全宗号	目录号	案卷号

无梦的歌

SONG FOR THE DREAMLESS

类目条款号:　　　　　　　　案卷号:

自　　年　　月　　日起　至　　年　　月　　日止

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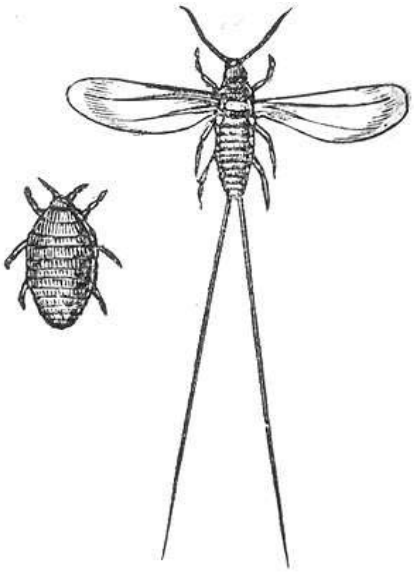
留 言

留 言



"The Houshold Cyclopedia" printed in 1881, Henry Hartshorne, M.D.

红

RED

Now my beloved, step down from your chariot, and let not your foot, my lord, touch the Earth. Servants, let there be spread before the house he never expected to see, where Justice leads him in, a crimson path.

- Aeschylus, from 458BC

The Bug That Changed History

Jeff Behan

Surprise Valley. July. You're running sweep on the Tapeats/Thunder River/Deer Creek hike. Conversation at the back of the pack is running something like this: "We're surprised all right. We're surprised how hot and dry and stupid it is up here!" Yep, they're suffering from heat frustration, and you're still miles away from the boats at Deer Creek. Resting at the Big Shade Rock, the glum crunching of a granola bar is the only sound. You think: "I need to divert attention away from blistered feet, achy joints, and sunburns. I need a long, entertaining story." Tell them the tale of the cochineal insect, a bug that changed world history.

The cochineal is found in many Colorado River side canyons, appearing on prickly pear cactus pads inside matchhead-sized white fuzzballs. When you find some of these, carefully pull one off. Go ahead and mash it. The brilliant red insect bodies now staining your fingertips have been processed by New World cultures for thousands of years, and used to color everything from warriors' shields to their own bodies. By the 14th century, the Incas and Aztecs both had whole agricultural systems based on cochineal, and apparently valued the dye as much as gold.

At the same time in Europe, the best red colorings were made from another insect, a pest of oak trees called kermes, which was dried, ground up and dissolved in water. Neolithic cave paintings in France, the Dead Sea Scrolls, and the wrappings of Egyptian mummies were all tinted with this dye. Compared to cochineal however, kermes tints look dull and faded. So when Cortes invaded Mexico in 1519, he was amazed to find Montezuma and other nobles dressed in robes dyed a brilliant, vivid red. He was also amazed to see the native women's hands and breasts painted the same intense color. In Tenochtitlan (now Mexico City) he found bags of dried cochineal sent as tribute to Montezuma, which were promptly shipped back to Spain. The dye was so much brighter than kermes it was almost instantly in high demand. By 1600, cochineal was second only to silver as the most valuable import from Mexico.
Around 1630, it was discovered that treating cochineal with an acidic tin solution made it bind much better to fabric and even brighter in color, the first scarlet as we now know it. Because of its expense and scarcity, scarlet cloth quickly became associated with money and power. Roman Catholic Card Cardinals robes were made from it as were the jackets of the British military.

The Revolutionary War in which American colonists fought against these "Redcoats" was brought on not only by British taxes on tea, but also by heavy taxes on cochineal, which could easily have been imported directly from Mexico by the Colonies.

In addition to dye for fabric, cochineal became widely used as a food coloring. Cakes, cook-

ies, beverages, jam, jelly, ice cream, sausages, pies, dried fish, yogurt, cider, maraschino cherries and tomato products were brightened with it as were chewing gum, pills and cough drops. Cosmetic rouge was developed with cochineal as the main ingredient. But while ever more diverse uses were found for cochineal, it's origin remained a mystery.

Most Europeans thought it was extracted from berries or cereals because the dried insects looked like grains of wheat. This misconception was promoted by the Spanish, who had launched a brutal cover-up of the dye making process as soon as they realized cochineal's potential. Many New World natives unfortunate enough to have chosen a career in red dye production were simply put to death. Access to cochineal farms was tightly controlled, but eventually French and Dutch adventurers succeeded in smuggling out live cactus pads covered with the insects. Cochineal "ranches" were started in dozens of countries in North Africa, the Mediterranean and the Caribbean. Prickly pear and cochineal did particularly well in the Canary Islands where whole farms and vineyards were cleared and converted to cactus plantations. In 1868, the Canaries exported six million pounds of cochineal, equivalent to 420 billion insects.

This time period proved to be the peak of the cochineal industry as new synthetic dyes in a variety of fade-resistant colors rapidly superseded it. By the 1880s cochineal production was in steep decline. A major crisis in Spanish financial markets ensued, as a key 250 year-old industry failed within the span of a couple of decades.

Though not in high demand today, cochineal is used in medical tracers, artists' paints and microscopy stains. It is currently the only natural red food coloring authorized by the FDA. Unfortunately, workers harvesting cochineal now are not much safer than those laboring under the Spanish 200 years ago. The world's primary growing area, Peru, is threatened by ongoing political instability and violence. Conditions are so sketchy that the insects are usually gathered at night. Revealing where his concerns lay, one cochineal importer noted: "There's high mortality in working staff right now, so supplies are a bit tight."

By now, if you've dragged the story out adequately, the boats should be in sight. If so, wrap up your tale on this note: as food producers continue to switch back to natural colorings, more and more of the stuff we eat and drink will be dyed with dead bugs. But at least the red color won t have originated as some awful synthetic brew in a General Foods chemistry lab.

HYPERALLERGIC

NEWS

The Chemistry of Why van Gogh Reds Are Going White

Allison Meier March 4, 2015

Vincent van Gogh, "Wheat Stack Under a Cloudy Sky" (1889) (© Peter Horree/Alamy, via RSC)

Vincent van Gogh's reds have been turning white, but the exact reason why has remained unclear. Research published last month out of Belgium has identified a rare lead mineral in his paint as the missing link.

Examining the red lead in a van Gogh painting (via Angewandte Chemie)

As reported this week by Matthew Gunther at the Royal Society of Chemistry's Chemistry World, a team at the University of Antwerp examined a microscopic sample of van Gogh's "Wheat Stack Under a Cloudy Sky" ("Heuschober an einem Regentag") from 1889 at the Kröller-Müller Museum using X-ray powder diffraction tomography, basically focusing beams to reveal crystalline compounds. Van Gogh loved the vibrant lead pigment colors, and the red in "Wheat Stack" turned out to contain a rare mineral lead called plumbonacrite that through light exposure was gradually coated in carbonates that were causing the discoloration. Or, in less science speak, the paint particles are now like if you had a Gobstopper with the red core inside and a light blue layer and then gray layer on the outside of the particle mass.

What the team found was described last month in "Plumbonacrite Identified by X-ray Powder Diffraction Tomography as a Missing Link during Degradation of Red Lead in a Van Gogh Painting" in Angewandte Chemie, published by the German Chemical Society. As they note in their abstract: "This is the first reported occurrence of this compound in a painting dating from before the mid 20th century." Interestingly, it's a different issue than the recent analysis of the fading of red in Renoir's "Madame Léon Clapisson" (1883), where the red lake pigment made of cochineal insects was separating. With van Gogh's "Roses" (1890) in the National Gallery of Art now flowering in ivory blooms, and those "Wheat Stacks" once surrounded by flourishes of red now muted, the continued research on the chemistry of van Gogh's pigments could have a wider influence on art conservation. And importantly, it could influence the way his paintings are displayed in light, knowing that the rare mineral in the red may fade from the colors the artist originally envisioned.

"Plumbonacrite Identified by X-ray Powder Diffraction Tomography as a Missing Link during Degradation of Red Lead in a Van Gogh Painting" is available online in Angewandte Chemie.

亚洲拍卖市场繁荣 红色绘画升值

青年参考　作者：胜一翻译　2014-02-13 10:05

天成国际　杨俊贤　珠宝　翡翠

安迪·沃霍尔 毛 1973

苏富比拍卖行2月的所有4个重要拍品都含有醒目的红色，其中包括里希特的绘画。该绘画的拍卖价格很可能会打破世界纪录。

这件名为《魔杖》的拍品成交价格预计不低于1500万英镑(约合1.5亿元人民币)，拍卖商希望它能打破在世艺术家绘画作品的成交纪录，目前该纪录同样为里希特创作的作品保有，成交价2200万英镑。

其他重要作品包括安迪·沃霍尔的毛泽东像，预计成交价格在500万～700万英镑之间;阿尔贝托·布里名为《RossoPlastica》的红色作品也栩栩如生，预计成交价格将达300万英镑。

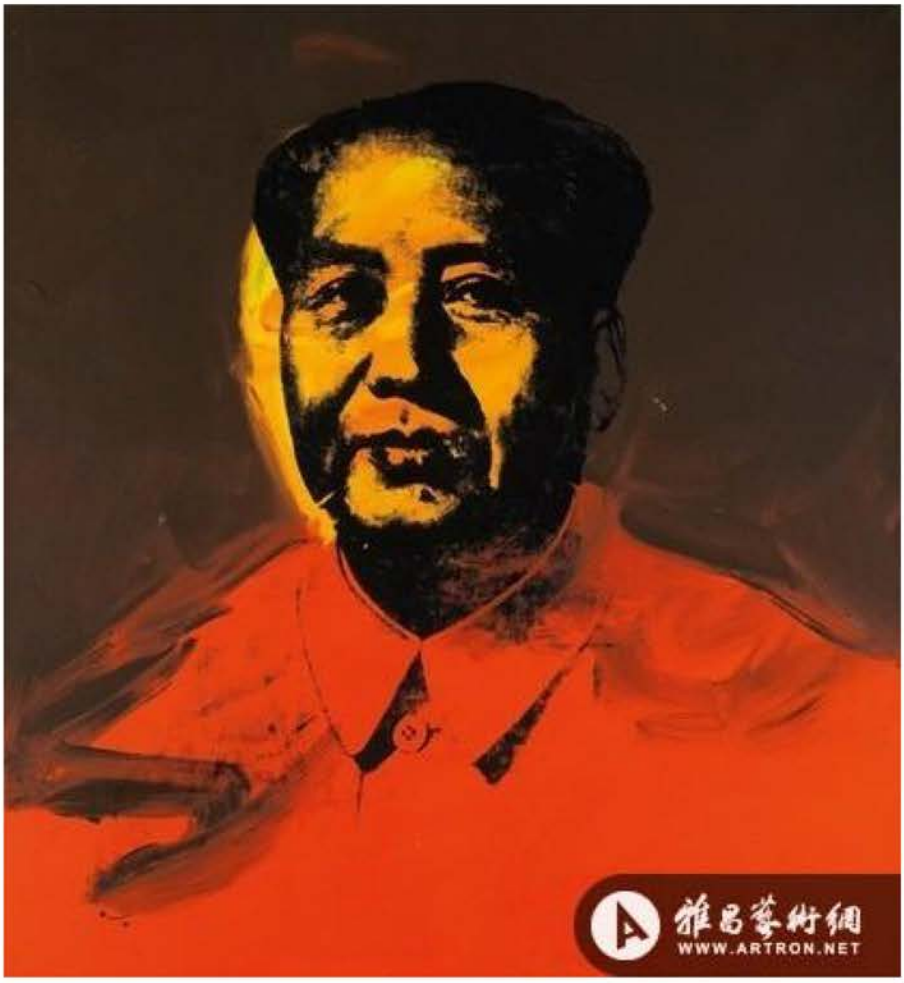
塞·托姆布雷的无题作品价值也高达700万英镑，该画作为其"红色意味最浓的作品"，非常令人期待。

此前，红色的重要性在皮特·蒙德里安的作品中已有所体现，其绘画采用红色方格，更加令人满意。

特约撰稿


想象·主流价值
看到艺术的多元性。

线下丨中英文化交流年伦敦闭幕艺术庆典



去年，佳士得当代艺术联席主管布赖特·格文称，红色是艺术作品中最能赚钱的颜色，其次分别为白色、蓝色、黄色、绿色和黑色。

苏富比拍卖行的菲利普·霍克称，红色的力量"非同寻常"，以"明智的触感"赋予绘画一种"额外的强烈刺激和冲击"。

罗斯科两个最昂贵的作品选用的都是红色画布，里希特售价最高的5幅绘画中有4幅的主色调是红色。

苏富比拍卖行当代艺术欧洲区主席夏安·韦斯特法尔称："红色的力量是非凡的，我们有一系列的惊人作品不断呈现，保持了市场的新鲜活力。红色是艺术中最富情感的色彩，非常强烈。它在中国等许多国家都被认为代表着幸运。我们经常会看到与红色相关的作品比其他作品售价更高。艺术品的价值很难量化，但你可以看到它的整体效应。如果某件作品或是某项艺术中有红色，往往售价更高。中国市场在很长一段时间内都很火爆，我们发现亚洲的很多收藏家也积极参与到拍卖活动中。我希望我们收集到了正确的作品。"

天成国际 杨俊贤 珠宝 翡翠

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阅读排行

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艺术家

European sailors throwing African captives slaves overboard during Middle Passage to the Americas. woodcut, ca. 1750

藍

BLUE

BRIEFING

No one could see the colour blue until modern times

KEVIN LORIA

DEC 25, 2015, 9:00 AM

Photo: Ross Gilmore/Getty Images for Unicef

This isn't another story about that dress, or at least, not really.

It's about the way that humans see the world, and how until we have a way to describe something, even something so fundamental as a colour, we may not even notice that it's there.

Until relatively recently in human history, "blue" didn't exist.

As the delightful Radiolab episode "Colours" describes, ancient languages didn't have a word for blue — not Greek, not Chinese, not Japanese, not Hebrew. And without a word for the colour, there's evidence that they may not have seen it at all.

How we realised blue was missing

In the Odyssey, Homer famously describes the "wine-dark sea." But why "wine-dark" and not deep blue or green?

In 1858, a scholar named William Gladstone, who later became the Prime Minister of Great Britain, noticed that this wasn't the only strange colour description. Though the poet spends page after page describing the intricate details of clothing, armour, weaponry, facial features, animals, and more, his references to colour are strange. Iron and sheep are violet, honey is green.

So Gladstone decided to count the colour references in the book. And while black is mentioned almost 200 times and white around 100, other colours are rare. Red is mentioned fewer than 15 times, and yellow and green fewer than 10. Gladstone started looking at other ancient Greek texts, and noticed the same thing — there was never anything described as "blue." The word didn't even exist.

It seemed the Greeks lived in murky and muddy world, devoid of colour, mostly black and white and metallic, with occasional flashes of red or yellow.

Gladstone thought this was perhaps something unique to the Greeks, but a philologist named Lazarus Geiger followed up on his work and noticed this was true across cultures.

He studied Icelandic sagas, the Koran, ancient Chinese stories, and an ancient Hebrew version of the Bible. Of Hindu Vedic hymns, he wrote: "These hymns, of more than ten thousand lines, are brimming with descriptions of the heavens. Scarcely any subject is evoked more frequently. The sun and reddening dawn's play of colour, day and night, cloud and lightning, the air and ether, all these are unfolded before us, again and again… but there is one thing no one would ever learn from these ancient songs… and that is that the sky is blue."

There was no blue.

Geiger looked to see when "blue" started to appear in languages and found an odd pattern all over the world.

Every language first had a word for black and for white, or dark and light. The next word for a colour to come into existence — in every language studied around the world — was red, the colour of blood and wine.

After red, historically, yellow appears, and later, green (though in a couple of languages, yellow and green switch places). The last of these colours to appear in every language is blue.

The only ancient culture to develop a word for blue was the Egyptians — and as it happens, they were also the only culture that had a way to produce a blue dye.

If you think about it, blue doesn't appear much in nature — there aren't blue animals, blue eyes are rare, and blue flowers are mostly human creations. There is, of course, the sky, but is that really blue? As we've seen from Geiger's work, even scriptures that contemplate the heavens continuously still don't necessarily see it as "blue."

In fact, one researcher that Radiolab spoke with — Guy Deutscher, author of "Through the Language Glass: Why the World Looks Different in Other Languages," tried a casual experiment with that. In theory, one of children's first questions is "why is the sky blue?" So he raised his daughter while being careful to never describe the colour of the sky to her, and then one day asked her what colour she saw when she looked up.

Alma, Deutscher's daughter, had no idea. The sky was colorless. Eventually, she decided it was white, and later on, eventually blue. But it wasn't the first thing she saw or gravitated towards, though it is where she settled in the end.

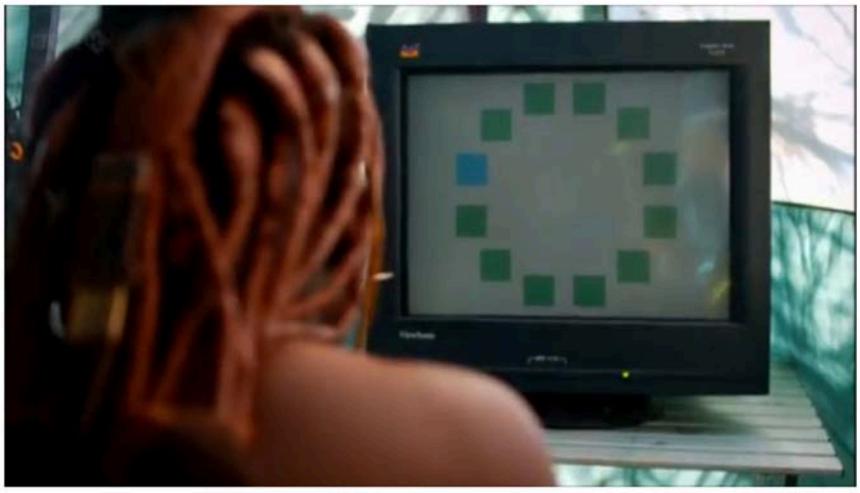
So before we had a word for it, did people not naturally see blue?

This part gets a little complicated, because we don't exactly what was going through Homer's brain when he described the wine-dark

sea and the violet sheep — but we do know that ancient Greeks and others in the ancient world had the same biology and therefore, same capability to see colour that we do.

But do you really see something if you don't have a word for it?

A researcher named Jules Davidoff traveled to Namibia to investigate this, where he conducted an experiment with the Himba tribe, who speak a language that has no word for blue or distinction between blue and green.



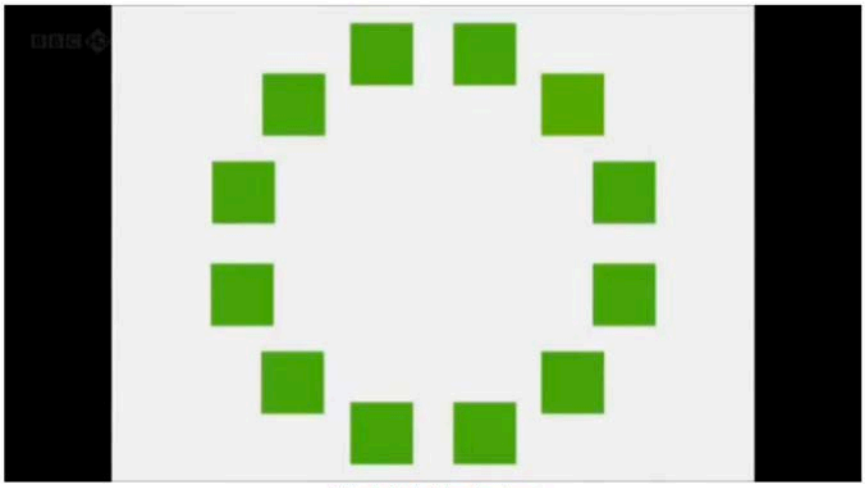
Vidipedia/Himba colour experiment

Namibian tribe member participates in a research project.

When shown a circle with 11 green squares and one blue, they couldn't pick out which one was different from the others — or those who could see a difference took much longer and made more mistakes than would make sense to us, who can clearly spot the blue square.

But the Himba have more words for types of green than we do in English.

When looking at a circle of green squares with only one slightly different shade, they could immediately spot the different one. Can you?

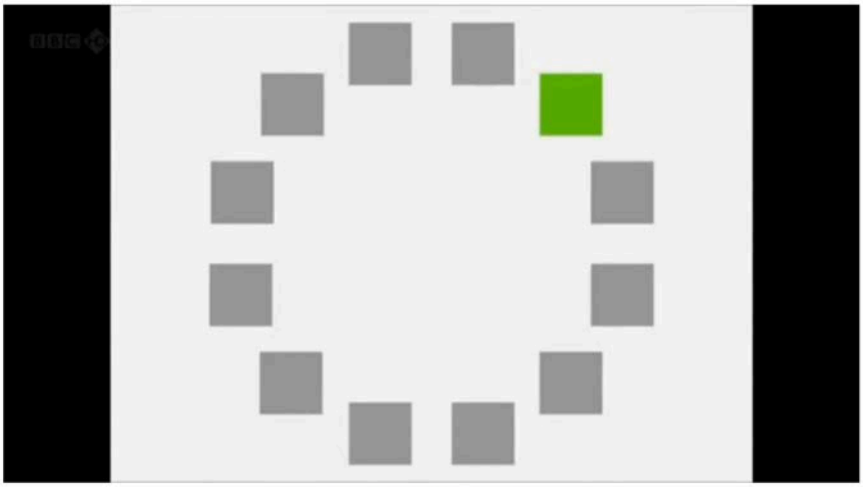


Vidipedia/Himba Colour Experiment

Which square is the outlier?

For most of us, that's harder.

This was the unique square:



Vidipedia/Himba Colour Experiment

Davidoff says that without a word for a colour, without a way of identifying it as different, it's much harder for us to notice what's unique about it — even though our eyes are physically seeing the blocks it in the same way.

So before blue became a common concept, maybe humans saw it. But it seems they didn't know they were seeing it.

If you see something yet can't see it, does it exist? Did colours come into existence over time? Not technically, but our ability to notice them may have…

For more fascinating information about colours, including information on how some "super-seeing" women may see colours in the sky that most of us have never dreamed of, check out the full Radiolab episode.

TAGGED IN

blue color perception radiolab science-us vision

ON THE DISCOVERY AND HISTORY OF PRUSSIAN BLUE

Alexander Kraft, Gesimat GmbH, Berlin

Introduction

In the early 18th century Prussian Blue (ferric hexacyanoferrate(II)), the first purely synthetic pigment, was discovered. This new blue pigment was less expensive and more readily available or more easily produced as compared to ultramarine or other blue pigments which were in use at the time as a blue color in paintings. Prussian Blue is a very stable compound with the exception of being labile in alkaline media. The discovery of Prussian Blue is still enigmatic and has not been well researched. Today, Prussian Blue is still used as a pigment, but it also has other applications ranging from electrochromics and sensors to poison antidotes.

