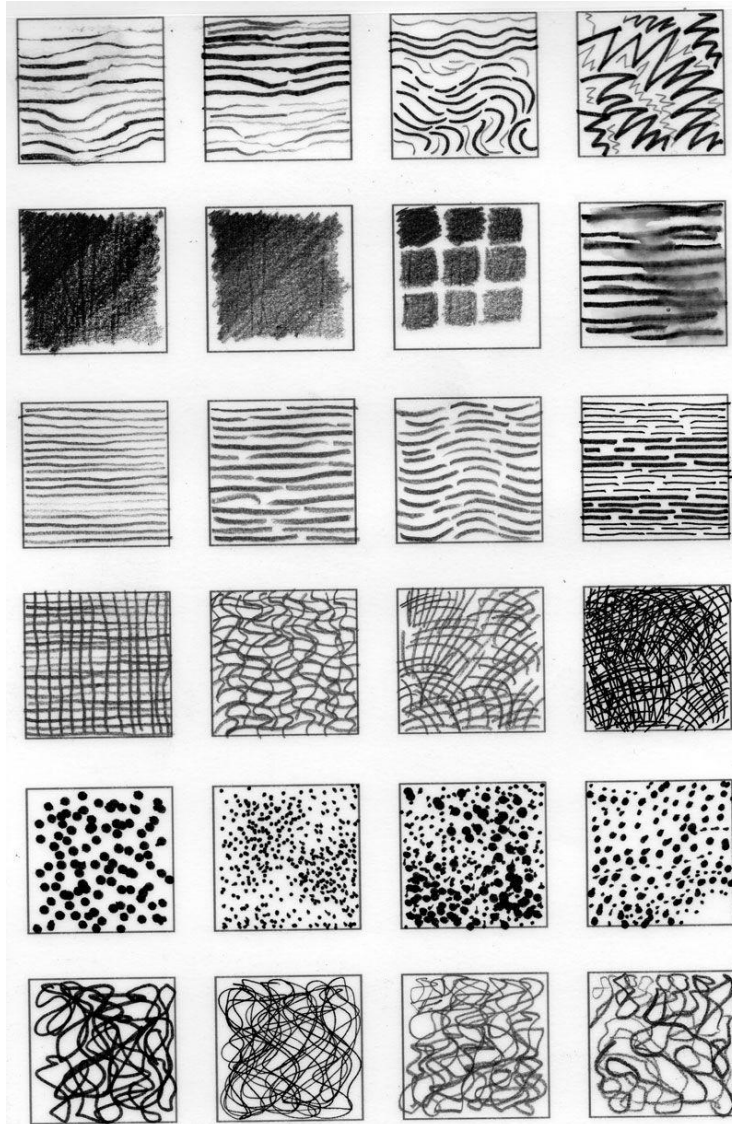


Image for Morning Prayer

Franz Marc, Deer In the Forest, 1914



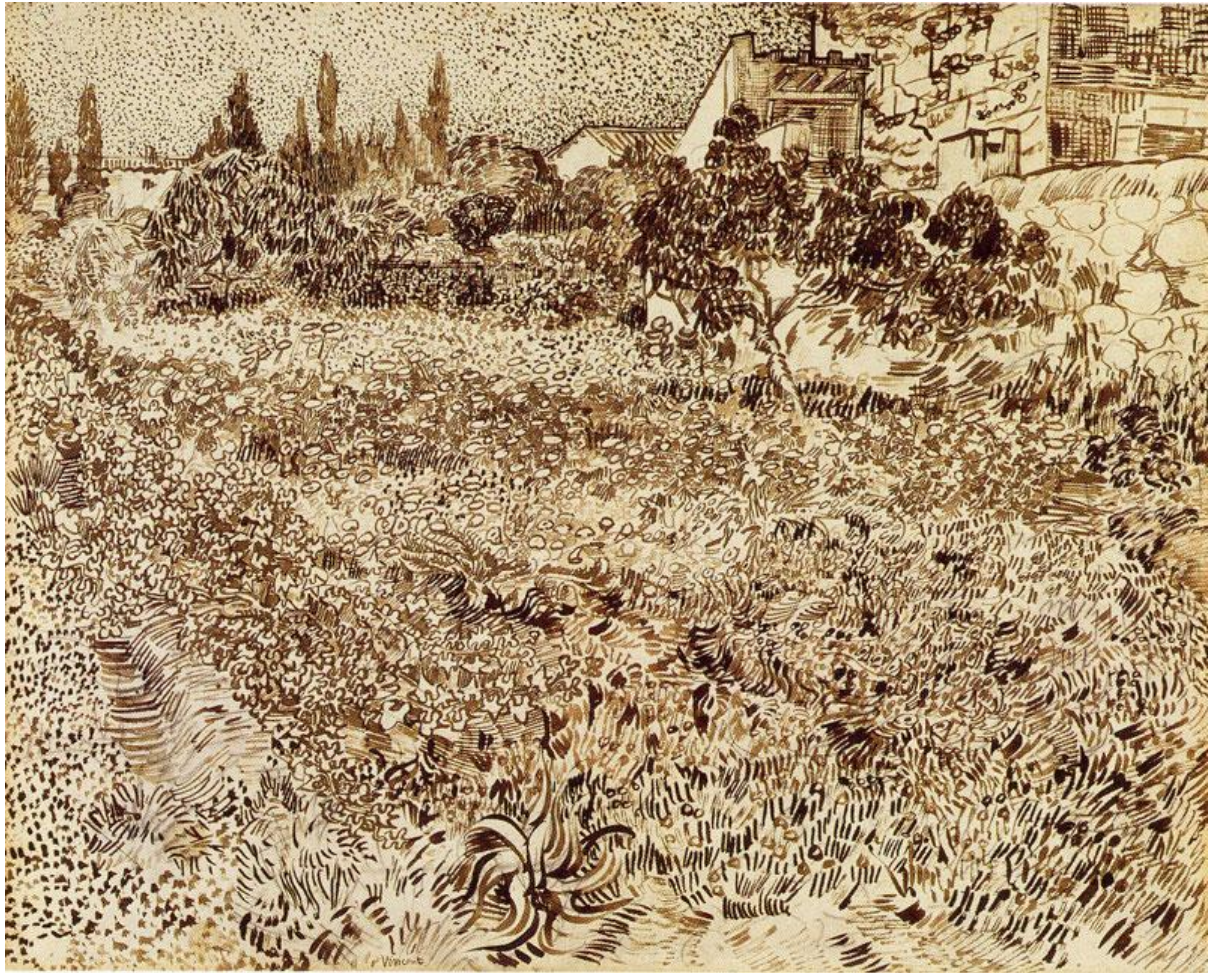


Our first exercise is to outline a number of squares and make as many different types of drawing marks as you can imagine. Mark making is an important element of drawing and involves gesture. Gesture is the beginning of language. When we observe the world around us and translate what we see through gesture, we are activating our mirror neurons and accessing empathy with what we are observing.

