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INDEX

PAINTING THE NEW REALITY:
COLOURS IN NEO-LATIN

ŠIME DEMO

Neo-Latin was developed during the Italian Renaissance in an attempt to restore the ancient form of the language after the medieval period, which was perceived by the Humanists as one of linguistic corruption in Latin.[1] Extensive quantity of Neo-Latin texts, their geographical and chronological expansion and the wide range of topics they cover make the most recent period of Latin a very interesting area of research.[2] This is especially true for the field of Neo-Latin vocabulary and phraseology.[3] While conforming to the classical usage, Neo-Latin writers also acted pragmatically and eclectically, making extensive use of medieval and non-Latin material as well.[4]

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* An early version of this paper was presented at the Colour Language and Colour Categorization Conference (Tallinn, June 2013).

[1] The term 'Latin' is, somewhat inaccurately, often used interchangeably with Ancient or even Classical Latin. Note the term 'Late Latin', referring to the stage of Latin immediately preceding the Middle Ages, as if no Latin existed after it. I use the term 'Ancient Latin' for all Latin produced from the beginning of Latin literacy up to the beginning of the Middle Ages, and 'Classical Latin' for the language of the literary authors writing roughly from 200 BC to 100 AD whose works provided a linguistic model for the Neo-Latin writers.

[2] The number of Neo-Latin texts considerably surpasses the quantity of medieval Latin texts, which are in turn much more numerous than extant ancient Latin writings. For example, the *Index Thomisticus*, a collection comprising only the works attributed to Thomas Aquinas and related authors, is almost double the size of the entire corpus of available Classical Latin texts (Bamman – Crane 2009).

[3] One of the most recent overviews is given in Helander (2014).

[4] See IJsewijn – Sacré (1998, 382). Benner – Tengström (1977, 62) describe such approach as "tolerant classicism".

Colours and Latin

The present study aims to detect the main trends of colour language in Neo-Latin. Much has been written about colour terms in Ancient Latin.[5] The seminal book by André (1949) and a more compressed, but still ample, article by Baran (1983) provide a rich descriptive frame. More recent work discusses the system of basic colour terms in ancient Latin works, with heavy emphasis put on Classical Latin, supporting either a universalistic (Berlin – Kay 1969, Kristol 1980, Kay 1999, Oniga 2007) or a relativistic (Eco 1985, Lyons 1999, Bradley 2009) theoretical position. According to the universalists, biological conditions play a crucial role in colour naming, while the relativists assert that culture influences colour perception (Bornstein 2007).

Apart from the neologisms, which have most frequently attracted the attention of linguistically oriented Neo-Latin scholars, the present analysis will also deal with more subtle aspects of colour naming. Although generalisations that establish sharp divisions are not possible here, it can be said, in agreement with the main thesis set forth by Lyons (1999) and Bradley (2009), that a general difference exists between the ancient Roman and modern views on colour. In the antiquity, on the one hand, colour was frequently connected with the object itself – its texture, original pigment, use, and cultural symbolism. On the other hand, in our modern use, colour is perceived more 'abstractly', set free from ties with objects, although still often burdened with symbolical meaning. This change is mirrored not only in the choice of vocabulary and semantic structure but also at several other linguistic levels.

Colour Language in the Early Modern Period

Generally, Neo-Latin writers did their best to use the Latin they encountered in the writings of the 'best' ancient authors. However, changes in the historical context modified their Latin (Ramminger 2014). Most of scientific writers were

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[5] To the best of my knowledge, there have been no linguistic studies of Neo-Latin colour terms published so far.

open to all ancient lexical resources, as well as medieval and foreign vocabularies.[6]

Medieval theories of colour were always a philosophical endeavour, heavily relying on Aristotelian model and making colours a part of larger systems of knowledge with theology embracing the whole.[7] However, Middle Ages brought some important advances: in the 13th century Robert Grosseteste (c. 1175–1253), although still an Aristotelian, presented the first new colour system after Aristotle, arranging colours in a three-dimensonal space (Smithson et al. 2012);[8] additionally, he heralded a wave theory of light. A few decades later Ramon Llull (c. 1232–c. 1315) included colour system in his geometrical combinatorics of the universal science (Baumann 2011). Renaissance writers, like Leon Battista Alberti (1404–1472), although still not questioning Aristotle, began to be interested in practical use of colours in art, openly avoiding the philosophical discourse.[9]

Seventeenth century empirical science brought the synthesis of theoretical and practical approaches. Findings by Kepler, Descartes, Newton, and others gradually superseded many old beliefs: that there are 'real' and 'fake' colours, that mixing lightness and darkness gives rise to colours,[10] that black and white are colours, that two types of light exist (*lux* and *lumen*), and so on. Apart from that, the awareness developed that in the antiquity everybody used to speak about pigments, and now they were talking about abstract colours.[11] The ever-growing need for precision in describing reality fostered the coinage of new colour terms and revision of the ways of talking about chromatic phenomena,

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[6] See Ramminger (2014, 22–23), discussing Flavio Biondo's rather eclectic rules for Neo-Latin style. Just like Helander (2014), I will not try to single out possible medieval sources for each Neo-Latin colour expression. A much more comprehensive analysis could sort out most cases.

[7] Examples of those accepting Aristotle's theory of colour include 13th century philosophers Bartholomeus Anglicus, Roger Bacon and Tomas Aquinas.

[8] I wish to thank prof. Galina Paramei for having drawn my attention to the work by Smithson's research group about Robert Grosseteste's *De colore* (mid-1220s).

[9] "Let us omit the debate of philosophers where the original source of colours is investigated (...) I speak here as a painter. " (Alberti 1966, 49).

[10] This is an old Aristotelian idea (*Sens.* 442a), taken up even by some early modern authors, e.g. J. C. Funck, H. Faber, or W. Meurer.

[11] Even in the Middle Ages people were perceptively more tied to material than to abstract colours (Gage 1993, 28–36).

especially in Latin, as it was the main language of colour literature (Plümacher 2007, 61–84).

