Diachronic Trends in Latin’s Basic Color Vocabulary

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ABSTRACT
The Latin language contains a number of synonymous terms in its basic color categories. The goal of this essay is to trace the diachronic trends of such terms; to discover which term, if any, is the favored term for a color category; and to determine whether it became established as such in sequence with the Universal Evolution (UE) model. I examine the frequencies of all potentially-basic color terms in the extant texts of five authors chosen to represent a span of about six hundred years: Plautus, Cato the Elder, Cicero, Seneca, and Saint Jerome. My initial hypothesis was that niger was displacing ater as the basic Black term; a similar shift was occurring as candidus displaced albus as the default White term; and other shifts between Red and Yellow terms are uncertain. The hypothesis that niger was displacing ater proved to be accurate; niger increased from occurring only incidentally in Plautus (third century BCE) to being the dominant Black term in Seneca (first century CE), although it did not completely displace ater until late antiquity. In Plautus, candidus and albus formed an equal percentage of total color vocabulary, and displayed only slightly divergent trends, which may reflect the use of albus for “matte white” and candidus for “shiny white.” Ruber was the favored Red term, but it was not displacing other Red terms, nor were the other Red terms displacing each other. The frequency of the intersective term purpureus “purple” suggests that it became established around the same time that Latin’s Red words became established. There was not enough data from the authors in this study to determine trends for Latin’s Yellow terms. Viridis was well-represented as a Green term throughout the time period surveyed. Caeruleus appeared very infrequently compared to viridis, implying that Latin was transitioning between evolutionary stages IV_{G/Bu} and IV in the five-stage UE model presented in the World Color Survey.
1. Introduction: Relativism, Universalism, and Latin

Prior to 1969, the most prevalent hypotheses for language evolution were those of Sapir and Whorf, the key principles of which are linguistic relativity and linguistic determinism. According to the theory of linguistic determinism, experiences map onto words, which influence future experiences—or, in terms of color, the experience (or optical perception) of a color influences the linguistic perception of the color (by association with a particular word), and this color language then influences future color experiences. From this principle the hypothesis of linguistic relativity follows, namely that the languages of different cultures should differ greatly from one another because of their different experiential stimuli.\(^1\) Brent Berlin and Paul Kay’s 1969 (B-K) hypothesis that basic color terms evolve in a sequential, partially-fixed order offered strong opposition to the relativists—the Universal Evolution (UE) hypothesis suggested universal evolution of color terms across cultures. Although this hypothesis was controversial, it found empirical support in the 2009 World Color Survey, which gathered data from 110 minor and tribal languages and which stated the revised UE hypothesis as follows:

I. There exists a small set of perceptual landmarks (that we can now identify with the Hering primary colors: black, white, red, yellow, green, blue) which individually or in combination form the basis of the denotation of most of the major color terms of most of the languages of world.

II. Languages are frequently observed to gain basic color terms in a partially fixed order. Languages are infrequently or never observed to loose [sic] basic color terms.\(^2\)

In recent times, the opposition between the universalists and the relativists has become less extreme. C. P. Biggam writes,

Relativism...was never totally eclipsed and, from the late 1980s, many researchers decided that, while certain aspects of colour looked universal, others differed from society to society. The more extreme forms of the two theories were not compatible but it became increasingly clear that the milder forms were.\(^3\)

With the revised UE hypothesis came a revised evolutionary scheme that allowed multiple trajectories for evolution and a reduction to five stages (as opposed to the seven in B-K).\(^4\) Based on the data collected from the five authors in this study, Latin appears to be at Stage \(IV_{G/Bu}\) which is to say it is a Stage IV color system in the Green/Blue trajectory. As a language in such a stage, Latin should possess basic terms for Black (Bk), White (W), Red (R), Yellow (Y), and Green/Blue (G and Bu respectively).\(^5\) As seen in Figure 1, the frequency of basic color categories supports the hypothesis that Latin followed the UE model. Categories that became established earlier in the language’s evolution (e.g. Black

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1 Brown and Lenneberg 1954: 461.
4 WCS: 11. The partially-fixed order of the 1969 B-K hypothesis was: Black (Bk)/White (W); Red (R); Yellow (Y) or Green (G); Green or Yellow (whichever was not acquired previously); Blue (Bu); Brown (Br); Purple (Pp), Pink (Pp), Orange (O), and/or Grey (Gy) in any order. See Berlin and Kay 1969 (hereafter BK): 4.
5 A forward-slash denotes a fuzzy set, where the terms contained in the set have varying degrees of association with it.
and White, Red) have higher frequencies than the categories that became established later (e.g. Blue). The revised UE model also allows for partitioning based on the distinction between Warm (Wa) and Cool (C) primaries; Latin possesses distinct Red and Yellow terms in the Warm category and fuzzy Green/Blue terms in the Cool category.6

