

A CLASSROOM-BASED PSYCHOLINGUISTIC STUDY

Moustafa Mohammad Shalabi

Universiti Utara Malaysia

Mohamed Aboobucker Mohamed Sameem

South Eastern University of Sri Lanka

The Stroop effect is the finding that naming the color of the first set of words is easier and quicker than the second Stroop effect. In psychology, the Stroop effect is a demonstration of interference in the reaction time of a task. We're wired to match similar colors quicker than anything else and that's the Stroop Effect in action. The purpose of this study is to examine the conflict or interference situation in which subject must name the color of the ink of color-words when the color and the word are incongruous. This is a quantitative study. The data source is postgraduate students in psycholinguistics of class 2015; University Utara Malaysia. To ensure reliability and validity, they were asked one by one to get the inquired information from this test while writing time was taken and observations while performing this test. The results are discussed.

Keywords: Age, Gender, Psycholinguistics, Study-college, Student

The psychological occurrence we now call, "the Stroop effect" was first described in 1935 by John Ridley Stroop, (Stroop, 1935). Why has the Stroop effect continued to fascinate psychologists? Part of the answer is the Stroop effect appears to tap into essential operations of awareness, thereby offering clues to fundamental cognitive processes. In two classic experiments, Stroop first compared reading a list of words printed in black with reading the same list of words printed in incongruent colors. Stroop found that there was little difference in reading time for the two lists. Stroop then compared the naming of colors for a list of solid color squares with the naming of colors for a list of words printed in incongruent colors. Subjects averaged 74% longer to name ink colors of incongruent words. The results of these two studies led Stroop to assume that since people are more practiced at word reading than naming colors, there is less interference with word reading than with color naming. Most individuals are very skillful at reading written words they are couldn't easily. It is true that it takes the notable attentional effort to ignore them. This tendency to read quickly a word which is used in the Stroop Test. The most interesting feature in Stroop test is the conflict or interference situation in which subject must name the color of the ink of color-words when the color and the word are inconsistent (Jensen & Rohwer, 1966).

The Stroop Effect, entitled after John Ridley Stroop, is a show of the response time of the test and is often used to prove the quality of unconscious handling as opposed to cognizant graphic control. It was first published in 1935 followed by sequences of experimentations (Stroop, 1935).

The result of the tests signaled the majority of individuals had a habit of saying the color of every word in the beginning with slight difficulty. Regardless of the clear directions, nevertheless, most people had conflict to read each word color. This struggle happens owing to the semantic intrusion (Jensen & Rohwer, 1966).

Looking at test words, processing the color of every word along with the meaning of each word, if both stimuli (color and meaning) are consistently or well-matched, responding correctly happens very fast. This explains the majority of respondents having the quickest response in both times for words and, colors (Comalli, Wapner, & Werner, 1962). When there is a primary discord between word color and word meaning next to the stimuli are usually incongruent or even conflicting. (MacLeod, 1991). When this happens the majority of us would have to decide and care about one particular stimulation versus some other (Stroop, 1935). The experience teaches us to be more interested about the importance of the meaning of the words more than colors, they are written in. the process of reading

is unconscious for the majority of persons. Thus, whenever we tend to be taught to do the opposite and pay more focus to the color of the word, intervention happens. We need to consciously adapt our responses because this specific new task isn't recognizable for us to as saying words. This consequences in our response times become much slower with column 3 than with the further columns of the test.

Most persons are so clever at reading, at seeing whole words, that we don't notice easily the individual letters. This clarifies why proofreading is a complex process. This propensity to rapidly recognize words have been used in testing for the Stroop effect (Chudler, 2015).

The Stroop effect (sometimes called the Stroop test) is a result of our psychological (attentional) energy and suppleness. The effect referred to the capability of most persons to say words more rapidly and automatically than they can name colors (Kaplan, 1995; Kaplan, 2001). If a word is printed in a color different from the color it actually names; for example, if the word **green** is written in **blue ink** then we have a hard time noticing the blue ink. In this example, even when asked to say the color of the ink, we have a habit of reading That is the name of the word represents (Young, 2015). Awh and Jonides, (2001) claimed that the mental device at work in this process is named "**directed attention**". This cognitive resource is used to accomplish our feelings by preventing one answer to say or do something else, (Berman, Jonides, & Kaplan, 2008; Desimone & Duncan, 1995; Gazzaley & Nobre, 2012). The capability to guide concentration is an initial mental supply that permits us to willingly accomplish the attention of our feelings. It is valuable in our effort to persist active, creative, clearheaded and cooperative. We could use it to hinder the power of definite characteristics of the instant physical and social environment, as well as interior interferences, so as to let reflection of less salient but nonetheless appreciated data (Corbetta & Shulman, 2002; Kaplan & Berman, 2010; Posner & Petersen, 1989). Directed attention allows for a diversity of prosocial and pro-environmental behaviors. It allows us to study significant aims regardless of stimulating competition in the instant setting, to aid others in spite of our own unmet needs, and to struggle

attraction so that we can continue keen to a larger apprehension. To sum up, the aptitude to direct attention is an indispensable source for accomplishing both civility and environmental stewardship.

