Electromagnetic spectrum of light frequency

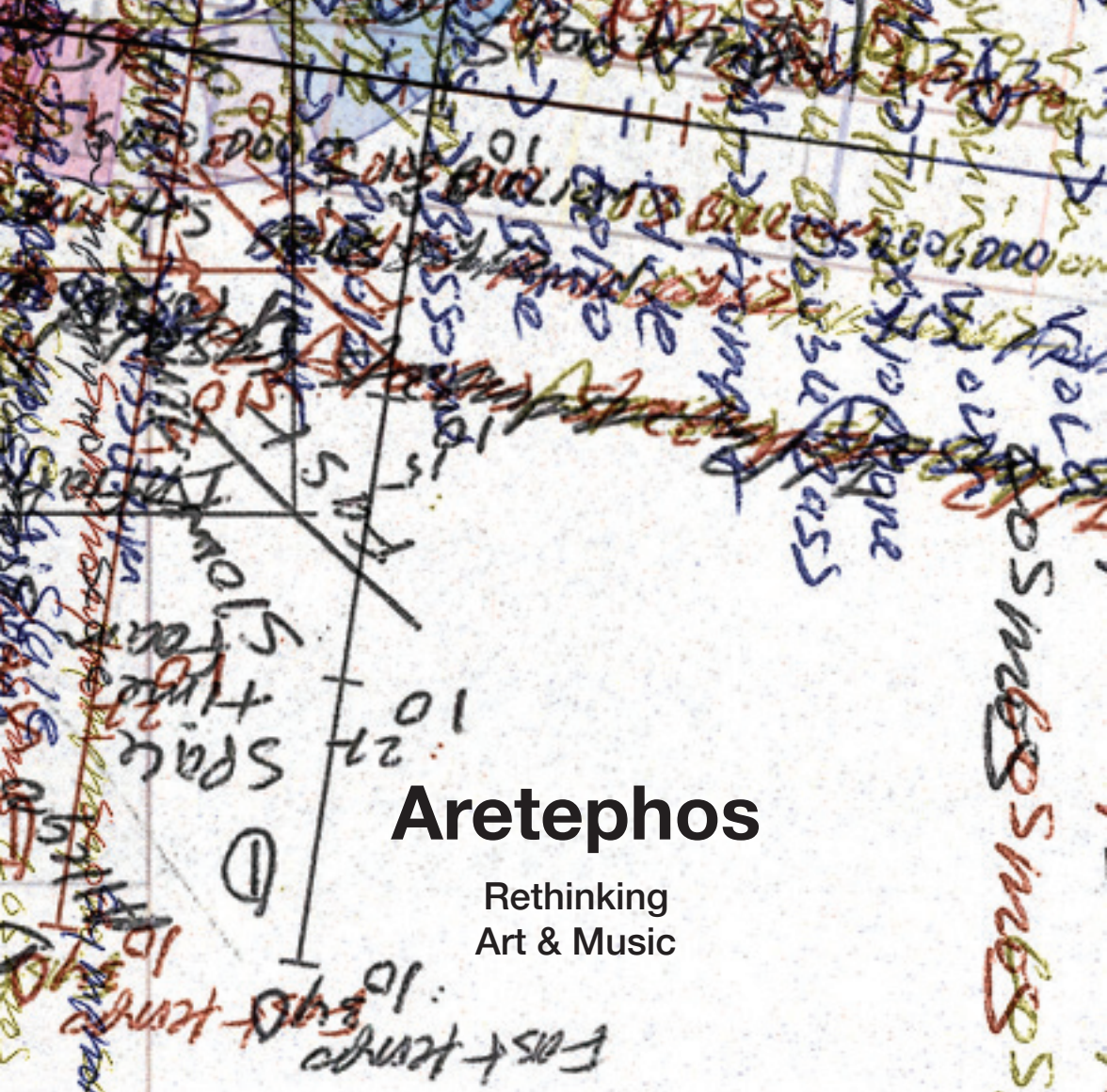
607.542 H_z

891.891 H_z

551.154 H_z

478.394 H_z

023 H_z



Aretephos

Rethinking Art & Music

Apostolos Stefanopoulos

Copyright 2023 © Apostolos Stefanopoulos

All rights reserved. This book or parts thereof may not be reproduced in any form, stored in any retrieval system, or transmitted in any form by any means—electronic, mechanical, photocopy, recording, or otherwise—without prior written permission of the publisher, except as provided by United States of America copyright law.

First Edition 2023

www.aretephos.com
www.symfoniamusic.com

Forward

“New York-based philosopher Apostolos Stefanopoulos wants to turn famous writers and philosphers’ words into highly symbolic digital art.

Stefanopoulos uses Aretephos to transform words from the likes of William Shakespeare, Friedrich Nietzsche, Oscar Wilde, and other writers and philosophers into computerized geometric art.

But Stefanopoulos does hit upon a unique angle of the word as art, made so by the code in Aretephos. The results are minimal and digital, but conceptually intriguing pieces of symbolic geometry.”

— from *Quotes Become Symbolic Geometric Art in ‘Aretephos’* by DJ Pangburn, VICE 2016

Aretephos

Rethinking Art & Music

Apostolos Stefanopoulos

Never surrender. You are your greatest work of art.

If you're going to be doing art — tell a story. That meaning, while it's fleeting, matters. Because if it doesn't then you don't. Existence is evidence.

You're all there *may* ever be...

This book consists of two parts: *art* and *music*.

In *Art*, we examine how meaning can emerge from decontextualization and the departure from the *we* to *I*.

In *Music*, we seek to capture what cannot fully be told by our understanding of physics and mathematics: the birth and formation of the universe.

Both *Art* and *Music* are crafted through the art form of Aretephos, a medium of symbolic art where works are defined and motivated by script and language.

Ultimately, there is nothing without interpretation.

Enjoy the Journey.

Art

The Birth of Aretephos

There's a painting on my office wall. Beside it is a Post-it that reads: Wassily Kandinsky *Spitzen im Bogen, 1927.*

One day, I found myself lost in a daydream, with my focus drifting between the note and the painting. I considered how the words on the note would appear in a context that was independent of the painting it described.

I found myself wondering: *What meaning do the words "Wassily Kandinsky* Spitzen im Bogen, 1927*" hold should they be viewed wholly independent of the painting they describe?*

What did the painting mean if I had no knowledge of Kandinsky?

What would the words on the Post-it mean if that painting had never existed?

The words would mean little beyond whatever feelings those sounds and syllables that comprised them stirred. That meaning, independent of the painting, is wholly abstract. But with the painting, and the knowledge of who Kandinsky is, the movement he was a part of, and his body of work, meaning emerges.

It follows, then, that the more decontextualized a piece of art becomes, the more meaning is lost to abstraction.

Imagine a cone shaped approach, where everything leads to a point. The further we enter the cone, the simpler and more "truthful" a representation becomes until there is nothing but *I* — our singular interpretation. On the other end of the cone, the more abstract things become and further they are from the "truth." In short, there is an inverse relationship between abstraction and meaning.

I wondered how words and language map onto reality and how it differs from the creation of art in abstraction.

What truth do words hold?

In these thoughts, Aretephos, virtuous light, was born.

Abstract Art Relies on the *I*

Abstract art itself relies on the *I*. Sometimes the *I* is more in tune with the cultural conversation, and sometimes it is discordant with the *we* that the artist engaged with when the work was created.

This is a roundabout way of saying everyone is different, it's impossible to know everything, and what we know shapes how we interpret the world around us and our perception of it. After all, for all intents and purposes, our perception of the world is the world because that's all we can know.

However, the abstraction of reality, and even our imaginations, is nothing but a quasi-reality. It is nothing more than a painting that has lost its color, a symbol that has lost its value, and a person that has lost their identity.

With this comes the question: *How can I express myself in this world?*

If nothing new can be created fully independent of context does that mean that which is new must inherently be abstract?

If we assume, this impetus to act is the "truth," then the act of expression, regardless of the medium, is a step away from the entire internal truth. It is a step away from the thought that served as an impetus for the act. It is a step out of the funnel toward abstraction. And the further we go from that impetus the more abstract things become. Thus, with this *shift* toward abstraction, the self and ego rise in art. The *I* begins to dominate and, as a result, art attempts to settle our struggles that can only be solved through the *abstraction* of reality.

From Where Art's Meaning Emerges

There are three questions to ask when examining where a piece of art's meaning emerges:

1. *Emotion and mind.* Does it give you an organic feeling back?
2. *Truth and axioms.* Does it map onto reality in some way?
3. *Time and tenses.* Is there something in there that reminds me of my life now?

The question is: *How do these questions survive abstraction?* As time passes, we lose context and meaning is lost. If we can no longer relate to a piece of art, meaning is lost. If it no longer maps onto our current reality or our understanding of it, meaning is lost. If it doesn't give one a feeling back, that is meaning lost. If the answers to these three questions fade, we are abandoned, hopeless to return to what once was, left with mere symbols, artifacts of the past, a collection of *I* lost at sea.

The Great Art Shift: Existential Art

This movement toward the *I* has progressed along with mankind's association with art, as it has gone from the ideal to the abstract. Most art is skin deep. This is what most are taken to think is abstraction. The substance is often void of meaning and purpose.

There is a pairing problem in art. Call this the Art Pairing Problem.

To what does art pair to and then abstract from? There must be an ideal to express from, otherwise we are left in an existential rut of despair, always searching for meaning and in the end finding nothing.

In the Baroque period (1630-1680), artists like Caravaggio embraced the use of light and shadow in an attempt to depict the dynamic and theatrical aspects of our world.

Impressionism (1860-1886) strove to capture fleeting moments and the impression of a scene. Artists like Monet would paint en plein air (outdoors) so they could observe and capture the subtle effects of natural light.

Cubism (1907-1914) was an even greater departure from "traditional representation." Artists like Picasso used fragmented forms and distorted proportions, disregarding traditional ideals of beauty and realistic representation.

Surrealist (1916-1950) artists, like Salvador Dali and Man Ray, sought to tap into the unconscious mind.

Abstract expressionists (1940-1950s) turned their focus to inner emotions and intangibilities of the human experience. Artists, like Mark Rothko and Wassily Kandinsky, sought to evoke profound emotional responses from their viewers. Rothko used overlapping blocks of color with soft edges meant to tap into viewers' innermost feelings and experiences and Kandinsky explored color and form, influenced by his synesthesia.

As impressionist and abstract artists sought to capture the feelings that their subjects — or in some cases, no subjects — captured, came the shift that art no longer represented something to aspire to and instead came to emerge from what it meant to the beholder.

But then, jumping ahead a bit, with the rise of photography, art shifted to the literal. With photography, moments were captured in time, showing the world as it is. And while that image could still represent something one aspires to, it will only do so incidentally, because it depicts a real-world phenomenon.

Compare this to Michelangelo's *David*.

The statue of *David* began as an idea, outside of the material world, and was brought to ours by Michelangelo. He crafted an aspirational, Platonic ideal of a young man in the moments before he delivers a killing blow to a giant. Grasping the idea of what a man should be, the viewer is in awe of the intangible. The viewer knows that even though the form is realistic it is not a realistic depiction of reality. It is not capturing and showing the world as it *is*.

A photograph, depicting a real-world phenomenon, is aspirational in the sense that it depicts a reality that an individual, the viewer, might desire or find appealing, or that the photographer found interesting, rather than some Platonic ideal. In this shift to capturing reality "exactly as it is," there was a *shift*, again, from the *we* to *I*, and from the gods to the self.

But, of course, it's not that straightforward. Photography can tell lies. It doesn't always depict the world as it is. With the editing of photography, whether in the darkroom or Photoshop, the literal has once again become an abstraction, and, again, we have grown less concerned with what is *beautiful* and more concerned with what we, as individuals, can *become*.

In today's age, we reverse engineer artwork. In the past we didn't. Now, we look for what will feed the *algorithm*. We are complacent in life and it shows in art. If an alien looked at modern abstract art independent of time and place, confusion and despair would be the focus. That is not to say that we shouldn't have imagination; it is to say that we should be rooted and driven by higher level ideals.

Everyone has turned their back to reality, and economic and global settings have changed how we perceive art. Or, perhaps, it is that we cannot create anything else of real meaning therefore we are driven to abstraction.

In the past, artists were few and far between. They were hired to replicate reality.

Art now has an existential crisis. The *self*, and our obsession with it, has changed how it is viewed. Before there was one picture on a wall that everyone enjoyed and related to, now there are millions in a glass and metal box in our pockets. Everyone has become an artist, and, at the same time, the *self* has changed the way it is projected. Art is no longer collective. In many places, art has become whatever is funneled to you by an ever-changing *algorithm* of life that works to optimize content just for you.

The end result: We're all more and more confused.

So, how do we escape this cycle? How are we to ever succeed in our search for purpose while, at the same time, turning our backs on reality?

The escape from this cycle is looking for meaning that is emergent from the world itself, independent of the context of the history of humankind, from reality itself, as opposed to a reality of our own creation.

Let's return, momentarily, to Michelangelo's *David*. It follows the Golden Ratio, a ratio that has been observed in the natural world that we humans time and time again find aesthetically pleasing. This ratio exists outside of our own cultural context. The ratio exists in nature whether we are here or not. Thus, beyond the meaning we give to the statue of *David*, the statue also holds meaning grounded in the natural world, independent of shifting cultural and societal tides.

If we assume meaning can be expressed geometrically, independent of context, emerging only from the natural world, then that is a type of meaning that can exist within abstract art. This meaning exists whether or not we do. This "meaning" maps onto reality whether we want it to or not because the meaning emerges from reality itself. It is meaning that can exist independent of the lens of the viewer. This is meaning that can emerge, even in abstraction, independent of the *I* and, as a result, the *we* becomes the world itself around us.

It is the lone element of *we* that stays afloat in a sea of *I*.

I believe that truth grounded in geometry remains even if it is unobserved, and that art has a core purpose because it is grounded in geometry. If a piece of art is grounded in the unknowing human experience, its meaning will always be abstract, because, when it comes to the human experience, there is no concrete meaning. Once art becomes fully abstracted, then the only thing that we can use to interpret it is ourselves and all that makes us who we are.
With this *shift* toward abstraction, art no longer represents something to aspire to. Instead, art represents something as it is meant to the beholder. And while that meaning will fade, I find comfort in knowing that there is something that underlies it all: reality itself.

Aretephos

So, there I was in my office, staring at a Post-it note and a Kandinsky painting, with the embers of these concepts in mind, when I began to rethink the synthesis of art and language.

What would happen if it was possible to look at words wholly independent of their context and the meaning we ascribe to it?

Is that even possible?

What's the point?

I wanted answers. So, I got to work.

I created an algorithm.

