Solutions, as
Gravitation, light, Magnetisme, &c? the Error lay
In using his Suppositions as principles; for those
ought to be ce~~..~~/r\tein and /being\ Inducted from Never
failing Experience, Stand firme, whatever may
be supposed, or not; but more of this afterwards,
At prsent that D. Cartes Living In a Cloudy age
made a gallant attempt, and (Except some
hints taken from antiquity) all Spun out of
his prodigious Magazin of thought. And /he\ litle
Deserved

[45] Washed/scraped out and overwritten, as in lines 7 and 15, below.

[46] i.e., 'assuming (supposing) what was probable, likely'.

deserved the Contempt with wch some of the more
modernes have treated him. It is manifest he was
the Cæsar that first discovered, and took posession
of the Country. And /now they\ have served themselves of his
notion's; And divers of his Inventions, Nay Errors
have bin usefull to them, of wch I might give seve=
rall Instances; let the laws of motion, or rather that
motion had laws, pass for one; and for another the
metaphisicall rule of clarè Et distinctæ.[47] and ma=
ny of his phrases, and formes of Speech pass Current
amongst them, and yet Nothing good is allowed him,
but sentences are often culled out, to be Confuted,
and seldome or Never to any better porpose is he
Named. In our Drs time at the university the new
philosophy (as it was called) of Des Cartes Entered
full sail, and Coming with strong Credentialls
from abroad, was greedily Entertained by ye you=
ger or more vigorous scollars; but ye Drs, & Graver
sort adhered moridicitùs[48] to ye old Qualitys of A=
ristotle, Et sic transitur in [partes?].[49] It appears
that the good Dr. Barrow, was more Inclined /to\ follow
after truth, then any authority beside it, and
In a

[47] i.e., 'clear and distinct' (i.e., clear and distinct ideas), Descartes' test for self-evident truth; the term was used in tandem with 'obscure', *viz* RN's reference to the 'cloudy age' (on previous page) in which Descartes lived.

[48] i.e., 'tenaciously'.

[49] i.e., 'and so things changed in part'? See next page for note on Barrow.

In a speech, So long agoe as 1652, Maintained that philosofia Cartesiana de materia Et Motu haud Satisfacit prcipuis Naturæ phenominis.[50] and In that exercise, besides a due Censure of the philosofy wee find a just Encomium of the Author.

13. Qualitys and Reallitys take turnes.

It is really Notable to observe how all things are apt to swing from one Extream to another, and more Especially in speculative phisiology, of wch the the professors most Confidently prtend to argue upon right Reason. The peripatick scheme of Quallitys open and occult held (as I sayd) for a time, then all gave way to the Cartesian of matter and motion only. And Now wee are Waf= ted back again Into a Region of powers operating in vacuo, as well as pleno,[51] whereby bodys attract, propell, and direct Each other, wch may hold out for a time and then Come round againe, and /the vertuosi\ Court Reallitys and so backwards and forewards, Quallitys and Reallitys, pendulum like, for such is ye lusus philosoficus,[52] Scarce Ever standing still In the Em= bleme of truth the perpendicular.

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[50] Isaac Barrow (1630–1677), JN's predecessor as Master of Trinity (see accompanying essay) whose MA thesis, *Cartesiana hypothesis de materia et motu haud satisfacit praecipuis naturae phaenomenis,* (i.e., Descartes' hypotheses concerning matter and motion on the whole satisfy natural phenomena) was submitted in 1652.

[51] vacuo/pleno, i.e., 'emptiness and fullness', contesting theories of 'space' as proposed respectively by Newton and Descartes.

[52] i.e., 'philosophical game'.

14.
Qualitarian philosofy under ye name of Attraction Restored

Upon this last Resumption of this hypothesis of powers, wch I call quallitys, for such they are however they mince ye matter, It is become a Mode to Resolve all Naturall Querys thereby, as If philosofy were not for search of truth, but /for\ Comon conformity. The designe, if it be to Restore the Aristotelian modell of Quallitys is Notably Lay'd, by Estabishing a quallity in all body's whatsoever of attracting or propelling Each other, ad Modum quantitatis Et distantiæ;[53] And they goe further, ffor these power's are supposed to vary, when any phenomenon will not be Resolved the Right on way. It is most of all observable, that these powers are not set up to Rule body's of demensions Experimentable, such as wee can handle, turne, and prove severall way's, but those are turned up to Shift among ye Laws of mechanicks and the rules of Impulses. And so farr attraction is waived, or shuftled out of the way. And when wee Call upon them for Evidences /of attraction\ /they Either send up\ to the planets too Remote & Immen's to be Examined by us, otherwise then

[53] i.e., 'according to their size and distance'; these are two terms used by Newton.

otherwise then by the Comon appearances; or els /they send up\
towards the other Extreme, the ... /Ind\[54]/is\tinguishable
world, /where\ wee are to meet with attraction propulsion &ca
again, but In the dark, for it is Impossible for any
clear Experiment to light us, and here mechanick
laws, and the Medium state of bodys, Respecting our
faculty's, are left in the Lurch. Nor out of those
dark Regions doe wee gaine any Cogent Evidence
of such universall powers, Nor in particular any
Shew of them, except in some fallacious ..... /Inferences\
from ~~some~~ /certein\ ordinary Experiments, wch shall be after=
wards /accounted for\; as for gravitation one of ye cheif holds, I
shall /also\
give a full account /of that\ afterwards. Thus farr it ap=
pears that the principles of this new Doctrine are
flux & Incertein, (and I Stick not to say, fals). Wher=
as all true principles are universall & steddy, and
also Evident, and Not in any Respect affected by
the limited extent of our facultys.

15.
Magnetisme & Electricity No Evidences.

When any Instance is prtended, ... /of\ body's acting
upon Each other by Mutuall attraction, there is
allwais found some odd Confusion in ye phenomena;
As between the magnet & Iron, wch will fall out
wide

[54] Washed/scraped out and overwritten, as in lines 10 and 19, below.

/wide\ from the porpose. for it is but in some manner
they approach and cohere, but generally the
consequence is a position or rather a polarity,
for the file dust brought Within ye sphear, Instead of
running to the magnett, fall into postures; and
needles the like, wch is by Impuls, tho ye agents
are mot Exposed to sence. But ~~If~~ /suppose\ the attraction
were direct & Constant, It is /onley\ between one kind of
stone & Iron, & what is that to universall attrac=
<BM stamp, red> tion? And ~~on ye part of the Iron~~, Magnetisme /it self\
~~may~~ by fire and action, may be produced, altered,
or destroyed; To shift off these Inferences, they say
Attraction is of Divers kinds, and this is one. then
as to Electricity, It is well knowne, the bodys will
not take up straws, unless first heated by friction,
that is a turbo Excited about it; so it is with fa=
vorite opinions, when the professors, like heated
Electricks, catch at straws to Maintain them.

16.
Gravitation
concludes Not.

But now as to Gravitation, wch is the pervicatious
tendency of heavy body's towards the Earths cen=
ter, wch they say argues an attractive power in
ye

[55] Washed/scraped out and overwritten ... The last version of the Life of Francis North was being produced at much the same time. This dated MS helps Chan and Kassler date writings from the period *c.* 1726–8 (*see* note 1, above).

in y^e^ whole Globe, w^ch^ hath that effect. If wee ask
why must that be Inferred; they ans^r^ becaus the
phenomenon Cannot otherwise be solved. It is hard
to say that the consequence of a minute agita=
tion of the Matter of the Rolling wor/l\d, or some
other mechanicall means, without an ascitious
principle Called in for the porpose, May not pos=
sibly Succeed in that Manner. Especially conside-/ring\
that wee have practicall Images of the Like, as
fermentation, eribration, vortications of fluids, /e\&/c^a^\[56]
~~the like~~, whereby Matters are segregated accor=
ding to their propertys. It would be strange to
say the Corne is severed from the Chaff by at=
traction, or that in turning-fluids, some things
gather Inwards, and other's croud outwards by
attraction; therefore our Ignorance of the true
caus, Is No argument for Inducing a supposi=
ous one; But as to gravitation I shall have
occasion, ~~.....~~ /towards\[57] a clearer Explanation
of it, to say More afterwards.

[56] This is an ampersand converted into an 'etc.'.

[57] Washed/scraped out and overwritten.

17

Congruity No argumt of truth, unless necessary & universall.

<imprint from the correction on opposite/following page>

But Now the ultimum Refugium is the planeta=
ry Region. Wherein the orbits, with the anomola,[58]
Respecting the attraction of the Sun, and what is
Reciprocall, is so congruent with the /comon\ Law's of attrac=
tion, that No other principle can be assigned, wch
can Regulate the planetary cours, but that. And
here Not Entring Into further descriptions or cal=
culates, wee will at prsent admitt that Congrui=
ty. and answer. 1. that No congruity is a /certein\ proof
of truth, for things congruous often fail of that;
orbs and Epicicles were in their time thought Con=
grous, and ye aspects of ye planets /were\ calculated by
them. And disputing to the contrary; was as ill Re=
sented by ye Astronomers then, as agt attraction, Now.
And as those ways came to be disproved, so May
these in time, as future discovery[s?] may happen; so
that the argument a congruo, is no Stronger then
a probabiy/là\;[59] But some have argued thus, the law's
of centripetall attraction Regulate the Courses of
the planets, therefore the Courses of the planets
are

[58] i.e., 'last refuge' ... 'anomolies'.

[59] The letter 'y' has been washed/scraped out and overwritten; we should read: 'the argument from congruity is no stronger than the argument from probability'.

are a proof of centripetall attraction; wch is lo=
gick in Circulo.[60] But, 2d. congruency may be al=
lowed Some ~~..~~ /weight\[61] when the question is of dispo=
sitions, and agencys under allowed principles; but
never to warrant the Invention of new princi=
ples. otherwise all the Conceipted Hypotheses that
ever were, may put in for preminence, since /there may be\ many
of them. (as Cartesius owned,) and /yet\ but one [~~Certeine~~?]
true. Therefore when the question falls upon prin=
ciples, the point is; true, or Not; and not whither
apt, or Ingeniously Contrived, or Not; that ought
to be discussed. 3d. If it be say'd that No princi=
ples can be advanced against Congruity, ffor the
Inferring things Contrary to Manifest truth, is E=
nough to Confute them. I say very true, Nothing
can Establish principles, but Congruity, but then
iy must be Manifest, and universall. Wch is Not so
~~...~~/of\ attraction, ffor it Cannot be affirmed of the grea=
test part of ye univers, Especially of bodys conver=
sant amongst us. This best shewed by an Example
Impenetrable Matter, is a principle, ffor it is uni=
versall and indefectible, and Instead of looking
out

[60] i.e., 'circular logic'.

[61] Washed/scraped out and overwritten, as in line 18.

out to find it, one cannot avoid, In every Moment
of life proving it. [|_][62] But Grant attraction may serve
a turne in some particulars, If others are without
it, and such as wee best know, and Can Examine,
that Conceipt must Never goe for an unversall
18. principle. Much less the diversification's for So Many
The planeta= severall principles. |_ 4. The Notion of attraction, as
ry Congruitys it is held forth, comes very neer Implying Contra=
No proof. dictions. ffor it Must Not onely penetrate thro body,
but operate in Nothing, or what is meant be
vacuity. A power to penetrate body belongs to Spirits
and not to Naturall agents, Indued, as some Suppose
with a quantum[63] more or less of Capacity to Move
bodys. The Interior parts of the Earth attract as well
as the Outer, but then the Efficacy /of ye one\ must pass thro
them /Other\, wch is a very great Inconsistency, and Nothing
less then /the being\ Congruous with - .. /W\hat[64] we know in the
world. Then what is to be sayd to Reconcile
something, and Nothing? What is to Connect
distant bodys, when Nothing is between them?
and Not onely to Connect, but to Remove the Most
solid, and Immens planets by ye Means of Nothing?
nay

[62] A paragraph mark was inserted, and subsequently washed/scraped out; another paragraph mark was inserted below, in line 7.

[63] i.e., 'a sufficiency, an amount'.

[64] Washed/scraped out and overwritten.

Nay who is bound to admit that a vacuity (If I
may speak absurdly) fullfills the whole world Except
a few planets? that is a thumping demand to w^ch
I shall have somewhat to say afterwards; 5.|_[65] Wee doe
Not admitt Such Congruity of attraction with the
planetary courses they p^rtend, that is exquisite~~ly~~[66] ~~a=~~
~~g..ing~~, as ought to be, when demonstrations flye
so thick about them, for they all faile in their Cour=
ses; Saturne doth not Resume to his point, by y^e Space
of 3. days, and the Rest are more or Less Inconstant.
No Astronomick tables, or Calculates will hold long,
but yearly depart; and Latter astronomers blame
their p^rdecessors, and fall under the same misrule
themselves; and at p^rsent are driven to come off
with a ferè, or quam proxime; w^ch spaces at
those distances are quam Longé;[67] and after all,
their deviations are charged upon some secret at=
traction they are not aware of; w^ch it is hoped
time will discover. And these are the demonstra=
tions of an universall principle In nature, w^ch
is Not to be found in y^e Sublunary world.

---

[65] RN has inserted a paragraph break, but without any heading (as had been added in all previous instances). Note that he also interrupts the 1, 2, 3 numbering of his argument, leaving the number 5 to hang at the end of a paragraph (compare to the insertion of the paragraph mark on the previous page).

[66] Washed/scraped out; the following word has been crossed out.

[67] i.e., 'almost', 'so close' and 'so far'.

19.
The attractive cosmografye.

These discourses opposed to ye doctrine of univer= sall and Reciprocal attraction have Engaged me to proceed, and /to\ shew how it is applyed to Resolve (phisically) the Grand Cosmografye, and /then\ to Collate it With the generall systeme of cartesius, or of those who have chosen to understand ye heavens according to his principles. so that a Comparison may be Instituted /in order to determine\, wch of the two Solutions, will appear most Reasonable, and Congruous with the knowne Cours of things In the world. The Cos= mografye of the attractors demands a few Slight matters by way of data; one is that the Immens Mundane spaces, are pure & pute vacu= ity; Next that the body's of the sun and planets are Endued with ye power, so much spoke of, to attract each other with force according to magnitude and distance. And then that the pla= netts by some originall power were put Into a a cours of Rotundity about ye Sun; and so left to shift. The Consequence then must be that

the

the motion's of them will tend in directum;[68] wch
Not checked, would Carry all away In the Infinite
vacuity, but the attractive power of the Sun lays
hold of them, with a force tending to bring them
downe to ye center of that powerfull body. So
here are 2. forces one in directum /receding from ye center\ wch in
vacuo
would be perpetually ~~y~~ /~~.....~~\[69] and the other ad Centrum[70]
wch opposing the Recess of the former, both Setle
in a ballance, and the Cours in directum is
turned to an Ellipps, and that Continues with
a focus In the Sun's center for Ever; ffor If Either
of these powers are more or less prvalent, it
doth not turne to an Escapade Either way,
that is on part of the direct, (the force Increa=
sing,) to carry ye planet continually more re=
ceding, or on part of the centrall (Increasing)
to draw it downe in a Spirall to the sun; but ye
alteration would Work on the figure of ye Ellips,
and Make it more [or?] Less oblong, and In that
maner /(as I sayd)\ ballancing [more?] about In the Elliptick
~~for~~ cours

[68] i.e., 'in a straight line'.

[69] A inserted correction has been washed/scraped out.

[70] i.e., 'in a vacuum' ... 'towards the centre'.

20. The Infirmi= ties of that scheme.

cours for Ever, unless it be /~~any~~\ when Collatterall attrac= tions happen w^ch^ produce~~.~~ Some Irregularitys, w^ch^ give the Astronomers No small trouble to Reconcile |_ And Thus the planets are Setled in their Severall orbs, by means whereof their aspects, and Ecclipses are cal= culated; Now is not this a spruce Contrivance of w^ch^ an Ingeniere or clockmaker would have bin proud But to Charge such a Whim peice of Machinery as here /is\ paumed upon the almighty Creator of all things whose works are Incomplex and direct, is plusquam unreasonable.[71] What a strife is here of two powers contending ag^t^ Each other to produce a mean Effect and to be perpetuall? One would from hence fancy that y^e^ creator wanted 2. strings to his bow, becaus one would Not serve the turne. And what is worst of all th~~..~~/is\[72] subtile frame there is scarce a member or part w^ch^ is Not p^r^carious or denyable, & w^ch^ can= not be made good by any Experimentall proof;/+\ one /may\ lament so much good geometry throwne away u= pon ~~it~~, /this scheme\ and upon the Calculates of a Comon center of

+ When wee al= ledg the Non-at -traction of bo= dys mutually here below, w^ch^ is most apparent, they say y^e^ Mas= ter attraction of y^e^ gross Earth confounds all others, whereas that operates onely in perpen= diento, but ag^t^ collaterall at= tractions Nothing at all.

[71] i.e., 'more than'.

[72] Washed/scraped out and overwritten.

of Gravity Respecting divers attracting bodys at
distance from Each other, as for Instance ye planets.
The author is pleasd to wince, and palliate his Scheme
in divers places, as that he useth ye word attraction
for a Conatus,[73] aiery or other Impuls, wch brings
distant body's together; And his followers, Instead
of attract, say Gravitate towards, and so make the
Ground good by a simile; sed heret in Latere,[74]
And Nothing will ~~not~~ be made something by an
arbitrary use of words.

21.
the singleness and aptitude of ye Cartesian cosmografye.

The planetary scheme of Cartesius hath but
one datum[75] and that is the fluid matter, of wch
our universe is full, /is\ In a State of Rolling or vorti=
cation about the sun. Here is No Strained Invention
but what our comon thinking, alluding to our
comon Experience, May Comprehend. As for the
generall vacuity it is a merum suppositum, &
not proved as plenum (in tanto)[76] is by Experience
but perhaps May be proved Impossible. Here we
find that the sun (Centrally) and all the Rest
of

[73] i.e., 'a tendency'; RN often couples these two words, using 'tendency' to transate 'conatus', *see*, e.g., ff. 95v, 100v, etc..

[74] i.e., 'but they are struck in the side', i.e., fatally wounded, a reference to the moment in Virgil's *Aeneid* (IV, v. 73) where a mortally wounded deer is used to describe Dido in love ("hæret lateri lethalis arundo", i.e., the fatal arrow fixed in her side).

[75] i.e., 'given'.

[76] i.e., 'pure supposition' ... 'wholly full'.

of the Celestialls wch wee may descrye, that is the
planets move all In a zodiacall order, ~~that is~~ from
West towards ye East, and Not far on Either side
of the Eccliptick, wch I may stile the Equatorian
part of the sphear, None being found moving Neer
ye poles of ye Zodiack, wch is a property of fluids as
will be shewed. And where any planets have Cen=
trations the movements are also from ye West Eastwards
and Not opposite /too\ or Much differing from ye Zodiacall
courses; as the Earth & Moon, Jupiter & ye Satellites
Saturne with his also, & (perhaps) his Ring. and the
surface of ye sun shews his Rotation neerly ye same way,
Now wee have but to Conceive all these planets, as
so many solids immerst and equilibrated in fluido[77]
wch Cannot but acquire a Consentient Cours toge=
ther with it. No otherwise then a logg in a silent
stream, or a ship in the Thames thrown up by a still
tide towards London, would he not say it is convey=
ed by the stream rather then ~~that is~~ Attracted by the
Monstrous Citty. And the like of ye planets, swifter
or

[77] i.e., 'as if in a fluid' ...

or Slower as ye state of the fluid in their severall
places Require. It is More reasonable to argue up=
wards, from Lesser agents here below, wch wee can
Experiment as wee pleas, then from the celestialls
downewards, of wch wee Can know nothing of essence
22. or circumstance /but\ by one Single phenomenon onely.
The zodiacall |_ If there were Nothing Comon to Impell the plane=/tary\
order No Small bodys all in ye Same directiōn, there is No reason
Inducemt. Why Some Should not Move upon other Rumbs then
E. and. W. ~~or~~ /as\ from W. to E. or in /other great or in Some\
Minor circles. In
the Cartesian Scheme, If any body's were Launched
In Ethere here or there Casually, the operation
of the fluid would Reduce them to a zodiacall
order; But in ye Attractors scheme, such would Never
be ~~.....~~ /so Reduced, but pass in\[78] Some Manner as it
were
accidentally, wch would appear very different from any
order and Conformity, /at least from such\ as wee must observe of
the
cours of the heavens as they Now are Notoriously in
our view. It is a sort of prjudice wch possesseth many,
that great things must have belonging to them
somewhat more a/u\gust then ye lesser may prtend too
whereas

[78] Washed/scraped out and overwritten.

whereas In ~~the~~ truth ~~of things~~ there is No manner of difference of operation between small things and great but proportion, w^ch being alike, all things are alike, and there is No More Exaltation due to the Sun Moon and Starrs, then to y^e Corks of bottles swim= ming on y^e Surface of water; And Wee may by Ima= gination Reduce both to the Same Mentall Inspection and Judgment, and find No just caus to ascribe more dignity to the one /class\ then to the other.

23.
Solidity objec= ted and ans^d

+
besides they say y^e power of at= traction is se= cundum Soli. ditatem,[79] so that is Not Compa= red with Ether of w^ch they allow none, but with other attrac= tive powers

But it is time to look out to see what objections are p^rpared to attaq this doctrine. one depends on the Notion of Solidity; ffor in y^e Cartesian Scheme the planets are supposed to be equilibrated in Such part of y^e fluid, where the solidity of the fluid and of the planet, space for space, are Equall. in manner as bodys in water are poised by weight. for in Ethere solidity is Equivalent to weight here below. The Attractors to this say that in pleno all body's are Equally Solid, for the same Quantity of Matter, that is Solidity will be in all places /+\ alike. But is is Not Considered here that bodys are porous and

[79] i.e., 'according to, or relative to, a body's solidity'.

and the porous Spaces are to be detracted from their
Solidity, as a Spunge in water. Is no heavyer for the
water Contained in it. And those parts of ye Ether
24. as permeate ye planet is Ether still, and not to be
Mathematicall accounted part of the planetary body. |_ then Next
Effect answd. that sphears Inlarge by squares of ye diameters
and the celeritys are in ye same proportion; that
is of the fluids in the severall diameters or dis=
tances; and if the planets ~~are~~ in their severall
places are conveyed by ye fluids, their aspects And
orbs will by No means agree with ye phenomena
of the heavens; Therefore its Concluded that the
planets /so\ to be conveyed is Impossible. to wch it May
be answered that the mathematicall rule of
sphears augmenting doth Not Conclude to the
celerity of ye Ether's Moving in all distances. for
ye Quallity of ye Matter May vary, and it is Not
necessary yt /the progression\ Should be all alike from ye sun out=
wards. so that No demonstration Can Extend
to that Matter, No More then a geograficall
Mapp may be made of terra Incognita;[80] but
this

[80] i.e., 'unknown land'.

this is certein, and found true by all tryalls, that
In vortication of fluids, things Immerst & natant
will move so, that the Remoter from ye axis or cen=
ter will come about slower, then those neerer, but
the measures of such swiftnesses, especially In ye Ether,
may depend on Circumstances unknowne to us; and
thus it is with ye planets, ye Remotest from ye Sun are
the slowest, and the proportions may aggree, as the
attractors affirme, but that doth not demonstrate that
no other Incidents but attraction .... /can\[81] be ye Caus of it.
and the Less becaus the question is not of ye planets,
as of bodys in motion, for being Conveyed In the
stream, have no motion, as will appear, but /that\ of ye Ether
it Self, wch no rule /wee may dream of\ Can Confine.

25.
Motion in pleno ma= nifested

They tell us that Motion Cannot be at all in per=
fect fullness, but empty Spaces are necessary to acco=
modate ye agitations of Matter, and if there be a Stop /of any thing\
for want of space, all Motion in ye World must ceas.
This might have bin alledged, If there never had bin
knowne a fluid in the world; but ye manifest se=
cession of the parts, in a Circular manner, by wch
means

[81] Washed/scraped out and overwritten.

mean's solid bodys pass & Repass thro them, is Ma=
nifest to all observation. And as to ye Minuter
parts, among wch Angular spaces may spring, ~~....~~ /that\[82]
May be conceived Smaller then /any\ matter is apt to sup=
ply, perhaps Minute ad Infinitum.[83] I have to Reply
that first wee have Reason to Conclude that /~~matter~~\ Inter=
stitiall /matter\ ~~i~~Is infinitely minute, and then all occa=
sions that Can happen, may be Eo Instante[84] supplyed,
and Next If parts cannot separate in any manner
without a vacuity, they will not Separate at all, at
least Not till Circumstances in that Respect are chan=
ged, wch May Conduce in Some measure to Resolve
one of the most abtruse questions In Naturall phi=
losofy, Continuity of matter; Motion is Reconciled
by the Conformity ~~i~~of Some, if Not all ye parts of
a fluid medium; And ye Manner may be made
apparent to ye Eye if a Glass cillinder, having /Included\
some heavyer or lighter bodys, be filled with wa=[85]
and Comprest with a strong force, so that there will
be no scope to dilate, (Engineers Say water is as
hard as Iron, and will not by any mean's be made
to

[82] Washed/scraped out and overwritten.

[83] i.e., 'infinitely small'.

[84] i.e., 'at that very moment'.

[85] The word 'water' has been left incomplete.

to Contract Into less space.) and upon Inverting
the glass divers times, it may be seen how the bodys
rise and fall as they are lighter and heavyer, and
the medium, tho very compact, yet being fluid
gives way to the passing. This is a Representa=
tion of plenitude and Confutes the vain prtence
that in pleno there Can be no particulate or
Gross Motion. The Same Experiment a litle vary=
ed by letting some air Into the cilinder, and Cover=
ing it with a yeilding leather, but otherwise
air-tight, ~~and~~ (the Included body's /to\ be Made hol=
low, with an aperture underneath, as Jugglers
Now ordinarily shew, with using ye forme of Ima=
ges to be just lighter then water till some is crow=
ded into them) will Shew ye manner of the pla=
nets being poised In Ethere. for press in ye Cover
and that crouds water Into ye Images, & Makes
them Sink; and by /ye managemt of\ that pressure, they may be
made to Rise fall, or Stand, in any height, accor=
ding as water ~~(~~Crowded in~~)~~ ballanceth ye Images
with ye Water /itself and\ as ye planets are ballanced by their
Solidity In the Ether.

It is

[?][86]

[86] A mark in ink.

26. Impedimt of ye vortexes by friction, Inconsiderable.

It is further Insisted that In pleno all movemts wast, and In vacuo there is No decay of force, but Whatever is Excited there Continues for Ever; but there is No Retardation in the Courses of the planets, therefore their motions must be in vacuo. I Answer first that the question is not of ye planets, but of /the\ whole Region of Ether. put in Motion; for the cours of the planets. (wch may be sayd Not to move), is a Consequence of the~~.~~ ether, in Wch they are Carryed. Then it is to be Considered what Wasting the whole Mundane Ether in its Cours, is obnoxious to. Wee Suppose ye whole orb to be /terminated\ ~~confined onely by~~ /upon\ the Confines of the next orbes or vortexes. Then Supposing our orb put into Motion, It Must prove round, for ye limitts Impede a direct Cours. And there is No Impediment or friction to Retard it, but /what\ may be accounted Superficiall, as ye sides of a tubb to the water turning round in it, or the air to a childs Spinning topp. And Saving that, the gyration

of

as.

of the Ethereall Sphear, with ye planets in it Must
as in a (suppose/d\) vacuum be perpetually the
Same. And wee know of No ascitious force that
can befall, to Renew its speed in Case of wasting. /But\
~~.....~~ /must allow\[87] this friction at the Exterior parts
~~must~~ /to -\ have Some Efficacy to Retard the gyration,
and the question is what ~~.....~~. /will ye loss be?\ and I
may Safely answer Not the time of a minuit in
100,000 year's, or rather much less. It is certein
that Solids, wch I shall Call force, (in Magnifying)
Increas as Cubes, but Superficies, wch I call Impe=
dimen~~...~~/t\ is left behind, and in Immensity, becomes
almost Nothing. goe No further then the Single
Globe of Earth, wch the Sun's vortex /comparatively\ is tantum
non a meer point.[88] ~~If~~ t/T\he child's turne /-topp\ will make
(as may be presumed,) 100 Rounds in 10. seconds of
time, wch, besides the air, hath a friction at the foot /Then\
deminish the /comparative\ Impediment, as the Quantity, or force
Increaseth /up\ to the magnitude of the Globe, /And\

it

[87] Washed/scraped out and overwritten, as in lines 6, 7, 12 and (partly) 15, below.

[88] i.e., 'is hardly, not quite a mere point' (i.e., it is not a geometrical idea or abstraction).

it will be found by proportion. that in 100,000
Revolutions a /2d or 3 or rather 1000th\ minuit of time would /
scarce\ be lost, by
means of the Impediment, altho the Rolling were
against a pressing air, & with an Imprest vio=
lence, wch it is Not, Therefore there is no reason to
charge a wasting upon the Cartesian Revolutions,
wch, if any at all, Must be Imperceptible. And it Implys
No absurdity, If one Should admitt that our days are
not so long by 1/4 ho. as they were 6000 years agoe,
how should it be perceived, or accounted?

27.
The suns fire wasts not by time.

If any one would be Enterteined with discourses
In favour of attraction, and opposite to the ple=
nary scheme, the prface to the 2. edit of the prin=
cipia[89] ~~.....~~ /is an Elaborate\[90] peice to that porpose
wittness a question there. vizt. Body is Capable of
motion, why may it not as well be capable of
attraction? It Might have bin /as well sayd -\ Capable of figure
why not of attraction? but this onely for a tast
There /are\ divers /other\ objection's drawne from the condition
of the heavenly bodys, wch must be taken No=
tice of, least they should pass for Indissolubles.

one

[89] The second (Latin) edition of Newton's *Philosophiae Naturalis Principia Mathematica* appeared in 1713, a third in 1726. The *Preface* to the second edition to which RN refers was written by Roger Cotes (1682-1716). Cotes had been a student and protege of Newton, he was the first holder of the Plumian Chair of Astronomy and Experimental Philosophy at Cambridge University. RN's argument throughout, and even his use of Latin terms, echoes and addresses either Cotes' defence of Newton, or the first few pages of Newton's *Definitiones* and first *Scholium*. In his preface Cotes explicitly criticised Descartes' plenum/aether/vortex model. He argued that Newton's work was based on experiment and observation, and defended 'attraction' against accusations that it was an 'occult' quality. Cotes' preface appears in both the second and the third Latin editions, and was translated for Andrew Motte's English edition of 1729 (which was based on the 1726 third edition). *See* https://en.wikisource.org/wiki/The_Mathematical_Principles_of_Natural_Philosophy_(1729)

[90] Washed/scraped out and overwritten.

one is that If the sun be fire, the Exhalations by
Steam & smoak must consume the materiall, till,
(like other fires) it must goe out. I answer, that the
matter that constitutes the suns fiery body, Is brought
by ye Etheriall Gravitation downe to ye Center. and then
the Ignivomous process Continues for Ever, for all that
by volcanian Eruptions, wch are generall & perpetuall
may be supposed to flye off, is by ye same process brought
as fuell downe again to the Same fire; as If in a chim=
ny, all ye Smoak and Exhalation's throwne off, Should
Returne again to ye fire, It would be like ye Sun, a
perpetuall motion in Circulo, but More of this ac=
28. tion called Gravity afterwards: |_ It is alledged also
Circular figu= that the orbits of the planets are Elliptick, with
res corrupted the focus on the Sun, and Not Circles as ye Carte=
become ovalls Sian Supposeth. I answer by denying ye charge, and
say, that It /is\ Not Necessary ye orbits should be Circles
as in ye objection. for they may be, and Nature
Seems to Require, they should be Ovalls. Sphears or
circles Exquisitely true, are Not to be found, for
Such are ye work of art, and not of nature.

but

But the perpetuall Irregularity ~~of things~~ in ye World
will not permitt any thing /to\ Come out prcisely formed
to any shape, nor is it at all Necessary to the Existence
of things /so to be\. All Incidents that tend to Corrupt ~~....~~ /
Comon\[92] Cir=
~~...~~ /cular\ figures, Convert them Into Ellipses; as an hoop
pressed, water turning in an oblong vessel; and
If wee observe sections, and projections of any kind
obliq, as the Shaddow of a coach wheel upon ye ground, &ca
~~.......~~ /the eye/will speak that\ such\ ovalls have all ye
property's of Circles,
except acceleration, we is ~~....~~ /swifter\ about the shorter,
then /it is\ about ye longer diameters, as the Spaces extend
more here ~~.......~~ /in length,\ and there in breadth; but so as
Equall areas are described by Every point in Equall
times, wch is ye Same originally In ye /proper\ Circles; It is
therefore No wonder ~~..~~ /yt\ ye orbits of ye planets should
fall into ellipses, and have those propertys ye Astro=
~~..~~ /no\mers have discovered of them, without ye plastick
power of attraction:[93] I should think it much more
wonderfull, if the orbits were perfect circles, and Not
ovalls, But Supposing the Sun to be Not [in?]
[in?] prcisely in a focus but rather in [umbilliio?]
of ye Ellips, whence ye like Consequences will
follow, and ye distance of ye focus ab [umbilicu?][94]
is Not so great to be Much Regarded.

____ <flourish underline>

2. heliacall
a conjunction
in apoge of
length[91]

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[91] This is written in miniscule and barely legible script and tucked into the gutter of the page as presently bound. It appears to be an authorial comment to the self rather than a marginalis provided for any anticipated reader.

[92] Washed/scraped out and overwritten, also in the following line, and lines 9, 10, 12, 15 and 17, below

[93] Beginning with the words 'I should think', RN changes pen. The last few sentences on this page appear to have been added later, an impression reinforced by the crowding of the writing down into the bottom margin and the clumsiness, or apparent haste, of that writing which renders some words hard to read. It may be that there was an actual pause during the writing of the Life and that the new pen marks a re-start on another day. It might be that after that pause, with this change of pen, RN added some afterthoughts re-inforcing points made earlier. The previous sentence had finished at a point where one could believe that RN felt that Newton's claims for attraction had been refuted. He continues with the same pen overleaf, changing topic, going on to discuss the the problematic (for Cartesians) matter of comets. This moment of revision might explain the diminuitive 'note to self' in the margin. We find a few examples of such breaks or spaces left at the foot further on: ff. 86v, 88v (where only a few lines have been written on the page), and 118r. Note also that in the page has been finished off with a (actually quite small) 'flourish' underline.

[94] The spelling of 'umbilicus' varies in the same sentence. It is not clear whether RN is employing an English or a Latin form, and to what effect ('ab umbilicu'?). RN's spelling is anyway inconsistent as readers will have noted. He seems once again (see previous note) to be distinguishing between a perfect, geometrical point such as might be suggested by the word 'focus', derived, appropriately enough from the Latin word for 'hearth', for a more generalised or metaphorical concept of centre as suggested by umbilicus, meaning 'navel'. This would fit with his promotion of the 'Cartesian' preference for quotidian analogy and arguments illustrated out of commonplace experience.

29.
Comets Erra=
tick & not
fixed in orbes.

The Next Consideration is of Comets. Concerning wch
It seem's the Cartesian hath much ye advantage of pro=
bable truth, above ye attractors. This latter for confor=
mity, as I think, hold that they are body's that Move
In Immens /prolonged\ Elippses about the Sun, ... /which\[95] is In
their
focus /also\ and so goe and Returne periodically, but appear
Incerteinly, and have litle Regard to the zodiack, and
some have bin so assured to affirme that certein
comets seen at divers times, have bin one & the same,
and profecy when some, that are past and Gone, ...
will Returne againe. And the bold Mr Whiston[96] hath
Marked in his printed planetary scheme, the track
of one of them, that appears so Monstrous and In=
congruous with the Rest of the Celestiall Courses, that
the very view confutes it; His betters have gone so
farr in observation of them, to conclude from
Mathematicall Calculates, that their Cours about
the sun is in a line towards a parabolick, or tra=
jectorian; and undertake from 3. observations to
project their Cours. But as to any thing phisicall
concerning them, litle or Nothing is offered at.
the

[95] Washed/scraped out and overwritten.

