

## A monochrome view of colour

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**Abstract:** Saunders & van Brakel's criticism of Berlin & Kay's methodology misunderstands the fact that scientific hypotheses are tested by generating new, replicable data with novel explanatory power. Thus, although Berlin and Kay studied differences in colour words *between* languages, the same patterns are also present in colour word usage *within* languages, in a range of literary and other textual databases.

Saunders & van Brakel (S&vB) have written a strongly argued criticism of the influential work of Berlin and Kay (1969). They have several criticisms, but they seem largely reducible to methodological failings of one sort or another. If in Berlin and Kay they find "an appearance of sloppiness," then it can only be said that in their own criticisms there is an appearance of nitpicking, and of the setting up of artificial standards, unrealistic and arbitrary hurdles that perhaps no study could ever meet. Worse still, such standards are perhaps irrelevant. Of course it would be better to study many more languages with hundreds of bilingual speakers, not one of whom was acculturated to the West (but is that possible if they are properly bilingual?). Surely these criticisms are close to becoming irrefutable? And of course there are a thousand confounding measures that Berlin and Kay did not take into account. To be flippant, it *might* be the case that the colour of the interviewer's socks altered the respondent's behaviour; and there were of course no controls for this. But do such criticisms mean we can discount the Berlin and Kay hypothesis entirely?

Somewhere, S&vB have misunderstood the nature of science. It creates *hypotheses* that may or may not be right or useful. Its test is in findings that replicate and are useful for predicting and explaining other unanticipated phenomena. And as such the Berlin and Kay hypothesis is undoubtedly extremely useful. Of course more extensive data would be nice, and it is therefore strange to find S&vB not mentioning the World Color Survey (WCS) of Kay et al. (1991).<sup>1</sup>

The WCS looks at 25 speakers from each of 111 languages. Whether this will be sufficient for S&vB is not clear; one has a sneaking suspicion that it will not be, but it certainly appears methodologically sound. That the original Berlin and Kay position is genuinely a working hypothesis is shown in the WCS analyses by the discovery of some anomalies that require the original schema to be modified (although they hardly invalidate the basic formulation in any serious way).

Does the Berlin and Kay hypothesis provide insight into data remote from those on which the hypothesis was created? The original study says colour names are not mere categories but can be ordered, with each colour term having a number indicating its evolutionary antiquity, and white and black being older in some sense than orange and purple. Berlin and Kay derived their ordering from comparisons *between* languages, and said nothing about differences between colour words *within* languages. Differences in the use of colour words within a single language that correlate with the Berlin and Kay order therefore provide indirect support for the meaningfulness of that ordering. In 1983 I reported three sets of data on the frequency of colour words in English poetry, in English novels, and in Chinese poetry, in which there was a highly significant association with the Berlin and Kay order, older words being used more (McManus 1983). The older words also had longer entries in the Oxford English Dictionary, were listed more often in spontaneous colour word listings, and on the semantic differential had higher evaluation and activity, but not potency (McManus 1983). Previously, Hays et al. (1972) had reported similar colour word frequency effects in English, Spanish, French, German, Russian, Romanian, and Hebrew. Recently I (McManus, in press) have extended my earlier study by using eight large and very different computerised text bases (Biological Abstracts, Dissertation Abstracts, English Poetry, English Verse drama, GeoRef, MathSci,