

An Extract of a Letter lately written by an ingenious person from Paris, containing some Considerations upon Mr. Newtons doctrine of Colors, as also upon the effects of the different Refractions of the Rays in Tele[copical] Glasses.

I Have seen, how Mr. *Newton* endeavours to maintain his new Theory concerning *Colours*. Me thinks, that the most important Objection, which is made against him by way of *Quære*, is that, Whether there be more than two sorts of *Colours*. For my part, I believe, that an *Hypothesis*, that should explain mechanically and by the nature of motion the *Colors Yellow* and *Blew*, would be sufficient for all the rest, in regard that those others, being only more deeply charged (as appears by the *Prismes* of Mr. *Hook*) do produce the dark or deep-Red and *Blew*; and that of these four all the other colors may be compounded. Neither do I see, why Mr. *Newton* doth not content himself with the two *Colors, Yellow* and *Blew*; for it will be much more easy to find an *Hypothesis* by Motion, that may explicate these two differences, than for so many diversities as there are of others *Colors*. And till he hath found this *Hypothesis*, he hath not taught us, what it is wherein consists the nature and difference of *Colours*, but only this accident (which certainly is very considerable,) of their *different Refrangibility*.

As for the composition of *White* made by all the *Colors* together, it may possibly be, that *Yellow* and *Blew* might also be sufficient for that: Which is worth while to try; and it may be done by the Experiment, which Mr. *Newton* proposeth, by receiving against a wall of a darkn'd room the *Colours* of the *Prisme*, and to cast their reflected light upon white paper. Here you must hinder the *Colors* of the extremities, *viz.* the *Red* and *Purple*, from striking against the wall, and leave only the intermediate *Colors*, *yellow*, *green* and *blew*, to see, whether the light of these alone would not make the paper appear white, as well as when they all give light. I even doubt, whether the lightest place of the *yellow* color may not all alone produce that effect, and I mean to try it at the first convenience; for this thought never came into my mind but just now

now. Mean time you may see, that if these Experiments do succeed, it can no more be said, that all the Colors are necessary to compound White, and that 'tis very probable, that all the rest are nothing but degrees of *Yellow* and *Blew*, more or less charged.

Lastly, touching the Effect of the different Refractions of the Rays in Telescopical Glasses, 'tis certain, that Experience agrees not with what Mr. *Newton* holds. For to consider only a picture, which is made by an object-glass of 12 feet in a dark room, we see, it is too distinct and too well defined to be produced by rays, that should stray the 50th. part * of the Aperture. So that, (as I believe I have told you heretofore) the difference of the Refrangibility doth not, it may be, alwayes follow 'the same proportion in the great and small inclinations of the Rayes upon the surface of the Glass.

Compare herewith what Mr. Newton saith in Numb. 80. of these Tracts, pag. 3079.

Mr. Newtons Answer to the foregoing Letter further explaining his Theory of Light and Colors, and particularly that of Whiteness; together with his continued hopes of perfecting Telescopes by Reflections rather than Refractions.

— **C**oncerning the business of Colors; in my saying that when Monsieur N. hath shewn how *White* may be produced out of two uncompounded colors, I will tell him, why he can conclude nothing from *that*; my meaning was, that such a White, (were there any such,) would have different properties from the White, which I had respect to, when I described my Theory, that is, from the White of the Sun's immediate light, of the ordinary objects of our senses, and of all white *Phenomena* that have hitherto fallen under my observation. And those different properties would evince it to be of a different constitution: Inasmuch that such a production of white would be so far from contradicting, that it would rather illustrate and confirm my Theory; because by the difference of that from other whites it would appear, that other Whites are not compounded of only two colours like that. And therefore if Monsieur N. would prove any thing, it is requisite that he do not only produce out of two primitive Colors