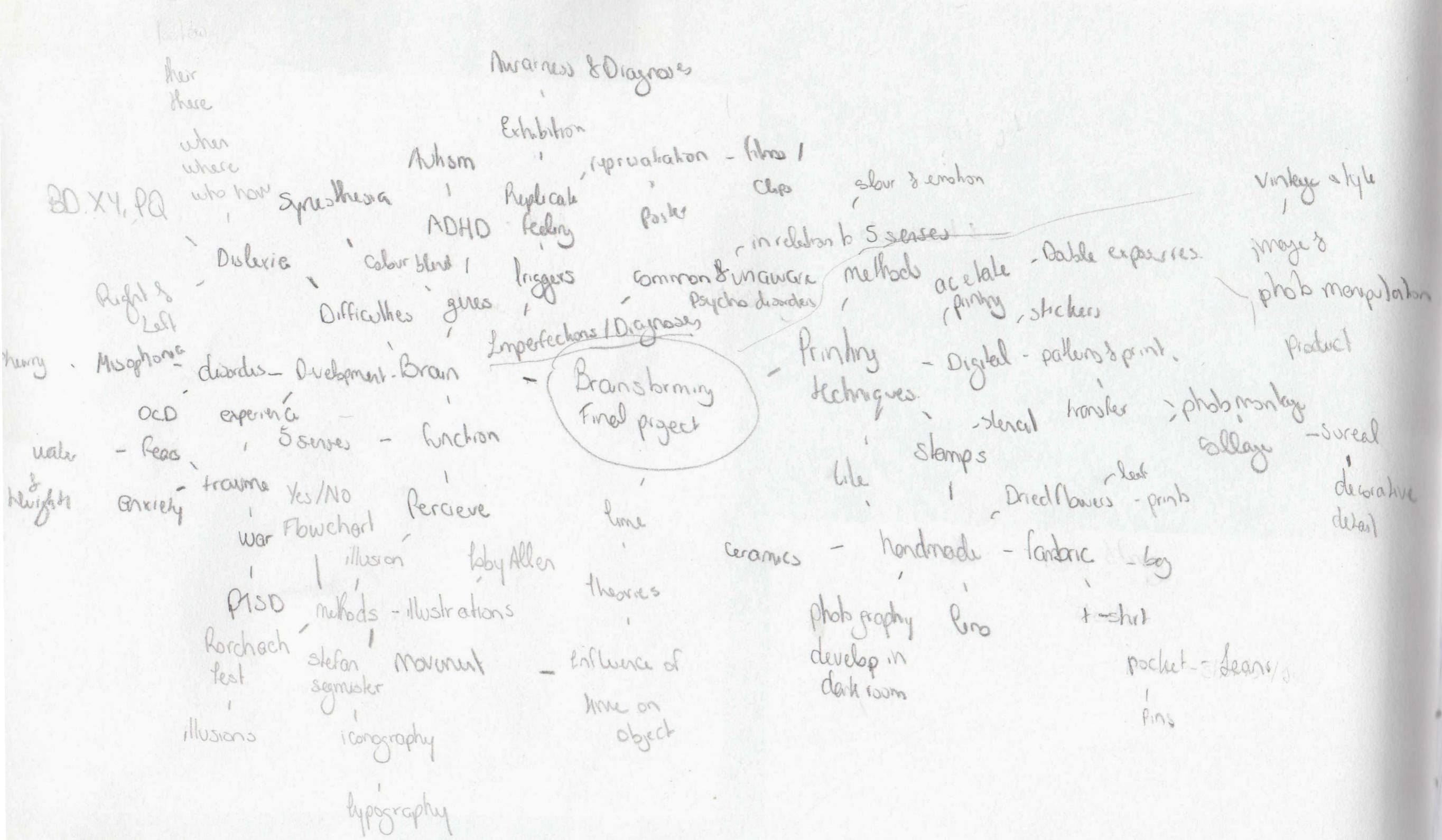


# Dyslexia

Maria Degiorgio





Sydney Dyslexia, *Sydlexia*, aims to challenge the misconception that dyslexia is a learning disability, and instead, aims to move towards addressing it as a learning difference.

offers new techniques and training methods to help facilitate “dyslexia correction”.

Sydlexia worked with *BBDO Dubai* on brand identity and its first campaign - Making Sense Of Dyslexia, where a series of *posters*, flyers and newspaper were created featuring shattered words and invites engagement in their reconstruction through folding.