[96] William Whiston (1667–1752) was in succession a student, protege and promoter of Newton. He followed Newton into the Cambridge Lucasian Chair in 1702. He popularised various scientific and theological positions in a number of books and pamphlets and introduced innovations in the researching and teaching of science at Cambridge. His denial of the Trinity led to his dismissal in 1710, a trial for heresy was only forestalled by the death of Queen Anne. He continued to promote his ideas as a lecturer, writer and teacher. His chart of the solar system (*A Scheme of the Solar System with the Orbits of the Planets and Comets belonging thereto, Describ'd from Dr. Halley's accurate Table of Comets Philosoph. Transact No. 297. Founded on Sr. Isaac Newton's wonderful discoveries By Wm. Whiston M.A.* [and John Senex]) was first published in 1712 and was reproduced many times.

The Cartesians suppose them to be Either decayed
Sunns or fixt Starrs, or Else body's that never were
suns or planets, but have bin Without rule erratick
for ages unaccountable. That sun's ..... /or lumin\[97] arys wch
are seen by their proper & Not borrowed light, and Change
not their [seite?] or aspects, may corrupt and becom=
ing opac, pass Into other heaven's, and be seen by a
Reflected light, is not Improbable; And such seems to
be the State of Comets, that are Not setled to move
in orbits Regularly, so as to be Styled planets. the
Number of fixt starrs, Wch include the Nebulæ, and
Galaxie, is so Immens or rather Infinite, that If
such a Contingent is possible, It is a greater won=
der that there are Not more of them, then that there
are so many. And the possibillity is strongly argued
from observations; as that some Starrs have abated,
and again Increased their light; And from being
seen onely by telescopes, have vanished, and Never
bin seen since.[98] And these of Considerable Magnitudes.
Who can ans' how many such alteration's have hap=
pened amongst the Nebulous and Galactick collec=
tions? And our Sun by means of ye Maculæ and
fa=

[97] Washed/scraped out and overwritten.

[98] Early-modern astronomers were able to demonstrate not only that the inherited Ptolmaic geocentric model of the universe was wrong, but also that the Aristotelian/Platonic tradition had been wrong in arguing for the immutability of the heavens. The heavens were contantly changing. Tycho Brahe (1546-1601) in November 1572, and Johannes van Heeck (1579-1620), Johannes Kepler (1571-1630) and Galileo Galilei (1564-1642) in October 1604, had observed and commented upon supernovae. This is the modern scientific model with which RN seeks to be associated - a jostling, transforming totality, knowledge of which is based on observation; for RN and Descartes the model employed 'common sense' laws which held good both locally and universally.

faculæ,[99] appears obnoxious to alteration, those Shew=
ing it to be a Composition of volcano's wch Eruct
smoak & fire unequally at times, whence a Naturall
possibility of a totall Extinction May be Conceived.
The Globe of Earth shews signes of its having bin More
volcanious then it now is. ffor divers Mountaines
that are Ignivomous, were probably raised by ye ashes
and Cinders thrown out, And great Numbers of moun=
taines, wch like them Dish at the summitt, and perhaps
all the Considerable Mountaines were raised in ~~.....~~ /in ye same/
manner\\[100]
by subterranean fires. And Now, No Man can answer
for the fires that rage in ye bowels of ye Earth, or that
they may Not In time get the better of the Crust that
suppresseth them, & break out in fires, as is suspected
to happen At Solfa terra, & other parts of Italy.[101]

30.
the genesis Na=
ture and
Gression of
comets.

In these cases wee may. let loos Imagination, for
it is not unpleasant so to doe, Would it were as pro=
fitable. It is certein ye /conterminous\ vortex's of the world (If
there
are such,) are Everlastingly Crowding agt Each other.
and as there are greater, & smaller, Stronger & weaker
amongst them, how is it Impossible that Some May
be opprest and destroyed by their neighbours, ...
~~And~~ the

[99] i.e., sunspots - dark (maculae) and bright (faculae). Galileo's observation of these brought him into conflict with the Church.

[100] Washed/scraped out and overwritten, note erasures below in lines 16 and 22.

[101] i.e., 'land of sulfur', or 'sulfur earth'; RN refers to Solfaterra, a shallow volcanic crater at Pozzuoli, near Naples.

[&?] The Consequence may be that the starr whose vor=
tex is absorped, may loos ye ordinary pabulum, and
being half choaked with less Combustible matter, fall
In the New Medium, without a due poise, such as
Keeps ye planets in their orbes, but by a sort of Gra=
vity, or levity,[103] acquire a progressive Cours Not Easily
Cohibited, and So pass from one part of ye world to a=
nother Without ceasing. There are divers reasons
drawne from the phenomenon it self to Countenance
this Supposall. ffor it is certine the body or Nucleus
of the Comet is violently heated, perhaps on fire;
but ye Smoak hinders the appearance of it, or so Much,
that it is Most seen by the sun's rays falling upon the
smoak wch Envelops it; And it is Not Impossible, but
ye Nucleus that is seen a litle brighter within, May be
a sort of fire. The Criniture[104] is plainely ye effect of
heat, and flowing from /-wards\ ye Sun (wch there is levity)
hath the ~~Sun's~~ light Every way falling upon it ~~....~~ /& that\[105]
gives us th~~..~~/e\ Crepuscular lumen, wch is called ye tail,
and Extends to a vast distance from the Comet. the
Nucleus is often Gibbous & Irregular, wch is a signe of
violence and decay, and /some\ have more then one lying Con=
tiguous together, wch is an argument of Many
con=

[102] RN's doubled-up page numbering crossed out, in pencil, by the BM/BL curator.

[103] RN explores the notion of 'levity' at length elsewhere, for example in 'Of the World', BL Add MS 32546. Levity is as contested a term as gravity during the period, and the two terms, which are nearly always paired, have as much a place in RN's aetherial system as in Newton's attractive system.

[104] i.e., 'hair', from Latin 'crinitus'.

[105] Washed/scraped out and overwritten, as in the following line.

cont/i\ngencys that happen to them, and it is most pro=
babile that by time, and length of travell, they May
wear quite out; for they Continually leav behind them
in smoak or steam Great part of their substance;
whereas planets keep their atmosphere allwais
about them, and thereby conserve their Equipoise,
wch the Comets Seem Continually /to\ Change. And the Man=
ner of the progression of them, sometimes with a vis
Impressa,[106] as a thing Shot forth, and then as If that vis
were spent, turnes as Gravity or levity Requires to Re=
ceive a New vis, wch may carry ~~..~~ /ym\[107] farr Enough from
our sight, and so Imitate ~~.~~ trajectorian lines about
the Sun; but What is to be sayd to ~~.~~ matter/'s\ Made up
all of Contingency's, as the Comets ~~...~~ /are\, however for sake
of the dear attraction /some have laboured\ ~~laboured~~ hard to
Confine them to
Rules.[108]

[106] i.e., 'as if a force had been applied to it'.

[107] Washed/scraped out and overwritten, also in line 14; note erasures on following two lines.

[108] As noted above (f. 84r), space has been left at the bottom of this page.

31. The earth a prolate spheroid, to solve ye prces= sion by attraction

Before wee take leav of these Cosmicalls, Some account must be given of another New Inven= tion; And it is that the Globe of the Earth is Not perfectly orbicular, but as a prolate ~~.....~~ /spher=/roid\\[109] having the polar diameter shorter, then the di= ameters at the Equator. And the reason given is That the Rolling of the /Earth\ upon its axis hath Throwne /up\ the Materialls at the Equator, till gra= vity opposing that power, put a stopp, ~~....~~ /& ye ma=\ ~~....~~ /teriall rests at ballance of the power of gra= vity, ~~....~~ /agai/nst\\ ye power of Receding from ye Center, Re= sisting Each other. Such fancy's. some people have ffor macheneries. But as to this Recess from the center of ye Globe, tending to swell up at the Equator, So long as there is no violence, or Im= puls to accelerate, or Retard the Rolling, aS if some Starts, or checks ~~..~~ /were\ given to it, but it pas= seth about tacitely, and Conforms to ye fluid in wch /it\ swims, It is to this porpose /all one\, as If it had No Mo= tion at all, & Consequently No Recess, as I Shall more fully demonstrate afterwards. But that ye forme of the Earth is such, they Endeavour to prove

[109] Washed/scraped out and overwritten, as in lines 9-10 and 11 below, note erasure on line 17.

prove by Experiments of pendulums, they say
a pendulum about ye Artick regions will os=
cillate Swifter, then the same Length will
do about ye Equator, becaus at the Articks the
Gravity is more powerfull, And /that\ is so, becaus the
position is neere ye center, towards wch the
power of Gravity ~~.....~~ /Increaseth, and\[110] at Remoter
distances deminisheth. I suspect that this Expe=
rimt is not Gross Enough to be Relyed on, for In
practise many accidents may happen, and Inci=
dents Emerge, to caus Such variation; And it
is observed that in divers places neer ye Same
paralells, pendulums may differ, and ye Caus
as litle known as that of ye variation of the
needle; And for these Reasons I doe Not Intirely
deferre to ye prtended Experiments.|_But they

32. Jupiter said to be prolate.

say that In the telescopes with micrometers
ye planet Jupiter is found to be prolate; It
may be so, and ye Earth may be ~~So~~ /prolate\ likewise
but It is Not proved by Jupiters Example. Why
not Saturne, Mars, or Venus also prolate it
being probable they turne as well as the Earth.

I may

[110] Washed/scraped out and overwritten.

I may ~~alledg~~ on the other side alledg, that If
the Earth were thus formed, All perpendiculars
In ye artick & Antartick Region's, and Even in En=
gland it self, Must be fals; for a line from the
center would not Cut the tangent of ye Globe there
at Right Angles, wch Might be proved by Instru=
ment, but it is not done. And It would be a great
dissapointmt If the opinion of Such forme Should
be disprooved; ffor the Credit of Attraction is Con=
cerned in it, and for ye sake of that, the thing
was Invented, and hath bin persued, in order to
proofs, More than any other point of Cosmografie.
And the use is to Resolve the prcession of ye Equinox
by means of the solar attraction, for If ye Globe
be not round, but Swelling at the Equinoctiall part
and as it were, like Saturne, annular, In the Revo=
lution some parts of ye Globe will fall more exposed
to the Attraction then others, and so the whole be
somewhat diverted from ye orbit of the former year.
And thereby ye Equinoctiall points In ye heavens
advance upon the Signe ~~a~~/A\ries, and Instead of its
being in ye first degree, is towards ye Midle, and
will

will Every year hitch a litle further. The demon=
stration of this (founded on the attraction, that is
upon Nothing) is to be found in Mr Gregorys Astro=
nomical works.[111] I have to do with it onely to Shew
the hard straining to Confirme a groundless Hypo=
thesis.

[111] David Gregory (1661-1708), Savilian Professor of Astronomy, Oxford, formerly Professor of Mathematics at Edinburgh; RN is presumably referring to his *Astronomiæ physicæ & geometricæ elementa*, Oxford, 1702. Gregory was one of a number of enthusiatic Scottish followers and promoters of Newton, a group that included John Keill (*see* BL Add MS 32546, f. 179r, ff.)

33. Nat philoso= fy is a science of truth.

Having done with Cosmografye, ~~....~~ /and\[112] its phisicall Solutions, I proceed to take a view of Naturall philosofie In generall. There are many sciences that Require much peculiar knowledg, as Law, medecin, Mathematicks, oratory, Morallity &c. but None that bui[t/l\d?] upon things really Existent, ~~and subsisting~~, but Naturall philosofye, and on that acco I may style it a science of truth; It is derived wholly upon sensible objects, that is observation, and Experience of Naturall Essences and Events; and of these Not more /the\ Exotick, then /of the most\ obvious Notice, wch Every man that lives In the world, Must gather, and Make his owne. therefore It is not any want of Experimts, of which Comon life affords enough, but the want of Rectitude ~~...~~ /of\ Judging thereupon, that Corrupts the Science of Nature; who can think right of any thing, ~~...~~ /that\ lives Enveloped on the prjudices of Education, and makes No distinction between things and appea= rences, but mistakes one for the other? |_ It is No= torious that all men are Inquisitive after causes, and for the Most part goe away as well satisfyed

34. ffirst knowledg of the phaeNo= mena

[112] Washed/scraped out and overwritten, as in lines 6, 15 and 17, below.

satisfyed with fals, as with true Notions, or rather
favour the fals agt truth with utmost partiallity,
wch is ye Effect of Early prjudices. there waS a jolly
Lady who would Not be perswaded ... /that\[114] ye Sun
moon and Starrs were not holes in ye firmament,
through which we Saw the Light of heaven; And Most
men are more or less given up for .. /Errors\ of that
kind, of wch the reason is that ye Enterteinemt
of life Especially at the beginning, is with the
phenomena, without Labouring to distinguish
between ye Substances and them, but think that
both are one and the same thing. And so they goe
on, and When Experiments Enforce such distinctions
34.[113] upon them, they rather /wonder\ then know More, or become
Errors for Not entring by prin= ciples, but at ye phenomena. less Inclined to Continue In the like fals Judgmt of
Every thing Els. |_ And all this happens because they are
not ledd Into a knowledg of principles, at wch eve=
ry man who would know any thing must begin,
And what is meant by principles hath bin, and will
be again more fully declared. And thus the Com=
mon prtender's to Naturall knowledg, Lanch Into
a sea of phenomena, and dispute about the
qu../ids\ and the Quidditys of them, and Never
arrive

[113] RN has given the number 34 to consecutive paragraphs (*see* previous page).

[114] Washed/scraped out and overwritten, as in lines 7 and 23, below.

arrive at a Que[115] Notion of anything. for this
reason it is an Error In the formall discipline
of universitys and Colleges, to put the Novices
In the arts upon Natural pholosofy, wch is fitter
for the More advanced and acute Scollars, who are
growne up into Strength of thought, Sufficient
to Repell prjudices, and to abstract themselves
and their facultys, and Every thing Els that stands
In ~~in~~ the way of their Conceiving what truely Ex=
ists in ye world, and is No phantosme of Imagina=
tion, and Who May be Supposed to labour after Na=
ked truth, and being above ye pride of knowing,
lay aside all affectation of fame, and Renounce
Implicite Credulity, and faction, wch have Ever bin
and its feared Ever will be, ye bane of all true
philosofye.

35.
Invincible dark=
ness of Many
causes, No fault
of Nat. philos:

I must owne that there is No End of Curiosity
and Inquest after the Causes of Complex Matters,
and Incidents, for after all Endeavours that can
be used, Much will Remain unsolvable, as I
shall shew More distinctly afterwards; this
makes

[115] i.e., Quid and Quiddity ('what is?') arriving at a Que ('that is').

makes Some account phisicks a vain Incertein
science, and If all speculations under that head
were Equally dark, it Must be Confessed it is so;
But it is well knowne, that by Strength of reason
aided by Experiments, under wch I Rank Naturall
History, Much of Nature, Not obvious to Every one
is disclosed; And ..... , (I am (speaking of par=
ticularitys,) /what\ Remains Confused and untelligible
It must on that acco. be lett pass; it is an Effect
of pure understanding to determine, as /well\ what
May Not, as /what\ May be knowne. and it is Much More
decent to proffess Ignorance of the former, then to
wordifye, and Stammer out Colours, Instead of Cau=
ses of any thing, without a Clear and distinct per=
ception of ye Subject Matter. But Some are So am=
bitious of seeming to know all things, that by Such
Empty dogmaticks with assurance held forth, they
disparage that knowledg wch in phisicks May be
attained. And What /is\ wors screen all failings by
some Eminent authoritys, or Stopp ye Gapps (as I
said

said) with Wisps of Empty words; And by this
means, the philosfick dialect it self (for all science
must have proper language) turnes to right
downe Canting, and Not Seldome the Well meaning,
but careless Inquisitors, being a litle seasoned with
a few out-of-the-way words, without More thought
36. goe off wonderfully Satisfyed.

The Invention
of principles. The best Remedy for this Inconvenience will
be to Extract from all that Ever wee Could perceive
and prove, a Notion of things that really Exist in
the world Independant on our sence and Imagina=
tion, and that would Exist/,\ and be the same, If all the
sensible Creatures in ye world were annihilated. And
by this method wee may gain some axioms, or prin=
ciples, wch being self Evident, and universall, will Not
be denyed. The axioms belong to ye Mathematitian,
the principles to the Naturalist; And these Must /not\
be the salt sulfure and mercury of ~~Chemistry~~ /the chim\ists;[116]
the Nitro, sulfureo, aeriall particles of Mr Mayo;
The Globuli, particulæ striatæ first or 2d Element
of the Cartesians;[117] Nor the vires Attractivæ[118]
centri-

[116] Washed/scraped out and overwritten. *See* note on following page.

[117] Descartes discussed first and second elements in his account of the vortices in his *Principia philosophiae* - "*primi*" and "*secondi elementi*". The first element is the subtle matter, or aether, the medium of light's vibrations, the second element was coarser matter.

[118] i.e., forces of attraction.

centri-pendentes, fuggientes /or\ sese mutuo appeten=
tes and ye Like of the newtonians, Much less the
matter, forme, privation, Substantiall formes, &
Quallitys of the Aristotelians;[120] ffor what is there
in all thse wch may not be arbitrariously denyed?
And then what becomes of all the fine thredds Spun
out of them?

Mathematiti=
-ans Not in ye
way of Nat[?]
philosofy.[119]

It Seems that the Moderne Excess of Geometry
hath ledd us out of the way of a due phisiology,
the former /Indeed\ Relyes on principles, but such as are
hypothetically, but Not in Reallity, true. ffor their
quantums, and formes are all prsumed, but Not Ex=
posed, as was Shewed before; And in Regard that
omne Majus Continet Minus,[121] and Every /less\ forme
and Measure is conteined in the Greater, & is pos=
Sible to be Exposed /and that\ without any ascilious princi=
ple, their prsumptions In Contemplation are
true, and the Consequentialls Incontestable, and
this perfection of truth Invites them to adapt
their methods to Serve in Natural philosofy
as If the Like Infallibility might be gained
thereby

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[119] RN has omitted to number this section (it would be 37).

[120] Francis Bacon, Lord Verulam (1561-1624), an alumnus of Trinity, is frequently referred to in RN's MSS (and in Dr John North's Notes). Bacon had described the four Idols ('of the Tribe', 'of the Cave', 'of the Marketplace' and 'of the Theatre') in his *Novum Organum, sive Indicia Vera de Interpretatione Naturae* ("New Organon, or true directions concerning the interpretation of nature") of 1620 to describe the various forms of mis-knowledge or delusion that characterised scientific and popular error in his own times. Here RN lines up all the scientific Tribes and their Idols as he saw them and as we find them characterised and criticised throughout his MSS generally. Firstly the Alchemists, the followers of Theophrastus von Hohenheim (1493-1541), known as Paracelsus, whose theory of matter described a tripartite elemental base, a *tria prima*, of sulphur, mercury and salt (see note on f. 66r, above). Secondly, a particular bête noire, which he mentions at a number of points in his MSS, the systematic chemistry of John Mayow (1640-79), chemist, experimenter and associate of Robert Boyle who wrote the *Tractatus quinque medico-physici, quorum primus agit de sal-nitro et spiritu nitro- aereo* ..., Oxford, 1674. (In BM Add MS 32546, f. 34r, RN noted that 'Chimistry rather ~~detect's~~ /confutes\ Errors the then establisheth truth', thus placing it in the domain of natural history rather than natural philosophy, and therefore not the form of enquiry most liable to throw up fundamental laws for the natural philosopher.) Thirdly, Descartes' theory of variously shaped material particles which RN frequently dismissed as whimsical and untestable. Fourthly, the Newtonian theory of the attractive force ('sese mutuo appetentes' = mutual desire). As we see from the next section, RN did not believe that Mathematics was appropriate for providing general laws for natural philosophy.

[121] i.e., 'the greater contains the less'; 'omne majus continet in se minus' is a legal axiom.

thereby; and accordingly they fall to prsuming /powers\
quallitys, and property's Exergeticall, Internally
appropriated to body, and that they Increas,
and deminish as Quantum's are More, or less;
and acting at distance, have less force as ~~.....~~ /Sphears\
qd[122] ~~.....~~ /Inlarge\,[123] Inversely; that is by Square of ye diameters.
the Sphears Increasing, and the powers decreasing;
And so they Come to be treated mathematically
as Quantum it self is treated, And thence Conclude
Q. E. D.[124] true Enough in forme, but Not in fact.
ffor however God Almighty Might have bin
pleased to have Created such powers to be Inhe=
rent in body, There is No Warrant to prsume
he hath done so; And Supposing it but doubdt=
full, the Case is Intirely Immathematicall, and
how Easy is a denyall of the whole Superstruc=
ture, built upon Such a prcarious principle, as I
have before Shewed that of attraction to be? And
perhaps more to the Same Intent will Result
from What is to follow~~?~~/,\ I have considered the
Importance of Naturall principles, Such as
are

[122] RN used this mark as an abbreviation of 'quid' or 'quod', indicating a query, presumably addressed to himself since such marks do not appear in RN's published works.

[123] Washed/scraped out and overwritten, also line 20, below.

[124] i.e., Quod Erat Demonstrandum, i.e., 'as was to be demonstrated', the declaration that a mathematical of philosophical proof has been made.

are Not prsumptive, but really Existent, and u=
niversally Subsisting, & essentiall to all phisiolo=
gy. I shall adventure to sink a litle deeper Into
the Secret of Such principles.

38.
Mater & Mo=
tion Not two
but one prin=
ciple.

Our Dr. went full sail Into the Cartesian prin=
ciples of Matter and Motion, Neither of wch is
Imaginary, but plainely Exposed to sensation,
And Renounced finall Causes; wch Causes with the
Quallity's are now become favorites of many. He
was fond of Experiments, and observed that the
Lord Bacon who first Recomended them was but
an Aurora, and the Greshamites[125] falling Into
that way, soon finished the old Schemes of Ver=
ball philosfie, wch brought before Experiments
mouldred to Nothing. But Now to Consider well
these principles of Matter and Motion, one Would
Not Expect a fallacy /to\ Ly Couched in one of them.
But really so it is, for the word Motion signi=
fyes just Nothing at all. It is an abstract, and
apart from ye Subject (matter) hath No true
meaning, Except a Mode onely under Wch Matter
is

[125] Sir Thomas Gresham (1519-1579) was an English merchant and financier, the founder of the Royal Exchange. Immensely wealthy, he left a bequest to establish a college, since known as Gresham College. Seven professorships (Astronomy, Divinity, Geometry, Law, Music, Physic, Rhetoric) were established, providing regular lectures in his former house in Bishopsgate (now the site of the NatWest Tower). During the 1630s and 1640s the College became an important centre for experimental science, its culture influenced by early 'baconianism'; in 1660 it was the location for the newly established Royal Society.

is understood, as when /wee\ Say. Shaped, wee men a
body under that mode, and Not that Shape /of it self\ ~~its~~
~~Self~~ is any thing. The Dr took motion as Carte=
sius seemed to Intend, to be a sort of Entity dis=
tinct from body, wch double principle hath made
No small Confusion in Speculative phisicks. If it
is Reasonable to Reduce Naturall principles to the
fewest that may be, then the Rescinding one of
these two, and Reducing all Nature to Consist
of onely one, wch is body, must needs be an Improve=
ment, and Render the philosofick Stream more
Limpid; Any one may see this by looking Into
the Many vain definitions that Authors have
held forth of Motion, the termes of wch are More
pregnant of doubdt then the thing to be defined.

39.
Motion & Rest no Realitys but modes onely.

As for the other principle, Matter; It is No=
tum per se;[126] for being the Immediate object of
Sence, and testable by all Experiments, Appears
manifestly to Consist In the exclusion of all
other like matter from Entring Into ye limitts of
it, wch artists understand by ye word Impenetrabillity
and

[126] i.e., 'known by itself, self evident'.

and in that State it is permanent and Indefect=
ible, and No other property or Quallity by any
Experiment we Can make, is found to be Essentiall
to it. I shall therefore assume this to be the sole
principle of wch all sensible things in ye world Consist.
And as forme and scituation are not reallitys,
but onely modes of the same essence, and may be
changed, or deprived, while the Substance or thing
~~itself~~ remaines the Same, So the being Moved or
not, hath No Regard to ye Matter it self, but to Ex=
ternalls onely; ffor take away all Respect to Exterior
things, and ~~....~~ /not\[127] onely our Conceptions of motion, but
motion it Self vanisheth; So vary the State with
respect to Exteriors, and ye motion vary's, and /so\ also
our Ideas of it, as will be shewed More Expressly
afterwards. The word Rest In the Signification, car=
rys as much of Reallity as the word Motion, and May
as well be made a third, as that a Second principle.
If one body onely Resided In vacuo Infinito, with=
out so much as a Spectator (wch by Imaginary
position Implys a Collation) that Solitary body
could

[127] Washed/scraped out and overwritten.

could Not truely be sayd to Move or Rest, for the distinction failes, altho almost Invincible prju=dice will persist In the Contrary.

40. Errors about motion grow by abuse of language.

All this prjudice about motion, Strong as it is, will be found to proceed from Language, being a meer abuse of the word motion; and the phantasma is hard to be Evulsed out of mens minds; ~~And~~ the best way to bring it about, (as I think) will be to make a Comparison of that, with other /similar\ Words and paralell Expressions; I touched before that Motion was an abstract ~~word~~, that had No mea=ning but as it Referred to some subject; It is comon to Say Rising [~~..~~][128] falling, Moving & the like. but Never risingness, fallingness or Movingness wch latter word is of ye Same kind with ye ~~former~~ /Rest\, an abstract; And the word motion is ye very same /as\ If to Signifie an Entity distinct from body, wee should Say (not motion but) movingness, It would be Redicolous. how uncouth would it be to say of a thing that fell downe, It had a fallingness; and /that\ A thing was opposed; by what? By opposition.

therefore

[128] Washed/scraped out?

Therefore Language, wch is but an Imperfect
shift, Should never be allowd to Insinuate Con=
ceipts of things. & least of all of principles, in
any state but that of truth; It must be Intens
thought that discovers Essences ~~that~~ Necessa=
rily subsist-/-ing\ Extra to all our Sence & Imagina=
tion, and what are onely Creatures of the latter,
As for Instance (waving those ordinarilly /on these occasions\ No=
ted ~~on these occasions~~) Colour, tast, sound, hard,
soft, & the like; ~~and~~ /then\ apply to the prsent Subject
motion; and ask what may truely Sayd of it?
the answer will be, that the distance, or aspects
or both, with Respect to some other bodys, alters
and what of Rest? that the distance, and aspects
continue the same. And more then this cannot
be prdicated of any body Moving, or Resting.
would it not be merry to Say that it was affec=
ted with a Change, or Non change, or that Motion
or Rest was /a Change\ Communicated from one /body\ to another?
as the Comon phrase is. All wch Sort of Expressions
are Equally Insensible & savour strongly of Nothing.

Des

41. Motion Caused but Not Com= municated.

Des Cartes had thought a great deall of this Subject (wch he set up for one of his principles, and Came Neer to truth, In defining it by the vicinia)[129] but Not Enough, ... /Els\[130] he had never In= dued it with a reallity, and upon Collision of bodys made it to pass from one Into another, or Els he is Not perfectly well Explained in that Matter. some that have followed his conceipt, have fancyed that there Ever was and will be the Same stock of motion in the world, and that it doth but pass as was said; so that all lost in ye one, is found In ye /an\ other; but this is Manifestly fals, for free will in men, & animalls (to say nothing of unknown agents) ex= cite and Repress movemts. But the Language of comon Sciolists[131] is - pass into - Comunicate. - Im= part, and the like, as If Motion .. /were\ like Nutriment Received Into the substance of a body Moved. our Dr was farr gone in that way, and (as he used to say) a body Impelled Carryed somewhat with it, wch it had Not before, but Never Could say what Impuls is a true Caus of motion but not by any comunication.[132] Now After having alledged that, the change of Distance

[129] i.e., 'neighborhood, surroundings' (for Descartes, motion was a relation between matter and its surrounding matter).

[130] Washed/scraped out and overwritten, also line 16, below.

[131] i.e., 'those who claim to know'.

[132] The whole of line 21 seems to have been inserted (probably quite soon) after the writing of lines 20 and 22, making the foot of the page appear crowded.

distance and aspects is all that Can be truely affirmed of Motion, I may freely use that word as the Comon phrase is, and as abstract termes are comonly used, for ~~the~~ our comon speech al= most Requires it, But I desire to be understood according to ~~.~~ /the\[134] foregoing Explanation.

42

The distinction of motus verus and Relativus Confuted.[133]

I must Now take Notice of a fresh distinction Lately coyned, wch let pass, all I have said stands for Nothing. It is between Motus verus, and Motus Relativus; the Latter is Explained by the Comon observation of a Man in a ship walking west as fast as the ship sailes East, or Supposing the ship sailes west as fast as ye Diurnall Carrys it East /There its sayd,\the man and Ship are Not Supposed to Move but onely Relatively, ~~of ye man to ye sea, and of~~ /as Respect is had to ye Soyle or\ ~~the ship to the sun~~ /shoar,\ /...\ But what then is motus verus, The answer is, when /a\ body moves in gyro, there is a tendency, or Conatus to Recede from the center, and when loosed from the gyration, it Moves away in directum, according to a tangent of ye arch at the point of the Last Contact. This is seen in the action

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[133] i.e., 'true and relative motion'; as the second paragraph of the text explains, Newton had 'lately coyned' the terms, they appear in the first Scholium to the first set of 'Definitiones' in the first few pages of the 1714 edition. Newton was Warden of the Mint from 1696 to 1699, and Master of the Mint from 1696 to 1727, which makes RN's choice of words a punning joke. *See* also note on next page, and on f. 121r, below.

[134] Washed/scraped out and overwritten. In line 16, below, RN actually leaves a series of dots in the place where he washed/scraped out word 'sun'.

action of fluide turning in a vessell; for they will
Dish up at the sides, altho ye vessell turnes pari pa=
su,[135] and would be ye Same in vacuo, Where Can be
No Relation; this they Say is Motus verus. It is Not
Easy to develope the art Couched under this dis=
tinction; But I think I shall make it appear to
be a Meer fucus,[136] contrived to countenance the
attractive Cosmografie; I shall stand to what I
have affirmed, that Nothing is in difference be=
tween a body moving, and one resting, but onely a
change /or non-change\ of distance and ~~..~~ /Aspects\,[137] and that all
Motion
in ye world consists in Such Relation, & Nothing Els.
I would willingly know, what any one with can=
dor can alledg of reall truth subsisting in any
motive Instance whatever, besides pure Relation.
To Say that some motion's are reall, and /that\ others, of
the very Same appearance, are Relative, (that is No=
43 thing at all,) is strange phisicks. |_The Epithet verus
verus Not a is to Exclude all Counterfets, and those Referr to
proper Epethet our fallible sences, that may mistake one thing
of reall Essen= for another, but In things, there is No Counterfet,
ces. but Every thing is, as it is; And In these speculations
wee

[135] i.e., 'at the same rate' (literally, 'in step').

[136] i.e., 'disguise, deception'; note use of the word 'counterfet' below in lines 19 and 21, denoting false appearance and echoing the opening reference in section 42 to Newton's 'lately coyned' term 'motus verus'.

[137] Washed/scraped out and overwritten.

wee abstract our faculty's, as If there were No
sens~~.....~~/itive being\[138] in the world; and thereupon the
distinction of true, and fals vanisheth, for Nothing
is fals but our Imaginations, and vain assertions,
when they vary from ye truth of things. Wee May say
a true round, or square, becaus wee may Imagin
a Rotundity or quadrature, that is Not such. but
abstract our Conceipt, and ye termes true or fals
applyed to things is Insensible, for things Either
are or are not, whither wee fancy so, or not
therefore verus here applyed to what is Existent
is futile, becaus Existence Cannot be fals, then it
belongs to them to shew, or (ex natura rei)[139] to de=
fine this Existence ~~..~~ /-\ to wch verus is applyed, and If
they can doe it otherwise then I have done, I sub=
mitt, I am sure none of ye comon definitions will
serve the turne. as translatio Corporis a loco, ad
locum,[140] for ye Word motus would serve as well as
translatio, and corpus, as Locus; for Nothing is un=
derstood by Either. but observe, corpus verus is
Impenetrable, and corpus supposititious, is penetra=
trable; why not as Well as Motus verus Est trans=
latio, &c. but Relativus not. Such Sport may be Made with /words\[141]

---

[138] Washed/scraped out and overwritten, also line 14, below.

[139] i.e., 'from the nature of the thing'.

[140] i.e., 'movement of the body from one place to another'; RN is again using the actual words employed by Newton (from the the first Scholium, to which we have already referred - see note on f. 83r, above)

[141] RN is clearly enjoying himself playing with the words here. The page is crowded at the foot, it is possible that the passage beginning 'why not as well ...' was added later, as an afterthought.

44
The true and fals ways of Judging Motion.

These discourses being hard of admittance with ordinary thinkers, I Shall further Endeavour to Remove out of the way of our advancemt In this Science of Motion, the Stubborn prjudices that Commonly offuscate mens understandings. I must observe a distribution of things sensible in ye world; some appear Individuall, as the sun moon and planets, others In systemes of divers, as the Constellations, and So of ordinary objects neer us, as shipps, animalls, woods, armys, &c. all wch are discovered to sence, and distinguisht by movements, as the position, and aspects of them are observed to change, and thereby our Ideas of Motion are formed. It is in our power arbitrarily to Collate more or fewer, and for the most part wee take in our owne persons for a member In the Comparison. And then such as vary with us, wee say move, and those things that Continue, Rest; and Not seldome ye Motion is ascribed. on our Side, as when ye systemes about us doe Not vary from Each other. And as wee select objects to Collate whither Individualls or systemes.

systemes, more or fewer /great or Small\ neer or farr off, Either Ex=
presly or Mentally, any one or more of them, May
with Equall truth be sayd to Move and that all Man=
ner of ways, as also to Rest at one and ye same time
and Consistent together; as for Instance one asleep
In his bed, Respecting ye Soyl, is at Rest; but Res=
pecting the fixt starrs he moves both Diurnally &
annually in Severall Courses. So the planets with Re=
spect to the fixt starrs move Constantly, but with
Respect to the Earth, they are often Stationary, or re=
trograde; so Either or Neither, according to Aspects
and positions, as they may be Collated. of these Con=
sequences numberless Instances may be given; but
there are certein topicks of prjudice, wch Corrupt
our ~~.....~~ /Ideas of motion\;[142] If one object be much less then
another, wee Can Scarce perswade or selves but
it is that wch moves, and not the greater; this
was the Case of the Earth's motion, wch Cannot
yet be demonstrated, for Moving or Resting the
exterior phenomenon is the same; but the Colla=
tion of ye planetary Systeme, makes it More then
probable, that the Earth takes its turnes

amongst

[142] Washed/scraped back and overwritten.

amongst them; the prjudices of this kind arise
out of an Idea of force, and power, and ye Sence
wee have of it in our Selves; wee cannot but think
the motion of approach Resides in ye body Impelled,
and Not in the other, that Received No Impuls;
Whereas in truth, whatever Causes may be, the
Effects being onley change, that /(change)\ Must be Equall
In both, for if. A. becomes Neerer B. then B.~ /becomes\[143]
neerer to A. the Relation being Comon to both. But
I appeal to prjudice it self to say, that motion May
be conceived in vacuo Infinito (If such were) with=
out the Adjunct of an Imaginary Relation, wch
Shall (Imaginarily) Supplye ye termes a quo, and
ad Quem.[144] I have Noted some systemes of bodys
whereto Relation comonly declares of motion, but
considering that Changes may be assigned upon
great, as well as small things, as when the Sphera
fixarum,[145] &c, were ~~ /made\ to roll /diurnally\ about ye Earth, I
Nee=/-ded\
not to have bin so much Reduced, for the Whole u=
nivers is but one systeme of Matter, and If the leas[t?]
particle could be sayd to Move, all the rest, tho
fixed

[143] Washed/scraped out and overwritten, also line 18, below.

[144] i.e., 'from (wherever it came from) and to (wherever it is going)'.

