> The concept of color as a grammar problem in Wittgenstein's perspective of language*

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Abstract

This essay aims to provide conceptual tools for the understanding of Wittgenstein's theory of color as a grammar problem instead of a phenomenological or purely scientific one. From an introduction of his understanding of meaning in his early and late life, his notion of grammar will be analyzed to understand his rebuttal of scientific and phenomenological discourse as a proper means for dealing with the problem of color through his critique of Goethe. Then Wittgenstein's take on color will become clear as his sympathy for Runge, the painter that Goethe criticizes, is analyzed to understand color as a language-game regarding kinds of colors as numbers and geometrical figures, in that grammar rather than experience is used to acknowledge them.
Keywords: Meaning. Language-games. Grammar. Color. Perception.

Resumo

Se pretende fornecer ferramentas conceituais para o entendimento da teoria sobre as cores de Wittgenstein enquanto um problema gramatical ao invés de fenomenológico ou puramente científico. De uma introdução à sua concepção de significado em sua juventude e tardiamente, irá se seguir uma análise de sua noção de gramática para entender sua refutação do discurso científico e fenomenológico como apropriados para lidar com o problema da cor através de sua crítica à Goethe. A perspectiva de Wittgenstein acerca das cores se tornará clara ao analisar sua simpatia à Runge, pintor que Goethe critica, para entender cor como um jogo de linguagem relacionado à tipos de cores enquanto números e figuras geométricas, em que usa-se a gramática em contraste à experiência para reconhecê-los.
Palavras-chave: Significado. Jogos de linguagem. Gramática. Cor. Percepção.

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1. Introduction

> "The logic of the concept of colour is just much
> more complicated than it might seem."[1]

Wittgenstein is well known for his controversial positions and discussions from language to classical philosophical methodology itself, even going as far as rebutting his own early work by identifying an underlying a metaphysical dogmatic position. In this paper I intend to shed some light on Wittgenstein's original perspective regarding such problems of perception. I will focus on his interpretation of the notion of concepts in his late life focusing on the problem of colors, mainly as he develops it on his Remarks on Color[2]. I hope this work will provide the reader with a useful understanding of some of the arguments responsible for the current state of affairs in these topics of philosophy, given that non-metaphysical approaches to perception and language, much akin to – if not directly inherited from – Wittgenstein, are currently much more predominant since the rise of naturalism and experimental philosophy in the XX century. I will not touch these contemporary discussions, but some of the most notable that may dialogue with this endeavor are the *qualia* discussions regarding perception (specially the thought experiment known as *Mary's Room*), Peter Ross' color physicalism and Alva Noë's action-based approach which dialogues with cognitive science and philosophy of mind.[3]

I will begin the first part of section 2 offering a panorama of Wittgenstein's early and late work on philosophy attempting to understand meaning in a conceptual sense throughout his life towards a greater focus specifically in his analysis of color. Once we understand meaning as use within

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[1] Ludwig Wittgenstein, *Remarks on Color*, 1998, III-106, p. 29.
[2] Ibid.
[3] Barry Maund's *Color* entry in the *Stanford Encyclopedia of Philosophy* delineates quite well most of the history of debates regarding color theory.

a given grammar in the second part, I will proceed to investigate his criticism of Goethe's theory of color as based on a phenomenological or scientific discourse in section 3, as hints to Wittgenstein's understanding of color concepts as different from subjective perception or the description of objective facts will gradually become clear. Hopefully a crisp understanding of his perspective will arise as I correlate Wittgenstein's position to the painter he identifies himself with and that Goethe criticizes, namely Philip Otto Runge, at the end of the third section. By grasping color concepts as following determinate rules apart from our direct or indirect perspective, but as relating to given formulaic language-games, in section 4 Wittgenstein's final position on the problem of color as the correlation of color discourse with a mathematical discourse should become evident. Finally, in the final section 5, I'll proceed to pose some final considerations regarding a possible contemporary relevance of this discussion.

2. Concepts and philosophy as language therapy

In this section I'll begin by introducing Wittgenstein's general thought on meaning in subsection 2.1, through a brief analysis of his changing perspective in his first and last major works. From his atomistic roots in the Vienna Circle towards a less metaphysically-oriented perspective in his last, posthumous work, I'll attempt to establish the groundworks for his philosophical understanding of grammar and conceptual investigation. In the following subsection 2.2, if I succeed in this attempt, it will be possible to delineate the theoretical context regarding his discussion with Goethe and Runge, which will be analyzed in section 3.

