

1) ITSELF FOR ITSELF

I recently came across a book with pages printed in gold. A compilation of thumbnails arranged together, from what I remember: a ceremonial elephant, a few vases, and a statue of Budai were printed in metallic.^A I knew those pictures were representing a golden subject; the elephant was wearing a ceremonial armor, made of glitter and shiny stripes. The vases were rich in detail, ornamented with a lot of tiny motifs. For the Budai it was easier, they are usually gold. But nothing concrete lead me to believe they were made of gold. Nevertheless, because of their shapes and the shiny aspect of the print, I was tempted to think they were.

The second reading was actually more of an aftermath. My eyes were slightly folded back on themselves from looking at something gold printed in gold.^B Unlike a print in four colours, it was more realistic, more present. Shiny, glitter, everything—even from the object's matter, was on this page. Since then, I find myself looking at metallic prints in a different way; like a recurring question, trying to figure out why a graphic designer chose this "colour", and for what purpose? It became a special way of looking at things. Once you pay attention to it, these inks appear everywhere: flyers, logos, catalogues, signs in the street. Even at my work place, the button of the coffee machine is silver with a layer of sparkling glitter.

Precious metals are often used to highlight, in such a way that the inner properties of the matter serves the purpose of light.

*"Light remains what it is while letting the infinite participate in it; it is consumption without loss"*¹

wrote Hans Blumenberg in his text *Light As a Metaphor for Truth*. Light is a "gift that makes no demands", colours are the result of light, which consists of making things visible. Metallic colours operate within this dialectic as a direct translation of this principle. We can almost call metallic colours "untranslated colours", close to a primary relation of what a colour is all about. The reflection created by these inks is a demonstration of light, it is a deep and primordial materialisation of the ungraspable.

Metallic colours are generous, they have a lot to offer to our eyes, quietly standing for what they are, they embody themselves. A silver Pantone is itself for itself, it is a pure construction, a mimicry of the properties of this material. Somehow these untranslated colours which are more direct and easy, suddenly feel also more complex. Being one step further on the "scale" of colour, offering less nuance to our imagination but so much more to our senses. Embodying themselves by the glittery ink they are made of, they look as if they encapsulate matter, they are more than just colours on the sensitive aspect.

Their sensual attribute expects more than usual from our senses, textures and lights combined, strongly connect our sense of sight and touch.

"So far, all that has given colour to existence still lacks a history." wrote Nietzsche in his book: "The Gay Science".²

Colour is lacking history due to the complexity of talking about it directly, it encounters the limit of language; escaping words and qualifications. My intent here is not to fill in details all that we can describes as metallic colours, but rather to show the way in which their uses are influencing our representation of things.

2) PANTONE PARADOX

Pantone is aiming to map the world of colour as we see it. Proposing an ink equivalent to all the visible colours of the spectrum. Then what about those metallic colours? They are not really part of the spectrum (as solid colours) and yet they are present in the Pantone colour guides^C. From gold to platinum, they offer a broad selection of tones, so broad that metallic colours tend to look like a simple effect. It's therefore mostly about the shine, by creating such a selection Pantone is proposing a shimmering equivalent to a broad series of solid colours.

Following historical and archeological documents, such as: *An Introduction to the Biblia Hebraica* by Ernst Würthwein, metallic ink was invented around the 3rd century BC. Although recent discoveries of scrolls buried by the eruption of the Vesuvius came to blur the exact date of creation of such inks, as they are probably older.⁴ Most of the documents are from the Early Christian book production, when inks were separable in two parts. Vegetable ink, made of soot mixed with gum arabic and vegetable oil. Metallic ink, also called Gallnuts ink:

*"Gallnuts are growths or blisters formed on leaves, twigs, and buds of certain oaks attacked by gall wasps."*³

These Gallnuts were dried, crushed and boiled with a mix of gum arabic and green vitriol, also know as iron sulphate. One of the main characteristics of this primary metallic ink was the blackness of the outcome, becoming permanent as it dries. Also, the iron oxidation was giving the mixture a profound black colour. Notable examples of the uses of metallic ink are the *Codex Alexandrinus* and the *Codex Sinaiticus*.^{D,E}

Meanwhile, dating the creation of metallic pigments on a mass production scale is as complicated.^F The oldest patent I found is from August 1944, but I will not take this as verified proof. This patent was published by Albert Geddes John, under the title of: "Titanium pigments and process for producing the same".⁵

1 Blumenberg Hans, "Light as a Metaphor for Truth: At the Preliminary Stage of Philosophical Concept Formation," in *Modernity and the Hegemony of Vision*, ed. David Michael Levin, University of California, Berkeley, 1993. Many thanks to Phil Baber for pointing out this reference to me.

2 Nietzsche Friedrich, "The Gay Science," 1882

3 Würthwein Ernst, "The Text of the Old Testament: An Introduction to the Biblia Hebraica," 1996

4 Radford Tim. "Herculaneum scrolls buried by Vesuvius yield another secret: metallic ink," *The Guardian*, March 21 2016

5 Geddes John, Albert, "Titanium pigments and process for producing the same," 1944

A EzFlow, "Golden Showers", Lacquer and Budai laying on my desk, 2016

B Chuard Guillaume, "Albertopolis, A companion", RCA, *Critical Writing in Art & Design, Black-Gold, Printer: Lecturis B.V., Eindhoven*

C PANTONE, "metallic chips coated"

D The *Codex Alexandrinus*, New Testament, Old Testament f, London, British Library, c. 400-440

E *Codex Sinaiticus*, New Testament, Old Testament f, Brit. Libr., Leipzig University, Saint Catherine's Monastery, Russian Nat. Libr, c. 330-360

F Mitsuboshi, Gold ink website banner of Mitsuboshi-ink

In 1963 Gessler Albert E and Kirk William H Van published a patent under the title: “Metallic inks and pigment for use therein”.⁶ All these documents explain new processes of drying and how to improve the pigments, but the exact date of their creation remains unknown. The composition of these inks is based on pigments mixed with particles of existing metals such as copper, aluminium, bronze or zinc, depending on the desired colour. When the print is drying, the metallic particles rise to the surface, reflecting light and creating a metallic sheen.^{7, 8} Due to the particles, metallic ink is heavier than a solid colour ink.