Aim

The objective of this psycholinguistics class activity which is known as Stroop test to pursue the confusion in the response time of the test and number of errors as dependent variables and gender, age, and ethnicity as independent variables.

Method

The purpose of this study is to examine the conflict or interference situation in which subject must name the color of the ink of color-words when the color and the word are incongruous. This is a quantitative study. The data source is postgraduate students in psycholinguistics class-2015 of University Utara Malaysia, using Stroop test inside the class asking the respondents to read the colors not the words, recording the estimated time used to finish the task and the number of mistakes done. There Were 10 respondents' from different ages, nationalities both males and females. To ensure reliability and validity they will be asked one by one to get the enquired information from this test while writing down the time taken and observations while performing this test.

Conceptual Framework of the study: In line with the objective of this psycholinguistics class activity which is known as Stroop test to pursue the interference in the reaction time of a task and number of errors as dependent variables and gender, age, and ethnicity as independent variables. Thus it was conceptualized these variables into a framework that guides the study.

procedure

This study is a descriptive analysis, carried out correlation analysis among the variables. Therefore, the statistical tool. Thus the current study uses SPSS 20.00 for the data analysis. SPSS is used in this case to decide the descriptive analysis of demographic factors and to find out the relationship between Age,

Gender, and Ethnicity. Also, correlation analysis is run to find the association between an independent variable and the dependent variable.

Data analysis

Table 1: shows the total number of respondents took part in this study. I here were 3 Arabs two males and one female respondent, one male Bengali and five female Malaysian respondents. This table gives the reader the whole

information about nationalities, age, gender, and Ethnicity.

Table 2 : depicts the time duration of the respondents who took part in this test. The table shows that one female respondent time was 60 seconds, two female respondent duration time to this test was 65 seconds. One respondent time duration was 82 seconds. Zero female respondent time duration was 88 seconds. Zero female respondent time duration was 97 seconds. Zero female respondent time duration was 114 seconds. One respondent time duration was 145 seconds.

Table 1: Respondents data

N.	Respondent	Age	Time	Mistakes	Observation Notes Reading capacity
1	F.A.L.H.	30	2:25:50	10	First time read slowly and with mistakes
2	M.B. A. M.	26	1:28;08	3	Good focus, trying to avoid mistakes, slow a little bit
3	M. A. E. M.	45	1:37:11	1	Avoid making mistakes slow a little bit
4	M. A. J. A.	26	1:05:30	1	Go back to correct his mistakes, very concentrated.
5	F. M. A. NF.	23	1:22:30	1	Much good focus Little tension trying not to make mistakes
6	F.M.A.D.	30	1:05:13	0	Little tension trying not to make mistakes, Good focus
7	F.M.A. LY.	24	1:05:02	2	Little tension,trying not to make mistakes, very Good focus
8	F.M.A.SY	23	1.08	1	Little tension ,avoiding mistakes, slow a little bit
9	M.P.A.M	33	1.54	-	Little tension,trying avoiding mistakes, slow a little bit

Table 2 : Gender time

		time							Total
		60	65	82	88	97	114	145	
Gender	male	0	1	0	1	1	1	0	4
	female	1	2	1	0	0	0	1	5
Total		1	3	1	1	1	1	1	9

Table 2 : Gender errors

		errors					Total
		1	2	3	10		
Gender	male	1	2	0	1	0	4
	female	1	2	1	0	1	5
Total		2	4	1	1	1	9

Table 2 : Depicts that according to the number of errors related to gender factor that one male respondent made Zero error. Two male respondents made one error. Zero male respondents made two errors. One male respondent made three errors and Zero male respondents made ten errors. one female respondent made Zero error. Two female respondents made one error. One female respondent made two errors and one female respondent made ten errors.

Table 3 : depicts the time duration of the respondents who took part in this test according to the three age groups stated before: Age group one from age 20 to 25 years old. The table shows that one respondent took 60 seconds, one respondent duration time was 65 seconds. One respondent duration time was 82 seconds Zero respondent time duration was 88 seconds. Zero respondent time duration was 97 seconds. Zero respondent time duration was 145 seconds.

Table 3 : Age time

	time							Total
	60	65	82	88	97	114	145	
age 20-25	1	1	1	0	0	0	0	3
26-30	0	1	0	1	0	0	0	2
>30	0	1	0	0	1	1	1	4
Total	1	3	1	1	1	1	1	9

Age group two, from 26 to 30 the table shows that Zero respondent time was 60 seconds, one respondent duration time to this test was 65 seconds. Zero respondent time duration was 82 seconds. One respondent time duration was 88 seconds. Zero respondent time duration was 97 seconds. Zero respondent time duration was 114 seconds. Zero respondent time duration was 145 seconds.

respondent made one error. Zero respondent made two errors. Zero respondent made three errors and one respondent made ten errors. Age group three from 30 and above two respondents made Zero error. Four respondents made one error. One respondent made two errors. One respondent made three errors and one respondent made ten errors.