My goal was to capture the feelings that words can encapsulate, and break down their forms to create space for introspection and consideration of a word's meaning independent of the existing context.

```
"""

Concept by Apostolos Stefanopoulos
Copyright (c) 2015 Apostolos Stefanopoulos. All rights reserved.

- This experimental script will read quotes.txt and convert quotes into svg art
- lines in quotes.txt should be in this format [quote]*[quotee]
- to generate the art: `python text2art.py` (quotes.txt in the same folder as this script)

In short:
- two longest words are visualized as bezier curves (each char is a controlpoint in the curve)
- words longer than 2 chars as polygons (each char is a point in the polygon)
- 2 and 1 letter words as circles
- colors are mixed between first and last char
- xy-positions for polygons and circles are evenly spaced on a center circle
- in general, the thickness of lines comes from the num chars in a word
- for further details read the code :-)

"""

import math, traceback, time


#### SVG FORMAT STRINGS ####

TEMPLATE = """<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE svg PUBLIC "-//W3C//DTD SVG 1.1//EN" "http://www.w3.org/Graphics/SVG/1.1/DTD/svg11.dtd">
<svg version="1.1" id="Layer_1" xmlns="http://www.w3.org/2000/svg" xmlns:xlink="http://www.w3.org/1999/
xlink" x="0px" y="0px"
           width="1000px" height="1000px" viewBox="0 0 1000 1000" enable-background="new 0 0 1000 1000"
xml:space="preserve">

%(word_polygons)s
%(word_lines)s

                    <text font-family="monospace" font-size="18" x="500" y="850" fill="#cccccc" text-an-
chor="middle">%(phrase)s</text>
                    <text font-family="monospace" font-size="18" x="500" y="880" fill="#000000" text-an-
chor="middle">%(quotee)s</text>

</svg>
"""

WORD_FORMAT = """
<path stroke="%(color)s"
stroke-width="%(width)s"
fill='none'
stroke-opacity="0.6"
stroke-linecap="round"
d="%(path)s" />
"""

POLYGON_FORMAT = """
<polygon points="%(points)s" stroke-opacity="0.8" style="fill:none;stroke:%(color)s;stroke-width:%(width)
s" />
"""

ELIPSE_FORMAT = """
<ellipse cx="%(xpos)s" cy="%(ypos)s" stroke-opacity="0.6" rx="%(radius)s" ry="%(radius)s" style="-
fill:none;stroke:%(color)s;stroke-width:%(width)s" />
"""

#### CHAR COLOR MAP ####
```

```
POLYGON_FORMAT = """
<polygon points="%(points)s" stroke-opacity="0.8" style="fill:none;stroke:%(-
color)s;stroke-width:%(width)s" />
"""

ELIPSE_FORMAT = """
<ellipse cx="%(xpos)s" cy="%(ypos)s" stroke-opacity="0.6" rx="%(radius)s"
ry="%(radius)s" style="fill:none;stroke:%(color)s;stroke-width:%(width)s" />
"""

#### CHAR COLOR MAP ####

class ColorMap:

        def __init__(self):

                #color table input from Apostolos
                self.table = {

                "a":(252,218,0),
                "b":(207,0,0),
                "c":(0,188,4),
                "d":(0,107,210),
                "e":(254,108,0),
                "f":(135,87,51),
                "g":(96,104,0),
                "h":(225,103,150),
                "i":(248,248,248),
                "j":(118,97,80),
                "k":(127,61,0),
                "l":(64,64,64),
                "m":(2,0,38),
                "n":(199,0,38),
                "o":(218,218,218),
                "p":(104,1,134),
                "q":(85,50,12),
                "r":(0,0,240),
                "s":(0,82,27),
                "t":(0,0,0),
                "u":(236,156,183),
                "v":(82,53,9),
                "w":(1,0,127),
                "x":(90,53,9),
                "y":(255,238,106),
                "z":(85,54,10)

                }

        def getColor(self,ch):
                return self.table[ch.lower()]

        def sequence(self):
                return self.table.keys()
```

Words are translucent but carry artful causal powers when abstracted. It's like looking at a prism. All we really see is light, but with a prism we can see the entire spectrum. Langage behaves in this way. Words hold no inherent meaning on their own beyond the associations we agree to make with them. But together words and phrases have meaning. Through inflection and tone, the prism of our voices and collective culture, we can give words shape and color. Some are dull. Some are bright. Some lead people to revolution and revolt. Some beget sadness. We map words onto our reality. When you begin to look at the world this way the idea of living your life as a work of art comes alive.

```
return self.table.keys()

#### WORD CLASSES ####

class BaseWord:

        #clean the chars not found in the table
        def cleanWord(self,w):
                cleaned = ""
                for ch in w:
                        try:
                                self.map[ch.lower()]
                                cleaned += ch
                        except:
                                pass
                return cleaned

        #we need hex strings in svg
        def rgb_to_hex(self,rgb):
                return '#%02X%02X%02X' % rgb

        def getYposFromMap(self,c):
                try:
                        y = self.map[c.lower()]["y"] + 40
                except:
                        return 0
                return y

        def createMap(self):
                self.colors = ColorMap()
                counter = 0
                alphabet = ColorMap().sequence()
                num_chars = float(len(alphabet))
                ypos_spacing = self.y_range/num_chars
                cp_spacing = self.controlpoint_range/num_chars
                for c in alphabet:
                        ypos = ypos_spacing * counter + 50
                        deg = cp_spacing * counter
                        self.map[c] = {"y":ypos,"d":deg,"c":self.colors.getCo-
lor(c)}
                        counter += 1
return self.table.keys()

#### WORD CLASSES ####

class BaseWord:

        #clean the chars not found in the table
        def cleanWord(self,w):
                cleaned = ""
                for ch in w:
                        try:
```

With Aretephos we can examine language and the meaning that we assign to it with a geometric underpinning.

```
                        self.map[ch.lower()]
                        cleaned += ch
                except:
                        pass
        return cleaned

#we need hex strings in svg
def rgb_to_hex(self,rgb):
        return '#%02X%02X%02X' % rgb

def getYposFromMap(self,c):
        try:
                y = self.map[c.lower()]["y"] + 40
        except:
                return 0
        return y

def createMap(self):
        self.colors = ColorMap()
        counter = 0
        alphabet = ColorMap().sequence()
        num_chars = float(len(alphabet))
        ypos_spacing = self.y_range/num_chars
        cp_spacing = self.controlpoint_range/num_chars
        for c in alphabet:
                ypos = ypos_spacing * counter + 50
                deg = cp_spacing * counter
                self.map[c] = {"y":ypos,"d":deg,"c":self.colors.getCo-
lor(c)}
                counter += 1

#avg color first and last char
def colorForWord(self,word):
        num_chars = len(word)
        r,g,b = 0,0,0

        c = word[:1]
        color = self.map[c.lower()]["c"]
        r += color[0]
        g += color[1]
        b += color[2]

        c = word[-1:]
        color = self.map[c.lower()]["c"]
        r += color[0]
        g += color[1]
        b += color[2]

        r = r / float(2)
        g = g / float(2)
        b = b / float(2)
        return self.rgb_to_hex((r,g,b))
```

I believe that algorithmic art representing language that is synthesized with geometry offers a place for the *I* while maintaining meaning anchored in the power of geometric symbols. There is always space for the *I* as it is impossible to observe anything without the *I* sneaking in.

```
class PolygonWord(BaseWord):

        def __init__(self,word,index,phraselength):
                self.controlpoint_range = 1000.0
                self.y_range = 250.0
                self.color_range = 255.0
                self.map = {}
                self.createMap()
                self.word = self.cleanWord(word)
                self.xpos = self.circularXYForIndex(index,phraselength)[0]
                self.ypos = self.circularXYForIndex(index,phraselength)[1]

        def circularXYForIndex(self,index,phraselength):
                degree_to_radian_fact = 0.0174532925;
                radius = self.computeRadius()
                step = (360.0/phraselength) * index
                rx = math.cos(step*degree_to_radian_fact) * radius + 500;
                ry = math.sin(step*degree_to_radian_fact) * radius + 300;
                return (rx,ry)

        #based on avg y values of word
        def computeRadius(self):
                y = 0
                num_chars = float(len(self.word))
                for c in self.word:
                        y += self.getYposFromMap(c)
                return y/num_chars

        def createPoints(self,numpoints,centerx,centery):
                degree_to_radian_fact = 0.0174532925
                radius = self.getYposFromMap(self.word[-1:]) / 1.0
                points = []
                step = 360.0/numpoints
                pointstr = ""
                for p in range(numpoints):
                        rx = math.cos(p*step*degree_to_radian_fact) * radius +
centerx;
                        ry = math.sin(p*step*degree_to_radian_fact) * radius +
centery;
                        points.append((rx,ry))
                for point in points:
                        pointstr += str(point[0])+","+str(point[1])+" "
                return pointstr

        #get the polygon points
                def pointsForWord(self,word,x,y):
                        return self.createPoints(len(word),x,y)

        def produce(self):
                color = self.colorForWord(self.word)
                if len(self.word) > 2:
                        width = len(self.word) * 5
                        points = self.pointsForWord(self.word,self.xpos,self.
ypos)
```

In the images that follow, verbs and adverbs are characterized as curved lines, circles, and ellipses (more specifically a Bezier curve with the letters acting as control points) that signify a never-ending continuity through their movement.

Nouns, pronouns, and articles are characterized as triangles, which reflect their steadiness and seriousness.

The thickness of a line indicates a word's length.

Then the coloring takes on a synesthesia-based approach, with each letter assigned to a corresponding color. If choosing between colors, the dominant (darker) color will win, i.e., black would win over pale pink.

```
        return "<!-- "+ self.word+" -->\n" + POLYGON_FORMAT%{"color":col-
or,"width":width,"points":points}
                else:
                        if len(self.word) == 2:
                                radius = 60
                                width = 50
                        else:
                                radius = 30
                                width = 10
                        return "<!-- "+ self.word+" -->\n" + ELIPSE_FOR-
MAT%{"xpos":self.xpos,"ypos":self.ypos,"col
or":color,"width":width,"radius":radius}


class BezierWord(BaseWord):

        def __init__(self,word):
                self.controlpoint_range = 1000.0
                self.y_range = 500.0
                self.color_range = 255.0
                self.p1_format = "M%(x)f,%(y)f C%(cx)f,%(cy)f "
                self.p2_format = "%(cx)s,%(cy)s %(x)s,%(y)s "
                self.p_format = "S%(cx)s,%(cy)s %(x)s,%(y)s "
                self.map = {}
                self.createMap()
                self.word = self.cleanWord(word)
                self.path = ""
                self.word_svg = ""
def getDegFromMap(self,c):
                try:
                        d = self.map[c.lower()]["d"]
                except:
                        return 0
                return d

        def produce(self):
                counter= 0
                if len(self.word) == 1:
                        self.word *= 2
                point_space = 1000.0 / (len(self.word)-1)
                width = len(self.word) * 4
                color = self.colorForWord(self.word)
                for c in self.word:
                        y = self.getYposFromMap(c)
                        x = counter*point_space
                        d = self.getDegFromMap(c)
                        if counter == 0:
                                self.path += self.p1_format%{"x":x,"y":y,"cx-
":x-50,"cy":y+200}
                        elif counter == 1:
                                self.path += self.p2_format%{"x":x,"y":y,"cx-
":x-50,"cy":y+200}
                        else:
                                self.path += self.p_format%{"x":x,"y":y,"cx-
":x-50,"cy":y+200}
                        counter += 1
```

In this work, I have attempted to create geometric meaning to something that normally only has a contextual meaning — words.

```
                return "<!-- "+ self.word+" -->\n" + WORD_FORMAT%{"path":-
self.path,"color":color,"d":d,"width":width}

class Text2Art:

        def __init__(self,text,quotee):
                self.text = text
                self.lines = ""
                self.polygons = ""
                self.quotee = quotee
                self.render()

        def renderBezierWord(self,word):
                return BezierWord(word).produce()

        def renderPolygonWord(self,word,index,phraselength):
                return PolygonWord(word,index,phraselength).produce()

        def findLongest(self):
                processed_text = ""
                words = self.text.split(" ")
                longest = None
                secondlongest = None
                maxl = 0
                if len(words) > 1:
                        for w in words:
                                if len(w) >= maxl:
                                        maxl = len(w)
                                        secondlongest = longest
                                        longest = w
                for w in words:
                        if w in (longest, secondlongest):
                                processed_text += "#"
                        processed_text += w+ " "
                self.text = processed_text[:-1]

        def render(self):
                self.findLongest()
                words = self.text.split(" ")
                wordindex = 0
                for w in words:
                        if w.startswith("#"):
                                self.lines += self.renderBezierWord(w)
                        else:
                                self.polygons += self.renderPolygon-
Word(w,wordindex,len(words))
                        wordindex += 1

        def save(self,filename):
                f = open(filename,"w")
                f.write(TEMPLATE%{"phrase":self.text.replace("#",""),"quo-
tee":self.quotee,"word_lines":self.lines,"word_polygons":self.polygons})
                f.close()
```

I sought to give shape and color and geometric form to words and phrases. I wanted to see how close we could get to looking at words and phrases from the perspective of mathematical truth.

I wanted to see if it was possible to pin something in “reality” that is otherwise abstract. It is not that language is the final arbiter of truth. In conjunction with attempting to understand the role I play in this “painting” that is this so-called world, I realized that, when it comes to validating my existence, function is more important than form. This existential approach to art renders every action or stroke of paint on canvas purposeful. Each stroke exists within and is not forgotten within. With each stroke I become the literal object of consideration as the meaning of each action originates from within and, as such, even if indirectly. Put another way, limited to a paintbrush we don’t tell the entire truth, as the totality of meaning/representation cannot be captured in a single brush, there is meaning independent of the painting that is imbued upon it. (It cannot exist on its own.)

By creating art algorithmically, I seek to remove myself as the painter, letting the artwork come to existence on its own, at least as much as it can.

```
class ErrorLogger:

        def __init__(self,filename):
                self.f = open(filename,"a")
                self.f.write("#######################  "+self.getTimestamp()+"
#############\n")
                traceback.print_exc(file=self.f)
                self.f.write("\
n##########################################################\n\n")
                self.f.close()

        def getTimestamp(self):
                gmt = time.localtime(time.time())
                fmt = "%Y%m%d%H%M%S";
                timestamp = time.strftime(fmt, gmt)
                return timestamp



def main():

        phrases = []

        f = open("quotes.txt","r")
        for line in f:
                phrases.append(line)

        counter = 0
        for p in phrases:
                if p != "\n":
                        ph = p.split("*")[0]
                        q = p.split("*")[1]
                        o = Text2Art(ph,q)
                        o.save(q.replace("","_").replace("\n","")+"-"+str(coun
ter)+".svg")
                        counter += 1


if __name__ == "__main__":
        try:
                main()
        except:
                ErrorLogger("error.log")
                print "-- ERROR --"
```

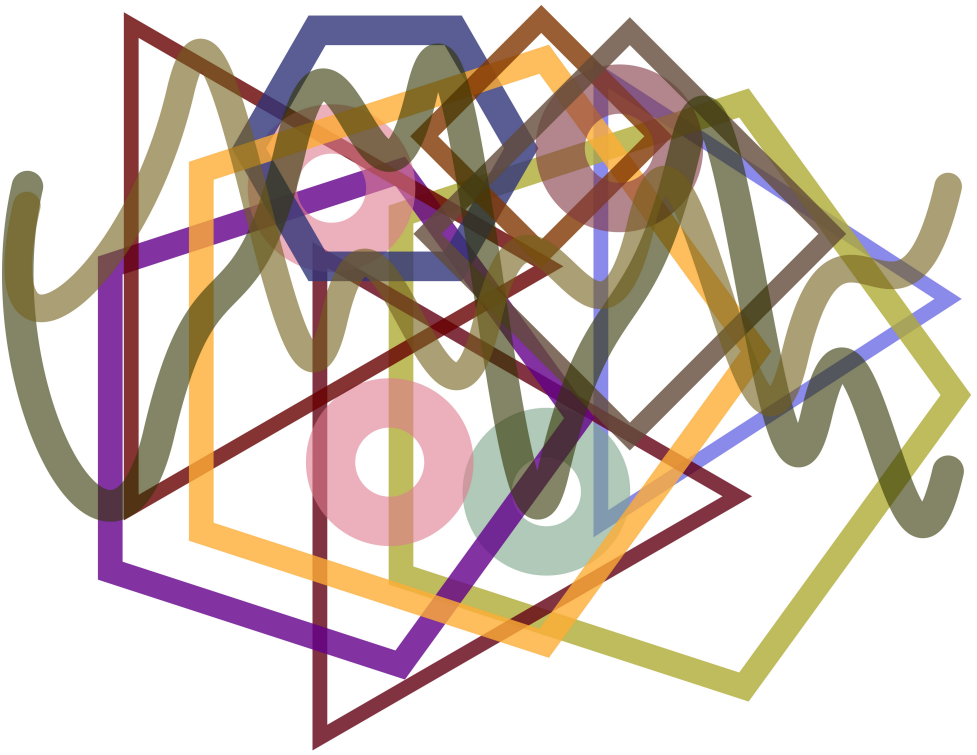
Now I have to find myself in this abstract world. To live a life in accordance with art in mind is the highest form of living: the art of living purposefully. The search for the self is why we create mythology, poetry, and other forms of art. It is because life can be boring. The solution is not to abandon abstract art forms. It is to find truths within before the winds of time and the tides of abstraction carry us too far from shore.