For example, a basic can of copper ink for offset is approximately the size of a big can of tuna, whereas a basic can of magenta is more or less 20cm wide by 15cm high, but they weigh the same. Besides, companies have recently introduced a new kinds of metallic ink, some of which are called SUPRAMETAL colours.⁸ Produced from metallised aluminium pigments under vacuum, the process gives a high brilliance to the mixture, with a “mirror like” effect close to chrome.⁹ Looking at patents archived by Google it seems to be a really active field in the ink industry. Copyrights are flowing, almost one a year. Sometimes patents for printing on paper seems to come from the car industry, providing new ways of making things shine.

On the subject of cars, in the 61st journal of E-flux¹⁰, Sven Lütticken wrote about Barbara Bloom’s photograph on the cover of the “Damaged Goods” catalogue:

“Barbara Bloom’s photograph—could be seen as a critical gloss on the Baudrillard-appropriating commodity art (discourse) of the period. Bloom’s photo Lisbon, 1985 depicts a car showroom, or perhaps the lobby of a car importer; we look through and past a glass door at a curved wall sporting a small Porsche logo. Against the wall is a small table and two chairs, and to the right is a classic black-and-white sports car, perfectly polished and shiny. To the left, next to one of the chairs, is a middle-aged cleaning woman mopping the floor, or pausing from mopping the floor—apparently noting the camera, and in any case not behaving like well-behaved worker à la Fried or Wall, completely absorbed by her task. She introduces the labor of shine into the publication; the activity of shining, of producing the gleam of the alluring commodity fetish.”^{12, 11, H}

The relation between polishing and labor is a interesting point, the fact that it’s a labor means that it’s unnatural, it’s a production, a complete artefact, but also a desired effect.

3) CHROMOLUX

The assets of metal are used in print to define paper as well. During my technical degree years, we used to have access to a room filled with paper of every kind. One of them was called: “Chromolux”, an uncoated paper with an ultra glossy coated side.¹ Coated paper is made out of layers of minerals smoothing the paper, making the surface white, enhancing the gloss and the opacity. Chromolux uses the properties of metals to describe their product, here using Chrome known for its quality of high polish. Besides, reading further information about Chrome, I found out that it is also a coater, used in the car industry (again) to protect and decorate some parts of the car.

Originally first metallic paint for cars were made out of fish scales, here is a extract about it from A Brief History Of Car Colors—And Why Are We So Boring Now?:

“Despite the downtrodden economic times, the 1930s saw the addition of metallic paints, which were first made from actual fish scales and reserved only for the very rich. It would’ve taken 40,000 herring to make one kilo of paint, Tutt says, but they’d give paints a mother of pearl sheen that could show off the curved forms of the cars of that day. But for most folks, expensive fish scale paint wasn’t a practical possibility. American paint companies used aluminum flakes in their metallics, which were much cheaper than fish scales. Color names still paid homage to their fishy predecessors, with colors like Fish Silver Blue.”¹³

Something from the shine is definitely connected with our relation of value and exclusivity. As a tool helping to look at, to show and to be seen.

In opposition to the lustrous shine of Chrome, Vantablack, a new substance created out of carbon nanotubes is known as the blackest existing substance, absorbing up to 99.965% of light’s radiation in the visible spectrum.^{14, J, K} In a short essay from Tom Holet: Blackout City¹⁵, this substance is mentioned in a paragraph about artists who recently started to use Vantablack, such as Anish Kapoor. What Kapoor says about the pigment’s structure is that it is:

“so small that it virtually has no materiality,” putting this substance “on the liminal edge between an imagined thing and an actual one.”¹⁶

6 Albert E Gessler and William H Van Kirk. “Metallic inks and pigment for use therein.” 1963

7 Varma Diana, “About metallic inks,” graphic arts, march 12, 2012

8 J. K. Dennis, “History of Chromium Plating,” 1993

9 Carey Alan, “Demystifying Metallic Inks for Screen Printing,” Screen Web August 15, 2002

10 Lütticken Sven, “Shine and Schein”, e-flux, Journal #61, January 2015.

11 Bloom Barbara, “Damaged Goods” catalogue, 1985

12 Theodor W. Adorno, Versuch über Wagner in Die musikalischen Monographien. Gesammelte Schriften 13, ed. Rolf Tiedemann (Frankfurt am Main: Suhrkamp, 1971), 86.

13 A Brief History Of Car Colors — And Why Are We So Boring Now? Mary Beth Quirk, consumerist, 2014

14 Howard Jacqueline, “This May Be The World’s Darkest Material Yet,” The Huffington Post, 07/14/2014

15 Holert Tom, “BLACKOUT CITY,” e-flux, Politics of Shine, August 12th 2015

16 Kapoor Anish, “500 Words,” Artforum.com, April 3, 2015

G Fonds der Chemischen Industrie. Germany; image series “Farbstoffe und Pigmente,” Pigments for metallic inks consist of small metal flakes, which act as tiny mirrors. They are, however, larger than usual pigments (several µm as opposed to fractions of a µm). “Silver” pigments are made of aluminum, while “gold” pigments are made of brass or dyed aluminium. Pearlescent pigments are coated with very thin layers of titanium dioxide, some silicate material, etc. The thickness of these layers is only fractions of the wave-length of visible light, so parts of the reflected light are extinguished by interference.

