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ENSCI–Les Ateliers

École Nationale Supérieure de Création Industrielle
CRÉATION ET TECHNOLOGIE CONTEMPORAINE 2014—2015

ABSTRACT

Light is an essential element for us humans since the beginning of time. It has shaped us, as we followed the seasonal changes and even daily with the setting and the raising of the sun.

Light is not only a physical element. Our ancestors told stories of magical sources of radiating light and warmth, a mysterious divine being that came from the stars. The powerful imagination of men and the unexplainable elements have made us fascinated by light and, until today, we try to possess and control it.

In this etude, I am presenting the connection between the jewelry as the most ancient sculpted visual art and the set of beliefs they define. In time, men put an end to their nomadic way of living, creating villages and within them temples. Occult related jewelry has evolved by size and meaning and became objects of worship, used by shamans and priests.

It is no coincidence that in those times, jewelry, as well as sculptures, were made of shiny materials. Man has a profound connection to shiny materials and objects, both instinctual urge and physical need.

Covering few of the prehistoric shiny materials, can easily demonstrate the artistic connection between such materials and spirituality, both in functional tools for every day tasks, powerful symbolic jewelry and objects of spirituality and worship.

Jewelry hasn't changed for thousand of years. The domain, the body, is the same, and most of the locations of body related jewelry or clothes haven't changed dramatically. However, by examining jewelry techniques as a knowledge gained and preserved for centuries, we understand the direct link between prehistoric jewelry and the primitive urge to control the light. Jewelry is just a precedent state of sculpture evolution.

Even though light has been used extensively by architects building grand churches in medieval times, only with Electricity we no longer live in darkness. Electricity gave us artificial light.

With the advanced technologies emerges the "light artist", presenting sculptures with virtual substance, light. In some industries we can truly see the power of the new technologies allowing even the simple lamp, designed as remarkable sculpture.

Finally, this etude helps to communicate the idea of light object as a jewelry for the home, as a sculpture of light and allows me to present my vision to the project in hand.

Asaf Yaacobi 2015



ASAF YAACOBI

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ALL THE GLITTE

CHAPTER 01

*"The first spiritual want of a
barbarous man is decoration",*

Campbell Carlyle, late 1800

Jewelry has been relevant since the dawn of humanity, and a substantial form of visual communication.

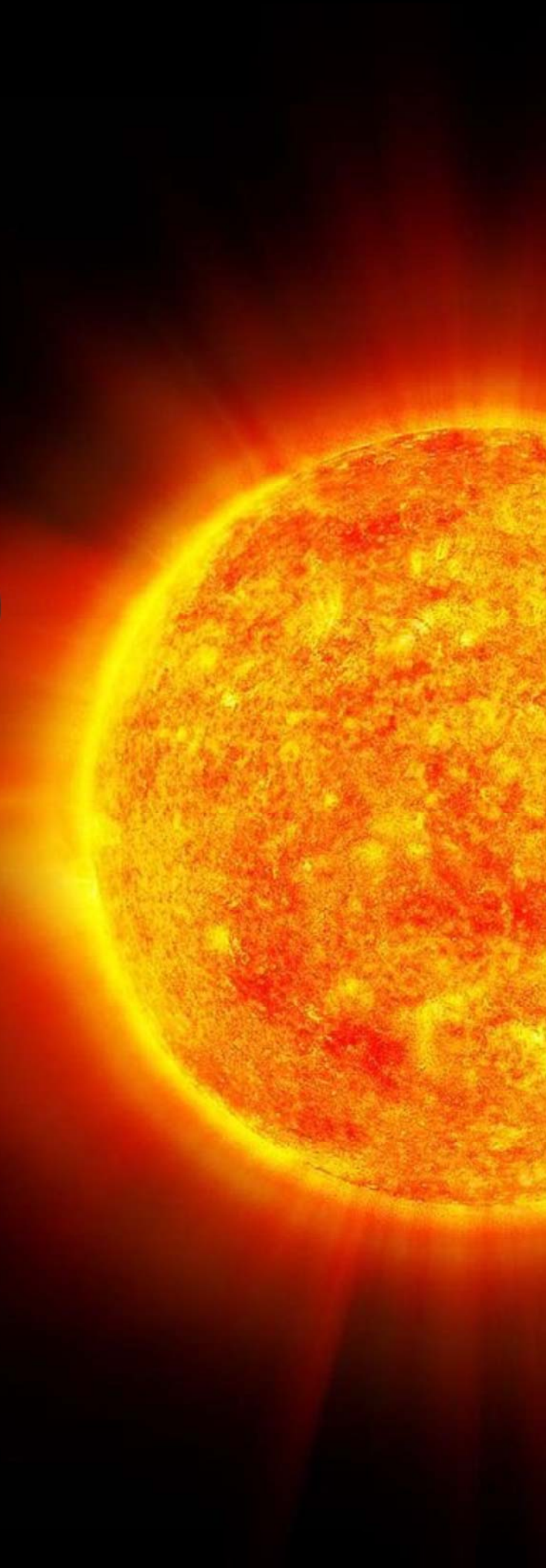
Jewelry has always been associated and assumed to be a form of personal decoration applying of owner status, symbolizing rank in small communities and large alike, from chieftains to kings and mighty emperors.

Until recently, researchers had believed that the ability to appreciate symbolism did not develop until humans had migrated to the continent of Europe

ARTS ...

some 35,000 to 40,000 years ago. It now appears as though the spark of creativity was ignited far earlier than previously believed.

The sun





"Hunting and gathering was humanity's first and most successful adaptation, occupying at least 90 percent of human history. Until 12,000 years ago, all humans lived this way." Lee, Richard B (2005).

story of a journey

In the cradle of humanity, before the establishment of languages, objects were the communicative media, and among those objects were jewelry.

Compared to other animals or primates, mankind has separated itself by not only creating tools, evolving them technologically, but the desire to capture the essence of beauty, to possess its secrets and to unlock its mysteries.

Probably, first jewelry were "ready-made" usage of available natural resources such as animal teeth, bone, various types of shells, carved stone and wood. Progressively, objects which have started as functional items as a result of human ingenuity, for ordain uses such as fastening articles of clothing together



woman thought to have lived between 47,000 BC

Technology may have pushed human culture to accelerate in leaps

2.5

million years ago
Oldest stone tools

400,000

years ago
Earliest strong evidence of cooking dates from this period

120,000

years ago
Early signs of pigment use suggest the emergence of symbolic culture at this time

2.5 MILLION YEARS AGO

2 MILLION YEARS AGO

1.5 MILLION YEARS AGO

1.6

million years ago
Tools begin to become more complex, including skilfully shaped, symmetrical hand-axes

160,000

years ago
Early humans begin to use fire to treat stone tools

100,000

years ago
Shell beads give the earliest evidence of jewellery

were later adapted as objects for purely aesthetic ornamentation, or as spiritual and religious symbols.

Prior to the Neolithic agricultural revolution (Paleolithic—Old Stone Age before 10,000 BC), hunter-gatherers were constantly on the move, roaming

the land on the path of seasonal migration of the animals to feed themselves. Those nomadic groups were organized mostly in bands of twenty to thirty people, incapable of sustaining large populations because of their limited food supply and need to keep moving.



They survived on hunting animals and eating vegetation, and would stay in one place only as long as they would sustain themselves from that area.

The first gemstones were probably "gathered" in much the same manner as

was food. It is likely that gems were found inadvertently at first, maybe while searching for food by picking through gem-bearing alluvial gravels in a dry river-bed. What must these primitive humans have thought of these dazzling, yet seemingly useless objects — harder

than any other naturally-occurring material, and capturing/possessing the warmth of fire, the brilliance of the sun, or the blueness of the sea and sky.

As mankind progressed, jewelry was used as a symbol of wealth and status, as well as to protect against harm, guard of evil, and heal illnesses. Jewelry was used by early man to adorn nearly every part of the human body, and has been made out of almost every natural material known to mankind.

Prolific jewelry-making began with the ancestors of Homo Sapiens. Over 40,000 years ago the Cro-Magnons (45,000 BC—10,000 BC) began to migrate from the cradle of civilization in central Africa to the Middle East, the Indus Valley, and to the continent of Europe. As these early humans traveled the land they collected objects of curiosity, fashioning them into jewelry which would tell the story of their journey.

Wodaabe boy Niger.



five functions that have traditionally defined jewelry

While looking at ancient cultures and remote and exotic hidden tribes, it is revealed that traditions of the visual arts are allowing changes to occur due to personal invention.

From New Guinea to Africa, people all over the world have decorated themselves for tribal ceremonies and many of these performances are recorded in books, magazines and anthropological documentary films.

At first glance, an outside observer with

untrained eye will often think that all the decorative patterns are identical, or with slight changes, due to the handwork of the local artisan. Not this is the case. A longer examination of the culture in question will reveal that every person is different, and that within a group style there is also a wide range of diversity. Further study will show that tribal styles gradually evolve, reflecting changes in community and environment. Clearly, pre-literate peoples regarded tradition as a framework and a starting-point, not as a rulebook to follow blindly.



scarification

Young Nubba Woman displaying elaborate scarification depicting the passages of life. SUDAN

Attachment to the body

Traditionally, jewelry is made to be attached to the body or to clothing,

therefore jewelry is applied to the human body and the human is the domain in which jewelry is being displayed upon. Some types of jewelry conform to the anatomy, as in rings, bracelets, necklaces, head-dresses which are round based shapes, utilizing the body natural shape to be laid or pressed on, while

other types of jewelry are designed to be fixed to garments, as in pins, penannular brooches, and buttons. Some varieties are attached to body and demand alteration of the body itself, as in earrings for pierced ears, nose ornaments, and lip plugs. A vast array of other forms remain (hairpins, combs, barrettes, pasties, pocket watches, etc.) but the common element is that they are all fastened to the human form.

personal decoration

From prehistoric times jewelry has been a form of visual art. We find that especially in pre-literate cultures, jewelry is a collection of signs and meaning which are carefully layered upon the wearer, creating a variety of intricate subtext within the relevant community and its closest neighbors.

As worn, jewelry constitutes a complex statement of social facts and personal

fantasy, which other people in the same culture recognize and interpret. Personal ornamentation use a subtle control of the coded message the wearer imparts. What public relations is to large corporations, clothing, makeup, and jewelry are to the individual.

In short, the decorative function of jewelry has been to provide visual accents, color, contrast, and texture, as well as to focus attention to specific parts of the body. In these senses, jewelry serves as a compositional device in the layout of the human form.

displaying socially meaningful codes

Creating a social identity is probably the most important subtext of jewelry mostly by the indication of status in the community.

Ornament and jewelry have always been used to either distinguish or merge the

wearer with social groupings. This embedded code differentiates the peers in the group or shows equality, allowing order in primitive society.

The urge to decorate also satisfies psychological purposes. Jewelry beautifies, within the value system of the local culture, and sometimes renders the wearer socially or sexually desirable. One cannot underestimate the power of jewelry to enhance self-image and to alter social perceptions.

portable and redeemable wealth

At all times jewelry is attached to the body, making it in sight, and mostly safe and in reach of its rightful owner. Women all over the world wear a substantial portion of their wealth in jewelry, which can be converted into goods and services should the need arise. In this way, jewelry is also utilized as a life insurance policy, guaranteeing the survival of a woman's family in the event of her

husband's death. For cultures lacking banking institutions, keeping wealth attached to the body offered a convenient alternative to a savings account.

mediation with the spiritual

For as long as we know, jewelry has been associated with the spiritual and the supernatural. Amulets and talismans appear in every culture, offering magical power and protection to the wearer. Sacred symbols are frequently made portable, as in cruciform, stars of David, or Islamic protective hands. In these cases, the jewelry object is a condensed symbol for an entire cosmology, summarizing the relation between god and person. The intimate contact between symbol and skin, as jewelry is worn, becomes a constant reminder of one's faith, and the promise of security and salvation.



The Yanomami are an indigenous group that lives deep in the Amazon rainforest in Brazil and Venezuela.

Jewelry & subtext

As mentioned before, jewelry has a lot of forms, locations on body, material and symbolic artistic effects; each contributed by era, global location in the world and resources, enabling the artisan to manufacture and design.

As a society we are accustomed by using and wearing jewelry since the cradle of men. The first definition mentioned before is obvious and can be noticed immediately. However jewelry has its own language and subtext for each and every culture, making each design unique even in close ethnic groups or even same ancestral tribes.

Material as medium

Jewelry-making has a tremendous variety of used materials. The idea that metal is the medium of choice for adornment is a narrow Western European view, sanctified by tradition and education.

Even in Europe, stone, wood, glass beads, leather, animal horn, coal, and human hair have been applied to jewelry-making. A cursory study of non-Western cultures reveals an even greater range: feathers, clay, cloth, straw, lacquer, shell and dozens of other materials have all become adornment.

sensual and sexual appeal

Majority of jewelry is caught up in sensual and sexual appeal. The basic impulse of decorating the body has always been connected to a bid for acceptability, of trying to be secure and likeable. The powerful human urge to

belong is a basic motivation for the use of jewelry, and the means to that end has always been looking as good as possible. Every society, of course, has its own standards as to what looks good, but the common thread is sensual and sexual appeal.

The shine of polished metal and the glitter of faceted gemstones on wedding rings are typical of the seductive allure of jewelry. In an example from African culture, the yaake dance of the Wodaabe tribe of Niger, young men adorn themselves to accentuate the local standards of masculine beauty: straight noses, white eyes and teeth, and slender bodies. During the dance, young women can choose the man they find the most attractive, and they later discretely spend the night together.

gender

Sexual appeal of fine jewelry can reinforce unfortunate role stereotypes for women. In most societies, women have long been regarded as sexual objects, not as complete human beings.

protection

Some jewelry are used as body ritual objects to provide talismanic protection (in the form of amulets or other holy related ritual items), giving the wearer unique mythical powers.

expressing identity

Our ancestors used jewelry and other personal adornments to reflect their identity. Those may have represented a signifier form of affiliation, whether it was age, sex, ethnic, religious or social status.

conclusion

- The esthetics of jewelry change depending on location and resources.
- Jewelry is a substantial form of visual communication.
- Jewelry is the oldest portable art form, that can be associated with the occult.
- The human body is the primary and most primitive domain for jewelry, creating a close relation between men and object.

LET THE BE LIGHT

CHAPTER 02



Stonehenge Wiltshire, England

Stonehenge is the remains of a ring of standing stones set within earthworks. 2600 BC to 2400 BC.

ERE HT

The science of anthropology has been trying to determine and answer the question: "what makes us human". Anthropologists have been researching for cultural evidence to identify and describe human remains to be used as a forensic evidence in answering those mysterious questions regarding our past. Humans have been described as tool users, creative beings with the ability of development. Humans, once thought to be unique from all other animals.

However, extensive studies over the years by many researchers has identified tools used by chimpanzees, and more recently gorillas, indicating that use of crude tools is not necessarily a unique human feature. Even a sea otter uses a crude tool, such as a rock, to crack open shell fish. The use of fire and burying of the dead are also cited as evidence of "what makes us human". It certainly could be argued that use of fire and evidence of burials are unique to humans, these activities result from the spiritual nature within humans. Fire use and religion (funerals) do not fully explain "what makes us human".



In the beginning

All known primitive tribes practiced some form of Paganism, this simply refers to any spiritual practices that are both polytheistic, and pre-Christian.

These primitive spiritual practices include folk religions that use animistic, pantheistic or transformational shamanic practices and rituals. Primitive pagan cultures were historically referred to as "heathens" or "savages," which were

used as an abusive term by the followers of Western monotheistic religions. Pagan tribal culture and spirituality typically revolved around the concept that souls or spirits exist in humans, as well as in animals, plants or inanimate objects. When used by a pagan shaman, healer or priest, a shamanic transformation fetish can alter the perceived reality of the subject, having a social and spiritual, as well as a

chemical and metabolic effect on them. Jewelry and fetishes that contain animal parts such as teeth, bone, skin or hide, claws, talons and hair played a particularly significant role in Pagan beliefs. The wearer of these types of ornamentations believed that he or she actually possessed the soul of the animal, permeating the wearer with the animal's attributes and strengths: speed, courage, strength, cunning and stealthy.