The art that follows are, in my eyes, the most imporant people, principles, and ideas of all time.

artists & luminaries

confucius

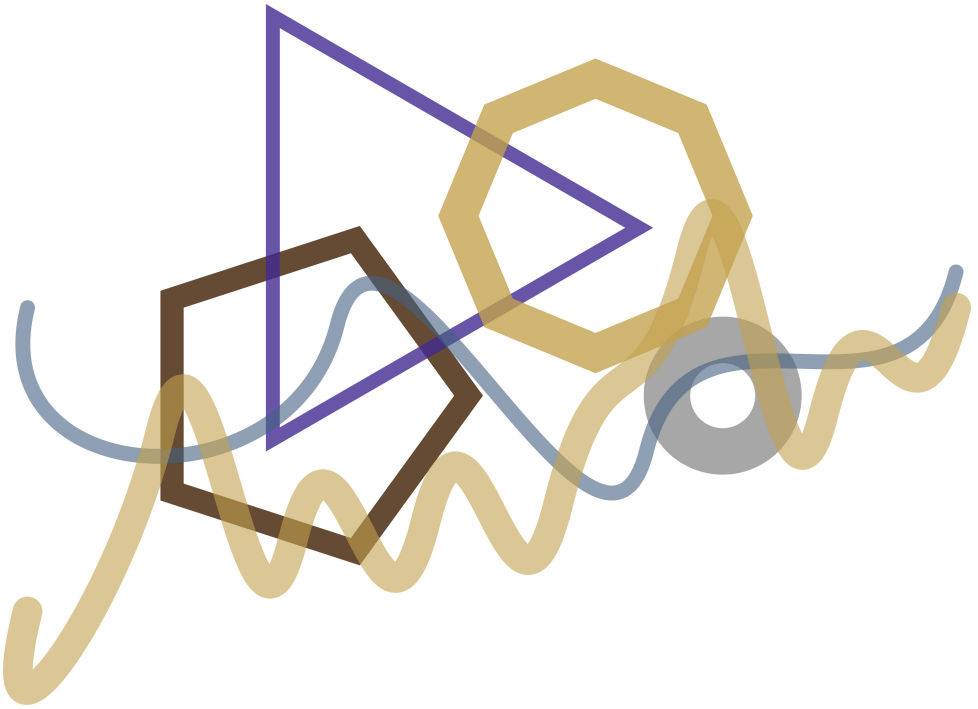
confucius was a chinese philosopher and teacher. he is one of the most influential figures in chinese history. his teachings have profoundly impacted chinese culture and society. he lived from 551 - 479 bce, during "the spring and autumn period" of ancient china (770 - 481 bce).



our greatest glory is not in never falling, but in rising every time we fall

socrates

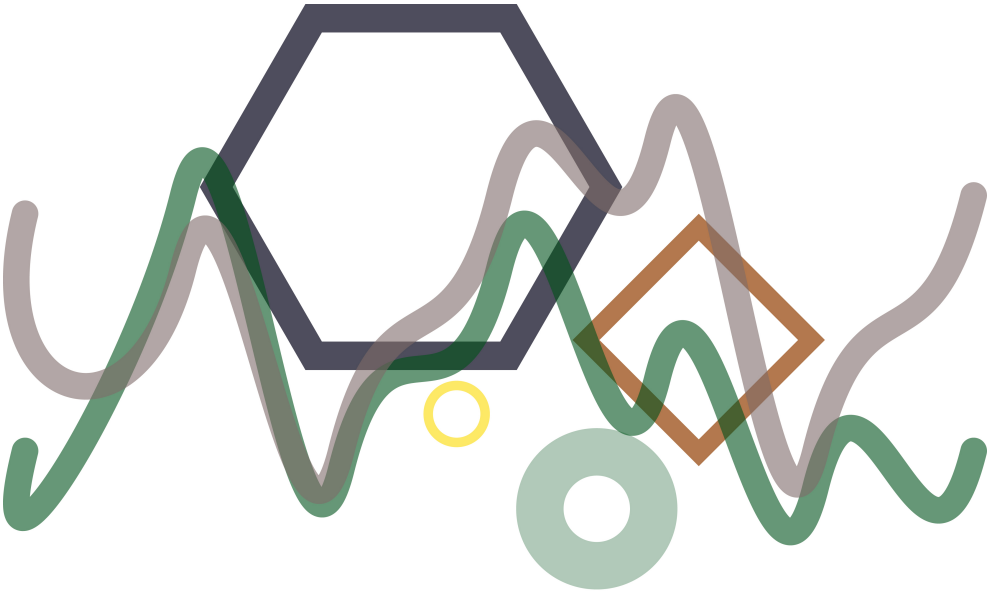
socrates was an ancient greek philosopher, considered one of the founders of western philosophy. he is renowned for his socratic method of questioning. he believed true wisdom emerges from recognizing ignorance and engaging in critical thinking and self-examination. he lived in atens during the fifth century bce



to find yourself, think for yourself

plato

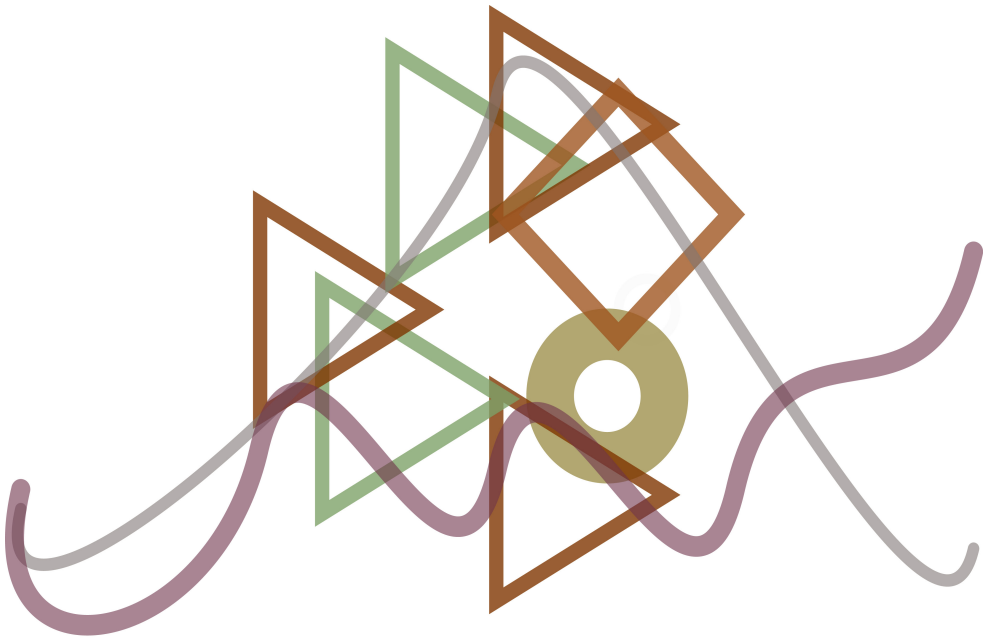
plato was an ancient greek philosopher, mathematician, and student of socrates. widely regarded as one of the most influential figures in the history of western philosophy, plato explored ethics, politics, aesthetics, and more. his dialogues cover various topics and engage with multiple philosophical questions, extending well beyond metaphysics and epistemology. plato was born in athens around 428 or 427 bce and lived until around 348 or 347 bce.



love is a serious mental disease

Jesus Christ

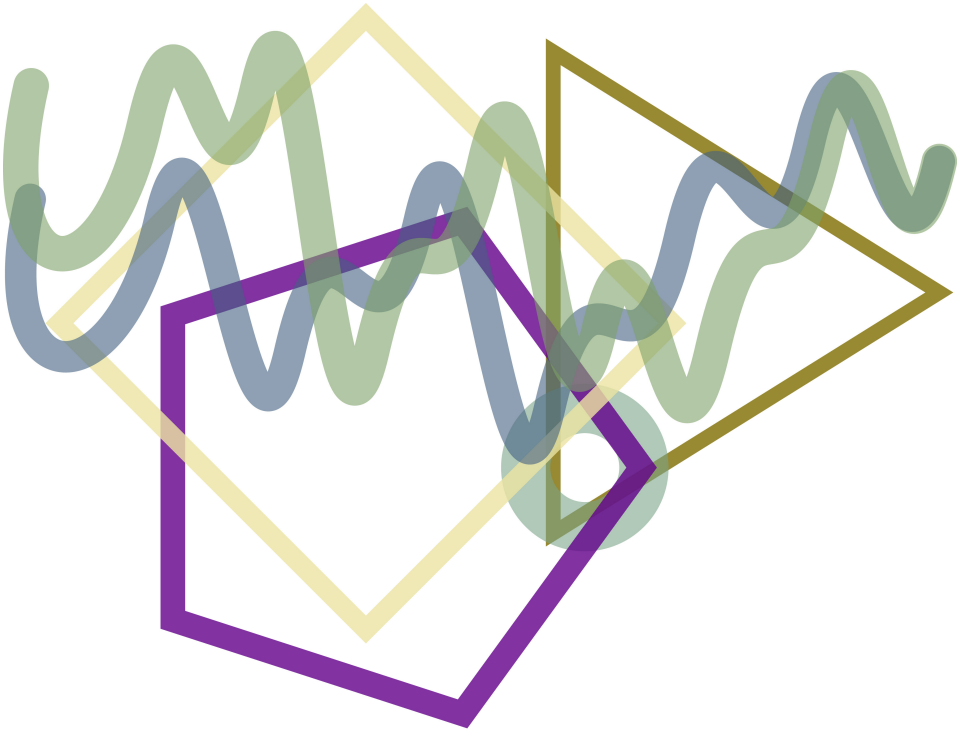
Jesus Christ is a central figure in Christianity and one of the most influential religious and historical figures in the world. according to Christian beliefs, Jesus is considered the son of God and the savior of humanity. His teachings emphasized love, compassion, forgiveness, and the importance of faith in God.



I am the way, and the truth, and the life

leonardo da vinci

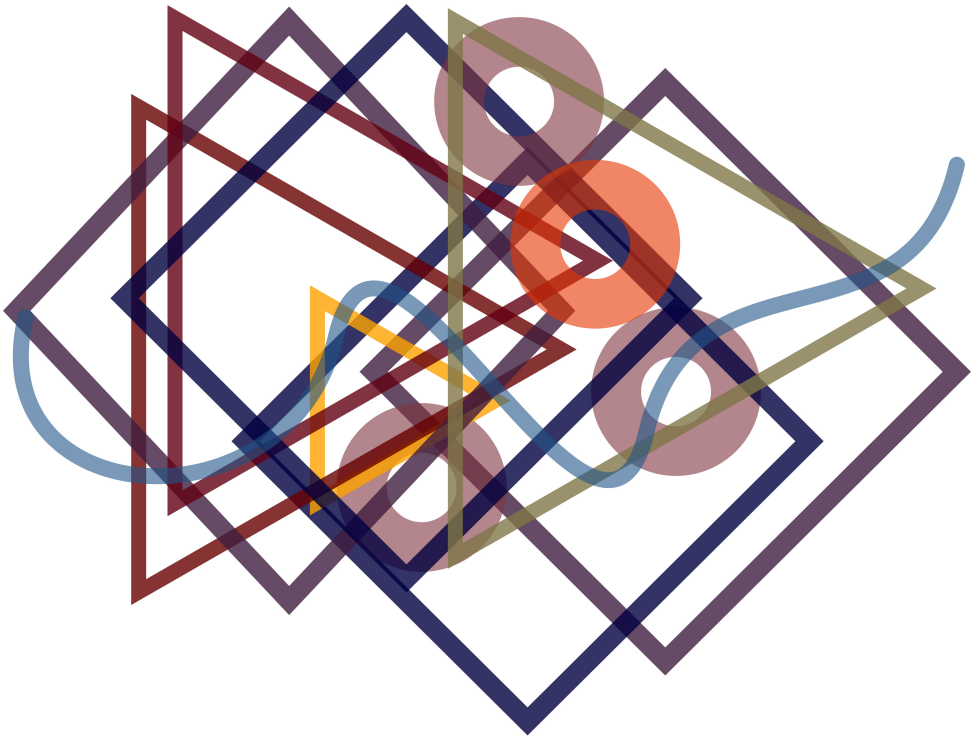
leonardo da vinci was an italian polymath. he excelled in various fields such as art, science, engineering, and literature, and was often referred to as the “renaissance man.” leonardo da vinci is best known as a painter. his works include the *mona lisa* and *the last supper* are considered among the most famous and iconic artworks in history. he was born on april 15, 1452, in vinci, italy, and died on may 2, 1519, in amboise, france.



art is never finished, only abandoned

william shakespeare

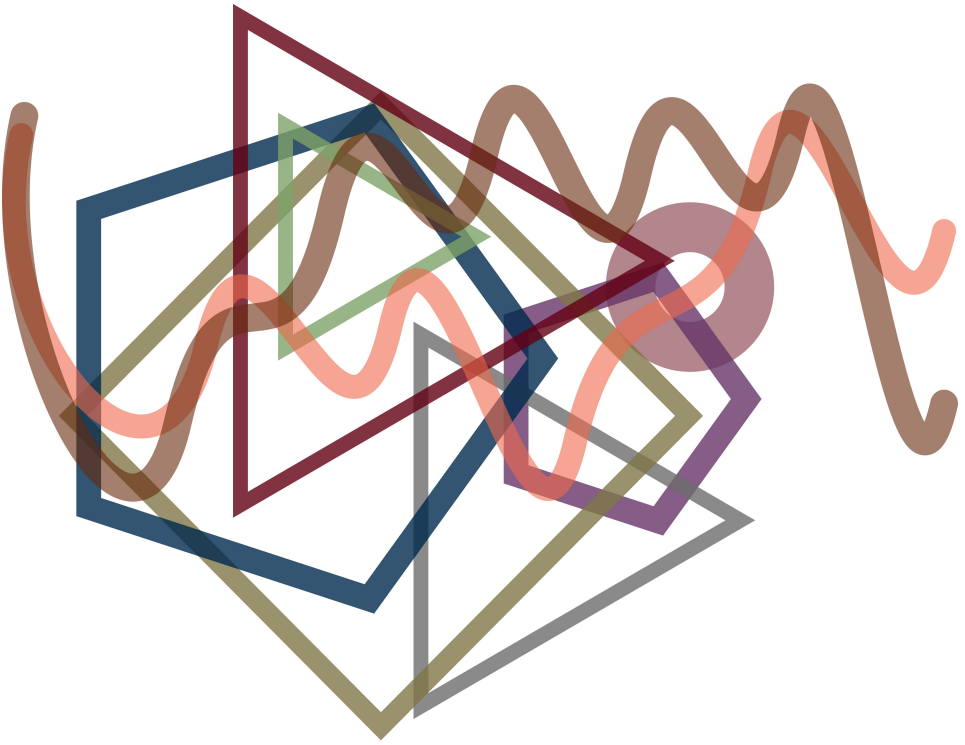
william shakespeare was an english playwright, poet, and actor. he is widely regarded as one of the greatest writers in the english language and the world's preeminent dramatist. shakespeare's works consist of 38 plays (encompassing tragedies, comedies, histories, and romances), 154 sonnets, and several longer poems. his most famous works include *romeo and juliet*, *hamlet*, *macbeth*, *othello*, and *a midsummer night's dream*. he was born in stratford-upon-avon, england, in 1564 and died there in 1616.



lord, we know what we are, but know not what we may be

isaac newton

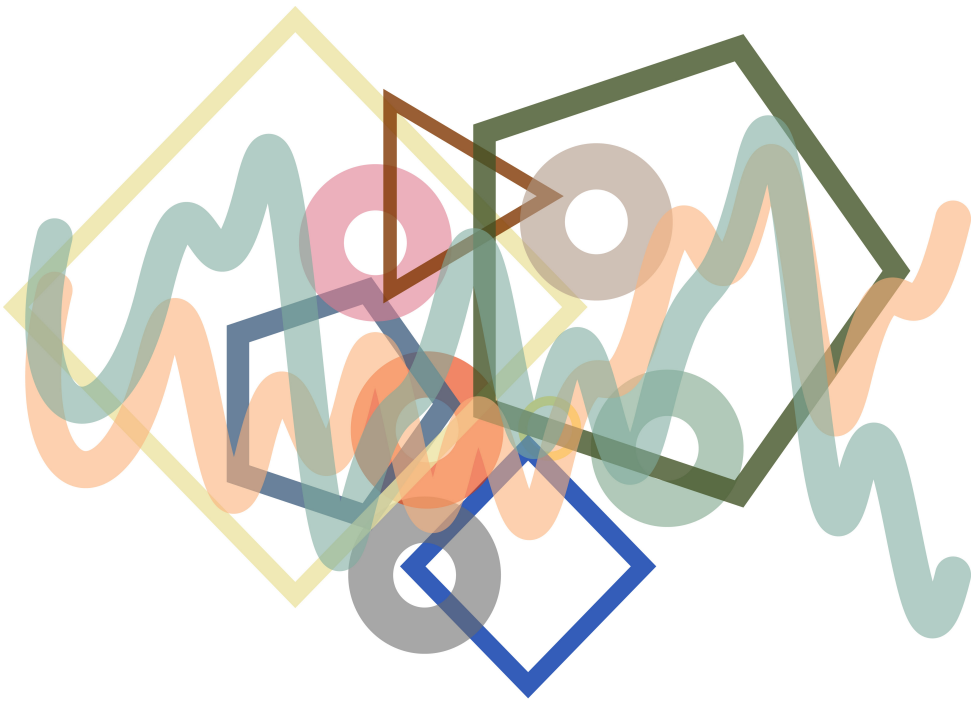
isaac newton was an english mathematician, physicist, and astronomer. he is widely recognized as one of the most influential scientists in history. newton's most significant contribution to science is his formulation of the laws of motion and the law of universal gravitation, providing a mathematical foundation for understanding and predicting the motion of objects on earth and in space. he was born on december 25, 1642, in woolsthorpe, lincolnshire, england, and passed away in london on march 20, 1727.



we build too many walls and not enough bridges

napoleon bonaparte

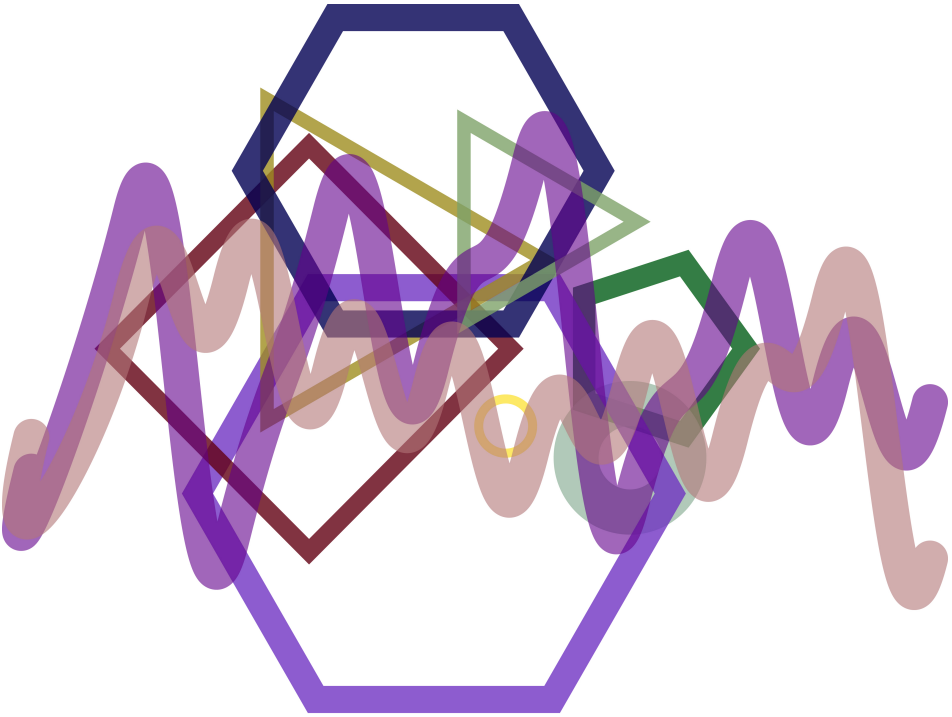
napoleon bonaparte was a military and political leader. he played a significant role in european history during the late 18th and early 19th centuries. he was born on august 15, 1769, in corsica, a french territory, and died on may 5, 1821, on the island of saint helena. most notable achievements include the battle of austerlitz, the reform of the french education system, and the napoleonic code.