2. Methods

2.0 Terminology

Before progressing further, it will be beneficial to set out definitions for some terms that will appear repeatedly throughout this essay. These are as follows:

**Color term:** any word that denotes color;

**Basic (also primary) color term (BCT):** the most elementary word for a Hering primary color or intersective color (e.g. red, pink);

**Secondary color term:** any color term which is not primary, including words derived from natural objects or dyes (e.g. scarlet, rose-madder);

**Intersective color:** any color outside of the six Hering primaries, (e.g. purple, grey);

**Focal color:** the color considered the archetype for a basic color term;

**Primary meaning:** the denotation of a color;

**Secondary/extended meaning:** the connotation of a color;

**Data referent:** the object to which the data (i.e. the color terms and, when applicable, their referents) refers (e.g. Seneca for the phrase *color rubicundus*);

**Referent:** the object to which a term refers (e.g. the noun color in the phrase *color rubicundus*);

**Total color vocabulary (TCV):** the sum of the occurrences of all forms of the Latin color terms in Table I.

### 2.1 Locating Latin’s Basic Color Terms

<table>
<thead>
<tr>
<th>Latin (Stage IV/L)</th>
<th>Latin’s BCTs and synonyms</th>
</tr>
</thead>
<tbody>
<tr>
<td>White (W)</td>
<td>albus/alb* candidus/cand*</td>
</tr>
<tr>
<td>Black (Bk)</td>
<td>ater/atr* niger/nig*</td>
</tr>
<tr>
<td>Red/Yellow (R)</td>
<td>ruber/rub* rufus/ruf* russet/ross* rutilus/rut*</td>
</tr>
<tr>
<td>Yellow (Y)</td>
<td>flavus/flav* fulvous/fulv* luteus/lut*</td>
</tr>
<tr>
<td>Purple (Pu)</td>
<td>purpureus/purpur*</td>
</tr>
<tr>
<td>Green/Blue (G/Bu)</td>
<td>(G) viridis/vir* (Bu) caeruleus/caerul*</td>
</tr>
</tbody>
</table>

Table I. Latin’s basic color terms (BCTs), including synonymous terms, placed into the Berlin-Kay continuum. Word stems are indicated by the stem followed by an asterisk (i.e. stem*).

Locating Latin’s basic color terms (BCTs) would be a simple matter if they mapped perfectly onto the BCTs of one of its daughter languages, or those of English, or of any modern language which would offer a key to understanding the intricacies of Latin’s color vocabulary. Unfortunately for the Latin scholar, however, the only language onto which Latin’s BCTs map perfectly is Latin. Nevertheless, the universality of focal colors offers a starting point for identifying the position of Latin’s BCTs in color space.7 As seen from Table 1, the Latin language has a number of color terms that can fit into the UE color categories, including four (“black,” “white,” “red,” and “yellow”) with at least one synonym. It also possesses single terms for “green,” “blue,” and “purple.” But are we, armed with only these basic categories, capable of teasing out the riddle of what the Romans meant when they wrote of colors?

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6 WCS: 27.
7 For the universality of focal colors, see Kay 2005; Regier et. al. 2005.
And what of the question of which colors are primary, and which are either secondary colors, or not colors at all?

In addition to their theory of the universal evolution of basic color terms, Berlin and Kay offer four criteria for judging whether a color term is basic, with four additional criteria used for doubtful terms. The four key criteria are (i) that it is monolexemic, meaning its signification (i.e. the color to which it corresponds) is not predictable from the meaning of its parts; (ii) its signification is not included in that of another color term; (iii) its usage must not be restricted to a narrow class of objects; and (iv) it is psychologically salient for informants.8 Determining the psychological salience of Latin’s color terms is a difficult task, due to the most unfortunate lack of natively Latin-speaking informants. However, when working with sufficiently large bodies of texts, the frequency with which a term appears offers an acceptable substitute for living informants who can communicate to the researcher the salience of a word. Thus, these four criteria (the first three especially) are pertinent for Latin’s color vocabulary, with additional criteria applied as needed.9

When trying to understand the meaning of any of these words, it is certainly easy enough to walk over to the Oxford Latin Dictionary as if into a candy shop and come back with a handful of definitions, neatly packaged into separate senses, to be devoured one by one. However, this oversimplifying approach often erases a word’s nuances, which profit more from a savory blend of complementary meanings and definitions. This is especially true with color, where even the name of a color can mean something more than its denotative meaning. Few would argue that the statement “red was suffused in his face” (as in Sen. Ep. 11.1) could have meaning other than the literal fact that a man’s face changed its color to a shade of red. It is certainly possible that a statement such as “X object (with color A) changed in color to B” may have only denotative meaning, but it is equally possible that it will have connotative meaning that should also be taken into account when evaluating its usage of color.