Dan Britton has created a typeface that demonstrates the effects of dyslexia, a disorder which impairs reading ability.

"What I wanted to do was recreate or simulate the emotions of reading with dyslexia to try and put across how frustrating it is to try and read something simple,"

He was diagnosed with dyslexia in his third year of university.

The intention is that a reader has to take their time to decipher which letters are used in words and sentences, slowing them down to the speed of someone with dyslexia.

He sliced up the commonly used Helvetica typeface and deleted 40 per cent of each letter and number, removing their key characteristics but leaving enough to make them just about legible.



Victor Windell created a simulation that lets anyone see what it's like to have severe dyslexia and read online content.

His inspiration came from a conversation with a dyslexic friend where "Out of curiosity, I asked about how she experiences reading. She explained it as the letters 'jumping around.'"

"I wrote some programming code to scan through the webpage and find all words. One word is selected randomly, and two letters in it, excluding the first and last, are swapped. It does this over and over, 20 times per second," Windell said. It manages to convey some of what a person with dyslexia sees when they log on to Twitter, or read emails of news websites.

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## Deysilxa

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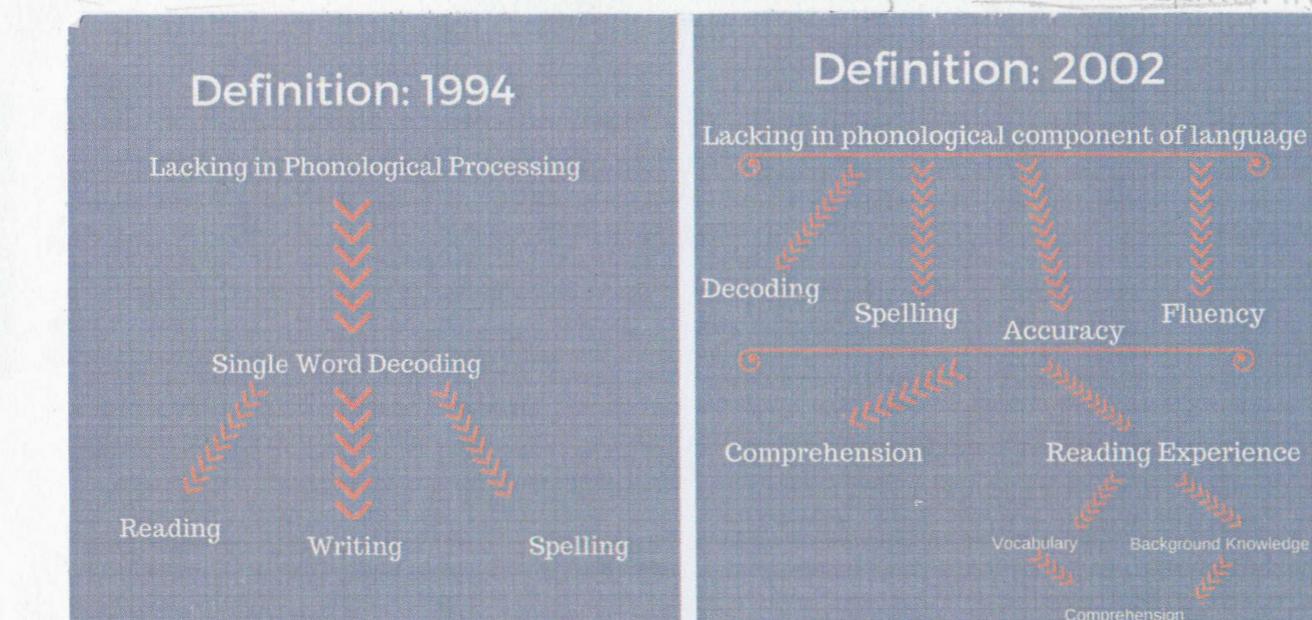
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MRI Scans - less grey matter in left hemisphere  
 Good spatial knowledge  
 Strengths - better visual processing, highly creative  
 pattern recognition, think outside the box, problem free  
 difficulty to retain information, difficulty to copy  
 difficulty to understand text, reverse numbers  
 Attention span & concentration



**This is Arial**  
**This is Arial It.**  
**This is Computer Modern**  
**This is Courier**  
**This is Garamond**  
**This is Helvetica**

**This is Myriad**  
**This is OpenDyslexic**  
**This is OpenDyslexic It.**  
**This is Times**  
**This is Times It.**  
**This is Verdana**