impossible is a word only to be found only in the dictionary of fools

ludwig van beethoven

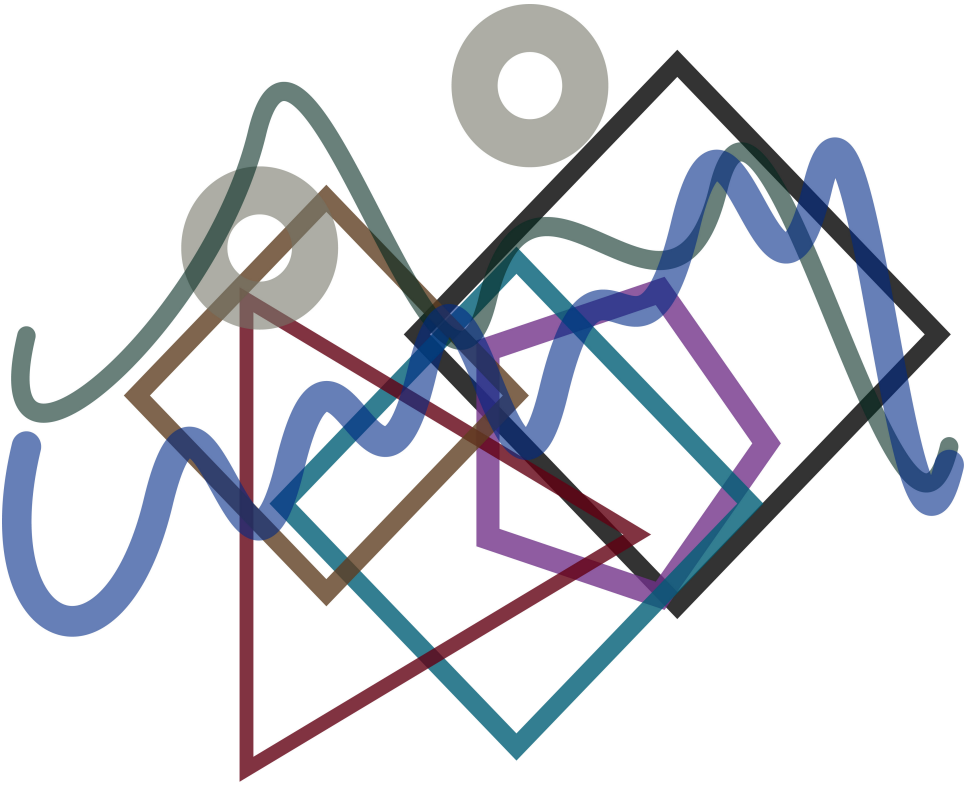
ludwig van beethoven was a german composer and pianist. he is widely regarded as one of the greatest composers in Western classical music history. notable works from this period include his *ninth symphony*, featuring the famous *ode to joy*, and his late string quartets, considered some of the most profound and complex chamber music ever composed. he was born on december 17, 1770, in bonn, germany, and died in vienna, austria, on march 26, 1827.



music is a higher revelation than all wisdom and philosophy

friedrich nietzsche

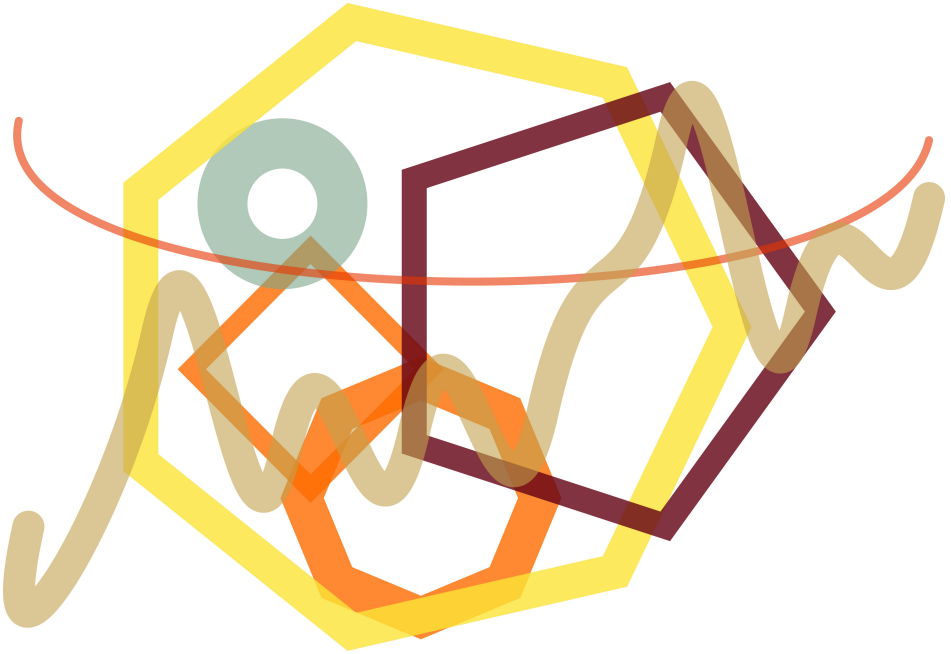
friedrich nietzsche was a german philosopher, cultural critic, and writer whom is known for his provocative and influential ideas. nietzsche's philosophical works encompass many topics, including morality, religion, culture, aesthetics, and the nature of human existence. he challenged and critiqued many established beliefs and values of his time, seeking to provoke new ways of thinking and questioning traditional modes. he was born on october 15, 1844, in röcken, prussia (now germany), and died on august 25, 1900, in weimar, germany.



that which does not kill us makes us stronger

oscar wilde

wilde was an irish playwright, novelist, essayist, and poet remembered as one of the most prominent literary figures of the late 19th century. wilde's wit, humor, and social commentary made him a celebrated figure in his time's literary and social circles. his plays, novels, and essays challenged victorian norms and conventions, often employing satire and irony to expose the hypocrisy and superficiality of society. he was born on october 16, 1854, in dublin, ireland, and died in paris, france, on november 30, 1900.

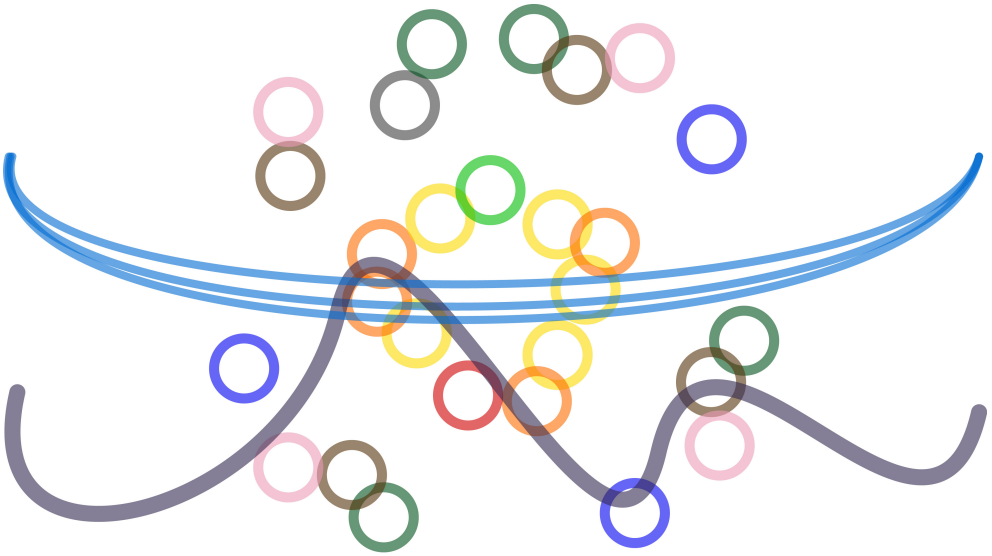


be yourself, everyone else is already taken

mathematics

the pythagorean theorem

the pythagorean theorem is a fundamental mathematical principle that states that in a right triangle, the square of the length of the hypotenuse (the side opposite the right angle) is equal to the sum of the squares of the lengths of the other two sides. It is written: $a^2 + b^2 = c^2$, where “a” and “b” represent the lengths of the two shorter sides (also known as the legs) of the right triangle, and “c” represents the length of the hypotenuse.

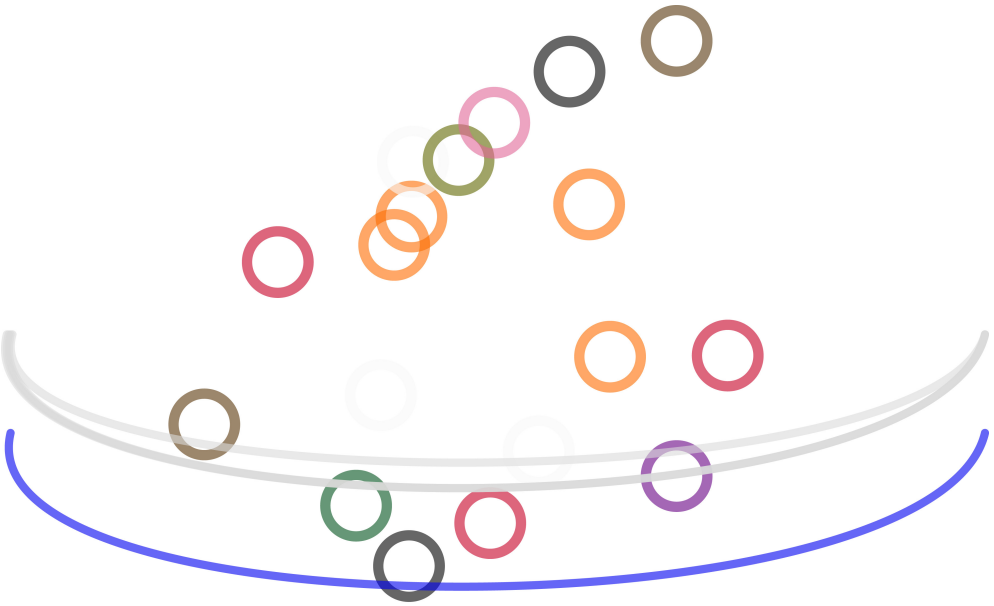


the pythagorean theorem

the golden ratio

the golden ratio, also known as the divine proportion, is a mathematical ratio that has fascinated mathematicians, artists, and thinkers for centuries. often associated with beauty and balance, it is believed to possess aesthetic and harmonious qualities. many artists, architects, and designers have used it in their works. it is observed in various natural phenomena, such as the proportions of plants, seashells, and the human body.

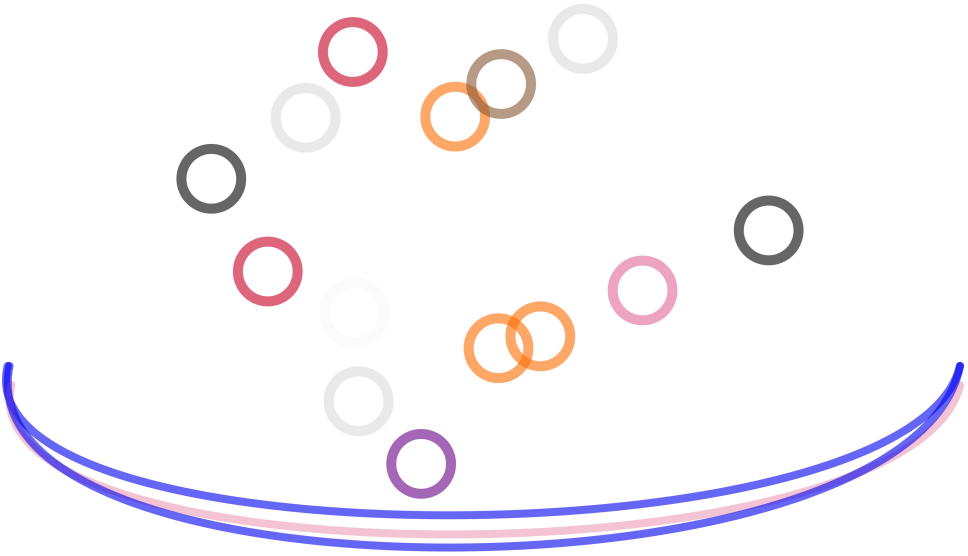
it is an irrational number expressed as $((a+b)/a) = a/b = \Phi$ where Φ denotes the golden ratio. $\Phi = (1+\sqrt{5})/2 = 1.618$
033988749894848204586834365638117720309179805762862135448622705260462818902449707207204189391137484754088075386891752126633862223536931793180060766726354433389086595939582905638322661319928290267880675208766892501711696207032221043216269548626296313614438149758701220340805887954454749246185695364864449241 0...



the golden ratio

archimedes' constant

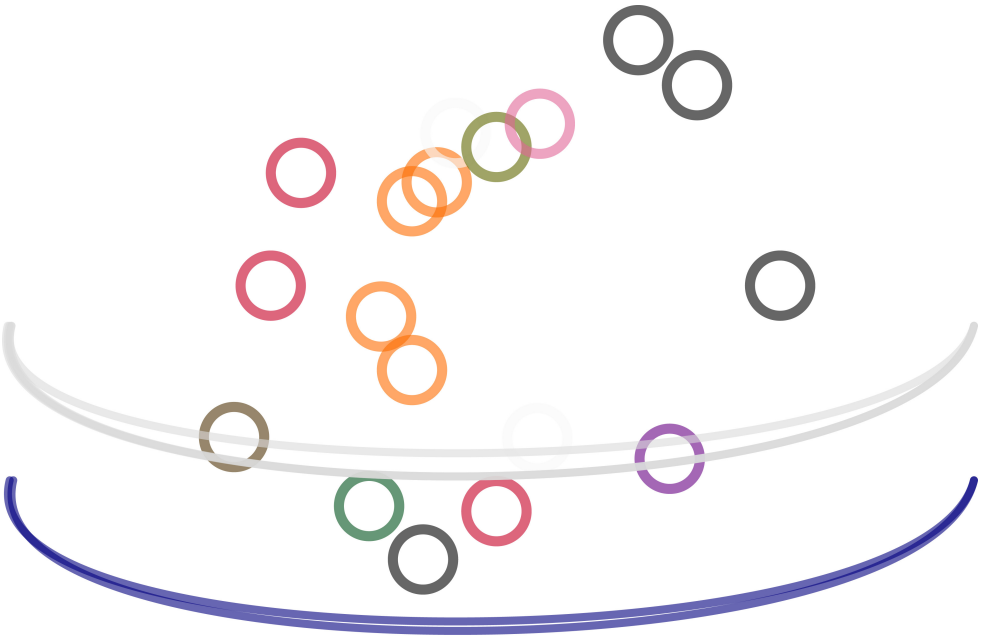
archimedes' constant, or pi (π), is a mathematical constant that represents the ratio of the circumference of a circle to its diameter. most notably, nasa used pi to calculate the trajectory of spacecraft and the circumference of planets. it is an irrational number, often approximated as: 3.1415
9265358979323846264338327950288419716939937510582097494459230781640628620899862803482534211706798214808651328230664709384460955058223172535940812848111745028410270193852110555964462294895493038196442881097566593344612847564823378678316527120190914564856692346034861045432664821339360726024914127372458700660631558817488152092096282925409171536436789259036001133053054882046652138414695194151160943305727036575959195309218611738193261179310...



archimedes' constant

euler's number

euler's number, denoted as e, is a mathematical constant, named after the swiss mathematician leonhard euler. with many use cases, euler's number is an irrational number that explains the exponential growth in radioactive decay as well as compound interest growth. it goes infinitely without repeating, approximately equal to: 2.7182818284590
4523536028747135266249775724709369995957496696762772407663035354759457138217852516642742
7466391932003059921817413596629043572900334295260595630738132328627943490763233829880753
1952510190115738341879307021540891499348841675092447614606680822648001684774118537423454
4243710753907774499206955170276183860626133138458300075204493382656029760673711320070932
8709127443747047230696977209310141692836819025515108657463772111252389784425056953696770
7854499699679468644549059879316368892300987931277361782154249992295763514822082698951939...

