Thought, Color, and Intelligibility in the *New Essays*

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One of the main cudgels Leibniz deploys against Locke in the *New Essays* is his *Principle of Intelligibility*, according to which a thing's (non-miraculous) qualities or modifications must be explicable in terms of its nature.[1] With this principle in hand, he argues for a number of controversial conclusions, including that our ideas of sensible qualities are complex and must bear a natural relation to the qualities they represent (A VI, 6, 6, 56, 131, 165–166, 264, 389–390, 403–404), that matter does not think (A VI, 6, 62–67, 381–382), and that gravity is not an attractive force (A VI, 6, 60–61, 66). In this essay, I want to urge an apparent inconsistency in Leibniz's application of this principle, namely, to the case of thought, on the one hand, and to color and other sensible qualities, on the other. In the former case, Leibniz uses the principle to argue that thought could not be a modification of something material, thus must be a modification of something immaterial, because we cannot explain thought in mechanical terms. In the latter case, however, he uses the principle to argue that sensible qualities must really be complex qualities—must be complexes of tiny shapes and motions—even though we cannot explain such qualities in mechanical terms, that is, cannot explain *why* such a complex mechanical quality gives rise to the appearance of a certain sensible quality. I will argue that Leibniz is inconsistent in his treatment of these two cases, and that this inconsistency should have thrown the Principle of Intelligibility into doubt.

1. Intelligibility and Thought

Leibniz introduces the Principle of Intelligibility in the preface of the *New Essays*:

(A) "Whenever we find some quality in a subject, we ought to believe that if we understood the nature of both the subject and the quality, we would conceive how the quality could arise from it. So within the order of nature (miracles apart) it is not at God's arbitrary discretion to attach this or that quality haphazardly to substances. He will never give them any which are not natural to them, that is, which cannot arise from their nature as explicable modifications."[2]

This principle, he adds, "removes all the difficulties"; to reject it would be to "destroy not only our philosophy, which seeks reasons, but also the divine wisdom, which provides them" (ibid.).

One difficulty the principle removes, according to Leibniz, concerns the question whether matter might actually think. Locke, of course, takes the view that, for all we know, matter might well have been endowed by God with the power to think.[3] The Principle of Intelligibility, however, leads Leibniz to a different conclusion:

(B) "As for what is said about thought, it is certain [...] that it cannot be an intelligible modification of matter or be understood and explicated in terms of it, that is, that a sensing or thinking being is not a mechanical thing like a

[1] See D. Rutherford: "Leibniz's Principle of Intelligibility", in: *History of Philosophy Quarterly* 9/1 (1992), pp. 35–49.
[2] P. Remnant/J. Bennett (eds.): *New Essays on Human Understanding*, Cambridge 1996, p. 66; A VI, 6, 66.
[3] John Locke: *Enquiry Concerning Human Understanding*, 1689, IV, 3, 6.

watch or a mill, such that we can conceive of the sizes, shapes, and motions whose mechanical conjunction can produce something that thinks and even senses in a mass [....] It is not therefore natural to matter to sense and think, and this can happen in it in only two ways, the one of which would be that God adjoins to it a substance to which it is natural to think, and the other that God puts the thought there through a miracle." (Remnant/Bennett, pp. 66–67; A VI, 6, 66–67)

Leibniz makes the point again in Book IV:

(C) "Primary powers are what make up the substances themselves; derivative powers, or "faculties" if you like, are merely "ways of being"—and they must be derived from substances, and are not derivable from matter considered as wholly mechanical, i.e., abstractly considered as merely that incomplete being which is prime matter or the purely passive. I believe you agree, sir, that it is not within the power of a bare machine to give rise to perception, sensation, reason. So these must stem from some other substantial thing. To maintain that God acts in any other way, and gives things accidents which are not "ways of being" or modifications arising from substances, is to have recourse to miracles […]." (Remnant/Bennett, p. 379; A VI, 6, 379)

Read together, these passages suggest the following argument:

1. A thing's (non-miraculous) modifications must be explicable in terms of its nature. (Principle of Intelligibility)
2. Material things (i.e., bodies) are by nature mechanical.
3. Hence, a material thing's (non-miraculous) modifications must be explicable in mechanical terms. (from 1, 2)
4. Thought is a (non-miraculous) modification.
5. Thought is not explicable in mechanical terms.
6. So, thought is not a modification of a material thing. (from 3, 4, 5)
7. All modifications modify either a material thing or an immaterial thing.
8. Thus, thought is a modification of immaterial things. (from 6, 7)[4]