Open Sans.  
 Calibri, Comic Sans, Century Gothic, Dyslexie.  
 - Fonts - thicker stems, tails, descenders  
 - use of italics.  
 - tails & descenders vary in length ex P Q g,  
 Concentration,  
 - struggle to follow conversation & explanation  
 late development in spoken language  
 decoding

messy.com  
 www.lovereade.com

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Dyslexia has been around for a long time and has been defined in different ways. For example, in 1968, the World Federation of Neurologists defined dyslexia as "a disorder in children who, despite conventional classroom experience, fail to attain the language skills of reading, writing, and spelling commensurate with their intellectual abilities." The International Dyslexia Association offers the following definition of dyslexia:

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The term visual dyslexia is sometimes used to refer to visual processing disorder, a condition in which the brain does not properly interpret visual signals.

The term auditory dyslexia has been used to refer to auditory processing disorder. Similar to visual processing disorder, there are problems with the brain's processing of sounds and speech.

Dysgraphia refers to the child's difficulty holding and controlling a pencil so that the correct markings can be made on the paper.

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symptoms:

#### Before school

Signs that a young child may be at risk of dyslexia include:

- Delayed speech development and vocabulary learning
- Difficulties forming words, such as making the sound in some words backward or mixing up words that sound similar
- Problems retaining information, such as numbers, the alphabet, and colors
- Difficulty learning nursery rhymes or playing rhyming games
- May learn to crawl, walk, talk, and ride a bicycle later than the majority of others.
- May take longer to learn the letters of the alphabet and how they are pronounced.
- May have problems remembering the days of the week, months of the year, colors, and some arithmetic tables.

#### School age

Once your child is in school, dyslexia signs and symptoms may become more apparent, including:

- Reading well below the expected level for age
- Difficulties processing information
- Difficulty finding the right word or forming answers to questions
- Problems remembering the sequence of things
- Difficulty seeing (and occasionally hearing) similarities and differences in letters and words
- Issues with remembering sequences of objects or information
- Being unable to put an unfamiliar word into sounds
- Difficulty in spelling
- Avoiding activities that involve reading
- The child may confuse "left" and "right."
- Children with dyslexia commonly find it hard to concentrate. After a few minutes of non-stop struggling, the child is mentally exhausted. A higher number of children with dyslexia also have attention deficit hyperactivity disorder (ADHD), compared with the rest of the population.

