Psycholinguistics: Studying inflection and word placement with reference to sentence

construction

Prof. Mayurakshi Dev

Sayan Karmakar

Naibedya Mohanty

Sayanta Das

Sreejit Ghosh

Institute of Engineering & Management, Kolkata, India

ABSTRACT

Psycholinguistics is the discipline that investigates and describes the psychological processes which makes it possible for users to master and use a language. In the field of psycholinguistics, psychology and neurobiological factors forms the pillars in order to enable humans to acquire, comprehend and produce language. We have made a short analytical survey on some students aging between 15 to 25 years and supported it with some mathematical calculations regarding the topic. We have made an online form and spread it amongst the students to apply their vocabulary skills and answer the topic using which we will decide the efficiency of a person through their answers. The base parameters on which we have taken the questions are age, first language, medium of education accomplished in 10+2 level in academics. We have used condition probability to draw the conclusion on the survey that we have done to calculate and designed a pie chart on the basis of the resulting data. We want to showcase that what are the smallest of smallest factors which are responsible for misconducting or misinterpreting a sentence during any reading.

AKNOWLEDGEMENTS

Psycholinguistics: Studying inflection and word placement with reference to sentence

INRODUCTION

Psycholinguistics is the study of related to phonetics, Morphology, Syntax, Semantics, Pragmatics. Chomsky[1] stated that humans possess a special innate ability for language and those complex syntactical features which are hard wired in the brain. The ability of language that humans use is absolutely different from that of any animals in the planet[2].

One question in the realm of language comprehension is how people understand and get to the meaning of a sentence which in scientific definition we term as sentence processing. If one needs to read the sentence and get to the meaning of it, then starting from the very first word to the last word one has to concentrate on each and every word that is normally missed out. This lands us to a great trouble of again re-reading the sentence thus losing energy, time, effort and efficiency.

Structuralism rose to prominence in France through the application by the French anthropologist, Claude Lévi-Strauss, of Saussure[3] structural linguistics to the study of such phenomena as myths, rituals, kinship relations, eating conventions. These were understood as signifying systems and were therefore open to a linguistic type of analysis in which attention was focused not on empirical or functional matters but on myth or ritual as a set of relations in which meaning was created by differences between signifying elements. This use of language as a model for understanding aspects of reality that are predominantly nonlinguistic in character established structuralism, particularly in the 1960s, as a powerful alternative to positivistic or empiricist methods of analysis.

If we take the words of THOMAS BEVER[4] in his Garden Path theory, it says that a grammatically correct sentence starts in such a way that a reader's most likely interpretation will be incorrect.

When reading a sentence readers analyze the words and phrases they see and try to make out interference about the grammatical structure and meaning of a sentence in a process called parsing. Through serial and parallel parsing readers will go on with their interpretations and work them out to get to the meaning of the sentence.

Ambiguities and disambiguates will be there in a sentence which is where readers get stuck and cannot cope up with the meaning of the sentence. In order to see the meaning of the sentence the reader first breaks the sentence into many time quanta and get to the end of the sentence with the full meaning. Now when it faces some ambiguous phrases from the very beginning of the sentence it carries on the ambiguity and reaches the end of the sentence with an ambiguous meaning. If the reader faces no ambiguity in the sentence, then it goes on with the perfect meaning and ends up fetching the correct meaning of the sentence.

We are kind of using a lexical experiment through our survey on the students. LDT[5] (Lexical decision task) is a procedure used in many psychology and psycholinguistics experiments. The basic procedure involves measuring how quickly people classify stimuli to words or non-words.

Eye movements is a very important aspect to study language processing. A high spontaneity and eye speed co-ordination while reading will help out a reader to understand a word very quickly and ultimately increasing the speed of reading the whole sentence.

Brain supports with the ultimate function in reading and understanding the sentence effectively and quickly. It's the brain which helps in co-ordination of the brain impulses and then through the central nervous system to the brain the processing of the data takes place, where the decision making processes takes place and the it is transferred to the organs again through the central nervous system. The hippo campus is essential to the consolidation of the information from short term to long term memory although it does not seem to store information itself. Though according to new researches, long term memory storage in humans may be maintained by DNA methylation and prion gene. We are literally concerned with long term memory storage because when we research for any sentence reading we take the long term memory storage of the brain, as most of the words are stored in the brain as a long term memory. When we start reading, the long term memory of the brain starts functioning.

METHODS

Now as experimentation, we performed a survey on a group of people within the age of 15-25 which we took as a parameter for the experimentation. Then, we took the primary education of any student that is the schooling is in which medium, in English or Bengali or Hindi or any other. Again we took the first language of the curriculum that is either Bengali or English or Hindi or any other as the first subject. Now we devised whether Bengali or Hindi or English is the medium or the main language that the individual is stressing upon. Depending upon which we can decide whether the person is well versed in Bengali or English or Hindi and how are they

PSYCHOLINGUISTICS   6

reacting upon seeing an English comprehension and answering the questions in given interval of time.