Leibniz articulates premise (1), the Principle of Intelligibility, in passage (A), and he assumes it in both (B) and (C). He affirms premise (2), that bodies are by nature mechanical, in (B), where he equates being a modification of matter with being "a mechanical thing like a watch or mill", whose sizes, shapes, and motions work as a "mechanical conjunction". In (C) he adds that matter in itself, that is, considered apart from any soul, is "wholly mechanical". As for premise (4), it is clear that in both (B) and (C) Leibniz treats thought as a modification or "way of being"; he also implicitly denies that thought is miraculous or non-natural. Premise (5) is one of the central claims of both (B) and (C). In the former, Leibniz denies that thought is an "intelligible modification of matter", that it can be "understood and explicated in terms of" matter, and that we can "conceive" how matter might give rise to thought. In the latter, he appears to classify thought as a derivative power—a modification or "way of being"—which is "not derivable from matter considered as wholly mechanical". Finally, though Leibniz does not affirm premise (7), either in the *New Essays* or elsewhere, it seems to go without

[4] For other interpretations of this argument in the recent literature, see S. Duncan: "Leibniz's Mill Arguments against Materialism", in: *Philosophical Quarterly* 62/247 (2012), pp. 250–272; M. Rozemond: "Mills Can't Think: Leibniz's Approach to the Mind-Body Problem", in: *Res Philosophica* 91/1 (2014), pp. 1–28; P. Lodge: "Leibniz's Mill Argument against Mechanical Materialism Revisited", in: *Ergo* 1/3 (2014), pp. 79–99.

saying, and he clearly assumes such a premise when he infers in (B) that "God adjoins to [matter] a substance to which it is natural to think", that is, an immaterial substance, and again when he concludes in (C) that thought "must stem from some other substantial thing", that is, something other than matter.

2. The Inexplicability of Color

The two key premises of this argument are (1)—the Principle of Intelligibility—and (5), which says that thought is not explicable in mechanical terms. In effect, (5) expresses the idea of an explanatory gap between thought and the mechanical qualities of bodies. For convenience, I will call this explanatory gap the *Thought Gap*. The point I now want to make is that there is a closely if not exactly analogous explanatory gap between sensible qualities such as color and the mechanical qualities of bodies. I will call this latter gap the *Color Gap*.

Leibniz is not as clear or informative about the Color Gap in the *New Essays* as he is in some other writings. But we can still discern the basic idea. In a nutshell, his position is that, although we can discover through empirical means the mechanical qualities that underlie a given sensible quality—its accompanying distinct qualities, as he often puts it—our sensory ideas of those qualities remain just as confused as ever, and indeed we can never explain the nature of these qualities through a consideration of our sensory ideas.

Consider first this passage from Book III, in which Leibniz discusses our ideas of sensible qualities:

> "They [i.e., ideas of sensible qualities] only appear to be simple. So when they occur there are other things going on which are connected with them, although the connection is not one that we understand; and these accompanying circumstances provide something that can be explained and subjected to analysis, which gives some hope that eventually we shall be able to discover the reasons for these phenomena." (Remnant/Bennett, p. 299; A VI, 6, 299)

Leibniz admits that we can discover the circumstances that accompany our ideas of sensible qualities, and in this way we can produce a kind of explanation or analysis of the quality. But he also admits that, whatever we might discover about these circumstances themselves, we cannot understand the connection between them and the quality they accompany.

He makes essentially the same point again in Book IV:

> "[B]lue and red can hardly provide material for demonstrations through the ideas we have of them, since these ideas are confused. These colors provide material for reasoning only to the extent that we find them through experience to be accompanied by distinct ideas, but without their connection with their accompanying ideas being an apparent one." (Remnant/Bennett, pp. 371–372; A VI, 6, 371–372)

We can reason about colors, Leibniz says, only because we can discover through experience facts about the distinct qualities or ideas that accompany them. For example, we now know that when the sky looks blue, this has to do with light of a certain wavelength being scattered by molecules of oxygen and nitrogen in the air. In other words, we have discovered through experience that our idea a blue sky is "accompanied" by a certain distinct idea of light-scattering. Similarly, we have discovered that when the sky appears red at sunset, this also has to do with light scattering and with the angle relative to the atmosphere. With this information, we can now reason about red and blue.

For instance, we can reason that when the sun reaches a certain angle, the sky will no longer appear blue. But for all this, the fact remains that we do not understand the connection between these appearances and the accompanying distinct qualities. We do not understand why the one circumstance produces the appearance we call blue rather than the one we call red, and so forth. In short, we cannot explain these colors in mechanical terms.

