

Theory of Colours

Johann Wolfgang von Goethe , Deane B. Judd (Introduction)

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By the time Goethe's "Theory of Colours" appeared in 1810, the wavelength theory of light and color had been firmly established. To Goethe, the theory was the result of mistaking an incidental result for an elemental principle. Far from pretending to a knowledge of physics, he insisted that such knowledge was an actual hindrance to understanding. He based his conclusions exclusively upon exhaustive personal observation of the phenomena of color.

Of his own theory, Goethe was supremely confident: "From the philosopher, we believe we merit thanks for having traced the phenomena of colours to their first sources, to the circumstances under which they appear and are, and beyond which no further explanation respecting them is possible."

Goethe's scientific conclusions have, of course, long since been thoroughly demolished, but the intelligent reader of today may enjoy this work on quite different grounds: for the beauty and sweep of his conjectures regarding the connection between color and philosophical ideas; for an insight into early nineteenth-century beliefs and modes of thought; and for the flavor of life in Europe just after the American and French Revolutions.

The work may also be read as an accurate guide to the study of color phenomena. Goethe's conclusions have been repudiated, but no one quarrels with his reporting of the facts to be observed. With simple objects -- vessels, prisms, lenses, and the like -- the reader will be led through a demonstration course not only in subjectively produced colors, but also in the observable physical phenomena of color. By closely following Goethe's explanations of the color phenomena, the reader may become so divorced from the wavelength theory -- Goethe never even mentions it -- that he may begin to think about color theory relatively unhampered by prejudice, ancient or modern.

Theory of Colours Details


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
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Red says

since 1982 the color theory of goethe had my attention. but science took me on a direction that gave little chance to meet again. untill some 30y later i found myself staring at an aquaduct in spoletto (i). the same goethe had seen during his journey in italy. from then my attention once again to the color theory became afresh. and it is the best thing i've encountered about light and color so far.

Jan Ingemansen says

Only book on color you'll ever need!

Eva says

I decided to rate this book as if I had read it when it was first published. A few decades before Darwin published 'The Origin of Species', Goethe wrote this book without being a scientist in the strict sense of the word. Since then there have been many advances made in Optics and Physics to explain the phenomena that Goethe describes better but one can only admire and acknowledge the extraordinary amount of work that went into this book. It contains a little bit of everything for everyone although I would not recommend it to anyone who doesn't really want to dwell into the science of color since it contains a large part that involves experiments. What appealed to me the most, being of a more romantic nature, was the connections he made between color and philosophy, nature and art. And I appreciated the fact that he had an open mind and did not try to pass his theory as 'law' but rather recognized its limitations. A very interesting, albeit difficult, text which I am glad to have read.

Quiver says

Most self-respecting books about colour mention Goethe sooner or later. Those references are simply the continued reverberations of his work, from when it was written in 1810 to the present day, and they retroactively provide the uninitiated reader with a context for his theory and the motivation to peruse it. Otherwise, facing 920 textual units that make up *Goethe's Theory of Colours* could prove quite daunting.

If you wish garner some of that context and motivation, here are a few references I came across most recently:

1912: In *Concerning the Spiritual in Art*, Wassily Kandinsky begins his section on *The Language of Form and Colour* with two quotations (by Shakespeare and Delacroix), but then grounds them using Goethe's theory:

These two quotations show the deep relationship between the arts, and especially between music and painting. Goethe said that painting must count this relationship her main foundation,

and by this prophetic remark he seems to foretell the position in which painting is today.

1975: In *On Being Blue*, William H. Gass, gives his lyrical interpretation of Goethe's theory of light:

Eye and sky together are then blue and its apprehension. Goethe—great pagan that he was—sounds the same note: The eye owes its very existence to light. From inert animal ancillary organs light evokes an organ which shall become light; and so the eye learns to give light for light, emitting an internal ray to encounter that from without.