The second exercise was to draw in another set of squares, the different elements of design: shape, line, space, value, form, mark making, texture (examples below)

We then found a scene and noted on paper the shapes and texture we found in that scene. Drawings only need to emphasise one or two elements of design to be successful.

Van Gogh, Garden with Flowers, 1888



“It is looking at things for a long time that ripens you and gives you a deeper meaning.”
— Vincent Van Gogh

Elements of Art

Shape

Piet Mondrian, Study for The Grey Tree, 1911



Space

Georges Seurat, Trees (Study for La Grande Jatte) 1884



Value

Emily Carr, Untitled (Formalized Cedar), c. 1931



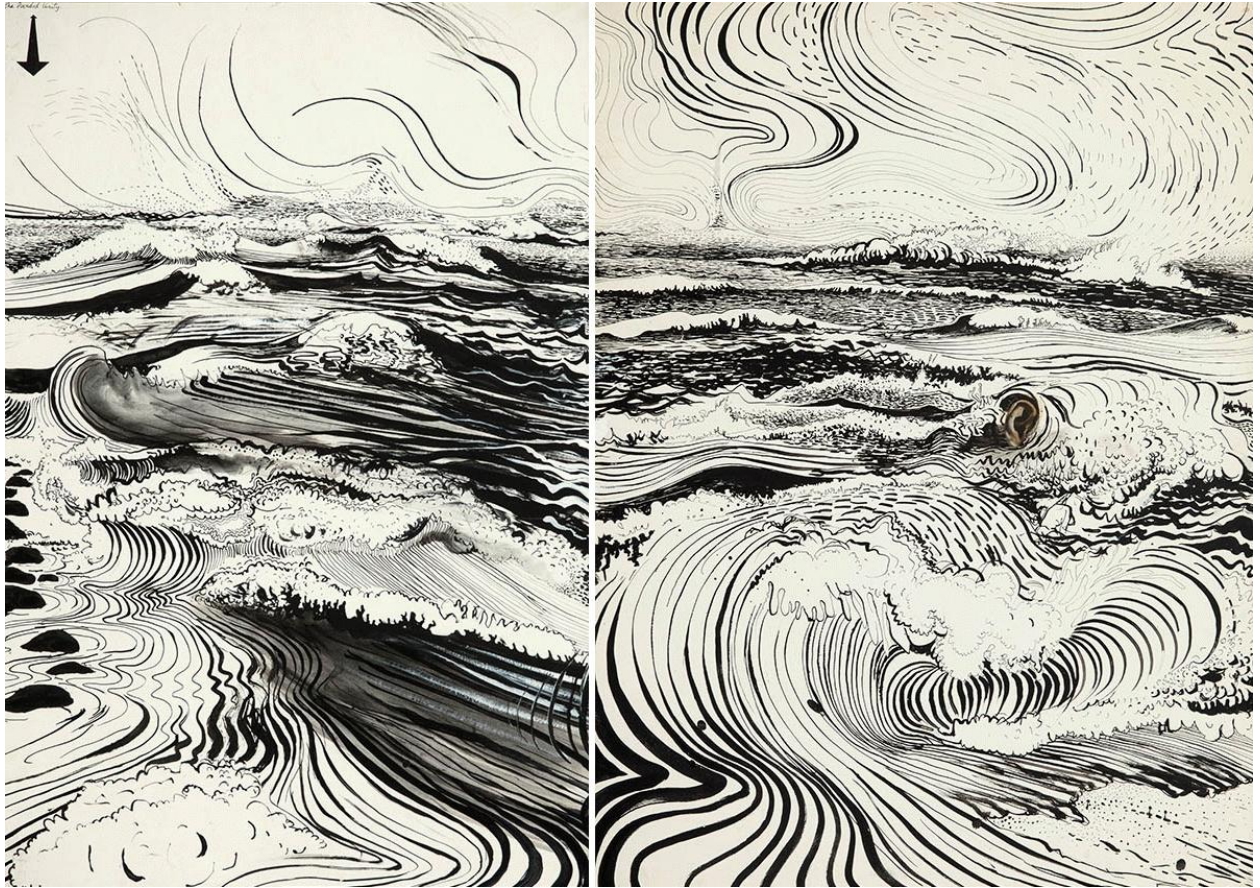
Form

Franz Marc, Two Horses, 1910/11



Line

Brett Whitely, The Divided Unity, 1974



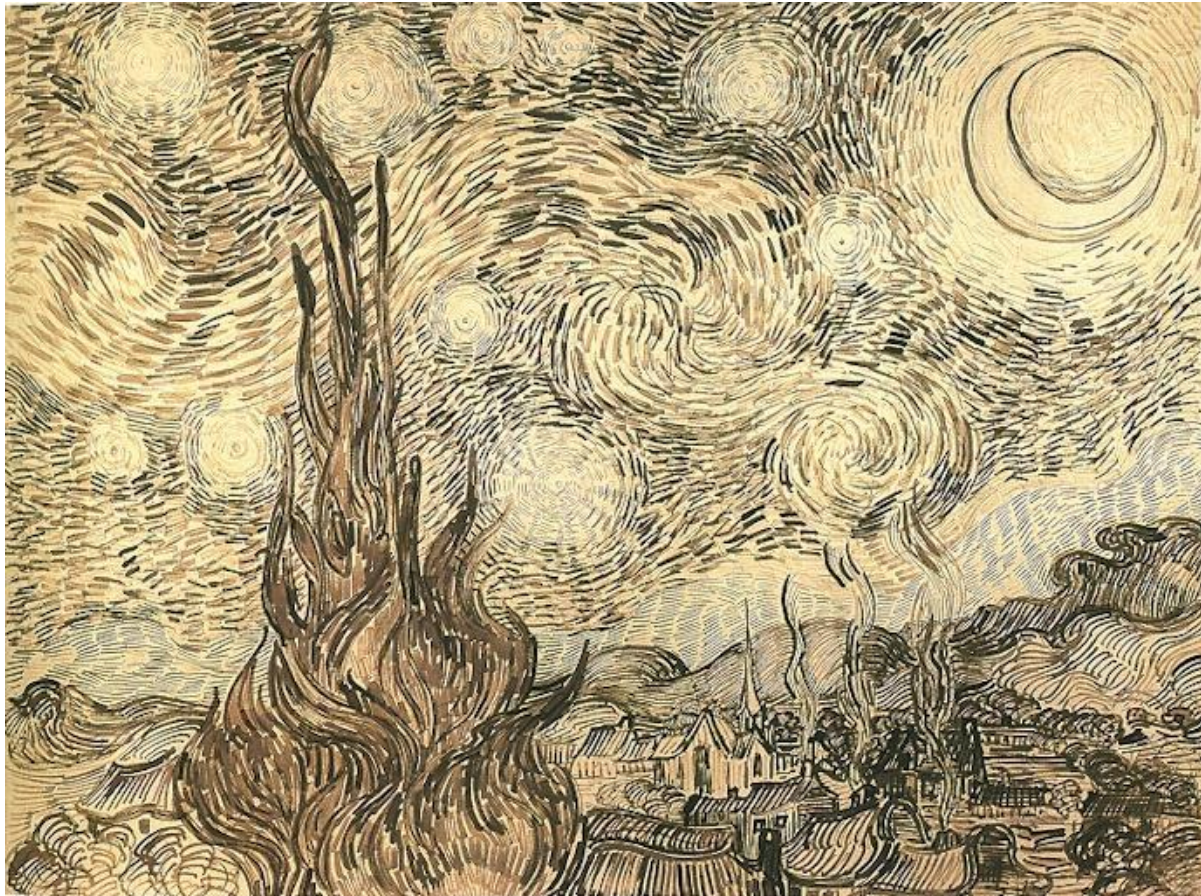
Texture

Jim Dine, Black and White Flowers IV, 2003



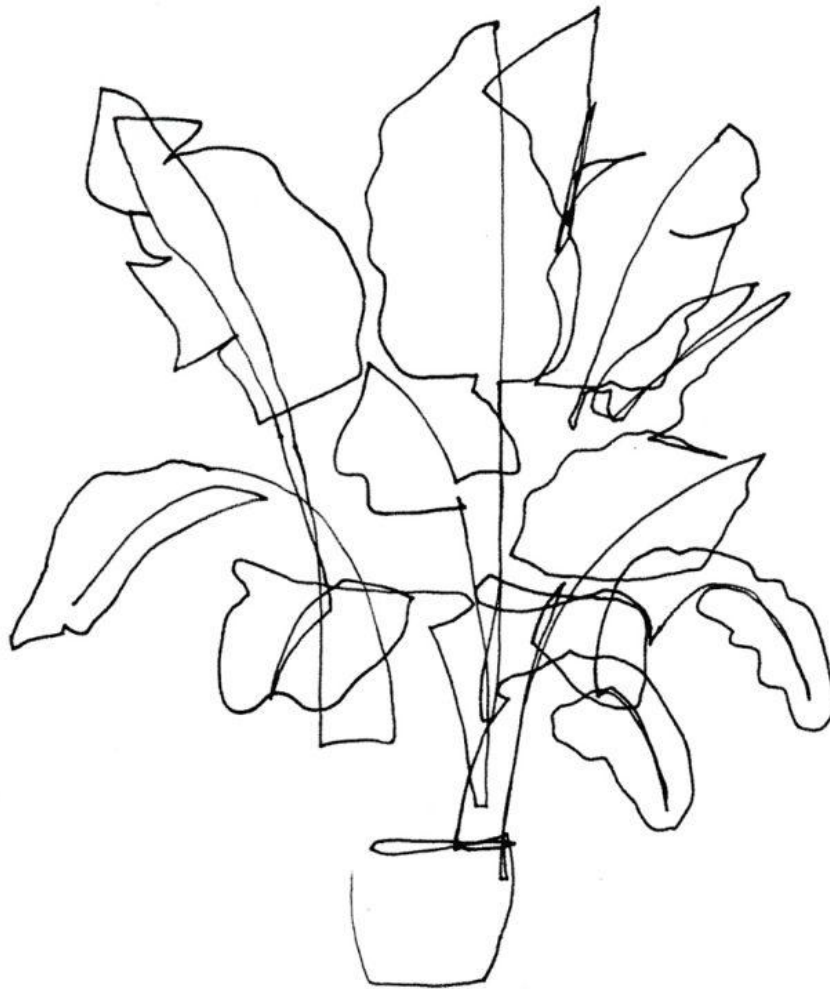
Mark Making

Vincent van Gogh, *Starry Night with Cypresses*, 1889



Contour Drawing

In this exercise we imagine our eyes observing a little ant crawling around a natural object. As we watch the little ant we trace its movements with our pencil we need to draw slowly as the little ant is taking its time. This exercise encourages our inner critic (aka the emissary) to slow down. It is a form of mindfulness. The act of drawing keeps us focused and calms our busy thoughts, activates connection between left brain and right brain, and cultivates attention.





Something fun to try out, is to make contour drawings, then colour them.

Collage