H The cover of the “Damaged Goods” exhibition catalog features Barbara Bloom’s photo Lisbon, 1985.

I Coated paper
J New non-nanotube super-black coating demonstration. https://www.youtube.com/watch?v=9v0_fid_jvA

K Génies Bernard, Anish Kapoor s’approprié l’« ultra-noir? » Pas de panique: il en existe un autre, L’Obs, March 2016

Furthermore art historian Amy Stewart's text, "The Work of Black" it's mentioned with this sentence:

"as a colour, black is all things and no thing: it represents the inability of an object to reflect light, to participate in the processes of illumination that govern all other things."¹⁷

The world as we see it is a huge and constant reflection of light. Within this world some materials, more than others, embody the capacity of making light visible. Therefore Vantablack could be the antagonist of a Chrome ink, one refusing to "participate in the processes of illumination", the other one being like an open book, a manual showing us how it works.

4) SCINTILLATION OF DARKNESS

Metallic ink was used in print before the invention of colour photography. Printers were using silver to give depth to the black of their images. In some poetical and contradictory ways, a metal known for its shine, and what we can compare to a color raising into our eye, ends up serving the darkness of the black, by rendering it deepness.

Gelatine silver print¹⁸, for instance, is a pure black and white silver process. The silver is applied into the emulsion of the paper. When exposed to light, the reaction occurs inside the matter, in such a way that the image is in the paper itself, giving a greater depth to the print.

5) GILDER'S LAMENT

My size is prepared,
The leaf is laid out,
My agate is polished and smooth.
The press, it is loaded,
The edge has been scraped,
I feel like I'm in the groove.
I put on the size,
I lay on the gold,
My confidence reaching its peak.
I polish the edge,
Till I see by its shine,
The edge of perfection I seek.
I take the book out,
Fan open the leaves,
My heart stops still in mid-beat.
Where has the gold gone,
I look all around.
As the leaf flakes onto my feet.
Oh, where did I err,
I did everything right,
But the gold, it just didn't stick.
I love the gilt edge,
But the process is such,
That it leaves me feeling quite sick.¹⁹

Gold has been and is still applied on book edges. Protecting the edges of the page and keeping the dust away, it is also used to ornament the book, as well as the cover, the back, etc.^L This task was achieved by specialised workers. Their aim was to stay close to reality by mimicking the surface of substances like granite, marble and gold.²⁰ What is interesting to notice is the relation to value, marble and gold being the most difficult techniques, they were reserved for more notable writings; a similar situation as the paint with fish scales. Meanwhile, metals such as brass are also used for the same purposes. Brass leaf being similar to gold leaf, were applied on books for a cheaper price, still the duration of this apparent luxury is quite ephemeral.

I recently came across a video about Traditional Korean Illuminated Sutra. A five minute video in which we can observe somebody illuminating a Sutra with great precision, using gold ink on dark blue paper.^M

In September 2007 The National Museum of Korea was holding a exhibition, titled "Sutra Painting: In Search of Buddhahood". Sutra from Korea considered a National treasure were exhibited with sutra from China and Japan to show the superiority of Korea's craft²¹. All the sutra are using metallic inks as main ingredient of illumination.

The precision applied in the painting process and the preciousness of the material are connected within the Sutra to the spirituality and the sublime. Similar to the Buddhist scriptures, metallic inks are part of the charm, becoming the medium of the enlightenment and the sacred. Here is a list of few of the Sutra from the exhibition, along with their inks:

"Avatamsaka Sutra Painting," which uses gold paint on paper from Unified Silla (754-755), is a sutra painting of the "Newly Translated Avatamsaka Sutra," which was translated by the monk of Tang Dynasty, Siksananda (652-710).

"Mah ratnak" is a sutra painting, painted with gold and silver on dark-blue paper in Goryeo (1006) which comes from the Kyoto National Museum.

"Lotus Sutra Painting," gold and silver paint on dark-blue paper, comes from Hoshaku-ji temple during the Goryeo kingdom (1294).

"Amoghapasa-kalparaja Sutra Painting," gold paint on dark-blue paper, from the Goryeo era (1275) is on display from the Leeum Museum.

"Maha Prajnapa ramita sutra painting," is gold paint on dark-blue paper from the Heian Period (794-1191).

6) GOLD IS LIGHT

If we follow what Raymond Dumoux is saying about Byzantine painting, gold is the main colour of Byzantine art.²² Being the equivalent of transcendence, the background of the Byzantine mosaics from the 6th to the 13th Century, drowns characters into a golden space.^N It is another space, away from the real world. The golden background's radiation creates an aura of light around the holy characters.^O

17 Stewart Amy, "The Work of Black," Drain vol. 10, no.1, 2013

18 Digital Silver Imaging, <https://www.youtube.com/watch?v=Z9NR5DSC0ZI>

19 Unknown Gilder 17th century

20 "Dorure," tome 1, A à D. Paris: Ed. du Cercle de la Librairie

21 The National Museum of Korea, "Sutra Painting: In Search of Buddhahood," 2007

22 Dumoux Raymond, "La couleur dans la peinture byzantine," <http://viapictura.over-blog.com>, 2007

L Freund Jacob, "Hanna," antique Jewish prayer, early, 1902

M Goryeo, Illustrated manuscript of the Lotus Sutra, c.1340

N Metaphraste Symeon, *Ménologe de Basile, Martyre de saint Blaise*, Xle and Xle c.