[145] i.e., 'the fixed sphere of stars', the imagined all-surrounding firmament originally described by the ancient cosmographers.

fixed into one Mass, Could Not truely be Sayd to Rest, ffor all change is Reciprocall; This Conside= ration (I prsume) made the great Author of the principia say, that he suspected there was no per= fect Rest In the whole univers; for While any thing changes distance & aspects, Every thing, to wch that change may Referr, is Equally in Motion.

45.
Turning flu= ids No proof of Motus verus

It hadd bin Strange, If the great Inventor of a Motus verus contradistinct from a Motus Relativus, had Not pointed to some Residence where the former Might be found, and brought under Examination; And it proves to be among the Giratorys, solid and fluid, by a conatus, and Recess from the center, as was touched before; and some Experiments are alledged of turning movemts, of wch that of water in a pail dishing up is the cheif, but falls short of proving any thing to the porpose. ffor the Representation is Confused, and the action unaccountable. It is of an agitation of Numberless minute parts (or bodys) Impelling each other, and being Impelled, of Wch No distinct Instance can be Selected, to Shew how that pro= miscous Effect is produced, therefore I propose

to

to Consider giratory's in ~~.~~ /single\[146] and distinguish=
able Cases, and Conclude that promiscous Ef=
fects are directed by ye Same rules & Not otherwise
ffor Nothing is so vain, as it is to search ~~..~~ /for\ Me=
chanick laws among the Indistinguishables.

46
contact and
separation are
In ye same Momt
Whence Impulses.

In Turning Motions 2. things are Comonly No=
ted. 1. the Crowding outwards. and. 2 the pas=
sing away in a tangent, wch is Comonly observed
to happen when any parts are Released. Both these
consequences are derived from the Same principle
wch (understood) demonstrates both; I shall there=
fore clear up that as distinctly as I may. and
first (out of Mechanicks) I alledg that bodys May
approach Continually, and In any manner with=
out being affected, until Contact, and then In
the very Moment in Some manner or other, they
must separate again. for Impenetrabillity forbids
a Continuance in ye State as at that time ~~.....~~ /(approach=
ing) and the onely Expedient to Reconcile the In=
consistency is a separation; and that Caus is com=
mon to both; vizt the Inconsistency, for whatever
the

[146] Washed/scraped out and overwritten, also lines 4 and 18, below.

the State of A Requires, B. Requires the like. Nor
Is the action on the one Side onely but Indifferently
on both. ffor the occurs is but one, tho ye bodys are
divers, and Can-/-not\ be answered, but by one separation,
that is Not More of A. from B. then of B. from A.
This Resolves the Enigma (some author's love dark
Sentences) where there is actio, there is Reactio,[147] wch
will be further Noted Elswhere. This occurs of ap=
proaching body's is Called an Impuls, and holds thro
all proportions, and (verbo venia)[148] disproportions u=
niversally; as /well\ between a granule of sand, & the
whole ~~.~~ /t\errestiall[149] Globe, ~~as well~~ as in Minor dis=
proportions, for what differences happen by Mag=
nitude, are In measure onely, and Not in /the\ Manner
of the Effect.

47.
Motion in Strait Lines from the point of Contact

I doe Not here Medle with the modes and Mea=
sures considered before and after Impulses, of wch
the variety's are Many, and properly belong to
the mechanicall sciences; But at prsent assert
one rule, wch is Infallible, and universall; And it is
that Every separation of bodys upon Impulses,
In what manner soever the occurs happens, shall
be

[147] i.e., 'action and reaction' (equal and opposite ...).

[148] i.e., 'sit verba venio', i.e., 'excuse the expression'.

[149] Washed/scraped out and overwritten.

be by strait lines, and Not by any Curve whatsoever. Here I must prcaution that speaking of a body, the totum is meant, and Not the parts separately considered, ffor a body may turne, as well as pass progressively, but the path of the Center, wch is a point Indifferent in all Respects to the whole, Shall describe a strait line, and not be disturbed by the ~~turn~~ turning; and upon that account Shall be taken In lieu of the totum. But least these proposition's should create doubdt upon what is to follow, becaus they are not pro= ved More Mechanico, I Shall for Instances /suppose\ Regular bodys Impelled by their diameters, Such as Globes, cubes, &c Wch are Comonly made use off. and I must also premise that when a Contact is by a Superficies, and Not by a point, the just Center of that Superficies, shall be accounted the point of contact, It being no less u= suall to prsume Every Contact to be by a point.

48
motion by strait & Not by Curve lines

That the direction of bodys Impelled, both one and the other, departing from the Contact must be strait will be Made plain by the following scheme. as Supposing the body B.C. Impelled upon ye point A.

<diagram>[150]

A. the direction of A. shall be /move Either\ by
A.F. a Strait, or /Els by\ some one of the
Curves D. & E. wch are Infinite; and
all May be co-tangent at. A. but
there is No Influence to determine
the flexure Either way therefore
the Indifferent to all, that is the
Strait Shall take place. The Impuls
is by a point of time or Moment
as well as by a point of Contact, and a point hath No
devision, therefore it Can have No Inclination. and
further the body Impelled Either way must depart from
the Contact Equably. that is Equall Spaces In Equall
times, wch cannot be in any Curve, as the figure shews.

49.
No Conatus
or tendency

Now to applye this Notion to Cases of Gyration, it
is generally agreed, that if a part be separated from
the rest during the Gyration; that moment hath the
Effect of an Impuls; and tha~~t~~/e\[151] devided part, Will not
accompany the curve, but as a body Impelled, con=
tinue the separation in a Strait line. This must Ne=
cessarily produce a departure from ye Center of the
motion,

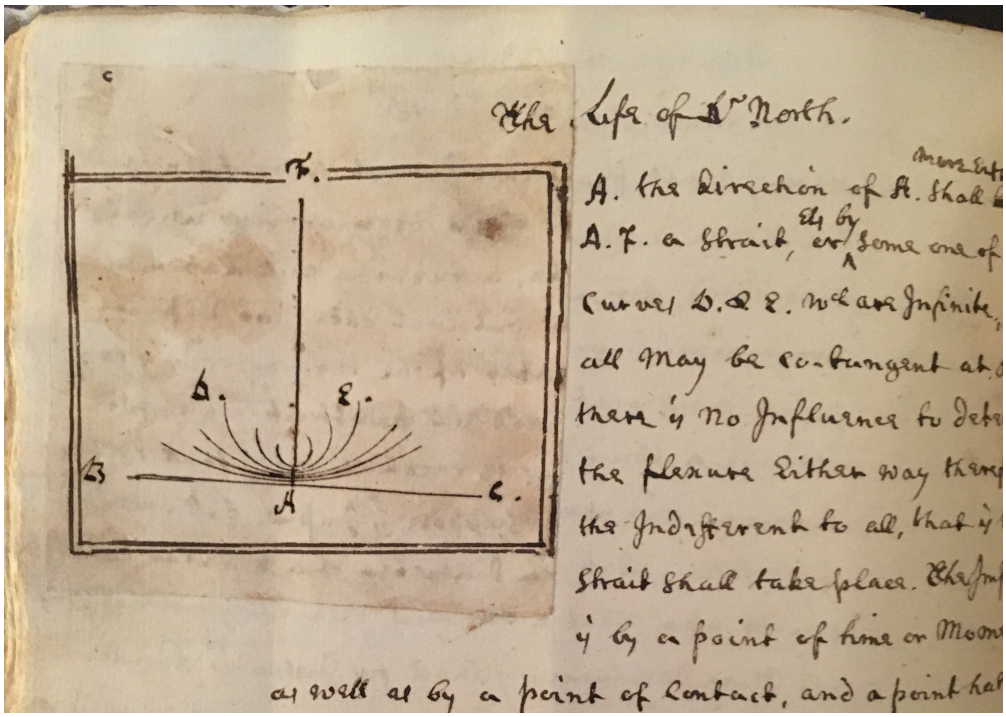

figure 2

[150] A piece of paper, *c.* 70x70mm, has been pasted onto the upper LHS of the sheet, *see* figure 2. It appears that the paper has been cut from an earlier version of the Life of Dr. North since, when the page is held against the light, RN's handwriting on the other side of the pasted-in paper can be made out; one can identify the heading 'The Life of Dr North.', and references to A. and B. as in the present text. The page onto which the paper has been pasted had its running header already inscribed, the pasted-in paper overlaps the word 'The', but the pasted-in paper already[?] had the same word from an identical running header at approximately the same place, and therefore replaces it. Note, too, the alphabetical page-numbering on the pasted-in paper.

[151] Wiped/scraped out and overwritten.

motion, Not by /vertue of\ any Motus verus /conatus\ or other Influence
then /what\ prvailes upon Every other Impuls whatsoever
therefore it is a vanity to assigne a difference be=
tween the Consequence of recess from ye Center, ~~..~~ /and\[152]
the Consequences of departure from the Contact of
Every other Impuls /since all are derived from the Same necessity\
So that the Lodgmt of Motus ve=
50. rus in the Conatus or tendency from Compass Move=
Departure by ments outwards, is a Meer figment, and without any
tangents Me= foundation of truth.|_Then as to the departure in
chanicall. a tangent, it never is So, but when ye Mode of the
Impuls, by Mechanick rule Require's it Should be so,
and a plain direct impuls upon ye Same point. as
/in ye turning was\ last touched, would procure it; And I Grant It often
falls out So, becaus ye Circulation covers /the arrere of\ ye whole part
and so is supposed to quitt it; but If the mecha=
nick rules, by means of a different manner of
touch, otherwise Required, /then\ the part would Goe off
in other directions, More or less departing accor=
ding to Circumstances. This Experiment might be
tryed at one view, as If upon a Rough table tur=
ned horizontally ~~round, and~~ a parcell of sand
were Layd

[152] Washed/scraped out and overwritten.

/were Layd\ ~~upon upon it~~, (the turning Not being So Swift
to scatter it) /then\ Interpose an obstacle that should
Stop the turning all at once, the Granules of Sand
might be seen (not to proceed in tangents, ~~....~~ /but)\[154] dis=
pers all Manner of way's according as the last
contacts by the Mechanick law's determine, and
very few if any would be perceived to leav the Com=
pass motion by tangents. I have not ~~....~~ /Incu\mbered these
<diagram>[153] ¯ papers with Mechanicall de=
ductions, as might be done to
prove some propositions of wch
the substance is here affirmed /but\
prsuming Such will not fall un=
any Controversie. I shall onely
subjoyne a diagram of the
round table afore proposed,
becaus the subject is of the
Last Consequence In ye Question
and the Events will demon=
strate against the distinction
of Motus verus. The table is
Supposed to turne in the order
A.B D E. and the bodys. A.B.D.E. Come about in
the

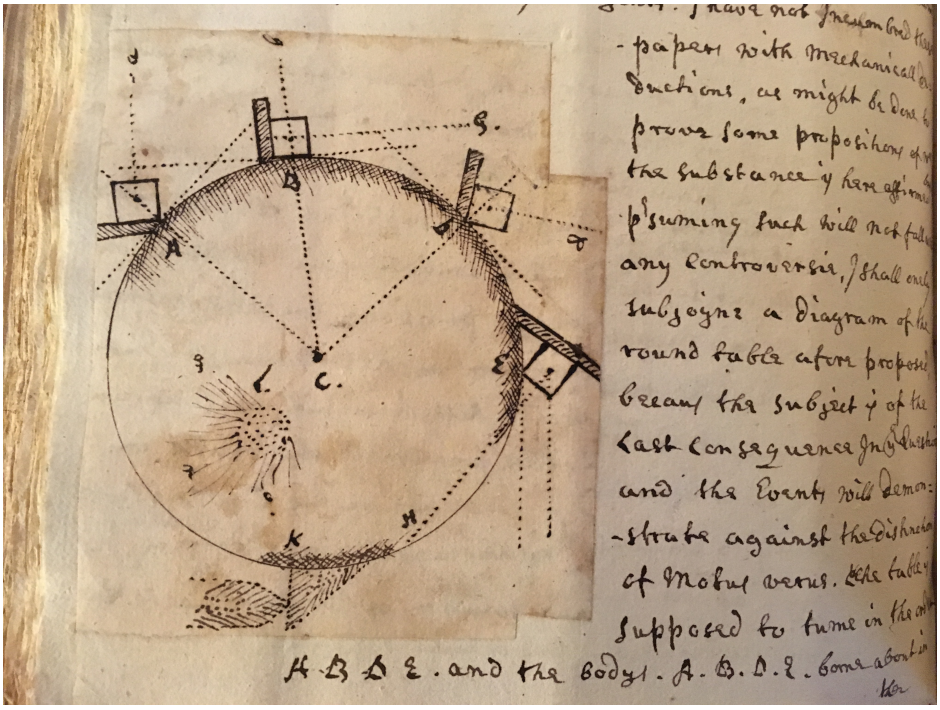

figure 3

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[153] A piece of paper, *c.* 85x90mm, has been pasted onto the lower LHS of the sheet, *see* figure 3. As was the case with the previous diagram (f. 100v, above), it appears that the paper has also been cut from an earlier version of the Life of Dr. North (*see* note on f. 100v, above). The paper is not rectangular, as can be seen in the illustration.

[154] Washed/scraped out and overwritten, also line 8, below.

the positions here described; then Suppose an ... /invinci=\[155]
ble obstacle applyed at K. Every one of these bodys
shall proceed in several directions, vizt, A ..... /towards.\ a.
B. towards. b. (which proves a tangent,) D. towards x. &
E. towards A. And the sand at L. dispers variously,
towards m. n. o, as the Impulses happen. these unde=
nyable Consequences declare that compass motions
have No other perogatives then are Comon to all the
formes, that can be Contrived to shew the Motive chan=
ges, that Happen in the world.

51
Acco of Water
In a paile tur=
ned dishing.

But Now as to the Instance of water dishing up
to ye Sides of a turning pail that Containes it, It is
Not Considered that the parts of the fluid, are as
s../o\ many solid solid body's that Continually Impell each
other, and the friction at ye Sides Impells all. for ye
Experiment Cannot be so Instituted, but Either by
accelleration or Retardation of ye Substance of the
paill, th../ere\ will be continuall Snatching or Impel=
ling of the watry parts Next to it, wch by reason of
weight Stick close and Causes what they Call a
friction, And /then\ what other Effect then dishing up of ye
water Can those violences produce? But If wee
may

[155] Washed/scraped out and overwritten, also lines 3, 14 and 18, below; washed/scraped out on line 20.

may be allowed to abstract all Imediate Impuls,
such as Exasperating or Remitting the speed of the
turning /causeth\ and /to\ suppose the pail to be in the center
of a Rolling fluid, and quietly moving pari passu
with the Rest, the water Conteined would Not rise, or
swell at the sides at all; but be as a ... /thing\[156] at rest,
.... /or (as if the pail\ were away) part of ye Comon
Water.
This kind of Effect is frequently observable at sea,
where Liquors in Dishes doe Not Rise, but upon Gusts;
and however fast the /Ship moves\ ......, If equably, as when
in a calme a current bear's her along, the li=
quors doe not rise; Els there would Not want Means
of proving Currents In a calme. The Case of the ter=
restriall Globe is the same, for however Rapid ye
motion is Eastwards, Liquors doe not loos their
Levell, by rising against shoars, or In vessells; be=
caus the turning is of ye whole together in a Current
silently, as a boat in a quiet stream, and In that
Respect /it\ is No motion at all; Much less ..... /colour\ is
there to Conceipt the waters swell at the Equator
And thereby to ..... /corrupt\ the /Earths\ Rotundity, without
any
Impuls to Excite such an Effect, as was Noted before
and

[156] Washed/scraped out and overwritten, also lines 7, 19 and 21, below.

And admitting Such a fforrein Supposition, as that
at the Creation when the first start of a motion
was violently Imprest, the Globe took a prolate form
yet when the Cours was setled and all violence
withdrawne, the water's (by ye levell of wch ye Globe
takes its Shape) would Resetle in Conformity. with
comon Gravitation, wch is to become Globular as where /-of ye like\
at sea in plates and dishes is obvious to be ob=
Served.

52.
Impulses and
Spaces real
but not Motion

I have often wondered that the vertuosi in all
times (comon men are allowed to think ~~....~~ /after\[157] [præ?]
judices) Should be so full of Blundering Mistakes,
as in the Theory of Motion they have Ever bin;
~~in the Theory of Motion~~, a Subject the most apert
and observable of any. Cartesius put ye world
into a clearer way of Judging it, then was used
before, and ye Modernes in their Mechanick phi=
losofy have in great measure profited by it, but
then the distinction of verus, & Relativus super=
Induced Confounds all again. If one would Endea=
vour a Reconcilemt of the whole Matter it
might be by distinguishing Impulses, from the
states

[157] Washed/scraped out and overwritten.

states before and after, and so to determine What
is Reall, and what Not. It is Certein that space is
a Reallity, and admitts More and less /And\ that things
may approach or depart /by Spaces determined and Comparative\ is
undoubdted truth. But
Nothing More then this can be argued, when it is
say'd a body comes neerer, & neerer. Then wee look
after the laws, wch in all Such alterations must be
prsumed, that is, Impuls; And that is Real also, being
body agt body in actuall touch, Impossible to Conti=
nue. Here is a reall Caus of a Separation /and ye Modes\ but be=
sides that, of Nothing Els. And that any thing be=
fore Impuls was brought, and after it Carryed away,
is without ground of prtence; If it be asked wch of
the 2. Impellents gives or takes, there can be no
just ansr, but both alike, ffor the Impuls is but one,
and /that\ Comon to both. And what differences of Quan=
tity, and modes of Impuls may produce to vary the
consequences, Must as before, be Referred ~~to the~~
to the Science of Mechanicks (in particulars) to de=
termine. but I may Say In generall, that more or
less of matter and Extension of space, will give
the ~~..~~ /Rule\[158] to all Incidents than Can be Inquired off.
But

[158] Washed/scraped out and overwritten.

53. The reason why motus ve= rus was Invented.

v. Borellus de motu per= cussiva.[159]

But Now to Returne, and Reflect somewhat further on our Moderne cosmograf..[ye],[160] It is not reasonable to think the great Author of the principia Inven= ted /or rather made use of\ this distinction of Motus verus & Relativa, like the scoolmen, for the meer Ratle of it; but he had Some occasion ~~for it~~, to Render his planetary sys= tee More plausible. ffor the ballancing 2. opp= site or Contending powers, the one in directum, and the other Centripetall, to Maintain a planet in an Eliptic orb in perpetuum, was a fair and In= telligible Contrivance; but founded on the Supp= Sition that Such powers Exist/-Ed\. Now the Centripetall is positive, but the direct, without asserting a motus verus, is Not So; ..... /And therefore\ Not a fair match. Would it not be odd, to hear it sayd that that a positive force was at Strife with a meer Relation; The planet and the Sun have force to come together (for they Say Attraction is Mutuall) one asks, what hinders? the ansr must be, Nothing; Wch is ye Sume totall of a meer Relation. If it be sayd perseverence, I Replye if that be not an

[159] i.e., Giovanno Alfonso Borelli (1608-79), author of *Theoricae mediceorum planetarum ex causis physicis deductae*, Florence, 1666. In his study of the 'Medicean planets', the moons of Jupiter, Borelli proposed three orbit-causing forces at work in the Solar system. The 'motu percussiva' was his notion of the physical impact of light particles radiating from the Sun which pushed out against the planets, this was balanced by a falling, or centripedal force, of the bodies towards the Sun, meanwhile there was a sideways movement caused by the revolution of the Sun. The end result was that planets were held at a steady distance from the Sun, all of them orbitting in the same direction. Newton addressed Borelli's solution, while demolishing it, in the *Principia*.

[160] Washed/scraped out and overwritten, also line 14, below.

an active principle, Such as the (feigned) motus
verus, It is also Nothing. The great Author was
sensible that these sort of Reasonings would, as ob=
jections lye out against him, And that Made him
set his Shoulders to the Question, and labour to Evince
a true Essence in Motion, by vain proffers at Experi/-ments\=
and at the Same time Exclaime, ô that Wee had an
Evidence of attraction here below, as wee have of it
above! Men will Ever o'reshoot themselves, when
they obtrude things as true, becaus they are Cleverly
contrived, and artificiall. Wee ought /Indeed\ to Indulge them
the proverb, Si non È vero È ben trovato.[162] But Now
wee find the great Author, and his followers, to
Render the Notion of attraction less Monstrous &
more acceptable, ~~..~~ /making\[163] bold with the English
lan=
guage, and Instead of Saying attract; they say -
gravitate towards - that is Ignotum per Ignotiùs.[164]
ffor who understands gravitation clearly? but becaus
that is a phenomenon that (verbo veniae) wee day=
ly, or rather Continually feel, It is hoped wee will be
so well satisfyed, as Not to wonder at all at it.

I

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[161] There is slight, rusty staining in the gutter caused by the paste employed in attaching the next two sheets; there is a similar effect in the gutter of f. 107r. The pasting-in would appear to be RN's own work as he has overwritten the join, correcting for the loss of letters on f. 105r. Note that the alphabetic numbering has been cut and left incomplete on f. 106r. Note also that neither of the two following verso pages has any numbering. Note also the the section heading on f. 105v is numbered 35, which is out of sequence with the previous section number (54) and the subsequent one (57).

[162] i.e., 'even if it is not true, it is well conceived'. Giordano Bruno, 1548-1600), this is a quotation from his *De gli heroici furori*, one of a series of philosophical dialogues published in London in 1585 during Bruno's stay in England, and dedicated to Sir Philip Sydney. There are no works by Bruno listed in the Rougham Library Catalogue.

[163] Washed/scraped out and overwritten.

[164] i.e., 'the unknown by the even more unknown', an explanation more difficult to understand that the thing it explains.

54. Thee Empty defininitions of Gra/v\itation[165]

I find here a Motive to discours more fully of the Gravitation, becaus It is Not onely the attractors Refuge, as was hinted, but it is Called upon by Every one that looks towards phisiology, for Say they give us an account of that or you say Nothing; the Ancients before the [proffer?] of Cartesius, to Resolve it upon the vorticity of the Ether, went No further then an Intrinsick qua= lity; Aristotle Called it Nature, and the cartesian Solution May have opened a way, but fell short; there is No End of Ex= amining the placita philosoforum[166] about it; and If the Last may prtend to be the best, wee must take up, with attraction, of wch somewhat hath bin Sayd already; but that Carrys [a defye?], as if a meer Enuncia= tion was a sufficient Reason, vizt that it cannot be otherwise solved, Ergo &c. I have a fancy to take up the glove and En= deavour to Shew that Gravitation May be mechannically Resolved by way of Con= Sequence of Complex Movemts or promis= cous action of minute Matter without Re- cours to attraction, or any other Spirit, as to serve

[165] The writing on the pasted-in sheet does not quite align with that on the strip to which it has been pasted, so the words are doubled-up, so to speak - but the sense of this section heading is quite clear.

[166] i.e., 'the Doctrines of the Philosophers', this is the title of a book then attributed to Plutarch (*c.* 46-119) (now attributed to Aetius?). A copy of this text was bound into the collection of works know as *Plutarch's Moralia*. There are two copies of the *Moralia* in the Rougham Church catalogue: 329 (in Latin), and 1135 (in English).

Serve ye turne /may\ be Conjured up. but I Must
here protest that have I offer cheifly at pos=
− +/s\ibillity,[168] submitting ye probabillity to Judg=
ment, It being so farr Enough to Enervate ye
violent Argument for Attraction before tou=
ched upon; ffor knowing that in Conjecturalls
how Aptly soever things may seem to full
truth May not Coincide, I must leav all Such
matters to their attitudes in ye zeale of Just
Reflection.

35.
of force and Resistance.[167]

The Matter of the world wch at large is
termed Ether, is a perpetuall fluid, of Wch,
as of all fluids, the parts or Corpuscles are in
a state of perpetuall agitation, and by means
of promiscuous Impulses, propagate Motive
Effects of all upon all ad Infinitum. and
this admitts no distinction on acco of Mag=
nitude or deminution, but all is ruled by
proportion, onely In ye stating Motions in
fluido, If ye disproportions are Eminent or
great, as when Notorious coagulums pass; it is
usuall to assigne the force upon ye Greater
and ye Resistance to ye Smaller parts or ye Com=
mon fluid, but in truth force & Resistance is
the same thing, as a ship passing thro Water
or Water against ye Shipp is all one. This ffor
clearer

[167] RN has numbered 55 as 35.

[168] Washed/scraped out and overwritten.

clearer Intelligence is stated of Sensibles, but
the same holds among ye Most minute parts Con
Stituent of Every fluid; Where force and Resis=
tance in like Manner take place, that is the Stron=
ger prvailes agt the weaker, and that yeilds or
gives way to the other, and this Inequallity Must
be allowed to Reside in ye Matter of Every fluid
whatsoever, as air, Ether, &c. Now ye force of
all bodys agt Resistances is Compound of Substance
and figure. for ye active force is substance, ~~In~~ /wch =\[169]
~~..... ....~~ /under ye like figure\, Increaseth triplicate, but
the superficies attending Such Increas Is dupli=
cate, therefore all fluid Resistance being agt
the superficies onely, is weaker agt a greater
then agt a lesser substance of ye same form ..
and this difference falls wholly on ye part of
the force, for ye fluid Resistance is accounted
ye Same, according to ye density of it therefore
It is No wonder that of all fluids the ~~parts~~
~~most~~ great/est\ and /most\ Compact /parts\ prvaile agt ~~those~~
~~of less~~ /all others wch for matter or maner have less force to
resist\ ~~but more spread Substance~~. Here if
one may let fancy loos to fly at Imaginary
consequences, Be it Supposed that Matter
being weaken/-ed\ by a perpetuall process of de=
minution, and /so\ Continued ad Infinitum; that /is\
if any body Reteining its shape, be sup=
posed to deminish in quantity, the extent
of

[169] Washed/scraped out and overwritten, also in the following line.

/The Life of Dr. North.\[170]

of the Superficies /will be continually\ more
In proportion to the accompaning Solidity un=
till In ye Infinity, or Extream deminution, the so=
lidity may be Evanescent, and ye whole Sink in=
to meer Superficies, and So be obnoxious to
be Influenced or moved by Substances Immateriall.

But this consequence will not fail, vizt that
In ye promiscuous agitation of fluid matter, the
largest and most compact /shall\, prvaile agt the less, &
more diluted, ~~weh~~ /the latter\ will thereby become more a=
gile, or volatile, as may be observed in all fire
fermentations Evaporations and the like that
depose any ash fæx or Caput mortuum.[171] Now
<BM stamp, red> to applye these Notes to the mundane sys=
teme; The Gyration of the whole fluid about
the sun, wch by reason of a tendency In direc=
tum, produceth a Recess of ye whole from the
center, and the perpetuall Intestine agitati=
of ye parts creates a Reciprocall opposition,
pelling and Repelling Each other, Whereof
the Crisis is that the More Compact & lar=
ger shall prvaile agt the less, and gaining
in ye Recess, detrude the more Spread and Smal=
ler matter towards ye center, And this In
the operation Resembles a fermentation
or eribration, whereby one sort of Matter is severed
from

[170] There is writing at the top of the page, not in exact alignment with the present layout, that has been washed or scraped out and overwritten by the header and the first line. Note also that RN had ommitted to number the new section (this should presumably be section 56).

[171] i.e., 'faeces, excrement'; i.e., 'death head', unusable residue or remains, a term used especially in alchemy.

from another, and from these Images, obvious Enough,
wee may figure In our minds the like effects produ=
ced in the universall world. And from hence it is that
the Ether is all transparent, and the Center Repleat
with Coagulations and fewell of fire, for that Consists
of the smallest, and [rugged?] parts of matter; Some
more, and other less apt to burne, but with proper
agents applyed, all capable of it.

57.
objections An=
swered.

Now here wee have the Mechanicall state of gra=
vitation; What are the Starr's (accounting the Sun
for one) but Collections of Ignited matter, and the
planets of Irregular parts Mostly Coagulated, wch
the Ethereall fermentation hath brought downe
to the Centers of the Respective vortexes? And be=
ing by that means ~~.....~~ /translated low,\[172] is it any won=
der that If ~~....~~ /some\ part be lifted up, & let goe, it Should
come downe to its place again, & rest there? ffor the
Same Caus operates Eternally. Now I Foresee a Re=
giment of objections Coming foreward, to wch Some
answrs must be applyed, but they shall be Short, for
1. there is No End /of\ cavilling about obscurity's, wch like
Heavy & light Groping in ye darke Seldome finds the way out, ffirst
Inverted. they

[172] Washed/scraped out and overwritten, also in the following line.

they say that wee make heavy things Light, and
light things heavy; that is the more Solid to fly up=
wards, and the Less solid to Come down; here I would
ask, by What Criterium doe wee distinguish More and
less solid? They ansr. by the weight; is Not that beg=
ging the question? ffor weight is by ye measure of an
Imbecillity, whereby it is obnoxious to give Way to
a stronger power; And it is an Error to Estimate

2. Most Com=pact discend.

body's by ye totum's, for the Regard ought to be to ye
condition of ye parts, whereof it is Composed~~,~~ /,\[173] and the re=
sistability's of them; Then it is added that the most
compact body's, as gold, lead, Mercury, &c. discend. that
is answered ye Same way, for however Compact, it is
the state of the Component parts that will Make it light,
or heavy. Water is a body as compact as any Can be,
for No force will Compress it, but yet ye Component
parts being Grosser, and (perhaps) more Globular then
Gold, seems to give way, but In truth prvail[es] agt it; for
If some ascend, others must descend, and to that

3. Ether not come at the Interior parts.

phænomenon ye words are appropriated, & Not to
minute state of the parts. They Insist further
by asking how the operations of ye Ether should
come at ye Interior parts of Gold Stone &c. /so as\ to
collate

[173] Washed/scraped out and overwritten.

-collate forces with them? I ansr that the Effect of this
Energye In ye world, is not by Imeditate Influence of
the contiguous Parts, but derived from utmost dis=
tance, and is Conveyed Laterally, Collaterally to & from
all parts of the univers, and ~~.....~~ /passeth\[174] by means of the
most minute parts (almost to Infinity,) so that there is
No Compound so close but ye Influence by such Conducts
Reacheth the Entrailes of them. Besides how doe wee
know what ye Cavitys, Called pores in Compound bodys
are, and whither there be such a thing in ye World, as
an unporous part of Matter? but If my thought have
any value, it is that there is Minuteness, as well of parts
as pores actually Extant in almost all places; and also
orders or classes of matter, as (for Similitude), Stones
4. Sand, powder, &c /ad\ Infinitum. |_They say further that
All centers must be in ye axis. if the detrusion /to ye center\ operates by an universall turning,
then Every point of ye axis must be a center, and In=
Stead of a Globe wee Should have an oblong from pole
to pole, for the suns Materiall to be Extended. But
Experience is to ye Contrary of this, for the crowding
at ye Equinoctiall, crouds also /the matter\ from ye poles, for
~~.....~~ /whatsoever\ there gives way, the Equinoxiall Mat=
ter will have thereby /more\ room to Spread; therefore in

a

[174] Washed/scraped out and overwritten, also line 22, below.

a turning sphear all that yeilds, Repaires to ye Center.
Another objection is that the force of weight /is so great\ and dis=
cent of heavy body's So Swift, that it is Not to be con=
ceived how such a Caus, as the Comon Recess Should Ef=
fect them. I ansr First, It is Not More the measure
of these powers, then the Meaness of our forces that
Imprints Such Ideas in us; these arise wholly by Com=
parison, and wee account of force, as of Magnitudes
by ye standard of our owne Capacity's, and So pro=
nounce, of Great litle, high, low, Strong, Weak, swift
and slow. therefore it is Not Strength in those things
but a Conscious/--ness\ of our own weakness that produ=
ceth Such Notions. then further, Considering the
Immensity from Whence ye force of Gravity is deri=
ved, no less then the whole vorticated matter, Such
strong Events are Not to be Wondred at; and that
not working ... /line\ally or Columne-wise, but particu-
latim[175] dispersed universally, the Comon Result of wch
complex & promiscuous Energye appears In the Ga=
thering together of Some Sortments of Matter towards
the Center of the Movement.

5. Force of weight very great.

[175] i.e., 'piece by piece'.

58
Some practi=
call Experimts
favouring this
sol~~...~~/lution.[176]
-

Here is Enough that gravitation may be derived
upon a Me~~t~~/c\hanicall principle, without ye help of
any Subsidiary principle, Such as attraction late
Introduced to Serve such turnes. But yet for Corro=
boration, I will alledg a Method, by Some actuall
Experiments, to /Render\ our solution Extreamly probable.
I Shall Not Insist upon a taskers shaking his Corn
in a fan, wch being mixed with much chaff Shall In=
stantly Separate. And the tendency of the Corn down=
wards being Stronger then that of the chaff above
it. I Suppose none will Say the air attracts ye Chaff,
tho it hath a Notable Resemblance with the ef=
fect of Gravity the Contrary way; And When there
is a tendency of all together /towards any\ one way ye Stronger
will prvaile & Separate. But to Come closer to
the porpose; let water in a tubb be stirred a=
bout till the whole is put Into a vorticall Cours,
And then take chaff, peices of wood of different
weights some just ready to sink or saw-dust
of such variety and make a scattering of it
all together upon ye Surface, so as all may be
wett

[176] Washed/scraped out and overwritten, also line 2.

wett, and then observe; you will find that the
chaff wch is ye weakest will get all Into ye center
and the rest according to Strength turne more
outwardly; And If a boat char/g\ed, but Not so as to
sink, be put in; that will goe to the very outside.
And this must not be taken Inversly, becaus the chaff
is the Slightest, and heavy bodys, (seem) most solid.
for More or less force from whatever caus it proceeds,
demonstrates ye same thing. but a more luculent
experiment May be made thus; Take a Sphear
of Glass, and being Neer full of water, put it Into
a turning Machine, and pass it about upon an
axis Swiftly. It will be found that ye air Will Sur=
render its place Of levity, and from the outside
Repair to ye center, And so would Oyle, chipps
and the like, wch have less force to Crowd outwards
then water. And will they Say that the Center
attracts those things? fill a florence flask 3/4ths full
of water and turne it till ye water vorticates swift=
ly, and then Suddenly Invert it, and in stead of
Gugling, the water will fall out almost all at once,
for there is a fistula In ye Midle that letts ye air in freely.
hitherto

59. All knowledg confined to one principle Impenetrability.

Hitherto the whole State of Nature Really Existent and Independent upon our perception & Imagination /is Reduced\ to one Single principle, Extension Impenetrable, that is body. the various modifications of wch by quantity, mea= sure's, Aspects, approximation's, Elongations, Impulses, &c. are Causes of all our Idea's, wch are /quasi\ preter naturall, and not in any Manner Subsistent without us.[177] But since by ye alternate, as well a Constant use of them, that is by Experiment, wee are Enabled to ~~.....~~ /distinguish\[178] Many truths, from meer appearances, and accordingly to Regu= late our Notions of things abroad; It is reasonable to Circumscribe our Imagination's, wch for want of probation are apt to stray, and create fals opinions; therefore some check to the Carriere of them ought to be provided, and for that End I propose one generall rule; wch is that Every /thing that\ ~~that~~ Can be affirmed of body, consistent with Impenetrabillity, May be true, but whatever is Inconsistent with that, must be fals. a= nother rule May be, that Body cannot operate in any manner but by Contact; whereof ye Conse= quences however modifyed are as necessary to Subsist as the Causes of them are to Exist. and beyond these

[177] i.e., the ideas we form are caused by our encounter with matter in all its diversity, but they are not material, they are 'preter naturall', that is, they exist (above, before or) beyond the world they represent to us - they are not the world, and they must not be confused with the world. This is the central tenet of the RN's epistemology. In RN's account, such scepticism was the most important philosophical discovery or invention of Descartes. RN's critiques of Descartes and Newton alike are driven by his radical materialism, his 'doubdt'. In the case of Descartes he critiques the idea that motion actually exists, arguing that it should be understood to be 'a mode'. In the case of Newton he critiques the idea of attraction (an idea inherited, in part, from Descartes idea of 'conatus'), which he satirises as a neo-Aristotelian 'quality'. *Not that ideas did not exist*, of course they did, but they could not, for RN, be the object, or subject, of any rigorous natural philosophy, they were not part of the world.