Campfire, stories and the evolution of human culture

The control of fire is considered a major turning point in human evolution. The ability to use fire enabled evolving humans to cook food and fend off predators, and therefore contributed to our physical evolution. The attributes of fire had more than just physical

contributions but also enabled human culture to evolve, as campfire conversations stimulated the imagination and developed a broad sense of community with distant people and with the spirit world.

Telling stories around a campfire may have begun the evolution of human culture and served as a form of ancient social engaging activity.

Humans learned to master fire during the Paleolithic era between one million and 400,000 years ago. Regularly keeping fires allowed early people to extend their day.

No longer rendered inactive by darkness, people could gather in the fire's glow to verbally, communally, process their lives.



“little is known about how important the extended day was for lighting the embers of culture and society.”

Polly Wiessner

The theory behind this is that telling stories around the fire led to cultural development by forcing humans to gather in one location to enjoy food, heat, light and eventually this has become the location of communication. Firelight stories were the original medium for shared information, emotions and entertainment which led to social bonding.

Daytime conversations enforced social codes; during sunlight hours people spoke of work with complaints, criticisms and gossip which function to regulate societal bonds.

Nighttime discussions created culture and community. After the sun went down and

people gathered in the intimate glow of a fire, most of the interactions were stories, and those actions of telling stories build a shared culture, reinforce values, and generate community.

In its whole, storytelling is a form of teaching passed through the generations. Personal or ancestral experience is communicated through narrative because humans find information more understandable in the form of a story. Whether it is science, faith or history, narrative makes knowledge more reasonable and easier to remember.

Eventually, talking around the campfire often turned to spiritual matters. People discussed faith, religion and how the spirit world affects the human world.

Story telling

Storytelling predates writing. Earliest forms of storytelling are usually oral and combined with gestures and expressions. In addition to being part of religious ritual, rock art may have served as a

form of storytelling for many ancient cultures.

After exploring cave paintings and the knowledge gathered about archaic forms of story, through ancestral dancing and other physical forms of expressing the story narrative, we see how various myths emerged from all cultures.

One of the common threads among these myths around the world is what we know of as archetype, a pattern, situation, character, or symbol that reoccurs in the human psyche.

The Australian aboriginal people painted symbols from stories on cave walls as a means of helping the storyteller remember the story. The story was then told using a combination of oral narrative, music, rock art, and dance, which brings understanding and meaning of human existence through remembrance and enactment of stories.

But a story could not be told without its teller. A key figure central to the dispersion of stories is the storyteller and this figure has worn many faces and roles throughout history.

Some cultures associate story with so much power that a storyteller is essentially a being with special spiritual insight and powers; this would be the

equivalent of a medicine man or a healer in a tribe.

The religious Impulse

Once mankind develops a sophisticated level of speech, expressions of myth and religion of some sort cannot be far behind. Superstition is an instinct in a primitive community among all the dangers of nature.

Even the simplest natural phenomenon, could invoke mystery and unanswered questions. Clearly everything that grows and recreates itself, whether animal or plant, has a living spirit of some sort. The elements, wind, water and the fire of the natural world seem far from dead, as they swirl about in their various ways. Mankind needs the cooperation of these aspects of nature.

In primitive tribes the priests are the medicine men, known also as shamans. Their ability to communicate with the spirits is evident from the way they fall into trances - achieved usually either by self-hypnosis or by drugs.

The medicine man's advice, when emerging from such a state, has odd force. Priesthood and politics, in any deeply religious society are never far apart.

Ritual also requires explanation, and explanation involves one of the most basic human talents, that of story telling. The spell-binding riches and infinite variety of the world's mythologies go back to such basic questions as how it all began, or why things happen as they do.

The gods of importance to primitive societies vary with the circumstances of the tribe, though nearly all give precedence to the sky. The sky is the largest fact of nature. With its ever-changing face, its sudden temper angers, its resident sun and moon, it is clearly a force to be considered. In the creation stories of most mythologies a sky god is involved.

Elements, myth & worshiping



Bush Barrow chieftain

Artists reconstruction of the By Kelvin Wilson. Wiltshire Museum, Devizes.

Many ancient spiritual traditions existed and flourished incorporating many different understandings of a so-called mystical Creator and celestial bodies. Those unreachable objects such as stars, planets, the moon, the sun, comets and meteorites would have commanded astonishment and wonder.

Events such as eclipses and the *aurora borealis*, also known as northern lights, would easily have led to marvel at the forces of nature.

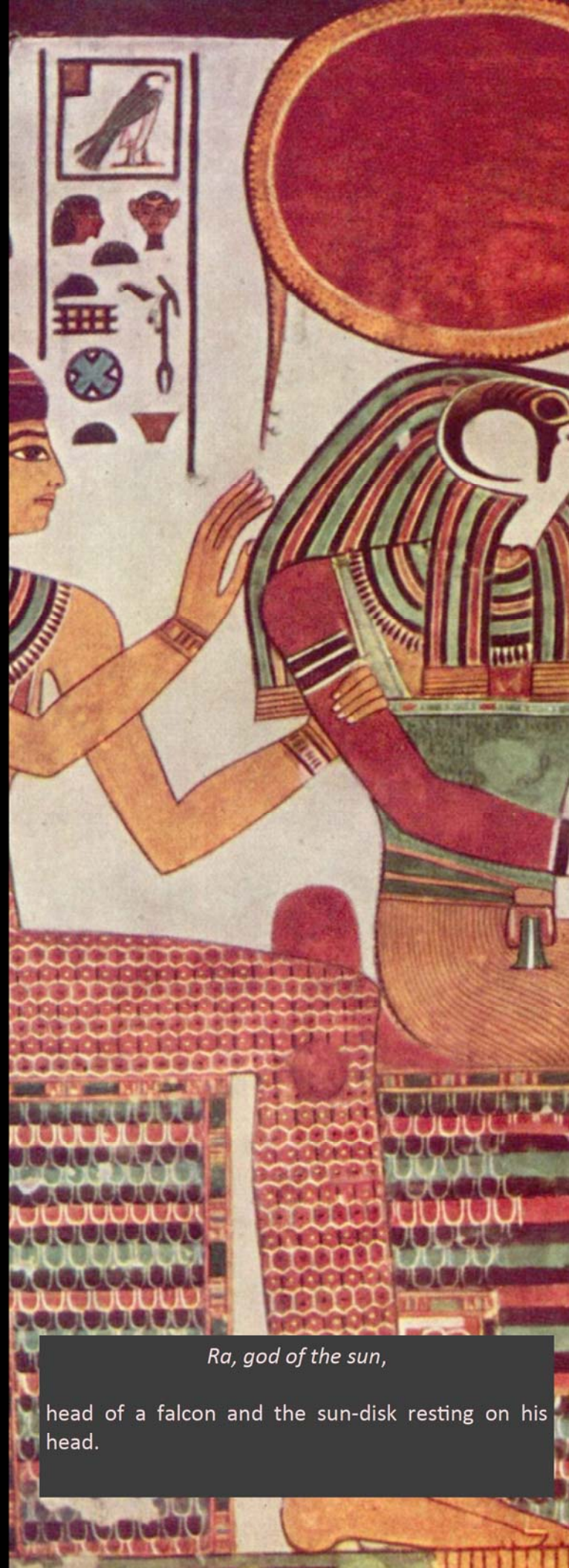
All of those celestial wonders are still as awe-inspiring as they were in ancient times. huge advances in science means we are constantly exposed to new research on celestial bodies.

Archaeology has unearthed many ancient structures with alignments to celestial bodies and the strong notion that those people worshipped stars, the sun and the moon. Examples include Stonehenge in the UK, which is an ancient stone circle with a spiritual history, and the pyramids of Egypt and Mexico.

Ancient spirituality and the sun

In the center of our solar system, the biggest celestial object is the sun. It's an object of admiration and myth. Glowing with light, radiating warmth and allowing life to blossom. Those are just few elements which are represented to the sun deity in spiritual rituals around the world.

Many researchers are occupied with the myth and mystery engulfing the stones at Stonehenge which evidently shows an alignment to the appearance of the sun



Ra, god of the sun,
head of a falcon and the sun-disk resting on his head.



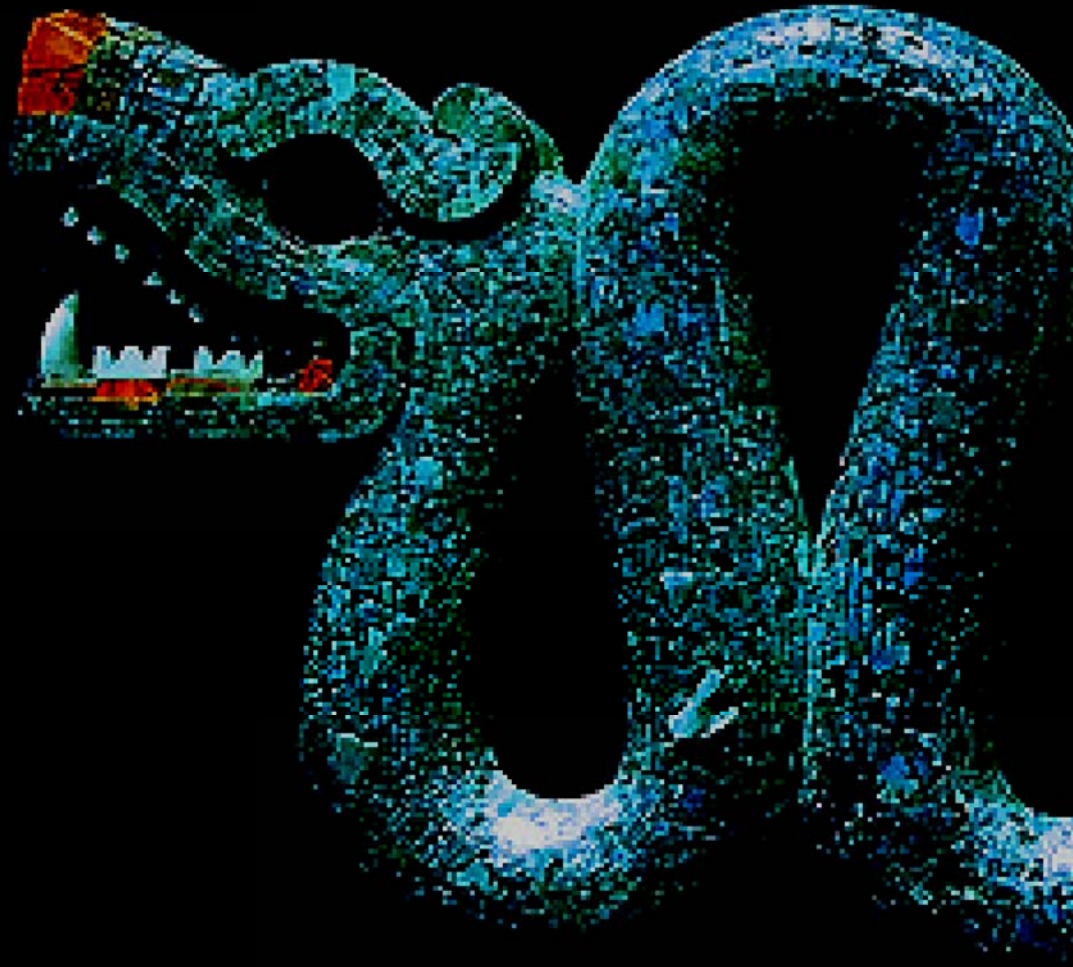
on the horizon at the summer and winter solstices, when looking from the center of the site over the tip of the Heel stone with its top just at the height of the horizon.

At that time, five to six thousand years ago, the knowledge of the solar cycle and calendar would have been used by social leaders as a source of power and wealth, particularly if they could direct the masses on when to sow and when to harvest.

In Ancient Egypt, in spite of the fact it is likely that there was monotheism in the early dynasties of rulers, over time, the sun deity took on a huge significance in the religion of the Egyptians and the status of Pharaoh. Some of the hieroglyphs depict Pharaoh with the sun on his head, the great Amon-Ra. Amon, was considered as the supreme creator while Ra was the much older sun-god, so the two were combined as Amon-Ra.

In Egyptian worship, Horus is the rising sun, Ra is the moon sun and Osiris (god of the dead) is the dying or setting sun.

The Romans and Greeks had also set up their own pantheon of deities and traded

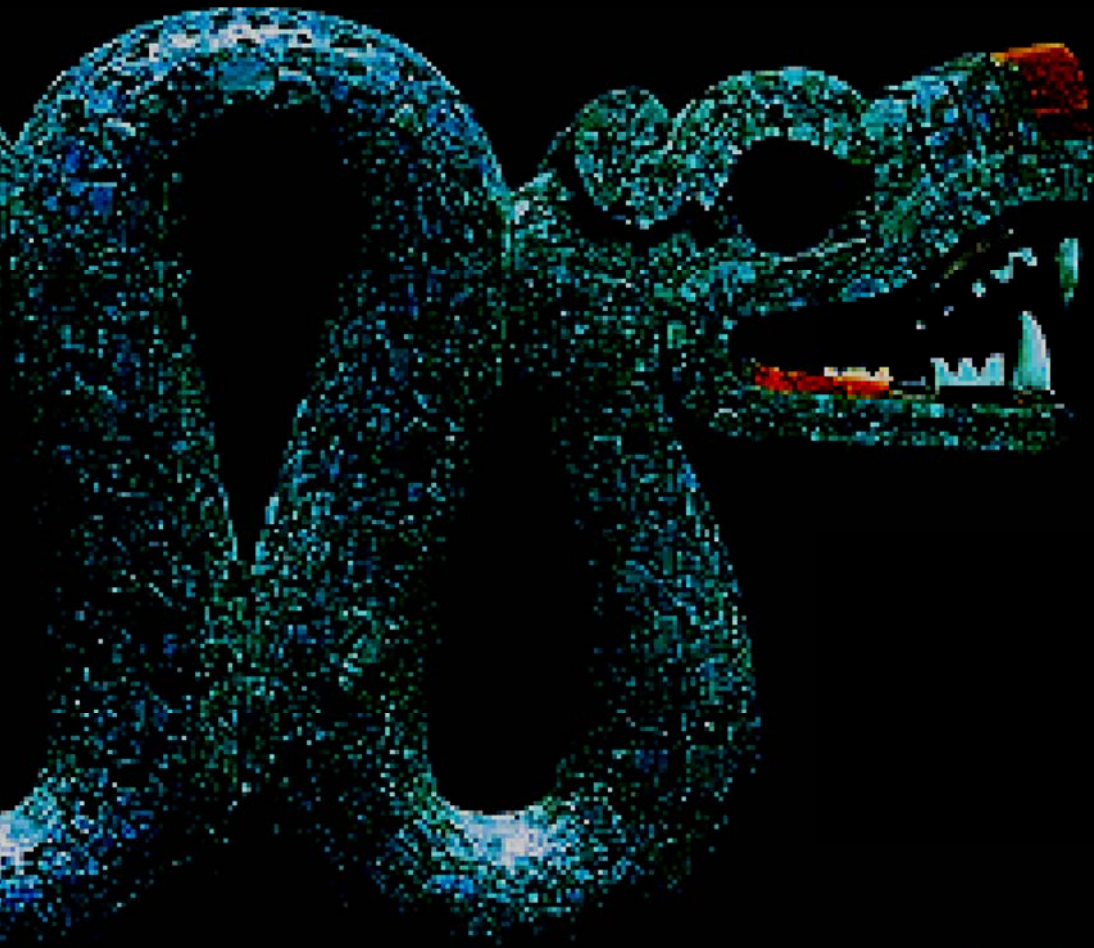


" the dual nature which seems to belong to the wind-god Quetzalcoatl who now appears simply a wind-god, and again seems to show the true, characters of the old god of fire and light. " *Bulletin 28 of the U.S.*

Bureau of Ethnology.

gods with other cultures, perhaps as a political gesture of collaboration. Alexander the Great established Ammon Zeus, a hybrid creator to cover the Greek and Egyptian cultures and their obsession with the sun.