In the eighteenth and nineteenth centuries, entire systems of colour naming were developed in order to meet the needs of clothing industry, biology and geology (Gage 1993, 170). Among those who tried to systematise colour terms the most significant were Linné, Wiedemann, Illiger, Bernhardi, and Hayne.[12]

Hayne's book from 1814 represents an extreme example of such strict categorisation of colour terms as abstract categories. His system is based on eight basic colours, which can be combined to each other and non-hue terms to yeald millions of complex colour terms. (e.g., *parellino-cyaneus*). Hayne's work is an example of how technical nomenclature can arise from language to take on a life of its own. In fact, any language (or an artificial set of signs) would have been able to take over the role of Latin in such a nomenclature.[13]

Research corpora

The present analysis is based on two corpora: I refer most frequently to a dozen Neo-Latin technical works dealing with colours that were published between 1548 and 1814.[14] Some additional examples, especially in the section dealing with literary influences, come from a five-million-word corpus of Neo-Latin works written by authors related to Croatia and stored in the digital collection *Croatiae Auctores Latini* (*CroALa*). The first subcorpus is interesting due to the frequency and variety of colour language in it, and the latter presents a slice of thematically randomised texts that are unbiased regarding colour language, although geographically limited.[15] The digital corpus of Latin texts published in the third edition of the *Bibliotheca Teubneriana Latina* (*BTL*) CD-ROM and

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[12] On the liveliness of the Neo-Latin word formation in the fields of botany, zoology and anatomy see Benner – Tengström (1977, 51) and Helander (2014, 42–43).

[13] Exacctly this eventually happened in the 20th century with colour models such as RBG and CMYK, where colours are encoded by tuples of numbers.

[14] Because of the frequent referencing, technical Neo-Latin works in the analysed corpus will be abbreviated acording to the list given in the Appendix.

[15] Wil is peculiar in that it is a poem, but also a technical work. Some works in *CroALa*, e.g. didactic epic poems of R. Bošković and B. Stay, have a similar character.

the *Thesaurus Linguae Latinae* were the main tools for controlling ancient Latin colour vocabulary.

Talking about colours in Neo-Latin

Classifying colours

Following advances in science, Neo-Latin scientific writers were actively employed in new ways of classifying reality – a process that brought about many lexical developments.[16] Although Newton and his predecessors demonstrated that all colours are equally primary because each has its own degree of reflection (Gage 1993, 168),[17] some authors continued to use hierarchical colour divisions, inherited from medieval and early Renaissance colour theories, where colour systems were based on several basic colours to which various properties were assigned.[18] Most of the terms employed by them in this way did not have the hierarchical use in ancient texts,[19] but were generally known to the Middle Ages: *primarii* and *secundarii* (FuncS 7); *extremi* and *medii* (Lam 1; PorL 32; Pri 41, or *intermedii*); *primigeni* (Wil 8);[20] finally, *cardinales* (Val 9, for *albus*, *ruber*, and *niger*).[21]

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[16] See Helander (2014, 45–47). This tendency is implied, for example, by the expression *colorum regnum* (Soy 57), taken from biology.

[17] *... mediique dicuntur, non quod constentur ex extremis – simplices etenim ac illi sunt – sed ob aliquam ad extremorum alterum similitudinem et analogiam* (Pri 41).

[18] The notion of primary colours is an old Aristotelian idea taken up from the medieval tradition by Renaissance scholars such as L. B. Alberti (Bomford 1995, 12).

[19] When I say that something is not an ancient or classical word or expression, I mean that it has not been *attested* in our corpora, which cover a great deal of the preserved texts. This, of course, does not exclude the possibility that ancient Romans in fact used it. Still, it means that a medieval or a Neo-Latin author must have come up with the word or expression independently of the ancient sources accessible to us.

[20] Applied to *niger* and *albus*. The word *primigenus* is a hapax in the antiquity (Lucr. 2,1106) and does not have a chromatic meaning.

[21] For example, medieval authors Johannes de Bado Aureo and Bartolo da Sassoferrato (both 14th century) use the terms *colores principales*, *medii* and *submedii* (Huxtable 2011, 200).

The same holds for the division into 'real, stable' and 'fake, transient' colours.[22] Several inventive expressions appear in our texts. A natural and permanent colour is described as *primi generis* (Soy [V], not an ancient phrase), *genuinus* (PorL 147, Jun 3), *naturalis* (Por 147), *permanens* (Soy [V]), *positivus* (Pri 112),[23] *realis* (Lam 15); or by the phrase *colorum veritas* (Jun 10).[24] For artificial and unstable colours the authors use a range of novel terms: *adulteratus* (Pri 47–51),[25] *apparens* (Por 14; Pri 16, Soy [V]; Wil 14), *artefactus* (Lam 6), *artificialis* (Por 99), *emphaticus* (Soy, [V]), *fictus* (Pri 16), *praeternaturalis* (Val 8, in physiological use), *spurius* (Wil 14), *non verus* (PorL 25).

Alongside a number of inherited terms expressing aesthetic classifications and evaluations,[26] post-ancient period contribute various new ones: *concinnus* (Doe 11), *[coloris] lenitas* (Pri 19), *deformis* (Val 11), *suaviter [rubicundus]* (Soy 24), *elegans [viror]* (Soy 64).[27] In addition, our ancient texts do not contain expressions such as *colorum concordia* 'chromatic harmony' (Pri 51–52) and *colores consentanei aut dissentanei* 'matching or clashing colours' (Soy 9).

Intensity of colour

In the early modern period it became important to distinguish precise tones and shades within a hue. In the seventeenth century, people used to devise the so-called *scalae (rubedinis / nigredinis / flavedinis...)*, which means that brightness and saturation started to be taken account of in the hue system. The first author to do this was Sigfrid Forsius (in 1611). The first to do it systematically was Francis Glisson (in 1677), who offered divisions from *simplex albedo* to

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[22] *... trita ista in scholis divisio colorum in reales et veros, vel apparentes; quod si rem exacte perpendamus, omnes colores reales et veros dicendos esse apparebit* (Jun 9).

[23] Referring to black and tagging it as a philosophical term; PorL 46 says *ut hodie loquimur, positivus*.

[24] *Verus color* (PorL 14, 25; Pri 112, 143; Soy [V]) is ancient.

[25] But Plin. *nat.* 14,68,8 has *saporem coloremque adulterat*, 'falsifies the taste and the colour', not in exactly the same sense.

[26] According to the *TLL*: *amoenus, blandus, bonus, deterior, egregius, eximius, gratus, informis, insignitus, iucundus, lectissimus, malus, mirus, obsoletus, pretiosus, rarus*.

