

## Color Science and Spectrum Inversion: Further Thoughts

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I am quite grateful for Martine Nida-Rümelin's response, which is useful in clarifying fundamental issues, in addition to underscoring our differences.

Nida-Rümelin offers the striking case of pseudonormal vision in support of the claim that undetectable spectrum inversion is possible. Crucial to her claim, which she provides as an objection to certain functionalist views, is the fact that vision scientists describe pseudonormal vision as a case of spectrum inversion.

In my reply, I emphasize that the possibility of pseudonormal vision does not by itself establish the possibility of spectrum inversion. Rather, the move from the possibility of pseudonormal vision to that of spectrum inversion also requires that we accept phenomenal internalism, which is a philosophically contentious claim. But she, as well as vision scientists who describe pseudonormal vision as a case of spectrum inversion, merely assumes internalism. Thus she does not address functionalist views that are externalist.

In her response, Nida-Rümelin states that assumptions made by vision scientists can be disproved by philosophical criticism. (She claims that "No hypotheses accepted or seriously considered in colour vision science should be regarded according to a philosophical theory to be either incoherent or unstatable or false" (Nida-Rümelin, 1992, p. 145), but states that this constraint can be overridden). In opposition to my externalist criticism, however, she first contends that I have the burden of providing an alternative empirical theory of color vision to explain the available data. She then offers motivation for internalism.

With respect to her first point, it is not clear why an externalist needs to provide an alternative empirical theory of color vision. If by "the available data" she means the data of color vision, *not including* cases of spectrum inversion, the externalist appeals to the same empirical theories that the internalist does. Thus, my criticism of the description of pseudonormal vision as a case of spectrum inversion does not take issue with the opponent-process theory, but rather the assumption of internalism. If by "the available data" she means the data of color vision *including* cases of spectrum inversion, then her point is question begging.

Furthermore, while Nida-Rümelin's discussion of internalism provides useful clarification, she offers no motivation to accept this position independently of vision scientists' descriptions which simply assume it. In presenting this motivation, she distinguishes between the physical properties of physical objects (which she claims to be the physical stimuli for color experiences) and the "intrinsic phenomenal qual-

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ity” of color experience. She then claims that vision scientists “quite obviously implicitly accept a noneliminativist, realist view about intrinsic phenomenal [qualities] of color experience,” where a realist view holds that intrinsic phenomenal qualities supervene on internal physiological properties of perceivers.

However, it is not clear how any of this helps to address the dispute between phenomenal internalism and phenomenal externalism. She claims that intrinsic phenomenal qualities are internal properties of perceivers’ color experiences. Certainly color experiences have *internal properties*. But externalism accepts that they do. For externalism accepts that internal properties, such as those described by the opponent-process theory, are involved in color perception. Rather, what externalism denies is that *phenomenal qualities*—the qualitative aspects of color experience—are internal properties.

Furthermore, color experience clearly involves phenomenal qualities of some sort. But when raising the question of the nature of phenomenal qualities, it is important to use the term “phenomenal qualities” in a way which does not prejudge an answer. Thus we can consider whether, for example, phenomenal qualities are internal properties of perceivers, or physical properties of physical objects perceived, or some other sort of property.

However, Nida-Rümelin uses the term “intrinsic phenomenal quality” to *assert* that phenomenal qualities are internal properties and deny that they are physical properties of physical objects. Since the question of the nature of phenomenal qualities is philosophically controversial, she cannot simply assert an answer without argument. Thus, she cannot simply deny that phenomenal qualities are physical properties of physical objects without argument.

Indeed, she does not motivate internalism independently of vision scientists’ descriptions which assume it. But to address my externalist criticism, she needs to provide an argument for internalism. Without one, neither vision scientists nor philosophers are justified in describing pseudonormal vision as a case of spectrum inversion.