We have prepared a comprehension and we have prepared questions accordingly. Now we want to observe what conclusion can be drawn from the experiment. The test tests the vision, memory, time management and vocabulary of an individual. We want to check how people react to the situation and the quality of English reading comprehension perfectly on the basis of vision, memory and time.

We have also induced spelling check, repetitive words and vocabulary in order to check the language efficiency of the students among the age group of 15 to 25, English/Hindi/Bengali medium versed and the first language subject as Hindi/English/Bengali.

We want to check that people while reading the passage with how much concentration they are reading the words so that whatever questions are being asked within stipulated time they can answer.

We have designed questions to check the vocabulary ability of the student

- Number of repetitive words in the passage

- Number of misspelled words in the passage

- Approximate number of words in the passage

- Number of misspelled words in their first attempt of reading.

On the basis of these questions we have analyzed and used mathematical calculations to understand the factor depending on an individual to misunderstand any passage with a single go.

RESULTS

Number of students for the test: 8

Medium of students in 10+2: English – 87.5%

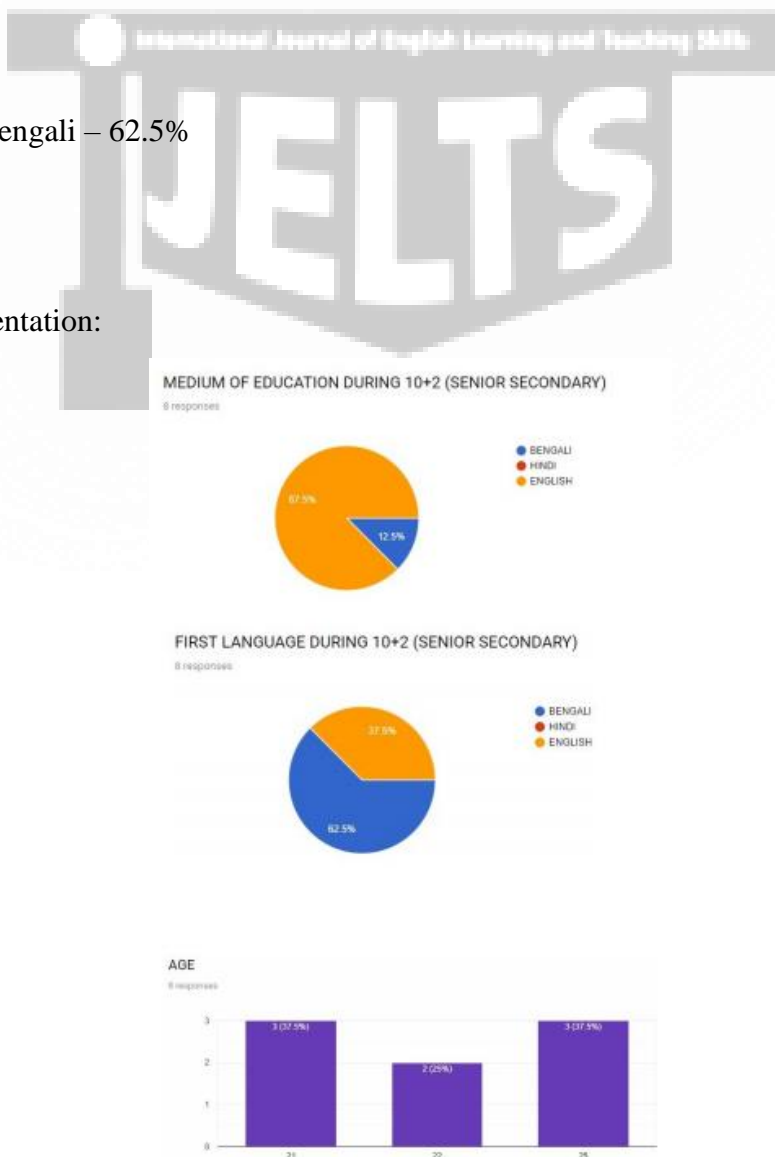Bengali – 12.5%

Age of students: 21 years: 3

22years – 2

25years – 3

First language: Bengali – 62.5%
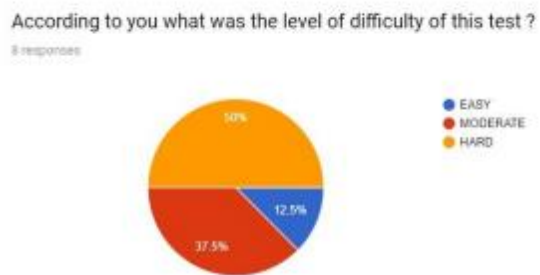
English–37.5%