[178] Washed/scraped out and overwritten.

these all our Experience failes. Some will have to be
considered the Intrinsick Nature of body /such\ as sour
sweet, alcalious, saline, fermentable, metalline; and
other's rank them by Influences, as Attractive, propulsive,
luminous, with Ray's specifically Red, blue, Green, and
So aeriall. humid drye, fiery, Cold, and Every thing Els
whereof our Imagination Supply's certein Idea's. all wch
Matters duely Considered will be found Inconsistent With
Impenetrabillity, of wch wee have an intire assurance by
all Experience of Sence & life. for If a body be Impene=
trable, No part can come from it, but what is ye Same;
Therefore ye supposed quallitys must be Impenetrable
also. And the Impenetrabillity is but one state in all
things, and No other state Can be Consistent with it.
And it admitts No degrees, No qualification's; the Sup=
posed Quallitys are penetrable or Not; If penetrable
they are No part of a body, whose Essence Consists in
Impenetrability, If ~~..~~ /Im\penetrable,[179] it is ye Same. so that
wchway soever wee turne the Quallitarian philosofye
is at a loss, and what a Magazine of fine Notions
vanish

[179] Washed/scraped out and overwritten.

vanish in fumo?[181] And to all this they Inculcate that Without Such supposalls Naturall effects can never be Resolved, and it will readily be granted that wee can have No Inspection Into the Indistinguish= able (I had almost Said the Invisible) world. But /yet\ Can= not Grant that such defect is a warrant to invent I= maginary principles, and If wee are /not\ omiscient we must have patience.

60. Non datur vacuum.[180]

There are Some question's ventilated among the Naturallists, wch Relating to ye matter's afore going, Shall be touched upon apart here; And one is of an universall vacuum; Sit, Necne?[182] I shall Not Sink so deep in the Dispute, as If I went about to Confute Borellus,[183] or any others, as there are some of No less fame, who have wrote furiously for the affirma= tive; but prsume to Expose certein reasons that take place with me, perswading that a reall va= cuity, In ye Sence of those wrighters, possessing the Immen's Mundane Extent, or indeed any /void\ space how= ever Small, is absolutely Impossible. This Notion of an Extended vacuum, Savours of privation one of

[180] i.e., 'natura non datur vacuum', i.e., 'there is no vacuum in nature'. That a vacuum could not exist, or that it could not exist for long, was a byword of natural philosophy. Newtonian physics, anticipated by Borelli and others, proposed that most of the universe consisted of a vacuum, vast tracts of space though which gravitational forces acted at a distance, without any 'contact'.

[181] i.e., 'in smoke'.

[182] i.e., 'yes, or no?' (literally: 'accept or not').

[183] Borelli's general system required something like a vast empty space for the circulation of the planets and he shared with Galileo a notion of some kind of attractive/gravitational force existing between bodies in space, *see* note on f. 104r, above.

of Aristotles naturall principles, and is now Revised
cheifly to sustein the Attractive cosmografie, wch
without that Supposition, falls all to pieces. If one
ask's a disciple of that Scool, what they mean
by vacuity, they ansr, Space; as for ye termes ordi=
narily used ... /vizt\[184] Capacity, Extension, susceptibillity
and ye like, they are but Synonyma, and mean no
other but what they would have understood by void
Space. Now it seems, Extension is a terme Comon
both to Body, and void Space; And the onley diffe=
rence that Can distinguish them, is that body is Ex=
tension .. /Im\penetrable, and space an Extension pene=
trable. Now that this latter Is Impossible, I think
may be demonstrated. It is allowed that Empty Space
is something, for if it were merum nihil,[185] Cartesius
Could Not be answered, who say's, If Nothing Inter=
posed between the 2. sides of a vessel, they must
touch; and then they fall a laughing, and say there
is Empty Space between. ~~then~~ it seem's /then that\ this Empty
Space is something, and that must have a reall sub=
Sistence as well as body, tho No body be in it; and they
will Not venture to Say it is merum nihil
now

[184] This appears to have been washed/scraped out and overwritten, also line 12, below.

[185] i.e., 'but nothing'.

61
Body & Space
one, & agt A=
theists a proof

Now Consider, that - of things ~~.....~~ /in Nature\[186] really
Existent,
of ~~....~~ /what\ sort or kind soever they are, one Cannot
be another, Nor can nature, or art Contrive, that, two
things alike, Should become one, like /to\ Either; for that
Implyes a Contradiction, unless it be allowed that
things should Exist, and Not Exist at the same time;
~~...~~ /Now\ the Space of Trin. Colledg Hall, Cannot be=
come one with the Space of the Coll' Library, for they
are severall, and distinct Existences, as much as
the very Hall and Library are.[187] Then In the Com=
pass of any one space, Imagine a devision Into
cubes; Each devision is a distinct space, that nei=
ther is, Nor Can be any other /of the\ Cubick Spaces, and
If any almighty power should Say, let this space
be where that is, must not that give way? so
that the other might be admitted? Els the spaces
would be both one, and divers at the same time.
What is this but Impenetrabillity? Suppose the
univers were one void space, as the attractors
(nearly) Imagin, and Such a power Should say
Let that Space be devided and subdevided as
the plenists conceiv ye world to be, and let ye
parts

[186] Washed/scraped out and overwritten, also lines 2 and 7 below [?].

[187] Suddenly, and with a jolt, we are in the experience-world of Dr John North, Master of Trinity. North's Mastership of Trinity was plagued/dominated by the problem of building Wren's library, a project initiated by his predecessor, Isaac Barrow. In the *Life* RN, if anything, *under*stated JN's troubled role and achievement. The new library, or the space cleared for it, was at the other end of Nevile's Court from College Hall and its slow-filling emptiness would have been plainly visible.

parts Counterchange position's and aspects in a
motive way; Must Not Impulses, and all the Conse=
quences that occasion the phenomena wee dayly
observe, Suceed? Cartesius went no further to prove
space & body to be the same, then that all /wch\ wee are sure
is true of body, belongs as well to space, that is the three
dimensions; there is as much reason to inquire what is the
Intrinsick nature of meer space, as of the same exten=
sion, when it is Called body. It is a devine Speculation /that\
~~t~~/w\hen[188] the Allmighty Enacted Space, body or matter
was Created; and so by body, Space; by this wee are
Emancipated from all those dark Inquiry's ~~...~~ /of In=\
trinsick natures, variety of Quallitys, attractions,
Influences, Alchimias, tendency's, conatuses, and all
that Misty, unphilosoficall tribe, that perverts the
knowledg of things, Into a logick of words. What a
transcendency is there in the Establishmt of one Single
principle, call it body, - Space, or (with ye philoso=
fer,) Extension, to be Capable of parts, Motion and Im=
puls, and /wch\ with ye adjunct of one ~~....~~ /other\ principle ani=
mall sence, produceth all the Glorious phenomena
of

[188] Washed/scraped out and overwritten, also lines 12 and 20, below.

of the univers? the Infinite wisdome of wch Single In=
stitution of matter, ... /onely modifyed, wch (as it
were)\[189] In=
Spires Into humane kind the Ideas of Glory, and Im=
mensity, with all ye varietys of sence, Argues against
Atheists and almighty power, and providence. and on the
other side, when /wee come off\ from this simplicity, wee Recurr to
multiplicity of principles /And\ for Reconciling the phe=
nomena of ye world to our fraile & Erroneous præju=
dices, we Idolize a sort of machinery & Gimcrack,
wch savours rather of humane Imperfection then of
a devine Sapience and power.

62.
Tems absolute & Relative a chimera.

Wee have now another distinction to deal with, no
less misterious then the former. And that is tempus
..... /absolutum and tempus\ Relativum;[190] this I
take to be
a counterpart of the ..... /Motus verus,\ & Motus Rela=
tivus; and a like discours will disable both, ffor as
motus consists wholly in Relation, So time will be
found to Consist wholly in demension; they say
tempus absolutum is Independant on body, and Even
of ye world it Self, and by ye Name of 'fore and after
must Subsist in secula, altho ye world were anni=
hilated. But tempus Relativum is tyed to ye
ordinary

[189] Washed/scraped out and overwritten, also lines 14 and 15, below.

[190] i.e., relative and absolute time; note the abbreviated spelling of 'tempus' in the marginalia.

<some marking by freshly written ink from another sheet>

ordinary Computes by the Sun's Cours, and horologes, & will be Inequable as all Cronometers are. But the absolute time flows alwais Equably, and Never va= ry's from it self, or Suffer's acceleration or Retardation I must Confess I doe Not love Such distinctions as these. becaus they put me in Mind of Thomas and Scotus,[192] & the rest of the Subtile tribe, who let No Essence or Idea pass, Without being Riven in peices, and (as here) tormented with Drye distinctions. But I less approve the setting up of these beings, Time and space, as Neces= sary, and undeprivable, Least it may Incroach on the power of the Almighty, or Inferr that the Diety Coin= cided with them, and so come neer to Hobbisme.[193] ffor So farr is Insisted, that it is Impossible that time & Space Ever was not, or Will Not be to Eternity, as If they were not with the world, Created beings.

63.
Time & velo= city Referred to space.

Now that wch I affirme in generall is, that whenever the world ceaseth to be, Not onely space, but time it self Shall be No More; I know most will say they cannot imagine it, but I make small account of Im= magination, for truth hath No dependence in Mens fancy

I

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[191] RN's page numbering is frequently puzzling. He goes from 'dg' on the previous page to 'dz' here. Perhaps he misread 'dg' as 'dy'?

[192] i.e., Thomas Aquinas (Tommaso d'Aquino, 1225-74) and Duns Scotus (John Duns, 1266-1308) and the 'subtile tribe' of medieval schoolmen, both were Aristotelians and therefore, by RN's criteria, subtle arguers rather than natural philosophers.

[193] RN distances himself from Hobbes' radical nominalism. In section II of *De Corpore*, 1655, Thomas Hobbes (1588-1679) wrote, 'I return to my purpose and define space thus: space is the phantasm of a thing existing without the mind simply; that is to say, that phantasm, in which we consider no other accident, but only that it appears without us'. [*The English Works of Thomas Hobbes of Malmesbury*, ed. Molesworth, W., Volume 1, London, 1839, p. 94.] Note the opening of the next section which seems to engage directly with Hobbe's definition of 'phantasm' as the object produced by imagination or fancy in the absence of a thing [*ibidem,* p. 396].

I must owne that No~~.~~ disquisition In generall
philosofye is more nice, then that Concerning the
nature of time. I Intend therefore to deal with it
In the same way, as I have done In other Inquests;
and that is first, what of time in the nature of things
(All sensation and opinion a part), is true, and then
what Idea we ordinarily have of it. As to the first
the the Witt of Man Can find Nothing, on accº of
time to Lay hold on, but the velocity's of Motion's. wch
being determined by Spaces, are Comparable as
those are. That there May be a Now is certein and
that Motion is continually successive, and that Every
point of the Space run, May be also a Now, is No
less certein. and the distance /passing\ from one Now, or point
to any other /being compared\ is Called the velocity. but /what\
that is no
one Can determine, Whither Long, short, equall, or in
any measure whatsoever, but by Comparison with
Some other velocity, and then it may be say'd to be
in any proportion. and all this /being\ ~~is~~ bredd, in Extension
or magnitude, it Resembles it Exactly. for that hath
No Standard but is more or Less as it is compared
with

with other magnitudes, especially that of our owne
persons, according to wch it is Caracterised, as hath bin
Noted already. The velocity's are Comparable one
with another, but have no other caracter then by
being Compared with our bodily powers, & thence
they are 'tituled Swift or Slow. In the world at large
motions excited or diverted are Infinite, and the Now's con=
tinuall; they May be Resembled to points, of wch a strait
line is compared /and\ of wch Every one May be Counted a, Now.
and of these as some are more Eminent, & distinguish=
able, they prove marks by /wch\ wee Note Comon times; Here
is all wee can observe, or Imagin to be true in the Na=
ture of things, and as to our perception /it\ is No other then
a series of .. /pu\lses[194] upon the sensorium, wch,as parts
of matter Indistinguishable, run into a seeming Con=
tinuum, so those forme an Idea of Continuity of time
and /as\ magnitudes distinguishable, are Judged of by
comparison; So noted periods of these pulsation's
are Collated, and by Comparison accounted swift, or
slow. In all wch Reflection, Nothing will be found
but comparison of demension; And who can say
that there is any other Essence Cofluent, that may
be ~~used~~

[194] Washed/scraped out and overwritten.

be used as a standard of time? Magnitude hath no
standard but what is arbitrary; for ye least quantum
may be a Mensura[195] (in proportion) of the Greatest,
and who determines the velocity of this tempus
absolutum? and If it be undetermined, it is Nothing;
but see the Incongruity; two accounts of time are
going together, the Relative and the absolute, the
Relative is by unequall Spaces in unequall times.
and ye absolute is by Equall spaces in Equall times;
doth not this Reduce time to ye measure of Space, -
wch is all thats contended for. divers movemts may
~~.....~~ /be concurrent,\[196] of wch Some may be Equable, others
not, But still the times must Relate to the spaces.
and in this Sence all time is Relative, And absolute
time, without Such Relation, is merum nihil, and
such Relation deprived, time Ceaseth.

64.
our sence of time altogether Incertein.

The next Consideration is of our Internall Sence
or Notion of time, and that Seems to be a Creature
of Imagination more then of sence, as colour, tast
Harmony & the Like, wch tho occasioned by Exterior
agitations, yet our Idea of it is Not to be found
without us

[195] i.e., 'measure'.

[196] Washed/scraped out and overwritten.

without us, that ~~.....~~ /is the continuance\[197] or brevity of
it.
It is in us rather an affection or passion ~~in us~~, then
a Comprehension of any thing; ffor while wee are
sound asleep, or Intranced, it is Nothing, but (as it
were) ceased; If wee are in pain, it is exceeding
long, If pleased, it is short; wch Made Mr farfax
concept that to a Being perfectly happy, time
was Nothing;[198] our Sence of it is Without any Note,
or Standard within us, to know it by; All the
account wee have of it, is by mean's of Externall
objects, or historicall Information, And at last Re=
lyes upon the alteration of spaces by motion, as
they are More or less Remarkable ~~...~~ /viz\ the ordina=
ry revolutions, and Cronometers; when wee are Not
sensible of, or mistake ye Measures of time, freinds
tell us, or Horology discover~~'s~~ what motions /have\ past,
while in study or pleasure wee /have\ let time slipp, or
In pain, ~~.....~~ /thought\ it over long; And so the References
are made to the agitation's of the most egregious
bodys wee have to observe, and Whither they are
equable, comensurate, regular or Not, wee
patch

[197] Washed/scraped out and overwritten, also lines 13 and 18, below

[198] '... for when we are ill at ease, the shorter time is alwayes long, and the wheel thereof drives on heavily; but when we are blith and happy, the wheel is laid aside for wings, and that which could scarce go of late, now flies, and overswiftly too for us to mark its speed', Nathaniel Fairfax (1637-1690), *A Treatise of the Bulk and Selvedge of the World; Wherein the Greatness, Littleness, and Lastingness of Bodies are Freely Handled*, etc, London, 1674, p. 199.

patch up our acce , ... /with them.\ If ye Sun accelerated
or Retarded his cours, ... /and\ wee had Not pendulums
to discover it, wee could Not by any means of
sence, or Cogitation find it out. therefore time it
Self, is motion it self universall, & the velocitys
thereof compared, And admitts of No such distin=
ction, as absolute or Relative. But If any dis=
tinction is to be made it is between truth, and Er=
-ror; time is ye Same, and allwais true, what opinion
soever wee may have of its Essentialls; ... /who\ever
thought that Men's Judgmt of things in ye world
did Not vary from truth? will any one Say there
is Corpus ... /absol\utum and Corpus Relativum,[199] becaus
our Sences give us Not a true account of any body?
It is body Still whatever our mistakes are, and
nothing Els. May it be Sayd there is distance
absolutum and distance Relativum becaus our
Reputed Miles doe Not aggree with true miles?
for ye distance is certein, whither wee know it,
or Mis-account it or Not. So time is a Result
of velocity's Compared, but wee cannot justly
account for them; Is therefore another kind of
time

[199] i.e., two kinds of body, absolute and relative.

time to be set up, wch depends Not on velocitys
for the word Absolutum Imply's as much. If they
will allow ~~absolutum and~~ Equabile[200] to mean
As extension is, subject to an arb/it\rary standard,
wee are agreed, but if absolutum is to mean an
Independance upon body, and to have an Existence
Equabile (as it is termed /apart from body.\) I Esteem it not
orthodox,
and abrenuntio.[201]

65.
Time not to be parted from Extension.

Then wee are attaqt with an objection, or rather an
Amusemt, It is Sayd the notion of Time, as being a Com=
parison of velocity's, or depending on ye Materiall
world, mistakes the measure for the thing. This Might
be Notab~~..~~/le\[202] if an Intelligible account were given of
the thing it self, but that is Not found any where; I
cannot away ~~....~~ /with\ /a\ mathematicall definition, Such as
ens fluens, or of that sort, but Expect to have it Ex
natura rei, as May be Scientifick.[203] I suppose the Mea=
ning is, that Time is Somewhat fluens, & Equabile,
And ~~.....~~ /Extensions truely\ /equall are to be\ ~~are~~ the
measures of it, and so
when wee Referr time to Comparative motion,
wee mistake the measure for the thing. And If wee
doe, wee are very ~~.....~~ /Inadvert-/-ent\ in Mistaking a\
thing

wee

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[200] i.e., 'equal, uniform'.

[201] i.e., 'I renounce it'; the words 'orthodox' and 'abrenuntio' introduce a religiose tone, as of dismissing heresy, or witchcraft. This echoes his comment above (f. 115r) that time and space begin and end in God since both were created by God and both will end when the world ends. For RN the universe, however large, however ancient, was a creation of God and therefore relative, temporary and local. Knowledge of and reflection upon this universe was the subject matter of natural philosophy, speculation on anything beyond was the domain of theology.

[202] Washed/scraped out and overwritten, also lines 15, 19 and 22, below.

[203] i.e., 'a transitory thing' ... 'from the nature of the thing'.

wee well know, and understand, for a thing wee
know nothing at all off, and. (tho accused) have it
not /the thing\ Explained to us, so as wee may understand it.
The prentise had ill luck, that mistook his yard=
-wand, for a yard of stuff, but ~~he~~ /-\[204] Could not tell of
whatt. But so it is when time is severed from body,
and the perpetuall mutations of it. and If Exten=
sion, or body be a measure, it is of it self, and No=
66. thing Els, & then Requires a standard /or hath No Name.\

The reasons of comon prjudices about vacuum and Non-time

It May be thought I have spun too fine, and
say'd more of these two grand prjudices, vacuum
and time, then Seem's Needfull. I grant what I have
sayd might have bin /more\ Concise, & in fewer words, and
probably more materiall, but so farr as it is ma=
teriall, and Conducing to a true Intelligence of
the subjects, I denye that there is too much. and of
this I am so well satifyed, that I shall venture a
litle further, and shew what is ye Infirmity in
in Comon thinking, that Sway's both vertuosos
and vulgar into such prpossessions, as no reason=
ing can ~~..~~/remove\. first as to vacuum the
caus

[204] Washed/scraped out and overwritten, also line 21, below.

caus lyes fair and plain; ffor a dayly view and
observation of vessells, and Cupps ... /of use\[205] in fami=
ly's, supposed Empty, becaus Nothing is visibley, or
..... /otherwise Sensibly\ contained in them, Imprints Such
an Image of vacuity, that however beleeved to be
full, yet ye mind is Engaged to an opinion, that in
possibillity they may be Rendered void of all Manner
of substance, and become meer ~~void~~ /empty\ Spaces. And
this mentall abstraction will Returne tot../ie\s quoties,[206]
so long as ye Image of Emptyness ... /lyes\ continually
Exposed, ffor that, and insensible fullness are one
and the same Idea. But as to time the process is
Reverst, ffor there is No Sensible Representation
of Non-time, and for that reason it is Concluded
Impossible to be; and however body and motion
are mentally abstracted, yet an opinion Remaines
that Succession by time must Continue. Sleep as to
sence is a sort of Non-time, but then the Lacune
is filled up by Report, and Horologes; wch declare
that time hath Continued as it was before, Whence
it is argued it will be so after, and for Ever. But
In the case of vacuity, ... /If providence had so\
ordered

[205] washed/scraped out and overwritten, also lines 4, 9, 10 and 22, below.

[206] i.e., 'repeatedly'.

ordered that by some peculiar faculty men Might
Might observe the Repletion of all vessells, and
how in filling and emptying ~~of them~~ the Matter
contained Gave way, as often as such operations
were had, so that No Semblance of vacuity
Should Ever appear, they would argue & Conclude
that it was Impossible to be ~~Ever found in ye world~~.
And Now altho the fact is so Reputed, ye prjudice
Still prvailes, and men doe not /onely\ think it possible,
but also that almost ye whole univers is perfect
vacuity. And as to Time If men had any Image
or Representation of a Cessation and Returne of
it, tho fals, as the Images of vacuity's are; as If
a man asleep had a miraculous guift to perceiv
at the Same time, that all duration was ceased
and at waking Resumed again, and So frequent=
ly, as Empty vessells are observed, he would Readily
beleev it was possible that Non-time Might
take place, as the others beleev of Non-Body.[207]

[207] This page, at 19 lines, is three short of the usual number of lines, *see* note on f. 88r, above.

67. Some further Advances

I have hitherto laboured agt the strongest pr= judices that humane minds are bound downe with, and think that the Speculations /are\ not Misapplyed ~~that~~ /wch\[208] tend to dissolve them, becaus the Most gene= rall principles of Naturall knowledg ~~...~~ /are\ affected by them, and allowing them to be so Corrupted, Errors of /no small\ Consequence to philosofy Must follow, therefore I hope to have Excuse for it. I am Sure the good Dr, In ye midst of whose life I have bin so free to Insert these dissertations, If he were alive would Not onely have Indulged, but also bin pleased with them, for In society he delighted in Nothing more then /in\ philosofick litigations; I shall therefore prsume a litle further and touch upon Some matters and Expression's found in the wrigh= tings of ~~one~~ /a\ moderne, wch I shall not Impeach as fals, but as disagreeing with my way of thin= king, and speaking, whither I have reason or Not let ye peruser determine.

68 Rare and Dens Not Explained

At the Entrance of ye great work wee find, aer duplo Densier Est quadruplus,[209] wch is certeinely true, but there is a defect either In ye knowledg of

[208] Washed/scraped out and overwritten, also on lines 5 and 16, below.

[209] i.e. 'Doubly dense air is quadrupled'. RN's words refer to the famous opening sentence of the first Definition as expressed in the 1687, first edition of the *Principia*, 'Aer duplo densior in duplo spatio quadruplus est', i.e., 'Thus air of a double density, in a double space, is quadruple in quantity' (as translated by Andrew Motte in the first English edition of 1729, see link in note to f. 83r). The words of the same Definition in the 1713, second edition, are 'AER , densitate duplicata, in spatio etiam duplicato fit quadruplus; in triplicato sextuplus'.

of the thing, or in ye Method. If the Nature of
Dens & rare that is /of\ Rarefaction and Condensation
had bin found in the whole book, ye fault was in
the Method, for such an obscurity at ye Entrance
Shocks a reader. If it were, or Could be Explained,
It ought to have prceeded that Enunciatum, if Not
Explanable, adding. - Whatever the nature of rare
and dens may be, - had bin apologetick, or perhaps
ye author thought ye reader might be trusted with
such a Subintilligitur.[210]

69.
The definitions unphilosoficall

The definitions are most unphilosoficall, and Not att
all Consonant to What the title page promiseth, vizt
principia philosofia Naturalis Mathematica. In
pure Mathematicks It is Enough to Circumscribe
a subject under consideration, so that No other
thing in the world May be mistaken for it, but in
philosofy definition's ought to be Ex Natura rei[211]
whereby the thing may be known, as well as de=
fined, and Not such as shall make ye Intelligence
more puzled and obscure, as here - Materiæ ~~..~~ /vis\[212]
Insita Est potentia Resistendi.[213] - Almost every
word

[210] i.e., 'implicit understanding' - something that if not expressed, is to be understood.

[211] i.e., 'from the things of Nature', i.e., from an example in Nature.

[212] Washed/scraped out and overwritten.

[213] From the third Definition - the wording is the same in both the first and the second editions (although the capitalisation varies ...); i.e., 'The vis insita, or innate force of matter, is a power of resisting' (as translated by Andrew Motte).

word Requires a definition, or rather Explanation,
ffor Nothing of the Nature of the thing may be
Gathered from it; and the Consequence, potentia;
Needs to be defined, for potentia may fail, as well
as act. But the whole is thus affectedly Singular,
to avoid a better and truer definition, or description
of Cartesius, by extension in longum, latum, and
profundum,[214] wch is the nature of it, and ye Conse=
quence, Impenetrabillity; but in ye other, the thing
is shuffled out of the way, and it will be said /it is\ Not
that, but, the force Inherent in it, is defined, wch
is a Subterfuge; Had Not Ens extensum Impene=
trabile,[215] defined a thing by its Nature & proportie,
bin Sufficient. but it Semes a Machine of power
is to be Erected, and this is the beginning.

70.
More Like. Then follows - vis Impre~~....~~/ssa\[216] Est actio &c[217] - who is the
wiser for that? Is there more in this, then in the
word, Motus, or the due Explanation of it? here
one Must ask, what is acto? and if that is ansd. -
motus. What is Impressa or vis? for Neither are
explained by, - actio. Again, vis centripeta est
qua

[214] i.e., 'length, breadth and depth'.

[215] i.e., 'an extended, impenetrable being', i.e., RN's 'Cartesian' definition of the common sense object of natural philosophy.

[216] Washed/scraped out and overwritten.

[217] From the fourth Definition. Again, the wording is the same in both the first and the second editions. 'Vis impressa est actio in corpus exercita, ad mutandum ejus statum vel, ...' i.e., 'An impressed force is an action exerted upon a body, in order to change its state' (as translated by Andrew Motte).

quâ Corpora versus punctum, &c.[218] - here wants a
definition of Corpus, That of Materiæ vis Insita,[219]
is Not Sufficient, for it is not /vis\ Corporis, &c. and these
may be Materia Not Corpus, till due description is
given of both? But the word vis is Intirely undefi=
ned wch spoyles all /-\[220] these deffinitions as to all philo=
Soficall porposes; for Words are set up in the places
of things, and all void of Intelligence; being as hath
bin observed a Refuge of Nescience, destructive of
Science; ffor There can be No question In philoso=
fye but may be quaintly Resolved by some of the
vires.[221] But of all the artfull application's of ye
word ~~...~~ /vis,\[222] give me - vis Inertia, - we is sayd to be
Expressio significatissima, but in truth is Insigni=
ficatissima. for if one is asked what he is ye wiser
for it? he must ansr nothing; he may wonder, but
Not understand any thing; And it is a strange
fancy some have to Invent Enigmaticall Expressions,
onely as marks to be distinguisht or knowne by.
Here, Inertia, is as Litle understood as any word
wee have had to doe with, and hath No Reference
but to the Ideas wee have of our Corporall powers

a

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[218] i.e., 'A centripetal force is that by which bodies are drawn or impelled, or any way tend, towards a point as to a centre' (as translated by Andrew Motte). This is the fifth Definition of the *Principia.* The 1687 text reads, 'Vis centripeta est qua corpus versus punctum aliquod tanquam ad centrum trahitur, impellitur, vel utcunque tendit'; the 1713 text reads, 'Vis Centripeta est, qua corpora versus punctum aliquod tanquam ad Centrum undique trahuntur, impelluntur, vel utcunque tendunt', so here RN is closer to the second edition.

[219] i.e., 'inherent force of matter'. It is not clear what distinction RN is making here between Matter (materia) and Body (corpus).

[220] Washed/scraped out and overwritten, also line 13, below.

[221] i.e., 'forces'.

[222] As is clear from RN's argument, he regards the notion of an active force (vis) such as gravity with suspicion, since, for him, such a force is rather a mode or effect of any body or matter on other bodies or matters. 'Vis inertia', i.e., the force of inertia, appeals even less since it is the resistance of a body/matter (e.g., to being moved) considered as a force, a passive force. 'Expressio significatissima' means 'significant expression', to which he punningly responds with 'Insignificatissima'.

a rare Criterium of ye universall Nature of things.
the word Mean's lazyness wch belongs to animalls
of Will, and aversion to act. besides how Can vis
Resistendi, and vis Inertiæ two definitions of ye Same
thing Consist?[223] yet to doe right there is a Meaning
Couched wch Must be Exposed. When unequall bodys
occurr, and at the contact separate, the Effect is as=
cribable to both, as If in yt moment they are one, but
cannot Continue so; And as there is a proportion of
the quantitys, there will appear a like proportion of
the Effects; And with Respect to ye vicinia,[224] or some
Standard supposed, the Separation shall be so as the
Share of ye less shall exceed that of the greater, as
the proportion of the quantum of ye latter is more.
Hence a greater body Must seem to yeild less to an
Impuls then one less, And In ye Exercise of our cor=
porall power's, wee find it harder to Remove great
things then small, and then by way of Simile wee
call it Sluggishness. whereas all body ratione quan=
tatis are Equally sluggish;[225] and to demonstrate
the lusus verborum,[226] vis is active and Inertia passive.
that is an active passiveness; the truer Expression
had

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[223] i.e., 'force of resistance' ... 'inertia'.

[224] i.e., 'surrounding' (in Motte's translation).

[225] i.e., 'according to quantity/mass'.

[226] i.e., 'play on words'.

had bin vis majoritatis, for all body's are Inertes
secondum mensuram Quantitatis.[227]

71. Expressions Enigmaticall.

There is another Enigmaticall Expression, wch is
just, but for want of proper termes, Wonderfull,
(its true,) but very obscure; and that is ~~...~~ /ubi\[228] actio
ubi reactio.[229] as when a peice of mony is Stampt
the force is above, but the Impression takes as well /underneath\.
and this looks as /if\ the force below was active like
that above,[230] wch Notion, as of some miracle people
will derive from that Expression. Whereas ye thing
is No more then here hath bin often Expressed,
that at the contact of (approaching) bodys the force
of separation lys not in one but in both, for the
Impenetrabillity, wch is ye Caus of ye separation, ~~.....~~ /~~exists~~\ /
exists\
in /the\ one as well as /in\ the other, and the action is but
one, and the reaction is ye Same (Indifferently) in
both; Might it Not have bin sayd, neerer to truth,
that in /-\ all action, (that is Impuls) /there\ must be of 2
bodys at least, and the Effect is /the\ Result of both
as the caus it self Indifferently Resides? but Mis=
terious Expressions are most Captivating.

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[227] i.e., 'greater force, for all bodies are inert according to the measure of their quantity'.

[228] Washed/scraped out and overwritten, also lines 14 and 18, below.

[229] i.e., 'wherever there is an action there is a reaction'. Note, too, the reference to coining.

[230] The reference to minting is probably another dig at Newton, suggesting his roles as Warden and then Master of the Mint, *see* note on f. 95v, above.

72.
center of Gra=
vity of many,
not Supposable.

Then the dealing mathematically upon Suppo=
Sition of powers, may perswade, as by plausible
argumentation, but Cannot Demonstrate, as when
it is upon Quantum Hypothetically; for that must
be true as postulated, becaus all formes of lesser
are really Included in greater, as hath bin Noted.
and are as certein as If an Almighty power should
expose them. but when wee come to powers, there
may be None Such; greater nor less, Implicite
Nor Explicite, and Nothing less then a new Cre=
tion, May give an Existence to them; why are
wee then /bound\ to admitt any supposed powers? and /doth not\
a possibillity of denyall lett fall /any\ demonstration
upon such Grounds? Of this sort are all those ope=
rose operations about finding the center of gr=
vity of divers body's; /And\ that is, as I take it /to know, by
force of.\ a Reci=
procall attraction, ad modum ~~..~~ /Qua\[231]ntitatis Et distan=
tæ,[232] Granted, and all Impediments (supposed) out
of the way, In what point they would all Con=
curre. Here must be granted the measure of dis=
tances, the Quantum of the body's, and such
powers

[231] Washed/scraped out and overwritten.

[232] i.e., 'consistent with/according to quantity and distance'.

powers Created and all Exact, wch Can be ap=
plyed to Nothing knowne or /(...a\t least n.../ot\[233] like quantum
materiale)\ Supposed Necessa=
rily to Exist in the world; and yet it is applyed
to the planetary Systeme & called demonstration
And It is pitty, as I sayd before, that so much good
Analitick should be Imployed on Subjects so
precarious.

73.
Divers demon=
strations faulty

I cannot be wholly Reconciled to the sty=
ling Divers mechanicall proposition's, leges,[234] for
there is but one Law in nature, and that is Im=
penetrabillity, all the rest are ... /con\sequences of
that, and /the\ Quantitys, and from thence are demon=
Strable; It is as reasonable to titule all the de=
monstrated proposition's in Euclid law's. And
wee /meet\ with divers modes of Demonstration, wch may
perswade, but not irresistably Convince, as demon=
strations should doe. as /I mean\ when built upon Supposalls
Imaginary, like /as for Instance\ fluids about a turning Cylinder
Conceived to Consist of Infinite paralell Cylinders,
wch is not, and (perhaps) cannot be true, So When
a body lighter then water is forced into it ob=
liquely, it Shall Emerge, and In the water
des-

[233] Both washed/scraped out and overwritten, also line 11, below.

[234] i.e., as 'laws' (of natural philosophy).

describe an Hyperbolican Line, to prove wch the
water is supposed to consist of Infinite H../ori\zon=[235]
tall filmes. Such supposalls as these are not Ma=
thematicall, and no one is oblidged to Come in with
them, Nor with many more of the Like kind, wch
are amassed with designe of Confuting the celes=
tiall Systeme of Cartesius, as when the principall
of the vorticall motion is /charged upon\ ye Sun; wch Cartes also
eroneously supposed; and Nothing in that whole
controversie concludes Mathematically, or argues
materially agt ye Continuance of the Ethereall ciru=
lation, altho the decay of it is principally urged /wch hath bin
(quasi) Enervated Els where\;

74. Analitick pro= cess Not apt in Philosofy.

There is another Note I Cannot pass by, wch is
that philosofy ought to be analitick, that is /working\ from ye
phenomena to principles, and not from principles /to\
the phenomena, wch is synthetick; this is specious,
and a Scolasticall jingle, & Nothing Els. ffor all
naturall science whatsoever is drawne from the
phenomena, And principles are found and Estab=
lisht purely upon Experience. How Els do wee
discover that the matter of the world is Impene=
trable, and that No essence but that /besides\ is
permanent

[235] Washed/scraped out and overwritten.

permanent, and Indefectible? but ... /since\[236] that, &
Such like principles (if there be any) are so well
approved, they serve as tests in phisiologicall
science, ffor No prtence, solution, or discovery /whatsoever\,
held forth Inconsistent with /them\ will be admitted as
just and true; And the Rest, wch may be termed
the phenomena, are cheifly Naturall History. But
the men that set up principles not so Confirmed,
as powers of various kinds, chimicall Essences
with hard names, ... /many\ arbitrary Supposalls of
things wch are not, ... /and a prliminary\ /list of the\
Leges na=
turæ,[237] are those who argue to nature from prin=
ciples, and from thence discend to the phænome=
na, as subsidiary to Sustein the ..... /prsupposed ener=/gyes\\
..... /universali\/-ter\, - and If that be a way to find out the
secrets of nature, readyer then Naturall history
that is Experiment, in some things direct, and in
others by analogy, I submitt to the Curious to de=
termine.

75.
proofs of a Deity & provi=dence.

It hath bin also prtended .../that\ the analiticall
process, from phænomena to principles, must at
last come up to a demonstration of the Deity
But &

[236] Washed/scraped out and overwritten, also lines 5, 10, 11, 14-5, and 21, below.

[237] i.e., 'Laws of Nature'.