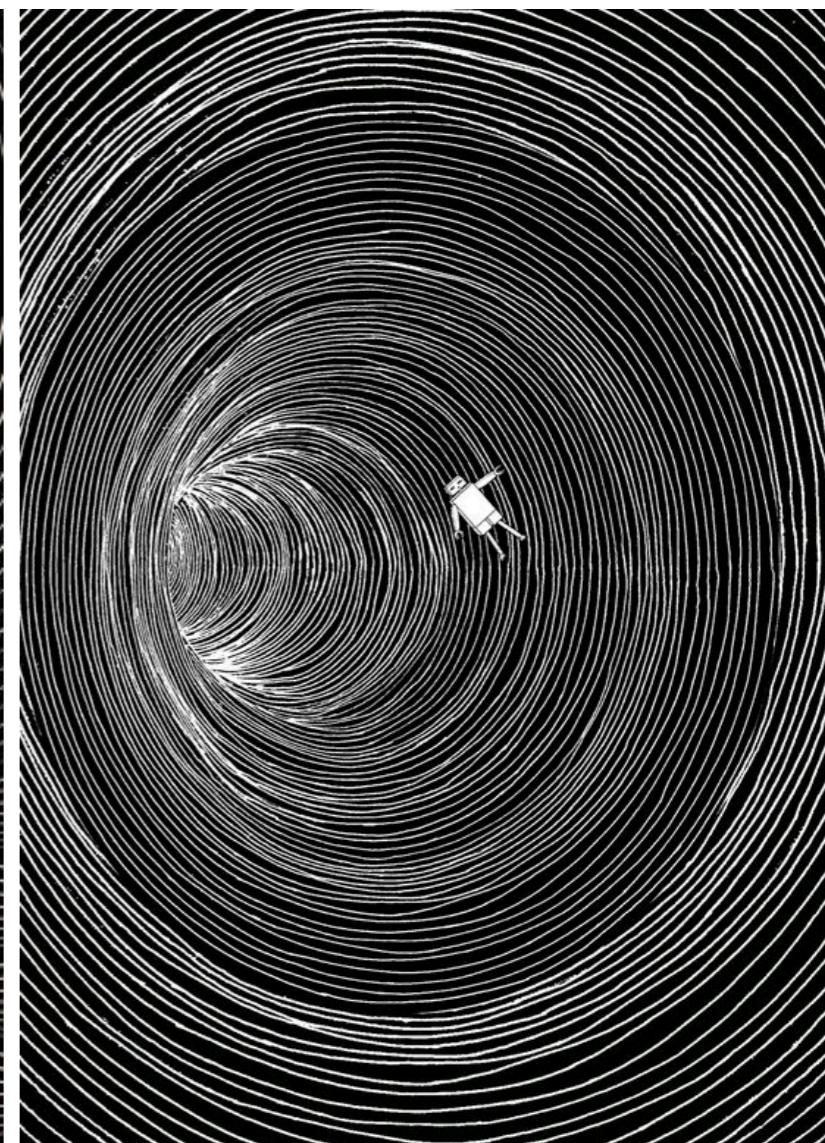
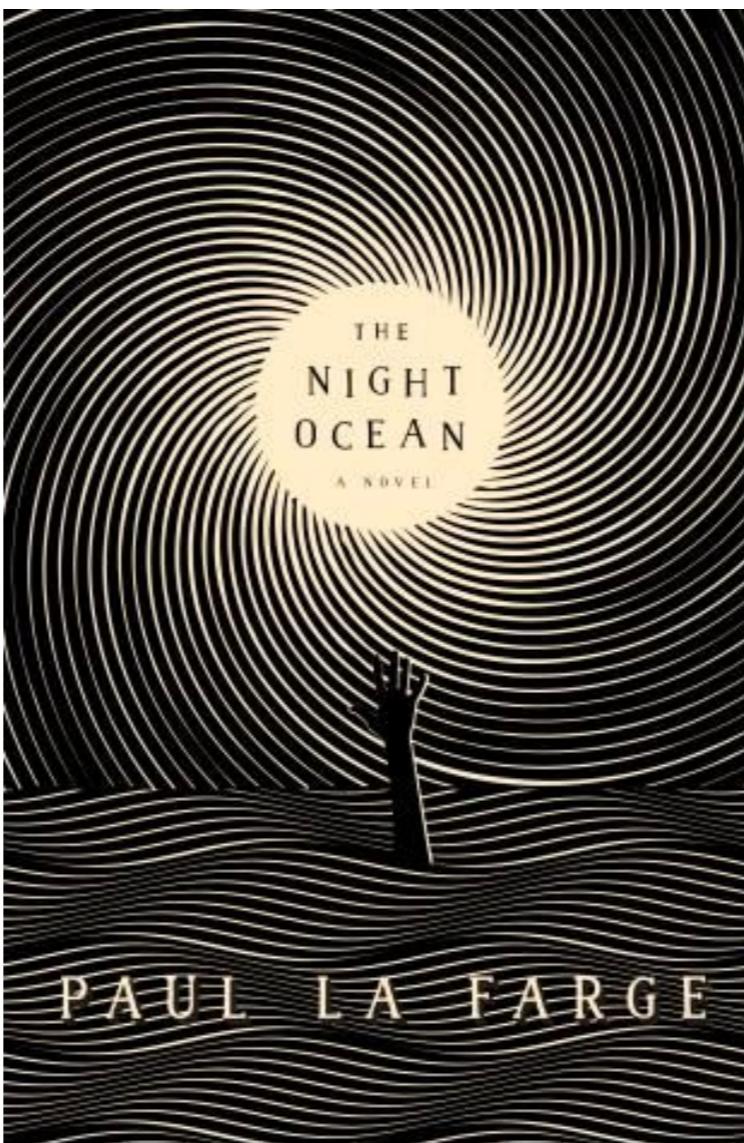
#### Teens and adults

Dyslexia signs in teens and adults are similar to those in children. Some common dyslexia signs and symptoms in teens and adults include:

- Difficulty reading, including reading aloud
- Slow and labor-intensive reading and writing
- Spelling issues
- Avoiding activities that involve reading
- Mispronouncing words, or problems recalling words for a particular object or topic
- Problems with understanding the meaning behind jokes and expressions
- Difficulty summarizing a story
- difficulties learning a foreign language, memorizing, or completing math problems
- Difficulty memorizing
- Difficulty doing math problems

<https://www.medicalnewstoday.com/articles/186787.php>

<https://www.mayoclinic.org/diseases-conditions/dyslexia/symptoms-causes/syc-20353552>