In an effort to avoid the oversimplification of such connotations, I have avoided the subjective task of separating out the primary color uses of individual words from their extended uses when compiling and analyzing the statistical data presented in this essay.

2.2 Data Collection

To collect the data for this study, I used the time-honored practice of word-counting. This was the technique used by William Gladstone in his earlier study of Homeric Greek’s color vocabulary, and the method so scathingly condemned by Gladstone’s critic, Grant Allen.10 Allen voices his chief complaint with the method:

I look in vain through the pages of Geiger, of Magnus, and of Mr. Gladstone, for any indication that pictures, sculpture, pottery, or other art products have been taken into consideration at all. Every one of these students seems to have sat down in his library, consulting the frail linguistic authority of the Vedas, the Homeric poems, and the Hebrew prophets; but never to have tested the truth of the philological conclusion by reference to museums and art collections.11

However, an approach such as that proposed by Allen is no less problematic and yields no more objective results than the practice of word-counting. The same subjectivity that plagues the distinction of a “green twig” that is green in color from a “green twig” that is fresh and growing is present in a modern scholar’s attribution of ancient color

8 Berlin and Kay 1969 (hereafter BK): 6. All of the color terms in this study (Table I) meet criteria (i) and (ii), with the exceptions of caeruleus and purpureus.

9 In particular, criterion (vi) “color terms that are also the name of an object characteristically having that color are suspect, for example, gold, silver, and ash.” Ibid.

10 Gladstone 1858; Allen 1879.

11 Allen 1879: 220. This method is not without current supporters; see Mark Bradley 2009: 30-32.
terms to cultural artifacts. We are not ancient Romans, and our native language is not Latin; to lay down rigidly precise judgments on these issues requires the imposition of our own modern sensibilities, which influence the interpretations we make. Indeed, matching color words to colored objects increases the risk of subjectivity because of the interaction between two different domains; limiting the scope of an investigation to the words themselves and their meanings lessens the risk of additional confusion. Thus, in the case of ancient languages, word-counting remains a sufficiently effective methodology.

The tools for such an endeavor have thankfully advanced since the nineteenth century, and my task was made much easier by the Library of Latin Texts (Series A) database, which I searched for all forms of 504 color terms. I then evaluated the results to determine if they were:

(a) color words (C): e.g. color rubicundus = “red color” (Sen. Dial. 5.30.1);

(b) not color words (NC): these include chiefly color words that are proper names (e.g. Rubrum Mare = Red Sea) and words that refer to a pigment without any particular reference to the color it possesses (e.g. atramentum = black ink); or

(c) color words with extended meanings (C+): e.g. Sen. Ep. 11.1 suffusus est rubor = “red (i.e. a blush) was suffused [in the face of a young man].”

NC words have been omitted from the data presented in this essay. C and C+ words were tabulated together for reasons upon which I have already commented above.

2.3 Authors Represented

In the present study, a random sample of five authors spanning a period of roughly 600 years served as data referents for determining any diachronic trends in Latin’s use of basic color terms. Table II highlights some key information on each author, including when and where they lived and some basic statistics on their word usage. In order to avoid the distorting influence of meter and poetic metaphor on a writer’s diction, I examined almost-exclusively prose authors (Plautus being the exception). Plautus’ writing does contain verse; however, its influence on word choice and expression is negligible due to the fact that Plautus used his Greek models more freely than did his near-contemporary

<table>
<thead>
<tr>
<th>Author</th>
<th>Born</th>
<th>Died</th>
<th>Born in</th>
<th>Tcolor</th>
<th>Tsum</th>
<th>% Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plautus</td>
<td>c. 254 BCE</td>
<td>184 BCE</td>
<td>Sarsina (Umbria)</td>
<td>53</td>
<td>167,826</td>
<td>0.03%</td>
</tr>
<tr>
<td>Cato</td>
<td>234 BCE</td>
<td>149 BCE</td>
<td>Tusculum (Latium)</td>
<td>40</td>
<td>19,919</td>
<td>0.20%</td>
</tr>
<tr>
<td>Cicero</td>
<td>106 BCE</td>
<td>43 BCE</td>
<td>Arpinum (Latium)</td>
<td>84</td>
<td>1,100,597</td>
<td>0.03%</td>
</tr>
<tr>
<td>Seneca</td>
<td>c. 4 BCE</td>
<td>65 CE</td>
<td>Cordoba (Hispania)</td>
<td>100</td>
<td>301,750</td>
<td>0.03%</td>
</tr>
<tr>
<td>St. Jerome</td>
<td>347 CE</td>
<td>420 CE</td>
<td>Stridon (Dalmatia)</td>
<td>221</td>
<td>666,544</td>
<td>0.03%</td>
</tr>
</tbody>
</table>

Table II. The sample authors. Plautus, Cato, Cicero, Seneca, 1 and St. Jerome 2 are the authors used as data referents in the analysis of diachronic trends in Latin’s BCT usage. Tcolor = total number of BCTs; Tsum = total number of words; % Color = the percentage amount of BCTs in an author’s vocabulary.