[27] Hay 12–14 even has *pulchritudinis gradus* ('the level of beauty') as one of his parameters of colour classification. His subdivisions are: *excellens* (prächtig), *suavis* (lieblich), *obsoletus* (verschossen), *foedus* (widrig), *sordidus* (schmutzig).

satura rubedo and from *simplex albedo* to *simplex nigredo* without naming the intermediate shades (Gage 1993, 166). Building upon medieval systems where non-hue qualities such as brightness and saturation were more central than they are now in post-Newtonian context,[28] Neo-Latin developed a large number of innovative terms denoting non-hue qualities. The wish for accurate description and stylistic richness encouraged technical writers to dip into the treasuries of Ancient Latin in search of words to express the presence or lack of various kinds of intensity within a hue.[29]

Categorial nouns marking these properties are *intensio* (FuncG C4r, Soy 18, 77),[30] *mediocritas* (Pri 19), *sinceritas* (PorL 150), *quantitas* (FuncG C3v), *vivacitas* (PorL 104; Soy 93), and *vividitas* (FuncG C4r – not an ancient word), none of them having appeared in the antiquity in a similar meaning.

Intensity of a shade within hue is most commonly expressed by adjectives and adverbs. Apart from the most general terms found in the corpus (*intensa rubedo*, Soy 56; *intensissima rubedo*, Soy 47; *color intensior*, FuncG C3v),[31] non-ancient semantic extensions producing expressions of high intensity of colour are based on a variety of colour conceptualisations that range from purely physical properties such as luminosity and purity to metaphorical ideas such as liveliness, abundance and fullness to evaluative concepts such as perfection and distinction. In black-and-white books lacking pictures the authors used these concepts in an attempt to transmit the idea of the exact shade to the reader. Here is a selection:

- luminosity (the principal shade within a hue is perceived as the brightest one): *coruscus color* (Lam 4), *fulgida nigredo* (Soy 14), *splendide ruber* (Soy 91)

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[28] "There was a closer association between a bright red and a bright blue than between a pale red and a pale blue" (Woolgar 2006, 157). Robert Groeesteste's system is based non on the hues, but on the oppositions *clara-obscura [lux]*, *multa-pauca [lux]* and *purum-impurum [perspicuum*, i.e. medium*]* (Smithson et al. 2012, A347).

[29] The terms are listed here without making difference among properties such as brightness, saturation, luminosity, chroma and lightness. A more comprehensive research could distinguish between mere stylistic embellishments and strict technical use, as well as determine exact meaning when possible. Also, nouns and adjectives are presented in a nominative singular form.

[30] The phrase *lucis intensio* (Soy 3) is not attested in Ancient Latin in description of colour, though Sen. *nat.* 1,3,12 has *color intensus*.

[31] The use is medieval: Albertus Magnus has *intensa viriditas* (Gage 1993, 166).

- purity (the colour is evaluated according to the absence of impurities): *emacula-tus candor* (Pri 59), *meracior niger* (PorL 55), *pure* (Hay with every basic colour term)
- liveliness (the most intense shade is perceived as having a vital force): *vegetus color* (FuncG C4r; Lam 4; *halurgus vegetus*, Lam 10; *purpura vegeta*, Pri 122; *ruber vegetus*, Pri 76), *vivax albus color* (Wil 4; *vivax radius*, Wil 3; *vivacissima rubedo*, Soy 46), *vivaciter ruber* (Soy 38; *vivaciter rubicundus*, Soy 68),[32] *vivi-dus fucus* (Pri 84; *color vividior*, FuncG C3v)
- abundance and fullness (main shade has the highest number of features of the hue): *ampla umbra* (Wil 3), *impense candidus* (Soy 10), *omnino ater* (Lam 5), *oneratus color* (Doe 9),[33] *plene rubet* (PorO 55),[34] *prorsus albus* (Lam 18; *pror-sus niger*, PorL 83), *satura rubedo* (Soy 27),[35] *saturate* (Hay 12–14 with various colour terms – not an ancient adverb), *summa nigredo* (FuncG A4r, PorL 53; *summus nigror*, Soy 56)
- perfection (the central shade is the most perfect and definite form of the hue): *absolutus color* (Soy 108; *nigredo absoluta*, Soy 49; *color absolutissimus*, Doe 9), *determinate purpureus* (Soy 72 – the word first appears in Boethius), *exacta nigredo* (Lam 9; PorL 130), *perfecta rubedo* (FuncS 13; *perfecta albedo*, PorL 184), *perfecte ruber* (FuncS 2, 8; *perfectius candescit*, Soy 59)
- distinction (the principal shade has a special eminence if compared to other shades): *excellens albedo* (Val 8),[36] *eximiae notae color* (Pri 113),[37] *exquisite niger* (PorL 99; *exquisite splendidus*, PorO 58),[38] *insigniter niger* (Soy 10; *insig-niter denigrat rem*, Lam 6), *primae notae niger* (Lam 3; Por 61), *vera nigredo* (Val 14; *vera et sincera purpura*, Doe 14).[39]

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[32] *Vivaciter* is found in late antiquity, and it is used exclusively with verbs, never chromatically.

[33] A possible loan translation from French: "... *quem Francogalli dicunt* couleur chargée".

[34] *Plenus color* appears in late ancient *Historia Augusta* (Capitol. *Alb.* 5,3).

[35] Verg. *georg.* 4,335 and Plin. *nat.* 37,170,11 have *satur color*.

[36] Plin. *nat.* 34,178,2 has *color excellens*, but the adjective does not appear with basic colour terms in the antiquity.

[37] *Eximiae notae* does not exist as a phrase in our ancient corpus; but Plin. *nat.* 9,135,3 and 24,160,4 has *eximius color*, and 21,23,3 *candor eximius*.

[38] Adverb *exquisite* is never used with colours in the antiquity, and it generally always comes with verbs.