Another passage of significance occurs later in Book IV. It is worth quoting at length:

"[T]hese 'sensory ideas' depend on detail in the shapes and motions, which they precisely express, though the mechanical processes which act on our senses are too small and too great in number for us to sort out this detail within the confusion. But *if we had arrived at the inner constitutions of certain bodies, these qualities would be traced back to their intelligible causes and we should see under what circumstances they were bound to be present; even though it would never be in our power to recognize their causes sensorily, in our sensory ideas which are the confused effects of bodies acting on us*. For instance, we now have a complete analysis of green into blue and yellow, and almost all our remaining questions about it concern these ingredients; yet *we are totally incapable of disentangling the ideas of blue and yellow within our sensory idea of green, simply because it is a confused idea*. Somewhat similarly, when the swift rotation of a cog-wheel makes us perceive an artificial transparency, as I have noticed on visits to clock-makers, we are not able to disentangle the idea of the cause of this, i.e. the idea of the teeth on the wheel. The wheel's rotation makes the teeth disappear and an imaginary continuous transparent [ring] appear in their place; it is made up of successive appearances of teeth and of gaps between them, but in such rapid succession that our imagination [*phantaisie*] cannot distinguish them. So *the teeth are encountered in the distinct notion of this transparency, but not in that confused sensory perception of it. It is the latter's nature to be confused and to remain so*; for if the confusion ceased (e.g. if the motion slowed down enough for us to be able to observe the parts in succession) it would no longer be this same perception, i.e. it would no longer be this image [*phantôme*] of transparency. [...] And so *we can readily conclude that the situation will be the same with regard to those other sensory images [phantômes], like colors and tastes and so on, of which we do not yet have such a perfect analysis*. [...] It would be enough for all our purposes if we understood them as well as we do that artificial transparency: *it would be neither reasonable nor possible to profess to know more*; for to wish that these confused images [*phantômes*] remain and that we nevertheless disentangle the ingredients by the same imagination [*phantaisie*] is self-contradictory." (Remnant/Bennett, pp. 403–404; A VI, 6, 403–404)

Obviously I can't unpack this whole passage here, but I have italicized the most important parts. The essential points are the following: (i) We can trace sensible qualities back to their intelligible qualities through the discovery of the "inner constitutions of certain bodies"; (ii) Despite this, our sensory ideas and perceptions remain forever confused, because we can never find these intelligible qualities *in* or *through* the confused ones. Thus, we might know through experience that certain shapes and motions regularly accompany certain sensible qualities, just as we know that the teeth of the wheel accompany the continuously transparent ring. But we cannot understand or explain why the teeth give rise to this particular appearance, and in the case of sensible qualities, "it would be neither reasonable nor possible to profess to know more."

One final passage worth mentioning on this topic appears in Book II, where Leibniz says that "we are not to blame for the confusion that reigns among our ideas, for this is an imperfection in our nature: to be able to pick out the causes of odors and tastes, for instance, and the content of these qualities, is beyond us" (Remnant/Bennett, p. 256; A VI, 6, 256). Of course, we know from other texts that Leibniz does not deny that we can discover the causes of our ideas of sensible qualities through experience. His point here is rather that we cannot discern the causes and content of these qualities through our confused, sensory ideas of them. And since this is what it would take to really understand these confused qualities—to understand why this particular confused quality arises from these particular distinct ones—it follows that such an explanation transcends our limitations.

3. The Inconsistency

As we saw in Section 1, Leibniz appeals to the Principle of Intelligibility to argue that, because we cannot explain thought in mechanical terms, thought must be a modification not of bodies but of immaterial substances, substances to which it is natural to think. But I would like to suggest that the Principle of Intelligibility implies a similar result in the case of color, given Leibniz's views on our knowledge of sensible qualities. In particular, we have seen that, on his view, we cannot explain colors and other sensible qualities in mechanical terms. That is, we cannot explain why certain mechanical structures give rise to the appearance of one color rather than another, or indeed why they give rise to the appearance of color at all. Hence, it appears that Leibniz has committed himself to the truth of the premises of an argument exactly analogous to his argument against the hypothesis of thinking matter:

1′. A thing's (non-miraculous) modifications must be explicable in terms of its nature. (Principle of Intelligibility)
2′. Material things (i.e., bodies) are by nature mechanical.
3′. Hence, a material thing's (non-miraculous) modifications must be explicable in mechanical terms. (from 1′, 2′)
4′. Color is a (non-miraculous) modification.
5′. Color is not explicable in mechanical terms.
6′. So, color is not a modification of a material thing. (from 3′, 4′, 5′)
7′. All modifications modify either a material thing or an immaterial thing.
8′. Thus, color is a modification of immaterial things. (from 6′, 7′)