1977: In *Remarks on Colours*, Ludwig Wittgenstein uses Goethe's theory as a springboard for his own (dissenting) ideas:

One thing was irrefutably clear to Goethe: no lightness can come out of darkness—just as more and more shadows do not produce light. This could be expressed as follows: 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. It would, however, also 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.

2009: In *Bluets*, Maggie Nelson cites Goethe in favour of her topic:

"We love to contemplate blue, not because it advances to us, but because it draws us after it," wrote Goethe, and perhaps he is right.

2017: In *The Secret Lives of Colours*, Kasia St. Claire gives Goethe's somewhat unfortunate quote in large magenta letters across a black background:

Savage nations, uneducated people, and children have a great predilection for vivid colours.

Let that suffice as a first offering of reverberations.

At the time of publication, Goethe's theory was contentious to say the least. He spent a whole part examining the Newtonian theory of colour from a negative standpoint. Specifically, in the preface, Goethe says:

In the second part we examine the Newtonian theory; a theory which by its ascendancy and consideration has hitherto impeded a free inquiry into the phenomena of colours. We combat that hypothesis, for although it is no longer found available, it still retains a traditional authority in the world.

But this Gutenberg edition, with notes by Charles Lock Eastlake, does not cover that part. Instead, it focuses on colour theory, a substantial portion, which is itself divided into six parts:

Part I: Physiological colours

Part II: Physical colours

Part III: Chemical colours

Part IV: General characteristics

Part V: Relation to other pursuits

Part VI: Effect of colour with reference to moral associations

Each of the parts is further divided into numbered units of thought that actually aid the reader: it's easier to focus only on the more interesting ideas.

And interesting ideas abound. I'd roughly divide them into:

- Pure observations:

[often used in illusions] 38. A grey object on a black ground appears much brighter than the same object on a white ground.),

[minutiae] 378. In mother-of-pearl we perceive infinitely fine organic fibres and lamellæ in juxtaposition, from which, as from the scratched silver before alluded to, varied colours, but especially red and green, may arise.

- Observations during experiments:

65. Let a short, lighted candle be placed at twilight on a sheet of white paper. Between it and the declining daylight let a pencil be placed upright, so that its shadow thrown by the candle may be lighted, but not overcome, by the weak daylight: the shadow will appear of the most beautiful blue.

476. If we hold a penknife in the flame of a light, a coloured stripe will appear across the blade. The portion of the stripe which was nearest to the flame is light blue; this melts into blue-red; the red is in the centre; then follow yellow-red and yellow.

- Anecdotes:

[about the negative afterimage of bright objects that have overstimulated the rods and cones] 52. I had entered an inn towards evening, and, as a well-favoured girl, with a brilliantly fair complexion, black hair, and a scarlet bodice, came into the room, I looked attentively at her as she stood before me at some distance in half shadow. As she presently afterwards turned away, I saw on the white wall, which was now before me, a black face surrounded with a bright light, while the dress of the perfectly distinct figure appeared of a beautiful sea-green.

- Classifications:

140. Light under these circumstances may be affected by three conditions. First, when it flashes back from the surface of a medium; in considering which *catoptrical* experiments invite our attention. Secondly, when it passes by the edge of a medium: the phenomena thus produced were formerly called *perioptical*; we prefer the term *paroptical*. Thirdly, when it passes through either a merely light-transmitting or an actually transparent body; thus constituting a class of appearances on which *dioptrical* experiments are founded. We have called a fourth

class of physical colours *epoptical*, as the phenomena exhibit themselves on the colourless surface of bodies under various conditions, without previous or actual dye (βαφ?).

- Simplifications to contrasts:

Plus. Minus.
Yellow. Blue.
Action. Negation.
Light. Shadow.
Brightness. Darkness.
Force. Weakness.
Warmth. Coldness.
Proximity. Distance.
Repulsion. Attraction.
Affinity with acids. Affinity with alkalis.

- Dated (but historically relevant) generalisations:

840. The female sex in youth is attached to rose-colour and sea-green, in age to violet and dark-green. The fair-haired prefer violet, as opposed to light yellow, the brunettes, blue, as opposed to yellow-red, and all on good grounds. The Roman emperors were extremely jealous with regard to their purple. The robe of the Chinese Emperor is orange embroidered with red; his attendants and the ministers of religion wear citron-yellow.