[39] Some of these strongly aesthetical evaluations of colour can be traced back to medieval theories

Lack of intensity is likewise specified in novel ways, expressions being again motivated by various ideas:

- opacity (contrary to the brightness of an intense shade): *obscure inest aquilus* (PorO 52), *umbrosus albus* (Lam 3)
- impurity (expressing opposition to a pure colour): *impurus* (PorO 26)
- moderatenes (a shade is not dominant within a hue): *mediocris albus* (Lam 3), *subtilis rubedo* (Val 10)
- weakness (a non-intense shade lacks strength or focus): *dilute* (Hay 12–14 with various colours), *infirmatus niger* (Lam 11), *prope citrinus* (Lam 19), *remissus color* (FuncG C4r), *remisse albus* (Lam 18)
- indefiniteness (pointing to a shade that is not specified, using an indefinite pronoun): *nescio quid cinerei* (Soy 2), *quid fuscedinis* (Soy 70), *nonnihil rubedinis aut potius flavedinis* (Soy 19), *aliquid punicei* (PorL 150)
- harshness (expressing an emotional reaction evoked by a gloomy shade): *austerum glaucum* (Pri 50).

Colour on an object

Apart from describing individual colours, various expressions designate the relationship between an object and its colour. If the topic is the mere existence of the colour on an object, then the relationship is static. Despite its generally constant tendency to reproduce the collocational properties of the Ancient Latin, Neo-Latin is revealed as innovative here as well. Apart from many ancient phrases, we find some fresh ones, whether they express state (*caret colore*, PorL 97; *constans color*, Soy 76; *fixus color*, Soy 75; *insidet color*, Lam 5, PorL 81, 84; *perdurant pili ... ruffi*, Por 165) or action (*emicat color*, Lam 3, PorL 16, 60, 77, 134; *emittit colorem*, PorL 53, 86;[40] *exhalat colorem*, PorL 86; *exhibet colorem*, Soy *passim*, Lam 15; *tuentur unum colorem*, PorL 137).

A change of colour is linguistically even more productive. Colour is most often imagined as an abstract entity that behaves as an object in a space, able to be produced, mixed, attached to something and moved away. Here, too, in our corpus of Neo-Latin techinical works we find multiple wordings for expressing

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that saw in the colour an effect of light, which was identified with God and perceived as reflecting ultimate beauty (Spicher 2015).

[40] Plin. *nat.* 2,90,1 has *radiis, quos ... emittit*.

such concepts. Below is a sample of such expressions, distributed by the type of process and morphologically uniformed:

- generating (colour is conceived as something created): *conciliat novum colorem* (Soy 93; *conciliat nigrorem*, Soy 56), *constitutio coloris* (Soy 78), *generat colorem* (PorL 14, 15; *generatur color*, PorL 51; *generatio coloris*, PorL 61), *nascitur [color]* Pri 87–99; Soy 63; Lam 3)[41]
- forwarding (colour is conceived as something brought to prominence): *consurgit violaceus* (Soy 11), *exaltat rubrum* (Soy 94), *resultat color* (Soy 38, 58; *resultat candor*, Soy 45);
- disappearing (colour is thought of as something vanishing): *degenerat in colorem obscurum* (Soy 10; *in atram scoriam degenerabit*, Soy 47; *ex aliis coloribus in alios degenerant*, PorL 127, see also 133; about objects: *lachryma ... in puniceum degenerat*, PorL 134, Lam 9);
- giving / receiving / losing (colour is viewed as something attached to an object or removed from it): *accedit color* (PorL 128, 133, 196), *adipiscitur perfectum colorem* (PorL 145), *abiicit nativum colorem* (Soy 14), *acquirit [colorem]* (Lam 10), *nigredinem asciscit sibi* (Soy 13; *colorem sibi asciscit*, PorL 6, Lam 8), *imbibitur color* (PorL 104, 105; *imbibit minus coloris*, Lam 7), *invehit colorem* (PorL 87), *suggerit colorem* (PorL 160, Lam 12);
- mixing (colours are seen as mixed entities): *combinat rubrum et caeruleum* (Soy 2), *complicantur colores* (PorL 131), *contemperatio colorum* (Val 9),[42] *colorum unio* (Pri 4).[43]

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[41] Expression that a colour is born (*nascitur*) out of another colour (implying an abstract idea of colour) does not exist in our ancient Latin corpus. An example can illustrate how a wish for variety affected the language. In the most famous ancient treatise on colours, pseudo-Aristotelian peripatetic Greek *De coloribus*, which was written in a monotonous technical slang, the most frequent word for colour appearance or generation is γίνομαι. In a 1548 translation into Latin by Portius (PorL), renderings of the word run like his: *evado, efficior, fio, sum, gignor, cernor* (the derivative ἐπιγίνομαι: *accedo*). Other words are also variously translated by him (e.g. Greek φαίνομαι, Latin *appareo, sum, cernor*).

[42] *Contemperatio* is a late ancient word for adjusting colours (the author qualifies it as a painters' word: *ut ita pictoris vocabulo utar*).

[43] 'Union' is a Christian meaning of *unio*, and never used with *color* in the antiquity (although there is *unitas colorum* in Colum. 7,3,2,4).

Colour in an abstract space

When colours are conceived as abstract entities, people tend to view them as ordered in an abstract space, similar to the one on a palette. Although colours and abstract space had been routinely connected since the antiquity throughout the Middle Ages (Aristotle conceptualised the realm of colour as a one-dimensional space – a line from white to black), and although three-dimensional colour space has been proved to have existed at least from the thirteenth century on (Smithson et al. 2012), Neo-Latin technical works considerably expanded the range of expressions describing the arrangement of colours in such a space.

Apart from the classificatory adjectives that we have already seen, such as *extremi* and *medii* (Lam 3, 6; Pri 40; Soy 5),[44] there are some nouns that suggest an organisation of colours in a mental space: *affinitas colorum* (Hay 18; *affines colores*, Soy 9), *basis colorum* (Wil 14), *continuatio colorum* 'arrangement of colours' (Hay 18), *series [colorum]* (Soy 47).

Various verbs express positions of colours in an abstract space. Verbs of motion indicate not only a change of colour: *abludit a priori colore* (Soy 11),[45] *commeat in colorem lividum* (Soy 100), *commigrat ex ruffo* (PorL 129), *terminantur colores in nigrum* (Por 132), but also non-altered colours: *accedit ad flavedinem* (FuncS 7; see also Doe 14; Lam 18; PorL 32, 98), *attolluntur colores medii in albo et deprimuntur in nigro* (Soy 9), *tendens ad nigredinem* (PorL 53), *vergens ad nigritiem* (PorL 53; see also 99, 114, 129; Doe 7).