Ennius, and as a result, Plautine verse bears a closer resemblance to natural speech. 13

3. Data and analysis

3.1 Black and White

Latin has two terms each for Black and White. The Black terms are ater (stem atr*) and niger/nigr*; the White terms are albus/ alb* and candidus/cand*. In Plautus, ater/ atr* is clearly the favored term, with a difference of 20.8 percentage points. In Jerome, this difference decreases to −7.2 percentage

12 LLT (Series A) published by Brepols, accessed 6/24/13 through 8/1/13 and 2/22/14 through 3/13/14.
13 Fortson 2008: 2, 6. For a more detailed commentary, 32.
points, indicating a shift in preference to $niger/nigr^*$ over $ater/atr^*$. In Plautus, $albus/alb^*$ and $candidus/cand^*$ are used with equal frequency; while the shift in usage is not as dramatic as that between $ater/atr^*$ and $niger/nigr^*$, there is an increase in frequency in $albus/alb^*$ over time, and a corresponding decrease in the frequency of $candidus/cand^*$ (see Figure 2).

Both sets of synonyms meet the B-K criteria for BCTs, and there is a great deal of heterogeneity in an individual author’s use of these terms. There are two possible explanations for this: each word in the pair is completely synonymous with the other, and the variability in usage depends on the author; and there is some subtlety underlying the words’ meanings. Variability between authors presents a situation similar to that between speakers of language which is undergoing change. Kay states that when a color term system is undergoing change, there will be inter-speaker (or in the case of Latin, author) variability: “If all speakers are at a given stage $n$ with respect to basic color terms, the most salient secondary color terms will be those that become basic at stages $n + 1$, $n + 2$, and so on.”

Here Kay is referring to the process of additional secondary colors becoming primary, but the same principle applies to synonymous terms through a cumulative effect: for instance, at $n$ (Plautus), $niger$ occurs once, while $ater$ occurs twelve times, indicating that in Plautus, $niger$ is the secondary term. At $n + 2$ (Cicero), $ater$ occurs nine times, and $niger$ eight. Because Cicero is writing somewhat more than a century after Plautus, this inter-author variability could also be indicative of a diachronic change. However, this conjecture is not sufficient to explain the variability in the usage of Latin’s Black and White terms.

A possible explanation for the existence of such variability between multiple terms is that different terms imply different luminosity or shininess. $Niger$ and $candidus$ are the shiny terms, $ater$ and $albus$ the matte ones. Table III describes Latin’s Black/White terms and illustrates their relationships with each other.

Although the Dictionnaire Étymologique de la Langue Latine (hereafter DELL) notes that there is some confusion between matte and shiny uses of $albus$, $candidus$ is without a doubt the term for “shiny white” because it is applied to such referents as fire and metals. “Shiny black,” on the other hand, is not so clearly defined. It is important to note that while $albus$ can only be opposite $ater$ (and vice versa) and $candidus$ can only be opposite $niger$, $niger$ can be opposite either $albus$ or $candidus$. This double relationship is evidence for $niger$ being the preferred BCT

<table>
<thead>
<tr>
<th>Matte</th>
<th>Shiny</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td>$ater/atr^*$</td>
<td>$niger/nigr^*$</td>
</tr>
<tr>
<td>$albus/alb^*$</td>
<td>$candidus/cand^*$</td>
</tr>
</tbody>
</table>

Table III. Descriptions of B&W terms and their relationships with each other. Dictionnaire Étymologique de la Langue Latine, s.v. $albus$, $albus$, $candidus$, $ater$, and $niger$.

Figure 2. Distribution of achromatic (Black and White) terms. A dashed line indicates a negative diachronic trend, while a solid line indicates a positive trend.

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14 Kay 1975: 263.
16 André 1949: 31-32.
for Black, and its relative stability (when compared to the extreme shift in *ater*’s usage; refer to Figure 2) implies that although it could be used as a term for “shiny black,” it could also be used to describe black things in general. *Ater*, on the other hand, was used more often in an extended sense to indicate moral character or refer to death, a meaning picked up by its derivative *atrox*. It is possible that *ater*’s usage involved so much more extended meaning than color salience that after *atrox* came into usage, *ater* lost its prevalence in literature. However, *atrox* was not included in this study, and data from other authors and statistics for *atrox* are necessary to prove or disprove such a hypothesis. In all five authors used as data referents, Black/White terms account for 42.2% of the total color vocabulary (TCV).