O Hagia Sophia, Portrait of Saint John Chrysostom of Antioch (Hagios Ioannis Chrysostomos), an early Byzantine mosaic from the Cathedral of Hagia Sophia in Constantinople (modern Istanbul), approximately 1,000 years old.

As a focal point of the painting, the golden space attracts the viewer's eyes. The metal is applied everywhere, also on the characters themselves, their golden clothes dematerialize them from the foreground, putting them in a scintillating floating space between the foreground and the background. Because of this golden space those figures seem timeless, with no future, present or past, it's a perpetual light. Yet, at the same time, everything is fixed by the metal's permanency. As an attribute of transcendence, gold brings holiness and glory. The metal is bringing a infinite light to the surface it is applied on. The landscape is so bright that the limits of the sky and earth are blurred. This system of representation was touching everything, spreading over different surfaces to produce metallic images. On the objects for example, gold was used as palpable reality of light and holiness.^P

In the text: *Fascination de l'or à Byzance d'après le chroniqueur Robert de Clari*, Régime Colliot drafts analysis from the chronicle of Robert de Clari, a Knight discovering Constantinople in the early 13th century.²³ Back in France around April 1205, Robert de Clari reported what he saw in Byzance, writing a story about precious metal. Visiting the palaces one by one, Robert de Clari is dazzled by the presence of the metal, touching everything, from paintings to the objects, from the floors to the walls. In fact, Byzantine emperors were in charge of the gold, therefore it was a way to produce brilliance and to reinforce their power through a metallic image. During the 9th century, Emperor Théophile ordered the construction of a golden plane tree on top of his throne, providing a shimmering shadow while in front of his audience.

"A golden plane tree shaded the throne of the emperor," writes Ch. Diehl, "on its branches were perched golden birds" — «Un platane d'or ombrageait le trône de l'empereur, écrit Ch. Diehl. Sur ses branches étaient perchés des oiseaux d'or»

One of my favourite paintings by Rembrandt (recently considered to have been done by someone in his circle) is: The Man with the Golden Helmet.^{24, Q} What I like so much about this painting is the obvious chiaroscuro. But in this case it is not only a game of contrast with the light shimmering between the character, it is also about the focus point. This focus point is not generated by something put in the light, but by the light itself. Usually with this technique the light puts the character on a stage and indicates where we should look, who to look at. Often the light source is mystical and amplified, like in *Le Nouveau-né*, of Georges de La Tour.²⁵ In *Foundations of Art and Design*, Lois Fichner–Rathus described Tenebrism as a very pronounced chiaroscuro, also called dramatic illumination, where darkness becomes a dominating feature of the image.

"The technique was developed to add drama to an image through a spotlight effect".²⁶

"Tenebrism", "dramatic illumination", such good names. In *The Golden Helmet*, the simulation of the metal is a clear demonstration of this spotlight, however for once, the spotlight is the object of the drama.

In the spring of 2016, a solo show of Sarah Van Sonsbeeck at De Nederlandsche Bank was dealing with gold and the value of gold²⁷. Everything I've read about this exhibition is mostly monetary related. However Sarah Van Sonsbeeck is raising mystical qualities in some of the pieces as well as materialisation of light. In *dripped #3^R*, the reflection created by the puddle of gold, besides its relation to value, has a strong link with the use of gold as light. Which makes me think about the halo in iconography, "Auréole" in french which means: "having a golden aura", from the Latin aurea which means: golden.

7) PASSPORT FOR THE DEAD

The Hierarchy of precious substances has been around since ancient Greece, materialising the different ages of the cosmology, such as the golden age, silver age, iron age. Metals were linked to cosmology as a transitional matter between the Macrocosmos and the Microcosmos, between Humans and the Universe. This alchemical way of thinking is described in the book of Gaston Bachelard: *Earth and Reverie of the Will*.²⁸

"If we were writing a book on the history of knowledge about metals, we should here give many indications on the relation of astrology and alchemy, especially on the prestigious correspondences between metals and stars."

In the chapter about metallisation, he uses an example of a triple harmonic diagram from Hélène Metzger²⁹, showing the seven transcendent substances:

Sun	Gold	Heart
Moon	Silver	Brain
Saturn	Lead	Spleen
Mars	Iron	Gall
Venus	Copper	Kidney
Mercury	Quicksilver	Lung
Jupiter	Tin	Liver

Those substances are deeply connected to our relation to the sacred. Some of the best examples of this transcendent relation of gold with human ceremony are the orphic gold tablets, also known as Totenpass or Passport for the Dead.^S

23 Colliot Régine, "Fascination de l'or à Byzance d'après le chroniqueur Robert de Clari," 1983

24 Rembrandt's circle, "The Man with the Golden Helmet," 1650

25 de La Tour Georges, "Le Nouveau-né," 1648

26 Fichner-Rathus Lois, "In Foundations of Art and Design," 2007

27 Van Sonsbeeck, Sarah, "Translating the standard gold bar," Solo show at De Nederlandsche Bank, April 20–June 2nd, 2016

28 Bachelard Gaston, "Earth and Reverie of the Will," 1948

29 Metzger Hélène, "Les doctrines chimiques en France du début du XVIIe à la fin du XVIIIe siècle," 1923

P Tutankhamun's death mask. Still today it's out of time, looking at this mask, I can understand where all the alien theory are coming from. Egyptian Museum, Cairo, c. 1323 BC

Q Rembrandt's circle, "The Man with the Golden Helmet," 1650

R Translating the standard gold bar (I only take risks I understand). One bar of gold, dripped #3, ©Gert Jan van Rooij, 2016

S Mathis Remi, Gold sheet with Orphic prayer found in an unknown site in Tessaglia, contained in a bronze funeral urn. Dateable to the 4th century BC and preserved today in the J.P. Getty Museum, Malibu (California). Many thanks to Phil Baber for pointing out this reference to me.