### **Studies studies to determine causes and understand dyslexia:**

According to multiple studies, there are real structural differences in the brains of people with and without reading disabilities. The brain is made up of two types of material: gray matter and white matter. Gray matter is mostly composed of nerve cells and its primary function is to process information. White matter is found in the deeper parts of the brain and acts as the connective fibers that create communication between nerves. The white matter is also responsible for information transfer around the brain. Researchers Booth and Burman found that people with dyslexia have less gray matter in the left part of the brain than non-dyslexic individuals. These researchers say that this could cause the problems with the sound structure of language. Interestingly enough, these researchers also found that people with reading disabilities have one area of their left hemisphere larger than the same area on the right.

The study from Massachusetts Institute of Technology (MIT), published in the Journal of Neuroscience have discovered a link between the size of a language-processing area of the brain and poor pre-reading skills in kindergartners. This finding, coupled with an MRI technique, could lead the way for an earlier dyslexia diagnosis.

### Dysfunction of Rapid Neural Adaptation in Dyslexia (Neuron, December 2016):

In a set of several experiments, dyslexic and non-dyslexic adults and children were exposed to several types of repeated stimuli, including listening or reading words, or viewing repetitive displays of pictures of objects or faces. The researchers used a form of fMRI brain scanning which measures changes in the level of brain activity as the tasks progressed. This was intended to measure the degree to which brain activity tended to settle down as exposure to the repeated stimuli progressed – a measure of “neural adaptation”, or the way the brain stops reacting to familiar stimuli over time.

The experiments also produced a consistent and significant result: “Across six experiments, we found that rapid neural adaptation... was diminished in children and adults with dyslexia for every stimulus type assessed, auditory language, visual language, visual objects, and faces.” In other words, the researchers consistently saw a higher level of activity maintained over time in the brains of the dyslexic subjects. That higher activity level could also be correlated with separate measures of reading skills – those who were weaker readers tended have higher levels of continued brain activity.

Although this experiment suffers from the problem endemic to all fMRI studies in that fMRI machines are annoyingly noisy, the data at least supports an inference of a distinctive difference in mental processing patterns, even if ignoring the sounds emitted by the machine is one more thing that the non-dyslexics are better at.

This study produced useful data. It supports our view that dyslexia is the result of brain differences that are much more than simply a difference in the way the brain processes written material. It also may provide evidence as to how or why the Davis Orientation Counseling tools work, in enabling the person to exercise control over mental focusing and perceptual awareness.

Dyslexia is different for everyone. Some people have a mild form that they eventually learn how to manage, others have a little more trouble overcoming it. They can still go to college and succeed in life.

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## Mark the difference: - Find 20

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Primary dyslexia: This is the most common type of dyslexia, and is a dysfunction of, rather than damage to, the left side of the brain (cerebral cortex) and does not change with age. There is variability in the severity of the disability for individuals with this type of dyslexia, and most who receive an appropriate educational intervention will be academically successful throughout their lives. Unfortunately there are others who continue to struggle significantly with reading, writing and spelling throughout their adult lives. Primary dyslexia is passed in family lines through genes (**hereditary**) or through new genetic mutations and it is found more often in boys than in girls.

Secondary or developmental dyslexia: This type of dyslexia is caused by problems with brain development during the early stages of fetal development. Developmental dyslexia diminishes as the child matures. It is also more common in boys.

Trauma dyslexia: This type of dyslexia usually occurs after some form of brain trauma or injury to the area of the brain that controls reading and writing. It is rarely seen in today's school-age population.

Dyslexia can be broken down into different subtypes, but there is no official list of dyslexia types because they can be classified in different ways. However, the following categories are sometimes used:

The term visual dyslexia is sometimes used to refer to visual processing disorder, a condition in which the brain does not properly interpret visual signals.

The term auditory dyslexia has been used to refer to auditory processing disorder. Similar to visual processing disorder, there are problems with the brain's processing of sounds and speech.

