

# Visual learner

## Seeing and reading

*“Direct vision is the first and final source of wisdom.”*

This declaration from the book titled Visual thinking comes from art theorist and perceptual psychologist Rudolf Arnheim. It simply states the importance and reliance we have on visual sensory perception of the eyes. It further implies the old cliché that seeing is believing and what we see is presumed to be the truth as we understand it. The eyes do not deceive. The ideas of visual thinking work in tandem with Developmental psychologist Howard Gardner author of multiple intelligences who presented us with the ideas of the visual learner who rely heavily on visual input in the learning process or we learn by seeing. We can combine these two theorists' ideas into the term visual intelligence where cognition begins with vision. What separates the intelligences that Gardner had identified is how the learners take in and process information and he clearly defines the necessity of visual input/perception for the visual learner but does not address the issue of how the visual learner sees. Returning to the opening quote of vision being the first and final source of wisdom raises the question of do we all see alike? Do we all process visual information the same? Is it possible that this truth through seeing is subjective and varies from person to person making it impossible to understand what each other's sees or Gardner's intelligence categories are incapable of understanding how each of the other categories learn and in the visual learners case, the way in which they see. Finally Gardner correctly pointed out that assessments were aligned to the linguistic and mathematical/logical intelligences making assessment unfair and unequal to the other intelligence categories. Although strives have been made to include all of the multiple intelligence categories into the presentation of learning materials little has been done to change the way we measure and asses learning and intelligence.

What I wish to do is to describe and clarify what and how the visual learner sees and propose that it is radically different than the perceived normal linguistic intelligence. I hope to illustrate that the assessment techniques currently used are unfavorable to the visual learner and does not accurately measure the visual learner's intelligence or knowledge.

I will begin with what do you see in the image below?



This was actually on the TV program 60 minutes a number of years ago. Most could identify it as the FEDEX logo and could only identify the letters used in the name. Only when it was pointed out to the viewer that the EX formed an arrow could they see what had been staring them in the eyes. Even after identifying and pointing out the arrow some could still not see the arrow because they could not change their focus from the letters to the image of the arrow. Below the arrow is highlighted in light blue.



It would be interesting to measure the reading skill and speed of those who couldn't see the arrow versus the reading skill and speed of those who see the arrow as the strongest element of the Logo.

This visual exercise immediately identifies that people do see differently and process visual information differently.

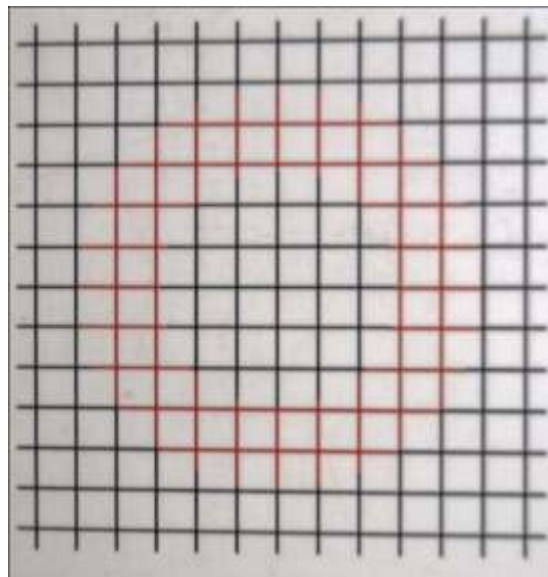
Look at the patterns below and determine what you see in the patterns.