– /and\ providence, more Effctually then by the synthetick
way; I wish the author had undertaken it, and hope
wee are not to stay, till his method, produceth it.
I am sure that, be the method of acquiring one
or other, the principle of pure Extension, and its
modes, joyned with animall sensation, producing
those Sublime Ideas of the world, and Incident Spe=
culation's. wch wee are all Enterteined with and
without any puzling Machinations of low Con=
trivance, but in utmost purity, and simplicity,
and in perfection of Exalted sensibility in Men,
(wch wee must admire, but In ye midst of Enjoy~~=/ment\~~/mt.
can scarce be reconciled to Credit a Wisdome so
superlative, altho wee continually feel ye Effects of
it;) goes as farr in demonstration of a devine
power, and wisdome, as the whole state and com=
position of Nature, and our Reflections and Judg=
ments can Reach. And under this I doe Not know
that ye order of ye world, and ye Glory of Comon
Incidents, will goe further In argument then
ad populum;[238] and Even at best, it is Impossible
to Silence scepticks, who have Evasion's at hand
to throw

[238] i.e., 'to the people'.

to thro out agt all that Can be alledged upon
the State of the world. But Human sence, and
Revelation Ever was, and will be too hard for
them, and put them beyond all Cappacity of Re=
plye. But this Argument will run /(2)\ out Into over
much Extension /(2)\, If ye reins are /(1)\ given up to it;[239]
I have but toucht upon it, In persuance, of what
was hinted before, and /as\ the observation Reflected
upon hath given occasion; So Conclude /wishing\ that the
Setting up So many occasionall powers, as of late
have bin brought forth in the philosfick scene,
may Not tend to politheisms, for ye heathen
Theology was litle other, then /of\ certein powers
prsiding over the various provinces of Nature.

76.
of Compound movemts & me=chanicall powers.

Wee find great use made of certein Movemts
called Compound, wch are usually described by
the Diagonall of a square, for that they say
is Compound of two motions /of a point\ from ye angle, one,
by the space of one Side, and ye other Motion /...[of ye?] Same point\
by ye space of the other Side, with Equall veloce=
ty, and /then\ the point so moved will discribe the
diagonall, and upon Supposall of other Sorts
of

[239] I have no ideas what is meant by the underlining and numbering of these three points. Certainly there is a pun on 'extension', but there is no indication of what it is that the numbers (insofar as I am able to read them) refer. Perhaps a diagram was intended?

of Conceived movements divers Mathematicall fi=
gures are projected, and thro. the pʳsumed agencys
very propositions are mathematically Resolved. but
when this method is drawne to phisicall cases, as
to Resolve the Mistery of Mechanicall powers, It
seem's very Improper, ffor in truth there ~~.....~~ /Neither\[240]
is, Nor Can be such a thing as a Compound Motion,
ffor Every Movement is Supposed to proceed from
some Impuls, wᶜʰ is allwais single, and the Sep=
ration in directum, and a single Impuls Cannot
caus a Compound Effect; but Successive Impulses
may alter yᵉ direction any way, wᶜʰ will be still
so many strait courses, & not any one Comixt with
any other. And what is wors is, a liberty taken
to Suppose a Strait direction, to be Compound, &
in any manner; It is but saying let A.B. be ta=
ken as the diagonall of a Square, or of any con=
ceipted Composition, and yᵉ work is done, tho there /can\
be no /reall\ caus but a simple Impuls; wᶜʰ is Supposing
a fals thing, and what Cannot be true, very un=
fitt for a ~~.....~~ /Mechanick\ postulate. Motion Consisting
onely

[240] Washed/scraped out and overwritten, also line 22, below.

onely in Relation, as Infinite Relation's may be had
/at one and\ ye Same time, So any two or more may ~~.....~~ /be
selected\[241]
~~.....~~ /And Referred too, and all very\
Just, In order to de=
lineation's, but when the propositions are mecha=
nicall /such\ as the Comparison of powers in Reall Effects,
the Liberty of saying there are no such compound
Motions, disturbes the demonstration. And it Seems
more reasonable to Referre to Comparison of ve=
locity's, wch are more Exposeable and hold true
universally. Cartesius allowed the Consideration
of time allwais to goe along with mechanicall
powers, but denyed the phisicall /caus\ to proceed from
comparison of times; wch was strange, for he accoun=
ted body and Space to be all alike, and Either capa=
ble of more, and less ad Infinitum; and why the mea=
sures of velocity, & quantity should Not answer
Each other, I cannot Imagine. But this notion
of Compound Movements was his Invention, as
appears In his Dioptrica, but ye application of
it hath bin Much Improved at least Enlarged
Since his time.

[241] Washed/scraped out and overwritten, also in the following line.

Our Dr. had Great hopes from Experimentall phi=
losofye, and that the Greshami/ti\sh designe might in
time have effect, wch was to make such a Muster
of Experiments as should at length furnish out a
compleat and Incontestable Hypothesis of Nature
None having appeared yet in ye world Much better
then the spume of some men's fancy's. and upon
principles for ye Most part prcarious. But he had
litle Reason to Expect great matters of ye kind to
come out of societys, since all the Improvemts that have
bin made in Naturall Science hath come by ye Ingeny
& Industry of particular men, as for Instance Torri=
cellius whose Experiment hath opened more of the un=
known world, then hath bin disclosed since ye days of
Solomon. vid. fol. 104.

Here the disser=
tation Ends.

Here wee drop our phisicall Reflections, [...]

Theology

proof of a} Deity ... }.

1. It seems to be a stronger proof for the being of a God, the order of ye univers, then the necessity to fall at last upon a first mover, as is most Comonly urged in the first place. ffor some may thinck it as Easy to Imagin an Infinite Moving Matter, as It is a God himself. But then how to Assigne it Should skipp Into so fair a posture, as that wee Now behold, is Impossible; and So Convenient unless it May be Eluded by Saying, In what forme so ever ye world had fallen it must seem Convenient ffor those Creatures, & thing's wch Spring up In it, for other wise they never would have risen, but out of such disposition. [8v][243]

2. But I would fain know, what keeps ye rude matter in such order as It is Now for so long time? How chance no

[242] Where there is sn original page numbering system in use, where the page numbers are in arblic numbers, it is customary for the BL curators to strike out that number and replace it with a folio number, all in pencil. RN's numbering is not always consistent, the BL curator's folio numbering does appear to be so.

[243] The original Notes of Dr North were written on loose scraps of paper clasped in a small portfolio. We do not know that there was ever any original intended order. It seems reasonable to assume that RN simply copied out the Notes in the order in which he found them when producing the first draft (BL Add. MS 32517). But for this second draft RN has arranged the Notes by topic, numbering each paragraph in the sections. I have added a page reference (in [square] brackets) at the end of each paragraph which reference the first draft of the Notes, the page numbers indicate the page on which the paragraph begins. Sometimes, but rarely, RN combined material from different paragraphs. This explains page references which pop up in the middle of paragraphs. Most often RN simply organised the pre-existing paragraphs and material on the same page into a (for him) more coherent order, one represented in an index at the back of the volume..

Theology.

No Remarkable variations In ye heavens
for so many thousand years, as wee have
knowne in it? What is it that binds it
so strong to the laws of motion? [9r]

3. Then you must still Indue ye prin=
ciples with more Quality's: How Comes the
species doe Not vary, and new arise upon
those Mutation's Wee find upon Earth, Es=
pecially In such as are yet bredd out of
slime? As for the arguments of a first
qd [244] Mover, theres no Necessity of Coming to that
and yet a procession ad Infinitum may be
avoided. ffor the parts May Impart to one
and other over and over againe. But how
ffarr will this Argument hold? Matter Can=
not move it self, becaus It Rests sometimes
and is onely directed by others. If it be de=
void of motion In it self then Motion is
Extrinsick to it, besides its Essence. If so it
If so It must have bin put in at first and
By somewhat Not Matter, & In time. - this
Infuser is God. [9r]

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[244] 'qd'from *quid* or *quod,* meaning 'this'. The same passage in Add. MS 32517, f. 9v, has a marginal note: 'qd'. a. or no.', and transcribe it as: 'theres a necessity of coming to that'. Either way the implication of the sentence remains much the same. The argument for a first or prime mover, i.e., a creator underlies Aristotle's cosmography as well as the Biblical account (which also argues for a linked final cause or intended outcome, *see* below, ff. 198r - 199r). JN appears not to lay much store by the Biblical account as an object for natural philosophical knowledge, but that does not make him atheistical. Like his brother, he believed that natural philosophy (i.e., human knowledge and understanding) should attend to the investigation of natural processes and their underlying laws (here, the 'laws of motion'), by means of observation and experiment, and not speculate on cause or purpose which was the business of theology. For JN, natural philosophy cannot help but reveal a benevolent providence at work ('It seems to be a stronger proof for the being of a God, the order of ye univers'), something revealed not least in the continuance of things in the way that they are, an 'argument from design'; things have all been arranged for the best and reveal, by means of their complexity and effectiveness, the mind of a benevolent creator. He goes on to concede that 'In what forme so Ever ye world had fallen' reasoning creatures in any system would think the same. The problem, as we read in the next section, is that this understanding of the 'order of the univers' might provide sufficient explanation for the substitution of religion by reason, or even God by God-in-Nature, which would allow the Barbarisme of 'a litle philosofy'. Ultimately only the 'Interpretation of S. S. and other parts of learning' is what can save mankind. JN's whole critique of Hobbes is an attack on Hobbes' use of 'laws of nature' to construct an account of the nature of Man. For both North brothers, when properly conducted natural philosophy is a kind of worship, but when it is done wrongly it threatens the very foundation of faith.

Theology.

4. Atheisme it self, will bring in Barba=
risme, In a most Gross Ignorance. ffor it's
certeine a great part of learning, that is
Theology, must necessarily be throwne aside.
Sancta Scriptura[245] And the Interpretation of S.S. and other
parts of learning that depend upon it.
But those who are possessed with that, will
be Careless of Every thing Consulting onely
their owne Eas, or such discipline as shall serve
to advance them In ye. world And therefore
In this age, wee see most parts of learning
out of countenance, except a litle philosofy. [1v]

5. It is to be feared, If Atheisme Should
steal in upon ye better sort, seing there Must
be Some forme of Religion, least they should
choos ye Roman sect, as ye Most Easy, tying
to least stricktness; or Els Repairing the Cre=
dite by a facile absolution The onely thing
that would obstruct, they would be loath
that so much Revenew should be bestowed
on a Meer shew & pageantry. And this /is\ that
wch Endangers the Revenew's of ye church at
this time, those of ye higher Rank, turning her
cheifest Enimys, wch before were her cheif Support [3v]

[245] This in a smaller script. JN uses the abbreviation S.S. throughout his Notes - evidently RN felt it required explaining here, at its first appearance in the Notes. JN's many other abbrevations are also often carried over by RN.

Notes of Dr. North.

Theology.

The Jewish} law .....}

1. It is very Notable that. G. is pleased to Enter Into Covenant with ye Jews, for the observance of ye law. he did Not use his su= pream Authority of comanding, but Seemed to bargaine with them. If they would observe those laws, he would bless them with tempo= rall advantages. he seems to leav it to them, whither they would be oblidged, or No; as ap= pears in severall places. So In Sam11. /i\ con= "sider , whither you will serve ye lord, or No. &c. Wch I am Confident is Interpreted of the ceremoniall law, and the particu= lar politic; As If becaus it had No Intrin= Sick vertue In it self. therefore. G. Would Not bind them withour their owne Consents. [15r]

2. And Really ye Jewish Oeconomy Seems to Carry No other Inequality of favour, a= bove the heathen, but onely In temporall prosperity, for the obteining of wch they Submitted to a troublesome law. [15r]

3 Indeed they had a clear discovery of morality, but that wch ye heathen might have attained by their Naturall reason,

but

Theology.

But as for ye promises of another life, State, or reward, they were left as much in ye dark as the heathens. And their law di= rected them Not at all to that. So that it pleased God More particularly to Interpose In their temporall affaires. but Els shewed them not more favout=r then he did ye Gentile world. And so Not the least room left for a Suspicion of partiality. And really If wee Consider it, th notion of another life, Came no sooner among ye Jews, then among the heathen's themselves. [15v]

4. How farr ye Jewish law binds, see lati= tudinarians, fol ...

Christianity } & its doctrines}

1. Reconciliation - world Given to Sacri= fices, - Jews by Gods appointmt - as In other things, so here, to Comply with sence. - to Expiate certein faults by lamb, Kidd, &c ¯ as a mean's to know they had pardon for them. - for how otherwise Could blood Satisfie? - So when ye world by arriving to More knowledg, was to be broke of this - and

Theology

Christianity, &}
Its docrines. }

– and Jews politic dissolved - It pleased -
that his death Should pass for a generall
Sacrifice, that so No More might be used. &
Is just as Goat, or Kidd, of old. that is a
ceremony to Intitule to a pardon, or in
a metaforicall way - and yet as much as
those of old. [2r]

2. perhaps, borne of a virgin .. Extra=
ordinarily Endowed, that he might be with=
out Spot, as anc[246] sacrif, tho Especially for
a greater testimony. - Metaforicall, I
say, ffor Indeed Not solemnely offered up,
but accused, Murthered, upon fals Imputa=
tion. - thus all ye law made a type of him,
Not Intended, but drawne to take the Jews;
So one may Imagin, perhaps that the Ep.
to the Hebrews adornes ye doctrine of christ
with allusions from ye law, on porpose to pos=
sess ye Jews, as If they had Nothing but What
Wee Injoy In our Saviour, for No other
part of the scripture runs so Much upon
that point as that. [2r]

[246] The 'c' in 'anc' has a grave accent above it, indicating an abbreviation, presumably of the word 'ancient'.

Theology.

christianity &}
Its doctrines.}

3. 'Tis Evident that David, & Solomon were Types of Christ In passages, Wch Could Not wholly be applyed to them. Why May Not Some Constitutions In ye law, be Referred thither also? [4v]

4. Our Saviours Satisfaction. how lawfull and Comendable a thing It was among the heathen, one to dye for another, and how ye Same prepositions are used, and words wch the .SS. Expressseth it self by. you May See In Euripides Alcestes.[247] [7r]

5. Erasmus says, In an Ep. to luther, that St. Paul turned all thing's Into Allegory, that he might better Elude the law, and Not seem openly, and plainely to abrogate it. [16r]
b. When our B.S. puts such Efficacy in his By. & Bd. as if life might be gained by devouring, beyond ye height of a bare cere= mony, according to the Rationall acco. It Must be Remembred, It is Suited to the Condition of the Jews, who becaus thinking they Receivd benefit by their sacrifices, as being Slain In

[247] *Alcestis*, one of a handful of surviving plays by Euripides (c.480–c.406 BCE), treats of sacrifice, promises made and the conquest of death. It was Hercules who defeated Death and Alcestis who was restored to life, but the Christian analogy was widely identified and the play's tragi-comic plot has been reworked many times. For a scholar like JN both the work of Euripides and the New Testament (the S.S.) were to be read in Greek.

Theology.

christianity &}
Its Doctrines.}

In their stead, to be Reduced by diver=
ting it to Some other thing, and applying
the same opinion of benefit. [5v]

7. For. R. is Suited to the ye generall temper of
Mankind,[248] Not that striktness some may
attaine too; Wee see G. Condiscends to the
Capacity of men, in cloathing himself in
humane dress. Chr: Seem's many times to
allow Some Erroneous opinions of ye Jewes,
at least doth Not Confute them; but draws
Arguments from thence, And why may it
Not be so In other, & higher? [6r]

8. Since ye Reformation, a better acco given
In reason, and from S.S. of the christian Re=
ligion, then I beleev Ever was, since Inspira=
tion ceased; at least, then doth appear In the
wrighting, wch have bin delivered downe
to us. [4r]

8.[249] for the Resurrection of ye body, other
particles, tho Not ye Same wee were Moul=
ded with in this life, may be so framed and
disposed

[248] 'R.' is an abbreviation for 'religion'. As is G. for 'God'.

[249] RN has numbered successive paragraphs '8'.

Theology.

christianity &}
It's doctrines}

Disposed, just In ye Same order as ye former, were, so that It shall be the same to all In= tents, & porposes. [7r]

9. That or Saviours Comand agt Swearing reacheth onely to our ordinary Convers and Not ye testimony before a Magistrate, Appears from ye claus, -n lett ye Comunica= tion be yea, yea, Nay, Nay, &c.[250] [7r]

10. Great Argument to me of the au= thority of ye holy. S.S. and its Antiquity that its speaks so suitably to what Reason dictates, In the plantation of ye world. [30r]

11. see Morality, All. _ pa.[251]

12. If Men did Intirely adhere to their Religion, Mr. Hobbs could Never make any Impression upon them. but his plausible Grounds, & fair deductions, weakens that wch stands onely on an artificiall Argument; therefore, he that would deal with Mr. Hobbs must muster up his owne principles against him. [29v]

1. I

[250] It is not clear what RN's '_n" means, but the quotation is from Matthew 5, 37: 'But let your communication be, Yea, yea; Nay, nay: for whatsoever is more than these cometh of evil.'

[251] *See* below, f. 195v, ff.

10. Notes of Dr. North.

Theology.

Arrian's &}
Socinˢ: }[252]

1. I am Confident Arrianisme will first prvaile before socinianisme, as declining severall texts wch strike at ye other. If it be handsomely proposed, and having some Ground of Antiquity, & generall acknowledgemt at one time. [1r]

2. The onely fear is least Socinianisme, If its Should prvaile, Should break ye Esteem wch Every one hath for the. SS. and so at length, Quite 'destroy the christian Religion. ffor their stongest hold is the Coleur of Reason, and greatest designe is to avoid the passages of. SS. In wch they shift most Noto= riously. [1r]

3. Now If they Should Get ground In the world upon prtence of a Contradiction In the other; yonger spirits afterwards growing up will dare to thro off. SS. itself. In wch ye orthodox opinion is so clearly delivered, Thus No doubdt It will prove a great occa= sion of the spreading of Atheisme. [1r]

4. ffor that, see proof of a Diety. 4.
5. the

[252] "In Christian theology he had a full intention to publish a thorough confutation of the Socinians; and some shrewd touches that way were found in a note-book which by chance escaped the fire, as I shall show ...", North, R., *Life, etc..*, 1744, p. 262. Arianism was a late-classical heresy that Christ was an ordinary man and Socinianism (*see* also, note on f. 172v, below), a 16th-17th-century anti-trinitarian heresy. Both demystified the sacred and both used contradictions in the Bible to support their arguments. For those reasons, even more than for what they argued, it was widely feared that both opened the way for atheism by means of 'reason' and 'opinion'. In Add MS 32526, f. 86v, RN speculated "I mean ye law of ye turks; that people, whose heresy is derived from ye Arrian's, so Coming Nearer to christianity is ye More dangerous; and if ye story of Mahomet, were not SuperInduced, a turk were a reall arrian Christian; of reasonable faith in Most point's but yt of ye devinity of or Saviour".

Theology.

Arrians &}
Socin: }

5. The great objection to socin. that If there be Nothing In .....[253] but onely yᵉ just managemᵗ of a free will, how chan= ceth it, that so great an honʳ is appointed as power In heaven, and Earth. Continuall & Equall Address, &c. unless that may be allowed wᶜʰ philosofers Would have done, that G. Receeding from yᵉ trouble of litle things, hath deputed another in his stead, wᶜʰ may well Enough, or perhaps better be one of our nature. [1r]

6. for Birth, Reconciliation & sacrifise see christianity. 1. &c.

7. Socin: will give occasion to Irreli= gion, becaus If that appears to be In the right, any one will wonder how providence Could Suffer the Ch: to be Involved ~~In~~ so Early. In so foul and desperate an Errror for so huge a period of years. The Arrians Indeed May have some Countenance of yᵉ ancient times, In maintaining a great contest

[253] I cannot judge whether this dotted line represents a problem for RN in deciphering, or a space left to be filled in later. Several words might fit - redemption, salvation, or even: religion.

12. Notes of Dr. North.

Theology

Arrian: &} contest, and In ye opinion of ye first fathers
Socin:. } who did Not so distinctly speak of those
things. but Socinus[254] Can defend himself by
No authority but. SS. wch he Miserably Shakes
off, by a strikt Interpretation [4r]

8. But my fear is, that these things
Should tend to the discredit of. SS. them=
selves, when men see, that is rather a=
voided, and is forced contrary to its obvious
mind to submitt to reason, & opinion. [3v]

popery. 1. Atheisme leads to it. See proof of a
Diety. 5.

2. It is pretty to Consider how long Rome
hath Governed ye world, one long track of
time by her owne armes, & valour; another
from the prtence of a Spirituall Empire,
wch would Extend it self farther then Ever
their Banner's Could Reach. [15v]

3. Becaus Rome was ye Seat of ye Empire
and Gave laws to ye world, therefore it hap=
pened that ye church planted there, had
more Respect & honr, then ye Rest, & perhaps
might

[254] The Italian theologians Lelio Sozzini (1525-1562), and nephew Faustus Sozzini (1539-1604), either could be referred to as Socinius, not only repeated the Arian heresy, but also (and it is a closely linked heresy) denied the existence of the Trinity. They had many affinities with the Anabaptists of the Radical Reformation, notably their pacifism. They were sceptical about original sin and argued that God was not ominiscient - if He were it would be contrary to the notion of Free Will. Their writings were widely read in protestant Europe and continued to be influential in RN's time. Both travelled widely and Faustus spent the last 25 years of his life in Poland where his influence was immense.

Theology.

popery . . .

Might lodg it In yᵉ ablest and Most Judi=
cious clergy men, & so Might be Consulted
by others, & Referred too, In matters of
Controversie. And altho It afterwards hap=
pened to be separated from yᵉ Empire, and
So Could challeng dominion No longer,
In strikt Reason; yet once having got this
Ground & advantage upon accᵒ of Religion
It was Easy to maintaine it; becaus It Might
be pʳtended to be devine right. ffor when a
priveledg is Granted to Religious orders, its
what men are afraid of taking away. as it
is harder to distinguish between that doth
truely belong to them by devine Institution [15v]

Calvinˢ; &}
Armin': }[255]

1. The Calvenists had some advantage, In
that Even among philosofers, some have bin
Great Impugner's of free will. [4r]

2. The doctrine of yᵉ Calvenists wᶜʰ Makes
yᵉ Irresistable will of God, yᵉ onely rule of
Justice, May make them More fond & te=
nacious of any Religion whatsoever they
profess

[255] John Calvin (1509-64), was the leader of a Protestant sect, based in Geneva, widely referred to under his name as the Calvinists. Calvin's doctrine of predestination precluded any role for free will in an individual's redemption. Jacobus Arminius (Jakob Hermanszoon, 1560-1609) was a follower who, in disputes within the Dutch Calvinist church, represented a more generous interpretation of Calvin's teachings, finding a route to redemption for any true believer.

Theology,

Calvinˢ: &}
Armin: }

profess, ffor then they Cannot Examine
the reasonableness of what God Injoynes,
but onely satisfie themselves, that he Re=
quires it. And this Gives way Either to the
Embracing or to yᵉ Establishing yᵉ Most ab=
Surd doctrines & Ceremonys yᵗ ever yᵉ World
was yet guilty off, Even yᵉ worst Superstiti=
tions of all. But then yᵉ Mischief of yᵉ other
Extream, that is the trying Every thing by
reason, let it Reject all other Manifᶠᶠ/f\estations[256]
of yᵉ devine pleasure, but onely what the
adored reason pʳscribes, as In My lord Herbert.[257]
And therefore there is more danger to any
Estabish't Religion from this then from the
first. If it appears not sufficiently In this age. [4v]

3. And really that wᵉ hath brought the
world to this loosness, is yᵉ departure from
Calvenisme, ffor when men had once Re=
jected that, as Not Consistent with yᵉ Good=
ness of God, to suffer any to fall under an
Inevitable decree; others began to thinck
it hard that such a Number of Mankind
Should perish as were Not Enclosed In yᵉ pale
of

[256] Washed/scraped out and overwritten.

[257] i.e., Edward Herbert (1583–1648), 1st Baron Herbert of Cherbury, whose *De veritate, prout distinguitur a revelatione, a verisimili, a possibili, et a falso,* (On truth, as it is distinguished from revelation, the probable, the possible, and the false), 1624, was a founding text of sceptical rationalism (i.e., reason) and Deism which, according to JN and RN, threatened to be the precursors of atheism.

Theology.

calvin: &}
Armin: }

of the church, condemned on all hands by christians, Especially when it seems almost Impossible, at least In their Circumstances, that it should Ever have bin in their power to Embrace it; and So Not any share In Sall= vation be allowᵈ them, living soberly In their way, or according to Naturall light, It seems then Necessarily to follow, as If yᵉ christian's, were onely one Sect, and one Way among many others leading to heaven. [5r]

4. But why May Not yᵉ hypothesis of many degrees In happyness secure all this? [5v]

5. The Calvenists doctrine however it Seem's to be learned, yet it works strangely with yᵉ Meaner sort, & raiseth their devotion. ffor it makes them apply, Every thing to God, and ascribe all their action's to him, and setles an opinion of providence In them. As for yᵉ other Concerning liberty, It is More philosoficall then they Can reach. the Re= ferring Every thing to God is Easily under= Stood. And as for Inconveniences & absurditys

that

Theology.

Calvin: &}
Armin: }

that follow the perswasion, they have Not witt Enough to see it. [5v]

6. SS. tho Confessed by all as a rule, yet still Every man follows ye Reason he has of things, and Interprets those according to his owne sence. this Most plainely appears in ye Socin: and also Armin: who rather straine them to their owne side. Indeed Cal= venisme seems to rise onely from Colour It had in Scripure, springing up in ye World at a time when men rather Composed them= selves Quietly to what they found there, then Examined it by Reason. Wch after other part's of learning had bin beaten Enough Came to be polished it Self. for they Saw these points plainely delivered so as any body at first Sight with Small Judgmt would be deceived; but they did Not at= tend to those places that Contradicted them so Much afterwards urged by ye Armin: be= caus they onely proved by Consequence, & did Not directly Contein ye other opinion, but In termes, Not to be discovered but by Connexion &c. [2v]

And

Theology

Calvin: &}
Armin: }

7. And Really there is so Much pʳtence for them as will allwais Retein a party of yᵉ weaker, who rather take for Granted whatever they find then Examine it by reason. Indeed yᵉ Armin: may perhaps have answered yᵉ places Cited by yᵉ other party. but it is with so Much paines, so farr unravelling yᵉ Context, and dedu= cing by so many odd, & unlikely conse= quences, that few Can Reach them. If Every one be satisfyed with what they say, and may Not rather thinck them put to as Shamefull shifts as the socin: themselves, there is so Much Colour, that its No Wonder the world hath bin so much driven that way; And were it Not that men are fond more of Reason then, SS. It would Generally obtein. [3r]

8. I wonder they Should say that God is Necessarily Either this or that, and so In= volve themselves, in Inextricable difficul= tys. for all necessity Supposeth Somewhat outwardly

Theology.

Calvin: &}
Armin: ..}

outwardly Cogent or binding, of that wch is Necessitated. and therefore that word cannot at all be applyed to God. so, "that God Cannot doe Evil, yet 'tis Not a physi= call Necessity, but proceeds from his choice and clearness of Reason, wch is seated in him. [6v]

9. Free will See page.[258]

Reason in }
Religion -}

1. When Men's Nature is prone to Em= brace Some peculiar sentiment, and ye generall sort will for Ever Maintaine them. If a good use May be derived from hence, why In this [vide christianity. 6. &. 7] as well as in other things, may Not God complye with ye Weakness of Man. The Jewish politie seems Nothing Els. so ye Learned must Not tye Religion by their Sence of it; or by ye height of Reason. In things that are Not Immorrall, or dis= honourable to God. The Cheif End of Re= ligion is but what is Necessary & Suitable to ye Nature of Man, So tho a philosofer may

[258] No paragraph reference is given.

Theology.

Reason in } Religion.,}

May have reason Not to follow Such a particular & distinct Notion of providence as doth obtein, becaus there is also no Need of it; yet becaus Mans Nature is fear= full, and out of Ignorance of second Causes[259] from ye unusuall appearances. Ever beleev a particular Influence of ye Invisible pow= ers, When I say, the greatest part of ye whole world Except 2. or. 3. philosofers, why May Not this be allowed in Religion and Countenanced yea Confirmed In. SS. by God, & derived to higher uses, as well as he doth, In ye philosofy of ye Creation, wch is apparently otherwise. [6r]

Holy Scrip} ture .... }

1. How used by ye Sects. see Socin: & Ar= r~~..~~/ia\n:[260] p. & Calvin: & Armin: p.

2. In ye books of Wisdome as one of the causes of Idolatrye, that Great Kings Might be in their absence worshipped, In their Images, was taken from the Roman Cus= tome of In carrying with them Into the provinces

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[259] JN refers to the second of Aristotle's four causes. The first is material cause, *hūlē*, the second is formal cause, *eîdos*, the third is efficient cause, *kinoûn*, and the fourth, *télos*. The formal cause (or purpose) is identified by something's visual appearance or form; it is analagous to Plato's notion of Form or Idea - Plato, too, had used the word *eîdos.* This is too much for a mere footnote to tackle, but it shows the degree to which Aristotelian method remained (and remains to this day) second nature in reasoning, there are further discusions below mentioning 'the Final Caus'.

[260] Washed/scraped out and overwritten. Note also that gaps have been left in the references to paragraph numbers ('p.') in the following part of the line.

Theology.

Holy scrip=}
ture ...., }

provinces the Images of ye Emperours
And shews those books to be wrote after
Caesars time. [8v]

Latitudi=}
-narians.}

1. It hath bin observed that the lati=
tudinarian's are generally Cartesians.
And perhaps that sect might take some
occasion from ye first rules of Morralls wch
D. Cartes layd downe In his Method. [34v]

2. It is an hard Case to damm all those
Infidells, wch living up to the height of
Naturall light, were Scarce In a possibility
of attaining any knowledg Concerning
christ. Before christ It seem's clear to the
contrary. ffor If they lived up to their best
Reason, Exact in Moralls, & abhoring Ido=
latry, as some suppose Socrates did. No=
thing Could be Required of them More.
ffor None holds yt ye Jewish law oblidged
farther then the Nation. Nay It Could
Not, becaus males all were to be prsent
themselves & their Sacrifises at Jerusalem
as

Theology,

Latitudi=}
narians. }

As for christ, ye Jews had but litle know=
ledg of him, none at all of that low Con=
dition he was to take. so that before the
coming of christ, Nothing appear's to be
Required at the Gentile's hands, beyond What
their owne Reason dictated. [34v]

3. Another accº of ye Rise of ye latitudina=
rians may be derived from hence. our Epis=
copall men have urged conformity to the
ceremony's of the church from their Indif=
ferency In themselves, and their obligation
from a Superior Comand. Now this sect
Embraceth them upon that accº, but still
with a Moderate affection, as of things In=
different, wch May soon be Exchanged
for others. Whereas ye high party, what=
ever they Talk, would have them valued
at a great Rate, and adored with as
close passionate & zealous Esteam as
fundamentalls, themselves. [35r]

free Will.

1. See Calvin: & Armin: In all. p.

2. Tho wee have ye priveledg of a
free

Theology.

free Will ... free will, Not to be discerned by ye Most perfect B.[261] yet profecy might yet stand firme, becaus what he hath declared Shall come to pass Many ages before, that he Confirmes with a Strong hand; but to know ye next Ensuing action's from ye prsent state of things, he may more Easily Compass, by knowing ye hearts & designes of all people wch is a vast way farther than ye best po= litian's can Reach. [36v]

3. But If God doe Not see how our will Inclines, It seem's to follow, that he Can= not Neither foretell how Somethings Meerly naturall will fall out; becaus our will determines Motion In Matter; so that If one Cannot be prdicted, Neither ye other. [36v]

4. It is observable that altho Some of ye heathen philosofers denyed liberty of Will yet Ever In ther future state, Not one was so absurd as to thinck ye Misery of some unhappy /persons\ prdetermined, as ye Calvenists doe at this time, wch certeinly Even those sour

[261] The most perfect being, i.e., God. The notion of free will, of course, imposes a limit on God's omniscience.

Theology.

free will,

sour tempers would Never have done
If they had not abused SS. to a prtens. [36v]

5. Really that is the most Notable ar=
gument agt or free will; The will Cannot
move without ye understanding. the under=
standing must prferr that wch seem's to
Include most good, whither it doth so in
Reality, or Not. hence what so ever prsents
it self fairest, must Carry the Consent of
the will; as if all deliberation or hesita=
tion were Nothing but ye Contention of ob=
jects upon the understanding, till one
prvailes over ye other; As Equall weights
In a pair of Scales; wch opinion is illustra=
ted In Democritus his Name by Gassendus
[????].[262] so that from hence they derive that
wee have No other liberty then a meer
spontaniety, such as is found in Brutes;
there being no difference but this, that
Higher & Nobler thing's may work upon
our understandings, then upon their
sences. [37r]

6. It's farther plausible becaus it
takes

[262] Pierre Gassendi (1592–1655), a French priest and natural philosopher who set great store by observation and whose work was influential upon several generations from Hobbes to Boyle, Locke and Newton. As well as experimental science, Gassendi was a thoroughly trained classicist and he employed and redeployed arguments from Epicurus (341–270BCE), Lucretius (99–55BCE) and Democritus (*c.* 460–*c.* 370BCE), proposing a theory of the atom. Whatever the citation is, it is not clear here, and no clearer in the first version of the Notes.

Theology.

free Will. takes Not away ye use of laws and advice becaus they may oblidg ye will perhaps to a determination. Tho I doe Not yet per= cieve how they Reconcile this with the Merit, wch ariseth from vertue. But upon second thoughts, It comes to the Same Issue as the other, becaus the Making these laws, and the giving of Councell, is the necessary Result of overpowering reason. 37r]

7. But perhaps It may be sayd, that according to this sentence, there Can be No liberty off will at all, In ye world. No Not In ye Most accomplish't being, for there Cannot be will In any subject without understanding, so that If the Judgmt of that lay's a Restraint to one particu= lar action, there Cannot possibly be any such liberty; becaus ye understanding must prcede ye determination of ye Will. [37v]

8. A strang fancy Sometimes possesseth men to doe a thing of wch they Can give No reason, as Especially appears in

playing

Theology.

free Will. . playing at Dice, but then farther the Most pevers Must be overswayed by a good and Convincing advice, wch is knowne to be Contrary. [27v]

Gods Justice. 1. As for Justice In God. there are but two things that I know wch oblidg him ~~to it~~, thereunto. ffirst to keep his promises, & then not to Condemne any of his creatures, Espe= cially ye Innocent, to Eternall & Intollera= ble pain. All other thing's are in his power as having an absolute dominion over his creatures, by Consent of all. [26v]

2. ffor the first I thinck it depends on this Reason; that for God to oblidg himself to promisses, and Not to performe, Would be frivolous, Wch cannot Suit with the E= ternall wisdome. ffor If he had power of Revoking, It would Signifie as Much, If he made None. And None would Enter Into covenant with him, or take Notice of it. [26v]

3. Then for the other, It cannot be Sup posed, God made ye world on any other

principle

Theologica.

Gods Justice. principle then his Goodness, that other creatures Might Enjoy themselves, ffor What is ye Glory of it, to a being, Infinitely happy; But Now to make a being Eternally Mi= serable ..... [26v]

Of the Gentiles. 1. Cic. In verrem. l. 4. Neque Enim hec Externa Est vobis Religio, neque a= liena, quod si esset, si suscipere Eam Nol= letis, tamen In eo qui violasset sancire vos velle oporteret. p. 459. Elz.[263] [13v]

2. Concerning ye Reformation of the Gen= tile Theology, see these verses of Tibullus felices olim veneri, l. 2. See 2. p. Edit Scal. p. 109.[264] [13v]

3. The reason why the Heathens at first thought Every thing Either animated or Governed by some God, or other, was becaus Seeing them Move, & Not knowing by What Caus, thought it Must be after ye Same Manner as they Moved themselves. [13v]

4. That all their Ceremony's were onely acting over some part of the History, see an Instance. plut. Thes. p. 50. A [par's.?]

liv.