Naturally, it's also a pleasure to hunt down the sources for the references found in other books. For example, whilst Kandinsky mentions Goethe only that once (as far as I could tell), I found far more similarities in their strains of thought, so much so, that I feel more credit should have been given to Goethe's observations of colour expansions and contractions, colour passivity and activity, and the connection of colour to sound.

748. Colour and sound do not admit of being directly compared together in any way, but both are referable to a higher formula, both are derivable, although each for itself, from this higher law. They are like two rivers which have their source in one and the same mountain, but subsequently pursue their way under totally different conditions in two totally different regions, so that throughout the whole course of both no two points can be compared. Both are general, elementary effects acting according to the general law of separation and tendency to union, of undulation and oscillation, yet acting thus in wholly different provinces, in different modes, on different elementary mediums, for different senses.

And there is so much more. The book is a deep, branching compendium of observations and opinion, which is why writers, artists, and philosophers return to *Goethe's Theory*. Refusing to read it would be like insisting on reinventing all the different (colour) wheels, when you could instead be studying their properties.

Archer says

recommended by a bearded and bespectacled youth with a studious aspect on the sf muni (or was it boston? I think it was sf)

Lisa says

the detail of perception

Nico Battersby says

I skimmed large portions of this book which I found uninteresting.

However, the 'section for artists' was worth the price of admission. I always found colour abstract and now I see them I need a new light!

Danke Goethe

Xavier says

<https://archive.org/details/goethesth...>

End of introduction: "In looking a little further round us, we are not without fears that we may fail to satisfy another class of scientific men. By an extraordinary combination of circumstances the theory of colours has been drawn into the province and before the tribunal of the mathematician, a tribunal to which it cannot be said to be amenable. This was owing to its affinity with the other laws of vision which the mathematician was legitimately called upon to treat. It was owing, again, to another circumstance: a great mathematician had investigated the theory of colours, and having been mistaken in his observations as an experimentalist, he employed the whole force of his talent to give consistency to this mistake. Were both these circumstances considered, all misunderstanding would presently be removed, and the mathematician would willingly cooperate with us, especially in the physical department of the theory.

To the practical man, to the dyer, on the other hand, our labour must be altogether acceptable; for it was precisely those who reflected on the facts resulting from the operations of dyeing who were the least satisfied with the old theory: they were the first who perceived the insufficiency of the Newtonian doctrine. The conclusions of men are very different according to the mode in which they approach a science or branch of knowledge ; from which side, through which door they enter. The literally practical man, the manufacturer, whose attention is constantly and forcibly called to the facts which occur under his eye, who experiences benefit or detriment from the application of his convictions, to whom loss of time and money is not indifferent, who is desirous of advancing, who aims at equalling or surpassing what others have accomplished,—such a person feels the unsoundness and erroneousness of a theory much sooner than the man of letters, in whose eyes words consecrated by authority are at last equivalent to solid coin; than the mathematician, whose formula always remains infallible, even although the foundation on which it is constructed may not square with it. Again, to carry on the figure before employed, in entering this theory from the side of painting, from the side of aesthetic* colouring generally, we shall be found to have accomplished a most thankworthy office for the artist. In the sixth part we have endeavoured to define the effects of colour as addressed at once to the eye and mind, with a view to making them more available for

the purposes of art. Although much in this portion, and indeed throughout, has been suffered to remain as a sketch, it should be remembered that all theory can in strictness only point out leading principles, under the guidance of which,. practice may proceed with vigour and be enabled to attain legitimate results."

* Æstetic - Belonging to taste as mere internal sense, from [Ancient Greek] to feel; the word was first used by Wolf.-T.