Table 4 : Depicts according to the number of errors related to the age groups factor. Age group one from 20 to 25, Zero respondent made Zero error. Two respondents made one error. One respondent made two errors. Zero respondent made three errors and Zero respondent made ten errors. Age group two from 26 to 30 The 3.2 table at the same time depicts that zero respondent made Zero error. One

Table 5 : depicts the time duration of the respondents who took part in this test according to the Ethnicity which was classified to Arabs and Asians: The table shows that one Asian respondent time was 60 seconds, two Asian respondents duration time to this test was 65 seconds. One Asian respondent time duration was 82 seconds. One Asian respondent time duration was 88 seconds. Zero Asian respondent time duration was 97 seconds. One Asian respondent time duration was 114 seconds. Zero respondent time duration was 145 seconds.

Table 4 : Age errors

	errors					Total
	0	1	2	3	10	
age 20-25	0	2	1	0	0	3
26-30	0	1	0	1	0	2
>30	2	1	0	0	1	4
Total	2	4	1	1	1	9

Table 4 : Age errors

		errors					Total
		0	1	2	3	10	
age	20-25	0	2	1	0	0	3
	26-30	0	1	0	1	0	2
	>30	2	1	0	0	1	4
Total		2	4	1	1	1	9

Table 5 : Ethnicity time

		time						Total	
		60	65	82	88	97	114		145
Ethnicity	Asian	1	2	1	1	0	1	0	6
	Arab	0	1	0	0	1	0	1	3
Total		1	3	1	1	1	1	1	9

Table 5 : Ethnicity errors

		errors					Total
		0	1	2	3	10	
Ethnicity	Asian	2	2	1	1	0	6
	Arab	0	2	0	0	1	3
Total		2	4	1	1	1	9

Table 5 : depicts the time duration of the Arab respondents who took part in this test. The table shows that one zero Arab respondent time was 60 seconds, one Arab respondent duration time to this test was 65 seconds. Zero Arab respondent time duration was 82 seconds. Zero Arab respondent time duration was 88 seconds. One Arab respondent time duration was 97 seconds. Zero female respondent time duration was 114 seconds. One respondent time duration was 145 seconds.

Conclusion

Since the purpose is the Stroop Interference Test, is to gauge discerning care and mental flexibility. It's generally referred to as calibrating the particular individual's capability to change cognitive

collection. (Spreeen & Strauss, 1998); it really is thought to provide a way of measuring cognitive inhibition. (Archibald & Kerns, 1999; Boone, Miller, Lesser, Hill, 1990) or the aptitude to prevent an overlearned (i.e., main answer) in favor of an uncommon one (Spreeen & Strauss, 1998).

This study provides us through the reading of its findings some of the similarities and differences between the participants who took part in this study according to their gender, age, and ethnicity. It also sheds the light on the age groups performance when taking Stroop test. These findings picture some of the cognitive interferences when taking this Stroop test how age, gender ethnicity affect the performance, time and number of errors.

References

- Archibald, & Kerns. (1999). Identification and description of new tests of executive functioning in children. *Child Neuropsychology*.
- Berman, M., Jonides, J., & Kaplan, S. (2008). The cognitive benefits of interacting with nature. *Psychological Science*.
- Boone, Miller, Lesser, Hill, & D. (1990). Performance on frontal lobe tests in healthy, older individuals.
- Comalli, Wapner, & Werner. (1962). Interference effects of Stroop color-word test in childhood, adulthood, and aging. *The Journal of Genetic*.
- Corbetta, M., & Shulman, G. (2002). Control of goal-directed and stimulus-driven attention in the brain. *Nature Reviews Neuroscience*.
- Desimone, R., & Duncan, J. (1995). Neural mechanisms of selective visual attention. *Annual Review of Neuroscience*.
- Gazzaley, A., & Nobre, A. (2012). Top-down modulation: bridging selective attention and working memory. *Trends in Cognitive Sciences*.
- Jensen, A. R., & Rohwer, W. D. (1966). The Stroop color-word test: a review. *Acta Psychologica*, 25(1), 36–93.
- Kaplan, S. (1995). The restorative benefits of nature: Toward an integrative framework. *Journal of Environmental Psychology*.
- Kaplan, S. (2001). Meditation, restoration, and the management of mental fatigue. *Environment and Behavior*.
- Kaplan, S., & Berman, M. (2010). Directed attention as a common resource for executive functioning and self-regulation. *Perspectives on Psychological Science*.
- MacLeod, C. M. (1991). Half a century of research on the Stroop effect: an integrative review. *Psychological Bulletin*, 109(2), 163–203. <http://doi.org/Doi 10.1037//0033-2909.109.2.163>
- Posner, M., & Petersen, S. (1989). The attention system of the human brain.
- Stroop. (1935). The basis of Ligon's theory. *The American Journal of Psychology*.

Moustafa Mohammad Shalabi Postgraduate Scholars, Awang Had Salleh Graduate School of Arts and Science, Universiti Utara Malaysia. Mostafa.shalaby1970@gmail.com

Mohamed Aboobucker Mohamed Sameem Lecturer in English, English Language Teaching Unit, Faculty of Arts and Culture, South Eastern University of Sri Lanka, Oluvil, Sri Lanka. risameem@yahoo.com