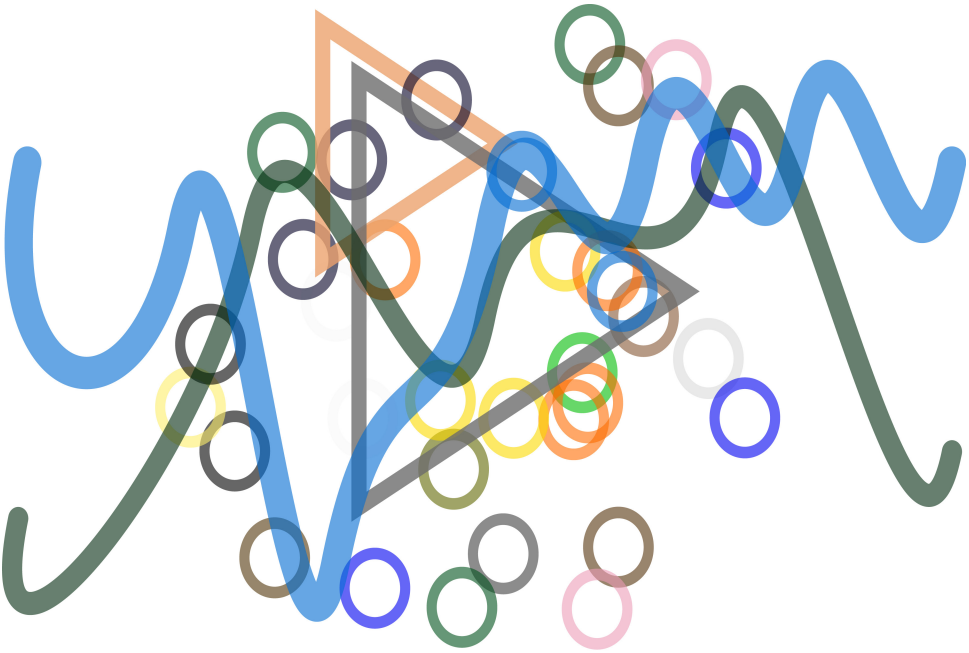


euler's number

newton's law of gravity

newton's universal law of gravity states that every particle or object with mass in the universe attracts every other particle or object with mass. the magnitude of the gravitational force between two objects is directly proportional to the product of their masses and inversely proportional to the square of the distance between their centers.

the law can be expressed as: $F = G((m_1 m_2)/r^2)$

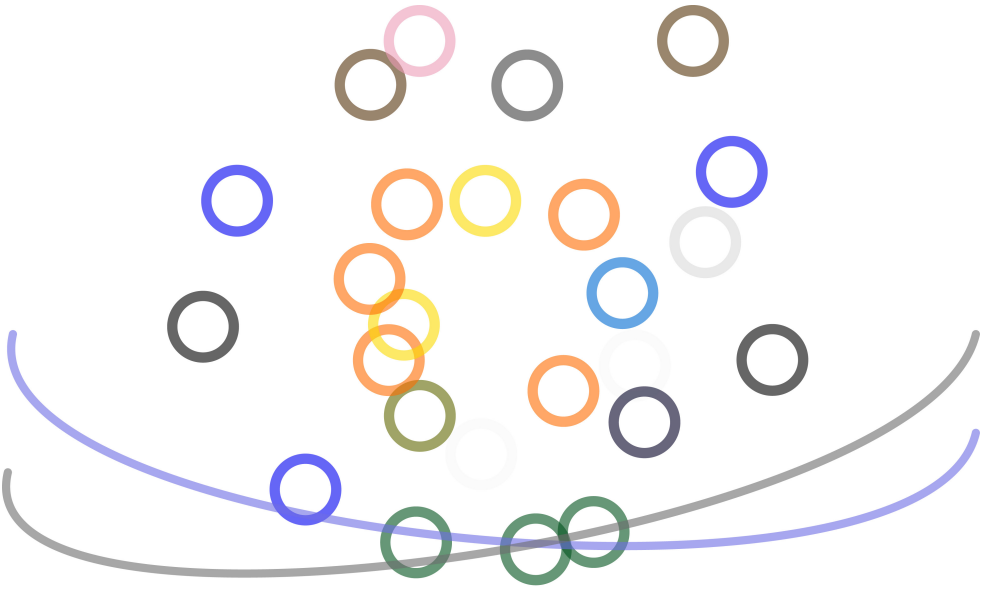


newton’s law of gravity

second law of thermodynamics

$\Delta S \geq 0$

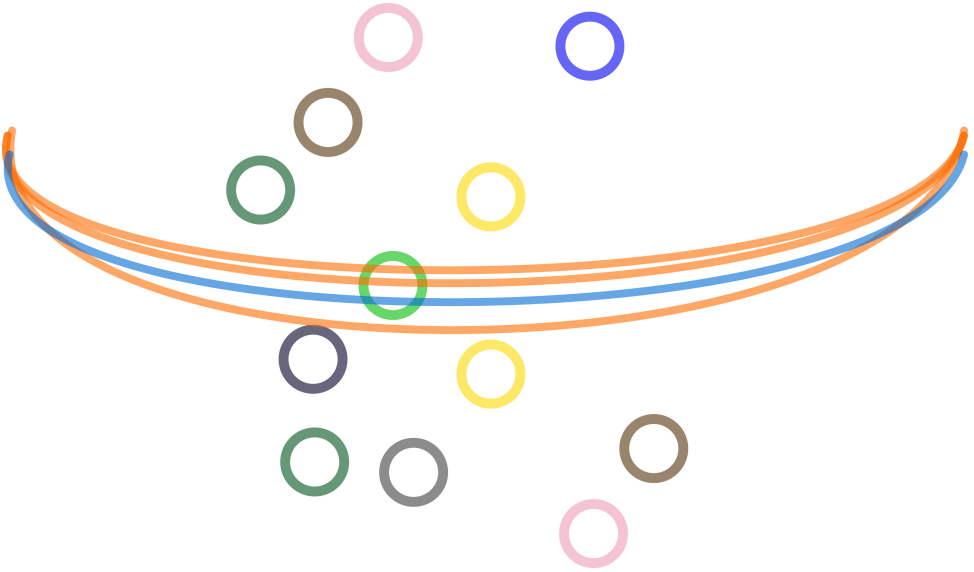
the second law of thermodynamics is a fundamental principle in physics that describes the behavior of energy in a closed system. it holds that in any spontaneous process, the total entropy of a closed system will always increase or remain the same over time. it provides insights into the direction and nature of energy flow and the irreversibility of certain processes.



second law of thermodynamics

$e=mc^2$

$e=mc^2$ is one of the most famous equations in physics, first proposed by albert einstein in 1905 as part of his theory of special relativity. it represents the relationship between energy (e), mass (m), and the speed of light (c). it says that energy and mass, i.e., matter, are interchangeable.

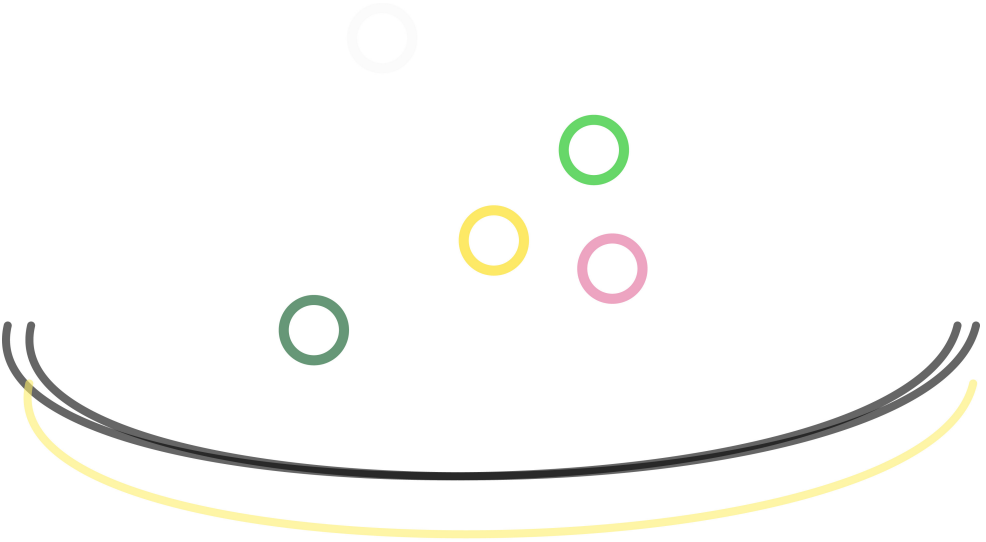


$e = mc^2$

the seven virtues

chastity

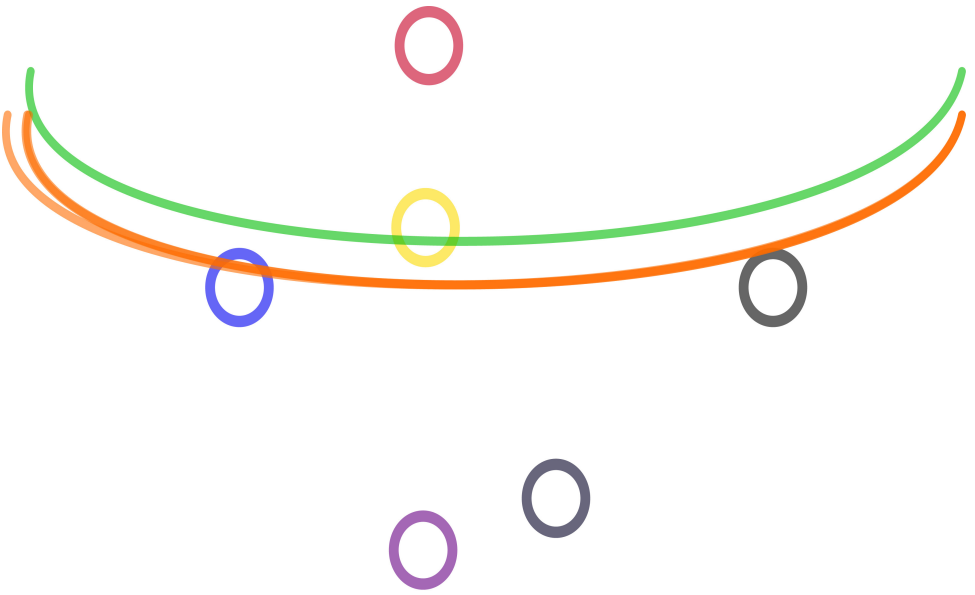
purity, self-control, and moderation in one's thoughts, desires, and actions. chastity involves respecting one's own body and the bodies of others.



chastity

temperance

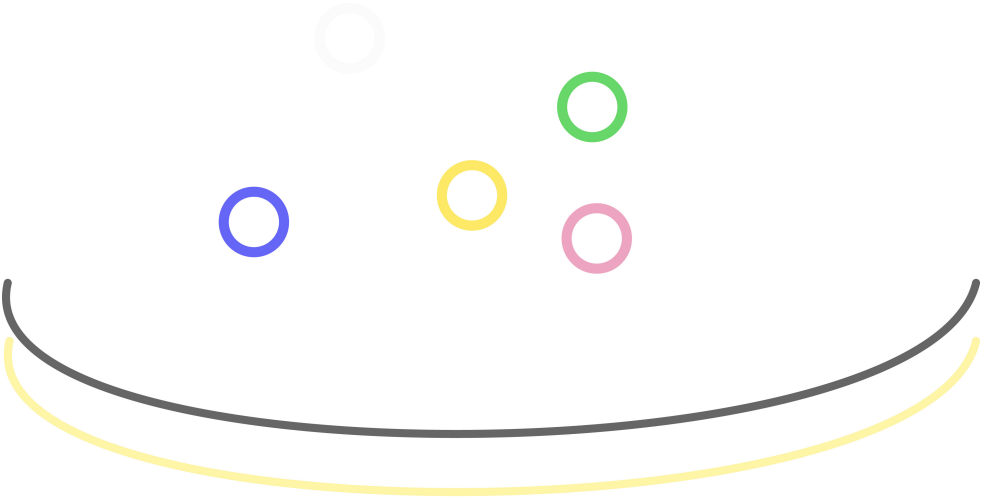
self-restraint, moderation, and balance in all aspects of life. temperance is the ability to control and regulate one's desires and impulses, avoiding excess and maintaining a sense of equilibrium.



temperance

charity

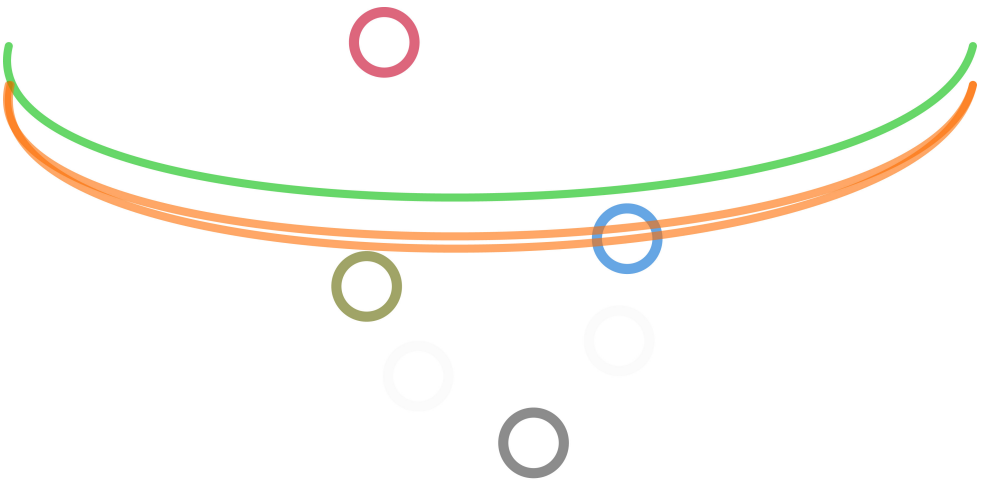
love, compassion. charity is the virtue of selflessness and giving. it involves acts of kindness, generosity, empathy, and a genuine concern for the well-being of others.



charity

diligence

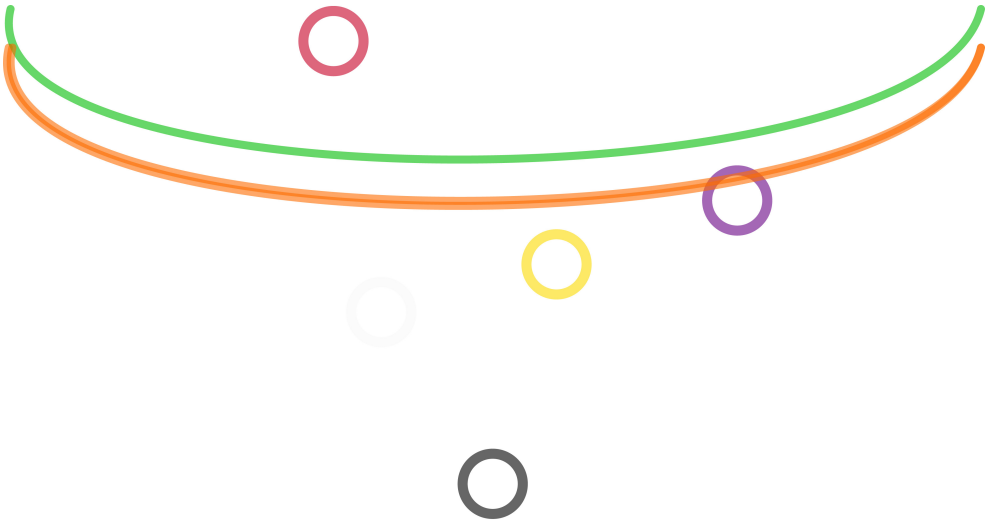
persistence, hard work, and conscientiousness. striving for excellence and personal growth. diligence involves putting in consistent effort and taking responsibility for one's tasks and obligations.



diligence

patience

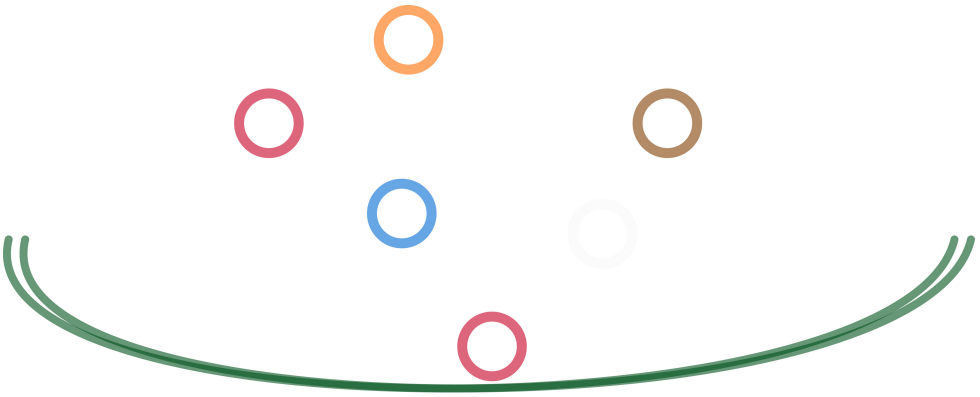
calmness, endurance, and tolerance in the face of difficulties, delays, or frustrations. patience involves the ability to wait, remain composed, and persevere without losing one's temper or motivation.



patience

kindness

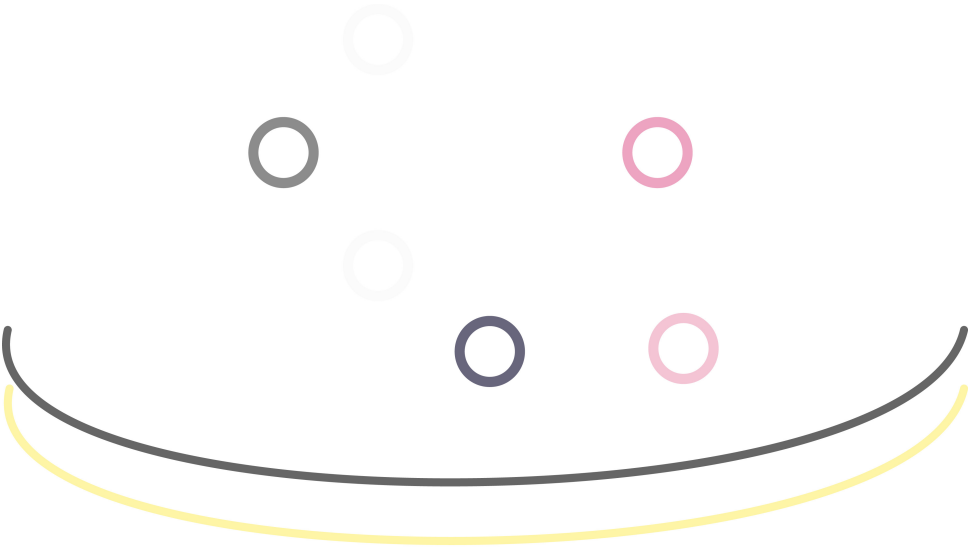
benevolence, gentleness, and goodwill towards others. kindness involves treating others with compassion, empathy, and respect, and performing acts of kindness without expecting anything in return.



kindness

humility

modesty, selflessness, and a realistic view of oneself. humility involves acknowledging one's limitations, an openness to learning from others, and recognizing the value and worth of all individuals.