In Central and South America, the ancient cultures of the Aztecs and Mayas also relied heavily on the worship of celestial bodies, and developed quite complex calendars. Their temples such as the famous Machu Picchu site in Peru,



*Quetzalcoatl (Feathered Serpent) Mexico
15th-16th century AD*

were also associated with an Incan religious cult dedicated to the worship of the sun. The site has several stones used as guide posts known as Intihuatana, literally “hitching post of the sun”, which were used by the Incans to mark the winter solstice. Some commentators describe this ancient festival as the will to tie the sun to prevent it from swinging further north, resulting in even shorter days.

Near Mexico City, the ancient site of Teotihuacan seems to be aligned to

the star cluster known as the Pleiades which signaled the day when the sun was at its highest point in the sky. Indeed, the two great pyramids at the site are named after the sun and the moon.

The Aztecs also carried on the worship and satisfaction of the sun and happily performed human sacrifices for pleasing and renewing the failing energies of their sun god Huitzilopochtli.

A more probable explanation of the origin of Quetzalcoatl and a more likely



The famous descent of the snake.

Kukulcan at Chichén-Itza. during the Equinox.
March 2009

elucidation of his nature would regard him as the "Man of the Sun", who has quitted his godly residency for a limited time in order to teach mankind those arts. After representing the first steps in civilization, Quetzalcoatl fulfilled his mission.

Quetzalcoatl is represented as a traveler with staff in hand, and this is proof of his solar character, as is the statement that

under his rule the fruits of the earth flourished more abundantly than at any subsequent period. The abundance of gold said to have been accumulated in his reign assists the theory, the precious metal being invariably associated with the sun by most barbarous people. In the native paintings it is noticeable that the solar disc and semi disc are almost invariably found in connection with the

feathered serpent as the symbolical attributes of Quetzalcoatl.

The Hopi Indians of Mexico at the present day symbolize the sun as a serpent, tail in mouth, and the ancient Mexicans introduced the solar disc in connection with small images of Quetzalcoatl, which they attached to the head-dress. In still other examples, Quetzalcoatl is pictured as if emerging or stepping from the luminary, which is represented as his dwelling-place.

Chichén-Itza served as a temple to Kukulcan. During the spring and fall equinoxes, the shadow casted by the angle of the sun and edges of the nine steps of the pyramid, combined

with the northern stairway and the stone serpent head carvings create the illusion of a massive

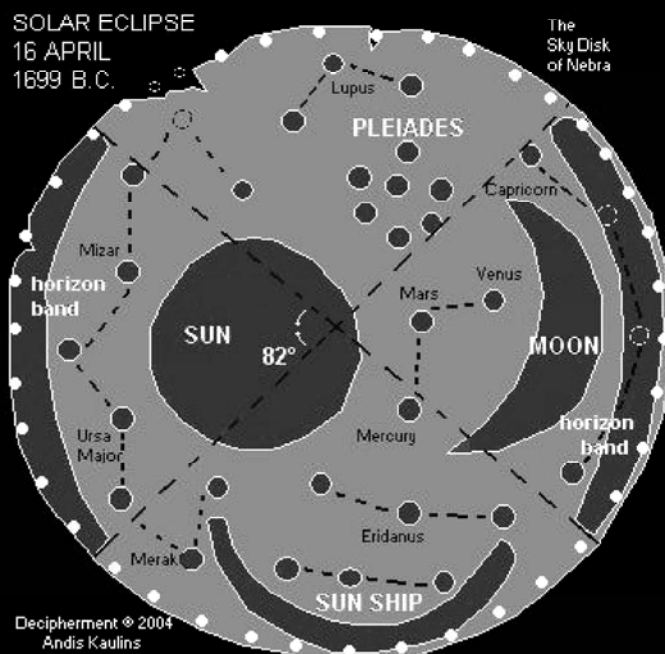
serpent descending the pyramid.

To the Aztecs, Quetzalcoatl was, as his name indicates, a feathered serpent, a flying reptile (much like a dragon), who was a boundary-maker (and transgressor) between earth and sky. He was a creator deity having contributed essentially to the creation of Mankind.

Nebra Sky Disc

The Nebra Sky Disc is a 3,600-year-old bronze disc which, according to UNESCO, features "the oldest concrete depiction of cosmic phenomena world wide".

The disc is such an extraordinary authentic precious artefact and it is now included in UNESCO's "Memory of the World" register, an international



initiative launched to safeguard the documentary heritage of humanity, and is being held in the State Museum of Prehistory in Halle (Germany), calling it "one of the most important archaeological finds of the 20th century".

Dating the artifact has posed many difficulties, and while scientists have been able to

determine that it was buried in 1,600 BC, they are unable to determine its date of manufacture, meaning it could be much older than its burial date.

The scientific studies of the Nebra hoard, in Germany are probably among the most thorough ever carried out on any

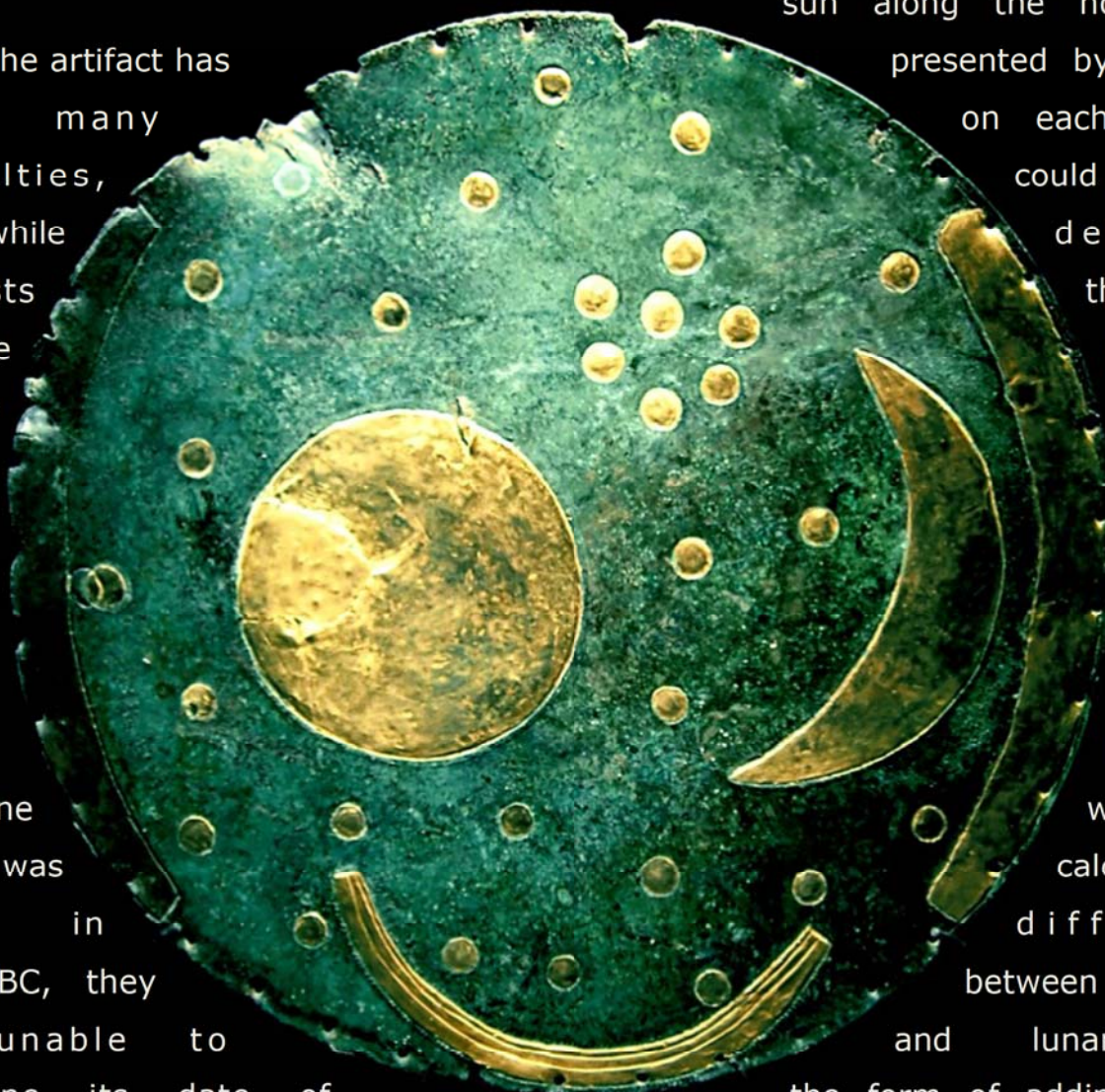
archaeological find in Europe.

It has been variously proposed that the disc was intended as an astronomical tool, and that through comparison of the skies and a visual display of the extremes of the rising and setting positions of the

sun along the horizon, as presented by the arcs on each side, it could be used to determine the time of year. In addition, it is

proposed that it was used to calculate the difference between the solar and lunar cycles in the form of adding a 13th

lunar month. It is perhaps relevant that the hidden site was found on the top of a hill, a good place for observing the sun's movements. The site was surrounded by an artificial low bank, which could be used for measuring the



position of the sun on the horizon.

conclusion

- Imagination and beliefs are thought to be the key for humans survival in competition with Neanderthal man.
- The awareness to the surroundings and the unexplainable natural phenomenon have seeded the belief of the unnatural, the powerful, god.
- With the Neolithic Revolution (10,000 BC) man is no longer nomad, and we see immediate transition of the relation between man and object.
- Powerful jewelry are evolving to bigger sculptures, objects of worship used by priests and shamans
- Technologically, those objects are based on mathematical knowledge as men learned to work with the natural

Precio us

CHAPTER 03

There's clearly a bit more to glitter than gold. Wherever we set our eyes around us we can find evidence to the fact that people are mesmerized and drawn to shiny things. One profound logical explanation for this affection is that we have culturally associated shiny and gloss with wealth and luxury.

The appealing attraction for the glossy might not entirely be linked to wealth, however it might be a basic enjoyment of things just by being pretty.

Recent tests suggest that there is more to glossy than cultural connection or

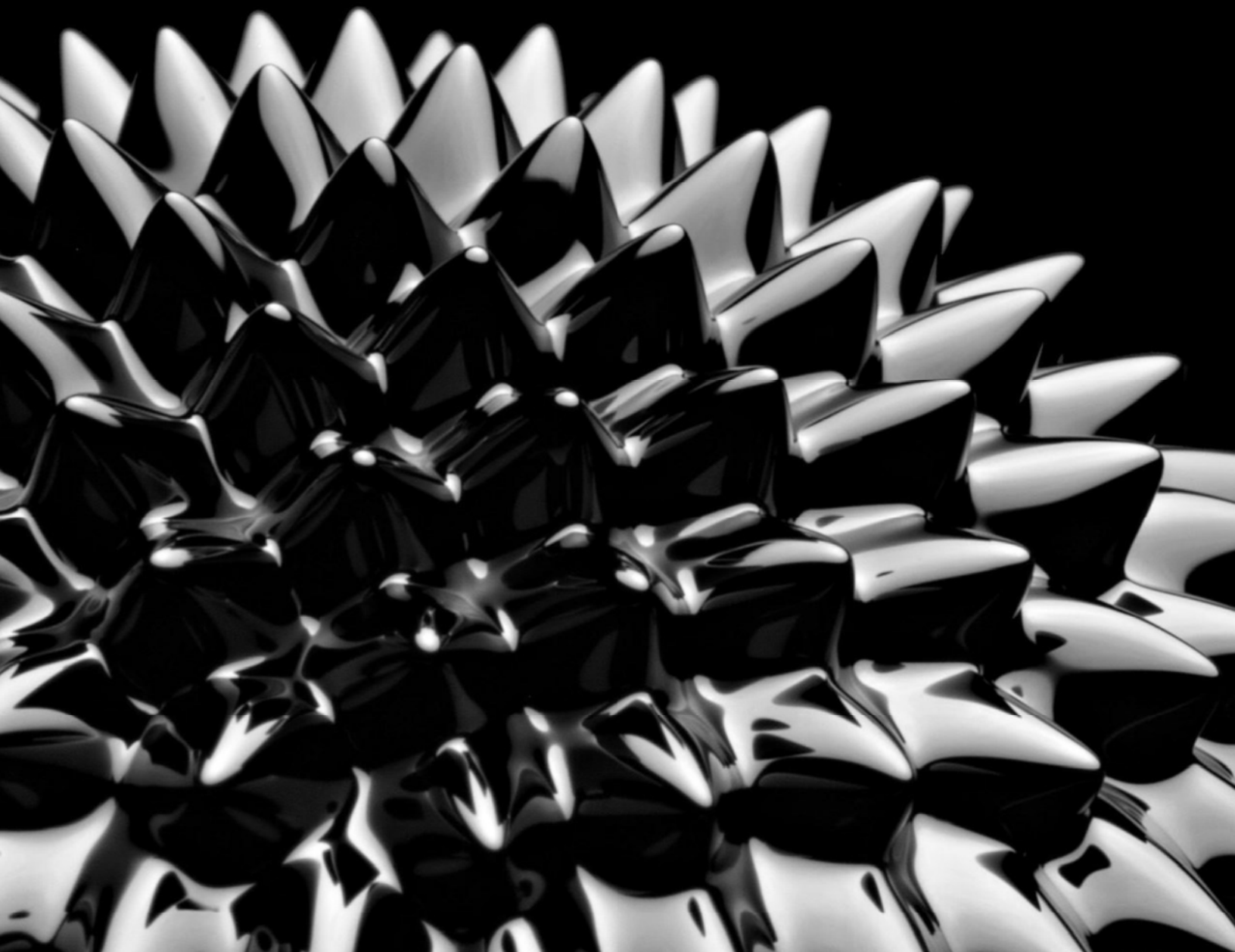
visual appeal. Those findings alone did not mean a biological urge for water played a role, but the researchers did collect some clues to that effect.

The instinctive need that dorms in each and everyone of us, we know that Clean drinkable water is shiny. Its surface reflects light, catches our eye from a distance. It makes sense that somehow there is a genetic embedding to shiny things, making humans better adapted toward survival.

"For the Love of God" Damien Hirst. 2007



**We
love
it
shiny**



*“Our preference for glossy
might be deep-rooted and very
human. It is humbling to
acknowledge that despite our
sophistication and progress as
a species, we are still drawn to
things that serve our innate
needs—in this case, the need for
water.”* Vanessa M .Patrick.

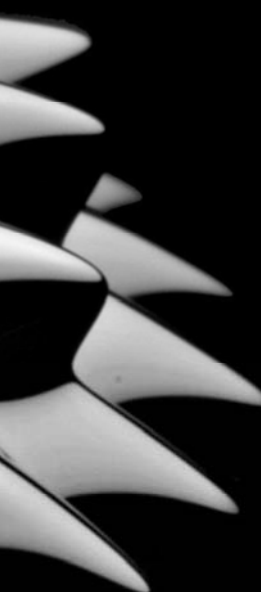
University of Houston

Archeologists have unearthed ordinary objects which clearly show prehistoric man polished bone tools to achieve a shiny gleam. Commonly, Paleolithic shiny materials were ivory, mother of pearl and soapstone to make shiny ornaments. Even today we can find and therefore compare, certain modern-day hunter-gatherer tribes, such as the Yolngu of northern Australia, equalizing the inner brilliance of such materials with spiritual power.

Since the beginning of time, almost all creatures, including humans, have had an innate attraction to bright, shiny objects. This impulse is overwhelming and often impossible to suppress.

For thousands of generations, mankind has gazed at the night sky, fascinated by the billions of pinholes of light. Stories and legends have been written about the stars. Entire populations have based their religious beliefs on, and tracked their future by the arrangement and movement of these heavenly shiny objects.

Around human primal connection to shiny objects we find many theories. Some sociologists have theorized that this connection comes from a primal



A Ferro fluid in a magnetic field

showing normal-field instability caused by a neodymium magnet beneath the dish .

attraction to glistening water, which is the basic necessity for survival. Others agree that this affection for shiny objects does relate to water, but suggest that it dates back to an ever more early stage of the tetrapods, ancestors of all first four-limbed vertebrates, leaving the primeval ocean and sprouted legs. In this case, the water was our collective womb and, as a result, our common origin or creator. No matter what theory is correct, it is clear that almost every ancient and many modern religions see shiny objects as a way to connect with the universe.