The Conventional Story of the Discovery of Prussian Blue

Prussian Blue was first mentioned in the scientific literature in the first issue of the publication of the Royal Prussian Society of Sciences (Königlich Preussische Sozietät der Wissenschaften) (1) *The Miscellanea Berolinensia ad incrementum Scientiarum* in 1710 (2). (A German translation of this Latin text was subsequently published (3)). This first written account of Prussian Blue was published anonymously (the author was most probably Johann Leonhard Frisch as will be discussed below). This early report revealed almost nothing of the discovery of Prussian Blue nor did it give a method for the preparation of the pigment. Rather, it was a kind of advertisement for the new material under the auspices of the new scientific society, and it was stated that Prussian Blue could be bought from the book dealers of the society.

The conventional story of the invention of Prussian Blue was told by Georg Ernst Stahl (1660-1734) (4) in a book he published in 1731 (5). In this book, published about 25 years after the discovery of Prussian Blue, Stahl reported 300 experiments supporting the phlogiston theory of oxidation and combustion. As related by Stahl (5), the discovery of Prussian Blue (Stahl writes "Caeruleum Berolinense") took place in Berlin in the laboratory of Dippel ("Dippelius"), although no date was given. Dippel was preparing so-called animal oil ("oleum animale") by distillation of animal blood to which potash (potassium carbonate, or as Stahl writes "Sale tartari") was added. Concurrently, a color maker named Diesbach was working in Dippel's laboratory. Diesbach was attempting to produce Florentine lake, a red pigment based on cochineal red. Usually he did this by precipitation of an extract of chochineal (produced by boiling dried cochineal insects with water to extract the carminic acid) with alum ($KAl(SO_4)_2 \cdot 12H_2O$), iron sulfate ("Vitrioli Martialis"), and potash ("Sale alcalico Tartari"). However, having no more potash, he borrowed some from Dippel that had been used in his animal oil production. This potash was contaminated with hexacyanoferrate; and therefore the addition of contaminated potash to the solution, which already contained iron

sulfate, resulted in a blue precipitate, the Prussian Blue, instead of the expected red product.

To date, these two reports (2, 5) have been considered to be the only sources of information on the very early history of Prussian Blue. However, there exists a neglected source of information on the first years of Prussian Blue: the correspondence of Leibniz.

377

SERIVS EXHIBITA.

Notitia Cœrulei Berolinenſis

nuper inventi.

Pictores, qui coloribus ſuis oleum admiſcent, paticos illorum habent, quibus cœrulea exprimant: eosque tales, ut jure commodiores deſiderent. Ex vulgaribus enim alius mixturam cum oleo non reſpuit quidem, ſed non diu in opere durat: ſubviridis, ſubpallidus, ferrugineus, aut planè ſordidus fit: Alius conſtans quidem & ſatis pulcher, ſed arenoſus eſt, & hoc vitium, quò ad ſubtiliorem artificis laborem eſt incommodus, ſi vel anni ſpatium in eo terendo conſumeretur, non tolli poteſt. Optimus omnium, quem vulgo Ultramarinum ſive Azurinum vocant, qui ex lapide Lazuli conficitur, non modo pretio ſuo multos deterret; ſed & aliorum colorum mixturam non libenter admittit; & hinc tantum in eminentiis pulchritudinem ſuam monſtrare poteſt: ad umbras inutilis eſt. Hoc juſtum artificum deſiderium cœruleus color, qui ante aliquot annos hic Berolini inventus eſt, & nunc, poſt varia variorum accuratiſſima examina, audaciter in ſcenam prodit; ſi non explere, certè lenire poteſt. Nihil enim harum incommoditatum habet: In oleo ſplendorem ſuum potiſſimum oſtendit. Ubique vero, in aqua, in oleo, & aliis liquoribus, quibus pingi poteſt, tam durabilis reperitur, quam qui maxime. Aqua illa fortis, ut à Chymicis appellatur, quæ omnia arrodit aut diſſolvit, cum adeò non mutat, multo minus exſtinguit, ut potius lucidiorem reddat. Et ut quædam cœrulei coloris genera in encauſtica pictura (Schmelz-Werck / *émail*,) adhiberi poſſunt, & igne, ut ita dicam, ficco non deſentur: ſic novus hic color igni humido (quod nomen aquæ illi forti & omnia deſtruenti, meritò dari poteſt) fortius reſiſtit, quem vix alius ex omnibus colorum generibus perferre poteſt. Hinc multo minus leviores & communiores pictorum explorationes timet, ut: ſuccum ex malis citreis expreſſum &c. Non mutatur in loci, aut aeris ſive tempeſtatis mutatione. Vivit in calce viva, ejusque album,

Bbb ut

***Figure**. First page of the first publication on Prussian Blue from the Miscellanea Berolinensia ad incrementum Scientiarum (2)*

The Correspondence of Leibniz

Gottfried Wilhelm Leibniz corresponded with an enormous network of people scattered throughout Europe. This correspondence was conducted in several languages, mainly in Latin, French, and German (6).

A major additional source on the very early history of Prussian Blue is a set of letters sent from Johann Leonhard Frisch (1666-1743) in Berlin to Gottfried Wilhelm Leibniz in Hannover (7), which were first published in a book in 1896 (8). This book contained 37 letters from Frisch to Leibniz between the end of 1706 and September 19, 1716 (Leibniz died on November 14, 1716), together with three responses from Leibniz to Frisch. Thirteen of these letters from Frisch mention the new pigment Prussian Blue; and in five letters Diesbach, one of two inventors indicated by Stahl (5), is mentioned (Frisch writes his name "Diessbach" or "Dieszbach"). Diesbach is mentioned in direct connection with the new blue color. The letters do not state the first name of Diesbach, the story of the invention of Prussian Blue, or the names of the inventors.

Johann Leonhard Frisch had been living in Berlin since 1698. He taught at the Berlin Gymnasium located in the former Grey Monastery of the Franciscans. Frisch had been a member of the Berlin Society of Sciences since 1706 (8). In his first letter to Leibniz in which Prussian Blue is mentioned, written on March 31, 1708, Frisch informed Leibniz that he had already earned some money with his blue color. In the second letter that mentions Prussian Blue, dated April 28, 1708, Frisch stated that he had made the color better than the original inventor had done and that the production process was now less expensive.

In a much later letter of September 14, 1715, however, Frisch informed Leibniz that he himself was the inventor. This statement may have been a reaction to an assertion made to Leibnitz by Diesbach's father-in-law Müller (at this time residing in Vienna), who claimed to be the inventor of Prussian Blue. This letter also clarified that the secret of the production of Prussian Blue was strongly protected and that at this time (in 1715), at least in Berlin, only Diesbach and Frisch knew how to make Prussian Blue. (The name of Dippel, the second possible original inventor, did not appear in the letters from Frisch to Leibniz).

The name Prussian Blue ("Preussisch-blau") is used in one letter dated August 25, 1709 and the name Berlin Blue ("Berlinisch Blau" or "Berlin Blau") in two later letters (from November 9, 1709 and September 2, 1712). However, in most letters, it was simply called the blue color ("blaue Farb(e)"). The name of Diesbach appears for the first time in a letter from September 28, 1709, which stated that Diesbach had printed an informational sheet for painters about the blue color.

Diesbach seems to have been active in alchemical studies as well. Indications of these investigations appeared in two letters (from September 28, 1709 and undated, but perhaps from about spring 1710).

In a letter of November 9, 1709, Frisch sent Leibniz a Latin text about the blue color. In another letter from January 30, 1710, he told Leibniz that the text *"notitia*

caerulei Berolinensis" that Leibniz sent back had been added to the texts for the *Miscellanea*. These two letters most probably refer to the first publication on Prussian Blue (2). It appears that Frisch was the author of this publication which had been published anonymously.

The profitable business of selling Prussian Blue was cause to protect the secret of its preparation. In several letters to Leibniz Frisch revealed details of his commercial success with selling Prussian Blue. At that time, Diesbach was producing Prussian Blue while Frisch was selling it, at least outside Berlin. In a letter dated October 29, 1712, Frisch wrote that he was not able to satisfy the demand for Prussian Blue. Soon imitation Prussian Blue, perhaps indigo blue being sold as Prussian Blue, appeared on the market (letter from August 25, 1709).

Because of the large amount of money Frisch earned by selling Prussian Blue, he was able to buy land outside the Spandau Gate of Berlin. He used this land for his botanical experiments with mulberry trees and other plants, according to a letter from July 26, 1715. As an example of his sales, this letter indicated that he sold 100 pounds of Prussian Blue in Paris for 30 thaler per pound in the year 1714.

Sales of Prussian Blue that were explicitly described included those to Wolffenbüttel (9) (letters from September 28, 1709 and November 9, 1709), in Paris (letters from July 26, 1715 and September 19, 1716) and in St. Petersburg (letter from September 19, 1716). In the last of these letters, Frisch reported to Leibniz that in Paris two factories that produced ultramarine (10) ("Outremer") had been closed because of the large amounts of Prussian Blue he delivered to Paris.

Leibniz was obviously somewhat involved in the sale of Prussian Blue or at least was active in informing potential customers about this new pigment. Frisch wrote Leibniz in a letter dated September 2, 1712, that Bernoulli (a Swiss mathematician from Basel who corresponded with Leibniz, see below) could purchase his half pound of Prussian Blue in Leipzig from Gleditsch for 15 thaler.

The only use of Prussian Blue reported in these letters is as a blue pigment for painters. The letter of September 28, 1709 reported that (Christoph Joseph) Werner (11), a Swiss painter in Berlin, had used the blue color for a long time and that he had sent it to other painters in quantity (8). Recently, Bartoll et al. (12) showed in an investigation of paintings from the collection of King Friedrich II of Prussia (the grandson of Friedrich I) that Prussian Blue can be found in paintings from Watteau that were painted in Paris between 1710 and 1712. Prussian Blue was also detected in paintings produced in Berlin by Antoine Pesne and others, the earliest being from 1710 (12). However, the earliest painting in which Prussian Blue was identified by Bartoll and colleagues was the "Entombment of Christ" by the Dutch painter Pieter van der Werff (1666-1720), which was painted in 1709 in the Netherlands . As shown below, during this time Dippel lived in the Netherlands and was also producing Prussian Blue.

In addition to the Frisch letters, other correspondence of Leibniz referred to Prussian Blue. In his correspondence with Johann Bernoulli (1667-1748) between December, 1710 and December, 1711 (13), Prussian Blue was discussed. Another example is a letter from Paris (dated August 17, 1714), in which the writer Hasperg told Leibniz (14) that Homberg (15) wanted Leibniz to describe the procedure for production of Prussian Blue. This letter mentioned that Leibniz had previously written to Homberg about Prussian Blue. Hasperg also stated in this letter that he and Homberg did not know the identity of the inventor. He further told Leibniz that a German in the Netherlands with the name "Dipelius" was also preparing the blue color and that he had a sample of this color, which was not as beautiful as the blue color from Berlin. Thus, it is clear that during his stay in the Netherlands, Dippel, the second inventor indicated by Stahl (5), was also producing Prussian Blue, but of an inferior quality.

Dippel in Berlin and the Netherlands

According to Stahl (5), the invention of Prussian Blue took place in the laboratory of Johann Konrad Dippel (1673-1734) in Berlin. Documents from the period showed Dippel's name, variously written as Dippelio, Dipelius, or Dippelius. He was a theologian, alchemist, and physician. Many of his mostly theological books were printed under the pseudonym Christianus Democritus. (Further information on Dippel's life can be found in Ref. 16-18) (19).

Around 1700, after some years of theological dispute, Dippel became interested in alchemy. First, he concentrated on attempts to transmute base metals into gold and later turned to finding a universal medicine. He thought that a substance which he called animal oil, produced by destructive distillation of animal blood, would be this universal medicine. Aynsley and Campbell wrote of Dippel`s animal oil (18):

> A glance at the list of principal constituents is enough to convince one of the heroic nature of the cure.

In the autumn of 1704, he moved to Berlin, invited by Count August David zu Sayn-Wittgenstein (1663-1735), who was one of the leading figures at the court of King Friedrich I. Here he rented a palatial house for his alchemy studies. Johann Georg Rosenbach, also a radical pietist, was living in this house and took part in Dippel's experiments.

In the early 18th century, Berlin was a good environment for alchemists who claimed to be able to convert common metals into gold. However, if they were not able to deliver gold, it could become dangerous. Of the alchemists who were active at this time in Berlin, Johann Friedrich Böttger (1682-1719) and Domenico Emanuele Caetano (?-1709) are the most famous. In 1701 Böttger fled from Berlin to Saxony, where he was later involved in the invention of European porcelain. Caetano arrived in Berlin in 1705. Dippel participated in the first tests of the abilities of Caetano as an alchemist. In 1709 Caetano was hanged in Küstrin (20). Other alchemists active in Berlin at that time, mentioned by Frisch in his letters to Leibniz (8), included Felmi (or Felmy or Filmey) and Meder.

Nothing specific is known about the alchemistic work of Dippel in Berlin. In early 1707 Dippel was arrested and held for about a week in the Hausvogtey prison at the request of the Swedish ambassador. Dippel had published a new theological book, which contained some harsh criticism of the Swedish Lutheran church. He was released on bail provided by Count Wittgenstein and soon fled from Berlin to the Netherlands. Living in Maarsen between Utrecht and Amsterdam, he worked as a physician for the next few years. From the letter of Hasperg to Leibniz, written in 1714 (14), it can be concluded that Dippel was also producing Prussian Blue during his stay in the Netherlands. He left the Netherlands in 1714 (21).

Since Dippel arrived in Berlin in the autumn of 1704 and left Berlin early in the year 1707, the invention of Prussian Blue most probably took place in 1705 or 1706. In a handwritten Berlin chronicle from approximately 1730 (22), the invention of Prussian Blue by the Swiss "Joh. Jacob Diesbach" is recorded for the year 1706. This date is the most probable year that is based on original sources.

The Secret is Out

Despite the efforts to conceal the production method of Prussian Blue, it remained secret for only about 20 years. In 1724 John Woodward published a procedure for the production of this color in the *Philosophical Transactions of the Royal Society* in London (23), and it was immediately followed by an account of some detailed experimental work on Prussian Blue by John Brown (24) in the same issue. The Woodward paper was based on a letter sent to him from Germany that disclosed the heretofore secret procedure, but Woodward did not publish the name of the author. Brown, a Fellow of the Royal Society since 1721, stated in his paper that (24):

> Dr. Woodward having lately communicated a paper (which he receiv'd from another hand) to this Society, containing a Process for making the Prussian Blue, I was willing to go thro' it exactly, according to the proportions there prescrib'd.

Obviously, John Woodward (1657-1728) (25), a physician, naturalist, and geologist, had asked the chemist Brown (?-1735) to perform some preliminary experiments to verify the contents of the paper he had received from Germany. In January / February, 1724 these two papers (23, 24) were communicated to the Royal Society and printed in the *Transactions*.

In his experiments Brown (24) not only followed the method communicated by Woodward, but also varied the procedure by precipitation of alternative metal hexacyanoferrate compounds, using silver, mercury, copper, bismuth (denoted as "Tin-Glass"), and lead instead of the iron used for preparing Prussian Blue. Thus, he performed the first documented research on the so-called Prussian Blue analogs, which continue to represent a major research field today. However, these experiments did not result in the beautiful blue precipitate that iron hexacyanoferrate gave. He also showed that in the calcination step, animal blood could be replaced by flesh ("beef") during the production process of Prussian Blue.

From whom Woodward received the information for making Prussian Blue is not clear and remains open to further investigation. Shortly after the two publications of Woodward and Brown, other people repeated the experiments and came to additional new conclusions. Notably Etienne-Francois Geoffroy (1672-1731) (26) in 1725 communicated to the French chemists the secret of the Prussian Blue production and published some new information (27-29). He found that Prussian Blue production could be achieved from other parts of

animals such as horn, hair, skin, or hoof, in addition to dried blood and flesh (28).

With the secret of its preparation revealed, production of Prussian Blue began throughout Europe. Often it was sold under different names such as Paris Blue or Milori Blue, usually named after the production location, the owner of the facility, or based on an advertising idea (30). The production technology changed greatly over time. Asai analyzed about 100 methods published between 1724 and 1904 and documented the increasing improvements in product quality that resulted (30).

Prussian Blue was not only used as a pigment for painters but it was soon applied to the dyeing of textiles, following the work of P. J. Macquer (1718-1784) (31) conducted in 1749 toward this goal (32). Prussian Blue was also used for blueing textiles, is still used as a pigment today, and sold under the commercial name Iron Blue.

The Continuing Story of Prussian Blue

Starting in 1724 and continuing for about 250 years, chemists tried to define the composition, stoichiometry, and structure for Prussian Blue. Eminent scientists such as Priestley, Scheele, Berthollet, Gay-Lussac, and Berzelius were among the researchers in the field (33). In 1782 Scheele discovered hydrogen cyanide by heating Prussian Blue with diluted sulfuric acid (34), and in 1811 Gay-Lussac's determination of the composition of hydrogen cyanide (35) led to the conclusion that Prussian Blue contained cyanide. Because of the lack of modern analytical methods, the details of the crystal structure and even of the analytical composition of Prussian Blue were for a long time only partially resolved.

The first structural hypothesis for Prussian Blue was presented by Keggin and Miles with the help of X-ray powder patterns (36). Finally, in the 1970s Ludi et al. (37) published a detailed structure and confirmed the composition as $Fe_4[Fe(CN)_6]_3 \cdot xH_2O$ (x = 14-16), which is now accepted as correct.

The use of Prussian Blue as a painter's pigment in the early 18th century and as a dye for coloring textiles was followed by other uses. An important example is the cyanotype or blueprint process invented by Herschel in 1842 (38). This was a commercially successful photocopying process in use from 1843 until the early 1940s. Prussian Blue is also used in analytical applications, e.g., spot tests in the classical analytical chemistry of iron.

Prussian Blue has a very high affinity for thallium and cesium ions (39). Therefore, people who have become internally contaminated with radioactive thallium, nonradioactive thallium, or radioactive cesium can be treated by orally administered Prussian Blue, which traps thallium and/or cesium in the gut and thereby increases fecal excretion. Thus, the biological half-life of thallium and cesium is significantly reduced after capture therapy with Prussian Blue (39).

In 1978, Neff published a short notice in which he described the electrochemical deposition of thin films of Prussian Blue from aqueous precursor solutions onto conducting substrates. These films can be switched reversibly by electrochemical means between different colored oxidation states (40) in a process called electrochromism. Especially interesting for practical use is the alternation between colorless and blue oxidation states. One possible new application is the construction of so-called smart windows which can reversibly change their transmission of light between very high and low values (41).

Another technically interesting property of Prussian Blue is its ability to catalyze the reduction of hydrogen peroxide and molecular oxygen (42). Current investigation is underway to employ this effect for the construction of sensors for clinical, environmental, and food analysis (43). Prussian Blue also holds some potential as an active material in modern batteries (44) or as an electrocatalyst for fuel cells (45).

Conclusions

Prussian Blue was discovered by Diesbach and Dippel between 1704 and 1707, but most probably in 1706 in Berlin. Written evidence indicates that Prussian Blue was produced at least between 1708 and 1716 in Berlin by Diesbach and Frisch, and that it was mainly sold by Frisch. Dippel also produced Prussian Blue during his stay in the Netherlands until 1714. Diesbach and Frisch tried to protect the secret of Prussian Blue production because of its great commercial success. Once the secret was given away in 1724, production and research started in various European countries. The use of Prussian Blue as a blue pigment still continues today. Although Prussian Blue has been known in the scientific community for 285 years and has attracted much research ever since, new and promising areas of application are still being explored today.

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10. At this time, for preparing the very expensive natural pigment ultramarine ($Na_{8-10}Al_6Si_6O_{24}S_{2-4}$), the mineral lapis lazuli was imported to Europe from Asia by sea (ultramarine literally means 'beyond the sea') and further ground and processed in local factories. A process for the production of synthetic ultramarine was discovered in 1826.
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20. This is now Kostrzyn in Poland, a town with a big Prussian fortress and prison at that time.
21. He had to leave the Netherlands again, because of a theological book which contained religious opinions that were not tolerable even in the Netherlands. Dippel next moved to Altona, at that time a Danish town. Today it is part of Hamburg, Germany. From 1719 until 1726 he was imprisoned on the Danish island of Bornholm. In 1726 he moved to Sweden but was forced to leave in 1728. He spent the last years of his life near castle Berleburg by Casimir von Wittgenstein, not far from the border to his home country Hesse.
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JOURNAL OF ART IN SOCIETY

PRUSSIAN BLUE AND ITS PARTNER IN CRIME

By Philip McCouat

Part 1: The accidental birth and career of Prussian Blue
Part 2: A blueprint for murder

PART 1: THE ACCIDENTAL BIRTH AND CAREER OF PRUSSIAN BLUE

The story of Prussian blue begins with an accidental but fateful discovery made in an alchemist's laboratory in Berlin in the early 1700s. As we shall see, it was a discovery that would electrify the art world and prove to have valuable applications in many fields, ranging from medicine to technology. But there was also a much darker side – as we shall see in Part 2, Prussian blue would also come to play a part in many deaths and, ultimately, in a human disaster of almost unimaginable proportions.

More on colours

- *Egyptian blue: the colour of technology*
- *The life and death of Mummy Brown*

And on crime.....

- Colonial artist, thief, forger and mutineer
- Watchmen, goldfinders and the plague bearers of the night

THE ALCHEMY OF CREATION

The Berlin laboratory where this story starts was run by a German named Johann Dippel. Originally a theologian and physician, Dippel had become interested in alchemy, and had moved to Berlin in 1704. At that time, Berlin was somewhat of a centre for alchemists, though the penalty in cases of fraud (or failure) could be high – one prominent Berlin alchemist was hanged after failing numerous times to produce gold for the king [1].

With the benefit of some highly-placed patronage, Dippel's original efforts were also directed at transmuting base metals into gold. But when that proved unfruitful, his efforts turned to the equally over-optimistic task of finding a universal medicine. The supposed key to this was a substance that Dippel called "animal oil", produced through the distillation of animal blood to which potash had been added [2].

Around 1706, Dippel had been joined in his laboratory by a colour-maker named Diesbach. One afternoon, Diesbach was engaged in producing Florentine Lake, a red pigment based on cochineal. Having run out of the potash he needed, he borrowed some from Dippel. Unknown to him, however, this batch of potash had been contaminated by the iron in the blood used for Dippel's animal oil. The result was startling – when Diesbach checked the next morning, he found a dense blue pigment instead of the red that he would normally have expected. Further testing revealed that the new pigment was stable, or colour-fast, an important attribute for use in artworks.

