Short Communication

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Dyslexia and Dyscalculia

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ABSTRACT

In this paper, we hypothesize what may be the root cause of dyslexia and dyscalculia. The problems appear to be with encoding information from the declarative memory. The ACT* Model of the mind is used to calculate some parameters essential to a normally working mind. It is estimated the as much as 6% of the population suffers from dyscalculia.

KEYWORDS: Dyslexia; Dyscalculia; ACT* Model of the mind; Depression

INTRODUCTION

In this paper, we hypothesize that those with dyslexia and dyscalculia have abnormal working memory, declarative memory, and production memory. Therefore, the encoding does not work properly according to the ACT* Model of the Mind. In Figure 1 it begins with the calculations on the working memory.

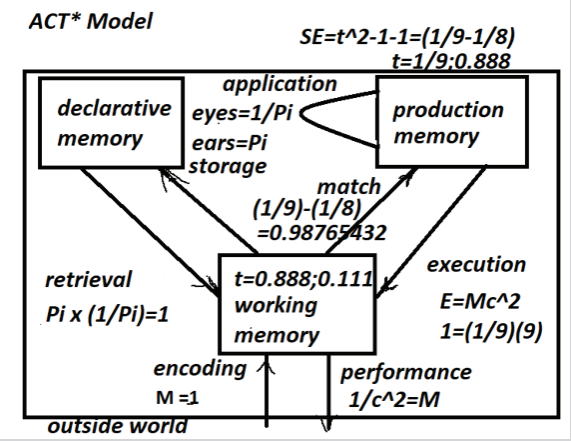

Figure 1: ACT* model of the brain.

WORKING MEMORY

Dyslexia can occur in association with dyscalculia. Co-occurrence of learning disorders appears to be the rule rather than the exception and is believed to be a consequence of risk factors that are shared between disorders, for example, working memory.

t=0.888; 0.11

PRODUCTION MEMORY (FUNCTION OF THE MIND)

t^2-t-1=E

$(t=1/c^2)$; $(t=(1-1/c^2)$

freq=t

E=hυ

$=6.626(1/c^2)$

=0.737

=1/1.35~/M

E=hυ

$=6.626(1-1/c^2)$

Quick Response Code:

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=6.626 90.888)

=5.888

=1/1698

~1/7

1.698/1356=1.2523~=E_{min}

In a normal mind, the minimum of the golden mean parabola (function of the mind), gives us the minimum Energy. We evoke the ACT* Model of the mind that has several steps in decoding and encoding. The end coding is what goes wrong in patients with dyslexia and dyscalculia.

RETRIEVAL

Retrieval is where the problems occur for Dyslexia and Dyscalculia. Since it involves coordination of eyes and ears. In a normal mind, the retrieval performs as follows:

$1/\pi \times \pi=1$

t^2-t-1=1

t^2-t-2=0

t=-1; 2

t=2: E=1

MIND AS BLACK BOX & WHAT GOES ON INSIDE

For the internal mechanism of the brain as black box (on the left side of figure 1):

Input ⇒Working Memory Declarative memory (Storage) ⇒Retrieval ⇒Output

$1/c^2=M \Rightarrow 1.25=E_{min} \Rightarrow$ Storage Eyes and Ears =1⇒E=1⇒$M=1/c^2$

Min -1.25-1-1=M_{out}

(1/9)-3.25=M_{out}

M_{out} =3.138~π=t

3.14^2-3.14-1=57.28=1 rad=t

RED HEADS AND DYSCALCULIA

People with red hair (beta carotene) have difficulties with Math. Beta Carotene leads to deficient skin and nails in red heads.

536.9g/mol x 6.023=3233.7gm

M=Ln t

t=1/394

1.73.9+1.394=3.13~π

$E=Mc^2$

$e-t=Ln\ t \cdot c^2$

$=1.14199c^2$

=10.263

Ln e^{-t}=-t=Ln (1.0.263)

t=2.328

Ln t=3.147~Pi (Note)

Surface Area / Vol.+Nervous System

$20,000/600 \times (104.9/\sqrt{3})+104.9+(1/(4/\pi))$

=201.8+104.9+7.854

=3.14=π

Griffiths reports that there is a common link between PTSD; Depression; Schizophrenia and Bipolar Disorder; Psychosis; Anxiety; Multiple Sclerosis; Autism spectrum disorder; Alzheimer's Disease. [1]

PERFORMANCE AND ENCODING

E=Mc^2

c^2=M(c^2)

M=1

=Encoding

3.138-3.147=0.009=c^2=9mV

From Electrical engineering:

V=iR

9=(1/c^2) R

R=808

DEPRESSION AND DYSLEXIA

People with dyscalculia are more likely to suffer from Dyslexia, Depression, ADHD and anxiety.

Depression and Dyslexia are linked by the gut metabolism. The gut metabolism produces neurotransmitters serotonin, dopamine, and adrenaline (norepinephrine).

Griffiths has it as follows:

Gut bacteria produce a wide variety of metabolic by-products from their metabolism, including serotonin, dopamine, and adrenaline. One theory of gut brain communication is that these metabolic products travel from gut to brain via the vagas nerves [CN 10] which link the gut and the brain [1]. Cranial Nerve 10 originates in the Pons where the subconsciousness is located.

Dyslexia and depression are two entirely different disorders, but dyslexia can trigger and worsen depression symptoms. While depression is a mental health condition that can be treated with talk therapy and intervention, dyslexia is a learning disability that requires educational intervention.

CONCLUSION

So, we see that there are differences between the normal mind and those with the disorders of dyslexia and dyscalculia.

REFERENCES

1. Griffiths Ray (2019) Depression: The mind-body, diet, lifestyle connection. Clink Street, USA.