Our final exercise activates creativity. David Eagleman in the book, *The Runaway Species*, explains that creativity takes what is, rearranges it and makes something new. We can practice our creative brain every day by making collage. Keep a stash of magazine pages with various colours and images that are appealing (or conversely challenging) cut out shapes and figures and put a timer on for five minutes. Allow yourself to put down elements instinctively and be surprised. This can be a very enjoyable process.

Hannah Hoch, *Watched*, 1925



Hannah Hoch, illustration from the 'Green Box' picture book, 1945



Ultimately creativity is play. The arts are as necessary to adults as play is to children. Play is where children process their experience of the world, develop creativity and exercise autonomy. The arts are the means by which adults may exercise the gifts of the child. Just as each of us needs to take part in some sort of physical activity in order to be healthy, even if we are not athletes, so do we need to take part in some form of creative activity even if we are not artists. In the light of McGilchrist's teaching, the arts are where the Master and the Emmissary work together, and where the Emmissary cannot take over the Master.

What next?

The supply list sent at the beginning of the workshop and a regular collage or contour drawing practice may be all one needs to keep creativity and vision healthy. I recommend two books: *Drawing on the Right Side of the Brain* by Betty Edwards, and *The Artist Rule*, by Christine Valter Paintner which intentionally ties artistic practice with contemplative practice. I highly recommend the documentary series 'Abstract' on Netflix.