2.1. From logical atomism to language games

Wittgenstein's interpretation of language begins in his first major work, *Tractatus Logico-Philosophicus*[4]. A great deal of influence from his contemporary members of the famous Vienna Circle, which followed Frege's revolution in logic, is notable in this work. Such group was characterized as greatly committed to the analytical perspective of logic as the most important tool of philosophy, mostly through the dominant perspective of logical atomism. In a general sense, it postulates that the only meaningful kind of language is the logical one by correlating elementary propositions about the world with its atomic facts[5]. This position is clear on the *Tractatus*, where he defines the world as the "totality of existent atomic facts"[6], of which its logical picture (i.e. the composition of those elemental facts, which serve as truth-function of one another) constitutes the thought[7], which in turn is expressed perceptibly through the senses in the proposition.[8] To put it simply, objects (simple items referred to by a name or symbol) have intrinsic properties that can be combined to become atomic states of affairs (atomic facts)[9] that can be asserted through language in an elementary proposition.[10]

This is a very strong and final position of the role of philosophy for the early Wittgenstein: given that the only propositions with sense are tautological assertions about the world, as the descriptions of empirical sciences – analytical truths, absent of new information since they are self-evident –, we would be unable to meaningfully tackle subjective perception and beliefs. I will return to

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[4] Ludwig Wittgenstein, *Tractatus Logico-Philosophicus*, 2008/2010, henceforth referred to only as *Tractatus*. Given the original numbering of propositions and the bilingual character of every edition of this book in the bibliography, further citations will consist only of its proposition number; e.g. *Tractatus*, 3.1 instead of WITTGENSTEIN, *Tractatus Logico-Philosophicus*, 2008, p. 148-9.

[5] This is a direct influence of Frege's correlation of *Sinn* (translated as "sense") and *Bedeutung* (translated as "reference", "meaning" or "denotation"). For example, the *morning star* and the *evening star* are different *senses* to the same *referent,* planet Venus.

[6] Ludwig Wittgenstein, *Tractatus*, 2.04

[7] Ludwig Wittgenstein, *Tractatus*, 3

[8] Ludwig Wittgenstein, *Tractatus*, 3.1

[9] Ludwig Wittgenstein, *Tractatus*, 2.01

[10] Ludwig Wittgenstein, *Tractatus*, 4.21

this point later on, but for now it is sufficient to point out that following this perspective, Wittgenstein claimed in the conclusion of the *Tractatus* that philosophy itself is a useless endeavor – a waste of time with senseless propositions. He took this so seriously he famously went on to give up his philosophy teaching work as a gardener.[11] Philosophy had found its end.

Thirty years later, in his posthumous work *Philosophical Investigations*[12], Wittgenstein acknowledges a fundamental flaw in his previous thinking, leading to his reviewing of his entire perspective. He identifies that logical atomism, as well as philosophy in general, is committed to the Augustinian perspective of language, in which "[e]very word has a meaning. This meaning is correlated with the word. It is the object for which the word stands"[13]. He presents this problem by quoting a passage from St. Augustine's theory of language, where the name and properties (meaning) of an object are learned when other people (in this case, St. Augustine's elders) show us an object through ostensive motions and sounds. This perspective is committed to a certain degree of dogmatism, once there is this occult connection between an object and how we refer to it.[14] According to Wittgenstein:

> Naming seems to be a strange connection of a word with an object. – And such a strange connection really obtains, particularly when a philosopher tries to fathom the relation between name and what is named by staring at an object in front of him and repeating a name, or even the word "this", innumerable times.[15]

The author here does not disagree that the process of language learning has this strong ostensive aspect, but he attempts to escape a greater commitment to this strange connection between word and object. He does so by shifting this paradigm of meaning: it is given not by the object itself, but by our use of the words when we interact with it in some way. Frege's context principle is

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[11] For an interesting and thorough biography of Wittgenstein, see Ray Monk's *Wittgenstein: The Duty of Genius* (1991).
[12] Ludwig Wittgenstein, *Philosophical Investigations*, 2009b.
[13] Ludwig Wittgenstein, *Philosophical Investigations*, 1986, p. 2.
[14] Ludwig Wittgenstein, *Philosophical Investigations*, 2009b, §38, p. 23e.
[15] Ibid., p. 23e.

maximized here, in that we are "never to ask for the meaning of a word in isolation, but only in the context of a proposition"[16]. In §6 he presents this process of ostensive teaching of words using the example of a child learning a language, where there would be the "teacher's pointing to the objects, directing the child's attention to them, and at the same time uttering a word; for instance, the word 'slab' as he displays that shape"[17].