Fig 1: Prussian blue pigment (Wikimedia Commons)

A CURE FOR THE BLUES

Artists had traditionally struggled to find an inexpensive, stable, brilliant blue pigment for their artworks. A gap had been left after the knowledge of the ancient recipe for Egyptian blue had gradually been lost. At the time of Diesbach's discovery, the most commonly used blue resources were indigo, smalt, azurite and ultramarine, derived from lapis lazuli, which was expensive and normally had to be imported [3]. A blue pigment that was less expensive, non-toxic, colour-fast and readily available would be a godsend.

It is not surprising, therefore, that the commercial possibilities of Diesbach's fortuitous discovery were quickly realised. By 1709, the name "Prussian Blue" had already been coined [4], and there were now two men claiming credit for the invention – Diesbach himself and a Johann Frisch, who had become involved in the pigment's commercial distribution and sale [5]. Soon, the laboratory owner Dippel, who had in the meantime fled Berlin to escape a possible theological prosecution, had also started producing Prussian blue from his new base in the Netherlands. By 1724 the secret of Prussian blue's recipe had become widely known, due to its publication in a paper delivered to the Royal Society in London. Large scale production began throughout Europe, becoming considerably more refined in the process [6].

WIDESPREAD USE BY PAINTERS

The demand from artists for the new pigment was enormous, and it quickly gained widespread adoption in both oil painting and watercolours. The first recorded user was the Berlin-based Swiss artist Christof Werner, though the earliest verified use in a particular painting was in the *Entombment of Christ* (1709) by the Dutch painter Pieter van der Werff (Fig 2) [7]. French painters were also using the pigment as early as 1710, including Nicolas Lancret and Antoine Watteau in his celebrated *Embarkation to Cythera* [8]. Among many others, Canaletto was an early adopter, using Prussian blue for his skies by 1719.

Fig 2: Pieter van der Werff, Entombment of Christ, 1709 (detail

In the coming decades, Prussian blue would grow to become a staple ingredient on artists' palettes all over Europe. It would be used by artists as varied as Gainsborough (for example, in *Mrs Siddons*, 1785), Sir Joshua Reynolds, Vigée-Lebrun (*Portrait of Theresa*

Fig 3: Vincent van Gogh, The Starry Night, 1889

While the pigment in its pure state produced a deep blue appearance, it was also amenable to being mixed with other pigments. So, for example, green colours could be produced by mixing Prussian blue with yellow – van Gogh would later mix Prussian blue and chrome yellow to depict a green garden scene [10]. It could also be used in association with ultramarine – Watteau, for example, mixed the two pigments, and Lancret's practice was to use ultramarine for skies and Prussian blue for figures, and sometimes to mix it with green [11]. During the 18th century, Prussian blue was commonly mixed with white lead, to produce lighter shades, though it now seems that this reduced its resistance to fading [12].

Fig 3a: Élisabeth Louise Vigée Le Brun, 'Theresa, Countess Kinsky' (1793)

A "BLUE REVOLUTION" IN JAPAN

Prussian blue's influence was also felt outside the West. Its export to Japan, which increased significantly in the 1820s, would prove to have major implications, with its vividness, tonal range and "foreign-ness" combining to make it somewhat of a sensation. Commentator Henry D Smith even described its effect in Japan as a "blue revolution" [13].

Japanese woodblock painters had previously created blue from vegetable dyes made from dayflower petals, or natural indigo. These were prone to fade when exposed to light, with the result that the blues in many 18th century prints gradually faded to a tan or beige [14]. Prussian blue made it possible for artists and print publishers to create a wider range of

Katsushika Hokusai's *Thirty Six Views of Mount Fuji* (1830) made early and prolific use of the new colour, a feature that was highlighted in the publisher's advertising for the series [15]. Some of the prints in this series were entirely in shades of blue, contributing to an all-blue *aizuri* style in the process [16]. Others, including the now-famous *Great Wave off Kanagawa* (Fig 4), were predominantly in blue, with the new pigment proving to be particularly effective in expressing depth in water and atmospheric distance -- spatial qualities that were so important in landscapes and seascapes.

Fig 4: Katsushike Hokusai, Great Wave off Kanagawa, from Thirty Six Views of Mount Fuji (1830)

Like Hokusai, Utagawa Hiroshige also used Prussian blue extensively in his landscape prints, such as his *Full Moon at Tsukuda* (Fig 5). Timothy Clark has even suggested that the new colouring became so popular that it may have been the major factor in establishing pure landscape as a new genre of *ukiyo-e* print [17].

Fig 5: Utagawa Hiroshige, Full Moon at Tsukuda, from Sixty Nine Stations of the Kisokaido (1852)

When the Western craze for collecting Japanese woodblock prints began in the 1860s, those featuring Prussian blue were the most prized; ironically, the very boldness of the Japanese usage of the pigment, with its impressive depth and tonal range, misled Europeans to assume that this was a novel new colour, which they initially called Hiroshige blue. It was only later that it was realised [18] that this supposedly-quintessentially Japanese colour was itself an “old” European invention.

A VERSATILE SUBSTANCE

Prussian blue's value was not limited to artworks. It was very early adopted for inks, including those used on postage stamps, perhaps most notably in the Mauritius 1847 two-pence stamp (Fig 6), now classed as one of the rarest and most valuable stamps in the world [19].

Fig 6: Unused blue 2d Mauritius stamp 1847

The pigment was also used for textile dyeing and later for laundry bluing. It was the main colour used in by infantry and artillery regiments of the Prussian army from the 18th century up until the early 20th century.

Prussian blue was the basis of the first ever industrial photocopying process, invented by the chemist John Herschel in 1842. As a very early adopter of the newly-invented photography (see our article on early influences of photography), Herschel realised that if he held a pattern drawn on tracing paper over photo-sensitive paper and exposed them both to a light source, the parts that were not protected by dark lines would change their chemical formulas in the light. As described by Victoria Finlay, they would shift subtly from ammonium *ferric* citrate to ammonium *ferrous* citrate. If the paper was then dunked in potassium ferrocyanide, the ferrous bits would turn into Prussian blue, while the ferric ones would stay neutral. The resulting ghostly pattern of white lines on blue paper became known by the now-familiar term "blueprint" [20].

Prussian blue also has its medical uses. It is used in pathology tests for bone marrow. It can also be administered orally to people who have become internally contaminated with thallium or radioactive caesium. It acts by trapping the thallium or caesium in the gut, thereby increasing its faecal secretion. It was used with varying levels of success in treating victims of the 1987 radioactive contamination accident in Goiânia in Brazil [21].

In solution, films of Prussian blue can appear either as their normal dark colour or as colourless, depending on the type of electrochemical charge that is applied. It is possible that this process, called electrochromism, can be applied in the development of "smart" windows which can reversibly change their transmission of light between very high and very low values. The pigment may also have applications in the construction of sensors for clinical, environmental and food analysis [22].

PART 2: A BLUEPRINT FOR MURDER

While Prussian blue has had many beneficial uses, there is also a dark side to its story. Like its original invention, this came about in an unexpected way.

It had been recognised for thousands of years that many plants – such as cherry laurel leaves, peach pits, cassava and even apple pips – are potentially poisonous, with the poison often being detectable by its distinctive odour of bitter almonds. While the naturally occurring poison is normally only present in very small doses [23], it can be lethal if delivered in concentrated form. Peach pits, for example, were used in judicial executions (described as the "penalty of the peach") as far back as the ancient Egyptians. The ancient Romans used cherry laurel leaves as an execution method (the "cherry death"), and the emperor Nero used them to poison members of his family [24]. To take a more modern example, an inheritance-seeking Englishman, Captain Donnellan, was convicted in 1781 of a poisoning murder by using laurel water infused from cherry leaves

ar

The breakthrough was made by the Swedish pharmaceutical chemist Carl Wilhelm Scheele, and it involved an unlikely culprit. Scheele discovered that if he mixed Prussian blue with diluted sulphuric acid, he was able to produce a "new" gas that was colourless, water soluble and acidic. We now know this gas as hydrogen cyanide (HCN), a name derived from the Greek *kyanós* for "dark blue". In its soluble form, it was called blue acid (blausäure) in German, and as prussic acid in English. Even in small doses, it would prove to be one of the most deadly of all poisons. Today we know it by its more common shorthand name – *cyanide.*

On ingestion by humans, cyanide is absorbed rapidly into the blood from the intestines and other mucous membranes. It acts by binding irreversibly to the iron atom in haemoglobin (blood), which prevents the blood from transporting oxygen to the body's cells and tissues. Symptoms include rapid heartbeat, headache and drowsiness, followed by coma, convulsions and death by asphyxia. To some, there is a slight smell of almonds, which may persist in the stomach contents of victims.

Cyanide's newness and extreme toxicity resulted in a number of accidental, but almost invariably fatal, overdoses, and to its use in pest extermination or even as a lethal agent for harpoons on whaling ships [26]. But it would also make it extraordinarily effective in one other thing… murder.

A MYSTERIOUS DEATH AT SALT HILL

Perhaps the most notorious and sensational example of prussic acid poisoning occurred in England, on the evening of New Year's Day 1845. A man dressed in the long dark coat and broad-brimmed hat of a Quaker was seen hurrying away from the house of Sarah Hart in the village of Salt Hill, in Aylesbury, just outside London. The witness to the man's departure, a next-door neighbour, had been alerted that something was wrong by hearing several alarming groans coming from Sarah's house, and had gone out to investigate. The appearance of the departing man was familiar to her, as he had been a regular visitor to Sarah's house for some time. But he brushed past her, refusing to answer her concerned queries as to what had happened, and disappeared down the road toward the local railway station.

Curious, and a little afraid, the neighbour ventured into Sarah's house. She found Sarah sprawled on her back, moaning and panting for breath, frothing at the mouth and with her clothes in disarray. A half-drunk bottle of porter ale was on the table. A few minutes later, a local doctor called to the scene declared Sarah dead [27].

The escaping man, still wearing his distinctive clothing, eventually caught the 7.42 train from Slough to London, where he obviously felt that his trail would be lost. He was not to know that the attending doctor and a companion had followed in his footsteps to Slough station and had seen him catch the train. But what could they do about it? They could hardly chase the train.

Fortunately for the pursuers, however, a technology even newer that the railway was about to play its part. The electric telegraph – the first commercial use of electricity -- had only recently been invented, with the prototype being developed in 1837 by the Briton Charles Wheatstone. In 1845 it was still regarded as something of a novelty, with great scepticism as to its future usefulness. But, by an extraordinary and fateful chance, one of its first installations was on the Great Western Line, between Slough Station and London's Paddington Station, just 18 miles (30 km) away (Fig 7). The original version of this line, established in a truncated form in 1839, was actually the world's first operational electric telegraph [28].

Quickly, the telegraph operator was located and was soon tapping a message to Paddington station: "*A murder has been committed at Salt Hill and the suspected murderer was seen to take a first-class ticket for London by the train which left Slough at 7.42. He is in the garb of a kwaker....*"

period of half an hour, just a few minutes before the Quaker's train was due to arrive there at 8.20. After an initial delay caused by confusion over the idiosyncratic spelling of *kwaker* [29], the Paddington station telegraph operator alerted his superiors and the railway police, one of whom followed the suspect once he disembarked from the train. The suspect was eventually arrested the next day at a coffee house. He was identified as John Tawell, "a gentleman and a merchant".

Fig 7: Telegraph machine at Slough 1843 (http://www.sloughhistoryonline.org.uk)

Fig 8: John Tawell, 1845

John Tawell had unwittingly scored a unique double – not only did he become probably the first person to make his escape from a murder scene by catching a train, but he also became the first person to be arrested as a result of a telegraph message. As one local newspaper put it, "*Steam bears him off more rapidly than the winds of heaven; but the electric current is his pursuer*" [30]. Impressed commentators were prompted to dub the telegraph as "the electric constable" or "God's lightning", and the telegraph lines were described as "the cords that hung John Tawell" [31]. Unfortunately for Tawell, as we shall see, these were not to be the only unwanted firsts that he would achieve.

The role played by the telegraph in Tawell's arrest was a major factor in its gaining general acceptance. As one commentator wrote at the time, "The telegraph … might have continued for some time longer in obscurity but for its remarkable agency in causing the arrest of the Quaker Tawell. This event … placed it before the world as the prominent instrument in a terrible drama, and at once drew universal attention to its capabilities" [32].

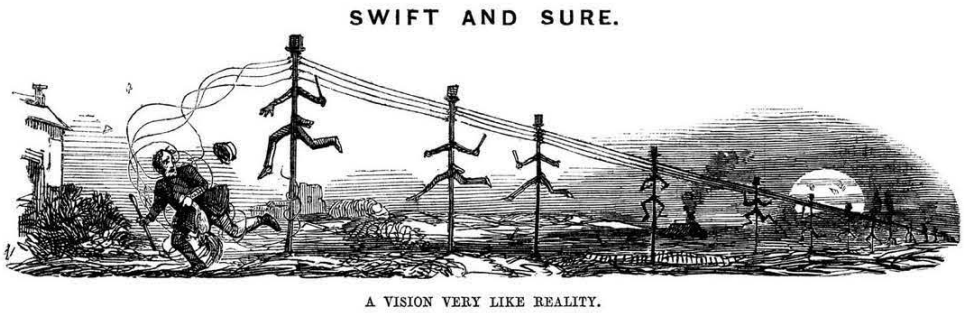


Fig 7a: Punch cartoon of malefactor being caught by the "ëlectric constable"

TAWELL'S HIDDEN PAST

John Tawell certainly did not look like a murderer should. A short and slender 61year-old with "the most thorough air of a Quaker" (Fig 8) [33], he appeared to be a sober, prosperous and respectable gentleman, with a wife and two children. But he had a

forged bank notes, and been sentenced to 14 years transportation to Sydney Town, some 12,000 miles away. By 1820, however, after obtaining a conditional pardon, he set up as an apothecary in what would be Sydney's first retail pharmacy. The business prospered, and he would eventually make a fortune there with astute property deals [34]. He eventually returned to England in 1828 as a rich (and free) man.

A few years later he returned to Sydney, partly for health reasons, and partly because business prospects appeared to be brighter there than in London. In Sydney he was instrumental in setting up the first Australian branch of the Quaker movement [35], financing a new meeting hall which he combined with a girls' school, and carrying out various philanthropic projects. Essentially now completely rehabilitated, at least in his own eyes, he returned once more to England. Despite his good deeds, however, his felonious past still dogged him; the Quakers still denied him official membership.

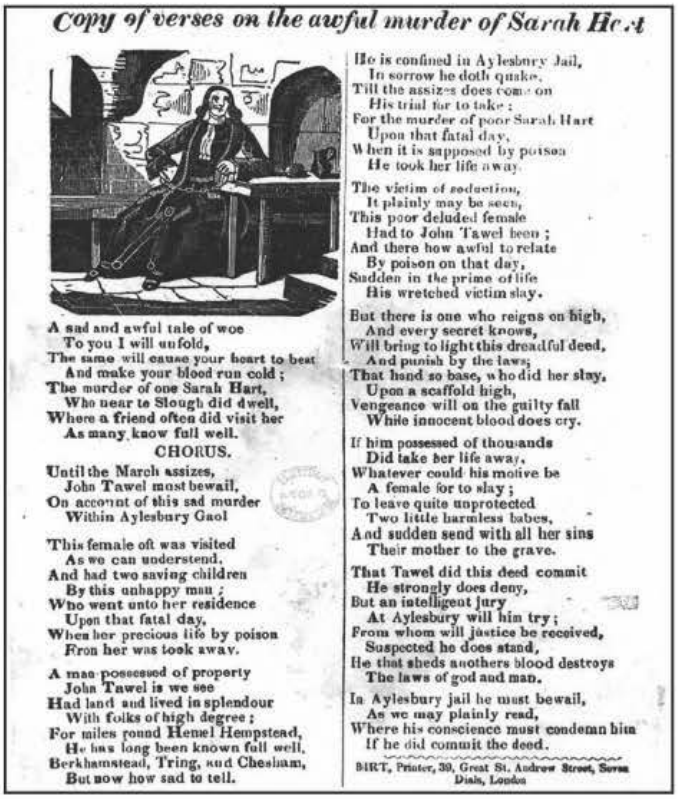
His real problems, however, began when he hired a nurse to care for his ailing wife. After she died, he secretly carried on an affair with the nurse. When he later remarried, he arranged for the nurse to live in cottage out of London, and paid her regular allowances to support the children of their union. The nurse adopted an assumed name. It was none other than the unfortunate Sarah Hart.

A SENSATIONAL TRIAL

Tawell's arrest in such novel and dramatic circumstances, coupled with his Quaker connections, the gruesomeness of the death, and the suggestion of a secret lover, all combined to create a national sensation. Not surprisingly, it filled the newspapers for months [36]. As Beppe Sabatini has noted, the hysteria surrounding criminals such as Tawell was "scarcely to be believed. Cheap penny broadsides of criminal deeds and confessions were purchased—incredible as it seems—in the millions; and outsold Dickens by one hundred to one. Dreary junk, much of it fabricated by the printer, these broadsides were unquestionably among the most widely-read material throughout all of Britain" (Figs 9A, 9B) [37].


LIFE, CONFESSION AND
EXECUTION OF
JOHN TAWELL, THE QUAKER,
At Aylesbury for the Murder of Sarah Hart,

Fig 9A: Convict broadside "Life, confession and execution of John Tawell the Quaker", 1845



Copy of verses on the awful murder of Sarah Hart

A sad and awful tale of woe
To you I will unfold,
The same will cause your heart to beat
And make your blood run cold;
The murder of one Sarah Hart,
Who near to Slough did dwell,
Where a friend often did visit her
As many know full well.

CHORUS.

Until the March assizes,
John Tawel must bewail,
On account of this sad murder
Within Aylesbury Gaol

This female oft was visited
As we can understand,
And had two saving children
By this unhappy man;
Who went unto her residence
Upon that fatal day,
When her precious life by poison
From her was took away.

A man possessed of property
John Tawel is we see
Had land and lived in splendour
With folks of high degree;
For miles round Hemel Hempstead,
He has long been known full well,
Berkhamstead, Tring, and Chesham,
But now how sad to tell.

He is confined in Aylesbury Jail,
In sorrow he doth quake,
Till the assizes does come on
His trial for to take;
For the murder of poor Sarah Hart
Upon that fatal day,
When it is supposed by poison
He took her life away.

The victim of seduction,
It plainly may be seen,
This poor deluded female
Had to John Tawel been;
And there how awful to relate
By poison on that day,
Sudden in the prime of life
His wretched victim slay.

But there is one who reigns on high,
And every secret knows,
Will bring to light this dreadful deed,
And punish by the laws;
That hand so base, who did her slay,
Upon a scaffold high,
Vengeance will on the guilty fall
While innocent blood does cry.

If him possessed of thousands
Did take her life away,
Whatever could his motive be
A female for to slay;
To leave quite unprotected
Two little harmless babes,
And sudden send with all her sins
Their mother to the grave.

That Tawel did this deed commit
He strongly does deny,
But an intelligent jury
At Aylesbury will him try;
From whom will justice be received,
Suspected he does stand,
He that sheds anothers blood destroys
The laws of god and man.

In Aylesbury jail he must bewail,
As we may plainly read,
Where his conscience must condemn him
If he did commit the deed.

BIRT, Printer, 39, Great St. Andrew Street, Seven Dials, London

Fig 9B: "Copy of verses on the awful murder of Sarah Hart", 1845

Murder by poisoning has always its own peculiar fascination in the public mind. This type of crime is almost always premeditated and cold blooded, somehow intimate yet cowardly, with the victim forced to face an extremely agonising end. The means are often invisible and rarely obvious, unlike an honest stabbing, shooting or bashing. And suicide or accident are in many cases just as consistent with the facts as murder.

These difficulties are magnified where the forensic evidence is not strong. At the time of Tawell's trial, there had not been a successful conviction involving cyanide for over 60 years [38]. Moreover, forensic science was in its infancy. Tawell's trial, which featured a number of conflicting testimonies, would not just be a test for Tawell, but also a test of the value of "expert" evidence. None of the reputedly expert witnesses who gave evidence at the trial had any real-life experience of human cyanide poisoning. On the state of medical knowledge at the time, there was no agreement about the dosage necessary to cause death, nor whether cyanide poisoning was invariably associated with a smell of bitter almonds, as was popularly believed. At this time, too, many jury members had limited educations and were simply not equipped to properly evaluate the technical evidence given.

Despite this, the evidence against Tawell seemed very strong. He had been seen hurrying away from the murder scene. As a former chemist he had a knowledge of poisons and had, in fact, purchased a bottle of prussic acid shortly before he visited Sarah. When arrested, he had initially lied about his whereabouts, and even about his knowledge of Sarah's existence. Evidence of his philanthropy and good character was more than counteracted by his criminal past and the fact of his secret affair. And finding a motive was not a problem — a temporary cash flow problem which he happened to be experiencing at the time provided some sort of motive for his wishing not to have Sarah continuing to be a drain on his resources. .

Moreover, the defence provided by his eminent lawyer Fitzroy Kelly (Fig 10), primarily an expert in commercial law, was long on rhetoric and short on facts. The defence also suffered from an ill-advised attempt to blame the death on Sarah's apparent consumption of large amounts of cyanide-bearing

Fig 10: Fitzroy Kelly, KC

Pip" Kelly for years afterwards [39]. It was also directly contrary to Tawell's earlier (and seemingly more credible) claim that Sarah had actually poisoned herself when she realised that he would no longer support her.The presiding judge's hostile summing up was probably the last nail in Tawell's coffin – the jury took only half an hour to bring in a guilty verdict. Tawell thus collected some more unwanted firsts, becoming the first man to be convicted of murder by prussic acid in Britain that century, and almost certainly the first Quaker murderer as well.

EXECUTION AND BEYOND

At this time, the automatic penalty for murder was death by public hanging. These events normally drew enormous, boisterous crowds and had a distinctively festive air, particularly in cases as sensational as Tawell's. Onlookers poured in by train to Aylesbury. As one commentator observed, "every minute spot from which a glimpse of the gallows could be obtained was occupied, and the concourse of spectators was immense and beyond all computation" [40].

Yet opposition to the very idea of capital punishment was slowly growing, fuelled in part by the fear that a wrongful conviction might lead to an irreversible execution. Charles Dickens, for example, was originally a strong opponent, writing a series of letters to the *Daily News* on the topic. He commented on its "horrible fascination" for even "good and virtuous and well-conducted people", noting that Tawell's trial, among others, had "awakened a vast amount of this depraved excitement", which had attained an "unusually indecent and frenzied height" [41].

Despite a number of petitions for mercy (including one supported by Dickens and signed by the foreman of the jury), Tawell was hanged at Aylesbury on the cold and bleak morning of 28 March 1845. According to most accounts, the executioner Henry Calcraft botched the job, not allowing enough rope for the drop, and Tawell "died hard", taking an excruciatingly long time to strangle to death [42]. Apparently even the crowd fell silent. It was later revealed that Tawell had supposedly made a full confession to the prison chaplain on the previous night, admitting that he had lived in constant dread that his wife would find out about his relationship [43].