Thank you all so very much for attending The Art of Paying Attention, Opening Our Eyes.

Cornelia van Voorst, vanvoorst.cornelia@gmail.com, 778 440 8170, www.vanvoorstart.com
on instagram, vanvoorst_cornelia

The Art of Paying Attention, Opening Our Eyes.

Excerpt Summaries of Reference Articles.

I have summarized a number of articles with the most relevant excerpts about the benefits of drawing. I am constantly updating my 'stash' and have shared what seem to be the most relevant. If you would like me to pass on anything of interest or have any comments or questions please feel welcome to contact me at vanvoorst.cornelia@gmail.com Here are the links with excerpts:

From A Powerful Tool for Learning: Why Drawing isn't Just an Art by Matt Davis

<https://bigthink.com/mind-brain/drawing-for-education>

https://samfoxschool.wustl.edu/portfolios/faculty/db_dowd

<https://www.printmag.com/post/drawing-is-another-language>

... everybody needs to create a bit of art every day, either for greater recall, improved cognition, to reduce stress, or simply for the natural pleasure of creating something.

"We have misfiled the significance of drawing because we see it as a professional skill instead of a personal capacity. This essential confusion has stunted our understanding of drawing and kept it from being seen as a tool for learning above all else." D.B. Dowd

We think of "good" drawings as those which work as (reproductions) of the real world, as realistic illusions. Rather, drawing should be recategorized as a symbolic tool.

Human beings have been drawing for 73,000 years.

instead of brute strength we manipulate subtle instruments. The human hand is an extremely dense network of nerve endings; the somatosensory homunculus (a sculpture of a human being where the body proportions correspond to how sensitive the associated nerve networks are) https://en.wikipedia.org/wiki/Cortical_homunculus demonstrates this well.

Drawing is a tool for seeing and understanding the world better. Both absent-minded doodling and copying from life have been shown to positively affect your memory and visual perception.

Drawing concepts and physical objects forces your brain to engage with a subject in new and different ways, enhancing your understanding. For example, some researchers tested study participants' ability to recall a list of words based on whether they had copied the word by hand or drawn the concept — like writing the word "apple" versus drawing one. The drawers often were able to recall twice as many words.

The human visual system tends to misjudge size, shape, color, and angles but artists perceive these qualities more accurately than non-artists. But non-artists by practicing drawing can improve how they see the world. Cultivating drawing talent can become an essential tool to improve people's observational skills in fields where the visual is important. (surgeons for instance are taking drawing lessons to improve their visual accuracy and hand and eye co-ordination

Biology professors are reintroducing physical drawing in their biology courses. The reasoning is that actively deciding to draw helps people see the world better.

How Art Changes Your Brain: Differential Effects of Visual Art Production and Cognitive Art Evaluation on Functional Brain Connectivity

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0101035>

We observed that the visual art production group showed greater improvement than the cognitive art evaluation group... (these improvements were) related to psychological resilience... these findings are the first to demonstrate the neural effects of visual art production on psychological resilience in adulthood.

Recent research on visual art has focused on its psychological and physiological effects, mostly in clinical populations. It has shown that visual art interventions have stabilizing effects on the individual by reducing distress, increasing self-reflection and self-awareness, altering behaviour and thinking patterns, and also by normalizing heart rate, blood pressure, or even cortisol levels

Distinct brain areas of a certain resting state network, the default mode network (DMN), are thought to be associated with cognitive processes such as introspection, self-monitoring, prospection, episodic and autobiographic memory, and comprehension of the emotional states and intentions of others (there it is... the empathy connection fully stated.)

Given the resource enhancing effects of visual arts, we hypothesized that participation in 10-week-long visual art groups may result in psychological changes and may alter the functional interplay of the DMN.

All these improvements did not occur in those who simply evaluated art. Participants had no previous education in visual art and were not professional visual artists or art historians.

Draw Yourself Happy: Drawing, Creativity + Your Brain Robin Landa (probably the best article to explain everything and to hand out.) <https://www.printmag.com/post/draw-yourself-happy-drawing-creativity-your-brain>

Making art positively affects the brain and enhances stress resistance. In a peer-reviewed article, **“How Art Changes Your Brain: Differential Effects of Visual Art Production and Cognitive Art Evaluation on Functional Brain Connectivity,”** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4077746/> the authors stated that their research was the first to demonstrate the neural effects of visual art production on psychological resilience in adulthood.

They observed that the visual art production group showed greater spatial improvement in specific functional connectivity than the cognitive art evaluation group. “Moreover, the functional connectivity in the visual art production group was related to psychological resilience [a protective personality characteristic that allows individuals to control negative effects of stress and thus enables a successful and healthy functioning even in stressful life conditions].”

A different team’s recent research indicates drawing *develops* your brain. “The people who are better at drawing really seem to have more developed structures in regions of the brain that control for fine motor performance and what we call procedural memory,” explains Dr. Rebecca Chamberlain, Laboratory of Experimental Psychology University of Leuven, Belgium, lead author of the article, “Drawing on the right side of the brain: A voxel-based morphometry analysis of observational drawing.” In this study using a scanning method called voxel-based

morphometry, the researchers studied how observational drawing tasks affect the brain, examining a cohort of forty-four graduate art students and non-art students.

They measured structural differences in the brain's grey matter and white matter in both the art students and non-art students. They correlated grey matter and white matter volume and performance on drawing tasks. What these scans revealed is stimulating: the art students had significantly more grey matter in the cerebellum and medial frontal gyrus (areas involved with fine motor control). And, that drawing relates to changes in fine motor structures in art and non-art students. Also, the scans revealed that the art students had more grey matter in the precuneus in the parietal lobe, an area of the brain linked to a wide spectrum of integrated tasks, including creativity, visuo-spatial imagery and more. (For those still holding to the notion of artists' right brain dominance, this study showed increased grey and white matter in both the left and right brain structures.)

.... this is no surprise to visual artists, designers and illustrators who have held firmly to the conviction that drawing is indeed thinking and intuitively have been prime investigators of visual perception and the visual brain. In a short film, "Milton Glaser Draws & Lectures" by C. Coy, esteemed designer Glaser, who wrote a book titled *Drawing is Thinking*, says, "The act of drawing makes me conscious of what I'm looking at...Drawing has always been a primary way of encountering reality...Drawing is essential to understanding form."