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## Mark the difference: - answers sheet (20)

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## DYSLEXIA SYMPTOMS:

### BEFORE SCHOOL

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- Problems retaining information, such as numbers, the alphabet, and colors;
- Difficulty learning nursery rhymes or playing rhyming games;
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### SCHOOL AGE

Once your child is in school, dyslexia signs and symptoms may become more apparent, including:

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- Problems remembering the sequence of things;
- Difficulty seeing (and occasionally hearing) similarities and differences in letters and words;
- Issues with remembering sequences of objects or information;
- Being unable to put an unfamiliar word into sounds;
- Difficulty in spelling;
- Avoiding activities that involve reading;
- The child may confuse "left" and "right";
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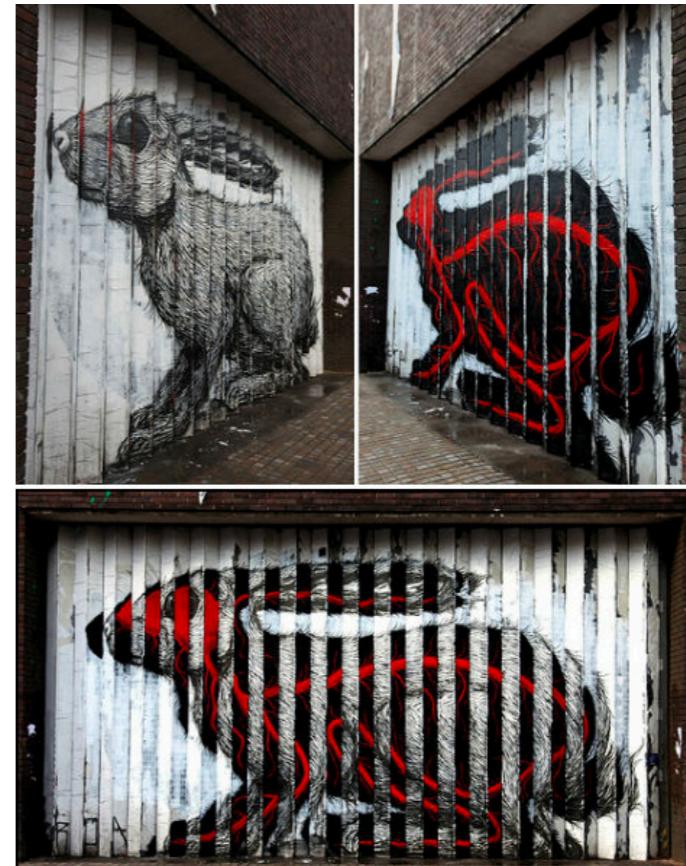
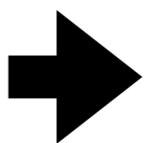
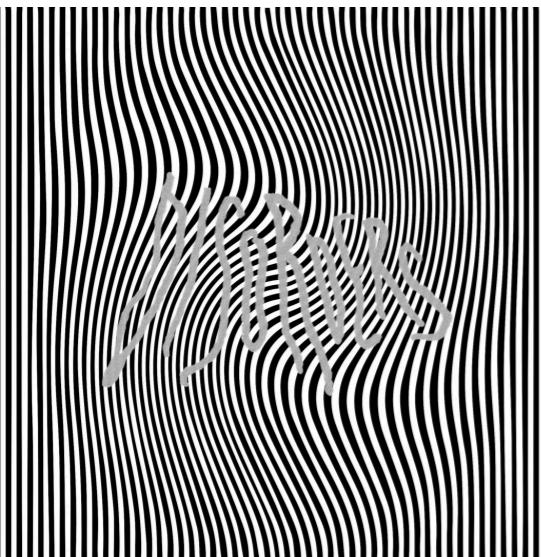
### TEENS AND ADULTS

Dyslexia signs in teens and adults are similar to those in children. Some common dyslexia signs and symptoms in teens and adults include:

- Difficulty reading, including reading aloud;
- Slow and labor-intensive reading and writing;
- Spelling issues;
- Avoiding activities that involve reading;
- Mispronouncing words, or problems recalling words for a particular object or topic;
- Problems with understanding the meaning behind jokes and expressions;
- Difficulty summarizing a story;
- Difficulties learning a foreign language, memorizing, or completing math problems;
- Difficulty memorizing;
- Difficulty doing math problems;