Public executions took some time to be outlawed in England, finally being abolished in 1868, though it appears that Dickens' views played a significant role in this change. The spectacle of botched hangings, such as John Tawell's, would also have played an important part.

CYANIDE AND GAS CHAMBERS

Cyanide has gone on to have many modern applications in mining, industry and medicine [44]. However, its toxicity to humans has continued to be a particular attraction for those interested in killing, both legally and illegally. In the United States, for example, following on the ancient practices of Egypt and Rome, it was used at various times during the 20th century in judicial executions. This was usually achieved by combining cyanide salt with sulphuric acid and releasing it in a gas chamber in which the subject was restrained. Death normally followed within 5 to 10 minutes (Fig 11) [45]. Cyanide was also used in the multiple Tylenol contamination murders in 1982, in which seven people died, and in the

1978.

Fig 11: Gas chamber, New Mexico State Penitentiary (www.dailymail.co.uk, 26 January 2014)

Even more ominously, cyanide held enormous potential as an efficient weapon of mass destruction. France rather ineffectively tried it as a poison gas in World War I [46], but it came to the fore with the German development of the amethyst blue Zyklon-B as a genocidal agent from about 1941, during World War II. German Nazism's need for highly efficient methods of mass execution arose from its quest for racial purity, which required the extermination of "inferior beings and the sub-human races". Hitler had concluded that anti-Semitism must "become the focal point of our spiritual struggle" and that "all the rubbish of small States still existing in Europe must be liquidated as fast as possible" [47]. A significant part of this policy was implemented in extermination camps such as Auschwitz-Birkenau. The affidavit of Rudolph Höss, the Commandant of Auschwitz, describes the procedure in chillingly clinical detail:

"I visited Treblinka [another extermination camp] to find out how they carried out their extermination. The Group Commandant told me that he had liquidated 80,000 in the course of one half year. He was principally concerned with liquidating all the Jews from the Warsaw ghetto. He used monoxide gas, and I did not think that his methods were very efficient. So at Auschwitz I used Cyclon [Zyklon] B, which was a crystallised prussic acid dropped into the death chamber. It took from three to fifteen minutes to kill the people in the chamber, according to atmospheric conditions. We knew the people were dead when their screaming stopped. We usually waited about half an hour before we opened the doors and removed the bodies. After the bodies were removed our special commandos took off the rings and extracted the gold from the teeth of the corpses. Another improvement that we made over Treblinka was that we built our gas chambers to accommodate two thousand people at one time..." [48].

Although estimates differ widely, it is generally now accepted that well over a million prisoners were executed with hydrogen cyanide in this way. Ironically, cyanide also became a preferred method of committing suicide in high Nazi circles in the final stages or aftermath of the war. Apparently, Goering, Himmler, Hitler's wife Eva Braun, and the Goebbels children all used it. Tragically, it was also a principal method of suicide for thousands of people among the general population in Germany as defeat became inevitable [49].

CONCLUSION

Prussian blue's story, while sensational and shocking in many aspects, is also instructive in a number of rather more prosaic ways. First, it is a reminder of the close connections between art and chemistry – both for good or for evil. As Philip Ball has pointed out, many advances in chemical technology and the chemicals industry have depended on the social demand for colour. In turn, many advances in the composition and techniques for

It is also a striking example of the role of serendipity and accident in the development of both art and technology. Many of the steps in this story – starting with the discovery of Prussian blue itself, its impact in Japan, the development of its horrifically-lethal derivative, and its possible uses in advanced technology – could not easily have been anticipated. Its story is a reminder that sometimes what we take to be logical developments only appear so with the illuminating benefits of hindsight.

Note: For other articles on art colours, see Egyptian Blue: the colour of technology and The Life and Death of Mummy Brown.

Mode of citation: Philip McCouat, "Prussian blue and its partner in crime", *Journal of Art in Society,* www.artinsociety.com

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END NOTES

1. The alchemist was Domenico Caetano: see Alexander Kraft, "On the Discovery and History of Prussian Blue" *Bull. Hist. Chem*, vol 33, No 2 (2008) at 64.
2. Kraft, op cit at 61-2, citing correspondence between Johann Frisch and Gottfried Liebniz, over the period 1708-16. See also note 5.
3. The name ultramarine is itself based on the Latin for *beyond the seas*.
4. Kraft, op cit at 62. The name Berlin Blue was also used.
5. It was Frisch's correspondence with the German mathematician and philosopher Gottfried Liebniz, which provides much of the background to Prussian blue's early days: see Kraft, op cit. The other source is G E Stahl, *Experimenta, Observationes, Animadversiones* (1731) p 280-283.
6. Prussian blue is technically ferric hexacyanoferrate(II). Its actual chemical composition is extremely complex and was only finally determined in the 20th century as Fe7(CN)18·xH2O (x = 14–16).
7. Kraft, op cit at 63; Jens Bartoli, "The Early Use of Prussian Blue in Paintings", Paper delivered at *9th International Conference on Non-Destructive Testing of Art*, Jerusalem, 25-30 May 2008.
8. This painting contains a mix of Prussian blue and ultramarine.
9. See letter by Vincent van Gogh to his brother Theo, 11 April 1888: ttp://vangoghletters.org/vg/letters/let595/letter.html
10. See letter by Vincent van Gogh to his brother Theo, 17 September 1888: http://www.vangoghletters.org/vg/letters/let683/letter.html
11. Bartoli, op cit.
12. Jo Kirby and David Saunders, "Fading and Colour Change of Prussian Blue: Methods of Manufacture and Influence of Extenders", National Gallery Technical Bulletin, Vol 25, 2004. Alternatives to Prussian blue would later be developed, such as the 19th century syntheses of cobalt blue and artificial ultramarine and, more recently, the intense blue pigment phthaloryanine blue.
13. Henry D Smith II, "Hokusai and the Blue Revolution in Edo Prints", in John T. Carpenter, ed., *Hokusai and His Age: Ukiyo-e Painting, Printmaking, and Book Illustration in Late Edo Japan*, Hotei Publishing, Amsterdam, 2005 pp. 234-69. Accessed at: http://www.columbia.edu/~hds2/pdf/2005_Hokusai_and_the_Blue_Revolution.pdf
14. Gary Hickey, "Waves of Influence: Japan and the West", in Exhibition Catalogue *Monet & Japan*, National Gallery of Australia, Canberra, 2001, at 176 and references there cited. See also our article on Floating worlds.
15. Matthi Forrer, *Hokusai: Mountains & Water, Flowers and Birds*, Prestel Verlag, Munich, 2004, at 10 ff.
16. Hickey, op cit.
17. Timothy Clark, *100 Views of Mount Fuji*, The British Museum Press, London, 2001, at 46. Other artists to use it included Eisen, Kunisada and Sadahide.
18. Kraft, op cit; Hickey, op cit.
19. John M Chalmers et al (eds), *Infrared and Raman Spectroscopy in Forensic Science*, John Wiley & Sons, 2012; Tracey D Chaplin et al, "Identification by Raman microscopy of pigments on early postage stamps", *Journal of Raman Spectroscopy* (July 2004), Vol 35, Iss 7, p 600-604.
20. Victoria Finlay, *Colour: Travels through the Paintbox,* The Folio Society, London, 2009, at 296.
21. International Atomic Energy Agency, *The Radiological Accident in Goiânia*, Vienna 1988. One surprising side effect of taking Prussian blue can be that the person's faeces turn blue.
22. Kraft, op cit at 65.
23. Although, under certain conditions, such as rapid regrowth after drought, the poison can also naturally collect to lethal concentrations in some plants, which can cause death to ruminant animals: Dr Sarah Robson, "Prussic acid poisoning in livestock", NSW Department of Prime Industry, *primefacts*, February 2007.
24. Dr Steven I Baskin et al (eds), "Cyanide Poisoning", in *Medical Aspects of Chemical Warfare,* Borden Institute, Washington, 2008, at 372-3.
25. Carol Baxter, *The Peculiar Case of the Electric Constable*, Oneworld Publications, London, 2013, at 271; Daniel Drake et al (eds), *The Western Journal of the Medical and Physical Sciences*, Vol XI, No XLIV (1838), 610 ff.
26. Dr. William Maloney, "A Medical and Scientific Analysis of Murder By Hydrogen Cyanide (Prussic Acid): Lizzie Borden's Preferred Method", *WebmedCentral* Toxicology 2010; 1(10).
27. For an excellent, comprehensive account of the Salt Hill murder and trial, see Carol Baxter's *The Peculiar*

times, Edward Arnold, 1892, at 127 ff.
28. This was five years before the American Samuel Morse's famous "What God hath wrought" message sent on an experimental telegraph line in 1844. A precursor of the electrical telegraph, the optical semaphore, was invented in 1792 in France.
29. This was finally resolved when it was realised that it must mean Quaker – the early telegraph machine did not contain the letter "q".
30. Quoted in Baxter, op cit at 28.
31. See Part 2 of our article Art in a Speeded Up World.
32. Andrew Wynter, "The Electric Telegraph", *Quarterly Review*, June 1854 pp 118-164.
33. *Letters of Harriett Countess Granville*, 20 March 1845
http://www.archive.org/stream/lettersharrietc00cougoog#page/n397/mode/2up
34. For an informative coverage of Tawell's Sydney experiences and property deals see Jill Buckland, *Mort's Cottage 1838-1988*, Kangaroo Press, Kenthurst NSW, 1988, p 9 ff; Baxter. op cit.
35. More accurately, the Religious Society of Friends.
36. See Part 2 of our article Art in a Speeded Up World.
37. Richard D Altick, *English Common Reader: A Social History of the Mass Reading Public 1800–1900*. Chicago: University of Chicago Press, 1957 at 382.
38. This was Captain Donnellan's "laurel leaf" conviction, referred to earlier.
39. Though this evidently did not hinder his career: he later became the Attorney General, a judge and a member of the Privy Council.
40. Robert Gibbs. *Buckinghamshire: A History of Aylesbury,* Robt Gibbs, Aylesbury, 1885.
41. Letter by Charles Dickens to the *Daily News*, 28 February 1846. Dickens later became more conservative in his views, believing only that capital punishment should be carried out in private (Letter to the *Times*, 14 November 1849).
42. Judith Flanders, *The Invention of Murder*, Harper Press, London 2011, at 330; Baxter, op cit at 321.
43. Enormous controversy later arose about the fact that a signed confession was never released. Even after his death, however, Tawell continued to make headlines. Back in Sydney, an extraordinary dispute over the sale of his estate's properties enveloped the New South Wales Solicitor General, leading to a scandal which resulted in his offering his resignation and prompting a constitutional crisis: Baxter, op cit at 341.
44. Some of these continue to raise concerns about environmental or health effects; see for example Jan G. Laitos, "Cyanide, Mining, and the Environment", 30 Pace Envtl. L. Rev. 869 (2013).
45. Baskin, op cit at 373-4. At one execution in New Mexico, the victim was reportedly advised to take deep breaths of the fumes in order to reduce his suffering: James Nye. "From gas chambers to department stores: Haunting images reveal execution sites across 18 states where the death penalty was dealt out": *Daily Mail,* 26 January 2014.
46. Baskin, op cit at 373.
47. Allan Bullock*, Hitler: A Study in Tyranny*, Pelican Books, Middlesex, revd edn 1962, at 703.
48. Quoted in Bullock, op cit at 701.
49. Christian Goeschel, *Suicide in Nazi Germany*, Oxford University Press, Oxford, 2009.
50. Philip Ball, "The Colourful Science", *Chemistry World,* 19 June 2014.

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AUTHOR INTERVIEWS

Indigo: The Indelible Color That Ruled The World

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November 7, 2011 · 3:01 PM ET
Heard on Tell Me More

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You probably take the blue in your favorite jeans or denim bean bag chair for granted now, but it was once prized by slave traders, spiritual leaders, royalty and rag traders alike.

A decade ago, Catherine McKinley embarked on a trip through nine West African countries, armed with a fellowship and her fascination for the blue dye. She tells her story in her book Indigo: In Search of the Color that Seduced the World.

The History of Indigo

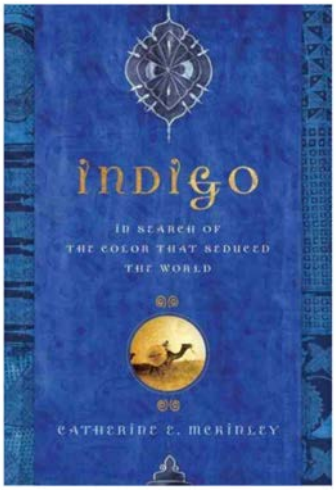
While indigo traces its roots to India, the African slave trade made it exceedingly valuable on that continent.

"Indigo was more powerful than the gun," McKinley tells Tell Me More host Michel Martin. "It was used literally as a currency. They were trading one length of cloth, in exchange for one human body."

Enslaved Africans carried the knowledge of indigo cultivation to the United States, and in the 1700s, the profits from indigo outpaced those of sugar and cotton.

"At the time of the America revolution, the dollar had no strength, and indigo cakes were used as currency," McKinley says.

The original American flag was also made from indigo textiles.



Indigo
In Search of the Color That Seduced the World
by Catherine E. McKinley
Hardcover, 235 pages
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African Women and the Story of Cloth

Across the ocean, on the African continent, indigo-dyed cloth helped financially empower many African women. Although nowadays, most cloths on the continent are dyed with a much cheaper synthetic color, owning cloth is considered a huge asset. During her stay in Ghana, McKinley learned that cloth is valued more than many women's bank accounts and insurances.

"If you have 300 pieces of good cloth, like a real Madame, well then you have something. A person's spirit is in their cloth," McKinley says.

Each cloth has a name based on its pattern, and it usually tells a cautionary story full of folksy wit: "When my husband goes out, I go out," "Attending school does not mean one would be wise," or "My head is correct."

But for McKinley, tracing the significance of indigo also sets her a on a more personal journey.

"I learnt through looking at the dye pot and how cloth is used and worn, really the value of life and how the color represents life," she says.

Catherine McKinley is the author of *Indigo: In Search of the Color that Seduced the World.*

Courtesy Of The Author

Hobbies ✧ Fine Arts & Crafts

Artist's Pigments: The Accidental Discovery of Prussian Blue Paint

How an attempt to make a red pigment created Prussian blue instead

by Marion Boddy-Evans
Updated May 24, 2019

Any artist who enjoys using Prussian blue will find it hard to imagine that such a beautiful blue was actually the result of an experiment gone wrong. The discoverer of Prussian blue, the colormaker Diesbach, was in fact not trying to make a blue, but a red. The creation of Prussian blue, the first modern, synthetic color was completely accidental.

How Red Became Blue
Diesbach, working in Berlin, was attempting to create cochineal red lake in his laboratory. ("Lake" was once a label for any dye-based pigment; "cochineal" was originally obtained by crushing the bodies of cochineal insects.) The ingredients he needed were iron sulfate and potash. In a move that'll bring a smile to any artist's who's ever tried to save money by buying cheap materials, he obtained some contaminated potash from the alchemist in whose laboratory he was working, Johann Konrad Dippel. The potash had been contaminated with animal oil and was due to be thrown out.

When Diesbach mixed the contaminated potash with the iron sulfate, instead of the strong red he was expecting, he got one that was very pale. He then attempted to concentrate it, but instead of a darker red he was expecting, he first got a purple, then a deep blue. He'd accidentally created the first synthetic blue pigment, Prussian blue.

Traditional Blues
It's hard to imagine now, given the range of stable, lightfast colors we can buy, that in the early eighteenth century artists didn't have an affordable or stable blue to use. Ultramarine, which is extracted from the stone lapis lazuli, was more expensive than vermilion and even gold. (In the Middle Ages, there was only one known source of lapis lazuli, which means simply 'blue stone.' This was Badakshan, in what is now Afghanistan. Other deposits have subsequently been found in Chile and Siberia). Indigo had a tendency to turn black, was not lightfast, and had a greenish tinge. Azurite turned green when mixed with water so couldn't be used for frescoes. Smalt was difficult to work with and had a tendency to fade. And not enough was yet known about the chemical properties of copper to consistently create a blue instead of a green (it's now known that the result depends on the temperature it was made at).

The Chemistry Behind the Creation of Prussian Blue
Neither Diesbach nor Dippel was able to explain what had happened, but these days we know that the alkali (the potash) reacted with the animal oil (prepared from blood), to create potassium ferrocyanide. Mixing this with the iron sulfate, created the chemical compound iron ferrocyanide, or Prussian blue.

The Popularity of Prussian Blue
Diesbach made his accidental discovery sometime between 1704 and 1705. In 1710 it was described as being "equal to or excelling ultramarine". Being about a tenth of the price of ultramarine, it's no wonder that by 1750 it was being widely used across Europe. By 1878 Winsor and Newton were selling Prussian blue and other paints based on it such as Antwerp blue (Prussian blue mixed with white). Famous artists who have used it include Gainsborough, Constable, Monet, Van Gogh, and Picasso (in his 'Blue Period').

The Characteristics of Prussian Blue
Prussian blue is a translucent (semi-transparent) color but has a high tinting strength (a little has a marked effect when mixed with another color). Originally Prussian blue had a tendency to fade or turn grayish green, particularly when mixed with white, but with modern manufacturing techniques, this is no longer an issue.

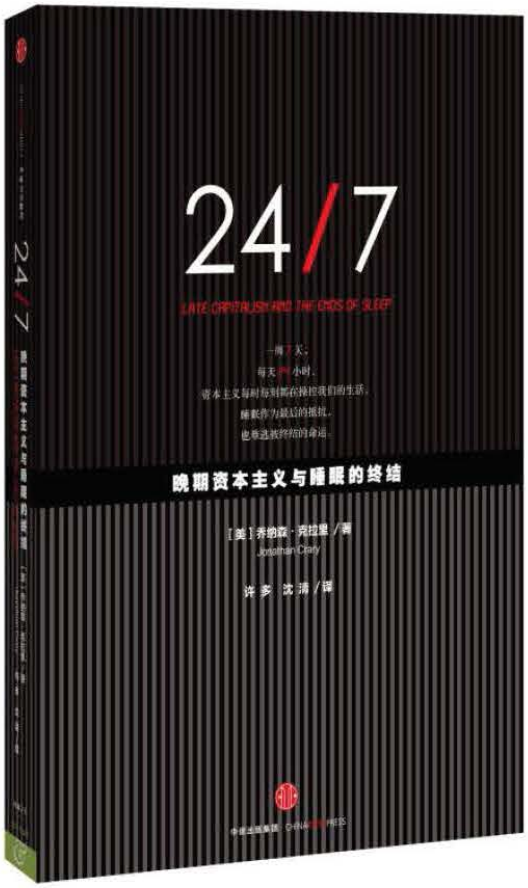
Tacuina sanitatis (XIV century)
3-aspetti di vita quotidiana, insonnia, Taccuino Sanitatis,

无眠

SLEEPLESS

不睡觉的世界：睡眠如何被资本主义谋杀

沈河西
2015-08-13 19:23 来源：澎湃新闻



乔纳森·克拉里的新书《24/7:晚期资本主义与睡眠的终结》

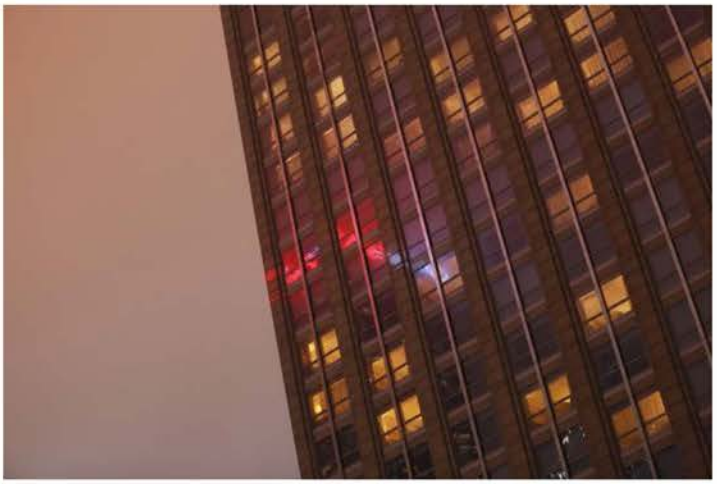
资本主义谋杀了睡眠

在王家卫的《阿飞正传》里，张国荣说：“世界上有一种鸟是没有脚的，它只能够一直飞啊飞，飞累了就在风里面睡觉，这种鸟一辈子只能下地一次，那一次就是它死亡的时候”。在乔纳森·克拉里的新书《24/7:晚期资本主义与睡眠的终结》的开篇就提到这种鸟——白鹳雀。但与这句台词勾起的青春期小资情怀所不同的是，克拉里笔下的白鹳雀更像科幻小说里的情节：美国军方希望仿造这种不需要睡眠的鸟，制造出不需要睡眠的战士。继而克拉里又举出一个颇具科幻色彩的例子：俄罗斯和欧洲宇航部门计划发射一种可以把太阳光反射到地球的卫星，使这个世界彻夜通明，据说这样可以节省能源。第三个例子最具现实感，美国关塔那摩监狱里，虐待囚犯的一种方法是剥夺他们的睡眠。无独有偶，这样的例子也发生在中国电视剧《甄嬛传》里，慎刑司虐待犯人的手段是让他们一天只睡两个时辰。当然，不睡觉这件事本身没有任何科幻和戏说的色彩，因为它真真实实地发生在“北上广加班最晚的10幢楼”这样的新闻里，构成普遍意义上的人类境况和未来。

一个什么样的世界使不睡觉成为常态？什么样的制度结构使不睡觉成为当下的人类境况？克拉里在书中将之命名为“24/7式的资本主义”。在英文中，24/7就是全天候、全年无休的意思。按照《帝国》作者麦克尔·哈特的说法：资本主义谋杀了睡眠！

关于当前的资本主义批判，我们已经听过太多沿着马克思主义传统而来的命名，如晚期资本主义、景观社会、控制社会等，24/7又说出了什么新东西？可以说，克拉里对于当前资本主

义的批判建立在马克思、詹明信、德勒兹、德波、大卫·哈维等人的基础之上，他也丝毫不避讳在书中援引他们的论述。但作为艺术史学、视觉文化研究出身的学者，克拉里更关注24/7式的资本主义给人的主观体验、日常生活带来的影响，并分析这种主观影响对于人类主体性的塑造这样的政治问题。



夜晚的广州，不少办公室仍然亮着灯。 林宏贤/CFP

一个不睡觉的世界是怎样的？沿着大卫·哈维“时空压缩”的论述，克拉里的批判更深入到我们的日常经验——时间感的毁灭。365/24、一年四季与24/7有什么不同？在他看来，24/7意味着一切有节奏韵律的、绵延的时间感被消灭了，随之而来白天与黑夜、工作与休闲、公共与私人间的界限被抹除，朝向未来的纽带也被切断，一切都是当下。“这个星球被重新想象成为一个永不停歇的工作场所或一个永不打烊的商场。”