Synaesthetic expressions

Colours are sometimes described synaesthetically, being connected with other domains such as temperature, density, emotion, and herbal properties. Neo-Latin does not have many new synaesthetic colour expressions. However, differently from the situation in Ancient Latin, synaesthetic colour expressions in our corpus do not necessarily preserve a close connection of a colour with the object bearing it. In other words, Neo-Latin describes synaesthetically abstract colours as well, which is a property that has not been observed in our ancient corpus; for

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[44] *Medii colores* is a late ancient expression (appearing in Pomponius Porphyrio, Martianus Capella and Boethius).

[45] The word is a hapax in our ancient corpus (Hor. *sat.* 2,3,320).

example: *accenditur ruber* (Pri 77), *spissa rubedo* (Val 14), *viror frondens* (Soy 52; see also PorO 55; Val 11).[46]

Naming colours in Neo-Latin

New terms: lexical innovation

Latin was constantly enriching its chromatic vocabulary during the antiquity (Baran 1983, 404). Post-classical Ciceronian Latin – despite having purism as one of its main features – acquired further lexical material by either borrowing or building on existing Latin words by derivation or semantic modification. The greatest number of terms listed below comes from Hay, a representative of rich biological classification of colours, who brought the system to its utmost. However, non-ancient words can also be found sporadically in other works from the sample corpora.[47]

As expected, the most numerous category is adjectives. The majority of the new items were produced by derivative suffixes already used in the antiquity (André 1949, 211–212):[48]

> *-aceus*: *coraciaceus*, *cycaceus*, *endiviaceus*, *glandaceus*, *laureolaceus*, *ochra-ceus*, *olivaceus*, *pisaceus*, *pomaceus*, *ranunculaceus*, *schistaceus*, *sibiaceus*, *ureaceus*;
> *-inus*: *amianthinus*, *basaltinus*, *betulinus*, *capparinus*, *cascarillinus*, *charmesi-*

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[46] Cf. in Ancient Latin *accendit lumina Vesper* (Verg. *georg.* 1,251), *ardens purpura vestit* (Iuv. 11,155); *ardens color [solis]* (Plin. *nat.* 2,79,9). According to the *TLL*, the following adjectives are used synaesthetically with colour tems in the antiquity: *adustus, ardens, austerus, callidus, excoctus, frigidus, hilaris, igneus, ignitus, intentus, liquidus, percoctus, pinguis, tener, torridus, vivus*.

[47] All Hayne's colour terms are found on pages 8–14 of his booklet. In this section, terms found therein are not referred to as such. Unless otherwise stated, the terms listed do not appear in the *BTL* corpus.

[48] This was the usual routine for the majority of the Neo-Latin authors – it mattered for them more whether the word had a regular ancient affix than whether it is found in the ancient texts (Helander 2004, 65).

nus (Por 77),[49] *cinnabarinus, citrinus* (Lam 18),[50] *cramoesinus* (Pri 50, 57), *crepusculinus* (FuncG C4r), *eborinus, foeninus, guaiacinus, iridinus, ligurinus, lilacinus, linotinus, morinus, mulatinus, myrtillinus, parellinus, persicinus, pruninus, roborinus; saphirinus* (Pri 97 – medieval), *strychninus, Turchinus, Turcus* (Pri 44), *t(h)urcinus* (Pri 97);

-*eus: aerugineus* (Pri 105), *azureus,*[51] *bismutheus, brunneus, carmineus, carneus* (Pri 43 – late ancient, but not chromatic), *castaneus* (Soy 11 – Late ancient, non-chromatic), *chalybeus, cinammomeus, lazuleus,*[52] *orichalceus, ruffeus* (Doe 7), *spadiceus, stramineus, zinceus;*

-*atus: capreolatus, fumigatus* (Apul. *met.* 11,22, *apol.* 58, not chromatic), *incarnatus* (Soy 11 – late ancient Christian, not chromatic), *infumatus, leonatus* (Pri 70, Soy 66);

-*us: aurantius* (Soy 2), *baius* (PorL 54), *bronsus* (PorL 108),[53] *brunus* (Por 52),[54] *castagnus* (PorO 52),[55] *diaphanus* (FuncS 24, Jun 12, PorO 22), *halurgus* (Por 52, Pri 45); [56]

-*icus: auranticus, chloriticus, haematiticus, indigoticus, malachiticus, margariticus, vitricus;*

-*itius: lateritius, cineritius* (PorO 54 – *cinericius* is ancient Christian);

-*lus: caesiusculus* (PorO 40), *nigrellus* (K. Vičić, *Iesseis* 11,29,29);[57]

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[49] Here I can mention that Por divides *purpureus color* in three nuances, all of which have non-ancient names, borrowed from modern languages and with idiosyncratic forms: *carmesis* ('carmine', of Arabic origin, on p. 125 he calls it *charmesinus*), *paonazzo* (kind of violet, from Italian) and *scarlata* ('scarlet', from Persian).

[50] Appears in medieval *Liber de sensu...* (Gage 1993, 165).

[51] Medieval *azurus* (Gage 1993 166); *azurrus* (Pri 97).

[52] A. Pontacus (16th c.), *In Eusebio-Hieronymianum et S. Prosperi Chronica apparatus, castigationes et notae*, in PL 27, 741A; *lazulus* is medieval (appearing in *Liber de sensu...*, Gage 1933, 166).

[53] Taken from Italian ("qui vernaculo nomine nuncupatur"), but of uncertain ultimate origin (Medieval Latin variation: *bronzius*).

[54] Latinised Italian word: *colorem aquilum esse putarim; quem Neapoli dicimus brunum quemque nonnulli fuscum appellant*; see also Jun 16.

[55] Another Italian word, introduced thus: *colorem ... quem hodie castagnum clarum vocant*.

[56] Greek χαλουργός; the word is not attested in the Latin of the antiquity.

[57] Non-abbreviated Latin works can be found online at *CroaLA*. Although the names of the authors can be given in their Latinised form (and they are usually so in the original editions), the Croatian form was used because that is how they are referred to in *CroALa*.

-*osus*: *githaginosus*, *tenebricolosus* (PorO 57);
-*iacus: ardesiacus*.