The author then coins the expression language-games in §7 to refer to these teaching games used with children (and also to its primitive, rudimentary aspect) that represent the different contexts required for language learning as a whole in any situation. Language, then, is strongly dependent on a form of life[18], for it emerges from certain practices, habits and culture of given communities. We could not share language with animals, for example, for the fundamentals of our way of living would pose a practical barrier against mutual understanding, "simply because our ability to interact with animals, to share ideas, responsibilities and aspirations with them, is so severely restricted"[19].

Together with his external/ostensive take on the construction of meaning, we can identify an inclination towards a non-private perspective of it. This then *public* status of language is central to his thought. By not having direct access to objects, likewise we do not have direct access to each other's minds. The rules of language can only be shown to be followed, but a knowledge of these rules remain occult. Wittgenstein criticizes epistemic privacy by way of arguing against a Cartesian solipsism, in that we do not have direct access to other's minds, but our own access to our minds is not possible without language (and, thus, others). He correlates it with a beetle in a box in the following example:

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[16] Gottlob Frege, *The Foundations of Arithmetics*, 1960, p. XXII.
[17] Ludwig Wittgenstein, *Philosophical Investigations*, 2009b, §6 p. 7e.
[18] *Lebensform* in the German original. It can be understood as a naturalistic perspective of Wittgenstein. For more on this and *form of life* as a whole, see GLOCK, 1998, p. 173-8, and GLOCK, 1996, p. 124-9.
[19] Hans-Johann Glock, *A Wittgenstein Dictionary*, 1996, p. 128.

> Suppose that everyone had a box with something in it which we call a "beetle". No one can ever look into anyone else's box, and everyone says he knows what a beetle is only by looking at his beetle. – Here it would be quite possible for everyone to have something different in his box. One might even imagine such a thing constantly changing. – But what if these people's word "beetle" had a use nonetheless? – If so, it would not be as the name of a thing. The thing in the box doesn't belong to the language-game at all; not even as a Something: for the box might even be empty.[20]

Having this lack of direct access to one's thoughts or knowledge – as Hacker puts it, "private ownership of experience is an illusion"[21] –, truth verification of a proposition becomes relative to the language-games to which they are inserted. "[T]he use of [a] word stands in need of a justification which everybody understands"[22]. When the teacher ostensively shows the children how to use a certain word, they are then providing the practical parameters to which they will then refer to when trying to reproduce this action. It becomes the framework[23] to which further instances of the rule are compared to, in order to regulate itself. These habits of regulated behavior consist in the aforementioned form of life of a community, and this "[s]hared human behaviour is the system of reference by means of which we interpret an unknown language".[24] Thus,

> [w]hat is true or false is what human beings say; and it is in their language that human beings agree. This is agreement not in opinions, but rather in form of life.[25]

To identify the meaning of a word then, it is not by a direct intuition given your particular experience, but by using ostensive frameworks acquired through your public, shared life among others; a process that is inherently necessary for language.

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[20] Ludwig Wittgenstein, *Philosophical Investigations*, 2009b, §293, p. 106e.
[21] Paul Hacker, *Wittgenstein: On Human Nature*, 1998, p. 24.
[22] Ludwig Wittgenstein, *Philosophical Investigations*, 2009b, §261, p. 99e.
[23] From the original *Gerüst*. This is as translated by Anscombe (1986); an alternative translation would be *scaffolding,* proposed by Anscombe, Hacker and Schulte (Cf. §240).
[24] Ludwig Wittgenstein, *Philosophical Investigations*, 2009b, §206, p. 88e.
[25] Ludwig Wittgenstein, *Philosophical Investigations*, 2009b, §241, p. 94e.