这种24/7式的没有褶皱和间隙的时间感的论述，让人想起早期的美国蓝调歌曲和公路电影。这些作品往往是这么开始的：我在路口站着，然后有人来搭顺风车，然后有了故事。在路口站着，可能几个小时什么都不做，但这是对于日常生活的反思。但据说今天美国的路口没人站了，今天人们永远在忙，在发朋友圈。克拉里注意到手机的“睡眠模式”这样一个日常生活细节蕴含的政治意义：它超越了关机/开机的逻辑，所以没有什么能够彻底关机，但也不存在真正的休息状态。

在这样的时间感里，一切都是24/7式的即时性，等待这样的行为变得没有意义。在批判论者看来，等待是感知未来的方式。譬如俄罗斯作家索罗金的小说《排队》里，写一大堆人在排队，在这些“嗯、呃、啊、喂”的简单台词里，有一种共同体的生命经验。贝克特的《等待戈多》说的也是等待，存在论意义上的等待。因为等待，所以有对未来的想象。自古希腊以来的政治思想中，等待还关乎直接民主的可能性：有耐心倾听他人。等待的终结，意味着政治的终结。但克拉里注意到，在阶级社会里，富人从来不需要等待。他们手握VIP卡，拥有一切服务的优先权。即便在《2012》里，富人、政客们也早早买好了末日船票，只有穷人才等待。

对于一个长期从事视觉文化研究的学者来说，克拉里敏感地意识到，一个彻夜通明的世界在摧毁时间感的同时，也在摧毁人类的视觉经验。在一个随处可见的世界里，阴影被消灭。在这里，克拉里富有创造性地提出这是一个没有幽灵的世界，他赋予幽灵以政治意义：“幽灵是某些不合时宜的东西和现代性未能祛除的魅影对于此刻的入侵与扰乱。它们是不会被忘却的受害者和没有被解放的人的魂魄。24/7的程序可以抵消或吸纳很多回返的幽灵，后者可能会破坏当下的实质性与同一性以及它表面上的自足性。”

当然，对24/7式的时间感的批判，总是容易被一种“从前慢”式的怀旧主义情绪所捕获。但克拉里对此心存警惕，他深知我们深陷于24/7式的资本主义，再也不可能回到田园牧歌式的前现代。我们必须立足于手头拥有的有限资源，在敌人最脆弱的地方迎头痛击。而克拉里找到这个资本主义的痛点就是睡眠。资本主义试图摧毁睡眠是因为它与当前的资本主义彻底的不相容。

作为一种革命诗学的睡眠

当然，克拉里不是第一个注意到睡眠这一问题的学者，有评论指出当前西方有一拨人在做“批判性的睡眠研究”。自从福柯之后，一切都有了历史，而睡眠是这个学术大party中较为晚近的一个。当然，克拉里的目的并不在于要从人类学或新文化史的角度为睡眠树碑立传。它的方法论和视角始终是文化研究式的。他不是为了研究睡眠而研究睡眠，睡眠只是他

的进路，目的是要通过睡眠来想象一种对抗当前资本主义的可能性。所以，24/7与其被看成关于睡眠的社会历史考察，倒不如读作一种革命诗学。

在克拉里的分析中，睡眠具有政治实践的意义，因为睡眠与24/7式的资本主义根本地不兼容：所有人类本能、欲望都可以转化为商品，但睡眠意味着生产需要停滞，从中榨不出一丝油水。诚然，如《帝国》这样的著作所论述的，今天的资本主义没有外部，睡眠当然无法无虞地安处于资本主义之外。但克拉里要强调的是，正因为睡眠作为一种人类不可剥夺的本能，作为马克思意义上最后一道资本主义需要克服的“自然障碍”，它无法完全被资本主义所吸纳。秉持着左翼乐观主义的他不相信，开篇中美国军方所设想的不需要睡眠的战士有朝一日会成为人类的未来。

但克拉里如此看重睡眠的抵抗潜能，最重要的地方在于睡眠具有公共性，睡眠预示着建构一个共同体的可能。这是他在本书中最核心也是最有启发性的观点。我们今天普遍认为睡眠是纯粹私人领域的事。但克拉里认为，睡眠恰恰是有某种公共性的可能。譬如，在前资本主义时代的政治思想中，君主需要为平民百姓提供睡眠的保护，因为睡眠时人是脆弱的。但正如几乎所有今天被视为天经地义的日常生活的方方面面都被私有化、私人化了一样，睡眠当然也难逃这样的命运。譬如，当前的失眠问题之所以无法通过安眠药得到彻底解决，因为失眠本身是资本主义的产物。当然不是说前资本主义的人不失眠，而是说失眠的意义发生了变化，它作为资本主义体制的一部分加入到了资本主义的再生产之中，它服务于一个庞大的制药生产链，并进而服务于一种不眠不休的生产体制。在这样的状况下，与睡眠相关的问题完全被建构成了一件私人的事件，不复有公共性的意义。事实上，克拉里没有提到，在埃利亚斯《文明的进程》中，睡眠的私人化是伴随着民族国家的产生，资产阶级作为政治主体的崛起而产生的，睡眠需要私密的空间被视为更“文明”的生活方式。而在中国的社会主义时期，也存在公共化的睡眠，这与建构一种共同体的逻辑是一致的。而当睡眠被私人化之后，连带着梦也被私人化了，一种超越个人、指向人类共同体的未来的梦不复存在。

当今天越来越多的城市白领彻夜加班成为常态，“加班狗”成为自嘲的自我指涉，以至于这种对于充足睡眠的要求以“睡你麻痹，快起来high”这种后现代式的自嘲所解构，我们更能深切体会睡眠的问题如何是资本主义发展进程中的一个问题。仅从睡眠匮乏这一点，我们就能体会为什么今天的情况更接近于19世纪，也更能体会何为“知识分子的无产阶级化”。睡眠的匮乏早已超出生理健康的范围，而变成一个资本主义的结构性问题。

克拉里的思路延续的是列斐伏尔、居伊·德波、德塞都等人的“日常生活革命”的脉络，这构成他论述中重要的思想资源。但在这一串最时髦的法国1960年代理论家也被当成时尚的当下，按照伊格尔顿所调侃的，“理论之后”，身体就成了后现代、后殖民等理论万花筒里的关键词，脱离了马克思主义的政治经济分析，月经的政治、懒惰的政治等等看似酷炫的政治可能性我们已经看得太多太多，睡眠的政治是不是也是这个“身体”大party中的一个迟来的明星？空有其表然并卵？

这样的质疑自然有其道理。但正如居伊·德波当年在墙上写下那句振聋发聩的话“永不工作”一样，克拉里希望恢复我们对日常生活的想象力。他希望让我们回归人的身体本身，激发蕴藏在每个人身体上的潜能。如奈格里、哈特等人已经一再确证资本主义进化到“帝国”阶段的无所不能，资本主义没有外部，而最终的抵抗力量只能来自于资本主义自身所发展出来的武器库，那克拉里的观点则与之相反，他认为最终的抵抗力量来自睡眠这样一种与资本主义内在不相容的不可削减的需求。也正是在这个意义上，《24/7》不应该被读成一本对抗资本主义的战斗指南，而应该被读成一种朝向未来的革命诗学。

关键词 >> 晚期资本主义,睡眠,24/7


评论（91）

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热评论

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孤独寻梦　1楼　15 | 回复

我们是社会主义，不会也不可能出现这种问题，对资本主义表示无法理解和不同情

那你觉得小编配广州的图是什么意思。听话不听音

Frederic Edokawa　2015-08-13　20 | 回复

望着雨壁写字楼仍然点亮的灯光，我怀着复杂的心情评论这一新闻。

孤独寻梦　2015-08-13　15 | 回复

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冰红茶76　2015-08-13　13 | 回复

竞争、失业、生活均存在于两种主义当中，是睡眠被资本主义谋杀，还是竞争使睡眠减少。帽子不能乱戴，带错了就出丑了。

–　2015-08-13　8 | 回复

好的是社会主义　坏的是资本主义

新评论

王著谷Museology　2015-08-15　2 | 回复

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说明你既不懂资本主义也不懂社会主义。

趣军明日抵达。　2015-08-14　2 | 回复

永不工作(￣▽￣)

心平20122012的海角　2015-08-14　5 | 回复

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我们是社会主义，不会也不可能出现这种问题，对资本主义表示无法理解和不同情

学习吧，读书吧，再说话

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国内大部分人连双休日都没有　谈啥国际

YES啊咪　2015-08-14　1 | 回复

真能吹

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中国的学生呢！？

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我就是经常加班的广告狗

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什么是资本主义?

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不睡觉说不定是很多人想要的。我的意思是有种药可以让人不用睡觉，并且可以永远都不用睡觉，你难道不想要

政治人物如何应付睡眠不足？

米迦勒·杰斐，佛罗里达大学（Michael S Jaffee, University of Florida）

2016年8月18日

作为总统候选人就注定没有办法拥有正常的睡眠，而无论谁当选情况也不会有改观。

奥巴马总统说自己一般是安排六小时的晚上睡眠时间，但常常无法做到，比尔·克林顿说自己一般只睡五至六个小时。那么政治领袖，例如我们的总统，每天到底需要满足多长时间的睡眠才能保证精力充沛呢？

尤其是目前总统候选进入全面竞选的阶段，这个问题就显得更为重要。睡眠时间会影响他们的判断力么？他们是如何日复一日在压力极大的情况下完成工作的？缺少睡眠会导致失误吗？

作为一个研究睡眠多年的神经学家来说，我知道睡眠时间影响着我们的身体机能和健康。虽然有一小部分人可以每天只睡4-5小时，但是我们大部分人还是需要更多的睡眠。

有关睡眠的进化学目的和功能目前在科学研究领域尚未形成一个"大一统的理论"，但研究表明了睡眠对于我们身体和大脑产生的几个重要的影响。基于一份有关医学研究文献的荟萃分析的基础上，美国睡眠医学院（American Academy of Sleep Medicine）和睡眠研究学会（Sleep Research Society）联合发表了一份共识声明，建议成年人每晚至少要保持七小时以上睡眠以达到最佳健康状态。这一建议是基于对以前研究的系统评价上做出的。这份报告还指出，每晚睡不到六个小时"有损人体健康"。

我们的睡眠有不同周期性阶段，包括快速眼动（REM）睡眠和非快速眼动（NREM）睡眠。快速眼动睡眠通常发生在我们做各种生动的梦的睡眠阶段。非快速眼动睡眠被进一步描述为浅睡眠（N1和N2阶段）和深慢波睡眠（N3期）。慢波睡眠在细胞的维护和恢复中起到重要作用，因此对物理恢复和身体健康至关重要。

我们需要REM和NREM睡眠的正常运转，确保良好的记忆。快速眼动睡眠是记忆巩固的重要阶段，特别是对程序和空间的记忆。NREM慢波睡眠促进信息的处理和记忆的巩固，特别促进对事实和事件的陈述性记忆。

我们的脑细胞（神经元）通过突触连接，突触是通过化学信使或神经递质的连接神经元的位置。慢波睡眠对于这些网络和连接进行必要的修整合完善。这种完善过程很有必要，它能够消除较弱的连接，保存强大的连接，是巩固记忆力的重要部分。

在过去的几年中，有新的科研成果表明睡眠对于减少与年龄有关的记忆丧失和轻度认知障碍和老年痴呆症都有重要的改善作用。动物研究表明，睡眠可以清除大脑中的废物，如淀粉样蛋白。淀粉样蛋白斑块的积累是阿尔茨海默痴呆症的病理特征之一。最近有关此类睡眠的"脑洗涤"功能的研究不断增加，人们对于从大脑中去除有毒物质的研究兴趣浓厚。

有无数的研究表明，缺乏睡眠后，各种脑认知功能下降。这些功能包括注意力，情绪调节，学习和记忆，和"执行功能"。

在这些研究中，执行功能是指同时完成多项任务和组织复杂程序的能力。它也可以指的自我调节和自我控制行为和言论，以避免发表不恰当的意见的能力。

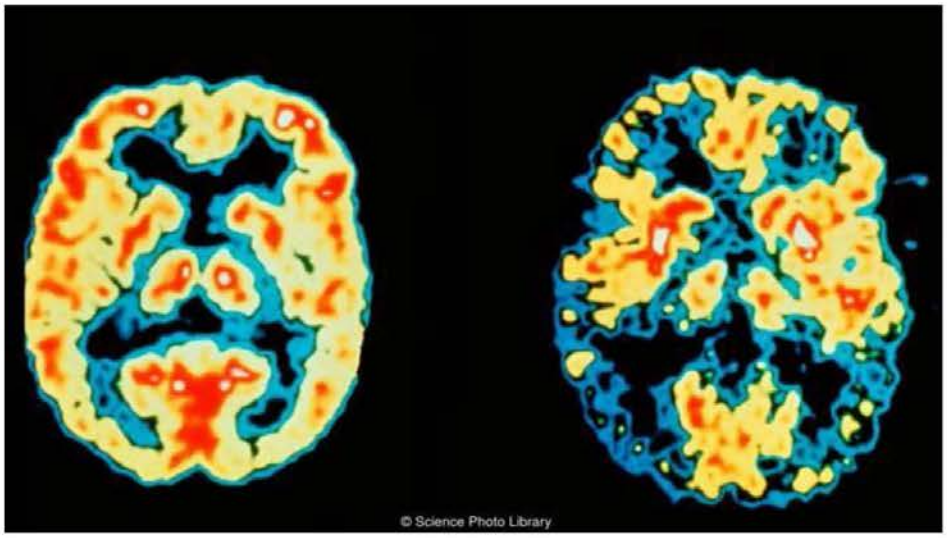
在这些功能中，注意力的认知功能受到缺乏睡眠的影响最大，复杂的注意力和工作记忆受中等程度的影响。值得庆幸的是，研究表明，简单的推理能力并没有受到缺乏睡眠的影响。最常见的睡眠质量障碍的现象——阻塞性睡眠呼吸暂停——目前已被证明可以影响大脑负责维持执行功能的部分的能力。

基于人类对于睡眠的重要性和它在认知性能中的作用的了解，行业职责规则也进行了相应的改变，比如限制一个雇员连续工作的最长时间，以及制定指导方针对医护人员和航空公

司飞行员这样的专业人士进行规范，预防由于缺乏睡眠而犯错的情况发生。

睡眠不足对于身体的一些影响被广为传播，例如体重增加和肥胖，糖尿病，高血压，抑郁症和心脏病和中风的风险增加，以及增加死亡的风险。缺乏睡眠也容易导致人体免疫功能下降，对于疼痛的感知强烈。

美国睡眠基金会（American Sleep Foundation ）在美国定期展开关于睡眠的民意调查。他们的数据显示，40%的受访者表示夜间睡眠时间少于七小时。美国卫生和人类服务部的一项改善国民的健康"健康人生2020"的倡议（The US Department of Health and Human Services' Healthy People 2020），以"增加的成年人获得足够的睡眠的比例"为目标。



也有一些研究表明睡眠不足易导致错误增加，和驾驶事故。考虑到睡眠和性能之间的关系，实际上有研究表明，精英运动员通过延长睡眠时间的练习改善了他们的运动能力。现在有许多专业的运动队雇佣睡眠专家，以帮助他们最大限度地提高运动员的表现能力。

如何对抗睡眠缺乏呢?

咖啡因：我们保持清醒的时间越长，我们的大脑中前额叶的被称为腺苷的化学成分就越加累积，我们想睡觉的冲动就会更强烈。因此，咖啡因会阻断这些接受体，暂时阻止腺苷的积累，减少睡眠欲望。

小睡：有证据显示，短暂的午睡（最好不超过20分钟）可以提高警觉性和身体性能。已经有一些高级领导人员进行此类的"动力小睡"。"在办公室或者工作场所中在一个完全不受干扰的地方进行小睡，例如在会议之间进行小睡就很有益。国家睡眠基金会的统计数据显示，有几个美国总统经常进行下午小睡，包括乔治布什，罗纳德·里根和肯尼迪。

科技助手：现今社会人们愈加依赖于使用智能手机和电子设备来计划安排我们一日的行动，提供必要的提醒，并且查看重要信息。这些设备曾一度被称为"外脑"。

一位高级管理人员经常有一名工作助理，协助他安排日程，定期沟通，处理问题，应对危机。这说明拥有一个能力强大的助手的重要性，（其中一些人并没有缺少睡眠），他们能够成为所谓的"负责组织事务的大脑。"

在理论上，一个总统可以通过使用以上这些策略的组合来应对缺乏睡眠的状况。 这或许就是总统候选人如何能够撑过紧张高压的竞选期的原因吧。

请访问 **BBC Future** 阅读 英文原文。

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CAPITALISM ESSAYS MEDIA/PUBLICS

Jonathan Crary's 24/7: Late Capitalism and the Ends of Sleep

Vince Carducci — November 29, 2013

Book cover of 24/7: Late Capitalism and the Ends of Sleep by Jonathan Crary © 2013 Verso

When I was a kid in the 1960s one of the big questions I remember being tossed about was what to do with all of the free time that modern society would afford us. That there would be a virtually unlimited horizon of material abundance and thus leisure, and how best to use it, was a topic of talk in the media and at dinner. Year after year, union contracts (back when there were such things) negotiated increasingly generous benefits, including substantial time off from work. John Kenneth Galbraith's 1958 classic *The Affluent Society* set the terms of the conversation early on by challenging Americans to muster the country's broadly experienced largesse, made possible by the productive capacity of modern mass manufacturing, to serve the larger social good. Lyndon Johnson's Great Society was subsequently founded on the notion that widespread wealth, and along with it leisure, were faits accompli.

The decades since have provided the answer to what we would do with all of our spare time, though it's not the one most people expected. We have dealt with the problem of leisure by getting rid of it. Instead, we now work

nonstop. Digital technology and the communications network it supports allow us to be on the job morning, noon, and night, wherever we may be. In his important new book, *24/7: Late Capitalism and the Ends of Sleep,* visual culture theorist Jonathan Crary tells us that rather than herald a new age of freedom and self-determination, the new media technologies have ensnared us in a stickier web of control. This condition is characterized by the obligation to always be "on," the better to surrender ourselves to the continual means of our own mutual self-surveillance and hence domination in the form of Tweets, Facebook and Tumblr updates, texts, emails, blog posts, multi-tasking regimens, and the like.

Jonathan Crary

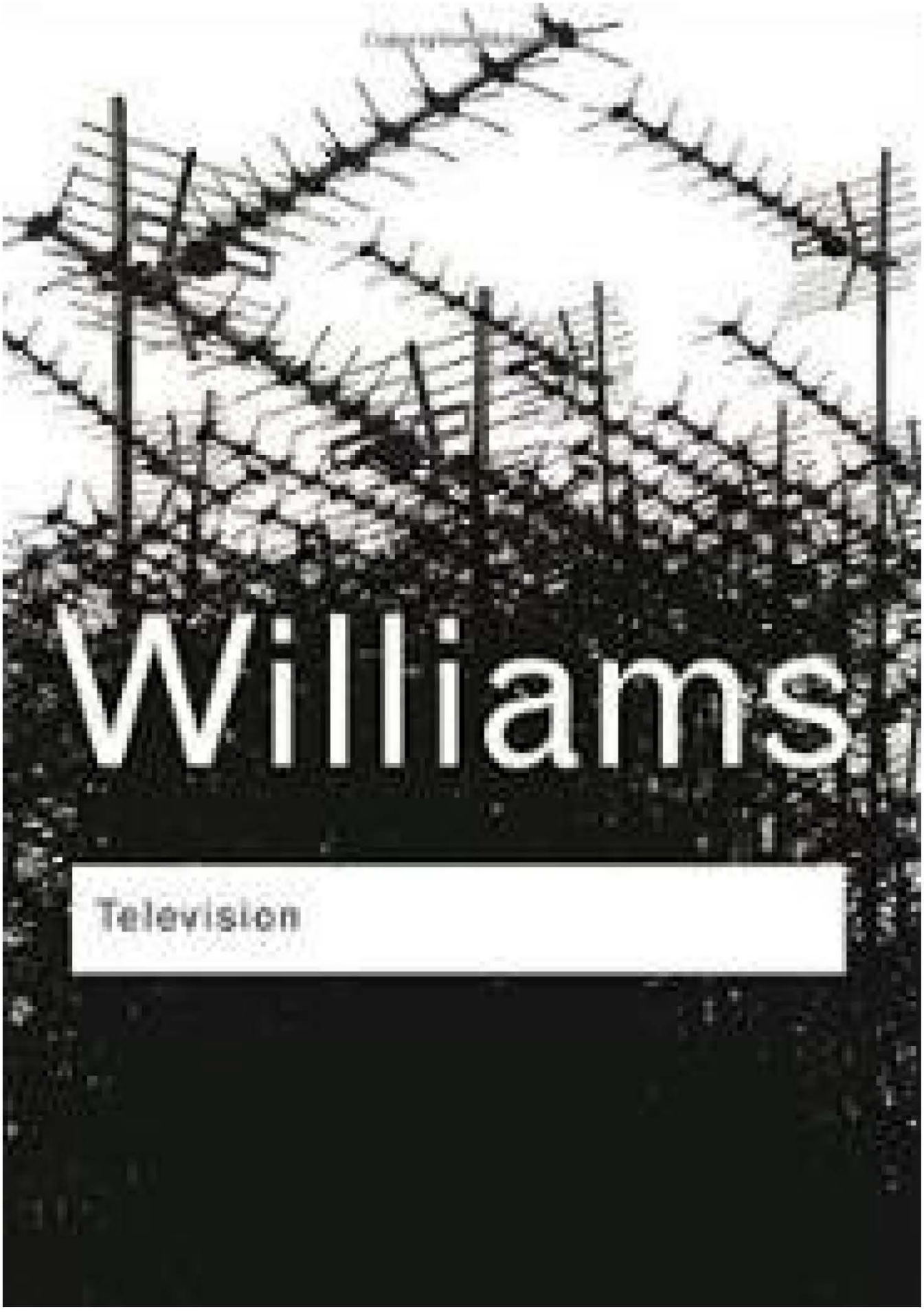
Crary, who is Meyer Shapiro Professor of Modern Art and Theory at Columbia University, is the author of two other significant books. The first, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century,* published in 1990, looks at the origins of modern visual culture in the first half of the 1800s, in particular the ways in which then emerging physiological science reduced human perception to a function of biological impulses, replacing the spiritual definition of self (i.e., the soul) with a more mechanistic one grounded in pure motor response and base instinct. The second, the award-winning *Suspensions of Perception: Attention, Spectacle, and Modern Culture,* was published a decade later and looked at the crucial period between 1880 and 1905 when vision was redirected toward solving the problem of attention (actually the lack of it), called upon to focus on specific phenomena as a way to combat the sensory overload of newly industrializing society. Both books essentially argue that these changes came about in the service of capitalism — a cadre of isolated self-interested individuals was created who could function as perfect cogs in the machine constructed by the modern division of labor.