### 3.2 Warm Colors: Red and Yellow

As a Stage IV$_{G/Bu}$ language, Latin possesses terms for Red and Yellow, with many terms spanning red and yellow areas of the spectrum. However, based on the authors represented here, the only clear favorite term is a Red one (*ruber*), and, there is no clear favorite for Yellow (although this is likely a result of the small sample size). Moreover, there are a great number of synonyms for Red, occurring in much lesser frequencies and exhibiting no tendency for one to replace the other. Red and Yellow terms also display considerable overlap in the extent of the colors they encode, with red terms frequently extending into the yellow range, and vice versa.\(^\text{17}\)

Although Red and Yellow are separate categories in a Stage IV$_{G/Bu}$ language, I address both here because they are Warm colors.

In Plautus, Red terms (*ruber*/rub*, *rufus*/ruf*, *russus*/russ*, and *rutilus*/rut*) have a very small presence, consisting of only 13.2% of his TCV. This ratio is remarkable given that 54.7% of Plautus’ TCV consists of Black/White terms, leaving the remaining 32.1% to be occupied by “yellow,” “green,” “blue,” and “purple”—colors that should not have appeared in such a proportion until later authors. Usage of Red terms consists of 17.5% of Cato’s TCV, 9.5% of Cicero’s, 28.0% of Seneca’s, and 13.1% of Jerome’s.

In all authors, *ruber* is the favored term for Red (although tenuously so in Plautus and Jerome, refer to Figure 3). Moreover, its salience is undisputed in Cato, Cicero, and Seneca, whose use of *ruber* and words from this stem accounts for 15.0%, 8.3%, and

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\(^{17}\) For instance, see Edgeworth 1985, “Luteus: Pink or Yellow?” He concludes that restricting *luteus*’ meaning to Yellow is oversimplifying the color it encodes.

\(^{18}\) Their use of the remaining Red terms is less than 2.5%.
27.0% of their TCVs respectively. Ruber is somewhat less established in Plautus: it accounts for 5.7% of his TCV, while rufus and rutilus each account for 3.8% (russus does not appear at all). The confusion between ruber and other terms in Jerome may be a result of the fact that his data comes from a translation project, in which he may have used Latin vocabulary to reflect that of the source texts. In the case of Plautus, the confusion may come from the Old Latin in which Plautus wrote—while Latin was around 400 years old by the time Plautus was writing, refinement of the Latin color vocabulary was a continuing process that was never truly completed. As such, it is not inconceivable that at this earlier point, ruber was simply another Red synonym. However, in the writing of Plautus’ near-contemporary Cato, the frequency of ruber doubled, indicating that at this time, the use of ruber was a matter of authorial preference. Although it is undeniable that ruber is the dominant term when looking at the sample authors as a whole, it is also clear that there is much interchangeability between Red synonyms without one of the less-used terms displacing another. Moreover, ruf* and russ* both derive from the Latin ruber, which offers an explanation for the frequency of their use alongside rub* (especially in Jerome, where ruf* accounts for 6.3% of his TCV, while rub* accounts for 6.8%). Rutilus, which has a lesser presence (appearing only in Plautus and Cato, 3.8% and 2.5% of TCV, respectively) is from another stem cognate with Sanskrit arunáh and arusáh, which may account for its smaller presence.19

In contrast to Red, Yellow has little presence in these authors: 3.8% of TCV in Plautus, 2.5% in Cato, 2.4% in Cicero, 11.0% in Seneca, and 1.4% in Jerome. Both flavus and fulvus have a great number of narrow applications (Table IV; see also Figure 4 for the distribution of all three terms), which makes it difficult to determine whether they are basic. Both terms appear in the sample authors predominantly in reference to hair or fur in the sense of “blond;” however, a glance at the entries for flavus and fulvus in the Oxford Latin Dictionary reveals that flavus has a strong connection with hair, while fulvus does not. The derivation from the same root as the Greek ξανθός (which also applies to hair) strengthens this connection further.20 Eric Laughton offers a detailed analysis of several instances of flavus, arguing that they prove flavus to mean “blond” whenever applied to a person.21 Included in the occurrences he analyzes are the two instances (both found in Seneca) which I tabulated under the heading “complexion,” and while he

19 DELL, s.v. ruber, rufus, russus, rutilus. Ruber itself derives from the same root as the Greek ἐρεύθω and Arabic ṭīdā.
20 DELL, s.v. flavus. It also shares the same root as the Baltic želti.
21 Flavus Pudor” 1948 and “Flavus Again” 1950.
must perform some semantic gymnastics to reach his conclusion, the fact that the ambiguity is sufficient to allow such a discussion further supports the connection between *flavus* and hair. From the fact that the meaning of *flavus* is tied near-exclusively to hair, it follows that *flavus* is not a BCT. Figure 5 shows the distribution of Yellow terms with *flavus* excluded.