Graphical representation:

MEDIUM OF EDUCATION DURING 10+2 (SENIOR SECONDARY)

8 responses

- BENGALI
- HINDI
- ENGLISH

FIRST LANGUAGE DURING 10+2 (SENIOR SECONDARY)

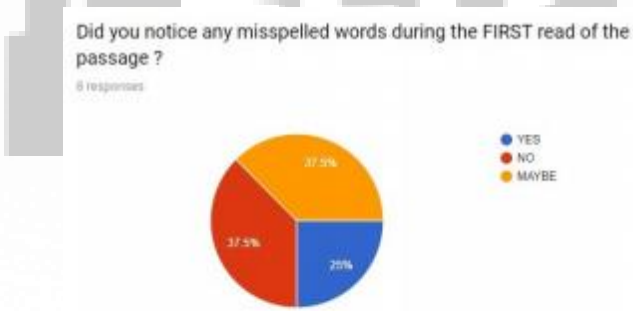8 responses

- BENGALI
- HINDI
- ENGLISH

AGE

8 responses

PSYCHOLINGUISTICS 8

Number of times the word "elephant" actually occurred: 9

Number of persons wrong:8

Number of persons correct: 0

How many times does the word 'elephant' occur in the passage ?
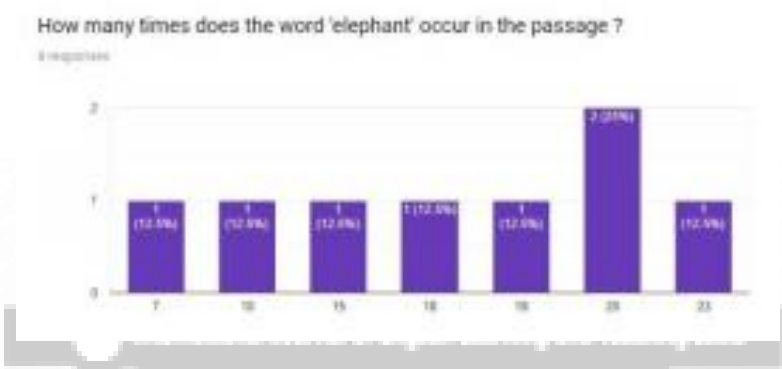
This is a subjective answer so we do not judge on the basis of subjective answers. We are only

dealing with numerical values

Did you notice any misspelled words during the FIRST read of the passage ?

According to you what was the level of difficulty of this test ?
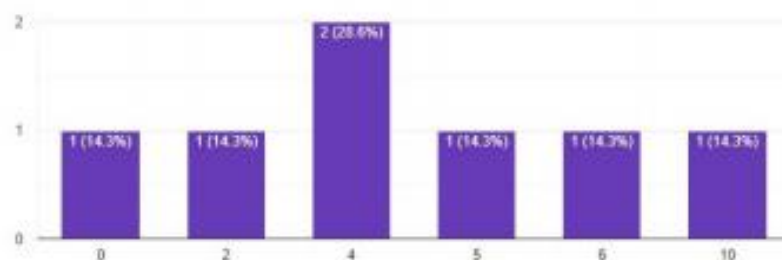
PSYCHOLINGUISTICS 9

Number of times the misspelled words actually occurred: 4

Number of persons wrong: 6

Number of persons correct: 2

How many misspelled words are there in the passage ?
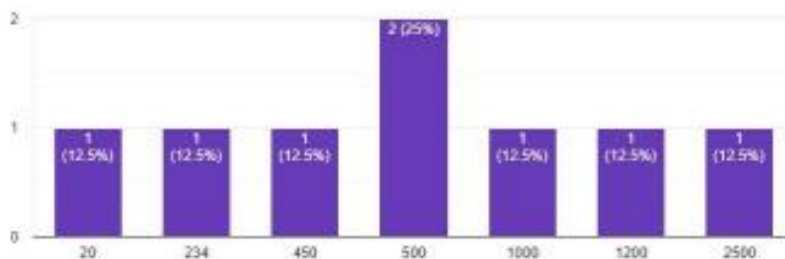
7 responses

Approximate number of words in the passage: 420

Number of persons wrong: 1

Number of persons correct: 7

Approximate number of words in the passage is ?

8 responses

DISCUSSION

From the above illustrations we can conclude that when we have applied these parameters on an individual basis and we got the graphs of the efficiency of them in the field of language and the deformities in the psycholinguistic study in people aging between 15 to 25.

We found the test set in the language test we have taken the efficiency of the persons are as below as 20% based on the applied parameters.