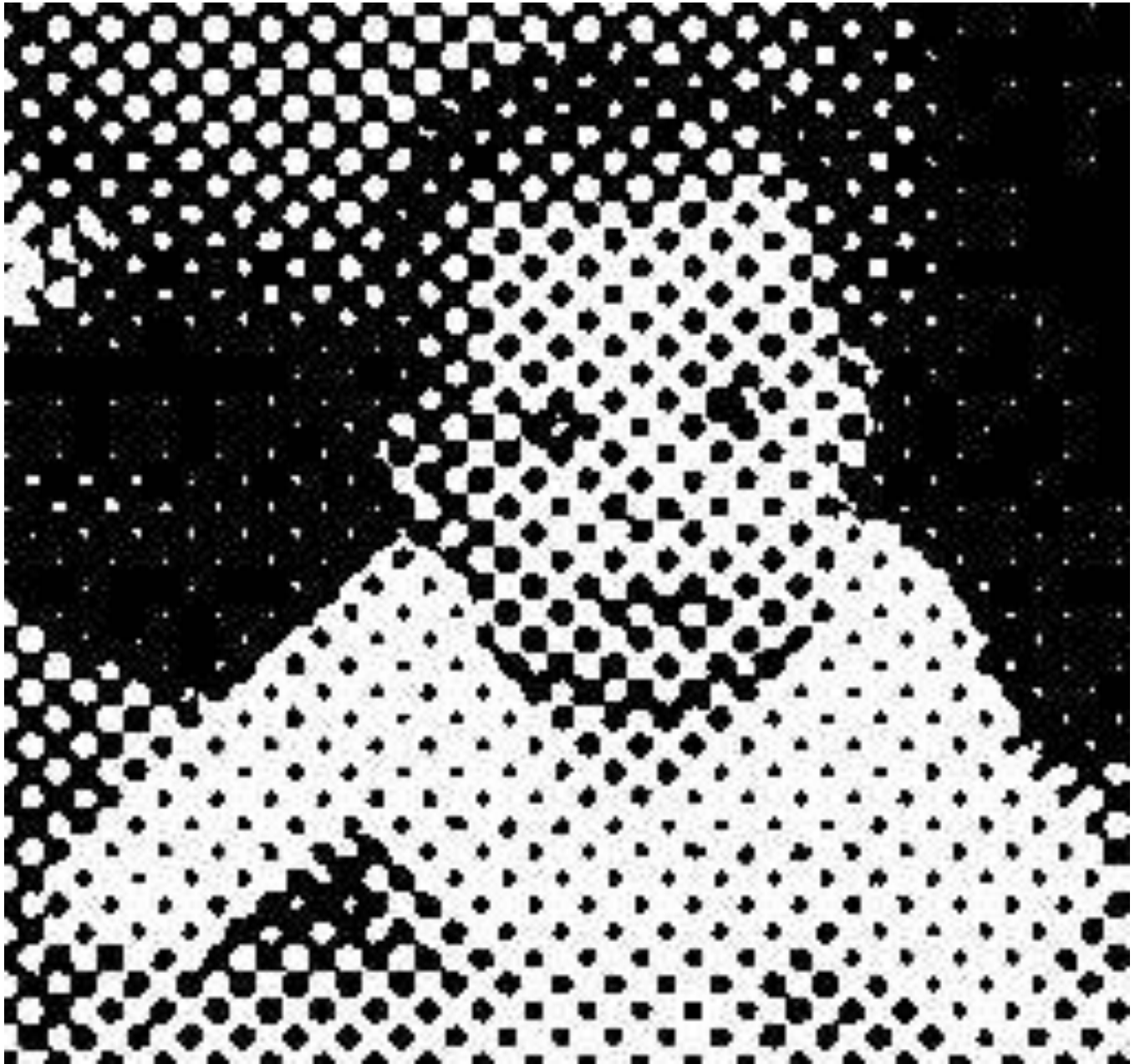


As you can see in the larger image there is quite a bit of missing visual information in the image of a person. The viewer first recognizes and identifies the shape of the image and then begins to free associate information that belong to the perceived image and the mind begins to fill in the missing parts of the image to make a complete image of a person. By reducing the size of the image I am to a degree recreating what the image would closely resemble from a distant vantage point. By moving your head away from the screen or picture the mind will fill in more of the missing features of the face. This illustrates we are susceptible to shape recognition and associating patterns to create recognizable, complete forms. We create what is not there by association.

As further evidence a simple geometric design is used to illustrate how the mind fills in information. The pink tone between the red lines is being created by your mind. It is you mind completing the circle created by the red lines on the grid pattern. The circle exists by associating the red in the square grid pattern.



The following image is a different pattern but the result is the same as the last figurative image. We can recognize the pattern of dots and associate it with a specific shape and image again mentally filling in the missing information to complete a clearer image of the infant.





Once again I have reduced the size to simulate distance and as you draw your head back from the screen or paper the child comes into sharper focus. Despite the different patterns used the results were the same.

Most all people can freely associate these patterns into images of human form. It is also important to note that these patterns originate from human form reduced to pattern where we see the pattern and return them visually to their original form.

I would now like to inject an object into this visual dialog.



As you can see it is a circular bell with an inner circle with words and a hex nut to secure the bell to the wall. What I am able to associate from the center circle with the words and hex nut is a perfect image of a person's face in the ¾ view. The image of a human face is being created from printed word and not patterns originating from a human image. Not only do I see the image of the human face but I see it more refined than the two previous images that originated from humans. I am sure you are looking at this and wondering how this is possible. I would suggest that I have a much higher visual vocabulary than most, a greater knowledge of the structure of the human face and a greater ability to free associate images and patterns to a more complete image than the average person or for the non visual learner. In his journals Leonardo daVinci writes that it is a great learning tool for the student to stare at textured plaster walls and see images of people, beasts and everything imaginable. What he was referring to was the ability to see patterns and mentally reconstruct them to an image or images within their visual memory. A memory far more extensive than most. It is important for the purposes of this article that the reader note that words create associated images and when seeing these images it is impossible to read the words. You have to do one or the other. Read the words or view the face. They cannot exist simultaneously but one interferes with the other. I will reduce the image to try to get the effect of distance to see if you, the reader can recognize the face.