When *flavus* is excluded from the data, *fulvus* appears to be the most common Yellow term in these authors, and because it does not have a connection to hair (as *flavus* does), it holds better standing as being a BCT. The writings of the authors represented here are not sufficient to establish a clear trend in the usage of *fulvus*. Etymological evidence indicates that it should not be as prominent as *luteus* (Latin’s third Yellow term, derived from the name of a plant producing a yellow dye) in Latin writing as a whole, because *fulvus* is of Germanic derivation while *luteus* shares a root with the Greek λύθρον. The influence Greece had upon the language and culture of Rome may very well have contributed to *luteus* becoming the favorite primary Yellow term, especially considering the fact that *flavus*, though a secondary term, also has a Greek counterpart. However, in the authors surveyed, *luteus* shows no particular trend and is absent in Cato, Cicero, and Jerome. Additional data are necessary to determine if there is a trend, or if the use of *luteus* (or any Red/Yellow word) is a matter of authorial preference or even regional differences in word usage.

In all five authors used as data referents, Red terms account for 15.9% of the TCV, and Yellow terms, 3.8%.

### 3.3 Purple: An Intersective Term

Latin’s Purple term, *purpureus* (stem *purpur*), is the next term (after Red terms) that appears in great frequency. While it seems unusual that this term would appear before the Hering primaries had resolved, it is quite common for intersective colors to appear earlier. *Purpur* accounts for a substantial amount of the TCV of the sample authors—23.5% (refer to Table V for the comparison of the amount of *purpur* words to other color categories). In the Old Latin writing of Plautus, *purpureus* already accounts for 22.6% of his color vocabulary, and with the exceptions of Cato (5.0%) and Seneca (17.0%), this figure does not change by more than approximately five percentage points. These statistics suggest that *purpur* words appeared as the result of some sort of

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22 Laughton 1950: 110.
23 DELL, s.v. *flavus*, *fulvus*, and *lutum*.
24 Refer back to Table II for the birthplace of each author.
25 WCS: 7.
external stimulus that remained more-or-less constant over time. Furthermore, the origin of the word is debatable, and the agent of its acquisition, ambiguous. There are two chief possibilities:

1. *Purpur* appeared as a loan from Greek; the agent is cultural exchange.
2. *Purpur* appeared independently from Greek; the agent is class-consciousness.

DELL supports both possibilities: “Emprunt ancien et oral au gr. πορφύρα, traité comme un mot purement latin.”

To begin, it is necessary to examine *purpureus’s* status as a color term. It does meet the first two B-K criteria; it is both monolexemic and its signification is not included in that of another color term. However, although it is not restricted to a narrow class of objects (i.e. the third B-K criterion) in the same way *flavus* and *fulvus* are, it nevertheless has very specific extended meanings due to the rarity and cost of the *purpura* dye—*purpur* words frequently refer to people or material goods exclusive to the upper class. A particularly notable example is the derivative *purpuratus*, referring to high-ranking officials, so called because of the color they wore (3 Esdras 3.2 in Jerome’s Vulgate); people clothed in purple more generally (Cic. Catil. 4.12); or even as a metonym for fine clothing (Pl. Mos. 288). These and other extended uses form the majority of uses of *purpur* words. In addition to the extended meaning that explicitly indicates wealth or luxury, *purpureus/purpur* is frequently connected more directly to objects reminiscent of the purple dye (Cato Orig. 7.8).

From the unique extended usages displayed by *purpur* words and the term’s close connection to the dye from which it was derived, it follows that *purpureus* should not be a BCT. However, if the emphasis on class in Roman society could lead to a synonymy between “purple” and “elite,” it is possible that this class-consciousness precipitated the early appearance of a Purple term. Berlin and Kay observe that in color systems possessing only terms for Black, White, and Red, the Red term includes “all reds, oranges, most yellows, browns, pinks, and purples (including violet).” Between the association of the color with elite status and the coincidence of that color with Red, it is unsurprising that *purpur* words figure so prominently in Latin’s color vocabulary. Moreover, their tendency to appear in frequencies either greater than or roughly equal to Green/Blue terms supports the interpretation that the *purpur* stem appeared closer to Red than to Green/Blue.