Though brief (a mere 133 pages) and lightly annotated, *24/7* is the capstone of Crary's archeology of the spectacle and arguably the most significant of the lot. It's informed by the erudition of one of the most thorough and original researchers at work today. The vast bodies of knowledge Crary seamlessly weaves together in *24/7* is reminiscent of the work of Michel Foucault, but without the gnarly, headache-inducing sentence structure. It's marked by a moral passion that fuels Crary's polemic and underscores what's at stake, specifically the future of the human being in both the physical and emotional sense. Plus, it's eminently readable, eschewing the critical theory gobbledygook of the tribe of radical art historians he's most closely associated with, the so-called October group that includes Rosalind Krauss, Hal Foster, and Benjamin H.D. Buchloh. (Those folks have done and continue to do important work in their fields, but the need for cultural critique these days is simply too dire to be locked away in the ivory tower.)

In the round-the-clock world of twenty-first century global capitalism, our only relief is sleep, and as Crary notes, even that is coming under attack. *24/7* starts with a report on research being undertaken by the US military to extend the amount of time combat soldiers and other personnel can go without sleep, seeking to extend it from days to weeks. Given that military innovations usually make their way into broader aspects of everyday life — air travel, the Internet, GPS, over-the-counter medications, all manner of consumer electronics, recreational assault weapons — there is every reason to believe, as Crary asserts, that the sleepless soldier is the prototype of the sleepless worker/consumer. "Sleep is an uncompromising interruption of the theft of time from us by capitalism," Crary writes. The endless here and now of 24/7 proposes to harvest surplus value not from only our bodies but from our psyches, rendering us little more than real-life *Matrix* pod-humans.

Crary doesn't discuss it in *24/7,* but an early iteration of this process can be discerned in the first part of the twentieth century when the techniques of mass manufacturing greatly reduced the amount of time needed to produce goods and services. In *Time and Money: The Making of Consumer Culture,* historian Gary Cross details the conscious policies adopted by the government and industry in the 1920s and 1930s to encourage material consumption, and along with it increased profit, instead of allowing spiritual respite. The commodity fetish, to use an old-fashioned term, became the mechanism by which capitalism increasingly inserted itself into everyday life,

replacing personal relationships and local cultural practices with cold market logic mediated by consumer goods, proffering more stuff in lieu of more time.



© Book cover of Television: Technology and Cultural Form by Raymond Williams © 2003 Routledge

A watershed moment Crary does address is the introduction of broadcast television after the Second World War. Following Raymond Williams 's 1974 study *Television: Technology and Cultural Form*, Crary recognizes the way in which TV was inserted into everyday life as a soft mode of social control. Through what Williams terms its "planned flow," television organized the daily routine from morning commuting information and weather reports to midday newsbreak to evening entertainment, culminating in nightly sign off, all the while promoting the ostensible benefits of a mass industrial consumer utopia. In the 1950s and 1960s, television was a relatively stable system, drawing an increasingly suburban and decentralized population into a homogenized national imaginary. The advent of cable TV and programmable VCRs in the 1970s offered the opportunity for time shifting and what McKenzie Wark in his new book terms the "disintegrating spectacle," the way in which control has become atomized and diffused yet more difficult to circumvent. This is represented today by such technologies as social media, wireless communications, and the Internet.

Against the relentless tide of 24/7 production and consumption, Crary proposes that we reclaim sleep as a site of unregulated desire, a mode of resistance to the rational calculation of the market, a state in which we might imagine "a world without billionaires, which has a future other than barbarism or the post-human, and in which history can take on other forms than reified nightmares of catastrophe." Going to sleep presupposes that one will arise anew the next day, refreshed and with the hope of new possibilities. As the web of 24/7 gets harder and harder to escape, sleep becomes as good a place as any to kickstart the opposition. So, workers of the world — go to bed!

This article was first published in ***Motown Review of Art.***

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from an advert in Canadian Entomologist, 1887,

梦

DREAM

昔者庄周梦为胡蝶，栩栩然胡蝶也，自喻适志与，不知周也。俄然觉，则蘧蘧然周也。不知周之梦为胡蝶与，胡蝶之梦为周与？周与胡蝶，则必有分矣。此之谓物化。

《庄子·齐物论》

梦和睡眠已成为我们与全球资本主义争夺的战场

陆兴华 / 同济大学哲学系
2015-09-20 17:07 来源：澎湃新闻

《24/7：晚期资本主义与睡眠的终结》，[美]乔纳森·克拉里著，许多、沈清译，三辉图书/中信出版社，2015年9月。

在这本《24/7》的第二章中，作者乔纳森·克拉里对法国哲学家贝尔纳·斯蒂格勒有很多引用和评论，比如对后者的《象征苦难I：高度工业社会》中对于算法和电视如何架空我们的日常生活方面的论述，有很多借用。“个人化”和个人心智活动的“间歇”，是他借用的两个重点。正是斯蒂格勒2015年新著《自动社会I：工作的未来》中对克拉里这本《24/7》的评述，才引起了我对后者的关注。

斯蒂格勒认为，克拉里对全球资本主义如何入侵睡眠和梦境的描述是深刻入骨的，但他对全球资本主义的黑帮性和文盲习气仍认识不够。必须看到，我们在当前遭遇的总体计算式的资本主义，是结构性地自我毁灭的，绝对地熵增的。它在逼人类作出一种像尼采号召的重估一切价值那样的激烈逆转。而对比此书中的这种刻骨的现象描述，克拉里却对人类落入利比多经济的当前状态的原因如此隔膜，在书中显出了过多的绝望：

“面对来自永久变动的技术的要求，个人和社会是决不能‘适应’[决不能一步赶上的]的”（乔纳森·克拉里，《24/7资本主义正攻占我们的睡眠》，Zones，2014年，49页）。

而斯蒂格勒认为，面对技术的集权式统治，人一去适应（adapt），也就死定了，因为人不光会适应，还更须吸纳（adopt）。克拉里描述的这种恶果，不是异质的病侵，而是当代人吸纳新技术的必然结果。“吸纳”就是俗话说的“吃不了兜着走”。后者是人接受新技术的一种独特能力，是人的进化的原因：生命想走出自己之外，就冲出去，去依赖技术支架，像瓜藤爬到架子上，反而先中了这支架的毒，需要长期的恢复，折返后，在恢复中，人绕到了一种新的命运上。克拉里在书中显然没有看到，在今天，“人”这种“技术形式”是处于自动化和脱自动化的拉锯战之中。人要得到它的未来，就必须在当前的熵增中去建立和助长各种逆熵的力量（用自己身上的这一种倾向去对冲另一种倾向），后者应该是我们在当代重估一切行动和价值的第一尺度。下面我对这本书的评论，将在以上框架中进行。

热新闻
一天 三天 一周
1 北京警方通报李彦宏被泼水事件：对嫌疑人处以行政拘留5日
2 视频丨辽宁开原突发龙卷风已致6人死亡，120余人受伤
3 俄媒：普京签署法案，暂停履行《中导条约》
4 百度再回应李彦宏被泼水：强烈谴责，肇事者已被公安带走调查
5 习近平举行仪式欢迎保加利亚共和国总统访华并同其会谈
6 四川宜宾珙县发生5.6级地震，重庆、成都等地震感强烈
7 新城控股：董事长王振华因个人原因被刑拘，其子王晓松接任
8 涉暴力冲击香港立法会，12人已被警方拘捕
9 茅台集团高管大洗牌细节：8人职务调整，李静仁成二号人物
10 法治的细节丨怎样区分强奸罪与猥亵儿童罪？

热话题
一天 三天 一周
1 我是中国地震台网中心研究员孙士鑫，四川为什么地震频发，问我吧！
2 我是多家高校、众创空间的创业导师，关于企业融资、创新创业的问题，问我吧！
3 我们是上海市城管局，规范垃圾分类的强制措施是什么，问吧！
4 我是隋唐史研究专家于赓哲，唐长安城百姓生活什么样，问吧！
5 我是波士顿大学人类学博士梅静秋，怎样才能让大学四年不白读，问我吧！
热门推荐

法国哲学家贝尔纳·斯蒂格勒。

在淘宝、京东、滴滴和优步主导的世界里，我们不光成了木偶，而且正在成为停不下来的像扫帚柄那样舞个不停的魔法师的学徒。我们人人都是数码稻草人，把我们自己都吓着了。那个“我们”不见了。稻草人般被安放的我们则被迫呆在这里，一定是有目的的，但我们自己却是不知道的！而且那肯定也不是上帝的意思！人的全部活动被网格化。人人还都很贱地通过用户界面，将自己当猪头那样挂网上去呢。就连我们脑中的“available brain time”也无偿交了出去，给电视节目的广告商去开发。但我们不应被这种现象吓坏，而应将它看作是一种人的吸纳和排毒过程，是青蛙吞蛇。

就像我们的微信“朋友圈”的扩张。它比电视更使个人被广泛地共时化（被夺走那些无名地湮没的“间歇”）。“中国好声音”里的选情正在代替观众个人的当天的命运曲线。过去是文化工业和节目工业来短路日常生活，架空我们的日常性和家庭性。今天，由于有了Facebook、微信等等，人人都不得不成为名人，被盯梢。而只有日常生活和家庭才能恢复我们无名。只有在那种无名中，我们的梦和睡眠，才能重新安详，走向丰足。但是，梦和睡眠到如今也成了我们与全球资本主义争夺的战场了。这是《24/7》这本书被这么多人关注的主要原因。离所有人的睡眠都监控（为了卖药或推销保险）的时代也已不远（在深圳已成立了几家睡眠监控的高科技风投企业）。

是的，你也看到了，到处，人际-社会关系被书写化，被程序化和节目化。数码监管、全球监视和政治、消费和日常生活的三层数码管治，已偷偷强压到了我们每一个人头上。而“监视和通过偷录的特务机构动员的数据的分析的最高级形式，正扮演着一个不可或缺的作用”（同上，59页）。

在二十世纪，我们是三八制，每周还休息一到二天，在今天“不是工人，而是整个人类必须三八制，不，24/7制了”，“在24/24或7/7式的主动市场里，全球的基础结构都是用来支持我们不停地工作和消费的”（13页）。

这是比福柯－边沁所说的全景监控还更“实时”的了！我们无法静下来细溯自己的个人化轨迹了，因为“已不可能小憩或暂停，来理顺长时段的投身或跨个人的计划”（56页）。

反过来，我们还得顺从于那一数码捕捉装置对我们的行为的要求：你不要弄得让我们找不到你好不好？还不快给我装上微信：“数码式操作期望个人预期和顺从于一定的行为标准，以方便被自动的运算系统实时地捕捉”（95页）。

这事的性质相当于将劳动程序对个人的要求，偷偷地强加到了每一个人的休闲生活和日常生活之中。

哪怕在非工作状态，个人生存也被书写化、语法化。运算的光速般的一般化执行过程，将我们的日常生活溶解到了那种被管理的生活之中：“我们的银行户头和我们的友爱，从此也是由同等的机械式操作来被管理。这绝对是剥夺了我们对生活的责任感”（72页）。

个人将自己的全部都交出去了。交给了市场？作者克拉里将影响中国改革开放之后的那种新自由主义经济发展策略，称为“反革命”。“文革”后，它被我们急急地硬是当救药搬进中国，所以，称它为“复辟”，也是一点不过份的。我们今天的梦和睡眠的越来越蚕食，克拉里认为，必须归咎到这一反革命复辟之上。

而今天我们通过手机正在经历的这一切，在1968年后，哲学家德勒兹早就已感受到。他发现，福柯的“规训社会”这一概念还远不能描述当时的社会状态。他认为，通过电视而进行的营销，更深入地控制了消费者的行为：电视代替学校，成了规训我们的更厉害的工具。 德勒兹称此为“控制社会的事件”。“事件”的意思是：某个状态并不是具体地发生的，而是隐隐地像一个黑洞那样地随时在架空、悬置我们。为了多卖掉商品，每一个销售员都在办公

室里像前来破坏人类生活的基础结构的外星人或黑客那样地颠覆我们的日常，修改和篡夺我们的公共空间里曾约定俗成的一切。

德勒兹当时曾提出了这样的对策："电视是新的"控制"权力的即时和直接的形式。为了进入对抗的核心，我们不得不发问：这一控制会不会被逆转，能不能被为对抗权力而追加的功能所钳制：通过发明一种类似于一种新的抵抗形式的控制的艺术？"（《商谈》，1996年，37页）

在今天，面对数码集权社会对我们人人的捕捉，斯蒂格勒提出了难度系数更大的要求：正因为数码工业的所有这一切会使我们压倒一切地无望，这是否也正有可能逼我们从这一事实的状态，也就是这一总体的瓦解出发，去发明一种超控制的艺术（ars de hyper-control）？它必须由这三种发明构成：器官式发明、编目式发明、增补式发明。我们人类从来都处于技术式成为的过程中，我们无暇去寻找和等待下一个技术进化的阶段，而必须在我们当前的行动中开始这三种发明。战略上，我们是能够以退为进的。是的，Google、Facebook、Apple和Microsoft这四驾前来摧枯拉朽的末日马车代表了一个新技术时代，但是"我们"正在其中开启另一个时代。不是我们被迫生活在他们的矩阵之中，而是它们有待我们去吸纳。"时代"在我们手里，每一个人的手里：每一个人都可以去开启一个新时代。因为，新技术的状态，就是人的状态。老的西方形而上学总是将技术当替罪羊，海德格尔、阿多诺和哈贝马斯仍都在压抑技术问题。克拉里显然也没有脱出这一在场神学的地基。

所以，我们一定要打破西方在场神学地来立足于我们时代：不是技术将我们带入巨大的危险，而是人将人带入了巨大的风险中。但这种面对技术后果时的勇敢的吃不了兜着走，才能使人成为人。而我们将成为什么样的人，我们事先一定是不知道的。

这是我能向看完克拉里这本书之后感到消沉和迫害的读者开出的一份乐观的处方。

不过，不要急，再问一句：这样的处方我们当真需要吗，如果我们能够积极地利用我们身上的一种伟大的能力，也就是做梦的能力的话？

对此，克拉里却下了这样一个悲观的判断："我们无法、没时间做白日梦了"（100页）。

而我们是从来都能做梦的，夜里的梦，白天的梦，都是不做都不行的。哪怕旧石器时代的人类，也是生活在他们的梦里的。法国考古学家阿则玛（Marc Azéma）在2011年的《电影的前历史》一书中考察了旧石器时代人类的生活场景后，认为旧石器时代的人类就能做强大的梦，是生活在梦境中，也就是说甘愿去演自己纺织的梦。他写道：

人类从来都是做梦的。它与很多种动物分享这一官能。但它的大脑是一架会生产出远远地更进化的图像[…]，能在人的身外投射出它内部的"电影"（《电影的前历史》，2011年，21页）。

我们做梦，就像是在器官之间剪辑和放映电影，身外的日常场景，是我们的梦的投射。像电影这样的媒体，应该来帮我们做梦才是，而不是来替我们做梦、硬要将工业制造的梦塞给我们，后者正是万恶的好莱坞对我们构成的真正威胁（阿多诺对电影工业和一般的文化工业的批判，斯蒂格勒认为，是没有瞄准对象的。不是像阿多诺和霍克海姆认为的那样，电影应该走艺术和批判的道路，不要商业电影，而要艺术和进步电影，也是不够的。真正的问题在于：艺术电影也是对于个人器官之间剪辑、放映的电影的短路。个人是自己会弄电影的！好莱坞只能是向他们提供一点材料和助剂而已！）。我们的器官之间就能剪出电影，就能播放电影。电影从来是我们自己给自己制作的，因为那是我们自己的梦。生活总是关于电影的（la vie est tourjours du cinéma），正因此，"我们热爱生命，才总是去电影院看电影"（斯蒂格勒，《技术与时间－III》，2011年，40页）。对于二十世纪之后的人，生命是靠电影给挂着氧气的，而梦是那氧气瓶。

而梦的能力，是思想的根源。器官术也是由实现梦的能力构成：器官的那些失去的功能和正在到来的功能，成为梦，总萦绕着它，我们的发明，就是基于这种萦绕，这也就是斯蒂格勒要我们主动去动用"器官术"的意思。去做能实现的梦，就是在发明。做梦的能力是技术、思想和艺术的条件。

克拉里自己并没有说，但我们可以替他说出来的一个很重要的使命是：今天，只有我们身上的梦的能力，才能打败这个将我们捆绑得日益紧的自动社会了！只有梦才能逆转这个盲目和致命的必然了！必须保卫我们的睡眠！必须保卫我们的梦！

克拉里说的"24/7资本主义"就是数据的运算、自动或互动并即时捕捉踪迹式的经济。它正在替代或架空我们人人身上和整个社会的利比多经济。如果继续沉迷在像微信和朋友圈这样

的梦幻般的数码绝缘装置内不能自拔，我们迟早会撞到这一致命的瞬间：冲动的最底处只剩下死的冲动和生的冲动之间的不可反复的嬉戏。这是弗洛伊德早就警告过我们的。

对什么应该要，什么应该拒绝，克拉里有发自冰水一样的理性的严格的甄别：

我们的生命策略必须是："将技术从那些关于快速、积累和虐乐的逻辑中解放出来"。

同时，克拉里还向我们提出了一个严肃的任务："如何在世界的落寞中继续做人"？

世界的落寞，这一说法来自荷尔德林和海德格尔，意境是，神退场后，人的世界黯然失色。"继续做人"的意思很显保守！意思难道是：守住人的条形码，不把自己做丢、做乱了？这个说法很有问题，与我们的新科学正在告诉我们的人的状况不匹配。古人类学和今天的分子生物学都在告诉我们：并不存在原初的人的本基的。只有一代代、一批批被技术塑造过的不同阶段的人！进化的前路，也是莫测的！哈贝马斯至今仍认为，人受技术刺激却被机器控制，就会成为机器要我们成为的人。不守住人的自然底线，人会最终搞得自己都不能识别自己。斯蒂格勒认为，哈贝马斯的看法是错且冬烘的。海德格尔和马尔库塞也都一样，都将技术当成了替罪羊。技术是人本身（Alors technique est le propre de l'homme）!技术的当前状态，就是人的当前状态。技术与人的关系就像雨伞的伞骨和伞布之间的关系。克拉里的上面这一号召，也是落在这一西方形而上学对于技术的长期压抑倾向之内的。"我们"是通过技术而使每一个我变成"我们"的，再在"我们"之中完成跨个人化，在集体中实现自己的独特的。技术的全部可能性就是人的全部可能性。在这样的大是大非上，斯蒂格勒对技术与人这一问题的思考，是我们最重要的参照。

"24/7资本主义"不光在剥夺我们做梦的权利，也将我们的生活弄成了电子监狱。怎么办？

德勒兹在评论瓜塔里的社会改造计划时，轻松地向我们暗示了这样一种操作可能性：重点不是换梦，而是交换生活，交换生活场地：

都用不着写成科幻小说，我们就能知觉这种控制的机制。它在每一刻都能敲定一个公开的场地上某一个成员的位置，就像定位保留地里的动物的位置、一个企业里的人员的位置。瓜塔里曾想象过这样一个城市:每一个人都能出离自己的住址、街道、区域，通过一张个人电子卡。这张卡可以每一天都被重置，或在某几个小时内做到这样。这时，重要的就不是它能锁住什么，而是计算机如何将每一个人安排到了哪里，合法或不合法地，以便达到了普遍的转换（《商谈》，同上，246页）。

瓜塔里长期担任一家心理诊所（La Borde）的领导，实验过大量的将治疗和社会改造结合到一起的方案。像所有瓜塔里的发明式思想跳高一样，上面的这个方案简单而激进！试想，在上海，如果我们每一个人没有一天是睡在自家的床上的，每天不得不回到不同的家里，这将是一首多么空前的史诗！在我们时代是能做到的啦！那样的话，我们还需做梦？这就是做梦了！生活就是梦了！要与全球资本主义系统下的这个淘宝和京东决裂，还有哪一种办法能像第二天早上让所有快递都无法送及或全部送错那样，更让人全身狠狠打个激灵的？你要好好想想：与这个滴滴和优步试图控制的自动社会决裂，其实也是我们一念之间可以作出的一个史诗般的小行动，而后者则完全可以是我们人类在一场超级革命后开始的一场全新游戏。而放弃这个被男女关系、银行户头和家用电器密实控制的小区里的抽屉那样的家，真有那么难吗？

暂时甩不掉"家"这个包袱，是我们没出息，但个人的感知性存在必须有间歇，这是人类的千古法则。社会生活必须有间歇。庄子必须有时间梦蝶，或让蝴蝶能梦到自己是庄子。在今天，我们人人都应争取庄子的这份权利。我们有权做梦，也同时有权做我们自己的梦里的主人公。这样，这个"24/7"式的自动社会最终才无法吃定我们。我们人人仍都可以成为庄子，将这个车水马龙，哦不，"24/7"的自动社会，当成像一根闹钟发条那样的东西，冷落到生活世界的角落的。必须的。

越是身处日常生活的自动化，瓜塔里这样的思想英雄的理论式实践，就越显得可贵。理论知识，在这个自动社会里，与制作知识和生活知识一样重要了。只有先有理论知识，我们才能找到把手和扳手，脱开这个失去刹车的自动社会的离合器。克拉里的这本书，许多和沈清的这本译文，笔者和读者们的接续讨论，也因此显得是更庄严的理论工作了。但我们仍要提醒自己：不要认为理论思考和写作讨论就是多么高尚的战斗，在这个自动社会里，那也只是落水后的挣扎。理论知识在这个自动社会里，正成为像侦察兵制作作战图那么重要的事。但这一任务感，对我这样的理论虫，仍不失为一丝好消息！也许算是克拉里说的"虐乐"的一部分吧。预祝大家的阅读恐怖、爽利！

关键词 >> 24/7,斯蒂格勒,乔纳森·克拉里

相关推荐


不睡觉的世界：睡眠如何被资本主义谋杀


这些电影中的科学幻想，在我们的生活里悄悄实现


人类的工作时间并没有增加，为什么大家都觉得忙?

评论 (59)

热评论

LinboX 2015-09-20 10 | 回复

陆兴华的东西实在不好读，读的时候明显感觉语言是思维的牢笼，不过至少技术与人的关系的立场主旨还是明显的。。。

专治各类不服 2015-09-20 6 | 回复

天哪 这是疯子写的文章嘛?

迷方之旅 2015-09-20 3 | 回复

求助!!!
本人是真心求助，我的家庭是会维权到底的，请版主、编辑不要禁我的账号和帖子。此信涉及西南大学招生、就业、学术等腐败问题。请有识之士将此信递交中国高层。请关注本人博客:
http://d-t-d.blog.sohu.com
http://blog.sina.com.cn/u/5482141571

新评论

2015-09-26 0 | 回复

看得越来越快，要走啦!