The Greeks and a few ancient Egyptian religions—as well as some from northeast Africa used to place Totenpass near the dead. Sometimes placed on the tongue or rolled around the neck as an amulet. The inscription engraved on the gold lamella instructs the dead on how to find their way through the afterlife, including formulaic responses to the underworld judges. Following is an hypothetical text from philologist Richard Janko. It is an english translation from the archetypal text structure of a Totenpass, according to the collection established by another specialist, Günther Zuntz.

“You will find on the right in Hades’ halls a spring, and by it stands a ghostly cypress-tree, where the dead souls descending wash away their lives. Do not even draw nigh this spring. Further on you will find chill water flowing from the pool of Memory: over this stand guardians. They will ask you with keen mind what is your quest in the gloom of deadly Hades. They will ask you for what reason you have come. Tell them the whole truth straight out. Say: ‘I am the son of Earth and starry Heaven, but of Heaven is my birth: this you know yourselves. I am parched with thirst and perishing: give me quickly chill water flowing from the pool of Memory.’ Assuredly the kings of the underworld take pity on you, and will themselves give you water from the spring divine; then you, when you have drunk, traverse the holy path which other initiates and bacchants tread in glory. After that you will rule amongst the other heroes.”³⁰

This use of gold to walk along the dead is present in the Fayum mummy portraits from Byzantine Egypt. A late era defined by the religious shifts in Egyptian culture to Coptic Christianity.³¹ The interesting point here is what happens to the metal in terms of representation. From a substance with transcendental value, it became an element of the icons used in funeral portraits.^T Therefore, from a particular matter carrying the sacred aspect, it became a symbol, a colour, therefore something flat, used as a representation.

8) FRESH SILVER

Chewing gum, tooth-pastes, basically a lot of products characterised by their “freshness” use silver on their packagings.^U The view of metal is often related to coldness, Gaston Bachelard materialism in “Earth and Reverie of the Will,” is describing metal as an automatic relaying to cold feeling:

“For example metal is the very substance of coldness, and this coldness is offered to all metaphors. The hostility of metal is its first imaginary value. Hard, cold, heavy, angular, it has everything it takes to be hurtful, psychologically hurtful.”

This synesthetic relation is similar for the marble, let’s just say it, everything polished and shiny has this tendency to appear cold and sharp to our eyes.

Looking at brands like Cartier, this omnipresence of metal and polished stones has this tendency to create a distance between us and them. I’m pretty sure they are aware of this and it’s probably one of the elements that is defining luxury. I can easily see myself holding the door handle of a Cartier Shop, made out of marble and fine metal, getting a fresh shot while entering the shop.

9) THE CASTAFIORE EMERALD

In Tintin and The Castafiore Emerald, after a number of robberies, emeralds are missing.³² All through the comic everyone is suspected, until readers finally discover that a sneaky magpie was in fact behind the whole drama.^V However recent studies showed that in fact, magpies aren’t attracted to shiny things, but are we?³³ In the realm of minerals, the pyrite or “fools gold” was a shiny trap. During the Gold Rush, ignorance and despair of many miners led them to confuse pyrite with gold because of its brightness and colour.

10) SOUTHERN FRUITS

I was recently looking for documents in the many boxes I “forgot” to unpack after I moved. In a really tiny one I found two plastic bags completely filled. One with stones, the other with business cards and small formats I’d kept. It was not really a collection, just documents I didn’t want to throw away. Anyway, I forgot what I was looking for and started to dig into those bags. In between two business cards I unfolded a citrus wrapping paper, kept from a blood orange I ate two years ago. This oily paper was wonderfully printed displaying really warm colours such as red and yellow, and of course gold. Looking for more information I came across a french article about those exact papers:

“Crumpled or smoothed, white, pink or blue, opaque envelopes of an orange sphere, citrus papers have almost become objects of the past, a rare commodity that is only found on the stalls of luxury grocery stores. The citrus fruits have freed themselves from the veil and proudly display their waxed bark and treated with fungicides. For the sadness of the collectors, who snatch these small rectangles of paper decorated with a central motif evoking the heat and the sun.”³⁴

In the early 20th century, oranges were still expensive and a rare fruit; which is something interesting as within a century, it turns out to be the “key” element of the everyday breakfast for millions of people. At the time reserved for wealthy people, the middle class waited for the special occasion of Christmas to buy fresh oranges. From then, companies started to protect it with paper to prevent transport damages.^W It quickly became a new support for advertising the product and making the goods more attractive in the shop windows.

30 Janko Richard, “Forgetfulness in the Golden Tablets of Memory,” *Classical Quarterly* 34, 1984
31 Berman Lawrence, Freed, Rita E., and Doxey, Denise. “Arts of Ancient Egypt,” Museum of Fine Arts Boston, 2003
32 Hergé, “The Castafiore Emerald,” Casterman, 1963

33 Zielinski Sarah, “Magpies don’t like shiny things,” August 26, 2014
34 Augustin. “Papiers d’agrumes,” *Index Grafik*, 2016 Mudac | Lausanne cit.