The significant cultural exchange between Greece and Rome must not be omitted from the discussion of purple due to the relationship of *purpura* to πορφύρα. Even though some Greek social practices and customs were considered effeminate by Romans, the elite prized Greek culture, including its art and literature. Biggam notes that when

<table>
<thead>
<tr>
<th></th>
<th>Plautus</th>
<th>Cato</th>
<th>Cicero</th>
<th>Seneca</th>
<th>St. Jerome</th>
<th>Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bk/W</td>
<td>54.7%</td>
<td>62.5%</td>
<td>50.0%</td>
<td>25.0%</td>
<td>40.3%</td>
<td>46.5%</td>
</tr>
<tr>
<td>R/Y</td>
<td>17.0%</td>
<td>20.0%</td>
<td>11.9%</td>
<td>39.0%</td>
<td>14.8%</td>
<td>20.5%</td>
</tr>
<tr>
<td>Pu</td>
<td>22.6%</td>
<td>5.0%</td>
<td>26.2%</td>
<td>17.0%</td>
<td>29.0%</td>
<td>20.0%</td>
</tr>
<tr>
<td>G/Bu</td>
<td>5.7%</td>
<td>12.5%</td>
<td>11.9%</td>
<td>19.0%</td>
<td>16.3%</td>
<td>13.1%</td>
</tr>
</tbody>
</table>

Table V. Comparison of the amount (in percent of TCV) of Bk/W words, R/Y words, and G/Bu words to words formed on the purpur* stem in each author.
establishing relative dating for a color system, it is “often the case that, when the gradual development of a colour system, category by category, appears to be lexically or cognitively disrupted...the explanation may be found in recent traumatic events such as foreign conquest...or some other form of social stress.”

Roman contact with Greece may very well have been an instance of such a social stress, leading to the early adoption of purpura in Latin. However, the five authors surveyed here are not a large enough sample to determine a relative chronology of the evolution of Latin’s BCTs overlaid with Rome’s interactions with Greece.

In all five authors used as data referents, purpur* terms account for 23.5% of the TCV.

3.4. Cool Colors: Green/Blue

Viridis is Latin’s only basic Green term, and it accounts for 3.8% of Plautus’ color vocabulary, 12.5% of Cato’s, 7.1% of Cicero’s, 11.0% of Seneca’s, and 16.3% of Jerome’s. This word experiences substantial usage as a term that does not refer purely to color—for instance, it may also have connotative meanings such as indication of ripeness, tenderness, or freshness; reference to new plant growth; or metonymy for plants or plant products. For example, things that Cato describes as viridis include olives to be pickled (Agr. 7.4), nuts (Agr. 17.2), foliage (Agr. 30), grass (to be fed to livestock; Agr. 54.5), and reeds (Agr. 160).

Because viridis does tend to have a greater number of secondary meanings, Bradley suggests that the established definition of viridis ought to be “verdant” (indicating primacy as a “plant” term) and not “green” (which implies primacy as a color term). Such a distinction seems to be supported by the data presented in this essay. However, Plautus and Seneca offer some uses of viridis that question the logic of such a reversal in the primacy of definitions. In Men. 828, Plautus describes eyes that are green (oculos uirere) and a countenance that is green in color (uiridis co-los) when writing of a madman. Plautus also describes the eyes of the ailing Cappadox (in Cur. 230) as herbeus “grass-colored,” which indicates that in Old Latin, the color green

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29 Biggam 2012: 162.
30 Bradley 2009: 11.
was closely linked to vegetation, and may even have had as its primary function the description of plant life (with color as a secondary meaning). This much is consistent with Bradley’s hypothesis. However, in Seneca’s discussion of the rainbow (Nat. 1.3.12), he describes the color of one series of bands as virides—a use that can hardly be thought of as primarily referring to plant life, unless in the sense of “plant-colored” (in which case the Plautine use of herbeus should more logically be expected). Seneca also uses virentia as a substantive for the color green in Dial. 5.9.2 when discussing colors that are pleasing for eyes to see. Moreover, as David Wharton notes, in a third of the total instances of viridis in Pliny, the term has non-botanical referents and describes animals, gems, pigments, etc. in a purely abstract manner.\(^{31}\) Both Seneca and Pliny are far removed in time from Plautus, so it may be that viridis became used purely as a color term only later in the development of the language. However, because Seneca uses the same stem in reference to vision, Plautus’ use of viridis in reference to eyes suggests that even in Old Latin, the extended meanings of viridis (freshness, plant growth, and so on) were not so dominant that they overrode the color meaning of the term, and thus that the color meaning was far from secondary to the word’s definition.

Appearing in conjunction with viridis is caeruleus; however, caerul* terms are not as established as vir* terms, either in frequency or in meaning. (See Figure 6) Caeruleus does not appear in Cato or Jerome. Plautus’ usage of caeruleus consists of 1.9% of his TCV, and Cicero’s, 4.8%. Seneca’s use of caeruleus amounts to 8.0% of his TCV, but this number is deceptive because in his discussion of rainbows, he uses caeruleus as a Cool term in opposition to Red/Yellow terms in a way that is more consistent with the light/dark contrast indicated by ater/niger and albus/candidus.\(^{32}\) If these instances are excluded from the results, caeruleus accounts for 5.0% of Seneca’s color vocabulary, which is more consistent with the ratio in Cicero (4.8%). The low frequency of the word, combined with its derivation from an object, suggest that this is Latin’s youngest BCT (among the Hering primaries).