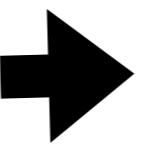
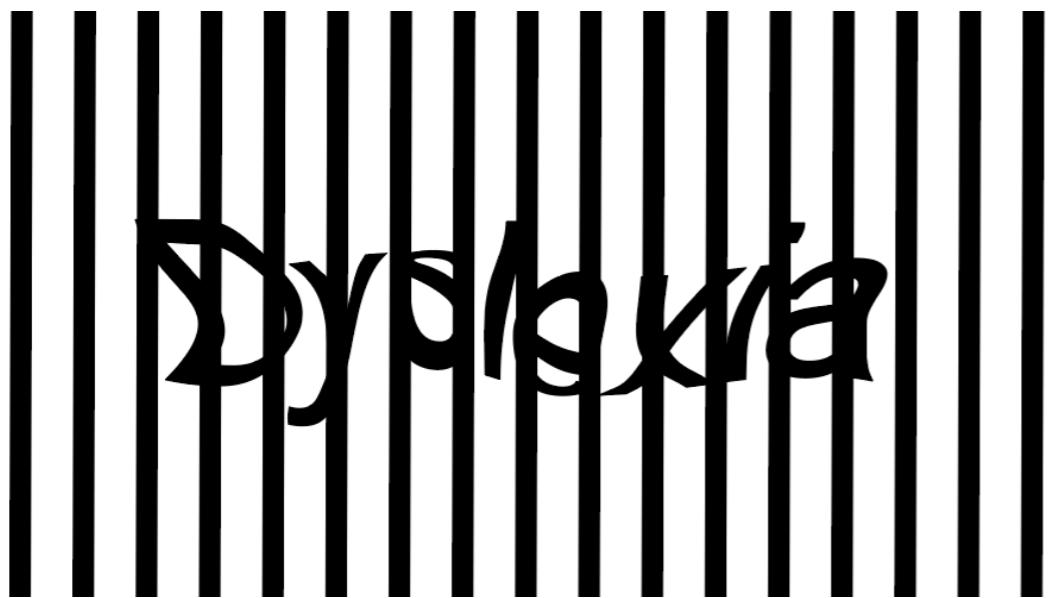
Dyslexia is a neurobiological disorder which affects the ability to read, spell, write, and speak. Mentioned above are some of the common symptoms a dyslexic person experiences.



Initial inspiration - music band cover album



Lenticular effect



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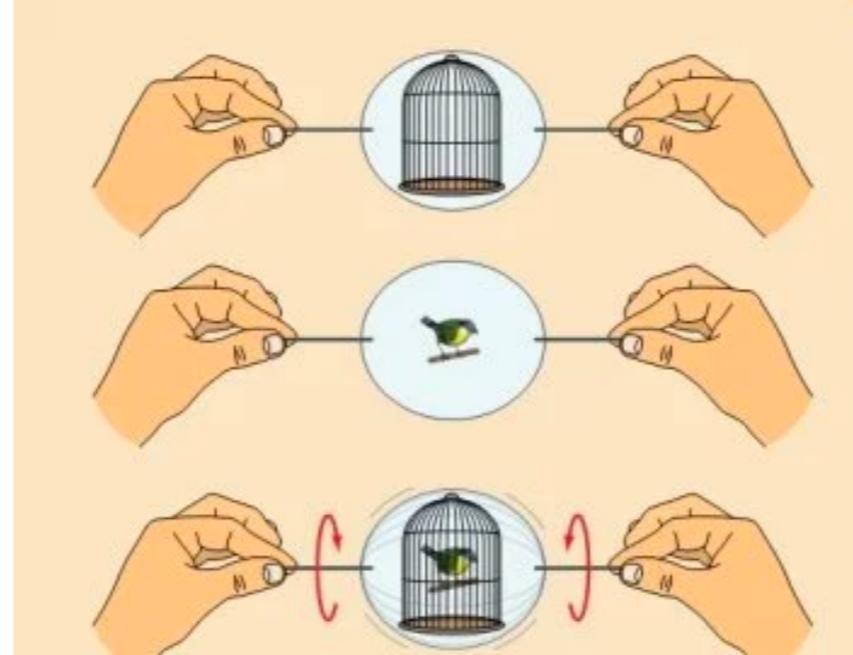
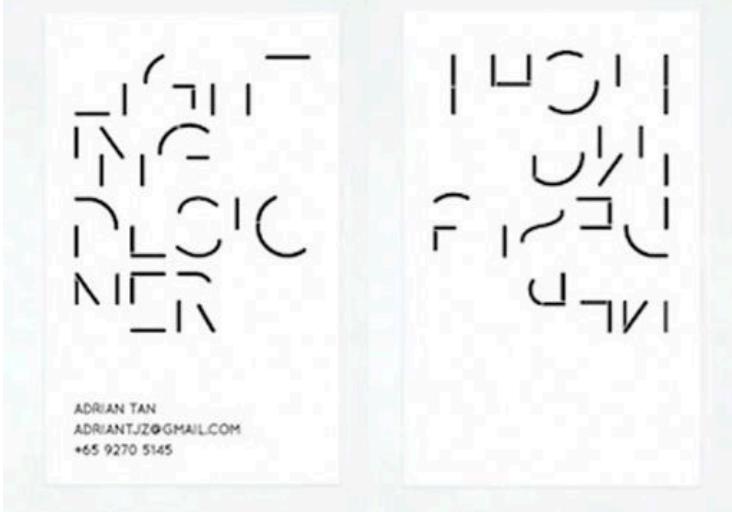
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# Thaumatrope