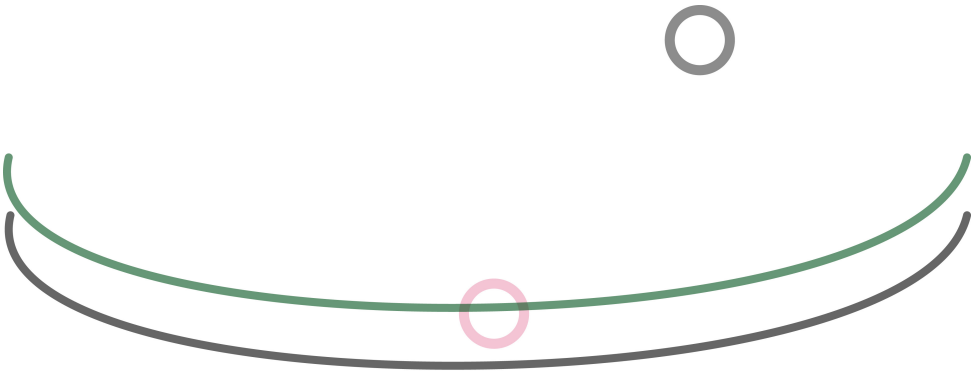


humility

the seven deadly sins

lust

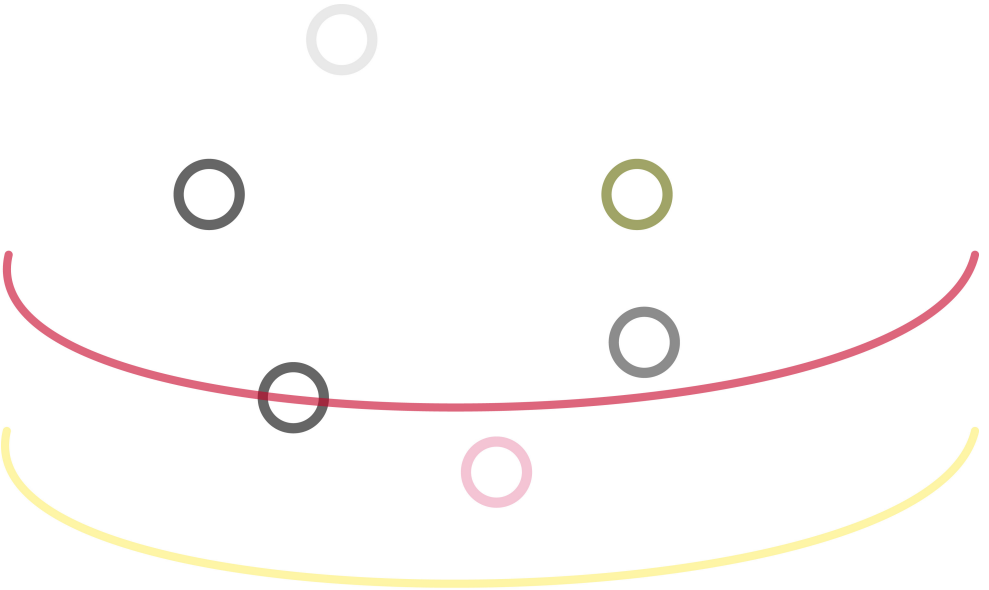
an intense desire or craving for sensual pleasure. lust is often associated with sexual desires but also extends to an excessive desire for material possessions or power.



lust

gluttony

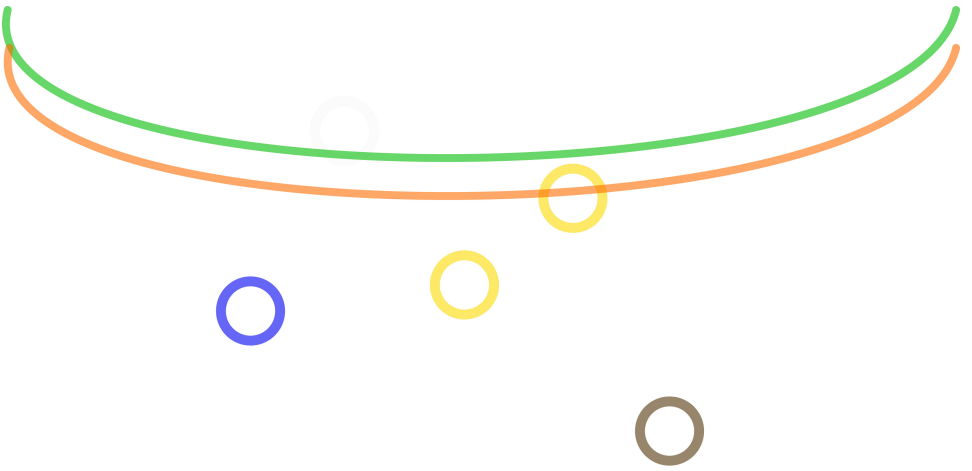
the excessive and indulgent consumption of food, drink, or other substances. it involves overeating, or overindulging, to the point of waste or harm.



gluttony

avarice

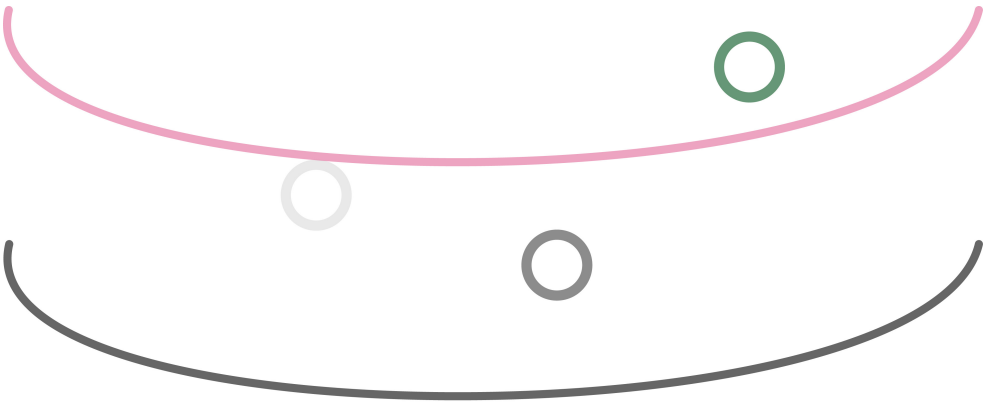
an insatiable desire for wealth, possessions, or power. avarice involves an excessive and selfish longing for more than what is needed, often at the expense of others or without regard for ethical considerations.



avarice

sloth

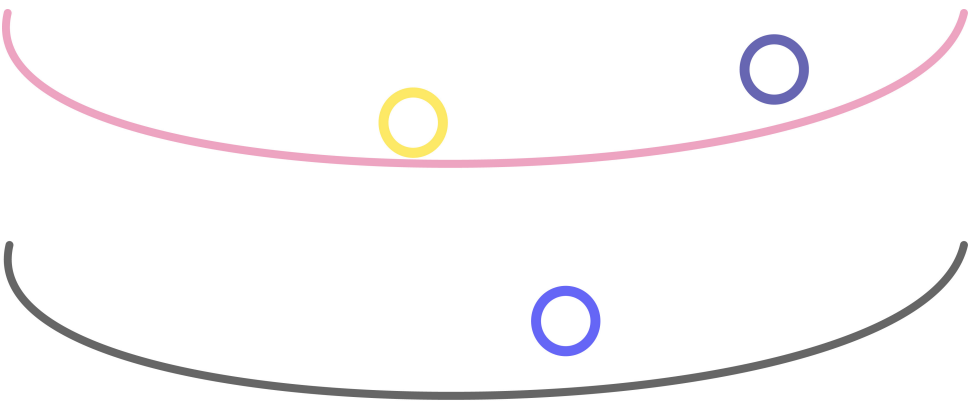
laziness, apathy, or a lack of motivation or effort in performing one's duties or responsibilities. sloth involves neglecting, or avoiding, necessary work. it can manifest as physical, mental, or spiritual lethargy.



sloth

wrath

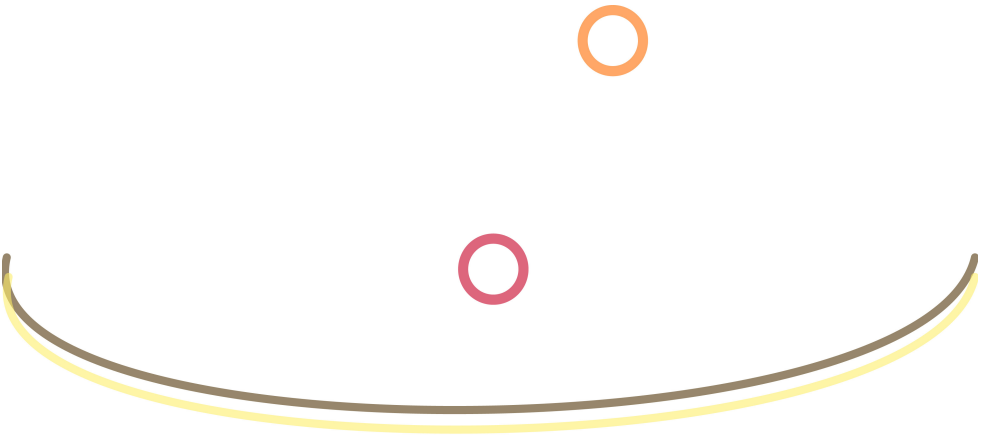
anger. rage. an intense emotional response characterized by hostility, vengefulness, or a desire for revenge. wrath involves acting out in destructive, or violent, ways due to perceived wrongdoing or injustice.



wrath

envy

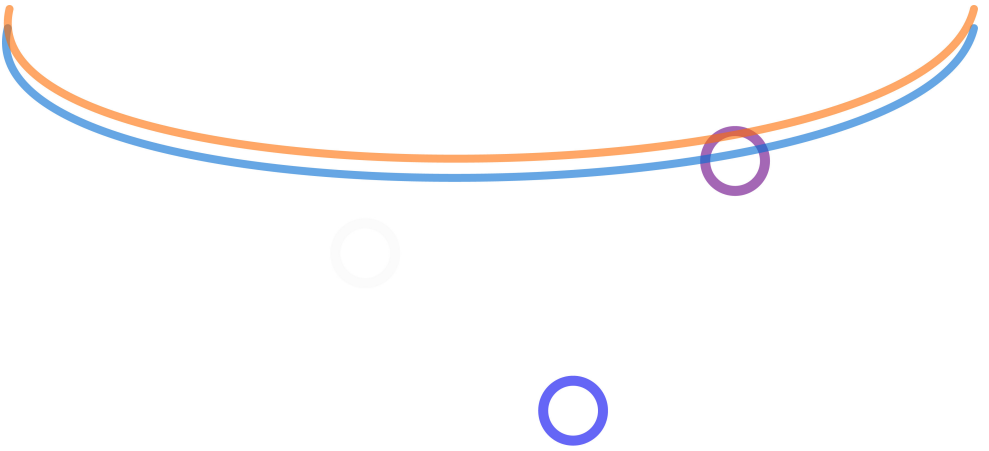
a resentful desire for what others possess, whether it be their qualities, achievements, or possessions. it involves feelings of jealousy, bitterness, and a sense of discontent or inferiority in comparison to others.



envy

pride

an excessive and self-centered sense of one's own importance, accomplishments, or abilities. pride involves an inflated ego, arrogance, and a lack of humility, manifesting as a disregard for others or an exaggerated sense of self-worth.

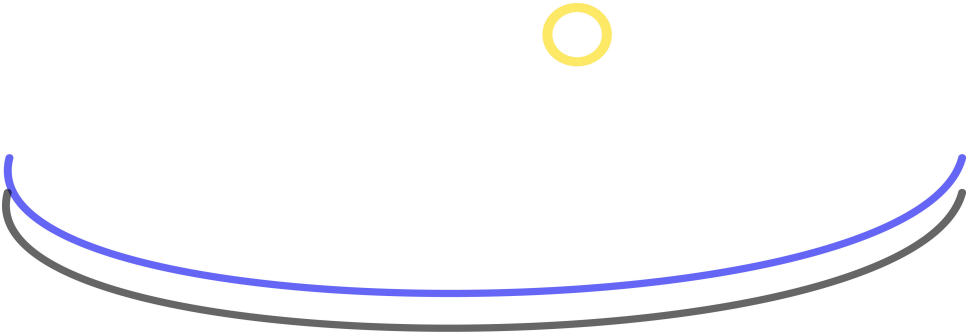


pride

states of existence

art

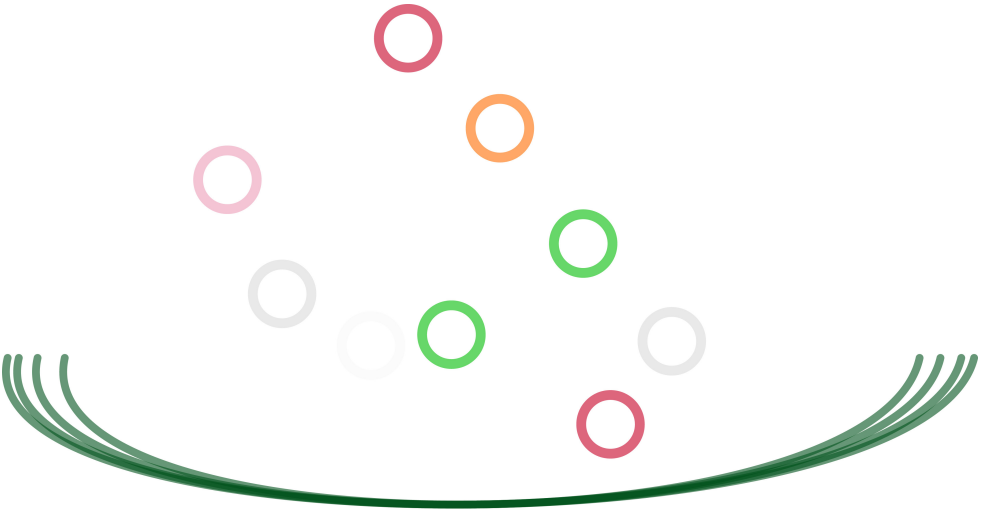
the expression of creativity, imagination, and skill in various forms. art can evoke emotions, provoke thought, and serve as a means of communication and cultural expression.