2.2. Not as a theory

As we saw previously, in the *Tractatus* the only propositions with sense (meaning) would be the ones of natural sciences and the like. The other kinds of propositions, therefore, would be pertaining to another sphere, which Wittgenstein called the mystical sphere[26]. They would be generated by a certain mystical feeling, which can be understood as one's position regarding their perception of the world as limited, and using their will to alter its limits (which, given the relationship of propositions and facts, are the same of one's language).[27] But since they had no truth value, given their lack of connection with facts in the world, it would be useless to try and speak about them, and "[w]hereof one cannot speak, thereof one must be silent"[28]. Thus, he explains that

> The correct method in philosophy would really be the following: to say nothing except what can be said, i.e. propositions of natural science [...] and then whenever someone else wanted to say something metaphysical, to demonstrate to him that he had failed to give a meaning to certain signs in his propositions.[29]

This perspective was shared by Rudolph Carnap, his contemporary member of the aforementioned Vienna Circle, which also defended a very similar logical atomism of his, but went further on analyzing the task of philosophy. As Wittgenstein, he agreed that these metaphysical (pseudo-)statements, although meaningless in logic, actually relate to one's position about the world (like art and music), what would remain as a task for philosophy would be then "not statements, nor a theory, nor a system, but only a method"[30]. It would be, negatively, to "eliminate meaningless words, meaningless pseudo-statements"[31] and positively, to "clarify meaningful concepts and propositions"[32].

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[26] For more references regarding Wittgenstein's mystical sphere in the *Tractatus*, see BILETZKI; MATAR, 2010, HACKER 1998/2000, and also HALLER, 1991 and SILVEIRA, 2008.
[27] Ludwig Wittgenstein, *Tractatus*, 6.43, 6.45
[28] Ludwig Wittgenstein, *Tractatus*, 7
[29] Ludwig Wittgenstein, *Tractatus*, 6.53
[30] Rudolph Carnap, *The Elimination of Metaphysics Through Logical Analysis of Language*, 1932, p. 77.
[31] Ibid., p. 77.
[32] Ibid., p. 77.

Even though Wittgenstein renounced his roots as a logical atomist, this perspective of the task of philosophy still persisted. Since words like essence, concept and the like have no "inner", "intrinsic" meaning, being but words in language-games, philosophy would only add to the confusion by using same words in different language-games in trying to find the language-game of all language games. Although he recognizes a family resemblance of words in different language games, since different communities may share similar forms of life, a universal status of a word is not conceivable for it would assume this intrinsic metaphysical characteristic that it could not possess. This "family resemblance" interpretation arises therefore

> for the various resemblances between members of a family: build, features, colour of eyes, gait, temperament, etc. etc. overlap and criss-cross in the same way.— And I shall say: 'games' form a family. [...] But if someone wished to say: "There is something common to all these constructions—namely the disjunction of all their common properties"—I should reply: Now you are only playing with words. One might as well say: 'Something runs through the whole thread— namely the continuous overlapping of those fibres'.[33]

This complex "network of rules which determine what linguistic move is allowed as making sense, and what isn't"[34] is called grammar. In this way, "[e]ssence is expressed in grammar"[35], and thus the task of philosophy modulates itself to a sort of grammatical analysis. Furthermore it follows that the kind of problem philosophy would deal with would be ones regarding the identification of which language-game and rule use certain word would pertain to or not, especially if we are confused and cannot identify its meaning. In his own words, the philosophical problem is characterized as "I don't know my way around"[36], in the sense that "we lay down rules, a technique, for a game, and that then when we follow the rules, things do not turn out as we had assumed. That we are therefore as it were entangled in our own rules"[37]. Philosophy would then have the task of serving as a therapy of language, a grammatical analysis of

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[33] Ludwig Wittgenstein, *Philosophical Investigations*, 1986, §67, p. 39.
[34] Anat Biletzki and Anat Matar, *Ludwig Wittgenstein*, 2010, p. 20.
[35] Ludwig Wittgenstein, *Philosophical Investigations*, 2009b, §371, p. 123e.
[36] Ludwig Wittgenstein, *Philosophical Investigations*, 1986, §123, p. 56.
[37] Ludwig Wittgenstein, *Philosophical Investigations*, 1986, §125, p. 57.

statements without the primary agenda to provide meaning, but to help us figure out how to guide ourselves amidst language-games – a clear shift in paradigm both to philosophy and the reader themselves.

From the atomistic, pessimistic, philosophical perspective in the *Tractatus* to the grammatical focus of the Investigations, I aimed in this section to provide the theoretical groundwork on which Wittgenstein's main discussion on color concepts will take place. In the next section I will introduce the author's debate with Goethe regarding the meaning of color concepts, how he disagrees with Goethe's final interpretation and the way that this influences his final position regarding the matter as it is clear in his Investigations and his Remarks on Color.