Lindy says

I was curious about this book because I've come across mention of it numerous times, usually in reference to its influence on the work of impressionist painters. Published in 1810 (first English translation 1840), it was surprisingly easy to understand. I did get a bit bogged down with all of the experiments because I didn't try them myself, only imagined their results as Goethe described them - they involved setting up coloured disks on different coloured backgrounds in specific lighting conditions; prisms; opalescent panes of glass and stuff like that.

Goethe did not believe Newton's wavelength theory of colour was correct. I knew this before I even started reading, yet it was startling to come across the following explanation for why shadows on snow may appear violet, blue, or yellow - "accidental vapours diffused in the air." He is a product of his time, of course: "it is worthy of remark that savage nations, uneducated people, and children have a predilection for vivid colours; that animals are excited to rage by certain colours; that people of refinement avoid vivid colours in their dress and the objects that are about them, and seem inclined to banish them altogether from their presence."

In 1820, Ludwig van Beethoven wrote: "Can you lend me the Theory of Colours for a few weeks? It is an important work. His last things are insipid." Other people are still lining up to read this. I'm only halfway through but I can't renew the book because someone else has requested it. I'll wear my pink coat and red hat to return it to the library.

Alexandra Taylor says

I probably would have liked it more if I was actually interested in that sort of thing and I wasn't reading it for a Uni assignment... It also would have helped if it actually had the information I needed in it :(

Adris says

Loved EVERY bit of it!

Moniza Borges says

O que me fez interessar por obra tão desconhecida de Goethe, foi certa vez ter ouvido na aula de Cosmologia e Astrologia Medieval do prof. Luiz Gonzaga de Carvalho Neto (Gugu) que, do ponto de vista simbólico, as cores primárias (vermelho, amarelo e azul) e as secundárias (verde, laranja e roxo) representam as etapas pelas quais passam os estados de consciência do ser humano. É um movimento descendente-ascendente que

parte da consciência do ser de que não tem a posse daquilo que deseja (roxo-trevas) passando pelos vários estágios (azul, verde, vermelho, laranja) até a consciência da interiorização e decisão na própria alma tomado a posse daquilo que deseja (amarelo - luz).

E a obra de Goethe tem tudo a ver com isso. Ele descobriu aspectos que, até então, o principal teórico das cores, Newton, ignorava, principalmente sobre a fisiologia e psicologia das cores. Ao escrever sua Teoria, cem anos após Newton, Goethe utilizou seus conhecimentos de ciências naturais para explicar a cor sob o ponto de vista fenomenológico. Em uma carta a Humboldt, Goethe explica que ao embarcar na História da Teoria das Cores, ele desejava criar uma “História do Espírito Humano”.

Enfim, A Doutrina das Cores é um estudo que busca ordenar e combinar o fenômeno das cromático para entender os princípios que regem e como essa ordenação nos leva a uma diferenciação em termos de estética.

Considero o estilo dessa obra denso (apesar de ser um livrinho curto), com alternações ora escrita poética ora científica, difícil de ler, que no entanto desperta a imaginação de qualquer amante da arte.

Cada olhar envolve uma observação, cada observação uma reflexão, cada reflexão uma síntese: ao olharmos atentamente para o mundo já estamos teorizando. Devemos, porém, teorizar e proceder com consciência, autoconhecimento, liberdade e – se for preciso usar uma palavra audaciosa – com ironia: tal destreza é indispensável para que a abstração, que receíamos, não seja prejudicial, e o resultado empírico, que desejamos, nos seja útil e vital.
(Doutrina das Cores – Goethe)

Jason says

My favorite chapter was brown!

Anthony says

Goethe plays a game of marbles with his eyeballs. You can join him, but you have to play by his rules; and they won't always be fair. I wasn't able to follow along with most of the demonstrations because I didn't have prisms, colored glass and candles handy... this book should really come with a little lab kit.

Erika Mulvenna says

I read this book twice, first when I started researching Color Theory last year, and again just this month. I got a lot more out of this the second time around, realizing that Goethe is responsible for several key established ideas about color repeated by many other artists and color theorists through modern times. A good read for anyone really interested in the history of Color Theory and art.