Dr. Lora Likova, a cognitive scientist at Smith-Kettlewell, might agree with Glaser. She writes (Likova, 2012), "We may not be aware of the complexity of drawing, but when analyzed in detail it becomes clear that drawing is an amazing process that requires precise orchestration of multiple brain mechanisms; perceptual processing, memory, precise motor planning and motor control, spatial transformations, emotions, and other diverse higher cognitive functions, are all involved. In terms of the multiple-intelligence theory (Gardner, 1983), drawing heavily employs such categories as bodily-kinesthetic and visuo-spatial intelligence ." (mirror neurons important for empathy are visiospatial)

This amazing process of drawing, whether observational or conceptual, depends on diverse brain regions:

- cerebellum (major brain region): movement
- frontal lobe: reasoning, planning, movement, emotions, problem solving
- parietal lobe: movement and orientation, spatial relationships, recognition, perception of stimuli, linked to a role in creativity
- occipital lobe: vision, visual processing
- temporal lobe: perception and memory

When you draw, dopamine is released. Dopamine is produced in the brainstem, which is the oldest part of the brain evolutionarily speaking, but the dopamine is released in the newest region of cortex, the part that we use to create ideas, make decisions, and plan our actions. Thus, we feel rewarded when we create new objects or actions. And since creativity is based on the decisions made by the creator, the reward system kicks in when we are in control and inventing things that we have thought of ourselves. Freedom and ownership are part and parcel of the neurochemistry of the arts," writes James E. Zull, Professor of Biology, Biochemistry, and Cognitive Science and Founding Director of the University Center for Innovation in Teaching and Education at Case Western Reserve University. (could it be that our dependence on screen robs this from us and from our children?)

Doodling May Draw Students into Science.

<https://www.livescience.com/15747-doodling-science-education.html>

Researchers noted that many students are put off by science in school, because the rote learning method in which it is often taught forces them into unpleasant passive roles. Drawing, on the other hand, caters to individual learning differences, and surveys of teachers and students indicated that when students were asked to draw to explore and justify understandings in science, they were more motivated to learn.

"We can have students exercising their creativity and imagination in order to learn the canonical knowledge of science," researcher Russell Tytler, a science educator at Deakin University in Waurin Ponds, Australia, told LiveScience. "There is no need for it to be 'transmitted' to students as dead knowledge."

as students draw a concept such as sound waves to understand it better, they learn to reason creatively in a way distinct from, but complementary to, reasoning through argumentation

"The most striking thing was the effort that students would apply to learning about science when they read and then drew what they could understand from the text, and how much enjoyment they derived from doing this," "This was in comparison to just reading text, or indeed writing summaries after seeing diagrams or seeing pictures and text. In my experience, learning through drawing is often therefore both effective and enjoyable."

Artists have structurally different brains by Melissa Hogenboom

<http://thecreativemind.net/786/artists-unique-brains/>

About research on observational drawing by Rebecca Chamberlain from KU Leuven, Belgium Chris McManus from University College London, published in NeuroImage. Detailed scans revealed that the artist group had significantly more grey matter in an area of the brain called the precuneus in the parietal lobe.

"This region is involved in a range of functions but potentially in things that could be linked to creativity, like visual imagery - being able to manipulate visual images in your brain, combine them and deconstruct them," (this enables creativity that David Eagleman describes in The Runaway Species,)

Those better at drawing had increased grey and white matter in the cerebellum and also in the supplementary motor area - both areas that are involved with fine motor control and performance of routine actions.

"The people who are better at drawing really seem to have more developed structures in regions of the brain that control for fine motor performance and what we call procedural memory," (why surgeons are taking drawing classes)

Grey matter is largely composed of nerve cells, while white matter is responsible for communication between the grey matter regions.

Increased grey and white matter were found in the art group in both left and right structures of the brain.

Attention May Link Arts and Intelligence By Aalok Mehta (this article is referenced here, but the article itself can no longer be found however the links it refers to are still functioning)
<http://archive.constantcontact.com/fs068/1101832901681/archive/1103495244623.html>

<https://dana.org/article/neuroeducation-emerges-as-insights-into-brain-development-learning-abilities-grow/>

Important:

<https://www.dana.org/wp-content/uploads/2013/12/learning-arts-and-brain-dana-press.pdf>

<https://www.dana.org/wp-content/uploads/2019/05/neuroeducation-learning-arts-brain-dana.pdf>

Posner's work builds upon surveys and tests of children that found that brain scans of those who exhibit high levels of "effortful control," or self-regulation—the ability to avoid distraction and focus on a single task—show greater activity in their attention network.

This finding offers a tentative explanation for common anecdotal reports that academic performance improves in schools that boost their arts programs, he said. Different art forms, such as music or dance, activate quite distinct neural networks. But if kids remain open to the experience and stay interested, all the art forms seem to interact with the attention network.

"Performance or practice of any of the art forms changes the neural networks performing that art form. There is very little dispute about the existence of these networks and that they change with practice," he added.

"Years of neuroimaging have now given us a plausible or putative mechanism by which arts training could now influence cognition, including attention and IQ."

The researchers did not see evidence of far transfer, or better performance on distantly related abilities such as mental rotation and geometric ability in the first year and a half of training. (But they would if they were looking at visual arts.....)

How Learning Artistic Skills alters the Brain

by Tom Jacobs, Feb 11 2015 and June 14 2017

<https://psmag.com/social-justice/how-learning-artistic-skills-alters-the-brain>

Schlegel and his colleagues report that taking an introductory class in painting or drawing literally alters students' brains. What's more, these training-induced changes didn't only improve the fine motor control needed for sophisticated sketching; they also boosted the students' creative thinking.

Start doing the work, and the brain responds, allowing one to build and retain not just technical knowledge, but also the imaginative capacity needed to utilize it fully.

But more importantly, they also observed changes in their prefrontal white matter that corresponded to an increase in their ability to think creatively.

The art students specifically increased "their ability to think divergently, model systems and processes, and use imagery," the researchers write. The results suggests that, in a matter of a few months, "prefrontal white matter reorganizes as (art students) become more able to think creatively."

(and what does the prefrontal cortex tle? Executive function the way we mke choices in about the world...emotional regualtion..below is a link describing what the pre frontal cortex does.)

"Maybe there are gene variants that give individuals a proclivity toward art (e.g. make them more open to new ideas or more prone to make connections or see patterns), but that is a long way from saying they were born an artist and that those without such gene variants are doomed to being uncreative," Schlegel concludes. "It also propagates the strange myth of the artist as a special class of human. I hope our study will help to debunk the notion that there are "artists" and "the rest of us."