One may notice a relatively frequent use of Greek vocabulary, which is another general feature of scientific Neo-Latin (Benner – Tengström 1977, 57–61).

Regarding forms produced by prefixes, our sample contains only one non-ancient form, *impellucidus* (Hay), which balances *pellucidus* (Plin. *nat.* 37,61,6 has *non tralucidi*).

Colour naming by compounding was never absent from Latin, but in the antiquity it was either confined to the language of agriculture and craft or modelled according to Greek usage (André 1949, 230–231; Bradley 2009, 131). Some innovative examples can be found in Neo-Latin:[58] *atropurpureus* (Soy 46), *alboruffus* (PorL 159), *ceruleo-lucidus* (A. A. Barić, *Statistica Europae 1792*: 2, 204), *flavicomus* (D. Pir, *Cato Minor* 16,2,18,1; R. Kunić, *Homeri Ilias Latini versibus expressa* 9,553 and 11,463, found also in late antiquity), *nigrifer* (F. Božićević, *Carmina* 19,142), *toticolor* (PorL 158).

For ancient Romans, colour verbs are most frequently inchoatives (André 1949, 243–244). In Neo-Latin, where terminological neologisms in verbal form are infrequent (Benner – Tengström 1977, 55), this group is represented at least by *ruffesco* (in participle, PorL 194) and *citrinesco* (Soy 26).[59] Suffix -*ic*- (André 1949, 242) does not seem to be productive in our corpus.

Sometimes verbal syntax is changed: PorO 52 uses *opaco* as an intransitive verb ('to be dark'), contrary to the exclusively transitive ancient use. There are also instances of increased morphological possibilities: while the comparative of *color* exists in ancient technical works, there are no preserved instances of the superlative *coloratissimus* (PorL 17) from the antiquity.[60] The same applies to *albissimus* (Lam 6; PorL 99), *luridissimus* (B. A. Krčelić, *Annuae sive Historiae* 423); *subnigrior* (Wil 9; comparing prefixed colour adjectives is a medieval innovation); there is also *albior* in Croatian Renaissance authors M. Marulić (*De institutione bene vivendi per exempla sanctorum* 3,631) and M. Vlačić (*Clavis scripturae sacrae* 2,1068).

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[58] I leave out Hay, who has countless hyphenated compounds of mechanically attached terms that he needed for his system.

[59] Hay, again, mechanically derives participles in -*cens* from each of his fundamental colour terms: of these, *coerulescens, fuscescens*, *lutescens* and *viridescens* are not ancient.

[60] The earliest appearance I was able to find is in John of Seville's (13th c.) *Commentarius in Nahum prophetam* 46, in *PL* 96, 727C.

New colour nouns are few: most of the slots in the system for ordinary ancient suffixes (*-or, -tudo, -ties, -edo*; André 1949, 236–237) had already been mostly taken. However, the less frequent *-itas*, which was productive in post-ancient period (Helander 2014, 43), yielded only *atritas* and *viriditas* in the antiquity but allowed for the Neo-Latin *ruffitas* (PorL 189) and *diaphaneitas* (Soy 14, 18, Val 11).[61]

Existing terms: semantic shifts

In the present section, those post-ancient developments in colour naming that used unchanged ancient lexical material are discussed. Some words existed before the Middle Ages but did not receive chromatic meaning until much later. Such semantic expansion can be seen in the following examples (Table 1):

Term	Ancient meaning	Neo-Latin meaning
citreus	'of citrus tree'	'light red' (FuncS 9 – also, citrius, Pri 69, 70)
galbaneus	'smelling like galbanum'	'a kind of yellow' (Soy 66)
icterus	'a [yellow] bird'	'a kind of yellow' (Soy 66)
lividulus	'envious'	'bluish' (F. Božićević, Carmina 42,32)
lactesco	'to turn to milk'	'to be white' (Pri 3, 67)*
ovinus	'of sheep'	'sheep-coloured' (PorO 52)
papavereus	'of poppy'	'poppy-coloured' (B. Stay, Philosophiae recentioris versibus traditae libri decem 1,147, Pri 44)
populeus	'of poplar tree'	'dark green' (Hay 10)
regius	'royal'	'a kind of yellow' (Soy 66)
sapphirinus	'of sapphire' (late ancient)	'sapphire-coloured' (PorL 85)
stanneus	'made of tin'	'tin-coloured' (Hay 12)
terreus	'of earth'	'earth-coloured' (Pri 44)
umbratilis	'private'	'shady' (Val 7)
vinosus	'drunk, having the taste or flavour of wine'	'a kind of red' (Soy 66, PorL 55, 68)
vitellinus	'of a calf'	'brownish-yellow' (Hay 10)

Table 1. Examples of semantic shift toward the chromatic meaning.

* The earliest chromatic use (and only one that is possibly pre-medieval) that I was able to identify is from Anth. Lat. 893,91.

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61 The suffix is typical for medieval Scholastic philosophy. See also the nouns *albificatio* (M. Vlačić, *Clavis scripturae sacrae* 2,784), *subrubedo* (PorO 55) and *glaucedo* (PorO 26, 28, for an eye disease).

In several cases, cultural changes caused a certain shift in balance: chromatic meanings became marginal, and non-chromatic ones started to dominate. Thus, *denigro* and *dealbo* had mostly chromatic meanings in the classical antiquity. However, the influence of Biblical language brought about the prevalence of non-chromatic meanings, *denigro* ('to defame, to denigrate'),[62] and *dealbo* (very frequently meaning 'to purify [of sins]'), along with many instances of *sepul-chrum dealbatum* and *paries dealbatus*. Further examples come from the po-litical domain. For Romans, the verb *candido* meant 'to render white', and its participle *candidatus* meant 'dressed in white'. The meaning 'candidate' comes from the time when those aspiring for public office used to wear white togas. Gradually, the word and its derivatives (like *candidatio*) were detached from its chromatic root and in our corpus they are most frequently used without refer-ences to whiteness. Finally, *rubrica* meant 'red earth, red writing matter' and also 'law, rubric', because in the antiquity, red chalk was used to write ordinances. This derived meaning preponderated in *CroALa*, no matter the colour used.[63]

Just like colour language in general, some ancient colour terms devel-oped more abstract meanings, being detached from the objects they were tied to in the antiquity. Here are several exaples in addition to those from the Table 1. Late ancient *murinus*, meaning 'grey like a mouse', was always used for the col-our of horse coat (André 1949, 73). However, B. Stay, *Philosophiae recentioris versibus traditae libri decem* 7,2283 and 7,2299, uses it twice, always simply as an abstract colour, without reference to an object. *Coccineus* is always used for the colour of cloths, except for Plinian technical language (André 1949, 117); on the other hand, Soy 66, B. Stay (*Philosophiae recentioris versibus traditae libri decem* 9,579 and 9,795) and M. Vlačić (*Clavis scripturae sacrae* 2,538) employ it in a wider range of contexts. For the Romans, *purpura* had consistent con-nection to the expensive pigment (Bradley 2009, 191–192), but the eighteenth century poets Stay, Bošković, and Kunić used the term normally in the pure wavelength-related sense, without connection to dye or cloth, or social meaning, or even the object bearing the colour.