2105710741 2015-09-21 1 | 回复

陆老师的文章，真的不难懂，跳出惯常思维和在场形而上学，你就明白了。

1539458931 2015-09-21 1 | 回复

好的哲学家能把的道理讲得简单，这篇文章不是给我们澎湃的读者看的，至少是大多数读者。

paul 2015-09-21 0 | 回复

仅仅是猜测 作者想说的是 —
我们的生活未必像克拉里所说的那样绝望， 以至于连梦境都被资本主义的思维逻辑所控制 （虽然表面上看起来是这样滴）。 相反， 从德勒茨（Deleuze）的时间哲学上来看， 我们当下的生活可能比任何一个时代都更加接近梦境， 因为不断地创造新的事物本身就和做梦没太大的区别。（但是前提是你必须了解时间是怎么一回事儿）。
但是从德勒茨到斯蒂格勒这个跨度有点太大了 — 这得让读者看多少书才能看懂你的评论。
瓜塔利的想法牛逼 — 每天不同的空间蹿来 （any-space-whatever）是吧， 虽然这个想法确实是把时间的创造性无限的发挥，但是我猜记忆本身是不是也将被全部摧毁? 对啊，真真是活在梦里了— 所以不辨东西不分南北， 还有点禅宗的意味哈。 可我真不认为这是件什么好事儿。


我想我在 2015-09-21 0 | 回复

无法看完


铁马书生走天涯 2015-09-21 0 | 回复

痴人说梦

ovsjsvo 2015-09-21 0 | 回复

牛C!


yliv 2015-09-20 0 | 回复

太、太深奥了！！


damon2150 2015-09-20 1 | 回复

还在担心血与铬共存的问题，早有人连肉体都不想要了

梦 梦学 清醒梦 (lucid dream)

关注者 4,570 被浏览 926,363

如何更好的做清明梦?

如何梦中知梦，也就是清明梦?

139 个回答 默认排序

知乎用户

3,858 人赞同了该回答

更新一下，有可能文章的内容比较乱，所以我在文章结尾处加了一个做清明梦的步骤图，希望能够帮助到大家。

题外话:

做清明梦的途径很多，想必题主已经在各种贴吧论坛上看到了形形色色的方法。

但很多理论的主观性太过强烈了。

每个有经验的人都变成理论的编撰者，经验的缔造者，大家都习惯从自己的角度去看问题，总结问题，更喜欢给自己总结出来的问题归纳出一套冠冕堂皇的体系，大有"那是我自己发现"的感觉

于是，本来应该是普遍，客观，简单的东西，被变成特立独行，主观，复杂的东西

这让许多想接触清明梦的人困惑不已，同时也拉拢的大批被玄之又玄理论蛊惑的拥趸者

什么梦屏啦，扳机啦，高灵啦，太玄经啦.....

而对于新手来说，在咨询庞杂的清明梦理论中，找出最本真的，最简单的，最普适的规律和联系，才会少走很多弯路。

只有解决了认识清明梦的问题，掌握原理，才能开发出有效的适合自己的工具。

下面来分享一下我根据各种前辈的经验总结出来的关于做清明梦的方法（里面会有一些简称，只是为了叫起来方便，请读者见谅），尽量解释最本质的原理而少添加主观的内容，让大家更能清晰地理解掌握清明梦。

补充一句：从学术上讲，清明梦涉及到心理学、哲学、玄学、医学等学科，而本人对这些学科是各种憧憬、向往加喜爱。但是一直没有机会接受系统的学习。所以下文中出现的一些不专业的描述，请各领域专家见谅。如果可以的话，也想和各路神仙交流一下，如果才能半路出家系统地专业地学习心理学、哲学的知识。

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一、概念

简单地说，清明梦的概念包含两大类:

1.知道自己在做梦（简称知梦）
2.自己可以控制自己的梦（简称控梦）

二、原理

心理学家弗洛伊德认为，梦是潜意识欲望的满足，人在清醒的状态中可以有效地压抑潜意识，使那些违背道德习俗的欲望不能为所欲为。但当人进入睡眠状态或放松状态时，有些欲望就会避开潜意识的检查作用，偷偷地浮出

百科

相关问题

清明梦对人有害吗? 21 个回答
清明梦联机可能实现吗? 15 个回答
该如何看待"清明梦"? 17 个回答
睡前做什么可以做清醒梦? 7 个回答
在清醒梦里怎样能主动醒来? 28 个回答

通俗地讲，人脑白天活动是受显意识的主要控制。如下图：

夜晚做梦的时候，人脑则受潜意识的控制更多，如下图：

而清明梦，正是在夜晚做梦的时候，你的大脑显意识和潜意识势均力敌（如下图），

在这种情况下，

如果显意识稍微占据一下主导地位，那呈现在人脑的活动便是**你醒来**，
如果潜意识稍微占据一下主导地位，那呈现在人脑的活动便是**你睡去**。

所以可以说，清明梦是大脑介乎于显意识和潜意识相互作用下的一种状态。

三、方法

知道了原理和概念，就很容易能找出想达成目标的最根本方法：

想做清明梦，只要能够在做梦的时候，知道自己在做梦（唤醒显意识，并与潜意识保持平衡），并进而控制梦境，那你便成功地进入清明梦世界。

所以总结下来，想要做清明梦只要按顺序完成能下面三个步骤即可：

要做梦
↓
会知梦
↓
能控梦

练习做清明梦要做好长期坚

这是因为：

1.清明梦对于一般人而言是一个高门槛的"游戏"，不是一蹴而就的事情。同时下面也会提到一些联系清明梦的方法，是需要时间积累才能看到成效的。

2.不是每个人都能随意做清明梦，这个需要天时地利人和才可以，有些时候身体状态不好就不适合做清明梦（比如说因为工作太累，回家倒头就睡到天亮之类的）。

下面说一下步骤：

- **首先，要做梦**（经常做梦的人就可以跳过这一段）

很多人说"我睡觉从来不做梦"，要打破的就是这种思维模式：你并不是不做梦，而是忘记了（原因可以自己百度，这里就不详细说了。）

那我们要做的就是要保持对梦的**警觉性**，可以从以下几点入手：

→作息规律，保持充足睡眠

→睡前对自己做心理暗示：**我一定会做梦**（在做心理暗示的同时，尽量回忆之前做梦时的感觉，和曾经梦过的场景）

→醒来后不要着急起床，迅速拿一个笔记本，尽量回忆刚做过的梦境，并详细地记录下来。（记梦，对于练习做梦以及练习清明梦的作用都很大，所以需要坚持）

→每天睡前，以及有空的时候就拿出笔记本，回忆当时做梦的感觉。

→睡回笼觉（一般睡回笼觉做梦的概率会高很多）+自我暗示

→利用睡眠周期，即快速眼动期来获得更高的做梦概率（下文会提到）

- **其次，会知梦（*此步骤对于做清明梦来说非常重要*）**

【在说知梦前，需要先告诉大家一个概念：**验梦**】

验梦就是验证梦境，即判断一下自己到底是不是在做梦。

验梦对于清明梦来说非常重要，而且作用也很大，主要体现在以下三个方面：

1.防止你在梦中以为自己是在现实中

2.帮助你练习知梦（这个下文会说到）

3.防止假醒被骗到（大家有没有过这种情况，在梦中醒来，结果却发现还在做梦，再次惊醒，这次才是真正清醒。如果掌握了验梦的技巧，在第一次假醒的时候就及时验梦，知梦的同时还可以避免假醒，一举两得。）

验梦的方法，前人的总结出最行之有效的方式有三：

1.梦中捏鼻子，如果能呼吸，就是做梦

2.梦中扳食指，如果扳食指能挨到手背，就是做梦（请不要再评论"扳手指我醒着的时候也能做到"了.我们都知道你骨骼惊奇，恩。）

3.梦中咬手指，如果咬手指能完全咬下去，你的上牙和下牙能碰在一起，就是做梦

注意，每次验梦的时候不要只使用其中一种，最好三种都试一遍，因为有时候可能不奏效，但是三种都不奏效的概率非常非常小。

同时提醒大家，验梦是清明梦非常重要的一个技巧，一定要养成习惯，随时随地验梦，醒来验梦，白天没事的时候验梦，把验梦当成一种习惯。

要求你这么做的原因，其实你在梦中验梦的概率，进而

怎么理解呢？举个例子：

上文不是提到要养成记梦的习惯么？比如我已经记录了我的10个梦境，并且会时不时的回顾这些梦境的记录，我会发现这些梦境中的一些共性。

比如，我会发现我的每个梦境都会梦到"女人"，或者说"女人"在我梦境中的出现率很高。

那当我在现实中看到"女人"的时候，我便会下意思地捏鼻子或扳手指验梦，同时自言自语：我是不是在做梦？如果捏鼻子能呼吸（扳手指成功），就说明我在做梦。

当我养成"看到女人就验梦"这个习惯之后，在梦中遇到女人之后下意识验梦只是早晚的问题了。

于是，你便成功的知梦了。

这也就是记梦和验梦的重要性的所在了。

【然后再来说说**知梦**】

知梦，即在梦中唤醒你的显意识， 知道自己在做梦，在这里，**保持警醒**和**养成习惯**尤为重要：

→作息规律，保持充足睡眠

→睡前对自己做心理暗示：**我知道我在做梦**（在做心理暗示的同时，尽量回忆之前做梦时的感觉，和曾经梦过的场景，带着这种暗示入睡）

→醒来后马上验梦

→醒来后不要着急起床，迅速拿一个笔记本，尽量回忆刚做过的梦境，并详细地记录下来。（**记梦**，对于练习做梦以及练习清明梦的作用都很大，所以需要坚持）

→每天睡前，以及有空的时候就拿出笔记本，**回忆**当时做梦的感觉。

→**睡回笼觉**（一般睡回笼觉做梦的概率会高很多）+自我暗示（即我知道我在做梦）

→这个我在上文中有提到：在白天的时候，反复验梦，养成习惯。这么做的原因，是为了把验梦的习惯带入梦中。具体的做法举个例子：每天养成**记梦**的习惯 ⇒ 每天都看记梦的笔记本，**回忆**之前做过的梦 ⇒ 在现实生活中碰到曾经在梦中出现或发生过的意象和情景，比如你喝水的时候想起来曾经梦见过自己喝水 ⇒ 从**心底产生怀疑**，问自己：**我是不是在做梦**？ ⇒ 下意识地**捏鼻子验梦** ⇒ 养成习惯 ⇒ 晚上梦见自己喝水，从而产生怀疑：**我是不是在做梦**？然后下意识地**捏鼻子验梦** ⇒ 成功知梦

→利用睡眠周期来实现人工干预知梦（此方法有影响睡眠的危险性，建议慎重尝试）。人正常的睡眠结构周期分两个时相：非快速眼动睡眠期（NREM）和快速眼动睡眠期（REM）。NREM与REM交替出现，交替一次称为一个睡眠周期，两种循环往复，每夜通常有 4~5个睡眠周期，每个周期90~110分钟。下图便可解释我们的睡眠周期规律（每个人的睡眠周期都不太相同，只能作为一个参考）：

其中sleep stage代表睡眠阶段，国际睡眠医学将睡眠阶段分为五期：阶段1--入睡期、阶段2--浅睡期、阶段3--熟睡期、阶段4--深睡期、快速眼动期。

由于REM是最接近显意识与

我们要做的便是人工干预进入REM，通常的做法是使用闹钟。比如：10点入睡，把闹钟设定在4.5小时之后，依照上图看也就是第三个REM，被闹钟闹醒之后，起床上个厕所，溜达溜达，确保自己完全清醒。然后再次上床入睡，同时对自己施加心理暗示：我知道我要做梦了，带着这样的念想进入梦境，随后验梦知梦。

- 最后，能控梦

做清明梦的最终目的，就是能够掌控属于自己的梦世界。但是知梦并不代表就一定能控梦，因为很有可能一知梦，就马上由清明梦变成普通梦当中。所以可以说知梦是技巧，控梦是学问。

控梦的中心思想主要体现在三个方面：

1.延时，即能够获得持续且稳定的清明梦

2.在保持1的状态下，自如地主宰自己的梦世界，即控梦。

3.对假醒保持警惕。上文提到了，知梦后，或者做梦时的突然醒来有可能是假醒，记得醒来一定要验梦

下面就1、2两点细说一下

第一点：获得持续且稳定的清明梦，说的简单一点，中心思想就是保持显意识和潜意识的平衡。

而达成这个目的的方法就多种多样了，比如：

→感觉自己马上要睡着了（潜意识要占主导），就思考一些简单的逻辑问题，比如做简单的加减法，一直搓手，摸地面等获得稳定不间断的触感，一直验梦，告诉自己在做梦

→感觉自己马上要醒来了（显意识要占主导），就全身放松，把思想全部投入到梦境中，或者干脆放松意识，让自己跟着梦境走（这个比较危险，容易瞬间变成普通梦），还有一些经常做清明梦的高手，会总结出一些比较奇怪的但行之有效的方法，我听说过的比如"梦中吃人"，"找一个井盖，打开后跳下去"

第二点：控梦

很多新手，在知梦后就开始兴奋，急于控梦，这样很容易造成显意识占主导地位，从而醒来。

所以切记不要着急，等能获得持续稳定的清明梦境后，再尝试控制自己的梦。

而控梦的中心思想是：只有你想不到的，没有你做不到的

没错，因为是梦，你可以在自己的梦中为所欲为，做任何你想做的事情。控梦的关键在于，你要用你的意念力去想，这是需要你在清明梦中锻炼的。

比如，你想飞，那就可以来个助跑，然后起跳的瞬间，用自己的意念力去想象飞行的感觉，或者模仿超人飞行的动作。

比如，你想穿墙而过，那就可以想象你穿墙而过的那种触感，可以是水，可以是沙子，可以是一片虚无，然后带着这种想象去做穿墙的动作。

控梦，就是发挥自己的想象力，这个在《盗梦空间》中被发挥的淋漓尽致。

能够顺利到达控梦的环节，基本上可以说你已经掌握的清明梦，接下来就尽情享受清明梦带给你的乐趣吧~

最后，我总结了一个做清明梦的步骤，也算是归纳一下上文的中心思想。

尽量多做普通梦
↓
把梦记录下来

↓
每天时不时的回顾做过的梦
↓
白天进行验梦练习
↓
睡前尽量回顾之前做的梦，以及做梦时的感觉，同时睡前暗示自己：我会做梦，我要知道我在做梦。
↓
入睡后做梦
↓
梦中验梦
（或）
假醒后验梦
↓
知梦
↓
控梦
↓
清明梦中撒欢~

另外，介绍一个清明梦的进阶玩法：鬼压床

关于鬼压床转清明梦的介绍，我在另一个问题中已经回答，有兴趣的朋友可以去看看

鬼压床怎么破？ - 知乎用户的回答

这又是另一个坑了，不过还是要祝大家玩的开心！

编辑于 2018-09-29

Ukey
忙完这一阵子就可以忙下一阵子了.....Σ(￣。￣/)/

367 人赞同了该回答

本人小时候身体很不好，常常生病，容易做噩梦，有一次和小伙伴看了鬼片....更是做了一个月的噩梦，晚上常常醒来，彻夜睡不着，要爬到父母床上才敢睡...但是阴差阳错的发现学会了清明梦。（背景交代完）

后来回想过是怎么学会的，纯粹自己总结，希望有帮助。

首先，本人在生活中有一个习惯，本人小的时候（大概小学吧，本人93年出生的）非常喜欢打星际，打过星际的人都知道如果按键盘左上角的“Esc”，就会弹出个菜单栏，里面可以选择保存、退出之类的，同时，游戏也暂停了。

在那段经常做噩梦的时间里，我清楚的记得我只要一做噩梦，就会下意识的去按"Esc"键，就像游戏一样强迫当前场景暂停，然后立刻退出。可能题主会问，你难道做梦的时候梦里面还带个键盘么...搞笑么你...其实不是的，噩梦发生的时候，本人第一反应就是跑、躲避（相信大多数人也是这样子的），但是发现身后就是一堵墙（打个比喻），退无可退了，就会感觉自己像是在游戏里，镜头拉远，拉出显示器，自己坐在了电脑面前，狂按"Esc"，最初的时候还有效果，能够顺利推出，也就时候从噩梦里面醒来，但是这样多了以后，发现无法从噩梦里面脱身出来，不管怎么按那个键都无法暂停弹出菜单栏，更别说去选择退出了。头几次心理压力极大，也不知怎么醒来的，但是醒来后发现已经汗湿了枕头，于是回想噩梦，发现自己以前是通过像退出星际那样从噩梦中醒来的，**心理暗示自己：如果遇到危险，并且按"Esc"键不管用的话，那么就说明是在做梦。这个心理暗示的过程务必要强化，在睡前要时刻提醒自己。**之前在背景中已经说了，我做噩梦差不多持续了一个月，所以在期间，我睡前就已经想到了今晚是不是可能又会做噩梦，如果做噩梦，就按照心理暗示的那样子来告诉自己。果然之后再出现这种做噩梦，按键不管用的情况的时候，突然自己就想起了之前暗示过的话（其实也有点不算是想起，就像本能，就像二选一，按不出菜单栏，就是在做噩梦了），终于在噩梦中思考到了一件事：我这是不是在做梦？之后很顺利的发现自己是在做梦，此时，你就是GOD的，在刚刚开始的时候，只是会满足于顺利摆脱了噩梦，但是，越到后面越发现，自己可以几乎“为所欲为”，这种能力延伸开来，我既是不做噩梦，只要是梦，几乎只要我愿意（本人有的时候更喜欢真的就是随心所欲

景的梦里面意识到自己是在做梦（同样，心理暗示不可少，在梦中可以反问自己"我这是不是在做梦"）。在前期，我还要依靠按键来区分，到中期我省去了这一环节，改成了反问自己"我这有没有可能是在做梦？我这是不是又在做梦了？"这是一个过程，需要进行自我反问，否则感觉无法进入清明梦，到了后期，我几乎可以不用反问，直接意识到这就是在做梦，这是一个需要积累的过程。

通过我的这个情况，我们来总结几点：

1.务必要选择一件现实生活中的必然事件，但是在梦境中可能无法实现的事。我选择的就是在打星际的时候按"Esc"键会暂停，可以退出游戏。（其实这也不是很我选择的，有点感觉是被动选择的，纯粹是因为我大脑觉得退出游戏=从噩梦中醒来）但是在梦境中，会发生按键不灵...无法暂停的尴尬。
这时题主可能会要经历比较痛苦的过程，心理压力很大，尤其是在梦中，本人是能够直接感受到死亡带来的恐惧。但是熬过去就好了。
当然咯，这痛苦过程可能因人而异，也许题主并与不需用做噩梦这中下下签的方式来学会清明梦。

2.务必要进行心理暗示，最好是能够二选一的那种暗示，即如果不是这样，那就是在做梦。本人即通过"如果狂按键不灵，那么就说明我是在梦中"。这个过程会要一点时间，暗示越强，次数越多，效果越好。这里就牵扯到了第一点，之所以能够进行二选一，那事因为选择的事情在实际生活中应该是必然事件。这做梦期间会发生很多奇怪的事情，你要告诉你自己这些奇怪的事情（不符合逻辑，不符合自然规律，不符合实际生活的事情）其实就是在提醒你自己**"你特么在做梦！！！"进而进行反思"我特么这是不是在做梦？！！！"**

3反复练习，反复暗示，反复回忆前一天晚上做过的梦，强化它，清晰它。本人在做完噩梦醒来后，都会回想，不然怎么会记得梦里面我是用按"Esc"键这么中二病的方式来从噩梦中醒来的呢？然后再在实际日常生活中有意无意的回想这个退出的过程（或者是激活第二点的过程）。

4.12点钟前务必睡着，一天不要太疲劳。经过本人长期探索，发现至少自己是如果在12点之后睡的话，清明梦出现的概率大大降低，太累了的话，直接就睡死了.....这一点可能与人体有关，这个本人也不是学这一行的，所以就不解释了.....