Moving your head away from the screen or page will make the image clearer.

This was the image that seeded the question of is the way we see affect the way we read. Is the visual learner caught in between the word and the images/patterns created by the words? Are the patterns of words becoming the distraction that make the linear left to right régime necessary in reading so difficult. Is it what slows the pace of reading and the cause of so much concentration that it quickly becomes tiring and exhausting causing the brain to literally shut down and fall asleep? Over the course of 20 years I have informally surveyed artist and asked how their reading skill were. The vast majority stated that they were very slow readers and that reading made them very fatigued to the point of falling asleep. These are the exact same experiences I have when I am reading. This slowness of reading and the causing of the mind to fall asleep do not bode well when taking standardized timed test that measure

knowledge/intelligence. It would appear that these slow drowsy readers were not very academically intelligent.

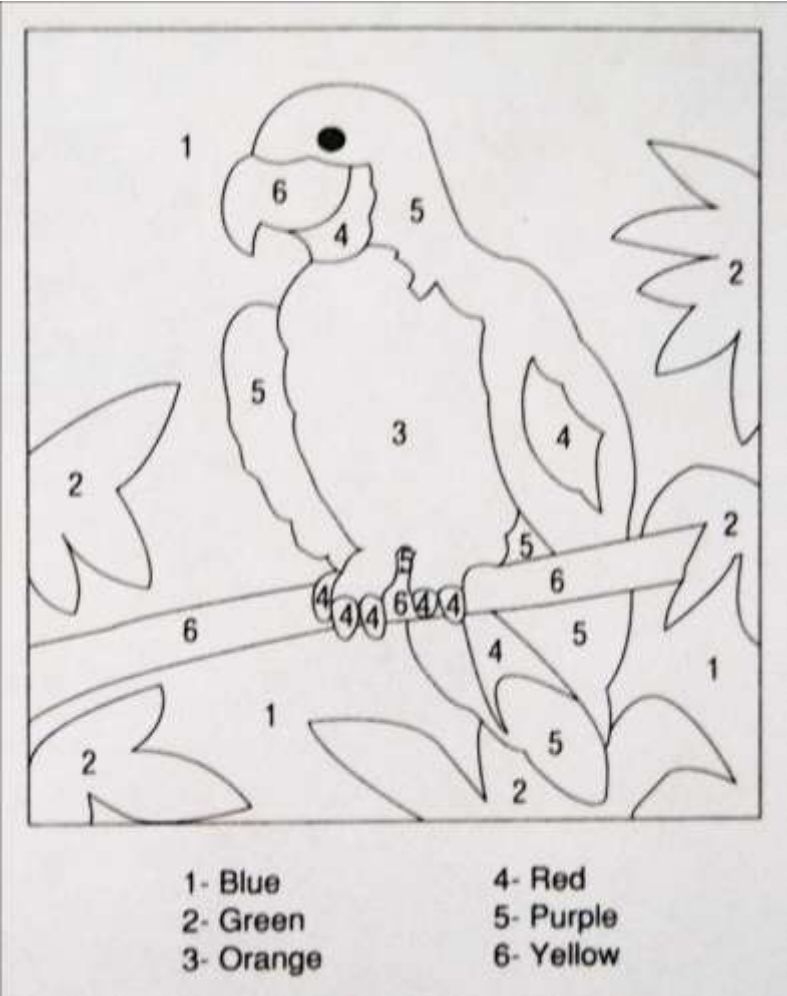
What is obvious to me is that we have a stronger sense of pattern, composition and the ability to freely associate between word and image and word becomes image/composition. The common denominator of letters and drawing is that both are constructed in the same manner. A single point moving along a flat plane. Letters of the alphabet and numbers are drawn and create the concept of an apple in the mind just as a line is used to draw an apple to create a concept in the mind. If letters are drawing then letters like drawings form compositions and patterns which is the property of lines.