People with Creative Personalities Really do see the World Differently by Luke Smillie and Anna Antinori <https://getpocket.com/explore/item/people-with-creative-personalities-really-do-see-the-world-differently>

(italics mine) New research indicates that indeed there are individuals with a proclivity toward art, new ideas, more prone to make connections or see patterns see next reference but that does not change that humans who do not have that natural proclivity cannot exercise or benefit from what artistic humans have to offer, just as “ the rest of us” benefit from what athletes have to offer in attending to the joy of their gifts and exercising our own bodies in athletic games and activities.

The subway of the brain – Why white matter matters.By James Balm, 14 mar 2014 – On Biology, BMC
<http://blogs.biomedcentral.com/on-biology/2014/03/14/the-subway-of-the-brain-why-white-matter-matters>

White matter has taken the back seat in the past. With apparently no use, white matter was ignored whilst grey matter was probed and inspected. It wasn't long before white matter rose to recognition for its important role in the brain.

But what is white matter? You could refer to it as the subway of the brain – connecting different regions of grey matter in the cerebrum to one another. Imagine living in a city and having to walk from one area to another 5 miles away; transport makes this much more fluent and helps make your tasks easier. This is pretty much the same for your brain!

White matter is fast. This is thanks to the electrically insulating myelin sheaths (formed by glial cells) encasing each neuron's process transmitting signals to other neurons. Nervous transmissions are quick, meaning regions of grey matter can connect and keep in contact with one another. Funnily enough, these myelin sheaths are what gives white matter its pinkish-white colour. Similar to a subway, the white matter mostly remains deeper underneath the surface with its many links and passages.

Now imagine if the subway collapses or isn't built properly – people from certain areas would

have no access to these disconnected regions. The same can be said for the brain: except instead of people, we're looking at information.

Regions of the brain need to communicate in order to carry out behaviour involved in everyday life. This isn't just a human rule, it applies to animals too.

White matter disease, autism, white matter disease all show us that damage to the white matter

Abusive treatment by parents of rhesus monkeys results in inhibited white matter development which shows up as...The deficits range from language ability to delayed memory, and visuo-spatial construction.

Let's look at the adolescent rhesus monkey and its relationship with its mother. In open access research from our *Biology of Mood and Anxiety Disorders* journal, researchers investigated the long-term impact of parental mistreatment on offspring. It's a sad study with startling results. A boost in stress hormones most likely led to long-term effects on white matter. In turn, these structural changes in brain white matter were linked with social aggression, poor visual processing, and emotional regulation.

But what exactly does it mean to have impaired emotional regulation? In a recent study in *BMC Psychiatry*, researchers took a look at white matter in adolescents. Some of these teens had been diagnosed with anxiety disorder, others hadn't. Those with the mood disorder were found to have structural abnormalities in white matter – leading to problems with emotional regulation, which contributed towards general anxiety disorder.

From Neuroscientifically Challenged blog.

Know your brain: prefrontal cortex...May 17 2014

<https://www.neuroscientificallychallenged.com/blog/2014/5/16/know-your-brain-prefrontal-cortex>

The prefrontal cortex makes up over 10% of the volume of the brain, and thus is likely involved in many functions. There is one category of cognition, however, that is frequently linked to the prefrontal cortex: executive functions.

The term executive function is defined slightly differently depending on where you find the definition. In general, executive functions focus on controlling short-sighted, reflexive behaviors to take part in things like planning, decision-making, problem-solving, self-control, and acting with long-term goals in mind. They are higher-level cognitive processes that people tend to display greater proficiency in than other animals---thus you could argue they are some of the functions that truly help to make human cognition unique.

Patients with prefrontal cortex damage tend to perform poorly on tasks that require the use of long-term strategies and the inhibition of impulses. They also often display short-term memory deficits, which may help to explain some of their difficulties in planning.

Patients with prefrontal cortex damage can experience blunted emotional responses, which may be another factor that negatively affects their ability to make decisions. To understand how this works, just imagine the emotional reaction you might have to thinking about doing something you know is a bad idea---like cursing out your boss at work when you're angry. Really giving some consideration to doing this might cause you to get a bit anxious, and because this emotion

doesn't feel good, it can help you make the (probably wise) decision to avoid the behavior. Patients with damage to the prefrontal cortex sometimes display abnormalities in experiencing these types of emotional responses, which then presumably makes it more difficult for them to make good decisions.

if you took away the prefrontal cortex we would be ruled by our desires and impulses, lacking an ability to plan for the future or think about the consequences of our actions.

Mirror neurons: Enigma of the metaphysical modular brain

By ni.oc.oohay@ayrahcaayruosSourya AcharyaSamarth Shukla ncbi.nlm.nih.gov

Many studies have independently argued that the mirror neuron system is involved in emotions and empathy.[20–23] Studies have shown that people who are more empathic according to self-report questionnaires have stronger activations both in the mirror system for hand actions and the mirror system for emotions, providing more direct support for the idea that the mirror system is linked to empathy.

Mirror neurons create a direct link between the sender of a message and its receiver. Thanks to the mirror mechanism, actions done by one individual become messages that are understood by an observer without any cognitive mediation. The observation of an individual grasping an apple is immediately understood because it evokes the same motor representation in the parieto-frontal mirror system of the observer. On the basis of this fundamental property of mirror neurons and the fact that the observation of actions like hand grasping activates the caudal part of IFG (Broca's area), neuroscientists proposed that the mirror mechanism is the basic mechanism from which language evolved. (visually based, not hearing based. In the beginning was he word....visual not hearing.)

....the initial communicative system in primate precursors of modern humans was based on simple, elementary gesturing.[29] Sounds were then associated with the gestures and became progressively the dominant way of communication. (on what we SAW and FELT and we matched the sounds to it not the other way around.

“Gesture” is a fundamental element of art making) it solves one of the fundamental difficulties for understanding language evolution, that is, how and what is valid for the sender of a message become valid also for the receiver.

..human language evolved from a gesture performance/understanding system implemented in mirror neurons. Mirror neurons have been said to have the potential to provide a mechanism for action-understanding, imitation-learning, and the simulation of other people's behavior. (cave paintings)

Engagement with the visual arts increases mindfulness Lydia G. Fogo University of Tennessee at Chattanooga

<https://scholar.utc.edu/cgi/viewcontent.cgi?article=1113&context=honors-theses> This is a link to a whole honors paper that demonstrates that the visual arts are a form of mindfulness. It is well worth the read.