T Fayum mummy portrait of a youth in golden wreath, Pouchkine Museum, Moscou 130–150 ad.
U Tic Tac mint, “A delicious combination of refreshing mint and soft vanilla,” Green and Silver

V Magpie, Hergé, “The Castafiore Emerald,” Casterman, 1963
W hier houd ik van, Papiers d’agrumes, <https://www.flickr.com/photos/hier-houd-ik-van/sets/72157594508113895>

Using warm colours to catch the eye of every passer-by, designers used colours such as blue, red, yellow and gold. Mostly warm tones as a poetical link to the origin of those fruits, coming from southern countries such as Spain and Italy, especially Sicily. Gold was used often as a circle in the design, element of light, there it was an allegory of the Sun.

11) SUN DISK

Hans Blumenberg is evoking in *Light As a Metaphor for Truth* this line from Wilamowitz-Moellendorff, *Der Glaube der Hellenen*:

*“Despite an abundance of gods of nature, Greek religion did not have a deity of light, precisely because light was too comprehensive to be grasped.”*³⁵

In some other literature, The Ancient Egyptian God Ra is described as an ageing king with golden flesh, silver bones, and hair of lapis lazuli.³⁶ God of the sun disk, he is often represented with a golden disk on his head.^X The circle is a direct connection to the sun, in alchemy the glyph used to represent the Sun is the same as for gold, it is a circle with a dot in the center: Solar symbol ☉. It represents the interior with everything that gravitates around it. In astronomy and in astrology, the symbol is the same. Here is a similar example as the harmonic diagram from H el ene Metzger, called the Seven planetary metals including alchemical glyphs.³⁷

Gold dominated by Sol
 Silver dominated by Luna
 Copper dominated by Venus
 Iron dominated by Mars
 Tin dominated by Jupiter
 Quicksilver dominated by Mercury
 Lead dominated by Saturn



12) CEI 60757

For electronic components, usually for resistors, a golden ring indicates a specific tolerance.^Y It is coexisting within a list of colours: black, brown, red, orange, yellow, green, blue, violet, grey, white, gold and silver. Gold and silver are used as colours to extend the list. The American Heritage Dictionary defines the colour metallic gold as “A light olive-brown to dark yellow, or a moderate, strong to vivid yellow.”³⁸

Names play an important role in the myth of colours. In his book: “What colour is the Sacred?”, Michael Taussig talks about the mimetic function of a colours name:

*“all that colour had been with reference to the world of plants, bugs and minerals, and adds the magic of artifice, frequently the colonial exotic”.*³⁹

Therefore we can observe the difficulty of naming metallic colours. Being by themselves so particular, it shows a lack of our ability to come up with words precise enough to describe them, without referring to something from the natural realm and the metal it refer to.

Often, colours are juxtaposed with something existing like lavender blue or olive green. What I started to notice with metallic colours is that their names can be associated with feelings and a certain atmosphere and promise, for example: Vegas gold, Satin Sheen Gold, Roman Silver, or even Sonic Silver. Those descriptions are close to a certain mythology of the colour, as when Roland Barthes notes in his autobiography first published in 1975:

*“The name of the color (Indian Yellow, Persian Red, Ce-ladon Green) outlines a kind of generic region within the exact, special effect of the color is unforeseeable; the name is then the promise of a pleasure, the program of an operation”.*⁴⁰

13) THE GOLDEN EXPERIENCE

One of my favourite snacks is a Mars bar, it’s full of sugar, completely unhealthy, but it gives a really nice boost, especially in the afternoon when you feel overloaded with coffee. One week, the vending machine of the Academie was out of Mars bars, and I ended up with a Twix instead. While opening the snack I started to look at the foil. I never noticed, but the wrapping is a combination of silver inside and gold outside. Curious I took a look at this technique of “printing” on aluminium foil. It’s possible with the process of “Anodizing”, which creates a porous oxidate layer, allowing the surface to absorb dyes and inks. This way, photo quality images, graphics and metallic colours can be applied.

In 1982, the Ferrero corporate created the chocolate sweet: Ferrero Rocher. The whole communication of this product was based on the use of gold, and gold foil in particular.^Z In the text of Allen, Lawrence L.: *Chocolate Fortunes*, the launch of Ferrero Rocher in China is describe as a cultural impact.⁴¹ In the 80’s, the Chinese market was completely closed to foreign business. When the doors of China opened again, one of the first big chocolate companies to settle in this new market was Ferrero.

It was a huge success, and an important part of it was due to the golden wrapper and the delicate packaging.^a In a report on Ferrero written by Iyob Umar, gold used to play a massive role in the meaning generated by Ferrero Rocher.⁴² Chinese associations with good fortune and wealth gave the chocolate an important unconscious aura, something deeply hardwired in the cultural DNA of the Chinese relation to gold.

35 Wilamowitz-Moellendorff, Ulrich von, 1848–1931; Klaffenbach, G unther, 1890
36 Hart, George, “A Dictionary of Egyptian Gods and Goddesses,” 1986
37 Alchemical symbol, wikipedia article, https://en.wikipedia.org/wiki/Alchemical_symbol
38 Eds. Houghton Mifflin, “American Heritage Dictionary,” Dell Publishing Company Library, 2001

39 Taussig Michael, “What Color Is the Sacred?” 2009. Many thanks to Emily Segal for pointing out this reference to me.
40 Roland Barthes, Roland Barthes, trans. Richard Howard (New York, 1977)
41 Lawrence, L. “Chocolate Fortunes: The Battle for the Hearts, Minds, and Wallets of China’s Consumers,” 2009
42 Iyob, Umar, “Report on Ferrero (Rocher),” 2016

X Egyptian god Ra in his solar barque. <https://en.wikipedia.org/wiki/Ra>
Y CEI 60757, Resistor https://fr.wikipedia.org/wiki/CEI_60757
Z Gold Foil Covering a Card Template.