Physiological Attraction

All life on earth evolved under both a light and dark cycle. As the sun rises and reaches its peak at noon, the spectrum it emits is smooth throughout the visible spectrum with a high intensity in the blue region. As the sun sets, blue visible light is preferentially scattered from sunlight, leaving an emission appearing orange. At night, there is darkness with limited visible light emitted from the stars, with the exception of full moon nights. During full moon, there is five times more the amount of visible light emitted from the sky, and significant light emitted in the blue visible range.

Like most land existing creatures, humans evolved under sunlight. This constant long evolution process, with the sun as a direct parameter, has been believed to have a direct built in attraction to the light within our inner biological code, DNA.

Humans evolved being exposed to different spectra of light in the morning, late afternoon and evening. It should not be surprising that human physiology is profoundly affected by the daily and seasonal changes in the visible light spectrum. Exposure to the appropriate spectrum of light during the day and evening enhances human health and well being, immune response and productivity.

Our attraction to shiny objects is an extension of this physiological need. Simply put, we are attracted to light because we crave its healthful qualities. Daylight, in particular visible light, is important to our overall health and well being. Visible light not only relieves depression but may also have a positive effect on our immune responses.

Another positive effect of light is the boost it gives the immune system. For thousands of generations, the standard therapy for the infirm was to sit out in

the sunshine. Evidently, our ancestors were smarter than we thought. When visible light hits the retina, it sends a signal to the suprachiasmatic nucleus in the hypothalamus, and triggers the pituitary and pineal glands. The end result is an increase in cortisol, serotonin and dopamine levels, all of which increase the strength of the immune system.

Our skin is an alternative pathway that light uses to boost our immune system. Laboratory studies have shown that after



macro photo of the human eye

half an hour of exposing a small skin area to visible light, healthy subjects

experienced enhanced activity of both white blood cells and natural killer cells. Meaning light heals us from the inside.

Just as the presence of light in moderation is therapeutic to the human body, the absence of light is extremely detrimental.

Although scientists continue to study the positive effects of sunlight on the human body, it is clear that the cure for a host of physical and emotional ailments is the biggest, shiniest shiny object of them all — the sun.

Instinctual Attraction

Only in recent years scientists have been dedicated to the exploration and the understanding of our instinctual attraction to shiny objects.

One of the studies that examined the effects of shiny objects most directly was a two-part study by Richard G. Coss and PM Moore : "All that glistens: Water Connotations in Surface Finishes". The basic premise that they tested was the notion that over the last 5 million years,

the natural selection process has selected only the humans who have the ability to identify sources of drinking water.

If this is the case, then humans would exhibit some sort of affinity to water. In the first part of his study, Coss and Moore tested adults attraction to glossy and sparkling surfaces. He chose these surfaces because they emulated wet surfaces, such as smooth ponds or shimmering water. Four surfaces were tested: matte, glossy, sandy, and sparkling.

In most cases, women were attracted to the shiny surfaces slightly more than men were.

Coss and Moore concluded from these results that glossy surfaces convey strong optical information about moisture, possibly the result of consistent natural selection over evolutionary time operating on failure to correctly identify mirrored surfaces as water.

In the second part of the study, Coss and his colleagues attempted to dig deeper into the apparent natural attraction that infants have for shiny objects. They tested this attraction by observing 46 infants and toddlers between the ages of 7 and 24 months in three age groups.

The infants and toddlers were put into a room with two plates: one was white plastic and the other was stainless steel. The results of these experiments seem to indicate that "mouthing activity is indeed influenced early in development by the clarity of reflections and intensity of gleaming highlights on surface finishes that arguably characterize the optical cues for water and wet surfaces" (Coss et al. 2003, 210). In other words, babies demonstrate an attraction to shiny objects because the objects instinctually remind them of water.

These two studies by Coss and colleagues constitute landmark research. They suggest that over the eons of time, only the people who had a natural affinity for water survived. This affinity is present today in our attraction to shiny objects.

Obviously a good way to obscure the 'higher' motivations, and to get a lopsided view of human capacities and human nature, is to make the organism extremely and chronically hungry or thirsty. Anyone who attempts to make an emergency picture into a typical one, and who will measure all of man's goals and desires by his behavior during extreme physiological deprivation is certainly being blind to many things.

H. Maslow , 1943

A Theory of Human Motivation.

Hierarchy of needs

In 1943, Abraham Maslow published his famous "Hierarchy of Needs " in which he attempted to rank people's needs in



order to capture these different levels of human motivation.

The hierarchy theory, portrayed as a pyramid, represents the idea that human beings are propelled into action by different motivating factors at different times, such as, biological drives, psychological needs, and lastly higher goals.

According to Maslow, we have to fulfill our basic needs before we can move up

the hierarchy to satisfy higher needs. It is something that all humans have in common and it is widely represented across all races and cultures.

The different levels also broadly correspond to different stages of life. The basic physical needs at the bottom are predominant and simple. Safety needs come into focus in early childhood; belonging needs predominate in later childhood; esteem needs predominate in early adulthood

and self-actualization only really comes into focus with mature adulthood.

The first category in Maslow's pyramid represents the Physiologic need, which are metabolic requirements for survival in all animals, breathing, food, water, sex, sleep, shelter, warmth, homeostasis, and excretion are the needs that all animals have in common and will resort to drastic measures to fulfill. If these requirements are not met, the human body will not function properly and will ultimately fail. Physiological needs are thought to be the most important; they should be met first.

The second category in Maslow's pyramid represents safety needs. After those physical needs relatively satisfied, the individual's safety needs take precedence and dominate behavior.

Safety and Security needs include:

- Personal security
- Financial security
- Health and well-being
- Love and belonging

Those are the primal needs of any living form. It is the basic and most automated behavior all living form thrive to achieve.

As mentioned before, in prehistoric times and even in tribal communities nowadays, the basic need of safety combined with ritual beliefs brought the appearance of private jewelry trinkets for sort of protection.

While observing Maslow's pyramid it is obvious that the relations between safety needs and the social needs are growing stronger and can manifest into a powerful object with different subtexts.

After physiological and safety needs are fulfilled, the third level of human needs is interpersonal and involves feelings of belongingness. Social needs, friendship, sense of belonging, family and sexual intimacy needs make up the third pyramid level.

Climbing up the pyramid, includes the need for self-esteem and self-respect. Esteem presents the typical human desire to be accepted and valued by others. Maslow noted two versions of esteem needs: a "lower" version and a "higher" version. The "lower" version of esteem is the need for respect from others. This may include a need for status, recognition, fame, prestige and attention. The "higher" version manifests itself as the need for self-respect.

At this step of the pyramid the need for self-respect brings humans to seek for individuality rather than the social belonging mentioned before; meaning that status will differentiate them among the group as superior to others.

conclusion

- We are attracted to objects, in a more animalistic state of being, in the pursue of clean water, and the vitality of life.
- Light is a shiny physiological need, as we are attracted to light in search of healthful qualities. Sun, light, warmth are basic needs.
- Wealth and stature, which are related to a higher level of the Maslow "hierarchy of needs", can be sought after and be obtained only when the physical sustainable needs of health are established.
- In this case jewelry in prehistoric time is a basic need of safety, which transformed with time into a social need for sense of belonging.

DELINEATA A P. BERTIO Christian
Geographo

From the four corners of the earth

CHAPTER 04

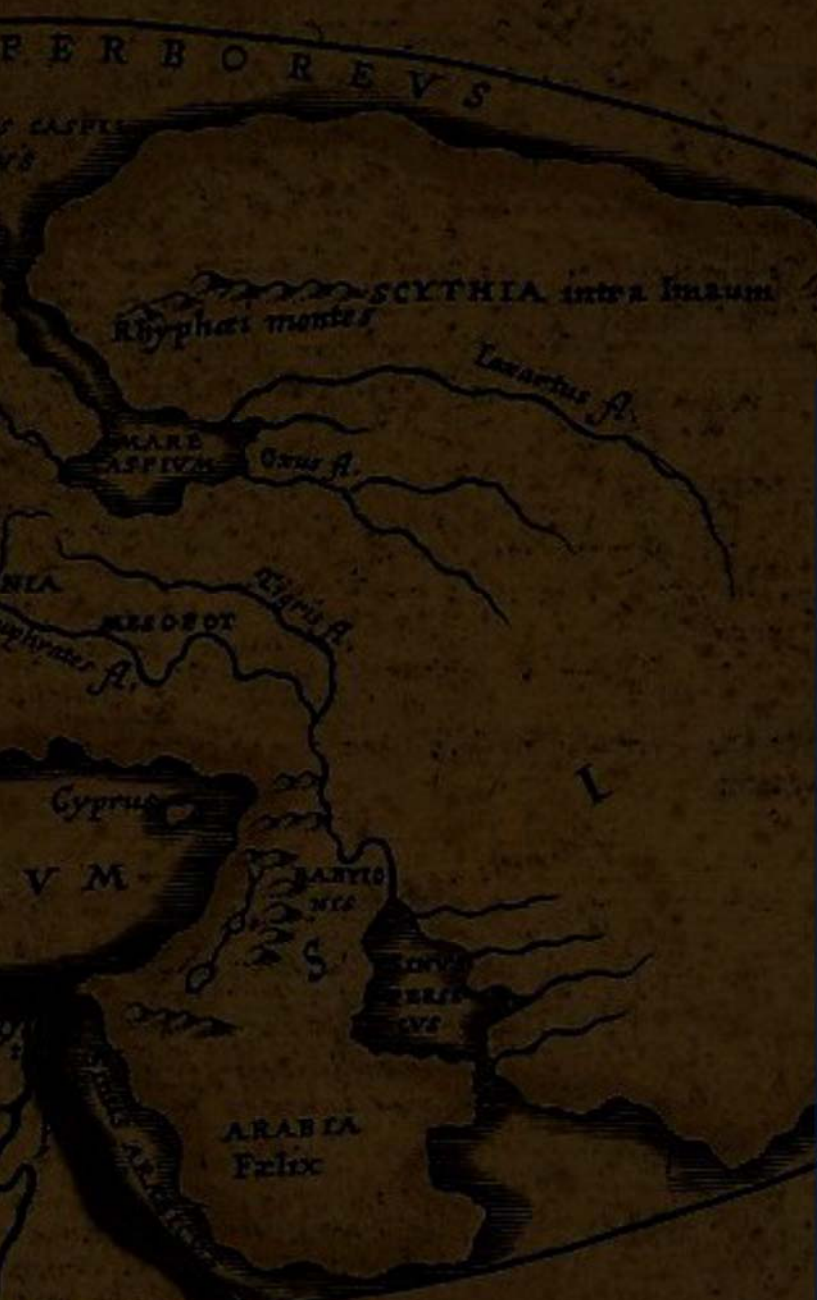
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Map Division
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DIONYSIVS EN TH
Πᾶσα γὰρ χθὼν, ἢ τε νῆλος ἀπειρίτος, ἐσφάνωται
Ὀὐ μὲν πᾶσα διαπρὸ περιδρομος, ἀλλὰ διαμρ

IONII

ssimi Regis LUDOVICI XIII.
& Professore.



ΟΙΚΟΥΜΕΝΗΣ ΠΕΡΙΗΓΗΣΕΙ
Ευρυτέρῃ βιβλιῶνα πρὸς Ἡλιῶ
ΣΦΕΝΔΟΝΗ ΕΙΚΥΝΑ



Desiring an artifact just for its mischief glossy properties innate within us. This indication of possession can be found in the wild, as we recognize the same physical attraction in some animals as well as to humans. Obviously what differs us from the creatures of the wild is the perception those objects hold. We are all lured to attractive gems and trinkets, and as a society we have elevated material properties to heavenly stature.

Men all over the world marveled the lustrous materials far from reach and have concentrated large amount of efforts to achieve them. This led men to search across the vast frontier for those precious resources, enhancing the interaction between civilizations and transferring knowledge, language and trade.

EVETIAE PARI...
MELCHIOR TAY...
ANNO MDCCXCVIII



Flint Blade. Guerrero State, Mexico , 300 BC.

Made by “knapping.” A process where one hard object is used to strike another hard object such as flint stone to create a shape or form.

Obsidian trade route

"Cross-cultural trade is as old as the hills. In Neolithic Chatalhoyuk in ancient Anatolia, we find cowrie shells from Jericho, and in Jericho we find obsidian from Anatolia. A by-product of such trade in objects is an exchange of words, ideas, animals, even humans, both male and female."

William Irwin Thompson. The
Etherealization of Capitalism,

Covering the path of human basic needs created value in early societies, allowing trade to be an early way of international communication route exchanging New inventions, religious beliefs, artistic styles, languages, and social customs, as well as goods and raw materials.

The history of obsidian merges with the history of early man. This volcanic glass

was among the preferred raw materials from the Paleolithic, both for its technical qualities for the realization of effective tools, and for its aesthetic qualities. It will spread very locally first, then will accompany the colonization of new territories and the creation of new trade roads.

Trade is based on the fact that natural resources are in abundance or scares, and if encountered somewhere else they

can be easily traded value for value.

The exchange of good is the beginning of trade and the emerging of material value system but only during the Neolithic era trade has become more organized to the appearance of exchange networks connecting far distance communities.

Trade is believed to have taken place throughout much of recorded human history, and perhaps it is the initiator of the written language, while transaction was needed to be recorded for both of the sides. Nevertheless, there is evidence of the

exchange of obsidian and flint during the Stone Age.

Largely, archeologists discover that in Neolithic period, in the Mediterranean, trading of Obsidian material were vast. Networks were in existence at around 12,000 BC, and Anatolia in turkey was the source primarily for trade with the Levant, Iran and Egypt.

Obsidian, a black volcanic glass, is know to be produced when felsic lava extruded from a volcano cools rapidly with minimum crystal growth. Obsidian is commonly



found within the margins of rhyolitic lava flows, known as obsidian flows, where the chemical composition induces a high viscosity and polymerization degree of the lava.

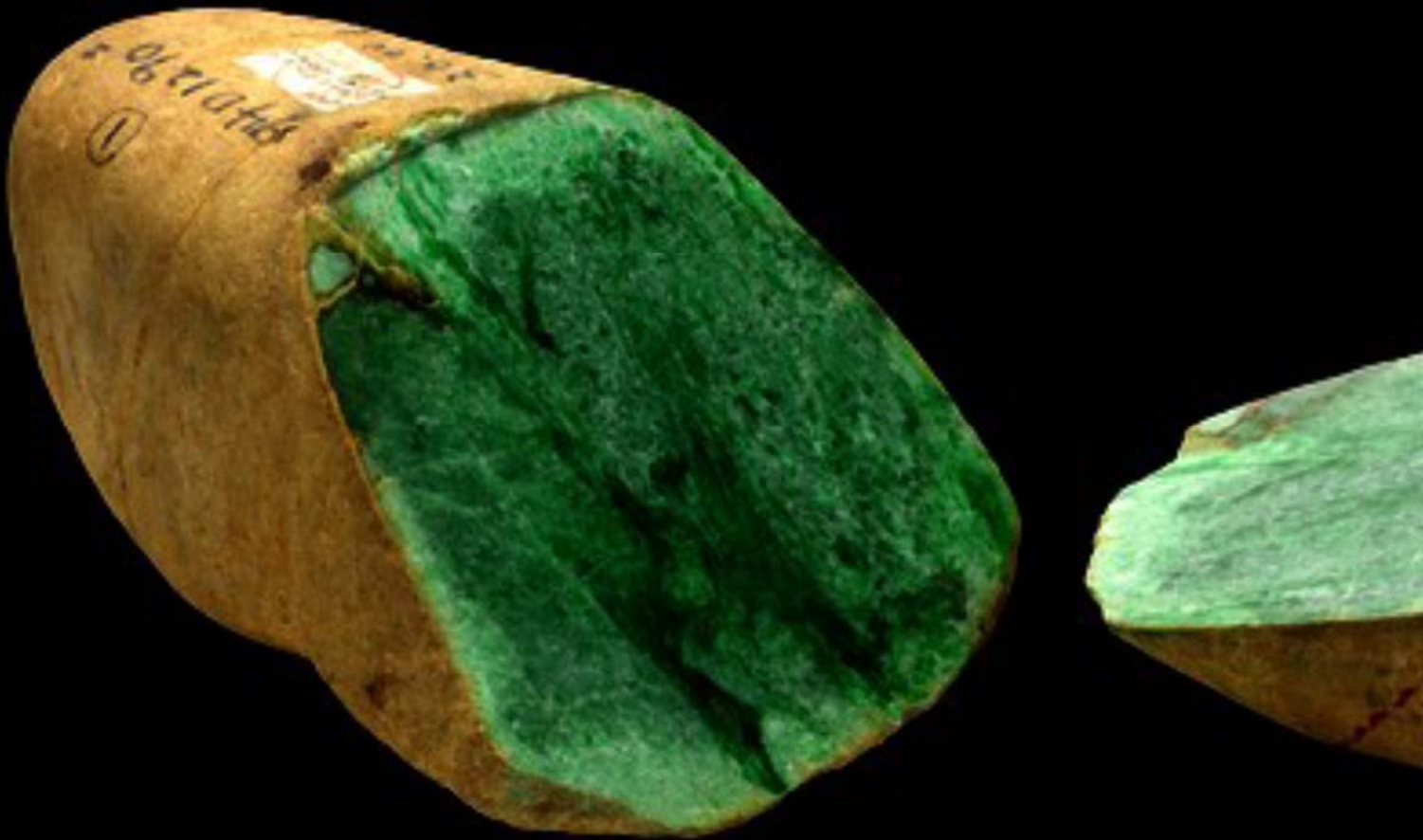
Obsidian was once one of humankind's most sought-after materials, the "rich man's flint" of the stone-age world. By its properties, it was not being only a shiny object : with the use of the right force and the right angle it fragments and transform immediately into lethally sharp and tough blades. Even after the invention of bronze, obsidian was still literally a cutting-edge technology.