3. Grammar against phenomenology

As we have seen so far, according to Wittgenstein a concept is a symbol regarding an experience of a language-game, constituted by a framework of the practices of a form of life, i.e. a contextualized language-game in a specific grammar, whichever could it be. Color, as a concept, follows these same guidelines: "[h]ow do I recognize that this colour is red? – One answer would be: 'I have learnt English'"[38].

Wittgenstein is inspired by Goethe in that he does not think a physical account of colors as Newton presents it is adequate. As Goethe, Wittgenstein thought that Newton's spectrum experiments could not provide us with any useful tool regarding the problem of color, for

> [...] we may call lilac a reddish-whitish-blue or brown a blackish-reddish-yellow – but we cannot call a white a yellowish-reddish-greenish-blue or the like. And that is something that experiments with the spectrum neither confirm nor refute.[39]

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[38] Ludwig Wittgenstein, *Philosophical Investigations*, 2009b, §381, p. 124e.
[39] Ludwig Wittgenstein, *Remarks on Color*, 1998, I-72, p. 12.

But Goethe's perspective goes on to attempt to create a new physical theory based on observational intuition (which was afterwards extensively criticized40). This sort of theory would be what Wittgenstein calls a phenomenological theory, in which direct observation generates a prima facie intuition of the truth-value of that concept. In other words, objects would possess certain intrinsic properties that one would be able to access through observation.[41]

As it should have become clear by now, Wittgenstein has a clear opposition to this kind of theory given his guidelines of the public defense of language, for "[i]t would […] be wrong to say, 'Just look at the colours in nature and you will see that it is so'. For looking does not teach us anything about the concepts of colours"[42]. No language-game is established by sheer intuition, for it requires a complete context of the public practices involved in its use. Not only that, but the grammar of science – contrary to Goethe's belief – is based on indirect observation of facts about objects, i.e. wavelength of light reflection, the physiological apparatus involved in light and color sensation, and "does not elucidate what" kind of objects "those propositions are about. Nor is it supposed to"[43]. Phenomenology, in Wittgenstein's conception, is thus useless, in that "it doesn't solve any problems [for] it leaves us, for example, with one person saying that he can see that green is not a blend of blue and yellow and the other person insisting just the opposite"[44]. In this fashion, a framework to a language-game of colors based on a phenomenological discourse would be impossible, rendering nothing more than a sea of meaningless, idiosyncratic propositions.

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[40] Cf. Alan Lee, *Wittgenstein's Remarks on Color*, 1999. Lee observes many criticisms of Goethe; a couple of them are: Brentano's saying that *In Goethe's theory of color […] observational intuition appears at its worst* (p. 228), Heimholtz pointing out that *his theorizing was dominated by incompetent experimentation* (p. 227)
[41] William Brenner, *Wittgenstein's Color Grammar*, 1982, p. 290.
[42] Ludwig Wittgenstein, *Remarks on Color*, 1998, I-72, p. 12.
[43] William Brenner, *Wittgenstein's Color Grammar*, 1982, p. 294.
[44] William Brenner, *Wittgenstein's Color Grammar*, 1982, p. 290.

Even though widely criticized, Goethe's phenomenological theory of color was later taken not as a valid physicist's account, but as a valid psychological account in experimental psychology as read by Boring, Brentano, and in a way, Helmholtz[45]. Still, for Wittgenstein, it wasn't a relevant account of color since "[p]sychology connects what is experienced with something physical, but we connect what is experienced with what is experienced"[46]. His proposal contradicts this interpretation in that he does not want to "[...] establish a theory of colour (neither a physiological one nor a psychological one), but rather the logic of colour concepts. And this accomplishes what people have often unjustly expected of a theory"[47]. Wittgenstein's agenda towards an understanding of color concepts becomes clear when we recall his linguistic focus given his criticism of other kinds of discourses such as phenomenology, psychology and sciences in general. His aim becomes to investigate the grammar framework in which color language-games appear by analyzing various examples of the use of color words in different contexts.

In this section, provided with the theoretical tools of Wittgenstein's understanding of the role of philosophy as a concept-clearing endeavor from the previous section, I introduced his debate with Goethe in order to understand their similarities and differences regarding color concepts. From this investigation I hope to have gathered the proper tools to enter the final and most important step of this article, namely his discussion with the painter Runge and his importance to Wittgenstein's definitive characterization of the problem of color within his perspective of philosophical enquiry.