Sermon 29th September 2019 Abbey Church

When I was a young Christian in my late teens, I attended a youth group meeting and the study imagined the human race having to leave earth and create a new world on another planet. We brainstormed what professions would be necessary to begin again and I listened as lots of suggestions were made. After the list was quite long, the facilitator asked, is there anything else before we move on, and I asked “What about artists?” The response was laughter “What do we need them for? What use are they?”

Since then I have spent my life asking that question, and have come to believe that the visual arts are an antidote for our highly polarized, image saturated, screen dominated society, are important for everyone and ought to part of our everyday life- not just in a gallery or museum or practiced by those who are talented.

Today we talk about empathy, diversity, creativity, intelligence, resilience and mindfulness as being essential to restoring our personal, societal and environmental health; we go to workshops and courses that are supposed to teach us these skills; yet the methods humans have evolved to practice and give expression to these skills - the arts - are still considered optional.

When we practice the arts, we are using our analytical and emotional facilities, our imaginative and practical, our intellectual and our instinctual. The arts explicitly utilise the creative process. No other human activity can teach us about creativity better than the arts, and when our minds process creativity through the arts, it is not just intellectually comprehended but also emotionally and it impacts our whole mind in such a way that we are then able to apply creative thinking in practical ways to every area of our lives. As a visual artist I will be sharing what has been learned about that facet of the arts.

I am pleased to have learned that scientists have been discovering that the visual arts are vital for our relationship with ourselves, with others, and with creation.

One study shares that a regular visual arts practice *builds significantly more connections in a critical part of the brain called the default mode network, which is associated with a variety of functions, such as reflecting on one's emotional state, empathy, and imagining the future. Not only was this important part of the brain strengthened by producing art, but the participants also became better able to cope with stress.*

Another shares that *Arts training can cause dramatic changes in the brain, including strengthening of the "attention network," a series of regions linked to general intelligence," and evidence is growing that skills built practicing the arts can cross into other mental domains.*

Stanford Neuroscientist David Eagleman and composer Anthony Brandt are coauthors of the book *The Runaway Species*. They explain that what makes us human is exactly that we are able to be creative. Because of the development of our frontal lobe we can imaginatively stand back from time and space, take what already exists, bend it, break it and then blend it together in an original manner.

This is exactly the process that we see in Genesis chapter one: God is hovering over what is yet unformed....God separates....light from dark, land from sea, night from day, animal from vegetable... and it is in the relationship between those separations that all the diversity of life is established.

Death occurs when polarity ceases to be the method by which we which we are creative and extremes are no longer functioning as a means to inspire relationship, and instead become independent from the diversity that connects them.

The arts thrive in, and cultivate diversity. The arts teach us to keep our

minds and society open and engaged with finding connections with what is different, perhaps even strange so that unity in diversity is possible and peace is cultivated not by eliminating difference but by appreciating it. A society that rejects the arts has stopped seeing diversity as a positive, looks at the other as someone to be feared, and perceives what is different as an aberration.

It was the mindset responsible for the bodily and cultural damages that European colonial expansion perpetrated upon the peoples of the New World. It is no co-incidence that the era of colonization was the same that oversaw the demonization and desecration of sacred arts all over Europe, and that Columbus was set sailing across the ocean blue by the monarchy which instituted the Spanish Inquisition. European settlement of the New World was birthed by an anti diversity, anti art version of religion combined with mercenary power and greed.

It is this very combination that is dominating and closing in on our world today. A near sighted, rigid mindset is challenging the well being of our environment, the rights of first nations, of refugees, of the lgbtq2 community, of women, of the sciences and of the arts; and cultivates racism, polarization and extremism in our civil discourse. It despises the poor and distorts the gift of wealth into a greed that refuses to see the creation as an entity to be cherished, let alone acknowledging it as the revelation of God.

In our everyday discussions on social media about the Anthropocene, I often see the idea that the changes in our climate today are natural, the logic being that somehow, if we humans are part of nature, then our influence on the climate ought to be seen as another page in the history of the earth. I believe that it is the denial of ourselves as being part of nature that has resulted in what is causing harm to the world.

The early church fathers described Jesus as the Good, the True and the Beautiful, but - as Jaroslav Pelikan points out in his book *Jesus through the Centuries: His Place in History and Culture*- since the Reformation,

Jesus as the Beautiful has been edited out of our theological and cultural understanding of the divine so much so that today we are seeing the end result demonstrated in our society's callousness toward the creation.

from Psalm 19 we hear:

The heavens declare the glory of God;
the skies proclaim the work of his hands.
Day after day they pour forth speech;
night after night they reveal knowledge.
They have no speech, they use no words;
no sound is heard from them.
Yet their voice goes out into all the earth,
their words to the ends of the world.

While all of the arts are vitally important, the visual arts have particular relevance for our relationship with creation. The language of nature is comprehended through texture, colour, shape, form, tone, size, space, rhythm, movement- and this is also the language by which we understand visual art. When we learn visual language we are using our mother tongue, we are children in conversation with the creation and the creator.

Science shares that those born with innate artistic ability literally perceive the world more accurately than non-artists, yet the ridiculously encouraging thing is that a simple practice of drawing enables even those who are not artists develop their ability to visually comprehend the world.

We take for granted that when we want to learn more about creation it is science that teaches us best, yet it is easy to forget that it was the gift of observing life through drawing that allowed us to develop the sciences.

In a study from Australia which introduced students to using drawing in in order to explore and justify their understandings in science, it was

found that not only were they were more able to recognize, colour, texture and form, they were more motivated to learn; they learned to reason creatively, in a way distinct from, but complementary to reasoning through argumentation (talk about what the world needs now!)

And students found learning enjoyable. Russell Tyler, science educator at Deakin University in Waurin Ponds, Australia put it this way: *“We can have students exercising their creativity and imagination in order to learn the canonical knowledge of science. There is no need for it to be transmitted to students as dead knowledge.”*

Consider the lilies of the field, Jesus says. What is it that he is wishing for us to consider? Does he want us to take samples and label each part, their stamens, their pistils, their petals, break down the chemistry of their fragrance?

It is not their *beauty he wants us to take note of*? Consider the beauty of these lilies, consider the glory of the stars (even better now that science has given us the Hubble Space Telescope) let them remind you that life is so much more than what you eat or what you drink or what you wear; God knows you need these things...but seek first the kingdom and all these shall be added to you. The arts remind us that there is more to life than being “useful, than simply surviving.” The arts are *us*, they are literally the manifestation of our beings as the image of God, of being co-creators.