Differences in the trace elements in each volcanic source let archeologists trace the origin of individual obsidian artifacts and reconstruct earliest evidence of commerce. Long-distance movement of obsidian, even hundreds of thousands of years ago, suggests the early stirring of true trade.

Obsidian, was first recognized as a uniquely sensitive indicator of prehistoric trade, both because of the great desirability of this material before the use of metals, and also because the trace-elements it contains are usually diagnostic of individual sources. Work on Near Eastern obsidian in the Neolithic

period has been a particular focus of interest, from which the information in the following maps has been extracted. They indicate a remarkable story, from limited circulation by late-Pleistocene hunter-gatherers, to its increasing use by the first farming communities.

The Jade age

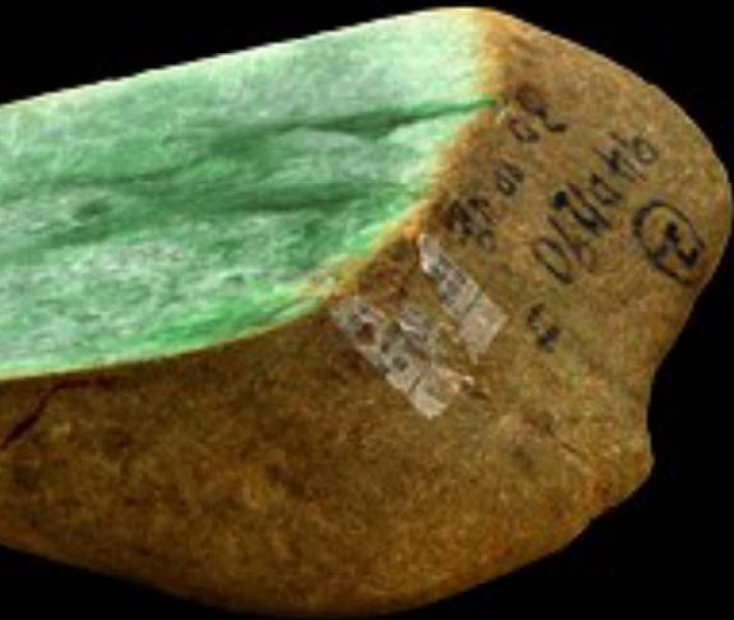


Contemporary Chinese religion is the product of continuous historical development from prehistoric times.

In that period the area of present-day China was inhabited by a large number of tribal groups. In around 5000 BC several of these tribes developed agriculture and began to live in small villages surrounded by their fields. Domesticated plants and animals included millet, rice, dogs, pigs, goats, sheep, cattle, and silkworms. The

physical characteristics of these early agriculturalists were similar to those of modern Chinese. The archaeological record indicates gradual development toward more complex technology and social stratification.

Above gold or silver, the Chinese most prized material has always been Jade. From ancient times, this extremely tough translucent stone has been



Jade coiled dragon

Jade coiled dragon, c. 3500 B.C.E., Neolithic period, Hongshan culture, 4.6 x 7.6 cm, China © 2003 Private Collection © Trustees of the British Museum

worked into ornaments, ceremonial weapons and ritual objects.

In many parts of China archeologists have revealed not only the antiquity of

the skill of jade carving, but also the extraordinary levels of development it achieved at a very early date.

As early as 6000 BC, Jade was being mined in China. The term "Jade" is used to translate the Chinese word Yu, which means "precious stone".

When extracted from the earth, Jade is plain and dull, and because of its durable properties, it was used as a tool material for blades, knives, axes and more. But somewhere along the way, some discovered that you could polish jade into a brilliant luster. Suddenly, what used to be just a hard rock was now a shiny object and an item of attraction and desire. Immediately, jade has transformed from a valuable resource for creating tools into a primary currency. And once its brilliant, shiny nature had been uncovered, it didn't take long for jade to make its way into spiritual customs.

Jade in fact refers to two minerals : nephrite and jadeite.

Chemically nephrite is a calcium magnesium silicate and is white in color. However, the presence of copper, chromium and iron gives colors ranging from subtle grey-greens to brilliant

yellows and reds. Jadeite, which was very rarely used in China before the eighteenth century, is a silicate of sodium and magnesium and comes in a wider variety of colors than nephrite.

Nephrite is found within metamorphic rocks in mountains. As the rocks weather, the boulders of nephrite break off and are washed down to the foot of the mountain, from where they are retrieved.

With the recoveries in several parts of China of numerous jades from middle to late Neolithic contexts (ca. 4500–2000 BC), Chinese scholars have resumed an idea raised in an ancient text concerning the existence in China of a Jade Age between the Stone and the Bronze Ages. If accepted, the notion of a Jade Age would create a Chinese Four Age system (Stone, Jade, Bronze, Iron) to be contrasted with the Three Age system (Stone, Bronze, Iron)

Jade was worn by kings and nobles and after death placed with them in the tomb. As a result, the material became associated with royalty and high status. It also came to be regarded as powerful in death, the Chinese believed jade had

universe and emanated transcendental qualities. Through this precious stone's power, the ancient Chinese sought the key to earthly protection and everlasting life. Because of this belief, jade became a vital element in burial rituals. Throughout China's history, jade has been a symbol of immortality and ceremony. Ornaments, pendants, seals,



Neolithic Cong, 3rd millennium BC

To honor the Spirit of the Heaven and Earth the round pi disk and square Cong tube were designed to accommodate the belief that the heaven was round and the earth square

magical powers and could preserve the body, protecting it from decay.

Jade was created by the supernatural forces of heaven to guide humanity. According to the Chinese, jade embodied the five virtues : charity, modesty, courage, justice and wisdom. Jade embodied the forces of nature and the



Jade disc, or bi, Liangzhu culture, 2500 BC, 18 cm in diameter . Trustees of the British Museum

Flat jade disc with a circular hole in the center. Neolithic bi represented deities associated with the sky (four directions) as well as standing for qualities and powers the wearer wanted to invoke or embody.

burial shrouds, and decorations in jade

have been created to exploit this otherworldly power.


There is some evidence for prehistoric religious activities, particularly for a cult of the dead. Grave offerings are found in almost all primary burials, with quantity and variety depending on the status of the deceased; tools, pottery vessels, objects of jade and turquoise.

Jade, in particular, a substance that does not break down and requires extraordinary skill and effort to carve with the simplest of tools, was associated with high-status burials and perhaps symbolized the eternity of the afterlife.

The *bi*, a flat disk with a central hole, and *Cong*, a tube, square on the outside and circular inside, were jade mortuary objects, apparently not used in life, whose meanings have not been determined. The bodies and faces of the dead were often painted with red ochre, a symbol of life. All of these practices constitute the prehistoric beginnings of Chinese ancestor worship.

In addition to fine pottery, the Late Neolithic in China witnessed the development of jade carving, lacquering and other jewelry crafts, confirmed by the increasing number of precious

artifacts discovered in the graves of wealthy individuals. It was also during the third millennium that bronze metallurgy evolved. The earliest known bronze objects in China were found in the Majiayao culture site, dating to between 3100 and 2700 BC.



Sweat of the sun Tears of the moon

Gold for the western world has been a valuable and highly sought-after precious metal for coinage, jewelry, and

other arts since long before the beginning of recorded history.

Gold and religion have maintained a symbolic link in many civilizations and despite having no trade or exchange, have adopted gold as a symbol of the gods and the practice of a cult or ritual.

This can be related to some properties of gold. Its color, deep yellow, and its glittering state, are similar to the sun's rays, signifying it with the celestial power. Additional fact, gold is a noble metal and unreactive element, protecting it from oxygenizing, changing and reacting in comparison with other metals and materials. Thus, making it a

materialization of immortality.

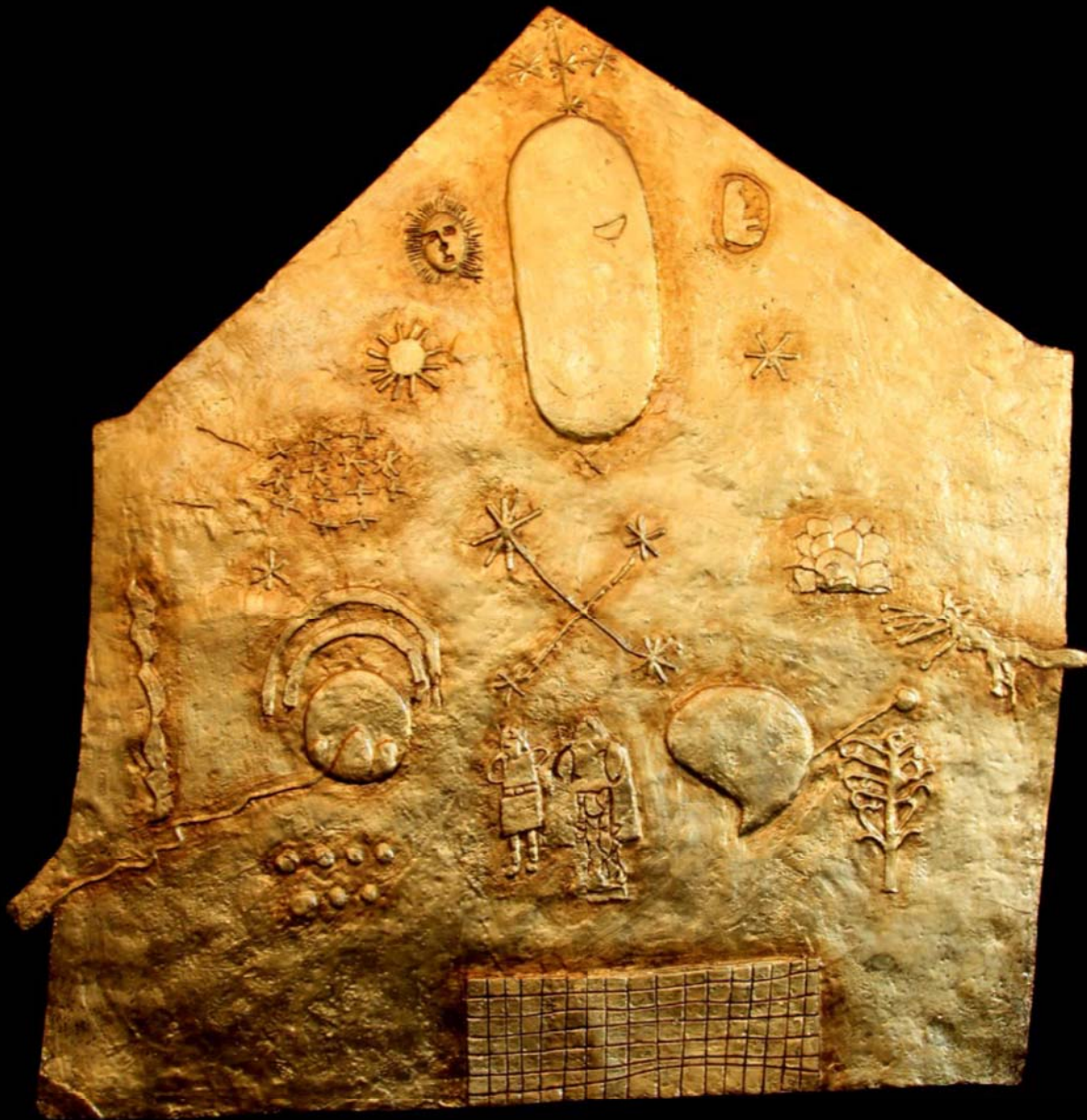
Far from any influences of ancient empires and the later European thirst for power and resources, was a parallel world with other empires having a different approach to the precious resources of the old world.

One of those empires was the great Incan empire. For the Incan, religion was embraced as an explanation for natural phenomena and the formation of society. Religion served an important purpose as it developed into a complex set of myths



sun god "Inti",

an ancient Peruvian mask, son of the great creator god Viracocha



Sheet of gold showing the circulation of energy for the Incans.

Qoriqancha museum Cusco, Peru.

that governed the empire. Their polytheistic religion had several deities who controlled how the world functioned. The few relics that survived make it clear that the ancient Incas believed in a firm association between shiny objects and

the afterlife. In fact, these shiny objects seemed requisite to gain immortality, while recent excavations at Sipan, Peru, have uncovered tombs in which gold objects were consistently placed on the right side of the deceased and silver on

the left.

From the gods of the Inca culture, the most important of all was Inti, the sun god, son of the great creator god Viracocha, regarded as the ancestor of the Incas. He was usually represented in human form, his face portrayed as a gold disk from which rays and flames extended. The Incas honored him with magnificent golden artworks. The Sun Temple, at Cuzco housed a golden image of Inti that looked like the sun.

The Incas called gold the "sweat of the sun" and believed that it represented the sun's regenerative powers. All gold belonged to the ruler of the empire, the Inca himself, who claimed to be descended from the sun god.

Inti's wife, the mother of the Incas, was the moon goddess, Mama Kilya. Her shrine in the Coricancha had walls of silver, a metal that was sacred to her because it was believed to be her tears. The Incas marked the passage of time with the phases of the moon. Mama Kilya was the driving force of the calendar the Incas used to schedule their rituals and festivals.

When the Spanish arrived at the borders of the Inca Empire in 1528, the empire spanned a considerable distance.

The story of a Spanish soldier, Pedro the Cieza de Leon, who made an account of what he saw in one of the temples in 1547 says that he gazed at an image of the sun of great size, made of gold, beautifully wrought and set with many precious stones. There was a garden in which the earth was lumps of fine gold and it was cunningly planted with stalks of corn that were of gold, stalk, leaves, and ears. Aside from this, there were more than 20 sheeps of gold with their lambs, and the shepherds who guarded them with their slings and staffs, all of this metal. There were many tubs of gold and silver and emeralds, and goblets, pots, and every kind of vessel all of fine gold.

conclusion

- Our imagination has given us the ability of perception, and the objects we create hold those imaginary powers and spiritual connection.
- The transformation of material from dull opaque to shiny object transcends the material to spiritual virtuous.
- Scarce resources were specially sought after, elevating material properties to heavenly stature, or to high in-demand as the foundation of monetary systems in trade.
- Objects such as jewelry, sculpture and other worship objects are a time capsule of man ingenuity and technology.

Man made



CHAPTER 05



The art of jewel making has been a kept secret for centuries. The knowledge and secrets of the trade were preserved and passed father to son.

The goldsmiths and other jewelry artisan have improved their methods and techniques along the years to the point of a defined physical trademark just by observing the design and the artistic craftsmanship.

Jewelry in general has evolved from its prehistoric state of portable spiritual art into a shiny object, worn by royalty and made by specialist artisan.

In the recent century, more books have been written, exposing the secrets of jewelry making, and especially with the explosion of world wide information. The internet has made it easy to share and learn those secrets and some of the dying knowledge has been revived.