Below are some very simple patterns using the numbers 1 and 0. The numbers can clearly create patterns based on the shape of the number. It is easy to see the patterns of 1s and the patterns of 0s even when they are dispersed among the opposite number. The eye can easily travel from one zero to the next just as the eye can travel from one 1 to the next. But it also should be noted that you are either looking at the 1s or the 0s but not both at the same time. The viewer is using one to see the other and it is in this way we can see the associations between the 0s or the 1s. (One becomes visually stronger by focus, searching for 1 or 0s)



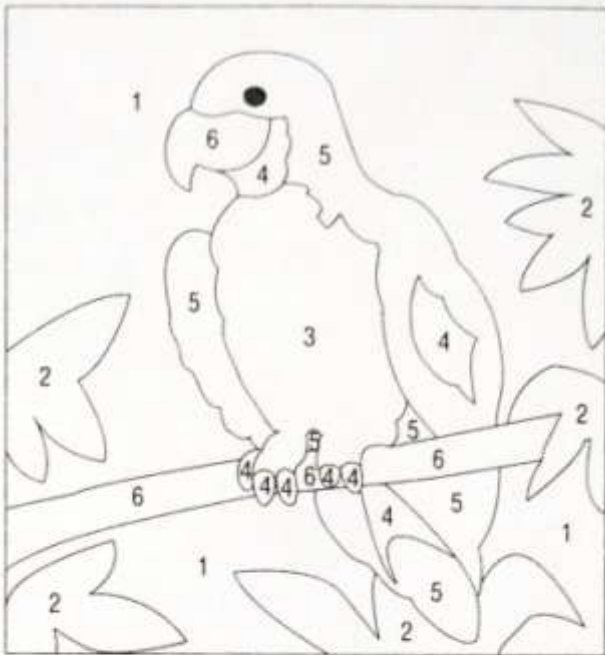


The next image is more complex and each part of the image of the bird is assigned a number. The bird will be filled in with the number assigned to the areas marked below.



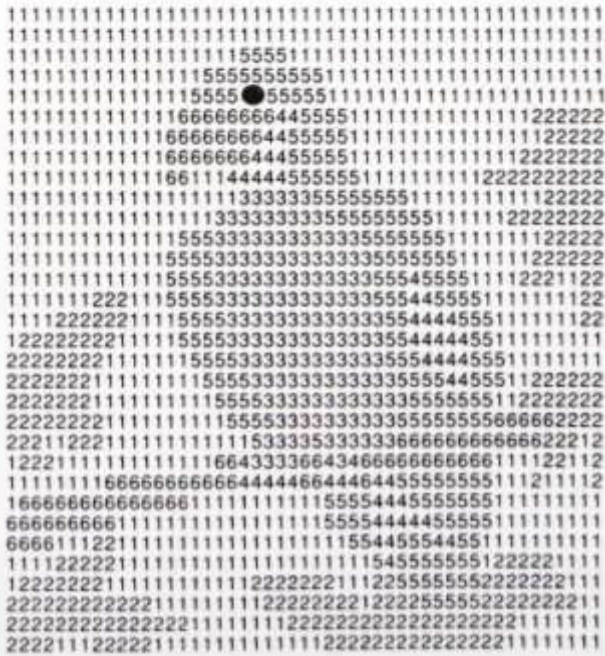
When the image is filled in with the assigned number the same pattern image of the bird appears as the eye and mind associate like numbers. The like numbers create line lines along their borders with other numbers. The different in numbers also create tonal differences in the image.





- 1- Blue
- 2- Green
- 3- Orange
- 4- Red
- 5- Purple
- 6- Yellow

Figure 11.6



A comparison of the two images together.

The numbers used on the bird indicate the ability of the eye/brain to associate like shapes to create a visual pattern/image. Letters could have just as well have been used to create the pattern of the bird. So letter have shape and when grouped together they can create patterns and the creation of patterns is the creation of compositions and with compositions there is visual movement that is neither linear nor static. As you look at the bird you will notice your eyes are not moving from left to right as in reading or as the image was created but your eyes are traveling up and down the entire compositional page. The idea of trying to read the numbers a single line at a time moving from left to right becomes a very challenging task. One that requires great concentration and intense focus and concentration is mentally challenging and tiring.

Below I have arranged the alphabet by similar shapes.

**aecosgUCGQODSB**

**bdpqPR**

**mnuhrU**

**vwxyzkAVWMNZKX**

**ijltfIJ**

**EFHTILJ**

These letters have similar shapes and some are the same shape but drawn in a different direction such as the b d q p. If these are shape patterns then can the eye associate them in the same manner as the dot patterns of images, the 1 and 0 pattern/images or the number patterns of the bird? These letters form words that create shapes. Is it possible to recognize the shape of the word before reading the actual word? Can similar shaped words be misinterpreted or misread to change the meaning of the entire formation of a sentence/thought? Is the individual letter associations of letter shape interfering with the process of reading? I am going to color code these shaped letters into a segment taken from Daniel Dennett's book Consciousness explained. Read the text and rate the difficulty caused by letter shape association.

virtually all theories of perception, but now we are poised for the novel feature of the Multiple Drafts model: Feature detections or discriminations only have to be made once. That is, once a particular "observation" of some features has been made, by a specialized, localized portion of the brain, the information content thus fixed does not have to be sent somewhere else to be rediscriminated by some "master" discriminator. In other words, discrimination does not lead to a representation of the already discriminated feature for the benefit of the audience in the Cartesian Theater--- for there is no Cartesian Theater.