a Ferrero Rocher, In its famous gold-foil wrapper and ruffled paper cup, https://en.wikipedia.org/wiki/Ferrero_Rocher

14) A GLORIOUS TOUCH

I notice that most of the shops using gold signs or gilding on their windows all have something in common.^b They aim to be authentic and true in what they do, in what they provide. In those shops you feel you will get craft quality product, following ancestral recipes that only they know. But where does this feeling come from? I just can't get out of my head a golden sign I recently saw saying: "True Tattoo".^c The following quote is a description from the English company *freestylesignstudio*, author of the "True Tattoo" sign:

*"Do you want to add a touch of splendour to your shop or restaurant signs? Or perhaps you simply want to update a school honours board? We believe gold leaf is the ultimate sign-writing medium. It will never tarnish or fade, and will always retain its optical properties—especially when applied to glass for a stunning effect. And just so we're certain we are providing the best possible service, we only use 23K gold leaf."*⁴³

The craftsman side is an important element in the relation we have with golden sign. Gilding, as we saw earlier is done by specialised workers. Therefore we can sense the manual work, the concentration and time spent in doing such work. These signs trigger something from our collective memory. Something I think is related to heritage, what we can also call: "patrimoine" in French.

I grew up in Morey-Saint-Denis, a small village located in Côte d'Or; which mean Golden Coast. Funny isn't it? It actually comes from the colour of the vine's leaf in autumn, the season when grapes are harvested. During October, the whole region is coloured by bright golden leaf. I spent my childhood playing hide and seek in the cellar of the best wine producer in the world. What I mean to say is that I looked at a lot of wine labels. Printing companies in this area of France very often use gilding for prestigious wines such as Puligny-Montrachet.^d Most of the time the part that was gilded was the name of the family and the heraldry.

Back in the UK, *freestylesignstudio* actually propose Honours Boards and heraldry gilding.^e

"Maintain history and tradition by adding to or starting a new honours board. At Freestyle Sign Studio, Peter Anthony uses traditional, time-tested methods to handwrite honours boards of the highest standard."

Those boards are used in schools and sports clubs to recognise success or status. They slowly slid into pubs and restaurants as well. Handwritten and gild with 23K gold leaf. It's interesting to notice the importance of gold and shine as a metaphor of success and fame. Related to the aspect of heritage, there is this idea that gold never fades and will shine forever. Something profoundly engraved in our communal European mind.

Lundgren+Lindqvist, a Sweden based design studio challenged 50 leading designers and studios to contribute an A2 format^f poster on the theme of 'money'. Each poster being unique, they were sold through an auction, with all proceeds going to Countess Mountbatten Hospice Charity.

*"With 'money' being both the aim, in the form of a donation, and creative theme for the poster project, we chose to address the subject in the dry tone in which money is commonly discussed. To us, the beauty does not necessarily lie in our contributed work, but rather in the buyer's act of donating money to the charity by making the purchase. The work, carefully avoiding unnecessary decoration, is what could be referred to as a glorified donation receipt. With blanks left for the donated sum, the name of the highest bidder (i.e. the donor) and the date and place of the donation, these final details were handset and printed using letterpress metal types upon closing of the auction, thereby completing the work. The resulting work can not be attributed solely to us, but also to the donors, without whose contribution it would not exist."*⁴⁴

Using gold ink to materialise their poster without "unnecessary decoration" it works as a contemporary designed honour board. Qualified as a "glorified donation receipt" it embodies the common intuition we have when looking at this colour, which is connected to power, fame, honour and so on.

15) GOLD, SILVER AND BRONZE

During the summer of 2004, *Dot Dot Dot Magazine* published adverts following the precious structure of gold, silver and bronze.^{45, g} The colours being attributed depending on the money put into the magazine. All of a sudden it turned the magazine into a printing olympic games between businesses, competing all through the pages.

A command structure based on the precious metals: gold, silver and bronze was created in 1985 by the UK Metropolitan Police Service.^{46, 47, h} The plan was to optimise intervention and establish hierarchical framework for command and control in case of incidents and disasters. The same structure is used in popular music, the amount of sales are represented by gold and platinum disks. Same goes for credit cards, that also have ranks and different values, depending if they are "gold", "platinum" or "titanium".ⁱ Those sets of precious substances forming hierarchies within our own notions of values and representation of merit. Once, I remember having a quick coffee at Hotel Adlon in Berlin, while waiting for the opening of an exhibition at the Akademie der Künste. Hotel Adlon being one of the most prestigious hotels in Berlin, I will always remember the face of the waiter when I handed him my basic blue credit card. We both looked at each other with a small moment of hesitation, something really brief which taught me that this piece of blue plastic says everything about my financial situation.

43 *Freestylesignstudio, Gilding and Gold Leaf Signage,*
44 *Lundgren+Lindqvist, "The Nifty-50"*
45 *Dot Dot Dot Magazine, 2004*
46 *London Emergency Services Liaison Panel. "Major Incident Procedure Manual 8th," ed (accessed 5 Dec 2014)*

47 *Herts Direct. In Focus—special edition, Buncefield, (accessed 12 Dec 2006)*

b *RUN RABBIT GILDING, www.runrabbitgilding.com*

c *True Tatto, freestylesignstudio.co.uk*

d *Puligny-Montrachet wine. Produced in Burgundy.*

e *The Quidditch trophies. Shown in "Harry Potter and the Sorcerer's Stone."*

f *The Nifty—50 poster. Lundgren+Lindqvist*

g *Dot Dot Dot, Summer 2014, photo from: "Salon loud", by Thierry Chancogne, 2009*

h *Gold-silver-bronze. command structure, en.wikipedia.org/wiki/Banque Populaire, Platinum card, http://www.banquepopulaire.fr*