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[45] Cf. Alan Lee, *Wittgenstein's Remarks on Color*, 1999, p. 226-9.
[46] Ludwig Wittgenstein, *Remarks on Color*, 1998, III–234, p. 48.
[47] Ludwig Wittgenstein, *Remarks on Color*, 1998, III-188, p. 43.

4. Color grammar

Wittgenstein's investigations on perception and color in Remarks on Color are, as we saw, according to Brenner and Lee, much inspired by Goethe's treatise on color.[48] But although it was his main inspiration, it seems that it was Goethe's painter correspondent Philip Otto Runge, "not Goethe, who spurred Wittgenstein to philosophize"[49]. For in a different fashion than Goethe's, Runge's attempt was not to recreate the physical and arithmetic basis for color concepts, but to elucidate how to efficiently, technically refer to colors as a painter would – thus, to elucidate a grammar of color according to its use. Wittgenstein finds a strong ally in Runge's description of color concepts as intricately relative to the technique of a painter.

Lee presents the relation between both of Wittgenstein's and Runge's perspectives by correlating the latter's conception of color as a tridimensional sphere model subdivided in longitude and latitude, where colors would be as points in a compass, and thus the concept of reddish-green for Wittgenstein would be similar to contradictory wind directions for Runge.[50]

An even stronger connection is presented as Lee remarks that both authors seem to agree on the interpretation of the concept of the color white. Runge points out in his letter to Goethe that we should not be confused by the idiom of calling a clean glass a white glass, the same rationale we use in white wine: regarding white as a synonym to something clear of all color. That would be the same problem as calling milk clear, and this problem follows other words as golden, amber and blonde, where although one could use these words, say, by referring to the color of a helmet in a Rembrandt painting as a "golden paint, Rembrandt didn't use it to paint a golden helmet"[51]. Wittgenstein's analysis of

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[48] Cf. William Brenner, *Wittgenstein's Color Grammar*, 1982, p. 289 ; LEE, *Wittgenstein's Remarks on Color*, 1999, p. 215-217.
[49] Alan Lee*, Wittgenstein's Remarks on Color*, 1999, p. 230.
[50] Cf. ibid., p. 232-4. Wittgenstein even quotes Runge directly on this matter in *Remarks on Color, 1998*, I-21, p. 5.
[51] Ludwig Wittgenstein, *Remarks on Color*, 1998, III-86, p. 27.

these color concepts always turn out to identify "a kind of reduction of
heterogeneous colour effects, since the picture itself is demonstrably made only
of simple colours"[52]. In this fashion, the main perspective in the problem of
transparent white in color grammar would take the following shape: "if
anything could be transparent white then there could be an explicit rule to tell
the painter how to represent it in a picture"[53].

Following this correlation, a picture of the grammar of color as a kind of
mathematical grammar emerges as we compare the uses of color words and
geometry words:

> Just as we do not continue the -angle series "...quadrangle, triangle" with
> "biangle" and "monangle," so we do continue the -ish series "...reddish-
> blue, reddish-yellow" with "reddish-green (black??) [sic]." And that we
> don't is part of what determines the concepts of constructing a figure and
> mixing a color.[54]

This pragmatic grammatical approach to color concepts becomes stronger as we
grasp the ordinary use of language without committing to a phenomenological
interpretation:

> Consider [...] the words "reddish-green." It is not that we first grasp the
> meaning of the words, analyze them, and then deduce that something
> can't be reddish-green. It is, rather, that the meaning of the color-words is
> constituted by the fact that we regularly exclude some word-formations
> (e.g., "reddish-green") from the language and permit others (e.g. "reddish-
> yellow").[55]

Again, to strengthen this perspective, when Wittgenstein defends that green is
a primary color, he does not attempt to compare experiences, but rather propose
a thought-experiment to investigate if the use of 'green' in the language-game is
analogous to the way of using 'red,' 'yellow,' and 'blue,' rather than to the way of
using 'orange' and 'purple'"[56].