These spatially and temporally distributed content-fixations in the brain are precisely locatable in both space and time, but their onsets do not mark the onset of consciousness of their content. It is always an open question whether any particular content thus discriminated Will eventually appear as an element in conscious experience, and it is a confusion, as we shall see, to ask when it becomes conscious. These distributed content-discriminations yield, over the course of time,

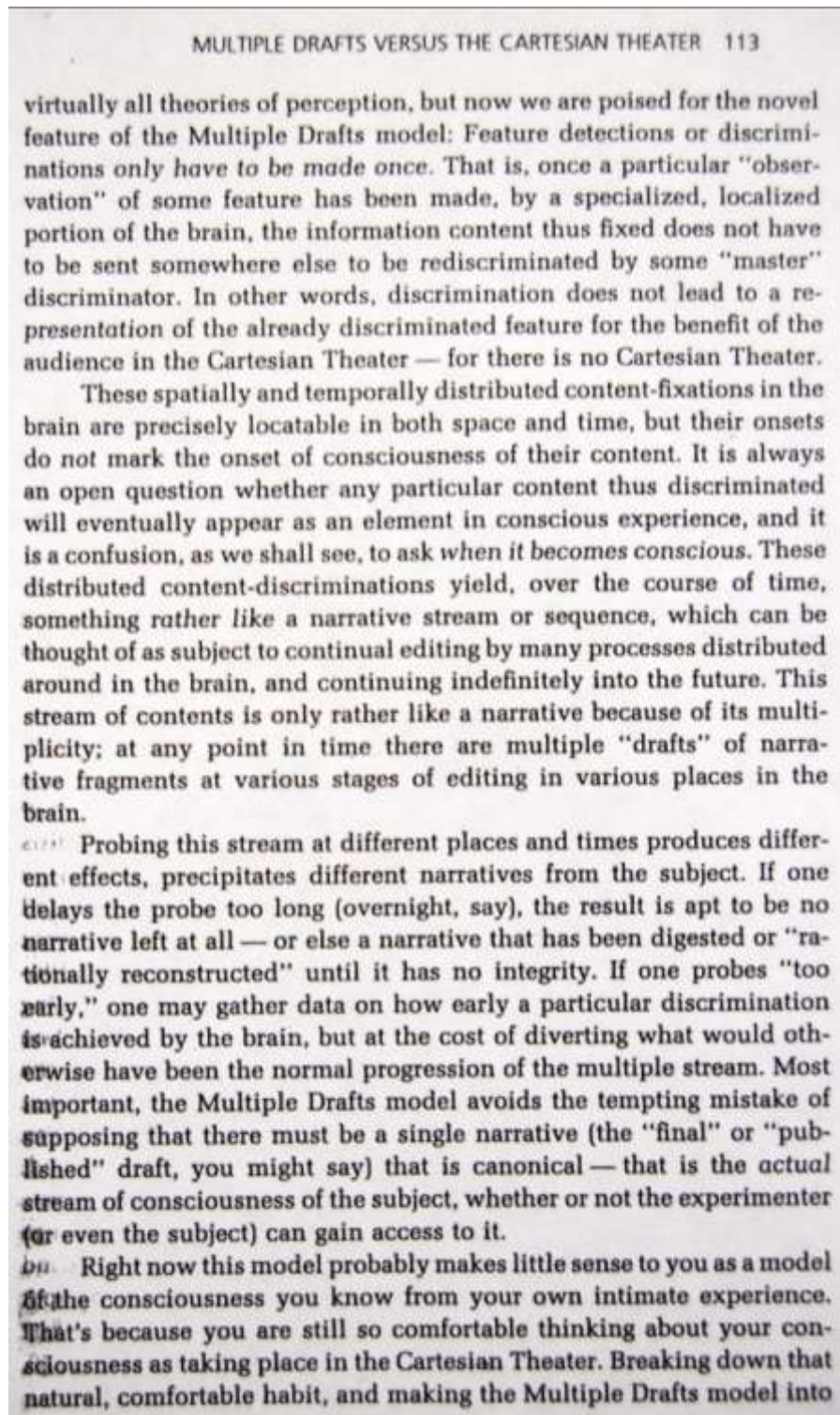
It is readable but the color coding gives you a heightened sense of shape that is stronger in the visual learner. With this heightened sense of shape you can easily associate shapes that are alike or similar throughout the entire written composition. Your eyes move freely from one like shape to the next as in the 1s and 0s. This letter shape recognition and visual patterns slows the reading process to sometimes merely word recognition which causes a reading stutter where the visual learner has to reread the identified words to grasp the concept or meaning of the words. A process that now takes the reader twice as long to process the written, visual information.