Final cut

Diamonds were first discovered in India about 6,000 years ago. Those first diamonds were found on sides of river beds in some reigns of India, but actual mining industry can be traced back to around 600-800 BC.

This explains why India has always been regarded as the natural home of gems trade and processing, such us diamond cutting, and up to 1728, the entire world diamond supply have originated from India.

Even in its raw form, diamonds have been associated with mystery and superstition, gaining its wearer special powers due to its scarcity, physical hardness and luster. They were worn in battles to insure victory and sometimes invoked as an antidote to poison. Other superstitions associated with the stone included the caveat that placing it in the mouth would bring on a loss of teeth. In





Imperial Crown of the Holy Roman Empire, Imperial Treasury, Vienna, late 10th or early 11th century

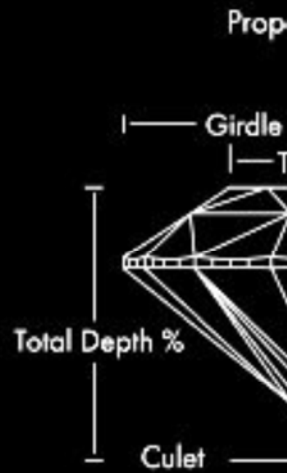
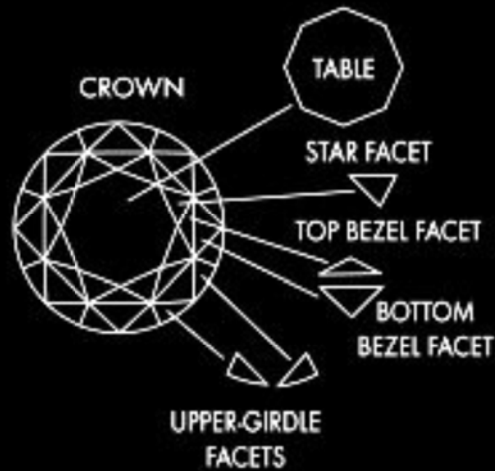
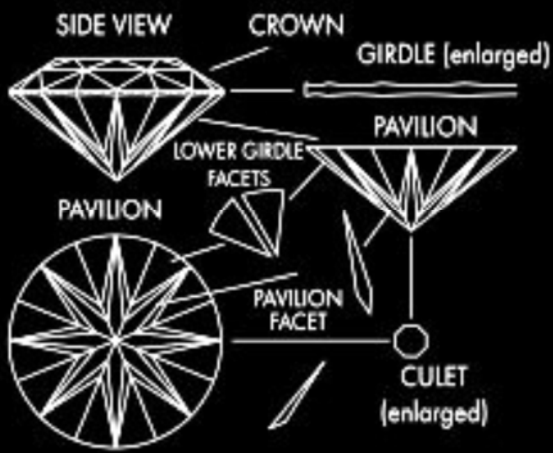
other cases, finely ground diamond, made into a powder, was thought to be an effective poison.

During the Middle Ages, the diamonds lost their fashionable appeal to some of the more colorful gems like the ruby and emerald, which easily found their way into the jewelry of the rich and powerful of Europe more easily than the diamond.

Nowadays we all recognize diamond in its absolute form, faceted and shiny, however, in the middle ages, gem-cutting techniques had not yet been developed to unleash the brilliance of the stone. Diamonds were usually left in their natural state or shaped by a basic cut.

A few gemstones are used as gems in the crystal or other form in which they are found. Most, however, are cut and polished for usage as jewelry. It wasn't until the 11th century that diamonds were first worn, in their uncut form, as adornments. Probably influenced by the trading routes from the east.

It is not known with certainty when and where the art of grinding or polishing diamonds originated. The earliest systematic reference of early knowledge



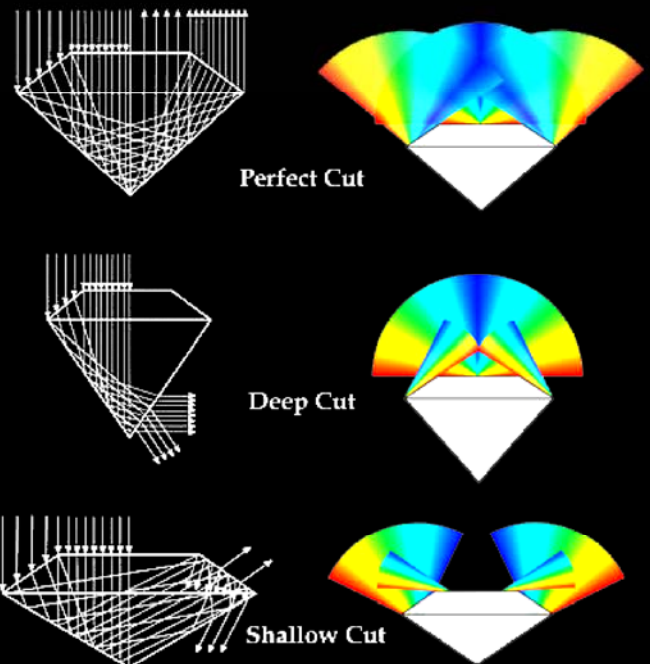
in the field of diamonds, appears to be the "Arthaçstra Kautilya" (ancient Indian literature, around 3rd century BC), without any indication of in which the polishing of diamonds is distinctly set forth.

The first description of cut diamonds is given by Tavernier, a French gem merchant and traveler who travelled through India, in the seventeenth century. In his book, "Voyage en Turquie, en Perse et aux Indes" (1679), it is mentioned that the Indians were polishing over the natural faces of the crystal, and preferred regularly crystallized gems.

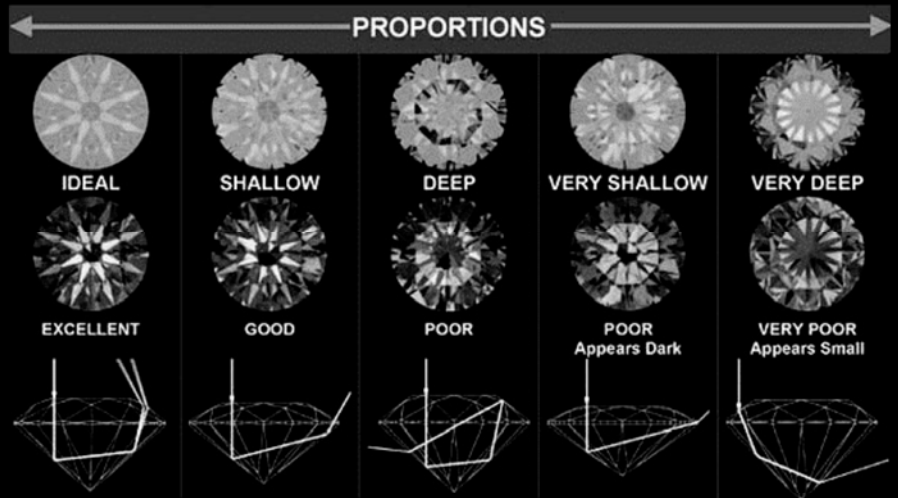
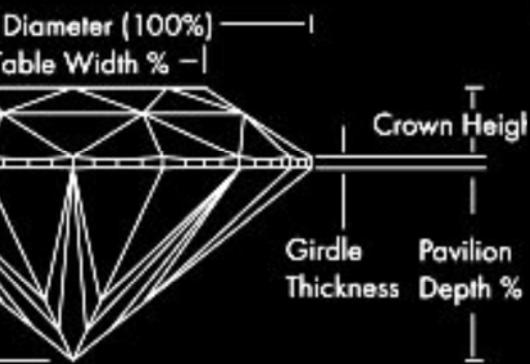
In the 17th century, however, a Venetian lapidary, stone cutting artisan, named Vincenzo Peruzzi developed the so-called brilliant cut. This cut revealed the

intricacies and the natural perfection of the stone.

Gems which are transparent are normally faceted, a method which shows the optical properties of the stone's interior



Proportion Analysis



to its best advantage by maximizing reflected light which is perceived by the viewer as sparkle. There are many commonly used shapes for faceted stones. The facets must be cut at the proper angles, which varies depending on the optical properties of the gem.

If the angles are too steep or too shallow, the light will pass through and not be reflected back toward the viewer. The faceting machine is used to hold the stone onto a flat lap for cutting and polishing the flat facets.

Polish and symmetry are two important aspects of the cut. The polish describes the smoothness of the facets, and the symmetry refers to alignment of the facets. With poor polish, the surface of a facet can be dulled, and may create blurred or dulled sparkle.



Imperial Crown of the Holy Roman Empire, Imperial Treasury, Vienna, late 10th or early 11th century

Ready set

In its rough state, a diamond and other precious gems are fairly unremarkable in appearance.

Most gem diamonds when recovered have dull, battered external surfaces often covered by a gummy, opaque skin. This is where the act of "stone cutting"

takes place; with it the polishing and creating flat facets in symmetrical arrangement brings out the diamond's hidden beauty in dramatic fashion.

In the process of what is now known as "traditional jewelry making" yet comes another process done by another artisan : the stone setter.



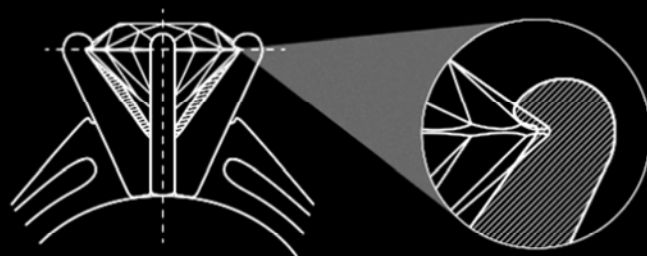
Stone setter at work 2014

Stone setting "micro-pave" technique done while using microscope to allow precision.

Stone setting is a way to craft a stone or diamond with metal. There are many

kinds of stone settings and are used extensively into jewelry design. Each setting produces a different appearance and can be combined with other settings to make eye-catching appearance.

Prong Setting



Initially discovered in 1886, Prong setting is much popular to create solitaire rings. In this setting, the stone is set in a metal basket secured by two or more prongs (or claws). Mostly "four Prong setting" is preferred by the jewelry designers. Prong setting increases gemstone's or diamond's sparkling light effect plus it also offers convenience to clean the stone.

Bezel Setting



Before introducing prong setting, bezel setting was the most common technique of all, due to the fact that it provides durability and excellent protection to the stone.

Bezel setting covers the stone surrounding its circumference giving a bigger look to the stone and ring. Apart from this, bezel setting comes with a smooth surface which does not hook on clothes hence it is preferred over prong setting.

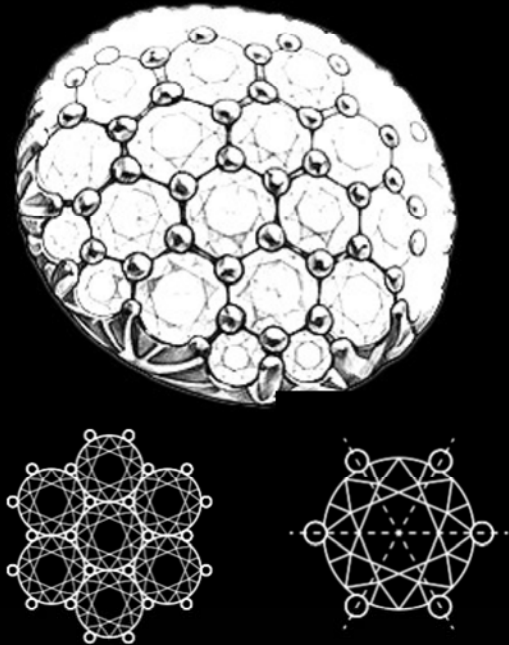
Bar Setting



Bar setting can be defined as a fusion of bezel setting and prong setting as the ring's prongs on each of the setting are

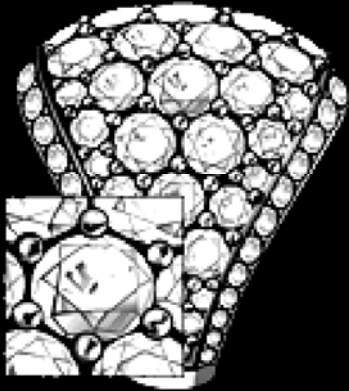
crafted into elongated bards to hold the stone. Usually it is used for multiple stones setting to create an attractive look.

Cluster Setting



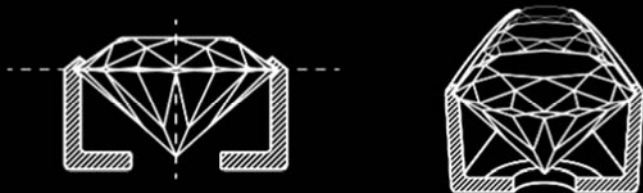
A cluster setting design represents a set of multiple diamonds or gemstones. Usually cluster setting is used to figure some design on a ring like a flower, bird, star and so on. This special technique of cluster setting is also used to produce a larger gem appearance using many small semi-precious stones, also known as "micro-pave".

Pave Setting



Pave setting is quite similar to prong setting but is used while multiple diamonds or gemstones are involved in the setting. Pave setting covers the entire ring surface with diamonds secured by many thin prongs. As the ring or jewelry contains more diamonds, obviously it is more costly than other rings.

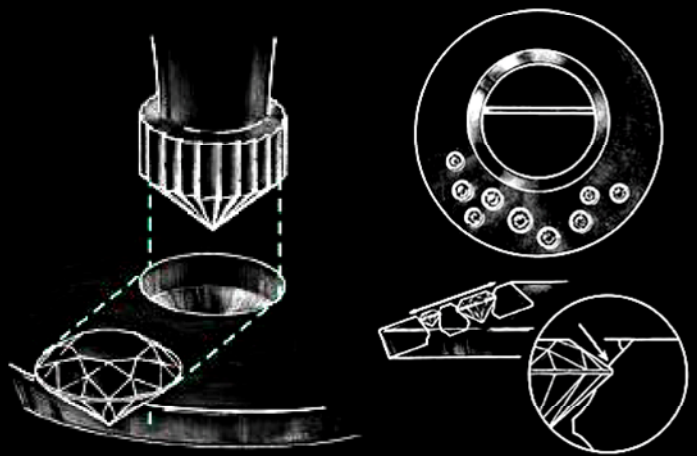
Channel Settings



Looking like an extended bezel setting, channel setting accents multiple stones in a linear series in a ring. In channel

setting, many diamonds, of similar size and shape, are linked in a channel inset with a narrow strip of metal to hold the stones. Despite its safety, it veils individual stone's beauty.

Flush Setting



Flush setting uses a tapered hole to hold stone in the ring supported by metal surrounding on the stone circumference. Through this way, the diamond is secured producing a nice looking, smooth and sleek presence to enhance diamond's beauty.