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[52] Alan Lee, *Wittgenstein's Remarks on Color*, 1999, p. 237.
[53] Alan Lee, *Wittgenstein's Remarks on Color*, 1999, p. 239.
[54] William Brenner, *Wittgenstein's Color Grammar*, 1982, p. 294.
[55] William Brenner, *Wittgenstein's Color Grammar*, 1982, p. 294
[56] William Brenner, *Wittgenstein's Color Grammar*, 1982, p. 291

This happens because color words correlate themselves in use "under certain circumstances [...] to the normal-sighted"[57]. An account of the experience for color concepts, as presented in his critique of phenomenology, becomes useless since "[w]e could certainly conceive of someone to whom things seemed sometimes this colour and sometimes that, independently of the colour they are"[58] depending on the lightness, agent condition and other myriad of factors involved in each circumstance. Although when asked what color words mean "we can, of course, immediately point to things which have these colours, [...] that's all we can do: our ability to explain their meaning goes no further"[59].

I hope I was able to present how the similarities between color discourse and mathematical discourse is evident. According to Wittgenstein, regardless of our own experience on perceiving and identifying colors, we follow a certain framework in our language-games to refer to them that is much more connected to an objective usage of color words. We are strongly reliant on a given grammar rather than on a subjective or objectively factual stance. Therefore, "[c]olors are like numbers and geometrical figures, and unlike apples and chemical elements, in that it is grammar rather than experience that tells us how many kinds there are"[60].

In this section we observed Wittgenstein's discussion with Runge and how the latter influenced the former to conceive color concepts as mathematical concepts within his perspective of meaning as language-games as present in his final major work. In the following final section I will proceed to make some remarks regarding this take and the possible relevance to contemporary discussions.

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[57] Ludwig Wittgenstein, *Remarks on Color*, III-97, p. 29.
[58] Ibid., p. 29.
[59] Ibid., p. 29.
[60] William Brenner, *Wittgenstein's Color Grammar*, 1982, p. 295.

5. Final considerations

As I hope it has become clear to the reader, Wittgenstein's understanding of the problematic regarding the concept of color arises from his strong anti-essentialist perspective in the analysis of language. It is within the public, intersubjective sphere of language that the rules of our usage of color words lay rather than the purely scientific or subjective methods of analysis; since, as we saw, color grammar is used more similarly with non-scientific discourses than with scientific ones. Therefore, according to the author, such problem is intrinsically related to the task of philosophy of clearing up misuses of language-games, rather than the approaches of other disciplines.

This may appear to present a problem for contemporary enterprises in naturalistic philosophy, of attempting to understand perception under the guise of scientific analysis. I think that this is only partially correct. A challenge is indeed proposed for an analysis of color and our perception in general solely by scientific discourse, in a reductive fashion. Contemporary naturalistic philosophy, though, does not intend to reduce philosophical problems only to an empirical analysis, but thrives in the interdisciplinary aspect of dialoguing with other fields of knowledge.[61]

Although current scientific technology and method reach far beyond Goethe's and Wittgenstein's contexts, allowing a much greater understanding of the physical processes underlying our perception, Wittgenstein's take is still relevant since the basic premises are still the same. Color grammar does not depend on the empirical evidence regarding our perception – though it certainly can influence it, perhaps e.g. providing a new framework for the usage of color words with new technology capable of amplifying our perception of the world, as night vision goggles, infrared and ultraviolet sensors and optical and neurological artificial enhancement, though its influence on color words is still

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[61] For further information on the task of current naturalistic enterprises, especially the experimental aspect of philosophy, I recommend the work by Joshua Knobe and Shaun Nicols (2008).

to be seen –, and empirical analysis also does not require a thorough analysis of the grammatical aspects of color concepts, but in order to have a complete understanding of the human species regarding the issues of perception we need an exchange between the different fields of knowledge. Through biology and medicine we investigate the physiological basis of perception; through ethology and anthropology we investigate how perception is dealt with and its variation in different societies and species; through philosophy and linguistics we are able to further understand how we refer to, develop and communicate our different understandings of our own perception; and of course, through art and literature we have the exemplar, primary fertile fields where our own common and intuitive perception is questioned and developed – especially within the metalinguistic approach of contemporary art.

I conclude with the thought that Wittgenstein's interpretation of the problem of color is not to refute any attempt other than his own to properly understand it, but to point out the path in which a serious investigation could be adequately pursued. We can speak of wavelengths, eye and brain physiology and a myriad of other facts regarding colors, but how we use words as a community to refer to certain colors will always have a greater weight on our language. The fact that different languages treat color names differently according to the peoples and the social, historical and cultural contexts in which they emerged should be enough to take this as granted, but a simpler way may be analyzing simple optical illusions. Thus, there is still much relevance to this approach as a paradigm to contemporary color and general perception studies.

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