Without vision it is not only the people who perish. Today our minds, emotions, society and environment have fallen apart because we have sacrificed personal creativity to consumerism and our vision has been co-opted by the advertising and entertainment industry. Many of us are wondering how it is we are going to survive. If we are to help the world overcome the damages of a materialistic, commercial and colonial culture, then the arts, particularly the visual arts, absolutely need to teach us to envision our world anew.

God created the world not from nothing – from the beginning we and everything we know, was there in the darkness waiting to be called forth. Even this darkness in which we are living today has the promise of light.

....'and it shall be in the last days,' God says, 'that I will pour forth my spirit on all human kind; and your sons and your daughters shall prophesy, and your young shall see visions, and your old shall dream dreams''

Despite all the awfulness we humans have allowed, we are still God's children and we still have a tremendous amount of raw material with which to work healing into our world. Human beings are wired as creative beings to participate in the growth of the world, not the destruction of it. To restore our world we need only to return to who we are. Come let us dream and envision. We are God's little children, we are creators. Our world is not over yet.

PART ONE: 15 MINUTES

Understanding our humanity – what are we? These peculiar creatures. Psalm 8 says we are “just a little lower than the angels” and yet you know we are mammals that are vulnerable and depend on our mothers and others to keep us alive.

We are CREATURES – MADE IN GOD’S IMAGE.

Creatures – part of an ecology and an ecosystem, we need air, food, water, shelter. We defecate, we fight, we have needs.

Made in God’s Image – what do we do with that? What does that mean exactly?

Well for our purposes today, it means we can PAY ATTENTION in particular ways – and offer this back up to God in worship.

Capon – let me tell you why God made the world.

See how he notes the goodness and fun and blessing of all that....

And now what has gone wrong? In another place, he continues,

Reflecting now on this movement from Genesis 1 and 2 of a wondrous created world to Genesis 3 of some conflict that is introduced..... notice how he frames this:

“So God says to Adam and Eve: See what I have made you. Behold a creation with a shape that cries out for shaping, with a meaning waiting to be meant by somebody. I challenge you to a game of oblation. My serve first! Watch now! Watch trees and grass, watch earth and mountains and hills; watch wells, seas, and floods, and whales and all that moves in the water. Catch! Catch beasts and

*cattle and men and women; catch winter and summer and frost and cold; catch nights and days and lightning and clouds; catch Omnia opra Domini (all works of the LORD). **Catch them and return the service!***

“And Adam and Eve say to God: Wait a minute, I didn’t hear you mention that tree over there.... And God’s jaw drops.”

“Look, God says, that’s only the foul line. Forget it; it’s just a rule. I have my reasons for it, but it’s in a good place, believe me. If I can provide the court and the game, trust me to make the rules to play it by. After all, you haven’t even returned the service yet. Try it again-my serve!”

“And once more, across the net of the world, come ice and snow and light and darkness, fire and heat and dews and frosts, winds of God and fowls of the air, and Omnia germinantia in tetra (all works brought forth from the earth). And this time Adam and Eve throw down their racquets, and with an edge to their voices say: BUT WHAT ABOUT THAT TREE?”

(Robert Farrar Capon. “The Renegade Priest” from *An Offering of Uncles*.

Reprinted in, *The Romance of the Word: One Man's Love Affair with Theology*. 1995.)

We KNOW THIS STORY. This is that thing that has happened in Creation, that happens somehow somewhere in the heart of each of us – in Capon’s phrase, we are priests who have “failed to RETURN THE SERVICE.”

God the Creator SERVES this great and beautiful ball – and we fail to return it. We were created to be CO-CREATORS of a marvelous Creation.... We have this unique ability to TAKE all of what has been made, in his words, “to shape what cries out for shaping and to mean what is waiting to be meant.”

And how do we do this?

Abstract thought..... Rationality..... Art..... We use this massive brain that we have – so much larger than what is necessary. So much potential. And we sort of create a map of the world outside of ourselves WITHIN ourselves, we use imagination and meaning and creativity and we make sense of the world – in ways that frankly no other creature does.

That is how I might begin to frame theologically our work as HUMANS. Which is to say our work as ARTISTS – for to be human is by definition to be one who CREATES within all that God has CREATED. Do you understand?

PART TWO: THE BRAIN

Now, one of the most important insights about this in recent decades is our study of the human brain. And there's a kind of broad and vague bit of this which I'm sure many of you have come across – with the left brain and right brain. Right?

The Left Brain, we are told, is the sort of calculated rational side. It does logic, reasoning, science and math, numbers, analytic thought, and language.

The Right Brain, in contrast, is the creative relational side. It does art and imagination, intuition and holistic thinking, it is the realm of music and creativity.

This is a very crude summary and research has begun to unravel our simplistic view of it. I'm going to draw on the very important and influential work of Iain McGilchrist who wrote a superb book called "The Master and his Emissary."

This book argues that the differences in these two sides of the brain lie not, as has been supposed, in the 'what' – which skills each side possesses – but in the 'how', that is, in the way in which each uses them, and to what end.

What is more, like the brain itself, the relationship between the hemispheres is not symmetrical. The left hemisphere, which remind you is the RATIONAL CALCULATED SIDE is in his phrase, the EMISSARY, to the Right one – the RELATIONAL and IMAGINATIVE side.

This, even though, as he points out the left brain is almost totally unaware of its dependence, and yet is deeply valuable for taking on a role that the right hemisphere – the ‘Master’ – cannot itself afford to undertake. However, it turns out that the emissary has his own will, and secretly believes himself to be superior to the Master. And he has the means to betray him. What he doesn’t realize is that in doing so he will also betray himself.

And so you can read this 600-page tome as a kind of cultural critique. We live in a world that is INCREASINGLY left-brain. We reduce everything to quantity and measurable outcomes. And in so doing, to borrow a phrase, we are gaining the world but forfeiting our soul.

This may seem an odd detour to some of you – but stick with me, for it underwrites much of the research as to why ART – even very simple art and creativity as Cornelia is going to bring us into today – is actually not just a cute little hobby or a specialized activity – it ACTUALLY MAKES US MORE HUMAN. SIMPLE ARTISTIC PRACTICES GROUND US IN PAYING ATTENTION.

McGilchrist Video:

https://www.ted.com/talks/iain_mcgilchrist_the_divided_brain