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[62] In *CroALa*, 10 out of 16 instances are non-chromatic.

[63] Even derivatives such as *rubricalis* appeared regularly (see B. Krčelić, *Annuae sive Historia* 138, 161).

A more subtle type of the same process is evidenced by the cases of marginal colour expressions employed as basic colour terms. Such terms include *puniceus* (from Greek φοινικός, in PorL and Lam a basic colour term for 'red'), *aureus* (used by Newton as a basic term for 'orange'; Gage 1993, 232), and *glaucus* (Greek γλαυκός, used often as a basic colour term for 'blue'). This was not a uniform shift in general use but rather the choice of individual authors.

The conceptual switch toward an abstract notion of colour, detached from its object or pigment, prompted a more creative use of the existing nouns pertaining to the semantic field of colour.[64] Apart from various new usages within spatial conceptualisations (see above, sections "Colour on an object" and "Colour in an abstract space"), one can note other characteristic trends. Using the noun *color* in the plural to connote a family of shades within a hue is not attested in ancient texts: e.g. *colores nigri* 'set of black-like colours' (Val 13; *rubri viridesque colores*, B. Stay, *Philosophiae recentioris versibus traditae libri decem* 8,839; see also Doe 14; Soy 4). In addition, Neo-Latin has colour nouns that appear with colour verbs or participles, marking the affinity between colours: e.g. *color flavescens* 'colour that approaches yellow' (Soy 21; see also Soy 68, 89), *pullus nigricans* 'dusky black' (Doe 7; *rubens magis rutilat* 'red is more glowing', Soy 9; see also Soy 45). Some phrases are attested in the antiquity only with adjectives, but Neo-Latin expands this to nouns; e.g. *rubedo ignea* (Val 11)[65] *nigredo pulla* (Val 10).[66] Finally, situations where a colour echoes an object bearing it, such as *color violis aemulus* 'colour that imitates violets' (Wil 3, 7), are not found in our ancient corpus – it contains only cases where a thing matches another by its colour.[67]

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[64] In the Middle Ages and early Renaissance it was common to discuss colours as inherently tied to physical objects and their properties such as moistness and temperature (Woolgar 2006, 156).

[65] 'Red' adjectives occur in the antiquity with *flamma / flammeus / ignis / igneus*, but not noun *rubedo*.

[66] 'Black' adjectives occur in Ancient Latin with *pullus*, but noun *nigredo* never appears with other colour terms.

[67] See e.g. Plin. *nat.* 25,8,6; Apul. *met.* 1,19; Auson. *epist.* 16,15–16.

Literary influences

For most Neo-Latin authors, especially poets, imitating the ancient models was a stylistic requirement. Apart from that, efficient Latin instruction in school infused an assortment of set phrases that were employed by the ancient authors. This is one of the elements that significantly affected the setup of their chromatic language.

The prince of Latin poets, Vergil, had the strongest influence on Neo-Latin versifiers. In our corpus we find, among others, the following Vergilian chromatic phrases: *albi dentes* (*Aen.* 7,668, 11,680; 4x in R. Kunić's Vergilian *Homeri Ilias Latinis versibus expressa*), *candor nivalis* (*Aen.* 3,538; it gave 9 instances in *CroALa*, of them 5 in Kunić's translation of the *Iliad*),[68] *lactea colla* (*Aen.* 8,652 – repeated by Silius Italicus, Statius and Martial; *CroALa*: 8x in 7 different poets), *picea caligo* (*georg.* 2,309 – but also Ov. *met.* 1,265, 2,233; 3x in *CroALa*) and *roseae quadrigae* (*Aen.* 6,535; generated 7 instances in *CroALa*). Of other authors, Ovidian presence is exemplified with *eburnea colla* (*met.* 3,422, *am.* 3,7,7; 5x in *CroALa*) and Propertian by *nivea manus* (3,6,12; 6x in *CroALa*). The Ennian *caeli caerula* became a stereotype in the antiquity and was repeated by Lucretius and Ovid (Baran 1983, 339); Neo-Latin epic poets adopted it as well (in *CroALa*: 8x).

Some pre-classical colour terms were not taken up by classical poets but were revived later. Such expressions include *exalbesco* (Enn. *trag.* 20,[69] Cic. *ac.* 48,7; in *CroALa*: 1x), *luror* (before Apuleius only in Lucr. 4,308; in *CroALa*: 1x) and *nigror* (exclusively in pre-classical poetry: Pacuvius, Lucilius, Lucretius; in *CroALa*: 4x).

At a more general level, some features characteristic of individual ancient genres seem to reappear in neo-Latin works. Epic poetry is particularly distinguished for its own stylistic choices. For example, the Vergilian and Ovidian connection of *croceus* with the mythological image of the morning sky was very popular Croatian Neo-Latin epics (8x in *CroALa*, mostly epics); *nigrans*, an epic word, appears in *CroALa* four times as often as in *BTL*, mostly in epics;

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[68] However, while Vergil uses it for horse coat, Neo-Latin authors from our corpus do not – they took over the set phrase, but not the context.