The derivation of caeruleus is from caelum “sky” and the –eus ending, and it originated in poetry before it gained widespread use as a color term.\(^{33}\) This development is coherent with Mills F. Edgerton’s question:

> To what extent is the apperception of a color conditioned by the existence of a ready-made label in the vocabulary of the language of the subject, and to what extent do other factors lead the individual to take note of a color which as yet lacks a name in his language so that he is led to supply a label for future use?\(^{34}\)

The initial term for Blue had a “ready-made label”—caelum, plus the adjective ending –eus. However, as seen in Table VI, caeruleus

<table>
<thead>
<tr>
<th>Application</th>
<th>Plautus</th>
<th>Cato</th>
<th>Cicero</th>
<th>Seneca</th>
<th>St. Jerome</th>
</tr>
</thead>
<tbody>
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<td>0</td>
<td>2</td>
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</tr>
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<td>0</td>
<td>0</td>
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<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Ocean/bodies of water</td>
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<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>In quotation</td>
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<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

Table VI. Applications of caeruleus. Non-zero values are in boldface. The application with the greatest number of usages is in a dashed box.

\(^{31}\) Wharton, “Abstract and Embodied Colors in Pliny the Elder’s Natural History” (forthcoming).
\(^{32}\) WCS: 27.
\(^{33}\) DELL, s.v. caeruleus.
\(^{34}\) Edgerton 1960: 20.
is used to refer to the sky only twice, with the most frequent referent for *caeruleus* terms being the ocean and other bodies of water, and the remainder of the instances refer to non-sky objects. Furthermore, as Bradley argues, the particular hue encoded by *caeruleus* was probably a dark blue (and not sky-colored); the distribution of *caeruleus*’ referents in the sample authors supports this interpretation. These observations and the data presented by these authors both underscore Renato Oniga’s observation that as *caeruleus* gains status as a BCT, it loses its etymological connection to the sky and becomes a basic color term. This transferal of meaning emphasizes the issue of labeling colors for future use; in the case of *caeruleus*, future use extends out of the initial domain (*caelum*) and into other domains embodying hues that are separating from Green to become Blue. Thus, in theory, *caeruleus* should not meet the criterion for being monolexemic (because of its etymology), but in practice, it is not only essentially monolexemic, but also a BCT by virtue of the fact that its applications are not limited to the sky.

In all five authors used as data referents, Green terms account for 12.0 percent of the TCV; Blue terms, 2.6%.

### 4. Conclusion

From the data presented here, it appears that the evolution of Latin’s basic color terms is generally consistent with the order proposed by the revised UE hypothesis. Latin is certainly a Stage IV G/Bu language, and it is most likely in the midst of a transition from Stage IV to Stage V. It possesses what seem to be separate terms for green and blue, but the distinction between them is still somewhat unresolved. The overlap between the green and blue foci of each term, combined with the rarity of *caeruleus* when compared to the sum of other BCTs in Latin’s color system, supports the hypothesis that Latin is transitioning from Stage IV (where Green and Blue are still indistinct) to Stage V (where there are separate and distinct Green and Blue terms).

The picture of the evolution of Latin’s BCTs is, to a certain extent, complicated by the use of connotative word meanings (as in the case of *viridis*) and words with limited applications (most notably *flavus*). Another factor that constrains modern understanding of the evolution of Latin’s basic color vocabulary is the limited data available for Latin earlier than Plautus. However, in spite of these complications, a number of conclusions are clear. As predicted, *niger/nigr* is displacing *ater/atr* as the BCT for “black/dark” and *albus* and *candidus*, each of which is used to indicate a state of luminance, display diverging trends but without replacing one another. *Ruber* has by far the highest frequency of the Red terms, but other Red terms do not seem to be displacing it or each other. *Flavus* is certainly a secondary Yellow term, although there is insufficient data in this study to determine trends for *fulvus* and *luteus*. In this study, they appear in frequencies even less than *caeruleus*, but this result is most likely due to a lack of data, because *caeruleus* develops later and is well-attested even in antiquity as a rare word. *Viridis* is a BCT, albeit one with a plethora of extended meanings which can cause some confusion as to its color meaning. *Caeruleus*, as noted above, is a BCT, but a relatively recent one. In addition to the Hering primaries, Latin has an intersective term, *purpureus*, that most likely appeared alongside Red—an unsurprising circumstance, given that Purple is included in the domain of Red in early-stage color systems, and that the color was probably evocative of class-consciousness and cultural contact with Greece.

The study offered by this essay is not meant to be exhaustive, nor are five authors, spanning multiple genres of writing, truly sufficient to make sweeping declarations regarding the evolution of color language in Latin. By the future addition of data from other authors, it will be possible to understand more fully Latin’s color terms, their meanings, and their role in the evolution of
Latin’s basic color vocabulary.
Emily Gering

Bibliography