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[263] Cicero, *In Verrem* (*Against Verres*). C. D. Yonge translates it: "Bring remedies, O judges, to the insulted religion of the allies; preserve your own, for this is not a foreign religion, nor one with which you have no concern. But even if it were, if you were unwilling to adopt it yourselves, still you ought to be willing to inflict heavy punishment on the man who had violated it" (*see*, https://topostext.org/work/131). I have not checked JN's reference.

[264] Tibullus, *Elegies*, Book 2, Poem 3, 29-30. "Happy those, once, when, they say, the eternal gods were not ashamed openly to be slaves of Venus." (*see*, https://www.poetryintranslation.com/PITBR/Latin/Tibullus.php#anchor_Toc532635319) The poem is a lament for the Golden Age, although phrased in strongly erotic terms. I have not checked JN's reference.

Theologia.

of ye Gentiles.

liv: varo. p. 21.[265] and Indeed almost all= most all customes In citty's rise from little paltry accidents happening at the first foundation of them, being the Most sol= lemne time, & peoples Minds More Erect, see Building Rome In liv.&c. [13v]

5. Observe ye Consent of the Gentiles In their Religion, for the temple of Diana at Ephesus was built at ye Joynt charg of the Citty's of Asia, So another, upon that Example, was Erected by the Romans With the help of ye latines. [14r]

6. The Most Eminent Miracles & More publiquely taken Notice of, Were Attius Navius his Cutting ye Whetstone, and that Jupiter did Not like ye prsultation of the sports, upon wch they were Most Solemnly Repealed.[266] [14r]

7. That wch brought in the Consacration of Men for Gods, after so long Intermis= sion, was derived from Alexander; for when ye Conqd persian's applyed the Same adoration to Him they did to their owne Kings.

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[265] Plutarch, *The Life of Theseus* and Livy, *Ab urbe condita*; without being certain of which edition is being cited we can only guess at the specific examples intended, there are several to chose from. *See* note on f. 184v, below.

[266] Attius Navius was a priest who countermanded the king, Tarquinius Priscius, and evidenced his priestly power by cutting through a whetstone; the word 'presultation' does not appear in the OED, 'praesultare' means to leap of dance before. I have not identified the story about Jupiter.

Theologia.

of ye Gentiles.

kings, whom they did Not Esteem Gods
but onely reverenced them With ye Same
posture; he being puftt up. & In his owne
Country yt adoration being ascribed to
None but ye Gods, began to fancy himself
one too; Besides that It appearing then,
In that philosoficall age, that Men for
their deeds had bin translated, he thought
his Conquests deserved it too, as his flatte=
rers argue in Arrian; After Alexander
the same humour was assumed by his
Captaines. ptolomy In Egipt, ffor Bere=
nice &c. Antigonus & Demetrius In
Asia, &c. & so it arrived at Rome it Self. [14r]

8. No subject, then ye Gentiles Theology
more beaten, and yet less to porpose,
ffor they that have attempted to give
the history of it; have rather heaped
up all ye passages together, then distin=
guish't ye Severall parts of time, as to its
originall & progress. They that handle
it

Theologia.

it philosofically, as Mr. Hobbs, onely Make
Religion founded in humane Nature,
of ye Gentiles, and attribute ye particular parts Meerly
to ye Contrivance of Governours, without
ye least touch at the history.[267] [7v]

9. As the christians say of Miracles
that they are now Ceased, so about Ciceros
time did the heathen say about devina=
tion's, that they had formerly power to
foretell, wch afterwards did fail. See for
this , Cic. 2. b. de leg: when he gives rea=
sons for his law in this point. p. 325. See
ye severall acco how their oracles chanced
to fail. plut de orac: Cic. de divin:[268] [7v]
Mr. Hobbs doth thinck that the oracles
were placed in some part of ye Earth
out of wch there did ascend an Intoxica=
ting vapour. And out of ye least speeches
of ye distracted, they applyed somewhat
to the thing in Question. Lev. p. 36.[269] [8r]

10. The Subterfuge of ye heathen for their
polytheisme, is to ye Severall Guifts of ye
same God. Sen. l. 4. ca. 7.[270] [8r]

11. plato

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[267] Part 3 of *Leviathon* goes into these topics at length.

[268] The texts referenced are Cicero *De Legibus*, and *De Divinatione*, and Plutarch *De Defectu Oraculorum*.

[269] Hobbes, *Leviathon* I, chapter 12.

[270] This would seem to be a reference to Seneca, *De Beneficiis*, Book. 4, chap 7, a Cambridge contemporary might have known, but we have to scramble to find out.

Theologia.

of The Gentiles.

11. plato calls yᵉ World, tho raised by the Dunamis, a compleat God, for So he Calls it In yᵉ Conclusion, Deus ille Eternus hunc perfecte beatum Mundum procre= avit - and the - Animus Igitur Cum ille procreatur mundi Deus, Ex Sua Mente Et deviniate genuisset -. Timeus In Cice= ro's translation.[271] [8r] The christian's also were Willing Enough, to use yᵉ allegorys of the heathen Theology, that they Might so more safely read them, and intrust them with an antidote to [Boys?]. Thus Tzetzes on Hesiod,[272] for Tertullian & yᵉ old christians would hardly allow them to be Read. Ter= tull de Idolatᵒ. [8v]

12. No greater signe of yᵉ vanity of Those Misticall Interpretations of fabu= lous Theology, then that they applyed the same Story's severall way's, to phisicks Moralls, &c. So Tzetzes. proclus.[273] &c. Quomede fabuloserˀ narrationes ad Misteria di= vina transferebantur, See Kercher obelis= cus pamphilis. l. 3. c. 9.[274] wᶜʰ flew too from

[271] 'Dunamis' is a Greek word used frequently in the New Testament to describe a miraculous power, for example that spiritual gift granted by means of the Holy Spirit. JN quotes from Cicero's translation of Plato's *Timaeus*. The *Timaeus* is one of Plato's last writings, it includes an account of the creation, which was the part translated by Cicero. The text describes a god making a god, the world being a god. I have used C. F. W. Mueller's 1878 text, widely available on the net, which reads: "Sic deus ille aeternus hunc perfecte beatum deum procreavit" and "Animum igitur cum ille procreator mundi deus ex suae mente et voluntate genuisset,", (Cic. Tim. 21 & 26). My literal translation: "Thus that eternal god begat this blessed god (i.e., world) perfectly" and "The mind, therefore, with that procreator of the world god, from his own mind and design begotten." Read the relevant passages in any edition of Plato's *Timaeus* to get the context and feel.

[272] John Tzetzes (1110-1180), a Greek grammarian working in Constantinople. He left commentaries on numerous Greek classical texts, reading/interpreting them by means of an elaborate allegorical method. He was an important source for much medieval and renaissance knowledge of the classical world. Tertullian (155-220), famously declared "What has Athens to do with Jerusalem, the Academy with the Church?". JN references his *De Idololatria.*

[273] Proclus Lycius (412-485), a Greek neo-platonist.

[274] i.e., Kircher's *Obeliscus Pamphilius*, 1650, book 3, chapter 9 (*see* reference, too, on the next page). Athanasius Kircher (1602-80), was a Jesuit scholar who claimed to have interpreted the hieroglyphics on the Egyptian obelisk in the Piazza Navona in Rome.

Theologia.

of ye Gentiles.

from ye Naked story he Quotes Much out of Jamblicus de Misteriis;[275] the Same Kirch: of ye Greeks as to their fables. Cap. 10. And they all Interpreted ye Same story severall way's, as well In phisicks as Moralls, as many Authors, so Many deductions. Among ye Severall References to the Theology, as to ye world, to ye Sun, to Jupiter So to Agriculture Some, & thinck they have Grounds for it too. see same Kirch: p... c. 13. concerning ye heathen Theology, & Referring as to ye Sun, where he gives his opinion for the Confusion of the historicall, & naturall Theology. It is that it happened partly out of the Confusion Wch the vast number of Gods Made; so forced to Joyne them together In the Worp: & Images, &c. partly becaus Not worshiping Naturall things, but under Some Symboll or other the symboll and the originall came to Signifie the same thing. And

to

[275] i.e., Iamblichus (245-325), a Syrian neo-platonist, author of (among several other surviving texts) *On the Mysteries of the Egyptians, Chaldeans, and Assyrians*, also known as *The Theurgia* or *De Mysteriis.*

Theologia

of the Gentiles

to be Mistaken one for the other. p. 278[276]
I rather thinck it happened becaus at first
they worshiped onely Naturall things
as the Wind, sea, sun, &c. and then
Deifying Men out of an apprehension of
some Comand In those things, wᶜʰ was onely
Skill, they afterwards Joyned them together
and worshiped them In Comon. - so Eolus
~~for~~ /and\ the Winds; Neptune & yᵉ Sea, Appollo
and yᵉ Sun. See Vossˢ. his New Editᵒ of
Idolatry. [16v][277]

<flourish underline>

[276] Presumably also a reference to Kircher.

[277] Blau of Amsterdam published a Hebrew and Latin edition of Moses Maimonides' *De Idololatria Liber*, (Moses Maimonides 1138-1204; tr. Dionysius Vossius (1612-33), bound with Gerardus Johannus Vossius' *De Theologia Gentili, Et Physiologa Christiana,* in 1642 (Gerardus Johannus Vossius,1577-1649). A second edition was produced in 1668, which might be the edition referred to here.

Critica.

Crittiques. a. Their cheif use is to Explaine Authors By Inquiring Into Customes, Skill in la= guages, & correction of Mistakes In transcri= bing, and to this End onely they versed & compared together humane Authors; so Also scripture; This took up the linguists, and more florid Witts, whilst o= thers were plunged In Controversie, and hath Imployed them Ever since the Res= =tauration of learning 'till these latter times, when all Authors being Restored & fully understood; Theology discovered, Customes displayed, ye art Now of it self ceaseth; Scripture being also perhaps too much canvassed by it. and Men have Ease & leisure to take other study's, and the Cours of learning that hath Succeeded them was philosofy. [46v]

Tongues. 1. The latin tongue propagated it Self by ye Roman Armys, and happened generally to obtein. The Greek prvailed by /the\ learning

it

Critica.

Tongues. it conveyed. Whereas In latine, tho a Native Tongue, there was Never any thing Consi= derable, but onely a litle poetry, oratory, & History, and Not so Much of those Neither. However it planted its self by victory In the Western parts of ye World; so much as that some Country's passed wholly Into It; onely varying in termination, as french, Spanish, &c. and others Reteined so deep a tincture as that the latine Idiom May Easily be discovered, throout ye whole language. [10r]

2. This In English it Self, as before So Especially since ye Recovery of learning. ffor Men Striving to write politely, have transferred almost all ye propertys & words of latin Into it. Hence If one Read Cicero, one would wonder to see ye likeness, of phrase an- swering in both. so as what I have thought meer Angliscisme, I have found there. And therefore I beleeve it is, that men Now In their orations decline from Cicero's, & ye true latin strain

Critica.

Tongues.

strain, becaus It seems to differ so litle from ye English, and Seek out odd kind of phrases, In their Composure, And In a pe= dantick way, make their latin Consistently, of a Company of proverbiall sentences & more peculiar Idiom's. or Els to avoid the naturall & purest latin, wch Now seems to them to be onely English Rendered verba= tim, they fall Into a poeticall vein of hea= ping up Epethites, & rarely using the Nomi= native of ye person, but thing, doe Elabou= rately proceed. Thus did Jns Barclay, & others In Imitation of him, have adopted it Whol= ly; and yet this seem's No more then /what\ Here= dotus, & Thucidides More Expecially did in Greek.[278] [10r]

Many, or most,

3. If wee Consider the Greek Instances, of wch wee have .....[279] before ye Roman Con= quest; tho Indeed that was Not altered after= wards, becaus ye Romans spoke it most them= selves, & loved it; or ye Easterne languages whither becaus the Romans did Not penetrate so

[278] John Barclay, 1582-1621, a French-born Scottish Latin poet. Herodotus (*c.* 484-*c.* 425BCE); Thucidides (*c.*460-*c.* 400BCE), so both of the Greek authors here cited were very early.

[279] There is no break in the corresponding passage in the earlier version (f. 11r), nor the words 'many or most'. This appears to be a rare intervention by RN. It would change the sense of the sentence were either or both words in the margin to be inserted, although the general argument for the pre-eminence of Greek over Latin literature (from a professor of Greek) is not affected.

Critica

Tongues.

so farr, or at least Not Implant themselves
So Much as In ye western parts, or becaus
wee have seen wrightings before ye Conquest.
If, I Say, wee consider Either ye Greek or
Easterne languages, wee Shall find an In=
compatible difference there is between the
latine & them, In the whole series beyond
what is between that & ye Westerne parts. [11r]

4. Its somewhat strang that peculiar
Idiomes of, - Take me this, or that. &c.
by wch wee deride ye Rustick, should run thro
both Greek & latine. ffor an Instance see
..... speech in livy. p. 147. so λαbε=
μοί, in sophocles.[280] Just as ye Jews doe Now
apply ye Scripture words, that onely are left
In that language, Either to a philosoficall
sence, or any other porpose.[281] [11r]

5. One ~~...~~ /May\[282] discerne how words, when first
Instituted, were onely suited to Sensible objects.
ffor those Whereby wee Express anything
of clear Reason, or Notion, are by a kind
of Metafor, or abuse transferred from things
of sence. this is obvious In all languages
as

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[280] Titus Livius (59-70BCE) and Sophocles (*c.* 497–406BCE). JN refers (presumably) to an edition of *Ab Urbe Condita* (the *History of Rome*). I have not identified to which edition and volume JN refers, whether it is a complete edition or a volume of extracts (such as we find in the Rougham Library at 933). One would suppose that JN would have used a complete edition. Neither have I been able to identify the orator quoted (this is left blank in the earlier transcript). I have been unable to identify the Sophoclean reference, but it must refer to a dialect term that occured in a speech: λαbεμοί, i.e., 'take it'. RN uses the Roman beta in this transcription, but had used a Greek beta in Add. MS 32517, f. 11v. In both MSS, as elsewhere, RN's transcriptions of Greek are hesitant and difficult to decipher.

[281] This paragraph is more or less exactly as the earlier version except for minor spelling changes, and the fact that the sentence beginning 'Just as ye Jews ...', was inserted in the margin in the earlier version as a comment on the point about dialect terms. I am assuming that JN brought together the use of dialect terms in Greek and Latin, and the use (in Hebrew?) of biblical Hebrew terms, to show how when quoted/transferred in this way the terms carry a new significance or signification.

[282] Washed/scraped out and overwritten.

Critica.

Tongues. as in ours. - hold. or break off discourses - take pleasure. - draw Consequences. &c. And so Especially when philosofy began to obtein, they were forced to Stretch Words to their porpose from ordinary things, & adopting them to Express their owne Notions. The Stoicks Most Notable in this, as wee may find Every Where, In Cicero. l. 1. καδγκον, άζίωμα.[283] [11v]

6. It is Strang to see how Reteining Some words of other languages, and Not transla= ting, but using them as proper Names have abused the world, Especially such as understand Not ye originall. This hath done Great Mischeif in Theology, in wch many of ye Hebrew & Greek words still Re= maine undiscovered, &c. But in philosofy It had as bad effects, Especially that In the scools. ffor Now If a man so Expresses any thing of them, In his native tongue, he is forced still to Retein their owne words tho in latin, Nay, and almost their owne

[283] In Cicero's *Tusculanae Disputationes*, Book I (for example), the Latin text is interjected with Greek 'specialist' terms, what we would call 'loan words' lending the sense of a specialist area of knowledge. *See*: https://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A2007.01.0044%3Abook%3D1.

Critica.

Tongues, — [284] owne phrases, or Els they Cannot make any thing of it; wch shews there is Indeed Nothing but words; Save onely in the Con= ceipt of their fond Admirers, becaus they Cannot be Expressed In any Style Els, but onely In that of the Inventors. [11v]

7. I have often thought it very Strang that ye poets of ye Greeks have words pe= culiar to themselves, Such as you shall Never find among ye Orators. This is More Eminently seen In ye Greeks, very litle In ye latines. Lucretius May, perhaps be sin= gular on this acco. I fancy for ye Greeks In whom it appears More Eminently, It May be thus. When Homer or Hesiod[285] wrote first, perhaps all their words Might have bin of comon or proper use, for ought wee know, having Nothing of prose of so Early a date to Judg by. But being after= wards left off In the language, they Might Still be Reteined by ye Succeeding poets as

[284] Washed/scraped out.

[285] Lucretius was the author of *On The Nature of things*, an exposition of the philosophy of Epicurus (see note on f. 200r, below). Scholars have dated the Homeric compositions to between 12-8C BCE and those attributed to Hesiod to *c.* 700BCE. Homer is considered to be a tradition rather than a person, Hesiod a person. They represent the beginnings of the Greek poetic tradition, predating other forms of literature. But you knew this.

Critica.

Tongues

as following the Example of those two E=
minent ones, and thinck it Authority E=
nough for any word that was found amongst
them. [12r]

8. And besides those Words, tho Not of Com=
mon use, yet might be well Enough known
from ye Admiration & Convers, wch ye World
had with those two. And so some of our
English poets have done; Spencer affected
the old style, wch perhaps he took from the
phrase of poets that had Gone before, Such as
Chaucer, Tusser, &c. others since have imi=
tated him, as for Example, Dr. More,[286] In all
his uncouth words, wch one shall find No where
Els. [12v]

9. Or perhaps the poets or Most of them
wrighting In a pastorall way and bringing
in person's of a Meaner sort, Might attri=
bute such words to them as were of a Courser
sort, Spoken perhaps onely by Rustiks, &
Country Clownes, Not used In cittys, Nor with
more Refined persons. wee see among /us\ the
country

[286] Edmund Spencer (1552-99), Geoffrey Chaucer (1340s-1400), Thomas Tusser (1524-1580) and Henry More (1614-87). Chaucer (we can assume) wrote in the idiom of his own time. Tusser's verse is notably old-fashioned, its old-fashionedness is suited to his material, a combination of country lore with advice (*A Hundreth Good Pointes of Husbandrie,* 1557; *Five Hundreth Pointes of Good Husbandrie*, 1573). Edmund Spencer famously looked back to Chaucerian and medieval chivalric texts. The language of Henry More's early poetry followed that of Edmund Spencer. More is now remembered as a 'Cambridge Platonist' and as an early enthusiast for Descartes. He and Descartes corresponded and their exchanges were published as *The Immortality of the Soul* (1659). More's *Enchiridion Metaphysicum* of 1671 argued that extension and space were not co-extensive (which was RN's position), but he also proposed the existence of infinite vacuum/space. *See* also below, f. 211v.

Critica.

Tongues. country people, have quite another set of word & dialect. So the Crittiques Judged of theocritus, & Excluded some of his Idyll? Non tantum a foro, Sed ab urbe as Rusticall. Heins. lect. In Theocrit. c. 1., p. 292. Col. 2.[287] [12r]

10. That some words grow out of use & fashion. ye Reason is, becaus New ones are taken in, & Novelty pleaseth so Much, that Every one assumes them. That wch brings New words In play, is conversing With other Nations or tongues, out of wch they are taken, becaus perhaps they seem better to Express ye thought. ffor ye Reason of absolute words. see. Cic. l. 3 de orat. p. 492. who there plainely Implys it.[288] [13r]

11. The scoolmen are great Corrupters of ye latine tongue.[289]

Style .... 1. I am perswaded that a ready Cours to a good style & choice of words is to Read aloud, or distinctly pronouncing to ones Self any Author Excellent In ye language that I desire to attain; ffor In a careless running it over, wee assent /onely\ to ye Sence never

[287] Theocritus (*c.* 300- *c.* 250BCE), traditionally celebrated as the first pastoral poet. I have not found the edition cited here, which presumably descends from Heinsius' 1603 edition (*Danielis Heinsii Emendationes et notæ in Theocriti idyllia bucolica. : Accesserunt epigrammata eiusdem, & idyllia quædam ab eodem & Hugone Grotio ita translata vt versus versui respondeat: decima item Maronis ecloga ab eodem & Iosepho Scaligero dorice reddita: alia item non pauca*. Heidelberg, 1603). The quote reads: 'Not so much from the forum, as from the city'.

[288] Cicero's *De oratore*; in the earlier draft this reads: 'See Cic.: lib. 3. de orat. p. 492'

[289] See 194v, below

critica.

Style .... never take notice of ye Cadency's and ffittness of of ye words to pass or lipps, wch Must be tryed upon the tongue. In Composing any thing, we Examine With What Grace It Will ffitt our Mouth; and therefore the Same way is to be trodden in procuring a Style. [35v]

2. I observe that Not onely words In time but the very Style & phrase alter, & Grow neerer those men Convers withall, so that Since learning hath bin Recovered, & latine generally understood, they have not onely adopted Most words, but have translated the very Idiom Into our use; so that one would wonder to see so much Consonancy between ye tongues latin & English; Wch hath onely risen from our Conversing. Any tongue Is Most polished by Speaking In publik, ffor the Men Endeavour to speak neatly & finely, & treating of thing's Not In Comon use, they are forc't to Mix New words, so while men delivered ye opinion of the ancient's they were forced to use

their

Critica.

Style. their owne words, onely putting them Into English termination. And so by degrees ye Same words, tho odd, & philosoficall are by allusion's applyed to ordinary things. [35v]

3. It is strange how some men have affected Strang names to the Heads of discours. Almost Every sect of philosofy, have their peculiar termes, wch their owne Country men, tho Never so well verst In ye language Could scarce understand, wthout an Explication. The Stoicks, among others, were much addicted to this. their Rejecta, &c. Among ye latter None more famous for this then Bacon, who Every where Coynes words, &c. as If he Intended to devise a kind of philosoficall language. as Idola, Tribus, Specus. fori. Theatri. &c.[290] [36r]

Learning. 1. Many books loos themselves In time, by growing Absolete In style, or at least Retein Not so Much credit, becaus our

[290] The Stoics 'rejected' the world but acknowledged that some worldly things worked positively while others worked negatively. The Latin 'rejectaneus' was a direct translation of the Stoic term in Greek ἀποπροηγμένα (apoproegmena), meaning 'dispreferred', this was applied to anything negative (for example, death, illness, pain), and was opposed to anything προηγμένα (proegmena), meaning 'preferred' (such as life, health and pleasure). For Francis Bacon, see note on f. 91v, above.

critica.

Learning.

our language, and all other already
living, chang the dialect Continually,
as may be Instanced since Chaucers time.
Now he that would have advantage of his
stile and properness of words live perpe=
tually, Must write In latine ffor that is
Measured by Ancient Authors and Judged
off by Instances from them. So that this
Can never be Subject to any Alteration. [32r]

2. provision of food, without Imployment
the first promoter of learning, as plato[291]
says, and therefore among Such whose Im=
ploymt did Not take up their Minds, as
Shepheards. &c. learning Improves thus
In that wch Cost former generations ye
Study of their whole time; the latter In
their youth Receiv from them, and so have
Matter & strength of age to proceed in. [32r]

3. It seem's that the dearness of books,
& scarcity of some books, are very great
hindrances to ye progress of learning
Especially

[291] For Socrates (469-399BCE), as recounted by Plato (429-347 BCE), learning was a benefit of leisure, which was the product of a classed society.

critica.

Learning Especially to such as live out of uni=
versity's.[292] [34r]

4. That Man Shall be Most approved
In ye World for learning & parts, who
Speaks More rationally, for those things
to wch ye times are Most addicted. Any
that starts a New device, will Not have
any applaus In his life-time. [34r]

5. It is a Much harder thing Now to
have ye Credit of any New Invention or
discovery In Matter's of learning, then
In the first Instauration, after the defect
from Rome. ffor then ye way lay open, Where
None had trodden before; but Now Every
Subject is so well handled, that it Will be
very difficult to add, tho Books are Now
So Comon, that it is Easy to be So farr a
good Scollar, as to know what ye World
knows already. [34r]

6. Wee have a great /dis=\ advantage In ye
cours of our Study's, In Comparison with
ye

[292] The building of the Library at Trinity was the most important project undertaken during JN's years as Master (see Roger North, *Lives*, vol. 2, 1744, p. 275ff). He left his own library to the College (*ibid.*, p. 257). An account of JN's interest in books supplemented by RN's observations on the London book trade (*ibid.*, pp.240-2) provides a fascinating digression in the *Life* .

Crittica

Learning.

the Grecians, from our Spending So Much
time In learning languages. the Romans
Indeed afterwards were oblidged to the
Greek language, ffor to derive thence their
philosofy. but they had a ffarr More Com=
pendious way to arrive at it, by travelling
Into ye places where the language was yet
Spoken. Wee have latin and Greek to acquire
onely by the tedious Way of Grammer,
Not by Convers. This is all the breeding of
our Children, & the Not having Comand
of languages, is the Greatest obstruction ~~of~~[293]
to our prtenders. [40v]

7. Let No Man Wonder that universi=
ty lectures are not frequented for It May
Seem that they were /constituted\ to supply as well ye
want of Copys, as defect of discourses
written on Such, & such Subjects Both wch
Since printing & the Advancement of lear=
ning doe so Much abound, that Men
Can Improve their time better In their
studys

[293] Washed/scraped out.

critica

Learning. Studys. Neither is it unlikely that for=
merly ye yong Scollars had Not lectures
made to them In their tutors chambers
but Resorted to ye publick, whither In Col=
ledg, or towne. so that I must account
lectures rather Exercises of ye professors
then Instructions for ye students. [39v]

8. Just as children Increas in knowledg
so the world, In learning; at first they
were Not able to understand any thing
of reason, If propounded In a Naked Ex=
pression, and therefore the Ancient wise
men Couched their Instructions under pa=
rables, fables, similitudes, &c. exposing
their Notions to sence as Much as Might
be. So lord Bacon observes. p. 153. Aug.[294]
ffor then ye world was generally clouded
In Ignorance, that they could Not bear
the Sudden view, Nor understand reason,
If abstracted from Sensuall Conceipt. It was
then with ye whole world, just as If one Should
Now discours with ye Most un hewne clowne. [56v]

9. So

[294] i.e., *De Augmentis Scientiarum*, 1623, p. 153. See note on f. 195v.

Crittica

Learning.

9. So are all the Inhabitants of America at this time, seeming Incapable to us of being Civilized. but I beleeve, tho the know=ledg of the learned world Should be propo=sed to them, with ye utmost advantage yet they Would Not be able to reach the force of Reason. It Must be accomplished by degrees. In severall Generations; as if when ye braines of ye parents are somewhatt disposed to learning, some of the aptitude Should be Conveyed to ye Children, who have that advantage, may proceed farther In ye acquest of knowledg. We know ye doctrine of ye Antipodes was discovered long before, & was Enterteined with ye Greatest Cruelty as If ye world were not then ready for such an Invention.[295] [56v]

10. In the way of learning, Much time is lost In confuting and destroying fals opinions. [39r]

11. The university men are to blame for Minding philosofy onely in their yonger time, & by that they are Masters of

[295] i.e., the belief that the world was a globe, which belief was persecuted before the modern period.

crittica

Learning. of art, they leav it off quite. If Not while Batchelors. for tho they Cheifly /follow\ some other study In order to a profession, yet they Might allow some time for that wch is No other then a Recreation. [57r]

12. The laying aside old philosofy, hath done Much hurt to the book sellers, becaus It hath put a vast Compy of books out of Request; vist. ye vast Number of Comentators upon Aristotle. [40v]

13. The truth is If Aristotle Were Not read wee should be at a loss for training up youth, becaus ye way of Experiments, is too chargeable, and fitter for Riper Judgmts, but then Why ~~they~~ Should /they\ be kept back So Much from ye high way, as to spend time In Aristotle when Cartes keeps as good a Method, and for an hypothesis doth as well, & better in this, that he Comes nigh ye true Method. As for a true Systeme, We have none yet, but are proceeding In ye way of Experiment, to collect a Naturall history, as verulam, directed. [39v]

14.

crittica.

Learning

14. As to New philosofy. see yt title No 1.

Scool men} & logick.}

1. Aristotle gave occasion to the Scool= men's drye distinctions, for his logick serves for Nothing Els, Never did 2. humours so well agree. [39r]

2. How the scoolmen fell to those Im= pertinent & vermiculate Question's, see My lord Bacon. Aug. 42. Who Imputes it to these. 1. sumum otium. 2. lectio rara. Nisi Aristoteles. 3. Materia parva cum Ingeniis, satis acutis, coinciden.[296]

3. It is notably observed by Mr. Hobbs[297] that one May see ye vanity of ye scool= men, by trying to translate Some passages out of them Into English. and really when wee discours of their notions wee are forct to use their owne termes in latin; becaus they are Nothing Els but words. Cornelius Agrippa[298] also abuseth them amongst the Rest. [45r]

4 Want

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[296] Bacon's *De Augmentis Scientiarum* refers to diseases of learning - they are institutional and moral. Here JN mentions it as the result of the combination of idleness, little reading (even of Aristotle), and keen wit employed on trivial matters.

[297] Hobbes writes in chapter 8 of *The Leviathan*: " ... if any man require, let him take a Schoolman into his hands and see if he can translate any one chapter concerning any difficult point; as the Trinity, the Deity, the nature of Christ, transubstantiation, free will, etc., into any of the modern tongues, so as to make the same intelligible; or into any tolerable Latin, such as they were acquainted withal that lived when the Latin tongue was vulgar".

[298] Heinrich Cornelius Agrippa (1486-1535), author of *De incertitudine et vanitate scientiarum atque artium declamatio invectiva* (*Declamation Attacking the Uncertainty and Vanity of the Sciences and the Arts)*, 1527.

critica.

Scool-men & Logick.

4. Want of Matter is well observed to have bin one caus of ye Scoolmen's foo= lery's, for so, when Men's thoughts have bin wholly Engaged In the SS. at last they have fallen to their Allegory's, tropes Mo= ralls phisicall References. &c. of wch Wee have seen Enough. and Especially for this In ye ancient fathers who all run that way. The Jews are as plaine an Instance, In their strang deductions, forc't Interpret= tions out of their law. &c. As also Mr Spratt hints in his Royall Society.[299] [45r]

5. P. Lombard,[300] their first founder; None followed him In that Way for al= most 100. years; Altho he doth Not bring in Aristotle, yet he is full of Nice distinc= tion's, & frivolous Questions, wch were Aug= mented to a vast bulk by letting In A= ristotle. To say truth, St. Austin[301] gave a great occasion for ye Scoolmen's Dryeness ffor he himself is full of those Imperti= nences, whom also ye Master (p. lomb:)

Quotes

[299] Thomas Sprat, *The History of the Royal Society of London, for the Improving of Natural Knowledge*, 1667; also, *see* comment in *Lives*, vol. 2, 1744 p. 263.

[300] Peter Lombard (Petrus Lombardus, 1096-1160), Italian scholar who rose to become the Bishop of Paris. An early systematiser among the "scoolmen" here discussed.

[301] St. Augustine (Augustine of Hippo, 354-430), one of the Church Fathers.

crittica

Scool-men & logick.

Quotes at Every turne; one May See it by his distinction of usus, & fruitio, &c transferred out of his lib. de doctr'xtia= nª. Into ye Master of ye Sentences.[302] the scoolmen discuss Most largely ye doctrine of the holy. T. and I am perswaded, their Streining so hard to State that forced In part to those Shallow Sorry decisions. [45v]

6. Their way Suits very well, Ingeniis Infra medocritatum positis, Quia dis= tinctionum obscuritas causa est, ut de omnibus Eque confidenter loqui [possiut?] ac si illa optime Novissent &. Met. Cart. p. 43. The same observes, Nonquam ob= servari veritatem aliquam antea Igno= tum, disputationum scolasticarum ope In lucem protractam fuisse.[303] [45v]

7. Its logick that hath done so much harm In the world ffor when the world In order to Confute ye Sofisters &c.[304] had Made such Nice distinctions to avoid all ye Nice Captions they Could Make, and un=

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[302] Peter Lombard wrote *The Four Books of Sentences*, a compedium of wisdom literature, he became known as the Master of the Sentences.

[303] The first quotation is from page 63 of the Latin edition *Principia philosophiae*, Elzevier, Amsterdam, 1644; it is most likely that '43' is a slip of the pen by JN. I use the English edition of *Discourse on the Method*, Part VI, translated as: "Their fashion of philosophizing, however, is well suited to persons whose abilities fall below mediocrity; for the obscurity of the distinctions and principles of which they make use enables them to speak of all things with as much confidence as if they really knew them" (https://www.gutenberg.org/files/59/59-h/59-h.htm; translator John Veitch).

[304] Sophists, i.e., 'the wise', a title given to professional teachers such as Sophocles and Aristotle in ancient Greece and later, Rome. As JN notes in his text, words can change in their meaning over time, and by his moment 'sophist' had become, as it remains today, a term of disparagement. *See* note on f. 194v, below.

Crittica

Scool-men & logick.

unravelled all things as much as they Could, It happened /that\ afterwards In any Question they would apply those distinc= tions to the Subject In hand and So confounded Every art & science with lo= gick, as it was Aristotles Custome. [55r]

8. I wonder Much at Aristotles books of logick, that he useth no prfaces at all to give ye designe of the work, but falls /on\ prsent= ly to his dry buissness. And I doe Not find by any description of the Stoicks logick, who admired it most of all, or any other, that they made so nice a thing of it as he did. The old phisici yt flourished before Ever logick was Invented, did farr better in philosofy, then afterwards when logick had Spoyled all. [56r]

9. How Came Ramus[305] first to depart from, and affront Aristotle, In such Confu= tation's? I beleev that becaus Not study= ing wholly ye Mathematicks, tho Excel= lently well versed in it, & forced Withall by

[305] Petrus Ramus (1515-1572). French scholar, educationalist, logician and critic of Aristotle. We know exactly the date of his death since he was a victim of the St Bartholomews Day Massacre. Ramism, his critical practice, was widely influential on succeeding generations - Bacon, Descartes - indeed, on all those commended here by JN.

crittica.

Scoolmen & logick.

by his professors place to Expound Aris= totle, he was In a better Condition to dis= cover his Errors, then another. but He him= self In prface to Scol: ownes that Rhodol= phus' Agric: In germany, & his scollar Sturmius, first vindicated logick from the Sofistry of Aristotle.[306] Wee See with what Contests Ramus at last Got ye victory over Aristotle, Not onely among us, where his party were distinguished by his Name, but also beyond sea, till all logick is layd aside, as it tends at this time. I am perswaded Ramus first affronted Aristotle In his throne, and altho it was In logick, yet it undervalued his Authority & Name, wch was ye Whole buissness. But besides it was a point. vist. logick, for wch he had bin' most famous, & Esteemed ye author of it, by wch two he did Most Mis= cheif, confounding his phisicks, with those Sorry distinctions, and In them giving occa= sion to ye Scoolmens Subtile Contentions about meer words. [41v] Ramus Inquired More Into

[306] Petrus Ramus, *Scolae physicae, metaphysicae, mathematicae* (published in parts between 1565 and 1578). Rudolphus Agricola Phrisius (1443-1485), a Dutch scholar; Johannes Sturm (1507-1589), a German educationalist.

Crittica

Scoolmen & logick.

Into ye use of logick, & Excluded all that did Not serve to Explaine ye Sence of Authors, Hee took ~~too~~ /so\ Much pride Even in his lo= gick that he profest he had rather have the Improvemts of that, then any thing Els Engraved on his tomb. [43v]

10. As long as ye Crabbed & perplext Way of ye scoolmen obteined, ye Gentry never could fix their minds to Study, who Now wholly addict themselves to ye Ingenious practis of Experiments.[307] [43r]

11. verulam Says In his prface to Nov: org:[308] - besides he thincks that part of lo= gick, vist Syllogismes, absolutely useless to Naturall philosofy, to wch Induction so Much neglected is onely Subservient. In all disputes of Naturall Causes, Experiments Must be pro= posed, and tryed, Just as ye Mathematitians can doe Nothing without their scemes. [40r]

12. Its not Much wonder Disputing grows out of fashion, for really Its Not so

[307] This is an astute insight to have had at that time and is supported by every commentator and historian since - viz. the history and sociology of knowledge.