The margins are set to align right and left just as most printed text is presented to readers. This also means that the words are now composed to meet this border criteria. This type of composing causes irregular spacing between the letters and creates patterns. I will now enlarge the type to illustrate the patterns that are being created.

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The enlargement creates exaggerations in spacing but you get a greater sense of how it works.

Below is a photograph of the text as it is composed in the book.



Can you see the spaces created by composing the text to align to the left and right margins?

Below I have filled in some of the patterns I had noticed while looking at the photograph of the composed page. The composing creates a number of vertical and diagonal lines throughout the entire composition. As earlier stated the visual learner is more apt to be consciously aware of the visual patterns than the non visual learner. The filling in of the shapes gives the non visual learner the opportunity to consciously see what the visual learner sees. Like the other images of the 1 and 0s and the bird the eye is prone to view and wonder through the entire visual written composition rather than focus on the linear left to right required in reading.

MULTIPLE DRAFTS VERSUS THE CARTESIAN THEATER 113

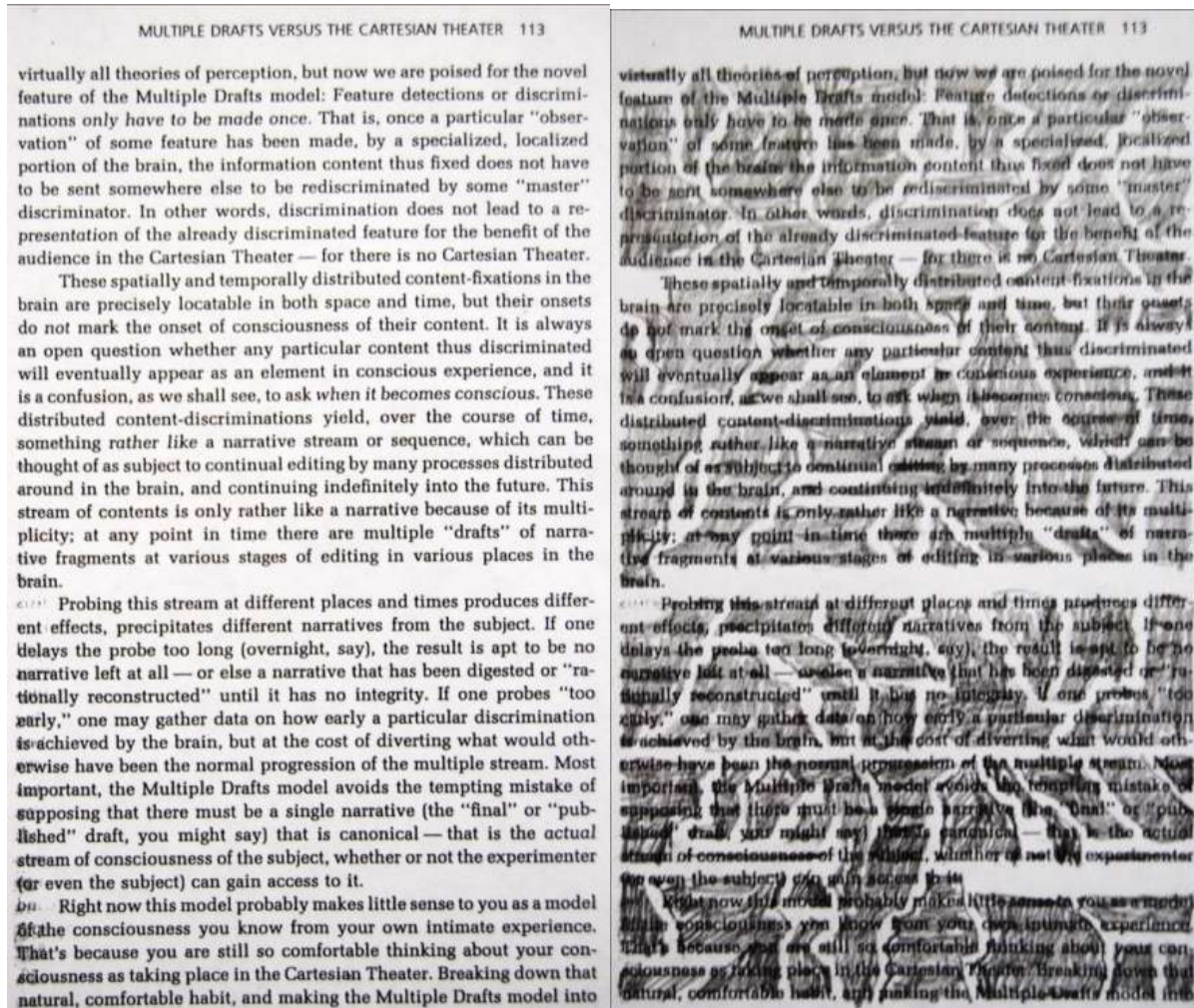
virtually all theories of perception, but now we are poised for the novel feature of the Multiple Drafts model: Feature detections or discriminations only have to be made once. That is, once a particular "observation" of some feature has been made, by a specialized, localized portion of the brain the information content thus fixed does not have to be sent somewhere else to be rediscriminated by some "master" discriminator. In other words, discrimination does not lead to a representation of the already discriminated feature for the benefit of the audience in the Cartesian Theater — for there is no Cartesian Theater.