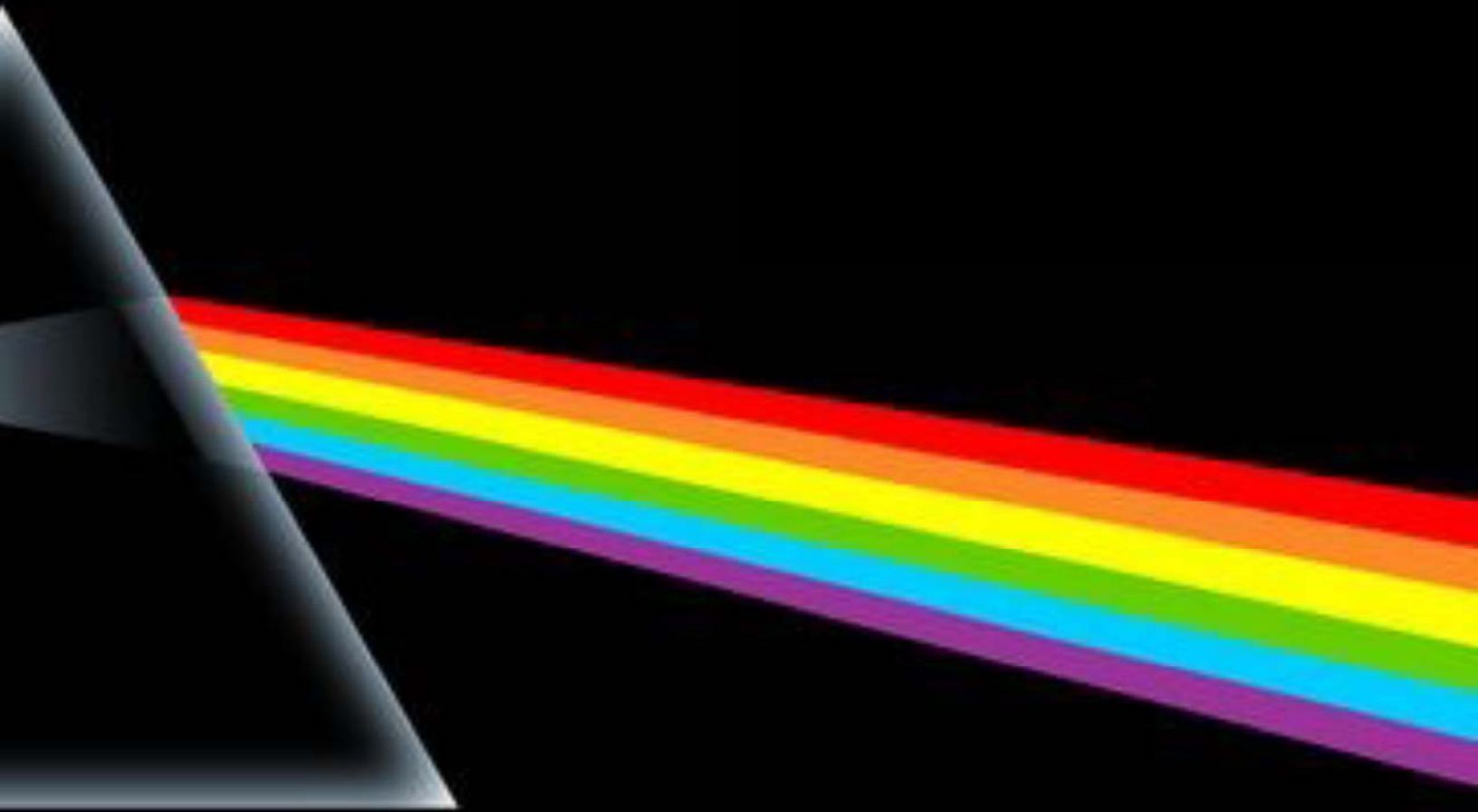


Here we go

Light has always been mysterious and eluding, controlling our lives from dusk until dawn, changing seasonally and hard to be controlled.

Scientific researches for the past recent centuries have taught us that light is part of the electromagnetic spectrum, which ranges from radio waves to gamma rays. Visible light is not different from the other parts of the electromagnetic spectrum with the exception that the human eye can detect visible waves. It is no accident that humans can detect and see light. The detection of light is a very powerful tool for probing the universe around us.

We, humans, possess “color vision”, the ability of an organism or machine to distinguish objects based on the



wavelength or frequencies of the light they reflect, emit, or transmit.

Our eyes are sensitive to a very narrow band of frequencies within the enormous range of frequencies of the electromagnetic spectrum. This narrow band of frequencies is referred to as the visible light spectrum.

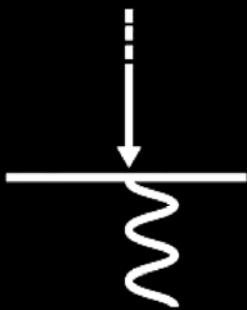
Specific wavelengths within the spectrum correspond to a specific color, based upon how humans typically perceive light of that wavelength. The long wavelength end of the spectrum corresponds to light

that is perceived by humans to be red and the short wavelength end corresponds to light that is perceived to be violet. Other colors within the spectrum include orange, yellow, green and blue.

Light reaches objects from many different sources. From large and powerful sources of illumination such as the sun or the main lights in a room, and also by reflection or scattering from surrounding objects, such as mirrors,

windows, buildings, the sea, lakes or ponds.

In general, when light reaches an object it interacts with the objects in various ways, sometimes with combination of ways.



Absorption

Light energy wave goes into the object itself and is being absorbed. In this

case, light is entering without leaving, converting the energy to heat. In general, dark objects are more likely to absorb light energy, while objects that are light in color are more likely to reflect or scatter the light energy they receive.



Reflection

Light reaches the surface of a very shiny object and

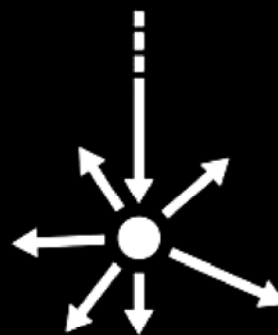
"bounces" off the object, in both manner, either specular (mirror-like reflection) or diffuse (retaining the energy, but losing

the image) depending on the nature of the interface.

If the reflecting surface is very smooth, the reflection of light that occurs is called specular.

The laws of reflection are as follows:

- The incident ray, the reflected ray and the normal to the reflection surface at the point of the incidence lie in the same plane.
- The angle which the incident ray makes with the normal is equal to the angle which the reflected ray makes to the same normal.
- The reflected ray and the incident ray are on the opposite sides of the normal.

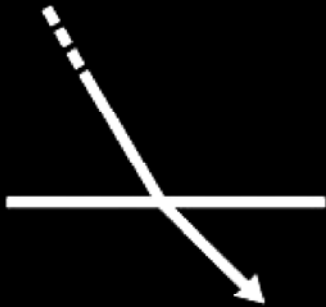


Scatter

This is the most common of these possibilities when visible light is incident on ordinary solid, opaque objects. While reaching the surface of an object, light leaves this surface not in one particular direction, but in many directions spread over a

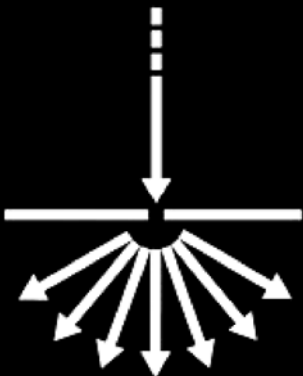
wide range of angles.

This applies particularly to non-highly-polished surfaces, such as paper, or walls painted matt white.



Refraction

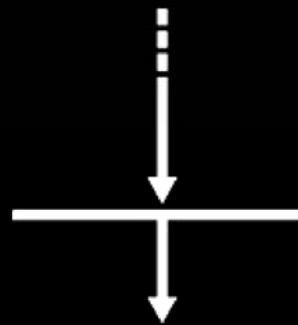
In some cases depending on material properties (such as blocks of glass or plastic, water, ice, windows and spectacles) light enters the object instead of leaving the surface of the object, and can pass through. The light wave is bending when it enters a medium where its speed is different : the refraction of light when it passes from a fast medium to a slow medium bends the light ray toward the normal to the boundary between the two media.



Diffraction

Diffraction is the slight bending of light as it passes around

the edge of an object. The amount of bending depends on the relative size of the wavelength of light to the size of the opening. If the opening is much larger than the light's wavelength, the bending will be almost unnoticeable. However, if the two are closer in size or equal, the amount of bending is considerable, and easily seen with the naked eye.



Transmission

Transmission is the moving of electromagnetic waves through a material, whether visible light, radio waves, ultraviolet etc. It can be reduced or stopped when light is reflected off the surface, or absorbed by the molecules in the material.

conclusion

- Jewelry as an object of design has gone a long way through the history, and can easily be associated and referred as high-end artisanal craft.
- The quality of such lavishing pieces of jewelry are at the equivalent of miniature sculptures.
- The designs are based on knowledge that has been preserved for centuries, and the creation is involving number of artisans, each with its own unique task in hand.
- Creating those amazing jewelry shows how the artisans control the light, allowing metals to reflect it with different techniques making gems to refract, and the jewelry to become a vehicle of light, transporting it in the thin air.
- In this case, this thought form allows me to contemplate and rethink of jewelry, now leaving miniature scale and blowing it up. What do we see? An object. Sculpture like. Shiny. With the abilities to play with light, therefore enhanced.
- Jewelry and light have always gone side by side, however, jewelry and man have been very close in the beginning of mankind, as portable art, until the art changed its scale and became static. The static object is known to us as sculpture, and jewelry in that sense is just a precedent state of sculpture evolution.




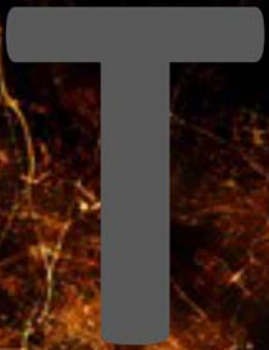
Incroyables et Merveilleuses Cerise ring , Dior jewelry

INLIGHT

CHAPTER 06

Light pollution

Paris from space 2014



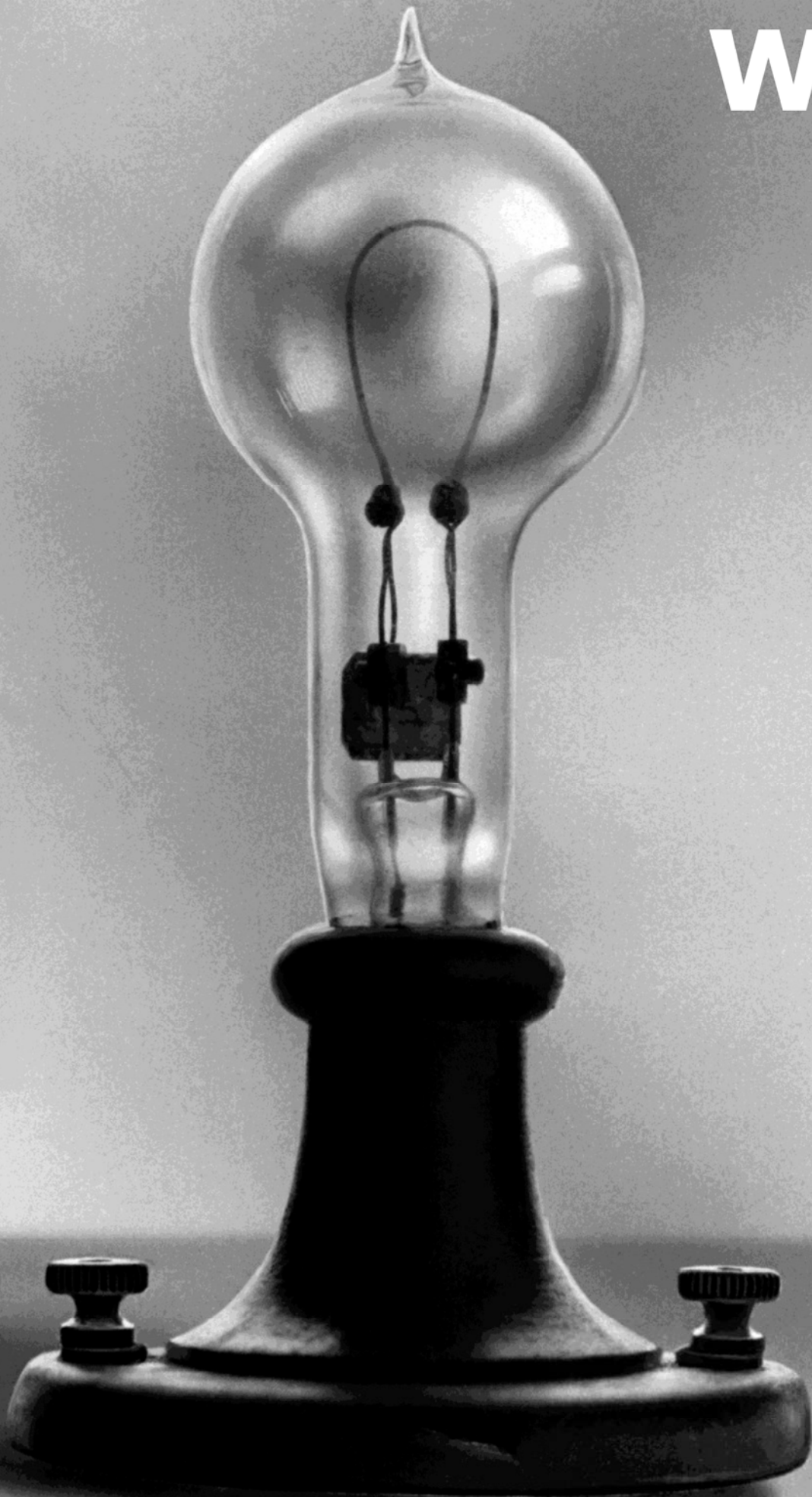
Light usually refers to visible light, which is electromagnetic radiation that is visible to the human eye and is responsible for the sense of sight.

Our main source of light here on earth is the sun, providing us precious energy for the sustainability of life.

Historically, another important source of light for humans has been fire, from ancient campfires to modern kerosene lamps. With the invention of electricity, electric lighting has replaced firelight.

Nowadays, light has surpassed its original functional purpose of creating light to the point where light is a new field of art and design.

Who's got light



*Thomas Edison's electric
lamp, 1880.*

Edison and Swan Electric Light
Company Limited

The ability to create light for extended light hours enabled men to have the power of control over the element of time, at the beginning made in small scale, by the development of light objects, such as, campfire, torches and oil lamps.

Around the 7th century BC, the Greeks started making terra cotta lamps to replace handheld torches. Centuries would pass before the next big thing in lighting would be developed.



Terracotta oil lamp , Byzantine period 800 AD

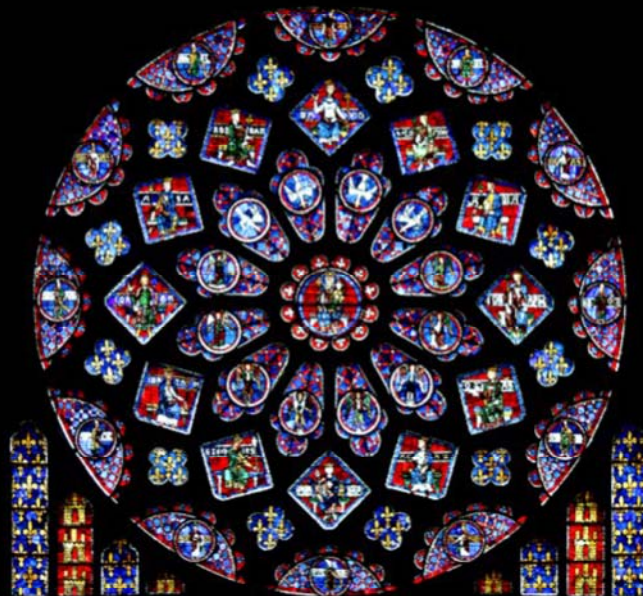
Harnessing the light with the progression of human technologies meant that light can be utilized to express the connection between man and the divine. In today's terms it is simply known as "light art", a form of visual art where the main medium of expression is light.



Dome of Rome's Pantheon, Italy , 128 AD

The 'oculus': scientists believe that the 2,000 year old Pantheon in Rome acts as a giant sundial.

Light art can be found all over the world related to ritual and religion, and the use of light was done extensively by the Christian churches.



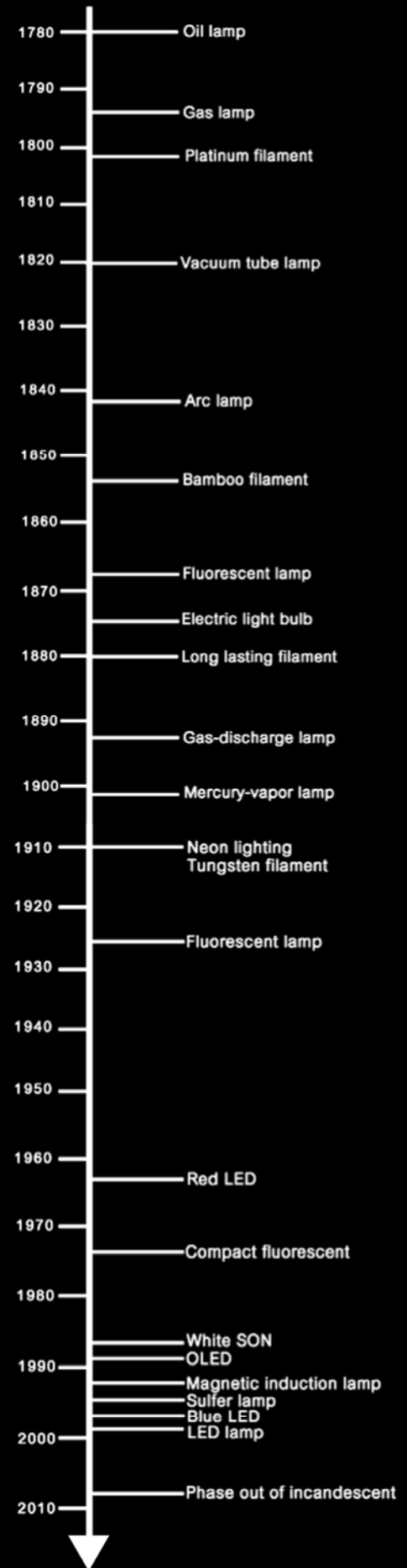
Chartres Cathedral donated. France 1220 AD

The north transept rose represents the Virgin Mary as Queen of Heaven, surrounded by Biblical kings and prophets.