[308] The *Novum Organum* was, of course, specificlly intended to challenge, and replace, Aristotle's *Organum*, the name given to his six books on logic and dialectic. JN continues to refer to it over the following paragraphs.

Crittica

Scoolmen & logick.

so proper In ye way of philosofy Now in vogue, wch is by Experiments altogether. so that it is ye Sences, & Not reason alone, wch must Judg. Aristotle Exactly fitted his Logick & his Naturall philosofy to that porpose, vist. substantiall forms, the ge= neration, Corruption, & Mixture of them. [39r]

13. The old way of philosofy is fitter to Maintaine ye Mode of disputing In uni= versity's, & to hold up professors places, then the New, wch is Not talk but Experimt org. p. 25. [39r]

14. Aristotle Shews it plein, in Severall places, that ye very designe of his logick is to dispute fairely on both sides, & either to ansr or object. see latter end of his topick: de Exercitatione, &c.[309] And Indeed his is Excellently Contrived for wrangling, by ye nice distinctions he makes of Every thing. [17v]

15. According to his Custome, he first Recites ye opinions of others, then gives his owne and

[309] The 'Topics' is the fourth part of the *Organon*, presumably JN is refering to the *Topics*, Book VIII.

and so Comonly Repeats ye best & truest
wch afterwards he Confutes, very weakly, so
Strang is it, for a man of his parts, Either
Not to be of their mind, ye arguments being
so well knowne, or that he be so proud
& willfull porposely to oppose them, onely
to advance himself. and really ye Greatest
profit to be reaped by his phis: & Metaphis:
is onley Matter of history yt lyes Couched
in them. [21v]

16. The scoolmen's, videtur quod sic:[310]
their disputing on ye Contrary Side to what
they hold, was derived from Aristotle; for
he proposeth first ye fals opinions & ye argu=
ments yt seem to maintaine it; & then
he lay's downe his owne, & answers them. [21v]

17. Concerning ye Sofisters See an Excel=
lent description In lucians .....[311] [9v]

18. The scoolmen Great Corrupters
of the latine tongue.[312]

<flourish underline>

[310] i.e., 'it seems that it is'; try a search in any Latin text of, say, Aquinus. It seems that it is used a lot.

[311] Lucian of Samosata, *c.* 125-180. This is an example of an ellipsis where, it would appear, RN had difficulty deciphering his brother's Greek; in the earlier MS, f. 9v, RN rendered it as 'δραπέται' (i.e., drapétai, i.e. Fugitivi, or The Runaways). Δραπέται was a dialogue satirising (among others) common artisans who, envious of the prestige and wealth of philosophers, aped the manner of Cynic philosophers such as Diogenes and parade through the world as imposters. The satire is as much social as philosophical. By the time of Lucian the Cynics were long gone and the dialogue would have been read as an attack on the Sophists of his own time.

[312] *See* 186v, above.

philosofica

prjudices

1. The reason of all prjudices, Especially In .....[313] is because having suckt on Such principles from our Infancy, Wee take No farther Notice of any thing In human wri= ters, then as they serve for /the\ Illustrating or proving What Wee thinck our selves bound to maintain, and So pass by all other Con= siderable passages without ye favour of a Reflection. So that those tenent's of philosofers wch seem Most absurd /now\ to us becaus ore'swayed by an Inartificiall ar= gument, wch if left to our selves, would have bin thought ye product of Right Rea= son. [38r]

2. Nay our prjudices have Reached to ye depravation of words, & perverting them to an ill Sence, so that humane writers are Either Not fully understood, or Els Seem of a farr wors Colour then they are In themselves. Therefore he that would attain ye Right use of his reason, Must convers

[313] The ellipsis is also in the earlier version, Add. MS 32517, f. 38r. Who knows wht JN wrote? Maybe RN left it this way to allow the reader to import their own example of prejudice. What follows is an early description of what we now call 'confirmation bias'.

philosofica.

prjudices. Convers much In ancient authors, with a Resolution to Revolve In his mind Every passage, for those free Spirits are Not afraid to Speak, what wee dare hardly Entertein In our thoughts. D Cartes, hints somewhat like this in his method. p. 4.[314] [38r]

3. One way to avoid an overfond Embrace= ment of any Sect, is to read both partys soon one after another, for one is apt to sink Into our Mind, where it takes place without Con= tradiction. [38v]

4.'Its Much my lord Bacons designe & method should not be put in practise, Con= sisting so with reason, before this time, there having past So many years since his first discovery. but he himself Complaines, In his last page of his Aug. that - verba sua se= culum desiderant.[315] [38v]

Morality. 1.'Its comonly urged agt ye rule of vertue being plac't in the midle;[316] that Justice want's one of two Extreams, for that all

[314]The introductory pages of Descartes' *Method* offer an account of his self-training in reading. *See* note on f. 192r above for JN's reference.

[315] *De Augmentis Scientarum*, 1623, was a Latin translation of 1605's *Advancement of Learning*, it was an extended version. The quotation does not appear in the English edition but, as JN states, it appears on the very last page of the Latin edition. Bacon mis-remembers a story from Plutarch's *Moralia* about Lysander, he attributes it to Themistocles. The story goes: "At an assembly of the states of Greece, when a Megarian talked saucily to him (Lysander), he said, Sir, your words want a city." To which Bacon adds, ruefully "Certe objici mihi rectissime posse existimo, quod verba mea saeculum desiderent; saeculum forte integrum ad probandum; complura autem saecula ad perficiendum." "I think it can rightly be said of me that my words want their century; perhaps a whole century to be proved; but it takes centuries to complete".

[316] i.e., that the 'golden mean' is achieved by finding the middle way in performing any virtue; that there is no golden mean in Justice, since justice is indivisible.

philosofica

Morality.

all other fall under ye Name of Injustice
But the rule Seems Still to hold Good, for in
giving Justice there is too litle and too Much,
but becaus they are not distinguish't by seve=
rall Names, they are branded with ye Negative.
Injustice. ffor otherwise ye objection strikes as
well at all other Instances of a medium
betwixt 2. Extreams. ffor Cowardice & auda=
ciousness are both. If I May so phrase it, to
My sence Infortutude;[317] but thay have had ye
fortune to pass under severall Names. [31v]

2. Men Wonder why ye Wicked florish so
much, when as there is so Naturall a reason
for it. ffor they that will take all opportunitys
of cheating, lay hold on Every advantage
tho never so unlawfull, Must of Necessity
thrive better then a just Man, who Can Make
but honest Gaines; And therefore Cannot thrive
So well as one yt hath a larger sphear.
Especially when there is No promise from
God of an Exact distribution In this life.
but

[317] I read 'infortutude' as 'infortitude' since it makes sense that a lack of *true* courage, the capacity to endure (this is a Christian priest writing), could be manifest in either cowardice or audacity.

philosofica.

Morality. ... /but\ rather the Contrary, In that he decla=
res that his sun shall shine on ye Just and
on ye unjust. [32v]

3. I must take notice that No other
creature takes death patiently, but Man,
or Submitts to it; Every other animall
contends to the last Gasp; Man can offer
his throat to the devouring Sword. [32v]

4. When Men talk of ye Eternity of Good
and Evil, they can, I thinck, apply it onely
to Justice. and this is becaus the same reason
that oblidgeth us to it, will Engage all other
beings under God. ffor by ye Same account
that they Greive any order of beings what=
soever, they are subject to the Same oppresi=
on from other's of ye Same Rank, or Not,
and this spreads it self over ye whole Creation
yt are Imbued With Reason. [27v]

5. But here is the true use of Religion
wch reacheth farther then the Civil laws
Can doe; and becaus that Men Might Not
measure

philosfica.

Morality.

Measure all things by this life, and so Make ye prservation of it ye ultimate End, Even In unlawfull Ends, and destructive to generall good, brings in a State after death, to wch men Might Referr their thoughts; for if there were No state after death No Man Could be oblidged to suffer patiently, but to Redeem himself by ye Greatest Injury's ffor he ventures for his life, wch he Can but loos at last. and If there be No punishm't afterwards, No other can be Expected of him. [25r]

6. And Indeed all Morall vertues are No thing Els, but Means to prserve our beings that is a cours Most Convenient to Conti= nue our life here, It being our Greatest Care and such all Morality will be found If More neerly Examined; and such part of it as doth More neerly concerne ye Governemt was More Early discovered by ye World, becaus No so= ciety Can subsist without it. [25v]

7 But

philosifica

Morality.

7. But that wch was terminated in parti= cular persons, did Much latelyer appear When at ye last, men Saw yt ye breeding of Every private person did Reflect upon ye Whole, by Making Each More or less serviceable to ye whole. they at last began to Regulate that, by branding vice with a Name of Infa= my, & advancing vertue & sobriety so high. I beleev Sparta was the first Comonwealth that took care of, and ordered ye private behaviour of ye people, for before they had hardly any Notion of that part of Morality wch was Shut up in a private Capacity. [25v]

8. The old Ethnicks admired & thanked God as Much for philosofy, as wee doe for our Religion. Cic: Seneca,[318] & Indeed that Sup= plys ye place. [8r]

9. No wonder that brute beasts live by such hardship in our service, when ye generality of Mankind Earne their living by ye Sweat of their brows, Especially day-labourers, E= quall with other brutes. [33r]

10 all.

[318] This reads: 'Sence' in Add. MS 32517, f. 8r, presumably this is a reference to Cicero's *De Senectute,* a philosophical dialogue on old age and death.

philosofica

Morality. 10. All talking of good & evil & the Eternall obligation of it, signifies Nothing to ye oblidging men to goodness, Where they can otherwise be Secure. If it be Not pressed by a Compensation In another State. [29r]

Finall Causes. 1. Cartes learn't the disparagemt of them from my lord Bacon, who directly strikes at them. they are those wch the οί φυσικοί ye onely person's before it was made a trade wholly Rejected, as Aristotle directly affirmes and appears In their wrightings. It was plato & then More fully Aristotle who brought them up, & thought them So Necessary to Naturall philosofy.[319] [22r]

2. They are generally Suited onely to our fancy, and for our advantage, wee Make those Ends of Nature, wch are Most profitable to us; but when from ye largeness of the uni= vers it appears, that this Cannot wholly be designed by Nature, these Must vanish and be left untouched, becaus wee Neither know

[319] 'οί φυσικοί'(fysikoí), i.e., the physicists, the pre-Socratics who had originally disparaged explanation of the world by means of an argument by final cause. Socrates argued in the *Phaedo* that only a teleologial explanation, or argument by final cause, would do - merely giving *sufficient* cause for anything, he argued, was insufficient. Bacon, a radical empiricist, could not agree and JN echoes his misgivings in the following paragraphs. Natural Philosophy, or Physicks, for both JN and RN, as well as Bacon and Descartes, was the study of the world, of material things and their laws of causation, and absolutely not reflection upon ultimate purposes, and saying that God had planned it that way was not an answer. On the other hand, any number of trivial explanations by 'final cause' can be made in daily life, for example that a chair was made to be sat upon, or that a roof was constructed to keep out the rain.

philosofica

Finall Causes.

see fol. 96.[320]

know Nor can Comprehend what is Couched In ye univers; Nay and it Need Not be sayd that all here below is Contrived meerly for us; and perhaps Cannot Wholly be Made out; for what are wee, that wee Should choos for orSelves? Is it Not Enough that this is habitable by us? that wee Need Not be Mi= serable, tho perchance it answrs not all our conveniences. ffor the Same Argument that affirmes, takes away ye difference of soyle & pleasure. ffor why some Countrys should be barren, Not to be Endured in Winter, & sumer, if all should be measured by our Con= venience. No reason perhaps can be given. Wee ought to Submitt to our condition, & Not set orselves at ye top of the creation. [22r]

3. They doe Not belong to phisicks, for Whatever ye designe of God or Nature May be 'tis by ye Mediation of Naturall Causes, wch indeed act by Necessity, and So ought to be designed. And the property's & laws wch Matter & motion are Endowed withall, are not Interrupted by this providence; but layd so

[320] Written in small script; for Descartes on final causes [RN's p. 96), see below, f. 214v.

philosofica.

Finall Causes

so at ye first Creation, as shall produce such Effects, and ye minding these alone depending meerly on fancy, & so Easily Invented, have made others Careless of any other Caus. [22v]

4. They are Easily avoided by the Epi= curean, & others, who say that all things took a Cours of life Consonant to their Shape, or Els that they perished.[321] [22v]

5. Its farr beyond our reach to attempt to know all ye designes of Nature, or God In ye Creation. [23r]

6. Finall Causes seem to deceiv just as ye sences, by Shewing rather our owne affec= tion, or humour, then ye Reason it Self. Con= cerning them , see Bacon. Aug. p. 237.[322] [23r]

pythagorean

1. præexistence. &c. - as Matter hath undergon Many changes since the crea= tion, ab orbe condita, Why Not souls?[323] [33v]

9. As for memory, most arguments are fully answered. for What doth a Man

Re...

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[321] Epicurus and his followers believed that all things were made up of atoms, their combinations composing and decomposing in a state of continuing and undirected change.

[322] In Book III, ch. 4; *see* note on f. 195v, above.

[323] i.e, 'since the foundation of the world'.

philosofica.

pythago= =rean

Remember of What passed In his Infancy? but then ye ordinary foundation on wch this hypothesis is Grounded Must be deserted. As if from ye Nature of this punishmt, Severall dispensation's of providence might be Solved, wch will Not hold water; Certeinly Souls are /not\ new Created as there is occasion for them; ffor how then did God Rest? If Innu= merable were produced, it is likely they Re= mained in some other state.[324] [33v]

The old phisici.

1. Gassendus was Not onely a Recoverer of ye Epicurean Sect, but his works are a treasury of all philosofy, wherein all opini= on's are brought upon ye Stage proposed and discussed.[325] [32r]

2. In ancient times famous for learning, philosofy took the whole Name, and time of Scollars. Now its devided Into Many More way's of Study, very Copious, as devinity, law, phisick &c. [40v]

3. Next to Aristotle & plato, wee have more clear discovery of Epicurus his philo= sofy, then ye other sects, tho perhaps, dispersed In

[324] Origen (185-253), having suffered as a Christian, was later condemned as a heretic and many of his writings were destroyed, however, they were numerous and a substantial body of material remains. He had considered the possibility that souls were created from the first, i.e., that they were pre-existent. The Cambridge Platonists, cited at various points by JN, were admirers of aspects of Origen's thinking. Plato was the principle proponent of the theory of the pre-existence of the soul and there were other related theories, such as re-incarnation, a belief associated with Pythagoras and his followers.

[325] Gassendi, *see* note on f. 178r.

philosofica

The old phisici.

In other authors. his owne Epitome In his 3. letters, is So Concise & obscure, that it Could Not be understood without other ad= vantages, But when a good Skill in the latine was Joyned with a philosoficall tem= per, lucretius gave ye best Sight of that Sect, & much light as well to Epicurus his Epistles as other authors.[326] So that I am Confident ye way of Matter & motion was derived wholly from them. And the cheat of Qualitys consequent Necessary to ye first Ground. Epicu= rus Made litle Nois In the world before Gas= sendus, Except those Calumnys of volup= tuousness scattered in other writers. [54v]

4. I wonder Extreamly, that when demo- critus his way was Started In ye world of Ex= plaining things by Matter & Motion; that they did Not see the ye truth of it so clear, as for Ever to Retein it.[327] And that so good a Witt in other things as Aristotle was, Should Not apply himself this way, When he knew it well Enough: but It was his logick Spoyled it all. [55v]

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[326] The only texts directly attributed to Epicurus are his Three Letters or Epistles, the rest have been lost. All that we know about his teachings comes by report, notably via the work of Lucretius' *De rerum natura/On the Nature of things*. Epicurus's statement that philosophy's principal aim was to lead us to happiness had been misread to state that the object of philosophy was the pursuit of pleasure. This is the calumny referred to below. What Epicurus in fact proposed was the more stoical notion of *ataraxia*, or freedom from fear and anxiety, something like the christian virtue of fortitude mentioned on f. 196r, above.

[327] Democritus's atomic theory proposed a world of interacting atomic particles, bouncing off and attaching to each other.

philosofica.

The old phisici.

5. The reason why I beleev democritus his way was Not so much Embraced, or Sud= denly forsaken, was becaus of ye danger that Might happen to Religion, & Comonly falls out In ye professors of ....[328] wee see ye Same Effect's In our days. Whereas Aristotle was Suited ye best in ye World to secure Religion, deserving hardly ye Name of a philosofer, as onely medling with a few appearances here on Earth, leaving vastly ye Greater part of ye univers to be Immediately Managed by God, or some petty Intelligences, wch was a certein way to secure. And all his Qualitys Naturall Endowments of Gravity, levity, &c. were Referred to God; this Made his philosofy to florish, tho In Some generall things he is Not orthodox. [55v]

Aristotle & peripateticks.

1. It is pretty to Consider that When once ye Authority of Aristotle was broken In a Small discovery, ye whole world fell off from him Immediately. ffor Quick work was in a thro Casting off, when once they perceived It ledd a quite contrary way from truth

And

[328] The ellipsis is carried over from first draft of notes.

philosofica.

Aristotle & peripateticks

And its No wonder his Authority besotted ye minds of men, becaus his Systeme was No= thing but ye Cobwebb of his owne brain; So Meer a fancy, that his Succrs could add No= thing of their owne heads, but wholly depen= ded on his text, as for what Could Not other= wise be proved, so that his text formerly In ye Scools obteined for the Greatest proof. [41v]

2. see ye old phisici, ffor ye Causes of Ari= totles declining.

3. Then his Credit was Much Impaired by ye Reviving of ancient Sects, as by Mag= nenus,[329] Gassendus, &c. And So the platonicks tho that did him Not Much harm. becaus plato was Most defective In Naturall philo= sofy, and seemed ~~a~~Onely to fill up his want of Theology. [42r]

4. And It is very pleasant to observe how many brave spirits rose up In ye world at one time, all leaving Aristotles seduce= ment, and aiming at an Explication by

[329] Johan Chrysostom Magnenus (Jean Chrysostôme Magnen, *c.* 1590–*c.* 1679), a French physician, published his *Democritus reviviscens, sive De Atomis*, in 1646.

philosofica

Aristotle & ? peripateticks.

by Matter & motion; all very Ingenious & such as could Not learne of Each other, D. Cartes, Gassendus, verulam, Gilbert Hobbs, &c. and the Improvemt of Astronomy breaking asunder ye Solid orbs, Contributed much to his overthrow. Copernicus was before Bacon, for Quoted by him.[330] [42r]

5. The reason Why the peripateticks fell to Such idle & Impertinent Questions becaus staying onely In ye Generall parts of phisicks, not discending Into ye larg feild of Experiments, they were forc't to Inlarg Into those foolerys for want of variety. [42r]

6. It is very strang that the hot peripa= teticks of our age, Should Not be Content that Aristotle Should retein ye highest credit for his Ethicks, politicks, Rhet: Hist. animal: &c. but thinck No honr done him, unless he Enjoy ye title of philosofus, catexokeen,[331] In Naturall things. for certeinly No Man did better in those Matters, the discussion of

[330] William Gilbert (1544-1603), an English physician (to both Queen Elizabeth and James I) was an anti-Aristotlian who wrote on Magnetism. He proposed that the earth was magnetic and that it had an iron core. Nicolaus Copernicus (1473-1543) - Francis Bacon never accepted the heliocentric model.

[331] The earlier draft, f. 43v, has 'κατεξοχην', meaning 'from above'.

philosofica.

Aristotle & peripateticks} of wch depended Soly upon a Mans reason, wch certeinly must be more Honourable, then that wch depends on Experiment. And In this onely have ye ancients done well says verulam. Org. ~~.~~ef[332] [43v]

7. Its pretty to thinck how that ye peripa= teticks are now willing to Compound. that is part with all Aristoteles Comentators as Rediculous, so they May keep his text in Credit, & Countenance. [43v]

8. The Reason why Aristotle obteined So much in ye world was becaus there never was another Complet body of ~~.....~~ /philosofy\ prserved from ye Injury of time. so they were forc't to profess that philosofy wch they found. plato wrote In so conspicuous a Method, his notion's thin disperst, & none determined. As for hypotheses of other philosofers, they lay Scattered In many books, & these occasionally Mentioned, Not collected together, till this last age after the Restau= ration of learning. So that Aristotle fell na=

[332] i.e., the *Novum Organum;* from the earlier draft , f. 43v, it is clear that JN is citing the Preface

philosofica.

Aristotle and } peripateticks.}

Naturally Into play, having bin before Extolled among ye Arabian Doctors, Aver= roes, &c.[333] and Especially Jumping right with that Metaphicicall way of St Austin, who had before ruled as ye onely Scollar & devine. [54v]

9. See More In philosofy Compared.[334]

New philoso= ffy

1. Greshamites May better Informe philo= Sofy then the university, for they Need Not persue any thing Els. here ye youngest of all Study that but 'till they are fitt for some More profitable profession, to wch their Necessity's & Colledg statutes oblidg. Besides they have purses to bear out ye charges of Experimts wch is ye New & best way of Improvemt in philosofy. [44r]

2. Really Considering ye tedious Method of my lord verulam, tho Most true, In whose Stepps this society treads,[335] one Can hardly Imagin an Exact acco Should ever be given

[333] Averroes (Abū I-Walīd Muhammad Ibn Ahmad Rušd, 1126-1198), an Arab scholar and polymath and one of the great Aristotelian scholars. His work was widely known in the Christain world.

[334] There is no section with this title in the Notes.

[335] i.e., the Royal Society - but also the 'Greshamites' (see note f. 92v, above).

philosofica

New Philoso=
=fy

given of Naturall philosofy becaus the
history of Nature, can never be Experi=
mented by one man In ye whole, and
Improvemt in Philosofy hath Ever bin
advanced by single persons, to wch the suc=
cessors of Each sort, have added litle or
Nothing considerable. My judgmt of the
Greshamites is, that tho they Never reach
a body of /Reall\ philosofy, yet by Conversing So
much with ~~.....~~ /& varying\ Experiments, they
may discover Notable and More advanta=
geous things for ye use of Mankind. ffor
If so brave Invention's, as Especially printing
Gunpowder &c. have owned their originall
to Chance, certeinly Much More Noble at=
tainments cannot Escape and Industrious
Search.[336] [44r]

3. It hath bin observed that ye vertuoso's
by unravelling ye Mistery of Every trade, have
layd ye Craft open Either to ye prtences or
the Contempt of Every pragmaticall [44v]

4. What

[336] JN echoes Bacon's famous dictum: "Printing, gunpowder and the mariner's needle ... these three have changed the whole face and state of things throughout the world." *Novum Organum*, (trans. J. Spedding) Book I, Aphorism 129,

philosofica

New philo=
=sofy.

4. What art doth beyond Nature, seems
to charg her with Imperfection [33v]

5. Des Cartes would doe well to Call in ye
devine assistance to ye turning his celestiall
Matter upon vortexes. &c. And to make his
2d. Element Recede altogether from ye Center
to lett in his first, wch Indeed crowding Into
that Empty Space, will at length press upon
ye Second.[337] But at first, It could Not be; and
So Must be Imputed to another Caus; for
to Make it a law of Nature, or that Every
body Endeavours to Receed from ye Motion,
one of wch doe Not In My Judgmt follow
from ye other, is very absurd. ffor tho the
Axiomes be true, In themselves, yet they
proceed from a certein Caus, upon wch acco
they will Not serve his porpose at all,
as onely following, Where Such a Cours
hath its Influence. ffor ye Reason that Every /body\[338]
Moves in a right line is becaus ye Mover
Cannot Impart its vigour to it but by
thrusting

[337] In *Principia philosophiae,* Book III, Descartes describes the plenum as filled with with vortices, of infinitely fine subtle matter, this is the first element, sometimes referred to as aether, the medium of light, it operates by percussion on larger particles, the second element.

[338] This inserted in the same blue-black ink used in the P.S. and Index, ff 225r-227v.

philosofica

New philo=
=Sofy.

thrusting it from him. [17v]

6. And If any thing Moves Circularly 'tis by reason ye Mover doth direct afresh the thing moved. but Every single Effort, as there are Innumerable In a Circular Comuni= cation, doth direct it right forward, & that's ye Reason it moves so, as soon as it is freed from its Restraint Spending its force according to the last Impression, or deter= mination. And that's ye Caus, why a thing Swing about, fly's off with Such great vi= olence, ffor in all that Rotation having New vigor Imparted to it Continually It spends it all according to the last de= termination, wch is Just upon loosening it from ye Sphear. [18r]

7. And thus D. Cartes is So farr from Shutting out God In the frame of ye World whither it was his Intention or No, I I know Not, that he Relys upon him for the

philosofica.

New philo=
-sofy-

the greatest & most generall thing
In his whole Hypothesis. vist, the turning
and pressing from ye Center of his Globule
wch doth Not want Much of that particu=
lar formation & wch wee would apply to
God Almighty. [18r]

8. The reason Why any thing Will for
Ever Move If not obstructed, is becaus Mat=
ter is meerly passive, & hath No motion
of its Self, and so is guided by, & follows
ye Impression, for if it is Moved of it Self,
It might as well Ceas, but once provo=
ked, yeilds it Self Intirely; And then Mo=
tion being a Real thing, distinct from
Matter, must allwais Continue, If Nothing
hinders, unless it would, or Could destroy it
Self. And therefore there is the same portion
of it in ye world. ffor If Spirits Could Comuni=
cate any, It Would perhaps destroy ye frame
wee see Now, and Make ye Quantity of ye one
unequall ~~to that of~~ /ffor\ ye other. vist. Matter
besides

philosofica

New philo=
-Sofy.

besides all such things as those Spirituall
Influence Imparts, Would arise, without any
Naturall Caus, wch wee allow Not in phisicks. [18v]

9. Matter its self Must be Indifferent Ei=
ther to Motion or Rest, and so Move or
Rest Eternally, becaus Supposing it Without
Motion, It cannot have any Appetite, or
conatus ye other way. And so being Moved
becaus It hath No other Motion according
to our hypothesis, and must be so Wholly
positive, but what is Newly Imprest,
It Must Move for Ever; ye Reason becaus
all appetite or conatus Must proceed from
Motion [19r]

10. perhaps one additionall reason
Why thing's Recede from ye Center of ye Mo=
tion, becaus they strive for larger space
to move in. Wch is Straitned towards ye Center.
How If a body were moved /round\ by an almighty
power (as Cartes Supposeth his vortexes)
without

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without any determination of a center,
as soon as it is dismissed from that power
It might as well fly to ye Center, discon=
tinuing its centrall motion. [19r]

11. The Reason Why any body Continues
to Move Circularly after the determina=
tion is ceased. as water In a vessell, or a
bullet at ye End of a String, is becaus by
its Connexion, It cannot get loos, and so
Continues as farr as it Can be from ye Center.
And So a whirletopp continues In a Circu=
lar motion, perhaps, becaus moving by its
Axis? tis ye same as if you Moved it from ye
center. and thus ye Rest of the parts being
Joyned to ye Center, Renders it ye Same case
as water In a bason, or rather string & bullet, &c. [19r]

12. Why May Not conatus ad motum[339] re=
maining still In a body, & Not comunicated
wch will move still, as it getts liberty. But
it seems necessarily to be added, that the
conatus

[339] i.e., 'a tendency to move'.

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New philoso=
=fy

Conatus is when a body Moved by reason
of its weakness, cannot impart its Motion
(v. c. upon a greater body)[340] It is Impeded
by other bodys behind it, from Reflecting
back. Wch it would doe If Nothing hindered
for No body ~~.....~~ /looseth its\[341] motion unless ~~it~~ /ye\ /
other\ Moves
and So consequently changeth its place.
And Every body Must certeinely comuni=
cate its motion to any other, that Meets it
If that other be Capable. [19v]

13. In a Conatus, v.c. a pressure of Glo=
bules, ye body pressing doth comunicate
its motion to all ye whole line, wch Might
be Infinite, but this presseth ye Next perhaps
with some litle Comunication, tho Not
not all, then the next presseth ye other, &c.
so that all the whole line is to be look't on
as one body, for it hath ye Same Effect.
All ye part's of matter are Not Endoweed
with motion [20r]

14.

[340] i.e., 'vis conatus', the force of the conatus or tendency.

[341] Washed/scraped out.

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sofy

14. In consideration of Motion, that Gravity
that all body's have here ~~below~~ & lightness
must be abstracted, wch is but motion ~~in~~ it
Self. so that it seem's at first Sight, that ye
Greatest body May be Moved by ye least Impetus
And when a body Moving strikes agt another
bigger than it self, & Reflects, the reason is
to be taken from, ye Contrary Motion of Gra=
vity; the reason why it Reflects is becaus
Not being able to comunicate its force Some=
where, and So Retorts In a /direct\ line from ye Man=
ner it stroke against ye other body. Now
It Cannot Comunicate When a Contrary Mo=
tion Either drives or presseth ye body it Meets. [20r]

?. motion.

15. If all things were /Not\ onely matter & forme
If there were any Els that guided them, there
Could be No such thing as phisicks, Nor argu=
ing from ye Caus of any thing. Then If so, It
Reflects on ye Wisdome of God & providence
ffor when all those things May be performed
by ye power of Matter, as is clear they May
Why should any other principle be Introduced.

for

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sofy

for Example, ye depressure of heavy body's
Might as well have bin Contrived by ye pulsion
of other bodys, as any Immateriall agent. then
No damage from hence to Religion, for it fol=
lows never the more, that these Atomes Could
dispose themselves Into this forme. and why
may not these be Instruments of ye devine
will as any other principle, when they are
as capable. Nor doth ye assertion of it promote
Religion for Aristotle that adores this way so
much in his. φυσιϛ. &c.[342] yet held the world
Eternall, and there have bin Atheists, who
nevertheless beleeved his Intelligences abstrac=
ted from Matter, as Vanninus.[343] then the diffe=
rence of things seem's to Conclude, for all
things that differ In any quality, differ in
scite & composition of parts. If onely Nature
or Inward spirit, the Most different Make
or frame Might have agreed In any Quality
of Effect. the way to find this is to look upon
& Consider the things themselves, without Re=
lation to Sence. ffor What is Sence of ye organs
made for, but that upon Such an application
Sence Should arise in us. [20v]

[342] i.e., 'physis', i.e.: Physics.

[343] Vanninus (Lucilo Vanini, 1585-1619), a philosopher and 'free-thinker', or 'libertine' in contemporary terminology, born in Apulia, educated in Naples and Padua, who travelled widely. He was brutally executed in France for his beliefs.

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old philoso=}
fy censured.}

1. One fault of the Ancient philosofers was. that they took for Granted Some things wch appear's most clear to or senses wthout Ever Examining ye Caus, as for Example Becaus it was clear that heat doth Ra= refye body's, & raise vapours, they Never Exa= mined that further, how it was performed, but used it towards the Explaining More difficult thingS. Aristo. Met. l.1.c.4.[344] [58r]

2. Really as it happened the Democra= tists, & Epicureans by throwing off God, Could Not but light on the Right way of Explai= ning things by matter & motion onely. ffor then they Could doe No otherwise. but plato by Introducing God. Neglected More the par= ticular Solutions, being Content to say, yt God Made, but Not how he Made them. ffor ye Case it is ye Same with a God, or Not. To say that God hath planted Such a Quan= tity In such a thing, without Explaining of what it Consists, is Redicolous. And so Epicurus May well deride the rest, for Ma= king a Refuge in any hard Question. [58r]

3. And

[344] See (for example) : https://www.perseus.tufts.edu/hopper/text?doc=Perseus:abo:tlg,0086,025:1 for Aristotle's review of his predecessors.

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old philoso= }
fy, censured..}

3. And so as I have observed In My Notes Aristotle abuseth Anaxorgoras ffor his νός.[345] In onely applying it to difficult Mat= ters. but Aristotle himself falls Into the Same Error, for he builded his phisicks wholly upon his Master platos foundation and tho he Rejected the Newness of the World, and doth Not bring in a God; yet he hath a φυοίς,[346] wch he adores as much and abuseth in Referring Most things to her /to\ save his owne Ignorance; And per= haps he is In this More to be blamed then Democritus himself; for If you ask him of Gravity or tendency of body to one place, he Contemnes ye Question, & thincks you had as good ask why trees send forth blossomes, why creatures generate, & bring forth, wch he says barely that Nature guides when as Indeed It's a poor shift. And a Reason Must be given of this latter, as well as of the former. [58v]

4. Aristotle Came into Credit Something the

[345] i.e., 'nous', (transcribed as Nός in Add. MS 32517, f. 58v, i.e., with a capital 'N'). Nous is Anaxagoras' notion of an organising mind at work in the cosmos. RN, in transcribing his brother's Greek, gives the omicron a double circumflex accent which I cannot reproduce here.

[346] i.e., 'Physis', as in first draft, f. 58v.

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old philoso=}
fy censured }

– the More In the latter times becaus Ammo=
nius Reconciled his Doctrine with plato's [59r]
wch did him great Service,[347] and Gave him
Some Repute, Wch he allwais had Since; for
I beleev ye platonists at that time, If I
Mistake Not, began to be distinguished
from ye Academicks, at least these Growing
weary of their old Suspension In all disputes
Joyned themselves to the peripateticks
whose principles Suited best with those
litle Grounds of phisicks plato layd downe
In his Timeus. And were Indeed really
ye Same. But more Inlarged Into a Com=
pleat body; Whereas plato onely Conside=
red a few & generall heads of Naturall phi-
losofy, this being discovered and asserted
by Ammonius, who therefore In the life of
Aristotle defends him from ye Imputation
of deserting or Neglecting his Master and
Indeed In all, writes favourably to Make
up the breach. [60r]

5. The platonists read and Expanded
Aristotle.

[347] Ammonius Saccas (175-242), a neoplatonist philosopher and teacher of Plotinus (204-270) and Origen (*see* note on f. 199v, above). As a reminder: the 'academics' were the Platonists, the 'peripatetics' the Aristotelians.

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old philoso=}
-fy censured}

Aristotle, & advanced his Credit, as appears by all their Greek Comentators, Alexander, Themistius, olimpiadorus, Ammonius &c.[348] And Indeed the two philosofers Might well Supply y^e want of one & other. for Aristotle wanted Theology, In w^ch plato Abounds, and plato phisicks, w^ch are Compleat in Aristotle, Such as they are. None of y^e Rest had such for they principally Studyed Ethicks &c. Except Epicurus, Who also litle Medled with it, but onely In the generall. But as for particular Explications Concerned himself but litle. A= nother reason of Aristotles Credit is that Where= as Democritus kept No scool, Nor the Rest of the phisici, & So Could Not propagate his o= pinions. [60v]

6. I beleev that y^e opinion of y^e Eternity of the World, did hinder Aristotle from falling Into the best way of phisicks; for that Made him take y^e world as it is. Not Examining how it Came Into Such a posture. W^ch Must have mended his Judgm^t; But beleeving it so from all Eternity, he onely Considered the

[348] Alexander of Aphrodisias (fl *c.* 200) born in present-day western Turkey, Themistius (317–88) born in present-day north Turkey, Olympiodorus (*c.* 380—*c.* 425) born in Thebes, Egypt.

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old philoso=}
=fy censured}

the prsent State of things, & that brought him
to his beloved Nature, wch Spoyled all. [60r]

7. The fault of the old phisici, that they did
Not Consider bodys, as they were In them=
Selves, but as they seemed In conjunction to
any of our sences. [60r]

8. How Gravity Should be Solved hath al=
wais puzzled ye world. Those that took the
best way, as the Democritists & epicureans
yet Could attaine Nothing, but were forc't to
make it one of their principles, & Indowmts
In their Atomes. This Aristotle Confesseth was
never Solved by any, but onely why one body
was heavyer then another; Not Simply how
it was Caused. and for this he finds fault with
plato. [~~1ib~~.?] 6. decælo.. 1. 3.[349] but at last he him=
Self useth a Shift and Comes off as pittyfully
as any of ye Rest, as Elswhere observed. But
Here D. Cartes hath done it Incomparably Well
at least hath Shewn a better way, one May
see that he was well verst, In ye old philoso=
fy and ye text of aristotle himself. [59r]

9. The

[349] i.e., Aristotle, *On the Heavens,* Book I, part 3, discusses gravity.

philosofica

old philo= sofy censured.