The crux of this argument is premise (5′), which corresponds to what I have called the Color Gap. I have already argued in the previous section that Leibniz seems to endorse this premise in the *New Essays*, and I will defend this claim against several objections in the next section. In the meantime, however, I should simply like to note that this argument presents a serious problem for Leibniz, insofar as the conclusion is one he (quite rightly) rejects. Although some of Leibniz's contemporaries did maintain that colors and other sensible qualities are modifications of the soul—Malebranche being one example[5]—Leibniz himself explicitly disavows this view. For instance, in his review of François Lamy's *On the Knowledge of the Self*, in response to Lamy's suggestion that "God leads us into error through our senses, in making us assign to bodies certain sensible qualities that are only modes [*manières*] of our minds," Leibniz accuses Lamy of supposing something false: "For these sensible qualities are modes [*manières*] or modifications of bodies and not of our mind; and our sensations are in truth ways of being of the soul, but ones which represent those of bodies".[6] Moreover, Leibniz is wise to reject this view of color; for it would seem absurd to suggest that color is a modification of something immaterial—in effect, that something immaterial could have a

[5] N. Malebranche: *Search for the Truth*, 1674/75, 1.1.1, 1.12.5.
[6] *Addition à l'Explication du systeme nouveau touchant l'union de l'ame et du corps, envoyée à Paris à l'occasion d'un livre intitulé Connoissance de soy même*; GP IV, 576. For more on this, see S. Puryear: "Leibniz on the Metaphysics of Color", in: *Philosophy and Phenomenological Research* 86/2 (2013), pp. 319–346, Section 2.

color, or be itself colored. Hence, if Leibniz's argument against thinking matter is sound, then given his position about the inexplicability of color, he appears to have committed himself to a conclusion that is absurd and that he explicitly rejects.

4. An Objection

One response which might have occurred to the reader by now is that, despite their similarities, the two explanatory gaps have different modal statuses. In some texts, Leibniz expresses optimism about our ability to close the color gap in due time. For instance, after noting that "we cannot define these ideas [of sensible qualities]: all we can do is make them known through examples," he adds that "until their inner structure has been deciphered we have to say that they are a *je ne sais quoi*" (Remnant/Bennett, p. 255; A VI, 6, 255), thereby implying that we may one day decipher the "inner structure" of various sensible qualities. Similarly, he has Locke's spokesman, Philalethes, summarize his view as follows: "You recognize, however, that ideas involve too much minute detail for us to be able to disentangle what is concealed in them; but you still hope that we shall come much closer to doing so" (Remnant/Bennett, p. 390; A VI, 6, 390). These texts suggest that the Color Gap might be only temporary, might one day be closed as we make further discoveries. In contrast, Leibniz unequivocally regards the Thought Gap as permanent. If so, then perhaps Leibniz could be saved from inconsistency by tweaking his argument. In particular, the Principle of Intelligibility (i.e., (1) and (1′)) could be modified to say that a thing's (non-miraculous) modifications must be *in principle explicable by us* in mechanical terms. (5) could then be modified to say that thought is not in principle explicable by us in mechanical terms. The argument against thinking matter would still go through. But the corresponding argument about color would not. For in order to maintain validity, (5′) would have to be changed to the claim that color is not in principle explicable by us in mechanical terms, which, on the view under consideration, is false. Color would only be mechanically inexplicable for us *in practice*, given our current level of understanding, not in principle.

In my opinion, this objection fails. First, note that when Leibniz expresses optimism about being able to explain sensible qualities, he probably has in mind the kind of experimental explanation or analysis that consists in discovering the accompanying distinct qualities. For even in passages where he expresses the optimism, he adds that something inexplicable remains, and is bound to remain no matter how far our knowledge advances. Further, it should be noted that in the case of the Thought Gap, we can discover the accompanying distinct qualities here too. For instance, we can discover that certain sensations are accompanied by certain neural events in the brain. It appears that our situation is the same in both cases: we can discover the mechanical (or physical) structures that accompany both thoughts and colors, but we cannot explain thoughts and colors themselves in mechanical terms. That is, we cannot explain the connection between a given thought or color and the mechanical (or physical) structures that accompany it.

5. Conclusion

I have not been able to consider all the objections which might be raised against my charge of inconsistency. So I will not go so far as to conclude that Leibniz's position is in fact inconsistent. However, it does appear that he was inconsistent in his treatment of the

two cases. In the one case, he recognizes the absurdity of denying that color is a modification of bodies, despite the inexplicability of color in mechanical terms. In the other, it is not so obvious that thought must be a modification of bodies—in fact, this is not obvious at all—and so Leibniz uses the inexplicability of thought as a reason for denying that matter thinks. However, the inconsistency in his treatment of these cases should have led him instead to question his Principle of Intelligibility. It should have forced him to recognize that, just because we cannot (perhaps even in principle) explain a thing's modifications in mechanical terms, it does not follow that the modification is not a modification of bodies. Doing so, however, would have undermined a number of his positions in the *New Essays*.