[69] Quoted by Cic. *de orat.* 3,218,7, *fin.* 5,31,5 and *Hortensius* 122,2 (according to Prisc. *gramm.* 6,250,9).

and *ater* is dominant over *niger* in ancient as well as in Croatian Neo-Latin epic poetry (André 1949, 99).[70]

On the other hand, Neo-Latin poets sometimes seem to allow ancient colour terms not attested in ancient Latin poetry. The source can be an admired prose author, such as Cicero, e.g. *miniatulus* (*Att.* 16,11,1; D. Pir, *Cato Maior*, "Ad Vincentium Gilianum" 5,7),[71] or technical literature: *nigrico* (Plin. *pluries*; J. Čobarnić, *Dioclias* 1,83; Ferić, *Fabulae* 2,38,10) and *nigritudo* (hapax in Plin. *nat.* 10,107,4; Ferić, *Fabulae* 1,39,2).

Finally, as in many other areas, Christian writers also contributed to the Latin chromatic vocabulary. Thanks to them, some words and phrases (rare or nonexistent in Ancient Latin) permeated Neo-Latin literature and became normal, especially – but not exclusively – in theological literature. To give a few examples: *dealbo* (90x in *CroALa*), *rubeus* (42x), *albedo* (30x), *viror* (26x), *nigredo* (18x), *caerula ponti* (17x), *rubedo (*13x).

Conclusions

The extended use of dyes and pigments in early modern Europe, as well as new ways of theorising about optical phenomena and uncertainty regarding the ancient meanings of colour terms, put Latin, then the principal language of the sciences, at the forefront of a great challenge. Not only was an extension of its chromatic vocabulary urgent, but it also had to operate more precisely with the existing terms, and order them into systems that were being formed at the time. To meet these needs, the authors used late ancient and medieval linguistic resources, and when these were not sufficient, they were prompted to pave the new paths of expression.

Just like the authors describing other domains of human life, those writing about colours made profuse use of ancient derivative affixes and word meanings. This resulted not only in numerous lexical extensions and semantic

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[70] Curiously, the ratio between *ater* and *niger* is strikingly similar: 59,5%:40,5% in *BTL* and 58,7%:41,3% in *CroALa*. Of course, as the corpora are not balanced, this overlap can very easily be incidental; however, it shows a certain tendency.

[71] Referring to *cerula*, just like Cicero. It appears in Neo-Latin oratory, too (see, e.g., J. Dragišić, *Oratio funebris habita pro … Iunio Georgio* 1r).

shifts but also in the expansion of the collocational potential of many words. Neo-Latin authors maintained medieval ideas of the hierarchical arragement of colours, which resulted in a series of non-ancient colour classifying terms. In distinguishing shades within hue ranges, writers used many innovative expressions that verbalised ideas of colour intensity and its absence. Although communicating a full idea of individual colour was unachievable by just using words, the authors made use of concepts such as luminosity, purity, abundance, liveliness, perfection and distinction to get the liveliest picture of a shade possible.

Our corpus has shown that various kinds of relationships between a colour and its object (existence, generating, forwarding, disappearing and so on), and between individual colours were described in Neo-Latin by a much broader range of expressions than in the preserved ancient texts.

The vocabulary of colour naming was greatly extended, firstly in the Middle Ages, but especially in Neo-Latin period. New colour names were produced by both derivation and compounding, and existing terms were semantically modified, with a general trend of advancing from a tight connection to the object toward an abstract notion of the colour. Other processes include a culturally motivated increase in the prevalence of non-chromatic meanings in some cases (e.g. *denigro*, *candidatus*, *rubrica*), forwarding less used colour expressions as basic colour terms, and a more extensive use of colour nouns (including the noun *color* itself) as bearers of an abstract idea of colour.

The analysis has included a short discussion of the colour language in literary context, especialy in that of the formally strict realm of poetry. Using the example of Croatian Neo-Latin authors it has been shown that chromatic expressions make part of the repertoire transmitted by the genre tradition, but also that the poets occasionally admit non-poetic chromatic expressions. On the other hand, as it could have been expected, theological works inherited much of their colour terms from Christian literary tradition.

The analysis of the corpus of Croatian Neo-Latin writers has not shown any developments that can be assigned to diatopical variation. Nevertheless, as the works digitised in *CroALa* belong to 'high' literature, the possibility still remains that more interesting details could be found in substandard writings such as notarial records and canonical visitations, because these are more inclined to vernacular influences and even linguistic hybridisation and might reveal some

traces of the native linguistic backgrounds of the authors.

Further analyses, for example studies of Neo-Latin translation literature (comprising translations either from Ancient Greek or from modern languages), could be expected to multiply evidence in support of the claim that there is yet much to be discovered about the linguistic structure of the final stage of Latin.

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Appendix: Abbreviations of primary sources

Abbreviations of technical Neo-Latin works:

Doe = Fridericus Guilelmus Doering, *De coloribus veterum*, Gotha 1788.
FuncG = Johannes Caspar Funccius, *De coloribus coeli in genere*, Lipsiae, 1705.
FuncS = Johannes Caspar Funck, *De coloribus coeli in specie*, Ulm 1705.
Hay = Friedrich Gottlob Hayne, *De coloribus corporum naturalium, praecipue animalium vegetabiliumque*, Berlin 1814.
Jun = Iohannes Christophorus Junge, *De coloribus, objectis coloratis non inexistentibus*, Kiel 1703.
Lam = Henricus Lamparter, *Disputatio philosophica de coloribus*, Dilingen 1632.
PorL = Simon Portius, *De coloribus libellus*, Florence 1548.
PorO = Simon Portius, *De coloribus oculorum*, Florence 1550.
Pri = Salomon Priezacus, *Dilucida de coloribus dissertatio*, Paris 1657.
Soy = Casparus Soyer, *Coniectura de coloribus*, Ingolstadt 1698.
Val = Iacobus Vallan, *Disputatio physico medica inauguralis: De coloribus tamquam signis morborum*, Utrecht 1698.
Wil = Ignatius Wilczek, *De coloribus carmen*, Frankfurt – Leipzig 1776.

BTL = Bibliotheca Teubneriana Latina, 3rd edition 2004. CD-ROM, Version 3.0, P. Tombeur (ed.), München – Leipzig – Turnhout – Strombeek – Bever.
CroALa = Croatiae Auctores Latini: Collectio Electronica, N. Jovanović (ed.) (http://www.ffzg.unizg.hr/klafil/croala/ , accessed 19 June 2014)
PL = J. P. Migne - D. Vallarsi - S. Maffei (eds.) 1844–1864. *Patrologiae cursus completus ... Series Latina*, Paris.

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