Even if it is not necessarily true, perhaps I'm a rich heir who is not interested in the privileges of a special card... Here is the description for each different card offered by my bank: Classic(blue): Close to you or abroad. Premium(gold): Benefit from privileges that change your life, it's royal. Platinum(chrome): Enter the Platinum universe. Infinite(titanium black) Enjoy exceptional services, and luxury benefits.⁴⁸

16) PENTACHROMIE

In 2014, during a workshop held at the University of Art and Design from Lausanne (ECAL), Franz Sigg (RIT/Rochester Institute of Technology) and Maximage developed the idea of a "Color Library". Working as a database of colour profiles, it provides artists, designers, photographers and printers a variety of colour combinations.^{j, k} Bichromie, trichromie, quadrichromie and even pentachromie are available.

The research project at ECAL on printing technologies started to develop this platform as a nonprofit website to stimulate the awareness of students about colour theory and colour management, all income being reinvested in research and development. Regarding the website, it is interesting to note the diversity of colours combinations able to reproduce a certain kind of "reality" without using the full colour scheme (CMYK). Usually an image for printing is defined by this CMYK profile, proposing a full printable spectrum. However, by using what's defined on the website as "spot" colours, you can reproduce images using only three non-CMYK colours. This way, you can mimic the real tone of an image, using only blue, green and red PANTONE. Same with blue red and yellow. But then, what is even more interesting is when you go above what is necessary to print an image.

Colour library is proposing one profile in 5 colours, CMYK plus a Silver PANTONE. Silver is working here as a colour transition between the colours and the black. Used as a grey, silver becomes the key colour, charging the images with light. In black and white images the grey is the transitional part, what makes the connection between the elements of a image, creating the contrast, it is the definition of shade. Without grey, a black and white image is flat, but in a colour image it is something else. By adding silver to the colour separation, images appear as under steroids. The grey is in the spaces of transition, where there is stretching between colours, creating gradients of different kinds to make the picture as it is. What was previously blurred and transitional, is fixed by the glitter of the silver, everything becomes more precise, more accurate and strangely, more real. For me, this is the printing equivalent to the Retina screen.

17) FAKE RING, REAL GOLD

In 2015, Golgotha, a Paris based creative agency (art direction, video and graphic design), together with Scott Renau, took care of a digital shooting for Étienne Garachon, a Paris based jewellery designer.

Designing really thin jewellery, his rings are, for example, similar to tiny engines where glass and gold interact with each other through what has the appearance of gears^l, cylinders and cranks. But nothing is moving, it's like looking at the mechanism of a dead watch. Those objects look perfect^m. Due to the 3D rendering, there is no trace of their making, they are pure shaped matter. Still, I wonder how they are in reality, everything seems to be so precise and delicate.

The portfolio of Étienne Garachon only presents 3D shots, so no possibilities to see rings on fingers. Anyway, I have the feeling that it contributes to the whole aspect of those jewels. I don't even know how they are made, I'm not an expert, maybe they are even 3D printed. Which could explain the perfect look. Maybe they are completely hand made, I don't know. What I'm sure about is that they are gold. The reflection applied to those jewels is completely exaggerated, spot lights coming from every direction, creating reflections on each side of the object. But still I'm convinced, they are gold. Then I came to realise that gold is not really difficult to fake on a screen. It's all about light and shine. When you get the right tones and the right reflection, metallic shades can be produced and obtained on screen. What Tom Holert, Julieta Aranda, Brian Kuan Wood and Anton Vidokle are qualifying in their Editorial of "Politics of Shine" as:

"a digitally calculated mimicry of (sun) light refractions and deflections, as mediated radiance."⁴⁹

Due to the shine, metal are not seen identically by our two eyes, therefore their reproduction is optically impossible. Metallic colours are based on this calculated mimicry born from the randomness of the gleam and the reflection of light. On one hand it is a negation of the matter, by copying it's assets it is not really what it is. But on the other hand, it a primordial imagination of matter, a communal dream of touchable light, the exact reproduction of metal is an alchemical phantasm. What Michael Taussig wrote in his text What Color Is the Sacred?:

"Color lies at the chemical heart of the cosmos. Take alchemy. That mixture of magic and chemistry is said to have started with ancient Egyptians dyeing their grey cottons blue, like the blue thread in linen mummy cloth dyed as early as the Fifth Dynasty (2400 BC). From the dyeing of drab cloth there arose the idea of dyeing metals—so to speak—converting, by alchemy, drab metals into gold and silver."⁵⁰

Precious metal like gold are really difficult to change into dyes, due to their ductility the matter itself is challenging us, encountering the limit of our technics.⁵¹ Funnily, I started to wonder if all this mythology around bronze, silver and gold is not born from a dyer's frustration.

48 Banque Populaire credit card
49 Holert Tom, Aranda Julieta, Kuan Wood Brian, Vidokle Anton. Editorial—"Politics of Shine," e-flux, Journal #61—January 2015
50 Taussig Michael, "What Color Is the Sacred?" 2009
51 Or (color): [https://fr.wikipedia.org/wiki/Or_\(couleur\)](https://fr.wikipedia.org/wiki/Or_(couleur))

j, k Image from Color Library, Automated Color Separation Black—Cyan—Magenta—Silver [METAL] <http://colorlibrary.ch>
l, m Garachon Étienne, jewelry, Golgotha, Scott Renau

Untranslated,
 Ideas and Stories about the use of metal in printed matter
 by Steven Lenoir

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