These spatially and temporally distributed content-fixations in the brain are precisely locatable in both space and time, but their onsets do not mark the onset of consciousness of their content. It is always an open question whether any particular content thus discriminated will eventually appear as an element in conscious experience, and it is a confusion, as we shall see, to ask when it becomes conscious. These distributed content-discriminations yield, over the course of time, something rather like a narrative stream or sequence, which can be thought of as subject to continual editing by many processes distributed around in the brain, and continuing indefinitely into the future. This stream of contents is only rather like a narrative because of its multiplicity: at any point in time there are multiple "drafts" of narrative fragments at various stages of editing in various places in the brain.

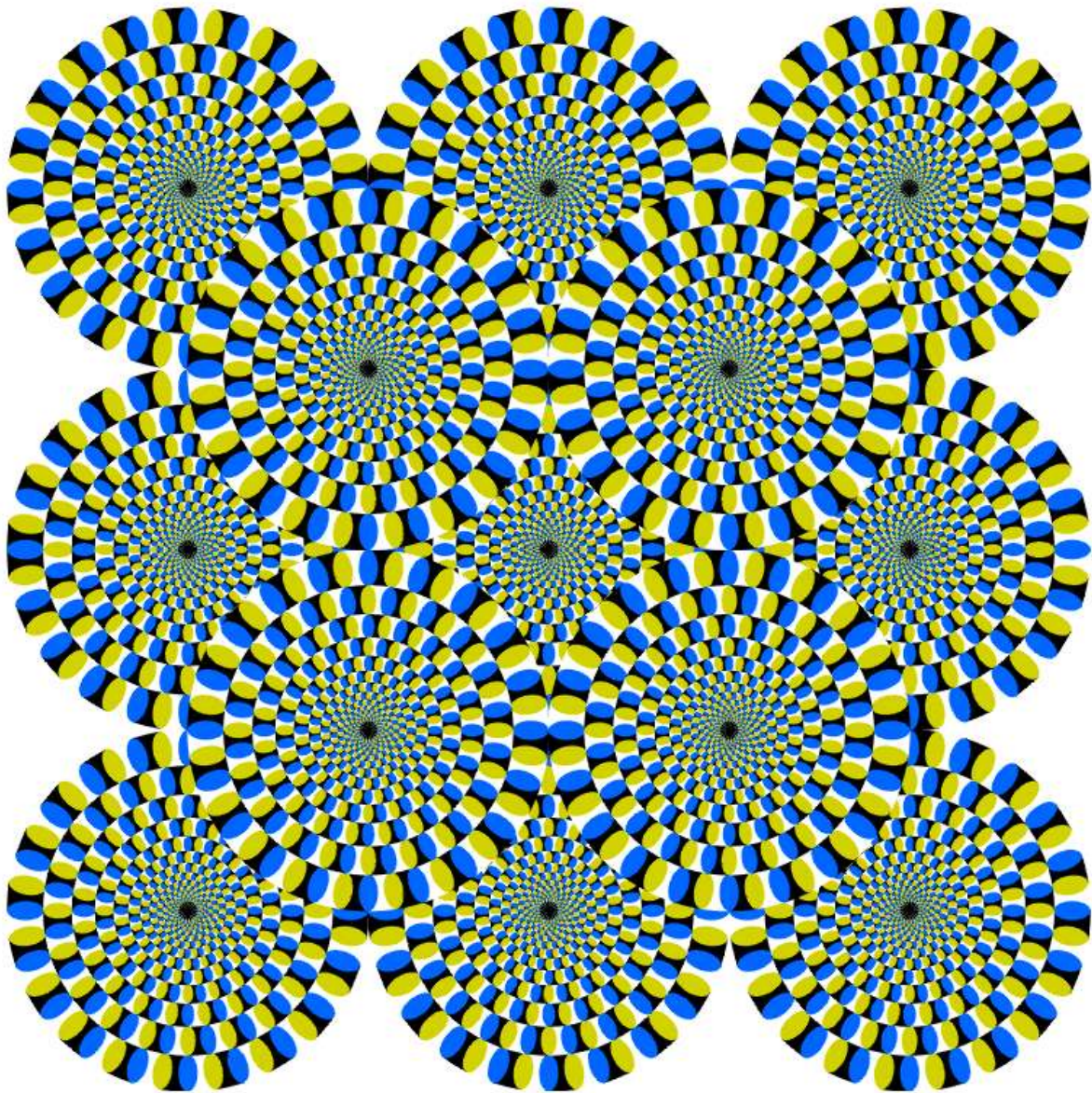
..... Probing this stream at different places and times produces different effects, precipitates different narratives from the subject. If one delays the probe too long (overnight, say), the result is apt to be no narrative list at all — or else a narrative that has been digested or "rationally reconstructed" until it has no integrity. If one probes "too early," one may gather data on how early a particular discrimination is achieved by the brain, but at the cost of diverting what would otherwise have been the normal progression of the multiple stream. Most important, the Multiple Drafts model avoids the tempting mistake of supposing that there must be a single narrative (the "final" or "published" draft, you might say) that is canonical — that is the actual stream of consciousness of the subject, whether or not the experimenter (or even the subject) can gain access to it.