art

consciousness

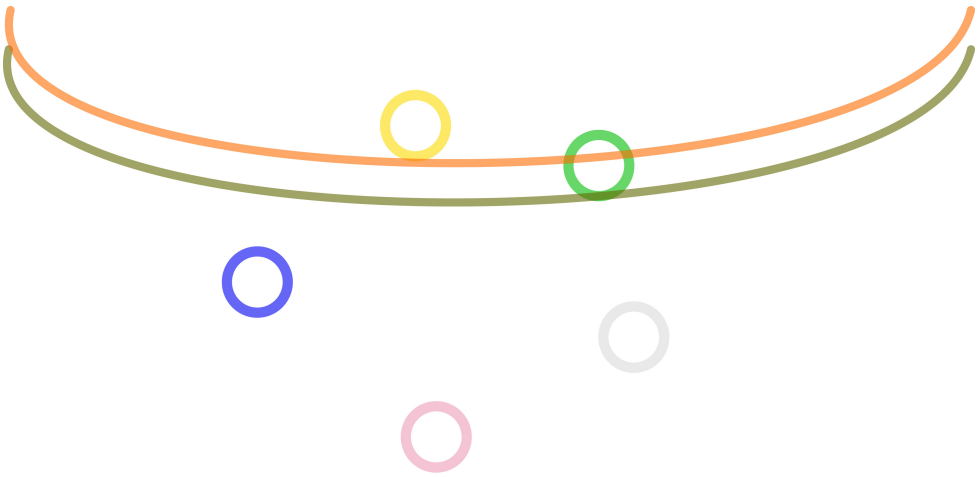
an individual's awareness and subjective experience of their surroundings, thoughts, and emotions. consciousness involves self-awareness, perception, and the ability to introspect.



consciousness

courage

the state of bravery, showing strength in the face of fear, danger, or adversity. courage involves taking risks, standing up for what is right, and facing challenges with confidence and determination.



courage

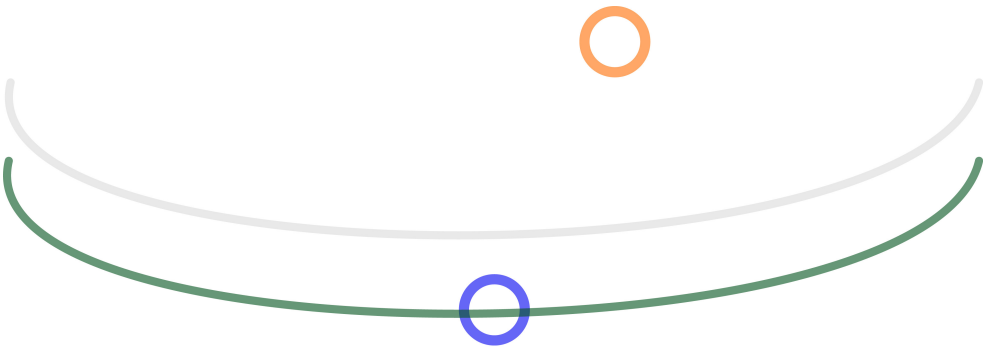
equality

the state of being equal in rights, opportunities, and treatment. equality involves fairness, justice, and the belief in the inherent worth and dignity of all individuals, regardless of their differences.

equality

eros

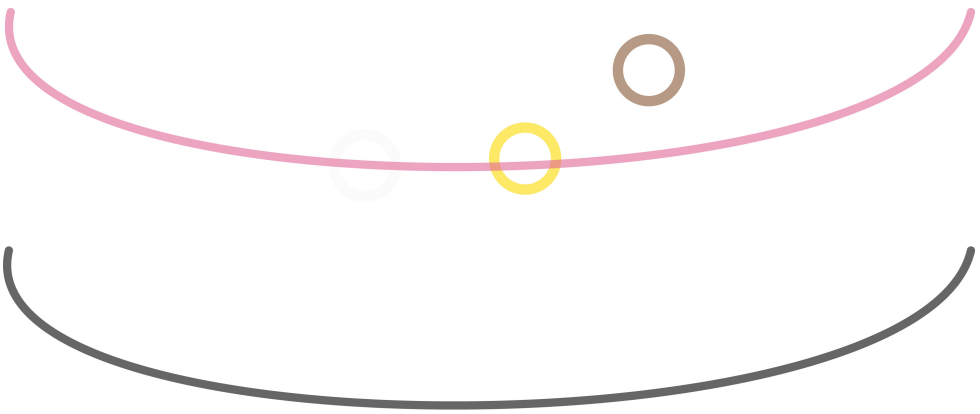
the greek concept of passionate love or desire. eros represents romantic or erotic love, characterized by intense longing, attraction, and connection between individuals.



eros

faith

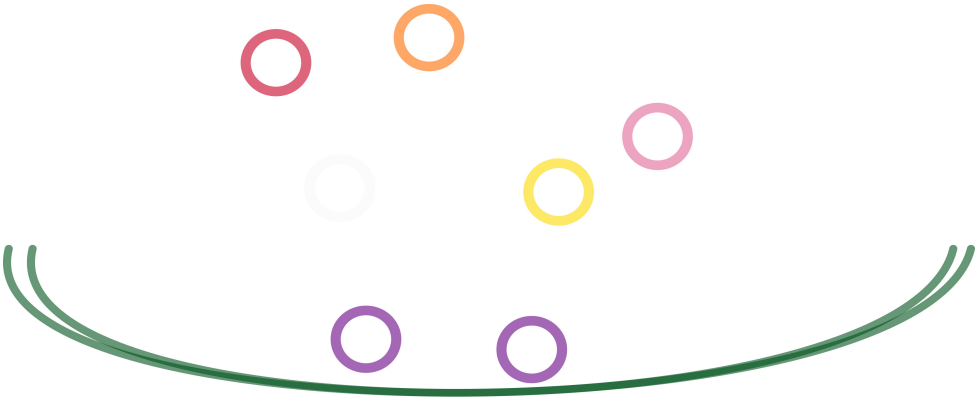
a strong belief or trust in something or someone, often related to religious or spiritual matters. faith encompasses a sense of conviction, loyalty, and reliance on a higher power or a set of beliefs.



faith

happiness

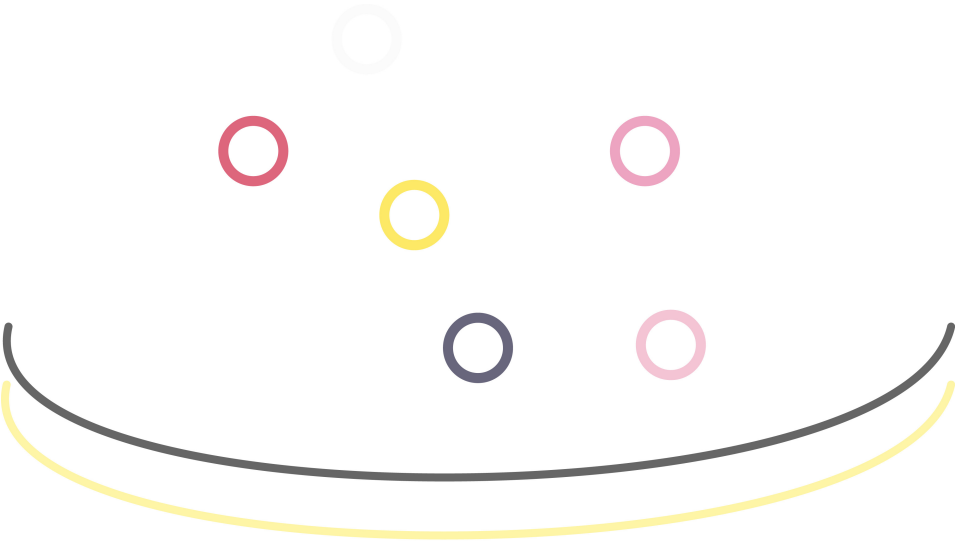
a positive emotional and mental state characterized by joy, contentment, and satisfaction. happiness involves experiencing well-being, pleasure, and a sense of fulfillment in life.



happiness

humanity

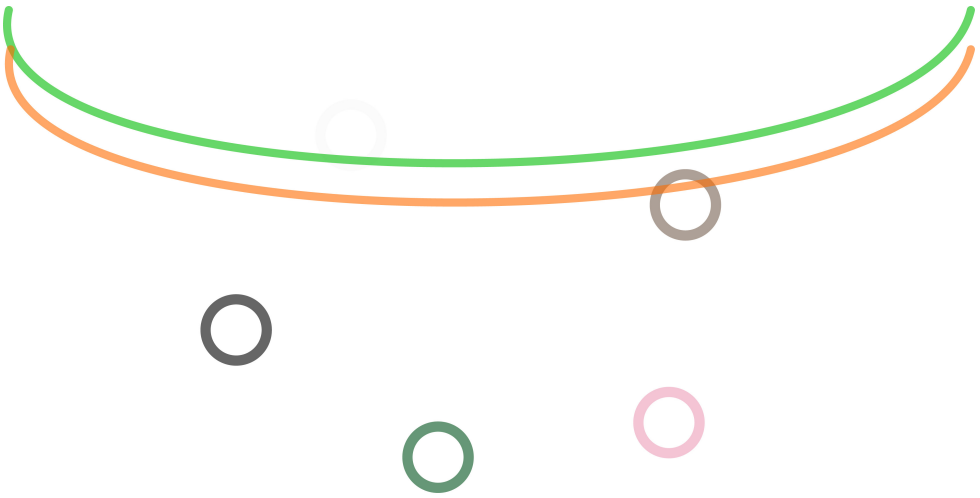
the collective human race or the quality of being human. humanity embodies qualities such as compassion, empathy, kindness, and the recognition of shared values and interconnectedness among all people.



humanity

justice

the state of fairness, righteousness, and moral rightness. justice involves treating individuals equitably, upholding rights, and ensuring that actions and outcomes are guided by ethical principles.



justice

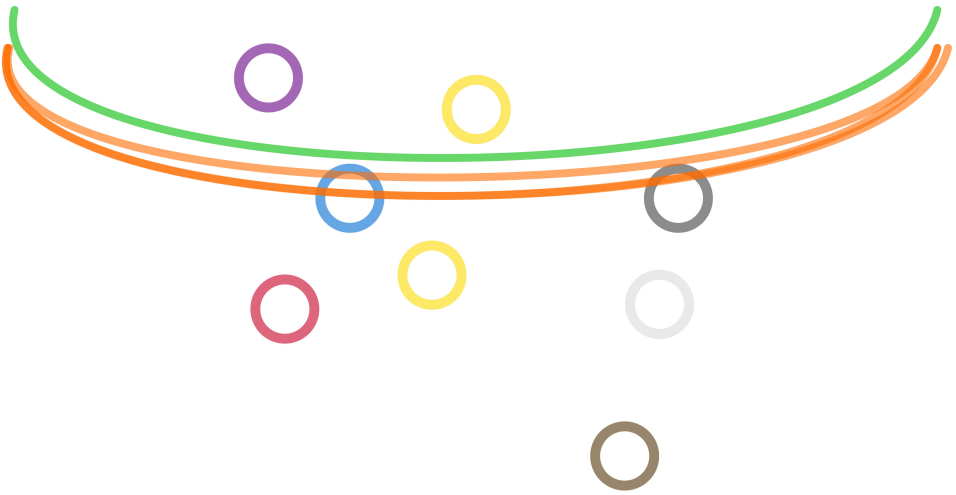
logos

a greek term that represents reason, logic, and rationality. logos refers to the use of logical thinking and argumentation to arrive at truth and understanding.

logos

love & peace

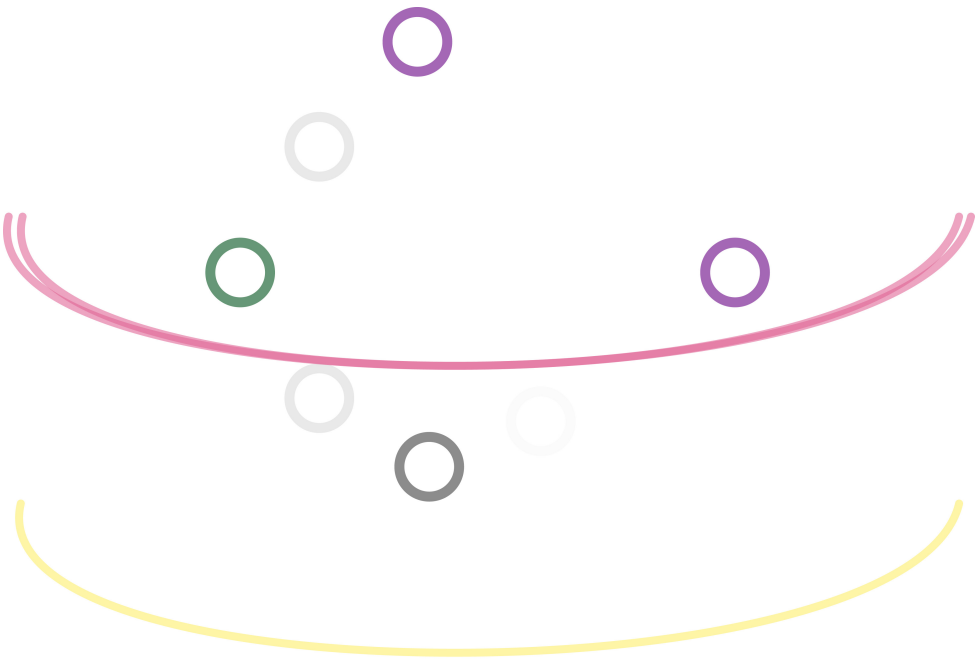
love and peace are interconnected states of being. love involves affection, care, and goodwill towards others, while peace represents a state of harmony, tranquility, and the absence of conflict or violence.



love & peace

philosophy

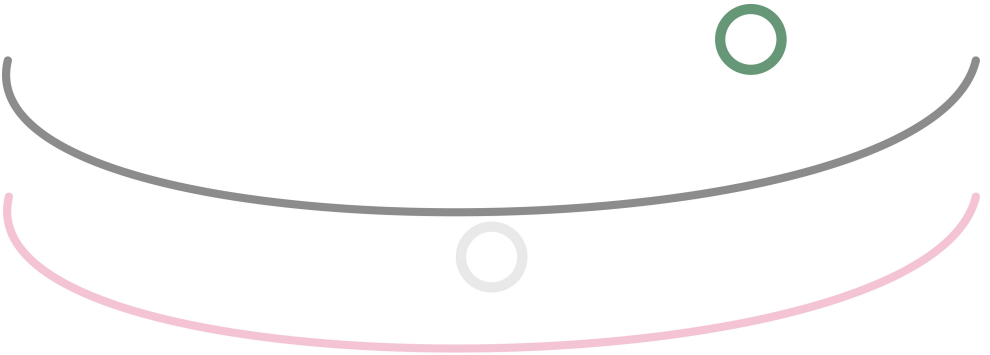
the study of fundamental questions about existence, knowledge, values, reason, and reality. philosophy involves critical thinking, inquiry, and reflection on the nature of knowledge, morality, and the meaning of life.



philosophy

soul

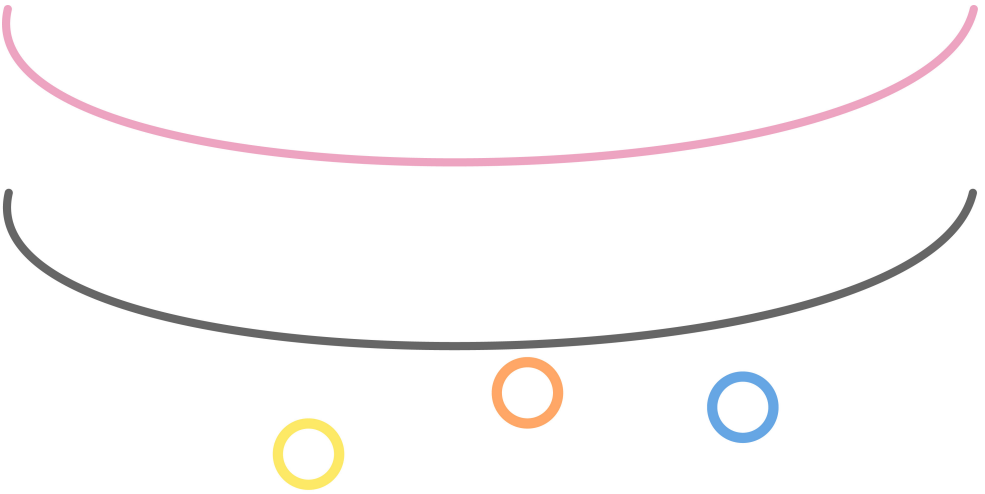
often understood as the immaterial and eternal essence of a person. the soul is associated with consciousness, selfhood, and the spiritual aspect of human existence.



soul

death

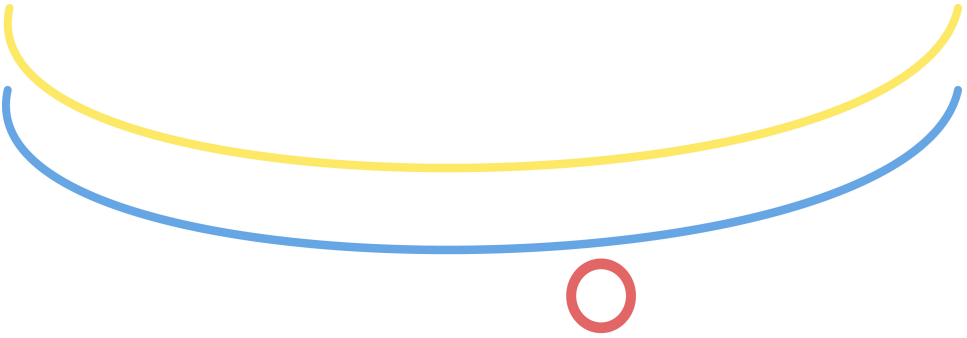
the end of biological life and the cessation of bodily functions. death is often seen as a transition or passage to another state or realm, depending on one's beliefs.



death

bad

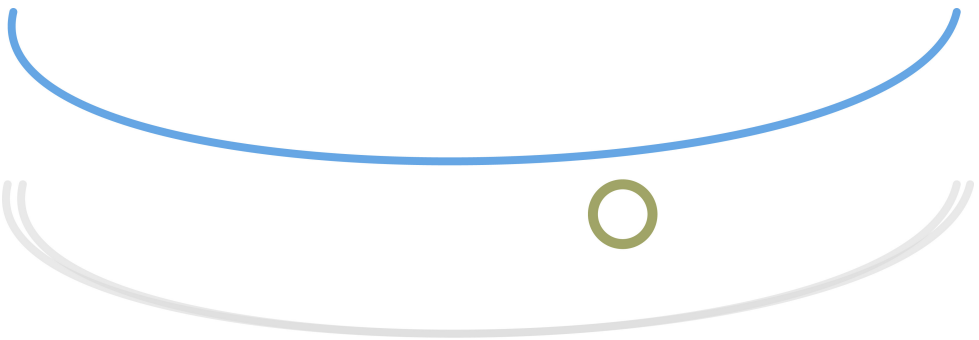
something that is morally wrong, negative, or undesirable. bad represents qualities or actions that go against accepted norms, values, or standards.



bad

good

something that is morally right, positive, or desirable. good represents qualities or actions that align with accepted norms, values, or standards.