Stained glass can be used to color transmitted light. Examples of this go back to the 4th century. This art form is mostly seen in churches and mosques with elaborate stained glass windows.

Since the industrial revolution and the development of electricity the modern light sources have changed dramatically.

Light is now artificial, allowing the emergence of modern light art and, as the technologies progress we can observe an experimental modern art made by the use of light, by artists, architects and designers.



Light art

More than almost any other medium, electric light has revolutionized our world. Light is considered to be rather a practical than an artistic tool and the contribution of the latest decades technology have made light to be also considered as material.

Today we live in cities and gardens of light, and for almost a century, artists have been working with light bulbs, fluorescent and neon light, glowing LEDs, and powerful spotlights. The medium of light has rooted deeply in our society and what was once experimental art, is nowadays contemporary design, where designers can effectively explore in their works the new properties of light as a medium with more powerful and more vivid artistic expression.

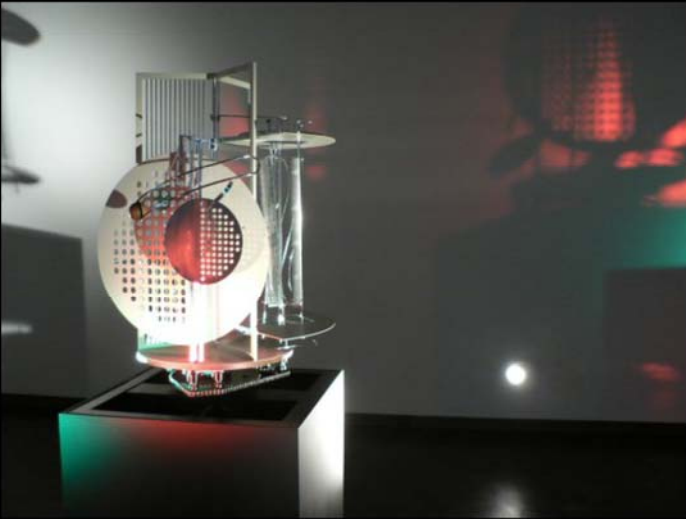
Light sculptures and designs are art form

in which sculpture, or any kind of art object, produces light or the interaction with light.

In the art of light, we can easily spot László Moholy-Nagy (1895–1946), one of the first to use this technique. He a Hungarian painter and photographer as well as a professor in the Bauhaus school.

“The reality of our century is technology: the invention, construction and maintenance of machines. To be a user of machines is to be of the spirit of this century. Machines have replaced the transcendental spiritualism of past eras.”

László Moholy-Nagy



Light-Space Modulator, 1921-30

Kinetic sculpture (151.1 x 69.9 x 69.9 cm).
László Moholy-Nagy

Moholy-Nagy stated that “everyone is equal before the machine”, in such state withholds possibilities for advancement, marking the only way to move forward from the utter breakdown of society. The camera, was a tool of modernity which can be utilized to see reality in new and different ways. Moholy-Nagy regularly experimented with both photography and film to explore this idea and produce new ways of seeing.

The influence of his techniques and ideas continues to have a strong impact on art, design and architecture, while he sought to disconnect from traditional artistic practices, by adopting the language of industry. He did this by literally breaking down the machine to its core components

– movement, shape, form and light – and testing how each can be utilized to create a new reality through art.

In the 1960s we see a peak of activity in creating sculptures and installations using diverse types of light, neon tubes, diffuse lighting or fluorescence, and with it the emergence of the American “Light and Space” group, that includes James Turrell, Robert Irwin and Doug Wheeler.

This unique group was characterized by a focus on perceptual phenomena, such as light, volume and scale, and the use of materials latest technologies and materials for installations conditioned by the work's surroundings.

By directing light , naturally of artificially. Light and Space artists made the spectator’s experience of light and other sensory phenomena under specific conditions the focus of their work.



Doug Wheeler, RM 669, 1969.



Doug Wheeler – SA MI 75 DZ NY 12 .2012

I see the light

CHAPTER 07



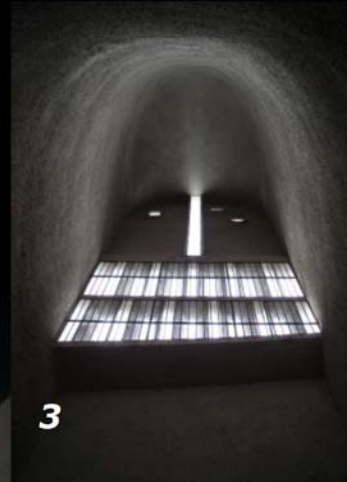


The emerging of technology today is beyond anyone could imagine. From all fields, and all at the same instance, we see a booming of knowledge and the incredible opportunities it brings.

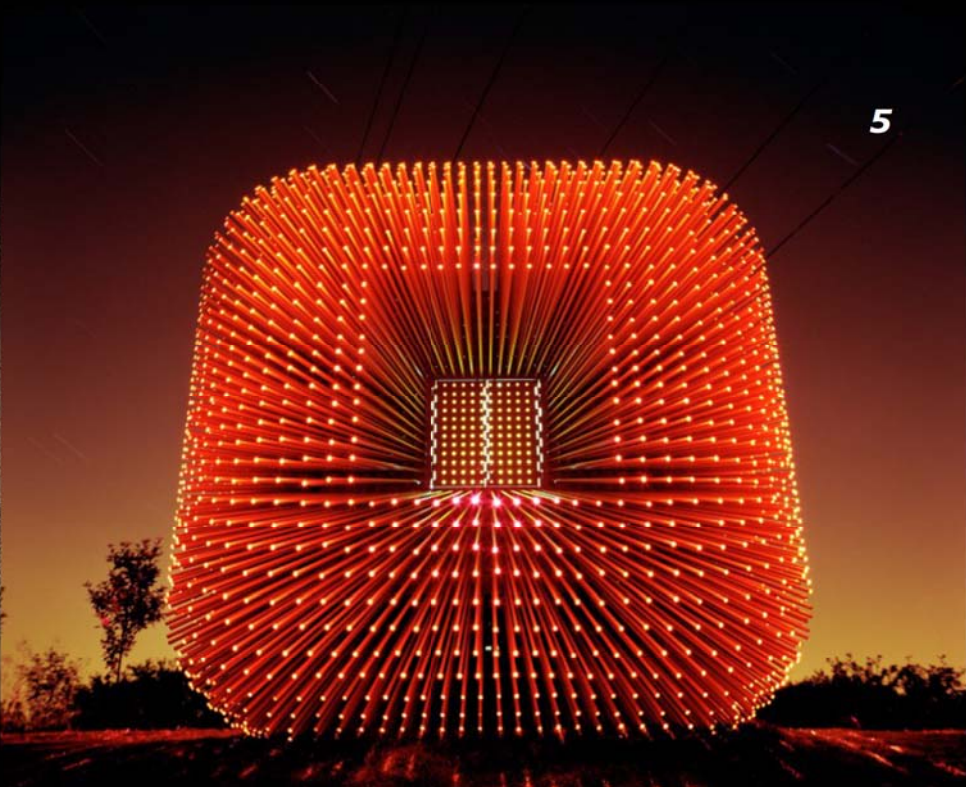
Without going into the deep details of each search, here I would like to present the visual research relevant to this project.

Architecture light

Light is essential for the human perception of architectural forms and space. Architecture has developed hand in hand with light, giving architects the expertise to manipulate light, by using materials with suitable properties, and by changing its direction and intensity. This manipulation of light alters the perception of architectural form and its details, thus changing the image expression of the entire object.



1. *Tadao-ando-church-of-light-closure. 1989*
2. *"The Holocaust Tower, Studio Daniel Libeskind.*
3. *Chapelle Notre-Dame-du-Haut de Ronchamp completed in 1954. Le Corbusier .*
4. *Seed Cathedral" Pavilion at Shanghai World Expo 2010 is designed by Thomas Heatherwick. IN*
5. *Seed Cathedral" Pavilion at Shanghai World Expo 2010 is designed by Thomas Heatherwick. OUT*
6. *Crystal Light of Center Stadium of World University Games. Architect: GMP International GmbH. Baku. Azerbaijan 2012*
7. *MAXXI – National Museum of XXI Century Arts, Rome. Architecture: Zaha Hadid & Patrick Schumacher, London / GB (Lighting design: Equation Lighting, London / GB)*





1

Light is a powerful element, a communication tool between man and the divine. It is not by accident that manipulating light has become a very sophisticated art form. The manipulation of artificial light technologies and materials allows visual

representation of magical images and spaces that could have never been perceived before.



2



3

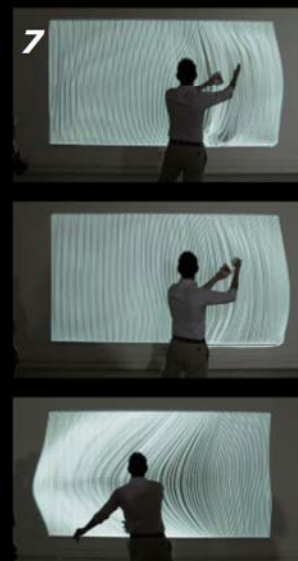
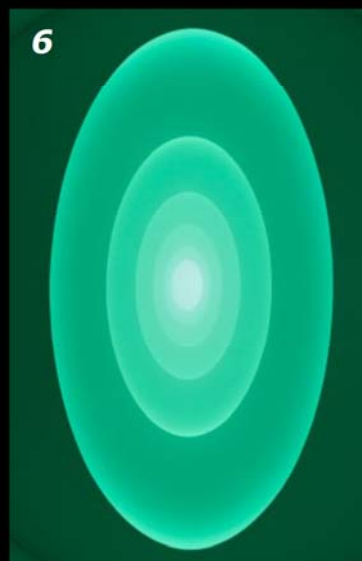


4

Installing light



1. *Olafur Eliasson, Contact 2014. Luis Viton Center Paris France.*
2. *"The Biggest Tent in the World, Louvre, France. Claude Lévêque. 2014 -2016*
3. *The Weather Project, 2003, Olafur Eliasson Monofrequency lights, projection foil, haze machines, mirror foil, aluminum, and scaffolding 26.7 m x 22.3 m x 155.4 m Installation in Turbine Hall, Tate Modern, London.*
4. *,Big bang fountain, Olafur Eliasson. 2014 Luis Viton Center Paris France.*
5. *Cathedral of Lights. 2012 Light Festival in Ghent, Belgium. by company De Cagna Illuminations .*
6. *'Aten Reign,' 2013, Guggenheim museum, NYC.*
7. *Nervous Structure (field) 2012 by Cristobal and Annica Cuppetelli.*
8. *Spectra, Ryoji Ikeda. 2014 Victoria Tower Gardens, London.*



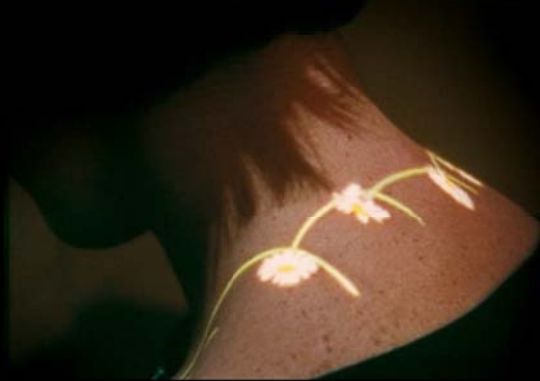
Low tech Light jewelry

Naturally, the body is the domain for jewelry, however the transformation of light object into the realm of jewelry is innovative and recent.

The techniques are composed from fusion of both jewelry and light. Designers play with the magical light and shadow games to create patterns, or to project images with a jewelry like object.

1. *Aurora Second Skin by Lighting brooch. Kyeok Kim 2007.*
2. *Future classic. Bartosz Ulatowski and Anna Sklodowska. Projecting virtual classic jewelry.*
3. *Future classic. Bartosz Ulatowski and Anna Sklodowska Necklace with a projector.*
4. *Portrait Projecting Ring. Luke Jerram 2010.*
5. *Portrait Projecting Ring. Luke Jerram 2010.*
6. *Monika Brugger - Game I - 2000 - jewel dematerialized light experience*
7. *Paper cut-out, image of a diamond ring . Steuart Bremner 2014. . Georgia Museum of Art.*
8. *Paper cut-out, image of a diamond ring . Steuart Bremner 2014. . Georgia Museum of Art.*





electronic Light jewelry

When technology finally meets the body, we encounter objects of light, taken from science fiction books that were written not so long ago.

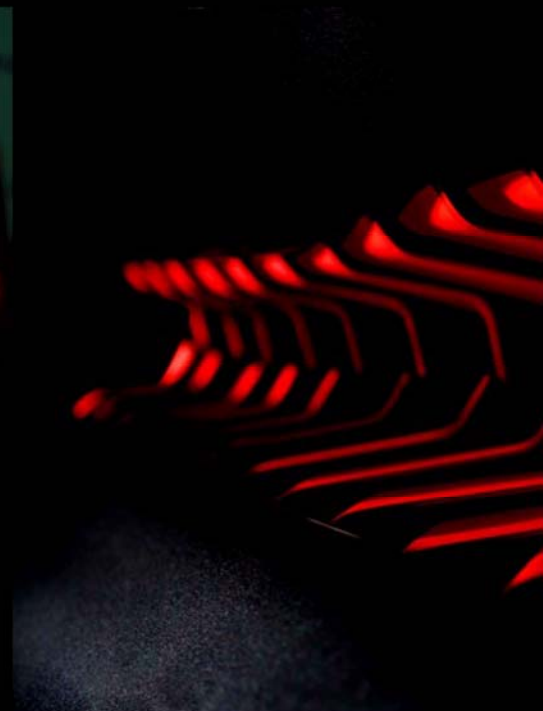
Designers and artist are creating fusion between technology and body, breaking the borders between the taboo of those electronic devices, which now are presented not as devices but as esthetic objects, paralleling technological components to jewelry gems.



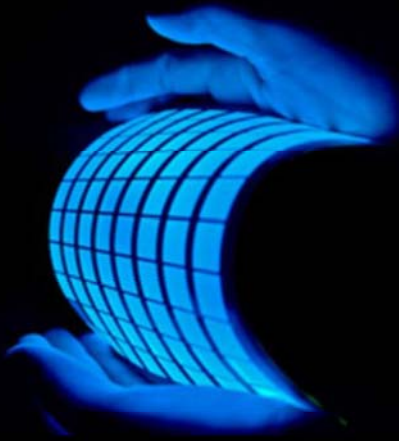
1. *'Pussy brooch' Brooch/Necklace. Lucy McRae*
2. *Broken beauties necklace. Marc Mann, Hamburg*
3. *Life time. Luke Jerram This piece of silver jewelry digital displays how long the wearer has to live*
4. *Cybertech Wings by JP Rishia .*
5. *Llili Colley Enlighted Jewellery*
6. *Danielle James - Inert 1*







Light Product design



The evolution of light from fire to lamp has gone a remarkable distance, and just in the past few decades, the bulb, as we know it, is rapidly changing and getting yet another facelift, with the help of LED technologies.

On the other hand, industries with limitless resources, such as the car industry, presents every year the cutting edge technologies and breakthroughs in synchronization with the coming conceptual designs.



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