Right now this model probably makes little sense to you as a model of the consciousness you know from your own intimate experience. That's because you are still so comfortable thinking about your consciousness as fixing place in the Cartesian Theater. Breaking down that natural, comfortable habit, and asking the Multiple Drafts model into

Here are the images of the two written compositions side by side.



Now that the images are side by side can you now see the diagonal and vertical lines flowing through the composition on the left? Once again you have a choice to either look at the patterns/visual image or the words. I would like to add one more complication to this image. These diagonal lines appear to move and make new patterns and associations as the eye moves from side to side as in reading. I will illustrate with the following image.



Move your eyes from dot to dot. As your eyes move from one dot to the next the rounded shapes appear to move. It is not the circular shapes that moved but the movement of the eye seeing the shapes at another angle and at a different position in the eye. The stationary moves just as the composed text moves for the visual learner aware of the patterns that words create. It is a distraction that takes effort to overcome and again the more effort one exerts the more fatigued one becomes.

## Color word illusion

For the final visual/reading exercise look at each word and speak out the colors, not the word.

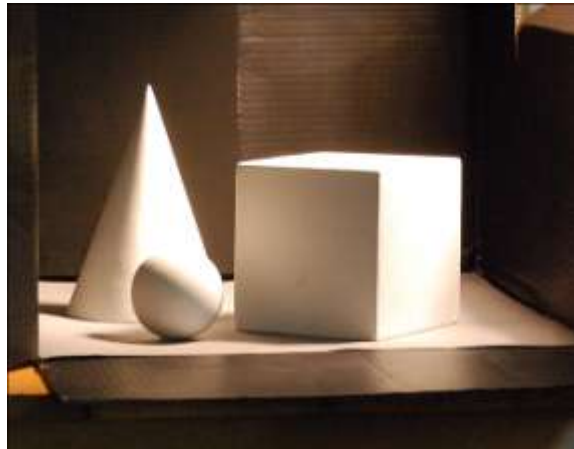
**RED BLUE WHITE**  
**YELLOW BLUE GREEN**  
**RED PURPLE BLACK**  
**BLUE ORANGE RED**  
**PURPLE RED BROWN**  
**BLUE YELLOW GREEN**

Part of your brain tries to identify the color while another part of your brain reads the word. This regional brain conflict can produce errors in perception. Also note the extra time and amount of effort/concentration that is necessary to overcome the conflict of image and word.

The goal in presenting the above materials is to present a compelling case that accurately describes the way in which the visual learner sees and the inequities this causes in a system that measures intelligence in timed segments. If the intelligence of the visual learner is not accurately measured then they are further disadvantaged in the competitions of colleges and scholarships which in turns affect available choices in life.

What I would like to see is research in the way we see and learn. I would like the element of time removed from tests so that the visual learner's intelligence and knowledge of content can be accurately measured. The educational system must be fair for everyone.

In closing I offer an assessment tool for identifying the visual learner. The determining factor in identifying a visual learner rests in the manner in which they process space and form. I usually measure a student's thinking and visual skills by having them draw a simple geometric still life like the one below.



The key factors I look for is the proportions of the three objects, the cube represented in space and not drawn flat and the tonal quality of shading of the objects. The use of this assessment has always given me accurate reading of the student's visual and thinking skill. The more photographic the rendering of the objects the higher degree of the student's visual intelligence.