9. The ancients Not searching for Causes of clear appearances, they also Made the Elements principles, and gave them Each a Quality, from whence ye Rest should flow. When as Indeed, they themselves were to be farther [derived?][350] still, as well as any other, and by taking principles from thing's here on Earth, they avoi= ded the greatest part of philosofy, that is the telling /of\ What parts, Every body is Composed becaus they held all things on Earth to be Composed of them, as may very well be. [59v]

Cartesian censured

1. It seem's to Me that It is a great flaw In D. Cartes method of doubdting, that he Ack= knowledgeth at first ye Certeinty of this Conclus= Sion. 'Cogito, Ergo sum. but then When he Con= Sider's of others in his Mind Equally clear vist. Si Equalibus Equalia. &c.[351] he yet for= bears to assert them, not yet knowing Whither some higher power Might Not have a designe to deceiv him, Whereas ye Same reason might be urged agt ye first principle. [53r]

2. D.

[350] This word is overwritten and not clearly legible; in the earlier draft, f. 59v, it is clearly 'derived'.

[351] i.e., self-evident truths such as 'equal things are equal'.

philosofica

Cartesian censured.

2. D cartes Contends that Space is Equally to be Comprehended under Extension as body. that ye Notion agrees with them both. but then it seems as If 2. bodys Might be In one place. [53r]

3. D. cartes In his Method seems to Sub= -scribe to My lord Bacons way, that ffor particular things, there is a necessity of a search by Experiment. for he Confesseth his owne principles to be so larg, that they. will admitt of severall way's of solving the same thing, of wch but one can be true, & that discerned by Experi= =Ence; to ye Enterteining a Comerce of wch he provokes ye world. The very designe of ye Greshamites. And as if he Suspected his owne Hypothesis, as In that most Excellent pa= ragraff, p. 39.[352] And for that Reason he un= dervalues Hypotheses. [53r]

4. It is observable that In all his philo= sofy he useth None but plaine Experimts - such

[352] *See* note on f. 192r, above for JN's citations of Descarte's *Principia Phiosophica*.

philosofica

Cartesian censured.

Such as were not at all Sought, but oc= curring Even In one dayly Conversation; wch I thinck Dr. More observes, & D. Cartes gives a Reason for it. p. 39. he Shews ye difficul= ty of a body of Experimt collected by Severall Men. And therefore thinck's it best that Some one Most Ingenious Mans charg Should be borne. p. 45.[353] But it May be Sayd that when such a body is made, he himself, that is one particular man, May Soon put them to a tryall, and a decision of his owne judgmt. He complaines what an Infinite Company of Experiments he lacks ye charg whereof he Cannot bear. [53v]

5. D. Cartes, tho perhaps besides his owne Intention hath Given Great occasion to the Atheisticall Spirit Now Reigning In the World, by attempting to prove In a demon= Strative way the principle, wch all before acknowledged, by arguments too, wch rather Entangle & force assent then perswade.

[353] *See* note on f. 192r, above for JN's citations of Descarte's *Principia Phiosophica*.

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Cartesian censured.

perswade; Neglecting ye ordinary and More cogent Reasoning, from subordination of Causes. tho his reason is obvious. And really ye Study of the Mathematicks hath, tho Mistaken, Confessed to ye Same Effect, be= caus It put men upon Expecting ye Same Satisfaction, & Infallible proof In all other things. [47r]

6. And Into all this ye Improvemt of Astro= nomy must be taken in, Espcially upon Copernicus Systeme, wch shews of what litle account, ye Earth is. In comparison of the univers. That Now she waits upon ye Sun & Not as formerly Setled In a throne, with ye planets & fixt starrs running their rounds about her, Seeming so considerable as If she, & ye heaven's devided ye univers. [47r]

7. D'. Cartes hath done No More then other Hypotheses,[354] vist from a pretty Compa of Experiments to Rais a fabrick of ye univers from his owne fancy. so then, when more of these may be made to doe as well, the

opinion

[354] In the earlier draft, f. 47v, this reads 'Hypothesists', which makes better sense.

philosofica

Cartesian censured.

opinion of his Cannot last long. Especially becaus Now wee seek truth by Experiment as my lord Bacon hath chalked out ye Way. But then those Experiments wch ye Noble Cartes found will be allwais Esteemd with ye highest veneration. as that there are No Quality's, but divers Modifications of Motion & Matter, laws of Motion. upon that one Experiment of Matter flying from ye center of its Motion, Cartes almost built his systeme of the heavens, and from that too, of all body's Moving In a Circle. Besides he hath put ye world In a way to attain knowledg by his Excluding all save Matter & Motion. [47v]

8. Its certein D. Cartes Makes Most use of his hypothesis In things that are beyond ye reach of any Experience. for In other things as in his first & second part of his principles he argues clearly from ye Reason of the thing; and In his meteors[355] for the most part he talks & Grounds his observations

[355] Descarte's Les *Météores*, translated from French, constitutes the final part of the *Principia Philosophia*.

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Cartesian censured.

observations upon vapours clouds. &c. as others doe, & gives a /most\ shrew'd accº. When wee Must make use of an hypothesis Some or other, as well for satisfaction & eas of the Mind, & to avoid Scepticisme dangerous to Religion, we cannot use a better then D. Cartes. as being Intituled according to the true Method of philosofy. Then as to his Hypothesis, tho wee Need Not beleev that there is such a materia subtilis,[356] as he des= cribes, just So generated. yet wee have all the reason In the world to thinck there is somewhat like it, that doth agitate ye vapours & rais them. &c. [57v]

Inventions of Cartes.

1. His giving So clear & Easy a Method to Imagin ye Imensity of ye world, ffor to hear of Infinite worlds, doth but Amuse our thought's. when as Considering ye Sun onely as a fixt Starr, Governing & illus= trating ye planetts of this vast heaven, we smoothly pass to the beleeving that Each litle starr, tho further Removed from us, yet May rule as great a province distin=

[356] i.e., the first element, subtle (i.e., very fine) matter.

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Inventions of Cartes.

distinguished with as many subjects. and If so, wee Can Never reach ye Ends of ye World becaus wee know there are Starrs beyond ye Most acute Sight, ye light of Some of wch wee perceiv, tho Not ye body from Whence it flows, as In the Galaxie. And then be= caus our Glassess Still bring others to our view. [48r]

2. His Confuting ye abuse of our Sence, In the foolish Mistake of Qualitys, & clearing us from their prjudices. &c. [48r]

3. The Demonstrating that Most opera= tions In Nature are done by Insensible parts ye World being full of bodys. [48v]

4. That In the Solution of Appearances he Considers ye Compass of the whole Earth What Reference it May have to or Influ= Ence from ye Celestiall Matter In wch it is Carryed. What power its Motion May have to ye Severall parts of it, or one part of it to another. This is Conspicuous In his Re= Solving ye flux & Reflux of ye Sea, In Mag= neticall force, In Winds. &c. This artifice May

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Inventions of Cartes.

be Much farther Improved, and is an Excel= lent device towards Naturall philosofy. [48v]

5. His advancing ye two principles of Mat= ter & motion. and In this Especially, that ye union of parts is Nothing but a Rest from Motion. [48v]

6. It was a Notable attempt, that he ven= tured to give an acco of the whole univers vist. of the heavens, how the bodys of Each Starr May be Generated. the reason of its Motion, ye boyling of ye Maculæ. &c. When all ye world before was content, as with a larg discovery, to find out their Motion, Es= pecially of the Earth. Epicurus pointed at it In some weak Endeavours In his Meteora,[357] but he wanted Ingeny to proceed, onely he Inculcates that there must be Some Caus or other for it tho unknowne. And why a Man May Not Endeavour at an Explication of those Magnalia,[358] I know Not, When the psalmist says, they have a law, wch they Can= not pass, that is, a Naturall reason, just as any triviall thing here below.[359] [48v]

7 his

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[357] One of Epicurus' Three Letters ('To Pythocles', *see* note on f. 200r, above) discusses his 'meteorology'. Epicurus's argument was that the weather was not to be explained by considering the gods and their concerns, but that we should rather consider 'natural' causes.

[358] i.e., great things, issues.

[359] Psalm 148:6: "He hath also stablished them for ever and ever: he hath made a decree which shall not pass".

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Inventions of Cartes.

7. His Rejection of finall Causes, In the Naturall Inquiry's, for really 't'has bin a Great hindrance heretofore, to ye progress of learning, the thinking ye Whole univers made for ye use of Man, and studying out the Conveniences onely in Reference to him; Wch hath Caused ye Great difficulty of beleeving Each planet an Earth, as well as ours is, wch hath setled ye Earth In the Center, and Much More Noble luminarys, dance about her. When as If they had bin Contrived onely for her Convenience, they Might have bin placed lower, & Served her porpose as well, without having So Much More vast Magnitude then Earth it Self, their Mistress, forsooth, to wch thee[360] world has thought ye whole Sphear of fixed Starrs hath Served onely for an Embroidered Canopy of a painted Roof as ye Epicurean derides in Cic. de. Nat. deor.[361] Nay this is that wch Makes us more admire our owne shape, as horses would doe theirs If they could Ex= press it, as In cic.[362] Nay ye taking in other things.

[360] Washed/scraped out.

[361] Cicero, *De natura deorum* (*On the nature of the gods*). The Epicurian point of view, in a rather garbled form, which takes up the first part of the first book, is stated by Gaius Velleius.

[362] i.e., as Cicero could/did.

philosofica

Inventions of Cartes.

things Into the consideration besides our Sel=
ves, is a better way of Solving ye particulars
of providence; for altho God hath Given us
an happy & pleasant dwelling here, yet per=
haps ye Sun moon & starrs Might have bin
disposed better, If he had Studyed onely our
Convenience; Wch wee should be Most unrea=
sonable to Ingross all to our Selves, being ye
most pittyfull & sorry point It May be In
Respect of the Rest of the World. My lord
Bacon also ~~.....~~ /decryes\[363] finall Causes; of the
Same nature is our making ourselves the
litle world. It seem's Arrogance too Much
to prye ito those Causes, lying deeper In ye
Eternall wisdome. then is possible for us to
penetrate. See Bac. Nov. Org. Et observa=
tiom. meam. p. 25. Augment. 336.[364] Cartes
Method of douting. vist laying aside all
former opinions, is frequently Intimated by
ld verulam. [49r]

8. His Exact laws of Motion.
ffor these his memory will Ever be famous. [50r]

1 when

[363] Washed/scraped out and overwritten.

[364] What does he mean by "et observatiom meam" ("and my observations"?)? Is he referring to an annotated copy of the text? In the *Novum Organum,* 1620, on p. 25 (part of the prefatory materials of the book), Bacon proposes an experimental Natural History. If 'Augment. 336' is a page reference to *De Augmentis Scientiarum*, 1623, then it leads us to one of the final pages of Book VI, a table of argument forms; it does not make any sense to me, sorry.

philosofica

Slight Inqui=}
rys of his }
vortexes .. }

1. When as Comets are Naught Els but deposed fixt starrs, that then Come to be In ye Nature of planets, It hath bin very ill luck (If not shaking to the Hyp:) that for these many Comets wch have bin Since an acco hath bin delivered downe by our Ancestors Seen In our hemisphear; we Should Miss None of ye fixed Starrs, but that all Continue as they did. The Comets Must have bin as great starrs as those wee see, or Els they Could Not have bin perceived by us: After So Many Comets that have bin Swallowed up, one would thinck that there Should be Some alteration among ye vortexes, that one Should Gaine Ground of ye other, having ye addition of More Matter, and so Why our vortex of ye Sun Should Retein ye Same distance, as ye other fixt starrs.[365] [50v]

2. Why the Motion of the planets Should be So Constant In a matter Wch May prove In= Constant, by ye various working's of ye Elements. for the Crowding of ye Maculæ doe (as I thinck) hinder ye Motion of the first Element; wch from

[365] Descartes account of comets was a principle target of Newton's criticism. Gravity and vacuum explained them, careful observation (and accurate prediction) by Edmond Halley in his *Synopsis of the Astronomy of Comets* of 1705 brought them into the new standard model - although not until 1758 when his prediction was confirmed.

philosofica

of vortexes Slightly.

from thence Cannot thrust back a 2nd with that force, (so that ye Neighbouring vor= texes May gaine upon it) and so the Motion of the second Element Retarded & so consequently ye Earth —— [366] [51r]

3. It seems Somewhat Strang, that When as Cartes Supposeth ye planets to be Naught but dispo/se\ssed fixt starrs, Carryed away, with the Neighbouring vortexes, having bin first Eaten up with the Maculæ. how comes it to pass, that our Earth should Carry about the moon with it? for according to his hy= pothesis ye Maculæ Should have so much pos= sessed it, that the first Element Cannot Work out to drive back ye Second. If so how is it mistress of a vortex; If it has a vortex it Must have some light, according to his owne principles; If light, where doth it appear? If it be Not Eaten up so as to drive a vor= tex, how can wee stand still upon it? how is it, that wee see it is So Solid, thick, hard consisting of Gross parts. this Confirmes me that

[366] *See* note on f. 73v, above. Here, and below, JN reviews Descartes fallen-star-in-the-vortex hypothesis. For Descartes, the comet evidences the vortices, and the vortices explain the comet, in a perfect circularity (*Principia philosophiae*, third part; originally published in *Traité du monde et de la lumière*, 1664). JN produces some compelling common sense objections to the hypothesis.

philosofica

Slightly of vortexes

that I doe Not understand ye hypothesis ffor these could not Escape ye incomparable D. Cartes. [51r]

4. If venus be a planet destitute of light more than what ye Sun Reflects, how comes it to twinkle so considerably as it doth after ye Manner of ye fixt starrs? Tho Cartes doth Not take notice of it, yet I cannot Imagin how that, when as light is Nothing but the pressure of ye Globoli, ye fixt Starr's Can Send any light to us, for that Motion Must perhaps pass thro severall vortexes, whose Contrary Mo= tion May Spoyle all ye direct pressure, but then Especially In our owne vortex, ffor My part I cannot but thinck this Systeme of vortexes subject to More Inconstancy & disorder then Can agree with ye Exactness of the heavens. [51v]

5. D. Cartes beggs the chief thing ffor his vortexes, vist, that they move In a circle and as for his rule that all things avoid ye center of their motion, I see not whither

it

pilosofica,

of vortexes slightly.

it holds true among his vortexes, ffor Suppo= sing, that they Move In a Circles yet there Seems to be No Necessity, that they Should fly from ye center, where the motion is Not begun. Nor thence derived, as In those alledged Ex= periments of ye sling &c. and then If the rule holds firme; why Should Not the first Element fly with ye Rest? but rather take up a place in ye Center. for that ye principall of ye Motion is Not first made at the Center. So that here his vortexes must differ from his Experimts Where for Instance ye Motion ~~is~~ from ye hand is comunicated to ye Sling & Stone in ye Way of pulsion, but he Supposeth his to have so Much Motion Imprinted on Each. v. our /water\ Whirlepools all Move towards ye Center. [51v]

6. The Earth turnes So Much of a vortex as to drive ye Moon, therefore I wonder how according to him, Gravity Can be Explained ffor how Can Matter of the suns vortex press downe body's, when at ye Same time,

ye

philosfica

of vortexes, slightly.

the Earths vortex plays In a Quite Contrary Motion; for he says ye Globules being obstruc= ted by ye Earth In their Motion Reflect back, & so press downe all Earthly __[367] It seems a great flaw In D. Cartes. see fol 115.[368] The Earth injoys a vortex wch plays so hard as to turne ye Moon, but then surely that Maintaines its Ground agt ye Sun's breaking In, or Els it would be Swallowed up; If so I understand Not how freely ye Globuli of ye Sun Can dance here & there, of have so Much Influence as he ascribes, & Especially by heating ye air In ye Sun's place. [52r]

<flourish underline>

[367] There is also an ellipsis at this point in the first draft, f. 52v., perhaps the source was illegible?

[368] This is also what is written in the first draft at f. 52v. Either JN here refers to the *Principia philosophiae*, on *page* 115, or RN is here referring to to the continuing discussion on the opposite page, which just happens to be page 115 of the earlier draft in Add. MS 32517.

politica

origination } of society.}

1. Man Not Numerous at first, however at first he derived his originall. - Earth peopled by degrees. - not able to bear Many before Cultivated. Incumbred with forrests &c. Nor did Men Joyne & live by one & other till Country's Grew too Narrow - people from ye East parts to stock ye World - It is an argument for ye Newness of it. Reason of that Innocence of old So much celebrated, becaus ye world not yet peopled & Not living neer Enough one & other, and Easily of what ye Earth brought forth of it Self - till pent up by Numbers of Inha= bitants; or Some Regions more Cultivated & strove for. - Hence 3. ages In severall degrees wors & wors, that is still as men En= creased - v. plato polit.[369] they that first drew men Into Cittys, as If they had drawne Stones after them. [24v]

2. Concerning ye life of the first men Consult Eschilus his prompt:[370] & cic. de Invento fa= mous for Eating acornes - promiscuous use

[369] There were various accounts of the past as a succession of ages. For example in Hesiod's *Works and Days* we are told of five ages beginning with a golden, paradisiacal age and descending to a brutal iron present. Ovid's *Metamorphoses* described four ages of gold, silver, bronze and iron. The model underpins many (continuing ...) theories of historical change, especially ideologies of decay. In Plato's *Politicus* or *Statesman*, myths of the ages of Cronos and the age of Zeus (a golden past and an iron present) are set up as a framework for a wide ranging discussion on the art of government.

[370] *Prometheus Bound* is attributed to Aeschylus (525-456BCE). Prometheus, a Titan, whose name means 'forethought', was a friend to mankind, bringing them fire from heaven (i.e., command over their environment). He protected them when Zeus intended to destroy them, for which reason Zeus had him bound to a rock, his liver eaten away each day by an eagle.

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use of weomen In first ages, whilst ffedd with acornes. Lib. 2. Seneca 2. ffor ye first condi= tion of men. Gro Mare lib.[371] [26r]

3. At first before any Strikt Society was Introduced, ye Same Nature, wch by an Instinct orders ye life /actions\ of Brutes, so also it appeared In Men, as to ye bringing up children,? till It Came to be perverted by reason and Interest. so that ye other tyes, whither of Re= ligion, or law, have a Stronger Influence upon them Now, then Nature it Self. That men did Convers together, and were Not of Such unsociable Condition as some would prtend ye State of Nature to be, appears from this that before any pact Could be made there must be use of Speech, & they Could Not have agreed upon that, If they had Not bin free In ye Society of one & other. [30r]

4. Man Entered Not Into society for fear. ffor before there Could be any Causes for fear from one & other, they Joyned themselves In litle Company's that's ye fault & /of\[372] all Mr Hobbs, that he Measures ye primitive state

[371] Cicero, in his *De Inventione,* a handbook on oratory, discusses primitive man, before the cultivation of eloquence, which is to say before reason and society. In the first draft (f. 26r) the text clearly states: "Lib: 2. sec. 2.', and there is no mention of Seneca. The relevant passage is in fact in Book I, section 2. It seems that there has been a double mix-up here, JN with a wrong citation, and RN, writing 'Seneca' for 'section'. Hugo Grotius (Hugo de Groot, 1583-1645) published his *Mare Liberum* (*The Freedom of the Seas*) in 1609. It is, in part, an historical argument for 'natural' law. Grotius discussed the earliest societies, drawing upon a wide range of classical texts, to argue for the two kinds of ownership, common and private. He identified that which was common to all (water, the seas, right of way on a path), from the kinds of property which were private. He sought thereby to establish a natural law argument for the freedom of the seas. His argument contests the Portuguese exclusion of foreign shipping from 'their' seas; his book was commissioned by the Dutch East India Company.

[372] Washed/scraped out and overwritten.

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Origination of society ..

State by ye humour of men Now In society.[373] There was that Innate Simplicity In men themselves, wch wee admire Now onely In children. And that wch Collected them first together, was no other then what makes other creatures delight In their owne kind, & heard together. And so by degrees Came to Speech, & ye More close union of society. & when ye World grew straiter, & men put to greater shifts, then they began to Warr, & so that was Necessary a Captain; for hence monarchy was ye first Governmt, & so they descended to more particular Conditions one with another. [29r]

5. It is very foolish to thinck that Man is of so Ravenous a disposition, as Not to be desirous of Society. If Necessity did Not force him to Submitt to it; ffor he is Capable of ye Greatest Excellences, yt is speech, wch is onely for Convers. Not to mention how litle Man signifies If alone, Not onely with Respect to security from

[373] JN joins the merry congregation of contemporaries seeking to dispute Hobbes' bleak assessment of human nature and the origin of law (in *Leviathan*, Book 1, Chapters 13 and 14) by means of flat denial.

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from wild beasts, but Necessary Subsistence. ffor this our Adversarys Will strain to their owne advantage. But Even Now In the Midst of Society, where Interests are decided and So Render Men more advers to one & other, tho they will Not trust Each other In ye least, or put themselves In their power, yet a Superficiall convers they love /desire\ and Seek after [28v]

6. The Interests of Men Were Not so devided Nor ye world So Narrow at first that they should Contend for it; there was that Great Innocency, wch ye poets cele= brate so Much; so they onely laboured to gett food. wch was as yet Easily done. No Such thing a Striving to be Rich, No occa= sion to Envy another, No thing that they Could Quarrell about. No weapon's to dis= patche withall. its hard to Imagin ye Sim= plicity wch /was\ at first amongst them. Now it is Quite otherwise, since by Society ye room is straitned, ye Equality taken away. som

En=

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origination of society.

Engrossing all to themselves, & dominee= ring over others, we raiseth passion & Envye of Men, and Comes onely /by Entring\ Into society and So cannot be produced as ye Rule of that wch prceded it, & Consequently of ye Nature of Man. [28r]

- of Govern= ment . . .

1. Every man is by ye laws of Nature to prserve himself, wch is the first maxime. therefore he must forbear from Injury, be= caus by the same Right yt others take from him, he from others, being of the Same Spe= cies and of Equall Reason. but becaus there will be some outrageous, It being Incident to ye Nature of Man having a free power to doe Either, & apy more fondly to love him= Self. and becaus Each person is afraid of o= thers, & knowing yt a Single man Cannot possibly secure himself agt all ye Rest, wch might be ill Inclined; therefore for this and partly for pleasure in Society, he Entered Into Confederacy & Joyned him= self with others wch were but ffew at first 5. or so. & so on till litle Comonwealths did arise. [24r]

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origination}
of Governmt.}

/2.\ Or It is likely Enough that children Might
stay with their parents, & so Make a
litle family of Kindred, having Experience
that they Meant them Well from use &
bringing up. tho I beleev this seldome or Ne=
ver happened, becaus of the Naturall Emu=
lation between kindred, & then None Would
Submitt to a Governeur, tho their owne father,
Whilst ye world was wide Enough, & they Could
Set up for themselves, or Make More Equall
Conditions Els where. [24v] It Seem's clear to me
that children, so soon as they arrive at the
State of Man, [30r] If wee Consider onley the
law of Nature, are No More oblidged to o=
bey their parents then other Men, but are
fully at their owne disposall [30v]

3. And I question Much Whither there was
any such abiding together of man & wo=
man, as wee Call Conjugall affection. but
that they might serve one & other In their
pleasures & then part, & so ye female onely
have possession of ye children. and perhaps
that

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origination of Governmentᵗ

/that\ sex was Not then so weak & soft as wee see it Now, but as able to shift for it Self as others; as wee have heard of yᵉ Amazo= nian, & Egiptian. & Society is Nothing Els but having one & others safety in Comon. [24v]

of privat Right.

1. It is my opinion that particular Men at the first, had No right to possess any part of yᵉ Earth, ffor It was a long time I be= leev before they fixt themselves In one place, Hardly before they began to plow. but the originall of a right to a spot of Ground was thus. There was No striving for land 'till yᵉ Earth was Replenished so farr, as that they wanted room. So that at first man Inhabited on spots of Ground Quiet Enough. and so it must be supposed that by a tacite Consent they agreed or yeilded that such & such Company should Retein that wᶜʰ they had Inclosed or did Cultivate ffor then yᵉ world was wide enough, to satisfie those few who were yet upon it;

so

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Originall}
of Right.} so Each took as Much as he desired
& seemed to disclaime wtever prtence they
Could have to ye other. [27r]

2. Its the most absurd thing In ye world
to say that, In ye State of Nature, Each Man
hath a particular right to Every thing;
for it seems to Imply a contradiction, as if
one thing Could be possed[374] by many, In vin=
~~.....~~ /dication\[375] of their sole Right. It Can onely be
sayd that they have a joynt title to ye Whole
wch Must be decided. for If a Company of
Banisht person's In a ship, should be thrown
a shoar where No person Inhabites, how
Redicolous would it be to say that they Might
all challeng ye Whole, & so determine it
by destroying Each other. And how Incon=
Sistent is it with ~~...~~ ye history & ye Nature of
man, to Measure ye originall of society
& right from ye Conditions, & humour they
are Now in; After a full Replenishing of
ye Earth. And Not rather from what Man
was at forst before any society wch
Esta=

[374] RN has left a mark above this word which could be read as a double 's', perhaps correcting the spelling to 'possessed'.

[375] Washed/scraped out and overwritten.

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originall of Right.

Established; but this is onely to lett in that Quarrelling & fighting State wch they would Introduce. [27v]

3. At first None Could have right to any thing beyond what he Encompassed with his limbs, for Els, one might possess ye whole world, as well as one close; Nor Could that be done by first occupation, as to ye Whole world, becaus It might be done by others in severall parts. and ye Same May be sayd of of almost any Extent before the world was parcelled out. And that it was Not possessed but left free; till men grew More Nume= rous, appears by ye Scripture & ye Sythian's.[376] [23v]

4. Tho I make /~~..~~\ all[377] foundation of right to arise out of self prservation; yet ye Exter= nall obligations of /~~.....~~\ it will be secure; ffor beside that it is his owne fault to bring him= self Into Such a Condition, out of wch he Can= not Escape without violating the Sacred law of Justice, yet ye antecedent bond Must rule

[376] i.e., nomadic peoples.

[377] Washed/scraped out and overwritten, also line 19, below.

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originall of right.

rule him. without wch he had lost his life long before. And if Every one Should doe it In his Circumstances, all Society Would be broken, & so Every Man's life Indangered as soon as he comes Into ye World, & his owne long since deprived. [24v]

5. After any one Company had devided themselves from the Rest In a proper Na= tion, yet still all things were in Comon a= mong themselves, till afterwards. [29v] In so small a space as Attica, there were divers frater= nity's, till Theseus Collected them Into one body. see plut Thes.[378] [29r] And So lands Might be devided or possessed in Comon, by a particular Nation before it was devided among Severall family's. And the first possessors were Nations or Community's. The Sythian's were Called No= mades. [26r]

6. No right Can be due from Man to beast, becaus they Cannot Enter Into a league, Not being capable of Reason.

for

[378] i.e., Plutarch, *Life of Theseus.*

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originall of Right.

ffor they being Injurious to us, In ye fruits of ye Ground of our plantations. & Not possi= ble to be Reduced by any Composition they Must of Necessity be Subject to ye Absolute power wee can by art obtein over them. [26v]

- In the Ma= gistrate.

7. The quarrells & envy men bear to one and other follows onely their distinction wch is necessary to a comon wealth. so that at ye Instances of froward & untoward dis= position, wch Mr Hobbs Mentions to main= taine this state of warr, are to be Referred thither.[379] ffor when men Endeavour to Expose or deride others, tis onely that they may be prferred before them In any matter of advantage, before hardly any thing of this appeared. [29r]

8. Its comonly sayd that a man hath not power over his owne life, and so cannot

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Right In ye Magistrate.

cannot give it ye magistrate, but that he must ..... /derive\[380] it from God. But wee Need Not drive it up so high, for whither a man hath ye disposall of his life or Not, It is not that wch he gives ye Magistrate but that power over his brother's life, Wch Nature it Self gives to Each man for ye Maintenance of his owne. So that When the Magistrate Condemnes me to death, It's Not from any power I give him, but what ye party injured doth by right of Nature. [27r]

Of Honnor.

1. That wch Makes a generous Spirit dwell in person's of Noble discent, & Great Estate is becaus they Never knew Either want of Mony or honor, wch are ye Comon Incentives to baseness. What Need they pollute themselves with untruths of whom hardly any can demand an acco of their action's? But ffor the grea= test of the nation, observe their distance

or

[380] Washed/scraped out and overwritten.

politica

of Honner.

or being plac't In so high a degree, they need aime No higher. But Where they are Not yet Contented with such advan= tages, they prove yᵉ basest & unworthyest Traytors, as also they are subject to the poor sorry Infirmity's of other Men, when they have lost their Estates, for yᵉ reason above mentioned. [61v]

Of The Law.

1. The Reason why yᵉ law obteines so much in this Nation & Engrosseth all to it self, is becaus yᵉ lands of yᵉ Nation are devided among yᵉ Comoners; When as for= merly the Nobility it self Injoyed the Greatest part of the land, Especially to= gether with the Religious orders. Then almost all yᵉ Comons were tenants; No debates could arise, & conveyances Easily made, but Now yᵉ land being broke Into many parcells, & changing Masters So often, causeth many debates &

distin=

politica

of the law. distinguisheth ye law Into More Nicety's we before lay in a few Rules Easily at= tainable by clergymen, together with other study's, - but Now Requires ye Whole time of a mans life; so that None but lawyers Can performe those offices, Not as formerly clergy & gentlemen. [62r]

of tenants. 1. The Reason why tenants for lands are hard to be procured, is becaus sitting at Rack-Rents, they have Much adoe to live under them, - So that they Choos rather to bind out their Son's to trades Where More May be gott With less dan= ger & dependance,- but formerly before the Nobility & Gentry parted with & lost their lands, they lived under such Easy Rents, as that they could pay taxes, take off ye trouble of Reparations from their lord, besides Grow Rich & so Improve ye land

of Tenants. Land being devided, and ye Revenew More
Easily consumed In so many hands, the
Gentry were forced to Recover themselves
by stretching their Rents to ye highest. [33r]

---

p.s.[381] Since the closing this work, Some loos
papers are come to my hands, wch contein
a few /other\ Notes of Dr. North, we seem to be
set downe upon his Reading over origen /by way of com~place\,
ffor the Quotation's are Most Greek, & out
of him. /But Some out of Justin & Tertullian.\ And Such not
meriting an exact
transcript, for who that Regards ~~such~~ /these ~~things~~\
things, hath Not the author/s\ ~~themselfs~~ /themselves\ to
peruse? I pass them by, and Gather onely
what I find /to have bin\ the Drs. owne observations in
latin, and subjoyne those by way of Ex=
cerpts/, being well\ ~~not un~~worthy to be prserved. These
Notes happened to be bound up with some
other papers of a very different nature
and In other hands, so lying hidd Escaped[382]
ye flames.

---

[381] The post script has been added for reasons that RN explains. All of it has been written in a 'blue-black' ink, with corrections in a much paler, apparently watered down version of the same ink. The whole of the last sentence on this page was added in the watered down ink, presumably at the same time as the corrections were made. This same 'blue-black' ink, has been used to write both JN's Latin observations and the index.

[382] The paler ink has been overwritten with darker ink to make clearer the word 'escaped'.

Notes of Dr. North.

Fides.

Et Sanè cum vulgus Non potest Notiones philosoficas Nedum Etiam lumen Naturale attingere, Revelatio Sive fides ob Miracula prceptis adhibita, optimus est modus, qui plebem in Cultu Religioso Contineat. Ergo /q3\[383] Religio id efficit, quod non potest philosofia. licet Eadem farè dicat, sed sensu abstruso, et Recondito Non nisi philosofi cognita. [Cum scriptura Etiam Imperitissimo pa= teat, sed scriptores Ethnici Nullam pene vulgaris Notionem haberent. Orig. L.1. p. 15.

Nomina }
Dei ...}

Dicente Celso Deum. opt. Max. æq3 posse designari per jovis Nomen, &c. ac per Adonai Zebaoth &c. Resp. Orig. Non ita, Quia sub Jovie Nomine occurit historia viri Improbi. &c. Deinde verò hæc Nomina ..... ad Deum Referri, quae Nude prolata Miracu= losa præstant, in aliam verò Linguam trans= lata Non valant.

θεοσ Abγa δεός Ισα?χ δεός Ιαχωb. ab Ethnici Incantatoribus adhibabantur, Nec frustra

Credo deum sub tempere Legis se per Nomen Jehov: aut Dei Abraham. &c. aut Zebaoth &c designare

[383] I have identitied the 'q' with a tail elsewhere in RNs MSS as an abbreviation of 'quod' or 'quid', meaning (here) 'which' or 'that'.

designari valuisse, ut Jude a diis Eth=
nicis distingueretur qui tune Inter gentes
obtinabant; cum autem In novo testa=
mento, Jesus Et discipuli Deum verum præ=
dicarent, Ista Nominis distinctio Cessavit.

Sancta } Triados.}

Omnia quid de Deo tanquam Membra humana habente is SS. occurrit, ad Christum Refert Justinus. p. 356. imò omnia in vetº. testº. p. 357.

In Nomine patris, filii. &c. Eam in Bab=
tismo formam Adhibiam facese Memoral Justinus. p. 94. Apolog.

Mira sanè Origines - Deum λογον in Corpore Ενσον fari Ego sum via et veritas in Eodem more qua dicit Deus aute me non fuit alius Deus Nec post me erit. sálicet οςγανα? &c.

philosofia.

Divers Quotations. out of origen & Justin: of sentiments & behaviour of philosofers in Matters of Religion.

Imò sanè tota philosophorum gens Reli=
giose Cavebant Ne doctrina ipsorum vulgo pateret, ut puto fatum socratis timentes cum aliena plane de ~~deo sentirent~~ vulgari Deorum cultu sentirent; Inde pythagoreis Lingua volint - tantum aberant ab

extirpanda

Notes of Dr. North.

Extirpandâ Idolatriâ ... cum christus
Et discipuli vitam deposuere, quo Etiam
rudem plebem ab Ignorantia vidicaret.

Lex Mo= }
saiv=ca ..}

Sapens In animo, Legem a Mose Datum
idea fuisse ut quod Judeas a ceteris nationibus
separaret; cum autem per christum Ethnici
in gratiam Redirent, legem ipsam Intercidisse
puto, ut pote Cujus usus Et distinctio tune
Cessaret; . . plurima hue faciunt. - v. in
Notis particul. - sanior videtur abrogandor
legis ratio quam illam typorum Completorum
Comuniter assignata.

Cognito futurorum concessa Hebreis ne hae?
in re gentibus Inferiores, Confugerent ad Inter=
dicta Ethnicorum oracula. &c. 4. Reg. 1. v. 3.

Inter Ethnicos Evidentiora præsagia fieri
per animantes rapacitate Et vapitiâ pollen=
tes. - ac Si demones vim suam in aliis mansue=
tioribus Exerere non potuerint. Ideoq3 Moses
omnia Ea animalia. Sett, vulpem. Draconem
accipt: Aquil: pronunciavit Impura' E quibus
præsagia ??ment Egipti Ceteriq3 Romines. Eaq3
Etiam proponunt prophetae -

prophetæ — lucequid παραδοξοτεξον aut Egisse aut vi= disse dicuntur prophetæ, non ita intelligentum putat origines ac si ita revera fecessent sed ita divino sensu Eorum intellectui repræsentatum fuisse - sic de Columbâ qua descendentum vidit Johan; sic de Rapin S. pauli, sentiendum putat. con. Cels. L.1. p.36.

Resurrectio} Christi ..} — - Eo magis clara Et absq3 fraude, eo luod pro certo Mortuus est, in publico passus, Cum Ceteri Heroes de quibus Idem falso narratur, & conspectu /tantum\ hominum se subduxerint. cont. cele. p. 93.

Index of the Notes.

Theologia

Crittica.

philosofica

politica

<BM stamp, red>

[In pencil]

227 fols [?] Dec 1885
Ex^{d}. SS

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At bottom of page, upside down (as if trimmed from a larger sheet):

"2. Servants"