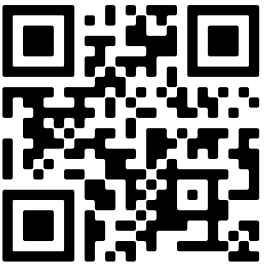
good

life

the state of being.

life

Scan the QR code to visit Aretephos.



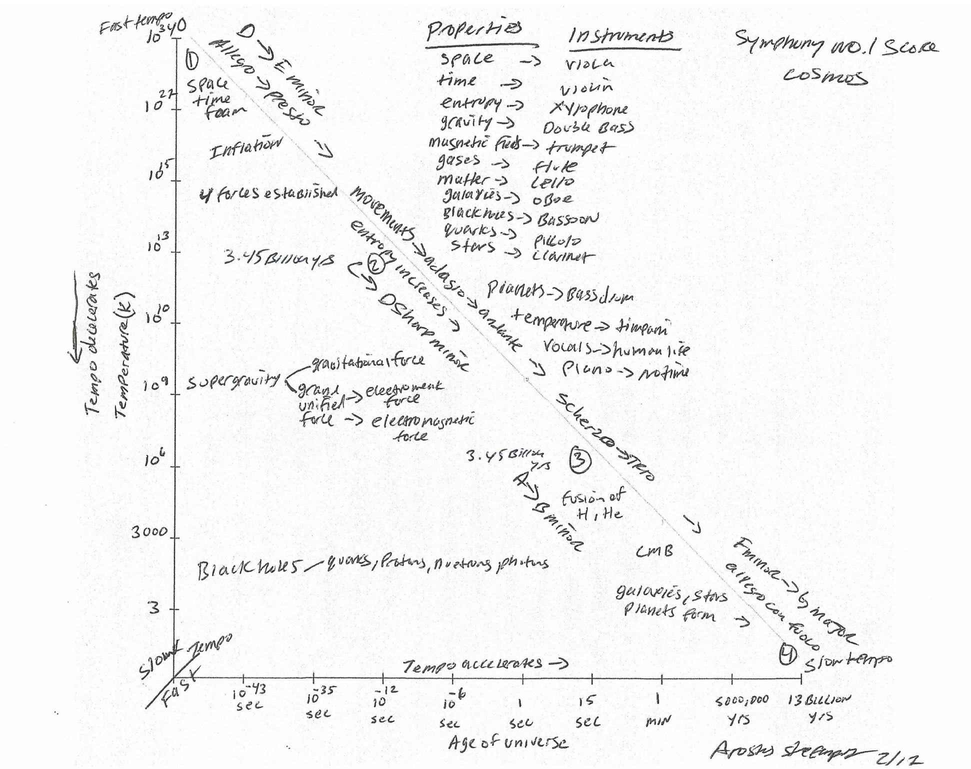
Music

Chromatic Frequency music scale

Symphony no. 1 score
Cosmos

Basic* Key	Pure	Color	electromagnetic spectrum of Light Frequency
D→E	$D_{\#5}$	Violet	607.542 H_z
C→D	D_5	Blue	573.891 H_z
C→D	$C_{\#5}$	Cyan	551.154 H_z
B→A	$A_{\#4}$	Green	478.394 H_z
A→B	$A_{\#4}$	Yellow	462.023 H_z
A	A_4	orange	440.195 H_z
F→G	$F_{\#4}$	Red	363.797 H_z

Apostle Stewart 2/17


Symphony No. 1 Score
Cosmos
Properties
Instruments
space -> viola
time -> violin
entropy -> xylophone
gravity -> Double Bass
magnetic fields -> trumpet
gases -> flute
matter -> cello
galaxies -> oboe
Black holes -> Bassoon
quarks -> piccolo
stars -> clarinet
Planets -> Bass drum
temperature -> timpani
Vocals -> human life
Piano -> no time
Fast tempo
Slow tempo
Tempo decelerates
Temperature (K)
Tempo accelerates ->
Age of universe
D -> E minor
Allegro -> Presto
space time foam
Inflation
4 forces established
Movements -> adagio -> andante
entropy increases
D sharp minor
3.45 Billion yrs
supergravity
gravitational force
grand unified force
electroweak force
electromagnetic force
Scherzo -> Tempo
A -> B minor
Fusion of H, He
CMB
E minor -> G major
allegro con fuoco
galaxies, stars
Planets form
Black holes / quarks, Protons, neutrons, photons
10^34
10^27
10^15
10^13
10^10
10^9
10^6
3000
3
10^-43 sec
10^-35 sec
10^-12 sec
10^-6 sec
1 sec
15 sec
1 min
5000,000 yrs
13 Billion yrs

Symphony No. 1, Cosmos began with a rather lofty goal: to capture the story of the universe — a 13.8-billion-year-old cosmological journey — and the Big Bang.

Describing the universe through music is a task no human is deserving of. Naturally, we judge what we see, what we hear, and what we feel against our best judgments, but this cannot be the case for the universe.

The universe accepts no praise and no blame. A battle has been waged, and the love story of life continues, working to find an end to a new beginning.

Cosmos follows a path from darkness into light, order into disorder, and death into life.

The universe's existence, 13.8 billion years old, is represented musically spanning 13:49 minutes. Each movement represents 3.45 billion years, approximately 3:45 minutes.

The rhythm echoes pressures during the space-time odyssey — an eternal voyage that has been and always will be, forever and ever.

In *Symphony No. 1*, instruments define the universe. They answer the calls of our distant ancestors, who now have a chance to perform for a moment in time, the greatest miracle of all: life.

Symphony No. 1 is architected with classical rigor for the modern audience.

Original in work and with relevant theoretical reflections in mind, driven and inspired by models found in cosmology, philosophy, nature, and geometry, the abstraction of values, properties, and sequences applied to instruments breathes life into *Symphony No. 1.* and it is from this idea that instrumenthesia was born.

Pairing *is* and *being* inspire romance and harmony, *Symphony No. 1* is a synthesis that gives rise to sound with purpose, because, ultimately, there is nothing without interpretation.

The music was composed in line with the electromagnetic spectrum, with notes assigned to each wavelength. Throughout composition, the electromagnetic spectrum or chromatic frequency determined the key on the music scale. Movements 1 and 2 have a higher energy, a higher frequency, and shorter wavelengths, making for more vibrant and sharper notes. Conversely, the later movements, 3 and 4, have a lower energy, a lower frequency, and a longer wavelength, providing for both longer and softer notes.

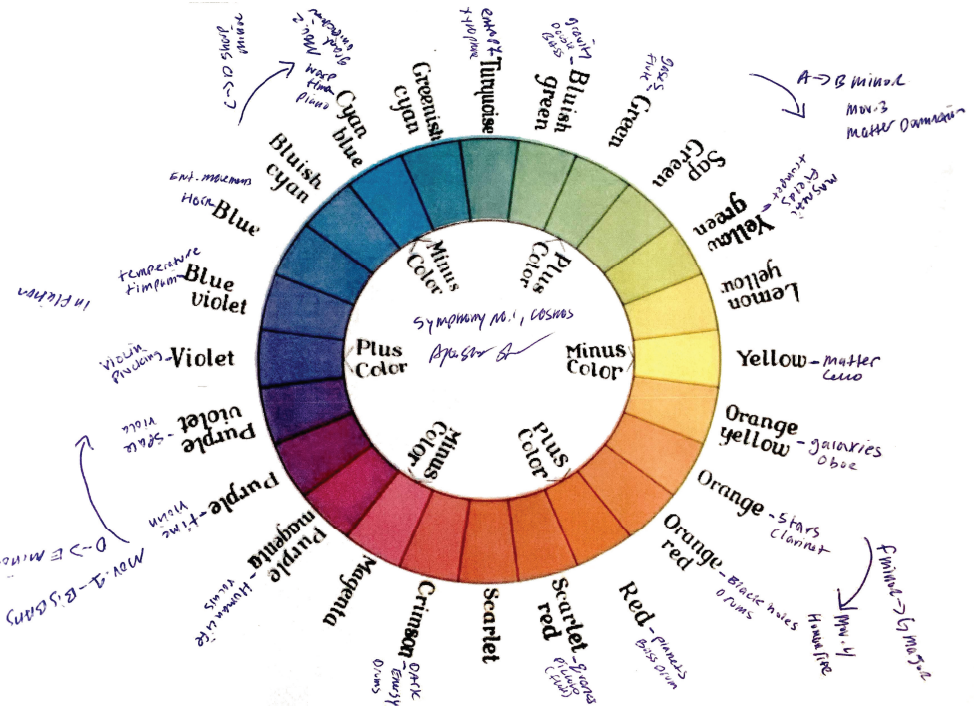
Throughout this symphony, color guides the movements, set by the passage of time. These techniques are inspired by the compositions Greek-French composure Iannis Xenakis, who translated mathematical formulas into music while applying concepts of architecture rejecting intuition and allowing for randomness in his compositions.

There has always been a geometric truth that exists within music. Long ago, Pythagoras discovered the rato of string lengths that created sounds that are pleasing to our ears. He identified the physics of intervals and proportional relationships that serve as the foundation upon which all music is built upon.

I believe it is within the capability of us all to understand our beginnings, and *Symphony No. 1* offers an alternative musical narrative, filled with drama, romance, passion, and, ultimately, obscurity of what will be.

Like the images in this book, this composition seeks to capture the intangible in a tangible form of the most profound individuals and ideas throughout history. While we may not be able to put it into words, I believe it is within the capability of us all to understand our beginnings.

Scan the QR for *Symphony No. 1, Cosmos*


Symphony No. 1, Cosmos
Plus Color
Minus Color
Plus Color
Minus Color
Plus Color
Minus Color
Yellow - matter
Orange yellow - galaxies
Orange - stars
Orange red - Black holes
Red - planets
Scarlet
Scarlet red - Stars
Crimson - Dark Energy
Magenta
Purple magenta - Human life
Purple - Time
Purple violet - Space
Violet
Blue violet
Blue
Bluish cyan
Cyan blue
Greenish cyan
Turquoise
Bluish green
Green
Sap Green
Yellow green
Lemon yellow

Properties	Instruments	Movements
Time	Violin	(1-4)
Space	Viola	(1-4)
Entropy	Xylophone	(2-4)
Gravity	Double Bass	(2-4)
Magnetic Fields	Trumpet	(2)
Gasses	Flute	(2)
Matter	Cello	(2-3)
Galaxies	Oboe	(3)
Black Holes	Bassoon	(3-4)
Quarks	Piccolo	(1-3)
Stars	Clarinet	(3-4)
Planets	Bass Drum	(4)
Temperatures	Timpani	(1-4)
Entering Movements	Horn	(1-4)
Human LIfe	Vocals	(4)
Pre- & Warp Time	Piano	(0,3,4)
Dark Energy	Drums	(3,4)
CMB	Static	(0,1)

Narration of *Symphony No. 1, Cosmos*

Note that the symphony captures only the most fundamental features and events of the universe.

0:00–0:35
Introduction - The Beginning
Before everything. No time, no space, only pure emptiness. The Big Bang is ushered in.

0:36–1:35
Introduction - The Big Bang
Cosmological time and real-time begin at 0:36 with the Big Bang. You'll hear all the instruments, symbolizing and foreshadowing the notion that whatever will be in the future was present from the beginning. The delay in events until 1:35 exaggerates the feeling of nothing before everything.

Cosmological events: space, time, CMB.

1:35–4:39
Movement 1 - Genesis
The plucking of the violin represents the progression of time. Until 4:39 you'll experience the universe in darkness and only space and time gradually becoming more complex as time goes on. You'll also hear static referencing the cosmic microwave background or CMB.

Cosmological events: spacetime, inflation, four forces are established, entropy increases.
Key: D–E minor

4:39–7:36
Movement 2 - Darkness Fades to Light
Events begin to flow faster, symbolizing the high rate of inflation. At 6:35 there is a directional shift; we have progress, growth, and the hint of possible stabilization.

Cosmological events: gravitational force, matter, dark ages, hydrogen, and helium.

Key: C–D sharp minor

7:36–9:57
Movement 3 - Eternal Voyage
The unification of all. The buildup is gradual. The universe takes true form, and is celebrated at 8:46.

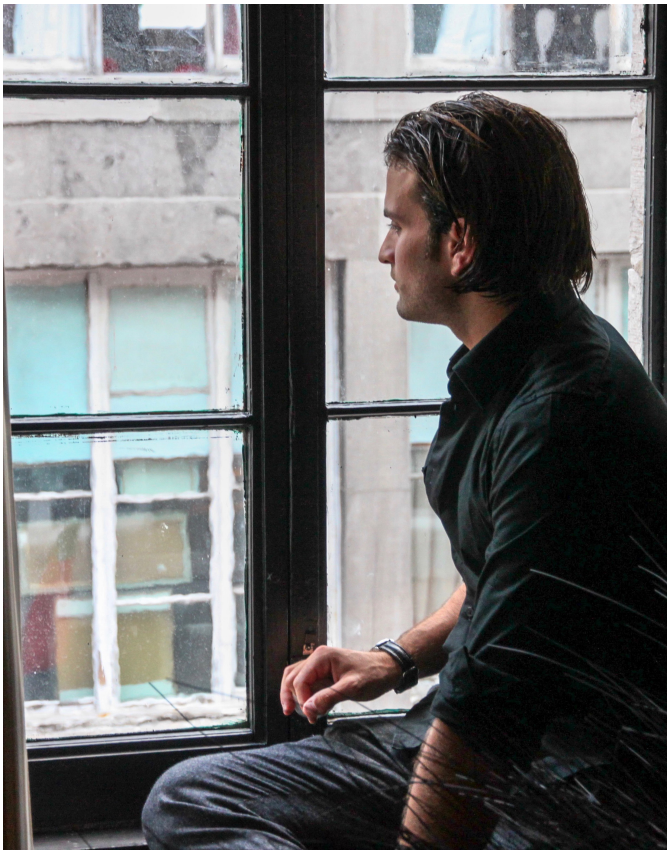
Cosmological events: supergravity, grand unified force, electromagnetic force, gasses, galaxies, blackholes, quarks, stars.

Key: A–B minor

9:57–13:49
Movement 4 - Fireside Stories
Dark matter dominates. The universe expands. At 13:20 vocals enter, symbolizing human life.

Cosmological events: dark matter, planets, expansion, human life.

Key: F minor–G major



Born in Sharon, Connecticut, Apostolos Stefanopoulos continues to live in New York, USA. He is a graduate of philosophy and economics from Marist College in New York. Wassily Kandinsky, Caravaggio, and the philosophy of logic influence his art.

Words do have a sort of color to them.

Maybe it is "more meaningful" to have an art piece that mirrors reality, even if that meaning is temporary.

It is not that language is the final arbiter of truth; it is that the abstraction of reality and even imagination is nothing but a quasi-reality, nothing more than a painting that has lost its color, a symbol that has lost its value, and a person that has lost their identity.

Can art bear an objective truth?

So the cycle continues...

We have started to lose ourselves. We must find ourselves again.

The futther we go the more abstract it becomes...

Who cares if the meaning fades.

What does it mean to stare beyond the paint on canvas?

Meaning can ebb and flow…

Time does work against you.

It works against all of these things.

Words are to express ourselves, understand others, communicate, but
they are always received through the lens of the I.

If nothing new can be created fully independent of context, does that
mean anything that is new must inherently be abstract?

The solution is not that we abandon art as it is and shift to another
reality or worldview.

That will happen on its own with the passage of time.

We create a work of art. It gives you a feeling back. It maps onto reali-
ty. It reminds you of your life.

But that meaning will fade with time. Authorial intent goes away as the
memory of the artist fades but that work may survive, holding with it
the possibility for new meaning to emerge.


Space + Time
Memory no. 1
Cosmos
Electromagnetic
Light Frequency
604.542
891 Hz