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**Sympthoms: Before school -** Delayed speech development and vocabulary learning. Difficulties forming words, such as making the sound in some words backward or mixing up words that sound similar. Problems retaining information, such as numbers, the alphabet, and colors. Difficulty learning nursery rhymes or playing rhyming game. May learn to crawl, walk, talk, and ride a bicycle later than the majority of others. May take longer to learn the letters of the alphabet and how they are pronounced. May have problems remembering the days of the week, months of the year, colors, and some arithmetic tables.

**School age -** Reading well below the expected level for age. Difficulties processing information, such as numbers, the alphabet, and colors. Difficulty learning nursery rhymes or playing rhyming game. May learn to put an unfamiliar word into sounds. Difficulty finding the right word or forming answers to questions. Problems remembering the sequence of objects or information. Being unable to put an unfamiliar word into sounds. Difficulty finding the right word or forming answers to questions. Problems remembering the letters of the alphabet and how they are pronounced. May have problems retaining information, such as numbers, the alphabet, and colors. Difficulty learning nursery rhymes or playing rhyming game. May learn to crawl, walk, talk, and ride a bicycle later than the majority of others. May take longer to learn the letters of the alphabet and how they are pronounced. May have problems remembering the days of the week, months of the year, colors, and some arithmetic tables.

**Teens and adults -** Difficulty reading, including reading aloud. Slow and labor-intensive children also have attention difficulties that involve the sequence of things. Difficulty seeing (and occasionally hearing) similarities and differences in letters and words. Issues with remembering sequences of objects or information. Being unable to put an unfamiliar word into sounds. Difficulty finding the right word or forming answers to questions. Problems remembering the letters of the alphabet and how they are pronounced. May have problems retaining information, such as numbers, the alphabet, and colors. Difficulty learning nursery rhymes or playing rhyming game. May learn to crawl, walk, talk, and ride a bicycle later than the majority of others. May take longer to learn the letters of the alphabet and how they are pronounced. May have problems remembering the days of the week, months of the year, colors, and some arithmetic tables.

The diagram consists of five concentric circles, each representing a different age group and its associated symptoms of dyslexia:

- Outermost circle (Teenagers and adults):** Symptoms include difficulty reading, including reading aloud; difficulty summarizing a story; difficulty memorizing a particular object or topic; reading and writing; spelling; foreign language learning; memorizing, or completing math problems; difficulty understanding math problems; difficulty doing math problems; and difficulty learning nursery rhymes or playing rhyming games.
- Second circle (School age):** Symptoms include reading well below the expected level for age; difficulties processing information, such as numbers, the alphabet, and colors; difficulty learning nursery rhymes or playing rhyming games; being unable to put an unfamiliar word into sounds; difficulty finding the right word or forming answers to questions; problems recalling words for a particular story and labor-intensive children with dyslexia also have attention problems; slow and labored; difficulty exhausted; a higher number of difficulties; and difficulty remembering the letters of the alphabet and how they are pronounced.
- Third circle (Teens and adults):** Symptoms include difficulty summarizing a story; difficulty memorizing a particular object or topic; reading and writing; spelling; foreign language learning; memorizing, or completing math problems; difficulty understanding math problems; difficulty doing math problems; and difficulty learning nursery rhymes or playing rhyming games.
- Fourth circle (Younger children):** Symptoms include difficulty summarizing a story; difficulty memorizing a particular object or topic; reading and writing; spelling; foreign language learning; memorizing, or completing math problems; difficulty understanding math problems; difficulty doing math problems; and difficulty learning nursery rhymes or playing rhyming games.
- Innermost circle (Before school):** Symptoms include difficulty learning to crawl, walk, and ride a bicycle later than the majority of others; may take longer to learn the letters of the alphabet and how they are pronounced; difficulty remembering the days of the week, months of the year, colors, and some arithmetic tables; and difficulty seeing (and occasionally hearing) similarities and differences in letters and words.