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发布于 2014-04-14

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蒋以瞳
INTP/黄巾军/魔法师

106 人赞同了该回答

无术语，尽量写的亲民。我从小学几乎每天做这样的梦开始，到如今因为学业压缩了睡眠时间所以频率低了一些，也有十多个年头了，做过的清醒梦不胜数.....我也听说过梦吧，但里面的贴子难以苟同，包括这个分类的许多看起来很专业的回答，我也难以苟同。本人不接受撕逼。一来，你坚信你的梦是如何的，你的梦境就

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景的梦里面意识到自己是在做梦（同样，心理暗示不可少，在梦中可以反问自己"我这是不是在做梦"）。在前期，我还要依靠按键来区分，到中期我省去了这一环节，改成了反问自己"我这有没有可能是在做梦？我这是不是又在做梦了？"这是一个过程，需要进行自我反问，否则感觉无法进入清明梦，到了后期，我几乎可以不用反问，直接意识到这就是在做梦，这是一个需要积累的过程。

通过我的这个情况，我们来总结几点：

1.务必要选择一件现实生活中的必然事件，但是在梦境中可能无法实现的事。我选择的就是在打星际的时候按"Esc"键会暂停，可以退出游戏。（其实这也不是很我选择的，有点感觉是被动选择的，纯粹是因为我大脑觉得退出游戏=从噩梦中醒来）但是在梦境中，会发生按键不灵...无法暂停的尴尬。
这时题主可能会要经历比较痛苦的过程，心理压力很大，尤其是在梦中，本人是能够直接感受到死亡带来的恐惧。但是熬过去就好了。
当然咯，这痛苦过程可能因人而异，也许题主并与不需用做噩梦这中下下签的方式来学会清明梦。

2.务必要进行心理暗示，最好是能够二选一的那种暗示，即如果不是这样，那就是在做梦。本人即通过"如果狂按键不灵，那么就说明我是在梦中"。这个过程会要一点时间，暗示越强，次数越多，效果越好。这里就牵扯到了第一点，之所以能够进行二选一，那事因为选择的事情在实际生活中应该是必然事件。这做梦期间会发生很多奇怪的事情，你要告诉你自己这些奇怪的事情（不符合逻辑，不符合自然规律，不符合实际生活的事情）其实就是在提醒你自己**"你特么在做梦！！！"进而进行反思"我特么这是不是在做梦？！！！"**

3反复练习，反复暗示，反复回忆前一天晚上做过的梦，强化它，清晰它。本人在做完噩梦醒来后，都会回想，不然怎么会记得梦里面我是用按"Esc"键这么中二病的方式来从噩梦中醒来的呢？然后再在实际日常生活中有意无意的回想这个退出的过程（或者是激活第二点的过程）。

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稀奇古怪的"理论"污染我的梦境。如果和我讨论，我还是很乐意的，但请不要用太多术语，我看不懂，也许看到过，但有意忘记了，有些东西，忘掉比较好……

首先，明确一点：梦是你脑海中的意象，它受你控制。你相信是如何，它就可以是如何。

看到了一些所谓"验梦的手段，比如说扳手指。虽然我不太认可，**但如果你坚信这一验梦手段，它就会在你的梦里有效。但千万不要曲解成有什么规则规定了梦里的手指就应该如何如何，**这只会让你和梦境的本质渐行渐远……你坚信咬手指会痛，又没有听说过咬手可以验梦，在梦里你咬手一样会痛……但我觉得，**你可以独创一些自己喜欢的验梦手段。** 验梦并非本文重点，但看到很多人都在纠结验梦问题，**我会在回答的最后着重讲一下。**

梦境和想象力、意志力息息相关。所以最根本的提高梦境质量的方法，就是**多想。**可以是思考一个哲理，思考一些琐碎的事物给你什么启示，也可以是YY一部大电影，但是要多想。此外，如前文所提，你想的要尽量生动、翔实。另外，你需要多观察。我发现长大之后，大家看东西越来越蜻蜓点水，风景往往是拍个照就过去。观察能力可以从一些简单的训练开始。比如说，趁着春光灿烂的时候，走到室外，观察你身边的一丛小树，仔细看它的叶子，叶子的纹路，看花是如何生长的，云云。仔细体会吹在身上的风，皮肤的触感。仔细体会你听到的东西。也许你会有一些新的发现，当然没有的话也没关系。**平时记得多静下心来看身边的事物，或者静下心想点东西，一来你的专注力有所提高，二来你脑海中能构造的画面也就具有更多细节。**有的时候，你看了一部电影，或者一部小说，因为剧情或者画面，你的身心都投入了进去，然后做了相关的梦，这其实也是你思考的体现。所以，平时多看点书，或者有意义的电影，甚至打一点（我很喜欢的）高质量RPG游戏。也可以多花一些时间，多去回想经历过的事情，或者看过的电影，也可以在脑海中讲看过的小说重构成画面，可以一遍遍地来，尽力让它们生动翔实。也许你会和那些人物们一起哭，一起笑，静下心思考个中滋味，你的思考的能力也在同时得到了提升。引用《龙腾世纪》里面的一句话：**你想做有趣的梦，你得先成为一个有趣的人。**

接下来就是梦境的内容。你做一些关于平时生活的琐碎梦境，辨识的难度也就大大提升。但如果你所思所想都很有趣，平时为自己构想的有趣画面多了，你的梦也会受到影响。你的梦变得特别有趣的时候，察觉它也是水到渠成的吧……就算察觉不了，你的梦也会成为别样的体验。我今天这篇回答并不执着于发现梦是梦，而是更倾向于梦的体验。

保证睡眠。虽然我觉得这是句废话……当熬夜到3、4点，几乎就出现不了高质量的梦境了；而不熬夜，11点前睡觉，做梦的概率就很大。另外，**回笼觉也很容易出现清醒梦，**经验得知，不知道有什么科学依据，也许其他的回答能够给出。

保持自信。往往你相信会发生的事情，就会很快的反馈给你。比如做噩梦的时候，提醒自己：这是我的梦，我为什么会被这些怪物掌控呢？如果你在梦中担心这担心那，你的恐惧也会被体现出来，毁掉这个美好的梦境。尤其是清醒梦中，你完全不必要担心自己控制不住怎么办。**因为这是你的梦境，它属于你！**就算一下子没有控制住，也可以慢慢来。

不要着急。有一天做清醒梦失败了，或者控制梦却失败了，很正常。特别是刚开始练习，能成功哪怕一次，都是非常棒、非常珍贵的体验，可以说每次成功都能迈出一大步。慢慢来，保持自信。

不要迷信。很多人把清醒梦说的神神叨叨的，不是这样的！（虽然我是有神论者，虽然我相信梦可能会和超自然挂钩，但看他们忽悠别人就不对了吧……）梦是你脑海的活动，多正常、科学啊！说什么梦中灵魂会出窍啊，梦中见到的电话号码不能打啊，昨天看到几个人说梦中的交通工具不能坐，会把灵魂载到阴间的。我感觉我做了假梦……当然你非要信我也没办法……去周公解梦翻几个发财升官的预兆，然后练好清醒梦，天天梦一遍，醒来之后收获名利金钱事业地位，岂不美哉？本来以为是废话的，但发现很多人都处在这个误区。真的，我打这段话的时候，我都为自己着急……

控梦也是有一定技巧的，一般来说，现实中越少发生的事物，你在梦里也就越难捏造出来，因为你自己都不能信，也难以想象。凭空想象一个东西出现在你面前是很难的（除非你这个梦的设定是你具有凭空造物的能力）……因为你现实中从未见过这种事。如果你想要"变出"个什么来，你可以转过身，想着这个东西已经出现在了你身后。我常用的方法是想象它在我的衣兜（书包，抽屉……随你）里面，然后把手伸进去拿，实中，你从哪里掏出个东西

是很难的。你可以想着，某人现在在自己的家里/前面的房子里/等等，再前往那个地方。如果你不喜欢某个梦，想换一个，或者你想换一个场景...你可以闭上眼睛，集中注意力，想着你的下一个场景，再睁开眼（我的惯常做法）。这样总比你睁着眼睛想着它变换的成功率大一点... 我再举一个例子，就是比如说《哈利波特》这样的奇幻文学/电影，里面的特效也可以拓宽想象力。这些魔法，和各种各样具有特殊魔力的物品，也易于接受和相信。比如说，当你挥舞着魔杖念着咒语，你的潜意识也就更相信魔杖所指的羽毛可以浮起来。这虽然未必适合每一个人，但可以成为清明梦体验的第一步。

当然，如果你熟悉了自己的梦境，坚信自己有控梦的能力，也就谈不上什么技巧了，因为你的梦可以听你指挥了。这是最理想的情况。

多回忆自己的梦。醒来第一件事不要拿手机，先想想自己做了什么梦，最好能重头回想一遍。最好不要只概括或者描述剧情，而是回忆之前的画面，再体验一次。

讲的很散，但要点都在。我自己也没有很系统的可以介绍的"验梦"方法，而是像之前说的一样，因为想得很多，梦很有趣，也自然而然知道是梦。梦的可能性很多很多，也往往能拓宽你的思路。当你思考的多，你的梦也就会为你展示更多的宝藏。

梦境的真谛是助你更好地活着并理解这个世界。

17.2.23更新，重新梳理了下语言，改正错别字，希望能更加易于阅读。另外，很多人纠结验梦的方法，我就在这里着重讲一下。

我在某些回答和梦吧的某些帖子里看到了，说在梦中，靠着墙壁是可以穿过去的，镜子的倒影不会和现实完全一样，井盖都不是井盖，跳下去可以达到"鬼压床"状态，云云。我在这里，**表示反对！！实名反对！！**正如前文所述，梦境是你脑海中的意向。今天你做了个梦，梦见你被霸道总裁壁咚了，那这个墙壁肯定得是实实在在的吧？你不幸梦见自己是个掏粪工，那下井盖也是正常的行动吧？我自己比较害怕镜子，现实中照镜子都会心慌，所以梦中照镜子往往有奇怪的影像，但也有完全正常的情况。还是那句话，**验梦是个手段，但千万不要理解成是梦境的独特物理规则。**不过某些现象确实更加容易发生：你在梦中捏住鼻子，但现实中还在呼吸，结果你便能明显地感觉到这一梦境和现实的差别，从而知道是做梦。比起其他人的脸，你更难记住自己的脸，所以照镜子时，你的大脑一下子很难展现所有的细节。等等。只是**这些"规则"都是可变动的。**

有一种方法，是平时养成一些小习惯，比如在手上写字，有事没事看一看；或者没事就闭一闭眼睛，看看还能不能见到东西。具体可以见其他答案，我也不需要赘述。**这种方法就是让你时常能提醒自己去检验身处的环境，哪怕在梦中也会下意识地去查看，**从而发现是梦境。你甚至可以学习《盗梦空间》，随身带一个小陀螺，有事没事转一转。但是实际上在梦中，你的陀螺还是可能倒下，你只是需要在它转动时思考一下而已。

再比如，你比较中二，相信自己会上古卷轴抓根宝的龙吼（……）。请在睡前翔实地、生动地、有画面感地想象自己使用该技能的样子，并提醒、暗示自己，在梦中，你能施放该技能。如果梦到了，请回忆并强化这一画面，抓住这一次成功，更加反复地暗示自己能做到。久而久之，龙吼就可以成为你梦中的常规技能啦！

有些练习者可能会遇到这样的情况：陀螺突然找不到了，或者不管到哪都找不到镜子，找不到你要拿来验梦的那个东西。**这时候不要紧张，反问自己为什么这么反常，找不到要的东西，是不是做梦？**

我自己的方法可能更简单粗暴一点。。我很小的时候，特别喜欢会飞的一切，就希望自己也能做梦，梦到在天上飞。就一直提醒自己：下次做梦，一定要飞一下！于是，之后的梦中，我终于想起了这件事，跳了一下，就飞起来了。有时候没成功，有时候成功了。再之后，我就在梦中试图飞行，作为验梦的手段（大概吧）。**但久而久之，就完全不需要验梦了，做梦的话，就自然而然能意识到。**甚至大多数时候，我都没有刻意地提醒自己"啊我在做梦"，但我的行动还是按照知道是梦的行动来……

最后再说一下鬼压床吧。我真的很郁闷谁给它起了这么个名字，以致于我有段时间一鬼压床，就想到这个名字，就想到鬼，然后就梦到鬼了……完全不是这样的。**鬼压床只是个做梦的状态而已，而且应该是最直接、最容易发现的清醒梦了。**该状态下，请放松下来，直接想象你要的场景（因为你躺在床上，所以故事也是从床上开始），并继续下去即可，一般来说很快就能完全睡着了。如果不想要这种状态，我的解决方法一般是深呼吸，能够醒来。

我有阵子想试试鬼压床放弃挣扎会怎么样，会不会死。就完全放松，伴随着那种不舒服的感觉，一直落下、落下，然后特么的做了个全人类灭绝了全都下地狱的梦。。没有其他不适。后来就明白了，鬼压床直接放弃挣扎，马上就睡着了。

编辑于 2017-02-23

你好我叫小黄人
第一次学做人，学的不好请多见谅

87 人赞同了该回答

写在前面，这几年的经历下来，慢慢觉得控梦这个事儿其实就分两个画风走向：
1、一个是百度贴吧风格的神鬼向；
2、一个是心理学梦的解析、意识训练、以及自我觉察方向。

走过神鬼向，觉得不适合，而且方向不可控，未知多难度大还挺危险。
现在走心理学意识训练和自我觉察方向。
（当然取向这个东西因人而异）

所以这篇指导也是以心理学为基础来写的，不算全面，有问题也欢迎留言讨论。

开始正文：

很早以前就想整理一下这几年练习梦境控制的经历了。
主要这事儿太好玩儿，我这种以“有趣”为人生最高宗旨的人怎么会错过。

不过这事儿也并不止于好玩儿，梦境毕竟取材于潜意识，个人的也好集体的也罢，它其中蕴含的信息量是非常大的，接触然后解读，是更高层面的有趣，我无法抵抗这种诱惑。

本游戏适用人群：
1）电影、游戏、幻想小说爱好者：梦是你取之不尽的灵感源泉。
2）自我探索、好奇心重症患者：为你打开一扇新世界的大门。
3）心理学爱好者：梦对于心理学和个人成长的意义重大。
4）懒癌晚期和宅癌晚期患者：这是一件躺床上睡一觉就可以完成的事儿。

本游戏不适用人群：
1）精神障碍人群
2）失眠人群
ps，有严肃宗教信仰或对梦有特殊解释的人请酌情尝试

梦境控制，就是利用潜意识的意念植入，心理暗示，意念练习，达到梦中清醒的知梦状态，从而控制梦境走向，来体验日常生活中无法接触的奇妙经历：去想去的地方，见想见的人，打僵尸斗怪兽，上天入地穿越时空。在清明梦里，没有不可以，只有想不到。

解释一下
潜意识：梦境的素材库。人类头脑中无法被认知或认知不到的部分，包括各种记忆和情绪。它架构了你的梦境。
画一张图解释潜意识与人心智的关系：

我画的，冰山等于心智

下面开始介绍逐步练习的方法：

1）提高对梦的敏感度
首先：养成记录梦境的习惯。在床头准备纸笔，或者在手机下载一个带上传云端功能的APP（Evernote之类的，这样就不会有因损失手机而丢失梦境记录的遗憾了，说多了都是泪），尽可能详细的记录你所有的梦。原本多梦或很容易记住梦中内容的朋友可以省去这一步，但是我建议还是可以记一下，闲来无事翻看梦境是一件很有趣的事儿。

2）心理暗示+知梦意念植入
其次：这也是最重要的一步：一旦了解了清明梦和梦中知道自己在做梦的概念，其实意念植入就已经完成了，**你需要做的就是反复加强这种意念。**
比如：在日常生活中随时提醒自己："等等，我是在做梦吗？"把手机屏保，桌面，聊天背景，桌面便签设置成"我在做梦"的相关图片或提示。将随身饰物（戒指、挂件等）与知梦状态进行联接。
最有效的增强知梦意念的时刻：每天躺下将要入睡的时候，心中默念"我知道这是在做梦"，进行心理暗示，直至入睡，提升梦中知梦的概率。
另外，如果你有过打坐、冥想或者自我催眠的相关经验，在提升梦境清醒意识时也是有帮助的。

3）耐心练习
因为个人体质差异，达到知梦状态的时间长短也是因人而异的。**意念习惯的养成和任何实际生活中的习惯养成一样，都需要时间和练习。**慢慢来，比较快。

可以尝试的梦境实验：

为了避免初次尝试清明梦的同学在梦中"醒"来无事可做，太兴奋，直接真的醒了，我准备了几个自己尝试过的清明梦境实验，推荐给大家，希望能给大家一点启发。
（ps，这些梦境实验本身其实有比较强的精神分析导向，是加深自我了解很好的手段，建议试验成功的请详细记录下来，后期有兴趣可以自己找书解梦。不是周公解梦那种类型，是精神分析方向或是完型方向的解梦。可能会带给你不一样的认知体验。）

（1）感官实验：
嗅觉：在梦中深吸一口气，感受一下潜意识为你提供的100%还原的呼吸状态和梦境味道。我曾经在梦里闻到过凉爽的海风之味，并惊讶于自己潜意识的绝佳还原度。

味觉：随便找个什么东西吃，感受一下梦中食物的味道。实在没什么好吃的，从地上抓一把土也可以，之后你就可以去回答吃土是怎样的体验了。

触觉：摸一摸周围的建筑，地面，也可以左手摸右手。

痛觉：梦里的痛觉几乎没有，所以很多控梦玩家把痛觉当做检验梦境的一大法宝。不用有疑惑，咬自己一口或掐自己一把，发现不疼，太好了，你在梦里！

听觉：梦中的听觉还原度并不高，如果你想尝试开启听觉，你可能会听到你从没听过的天籁之音。而且人在睡眠中，听觉也是和外界有一定连接的。

视觉：梦境主要依靠视觉体

作用：感官实验可以帮你增加梦中的意识清醒程度，也可以促成你对于自己感官的全新体验。

（2）约会实验：
在梦中想着你想见的人，就在下一个转角，或者临街的某间店铺，或者隔壁房间，走过去，那个人就会在那里等着你。

（3）镜子实验：
设法在梦中找一面镜子，看一看潜意识中的你自己是什么样子。

（4）电话实验：
掏出手机给随便给谁打一个电话，也可以打给未来或者过去的自己。

（5）飞翔实验：
试着飞一飞，不行的话，找个高地跳下去也可以。记住，梦里的你是有不死之身的。

一段时间集中于一个实验来做，成功并且熟练了再尝试下一个。对这些推荐的梦境实验没有兴趣的小伙伴，发挥你的想象力随便在梦里怎么玩都可以。

任何的技能达成都需要时间和耐心的练习，不可急功近利，不要影响生活。

明确一点：梦中发生的一切都只是发生在你的头脑里，是潜意识从你的记忆和情绪中提取了素材，为你构建了一个场景。

关于如何处理梦里的情绪：
多说一点，情绪是一种客观存在的东西，如果遇到情绪强烈的梦，敞开来拥抱和接受这种情绪，不要沉溺在情绪里。这里是一个很好的情绪观察场所，你只要做一个旁观者就好了。毕竟你所经历的一切，造就了今日的你，梦境中的情绪会把现实中的情绪放大很多，来的凶猛激烈，很少能招架住，所以一般出现这种情况，也不要恋战，争取赶紧掉线从梦里出来。起来喝口水冷静一下，该哭就哭一会儿，该求拥抱就去找人抱一抱，冷静下来再慢慢回味这种平时体会不到的汹涌的情绪体验。

每一场清明梦都可以是一次非凡的觉醒体验和前所未有的盛大冒险。

最后，不要玩梦丧志，毕竟我们的征途是现实中的星辰大海。

Have fun啦~~

ps，我说的都是正常睡眠下的知梦，这种方法肯定要来的慢。
出体和鬼压床会快很多，但个人并不是很喜欢出体的感觉，或是为了知梦控梦而专门尝试鬼压床。
（事实上我为了不被鬼压床已经拒绝睡午觉很多年了，因为一睡就会被压）
控梦本来是个有趣的事儿，不要让这事儿成为负担。
我也是花了很久才明白，破我执也是控梦很重要的一个点。

编辑于 2016-06-27

▲ 赞同 87 ▼ 24 条评论 分享 收藏 感谢 收起

匿名用户

106 人赞同了该回答

作为一名高中生，最大的期待就是午睡时控制梦境啦！！

上高中之前我是不午睡的，在高中因为住校才开始有这个习惯。也许是因为这个吧，我能清楚记得午睡的梦中发生的事情。幼时偶有控制梦的经历，我很清楚在梦里想干什么就可以干什么。对于一个中二的未成年人这件事超级有诱惑力！于是渐渐地，我有了控制梦的想法。

作为一名品学兼优（并不）的学生，早恋这种事离我自然是远远的。
（我会告诉你们其实是因为颜值不够么！！）
青春期的少男少女总会躁动，加上性启蒙较早，我对未知的那啥啥充满好奇。我想，是不是可以在梦里谈一把恋爱感受感受呢?
于是，在睡前，我有了一个习惯，就是不停默念“我要接吻我要恋爱bolabola”这都成为长期习惯了，念了可能有几个月。

▲ 赞同 3.9K ▼ 731 条评论 分享 收藏 感谢 收起

这样，在梦中的剧情进行时，我会突然想起"我要接吻我要恋爱balabala"。顿时整个人就兴奋了，开始寻找颜值高的人，直接扑倒。不过这个过程不能用力太猛，当我刚开始脱离主线寻找目标时，世界会变得模糊，人声会渐渐衰微。我知道我的意识快要控制我醒来了。这时，我会马上停住脚步，等待世界再度清晰完整后，再度迈开步伐。

有时候在梦中穿越到了人人穿古装的世界，也会尝试在空中飞行，对对对就是像轻功一样！！酷毙了！！在飞的时候大脑还会反馈给我一种失重的感觉！！只要一直想着飞飞飞，气沉丹田后（咦我在说什么）就可以在空中浪了！！

辨别自己是否在梦中也不难，当我在梦里遇到不好的事儿，觉得是梦但又不确定的时候，就会闭上眼睛。拼命闭眼闭到额头都有皱纹那种程度的时候，如果眼前还是有画面就是在梦里……然后就会很平静地把自己幻想成超级英雄，无所不能的那种，一切不好的事情就迎刃而解啦。

不过最近对爱情的渴望没有那么强烈了，睡觉前也不会念叨"我要接吻我要恋爱balabala"，对梦境的控制能力明显下降。记得上次控制时被人追杀了，拉着恋人逃到湖边无路可退，就想着我在梦里我应该会飞的就跳下去了，结果没有激活这个功能，沉底了……然后就醒了……所以我觉得控制梦很危险啊！！！！

一次老师上课提到了一个案例，是某种毒品使人以为自己在梦里，然后就跳楼了。我大惊，都快冒冷汗了。我同桌问我：
"怎么会有人这样就跳楼了呀。"
"如果我以为我在梦里我也会跳楼的。"
"为什么？！"
"因为我会飞呀！！！"
"……"

略激动，没想到我居然get了二十个赞……
对啦基本每次可以控制梦的时候，在入睡的一个时间段脑内会出现万花筒一样绚烂的像素点，然后就觉得全身失重，有种做过山车的感觉，还是5D的那种，眼前的像素点也像隧道一样开始运动。在平衡感与视觉的双重刺激下，经常会觉得自己已经在床上翻来覆去……有好几次真的觉得自己快掉下床了用手撑了撑床板才放心，当然这样做的后果就是还要再重新入睡一次。大概就是如果你能忍受那种眩晕感就可以控制梦了，不能忍受就只是普通的睡觉而已。
不过我这个学期都没有看到过万花筒，怕它再也不出现，难过。

编辑于 2016-05-24

“盗梦空间”情景成真 你有可能控制“清醒梦”

邓青

2018年05月04日13:59 来源：人民网-科普中国

看过好莱坞大片《盗梦空间》的人，都对电影中展现的能穿梭于别人梦境并“植入”思想的技艺心向神往。尽管《盗梦空间》中“穿越”梦境的技术仍然只是虚构的电影情节，但人们的确能够从梦境中学习新的技能。相信很多人都有过这样一种现象，他能够清楚的明白自己是在做梦，而且能够用自己的意识去改变梦境的发展。这就是所谓的“清醒梦”。那到底什么是“清醒梦”呢？做“清醒梦”的人有什么特点吗？

《盗梦空间》中的“穿越”梦境令人神往。（图片来源：《钱江晚报》）

我们先来了解一下什么是“清醒梦”。据《钱江晚报》报道，“清醒梦”是在意识清醒的时候所做的梦。“清醒梦”跟白日梦不相同，“清醒梦”是做梦者于睡眠状态中保持意识清醒；白日梦则是做梦者于清醒状态中进行冥想或幻想，而不进入睡眠状态中。那些做“清醒梦”的人能够控制大脑中的相关区域，继而实现“学习”的目的。

“清醒梦”是一种可以学习的技能。据《科技日报》消息，阿德莱德大学科学家提出能增加“清醒梦”成功率的3个技巧。第一种是“现实检查法”。像《盗梦空间》中那样，利用旋转的陀螺在梦境中不会停作为判断是否在梦中的方法就是现实检查法。另外两种方法分别为“清醒再入睡法”和“清醒梦记忆诱发法”。这两种方法都需要人们在睡过5小时后醒来几分钟，之后再次入睡。“清醒梦”记忆诱发法除了这一步骤，还要人们在再次入睡前重复一句话：“下次我是在做梦，我会记住我是在做梦。”

据《齐鲁晚报》介绍，与进入梦乡无意识的人相比，进入梦境沉睡状态大脑仍有意识的人解决现实问题的能力很强，因为“做梦的人睡着了大脑还处于清醒状态，把现实状态在梦境中过一遍，而且大脑还能意识到自己在做梦。”林肯学院的心理学高级讲师帕特里克·布瑞克博士说。在一项调查中发现，与做梦时没有意识的人相比，经常做“清醒梦”的人在解决问题的洞察力上超出25%。（邓青）

本文由中国科学传播研究所副研究员卜勇进行科学性把关。

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科 普 中 国
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（责编：任妍、张希）

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