

NON-VERBAL COMMUNICATION – A STUDY ON ENGINEERING STUDENTS

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Abstract: Reading or interpreting non-verbal language is a learning skill that requires continuous practice. The present study is conducted on a sample of 100 engineering students and identifies a set of theoretical rules specific to this type of language. Observations have been analysed in interactions with them in different situations, without knowing that they were being evaluated. Thus, the results of the study highlight elements related to how they are attentive to the surrounding environment, whether they are active observers or not, whether they can recognize and decode universal and private nonverbal behaviours. We have also analysed clustered or successive types of behaviours, reasons of behavioural changes that can signal changes in thoughts, emotions, interests or intentions, and their way of identifying by nonverbal communication, detecting untrue or false nonverbal signals.

Keywords: Non-verbal language, nonverbal behaviours, interpreting non-verbal language, study, universal non-verbal behaviours, private non-verbal behaviour

1. The context of the research

The non-verbal language refers to “the voluntary or involuntary transmission of information and the application of influence through the behavioural elements and physical presence of the individual or other social units (groups or human units), as well as the perception and use of space and time along with the artefacts.” () We consider that not using the words actually denotes non-verbal communication, whether we refer to body language or paraverbal communication.

Although the first studies on non-verbal communication first appeared in 1967, carried out by Mehrabian and Ferris, we believe that the nonverbal language has not been studied enough and it is also not sufficiently observed in everyday life. Besides knowing that reading a non-verbal language can help us identify false people or certain types of manipulation, it can teach us to better understand ourselves or the people we communicate with. Involuntarily, everyone uses non-verbal language, but too few understand its real power. In this paper, we want to analyse and prove the importance of the understanding and the involvement of the non-verbal language among young people. According to Anes’ research in 1980, the non-verbal behaviour has a communicative value, sometimes it is very ambiguous, but it expresses our most sincere attitudes towards an external stimulus, as well as the feelings we have in a particular moment. Interestingly, the significance of the non-verbal language is the same throughout the world, but with a certain cultural and social background.

Mehrabain brings arguments to the importance of the non-verbal language, concluding in his research that in a discussion an interlocutor is only 8% impressed by the words we use, 23% by our intonation and 69% of our body language. Also,

interpersonal communication assigns 35% to the verbal communication and 65% to the nonverbal communication. Paul Ekman believes that facial expressions communicate information, but they are not always intended. While people make facial movements to convey a message, the facial expressions of emotions are unintended. Paul Ekman and Wallace F. Friesen suggest in their research a system related to different categories in order to classify the nonverbal behaviour based on their origins, functions and coordination. These include facial expressions (affect displays), intentional or unintentional.

Reading or interpreting non-verbal language is a learning skill that requires continuous practice, as Navarro says in his work *What Every Body Is Saying: An Ex-FBI Agent's Guide to Speed-Reading People*. His recommendations are especially related to attention. However, just as careful listening is essential to understanding verbal communication, careful observation is also crucial to understanding body language. Unfortunately, most people look around with a minimal effort to observe without realizing the changes that take place around them, without distinguishing the details surrounding them, such as a small movement of the hand or of the foot of the person in front of them, gestures that could betray his/her thoughts and intentions. People with a low ability of observation lack what pilots call situational knowledge, meaning they do not have a clear mental representation of what is happening around them or even in front of their eyes. Being aware of what is happening around is a deliberate, conscious behaviour, for which effort, energy and concentration are needed, just as permanent practice is required for the preservation of abilities.

Regarding the key to understanding nonverbal behaviour, everything can be reduced to context observation. Joe Navarro exemplifies this by comparing the situation after a car crash, when people are in shock and walk around with the feeling of being lost. Their hands tremble and they make inappropriate decisions, such as walking towards the cars on the roadway. (For this reason traffic agents sometimes ask us to stay in the car.) Why does it happen this way? After an accident, people suffer from the effects of blocking the rational part of the brain by the region called the limbic system, which causes behaviours such as tremors, disorientation, nervousness, discomfort, and in this context such actions are expected to confirm the stress caused by the accident.

An important element in non-verbal communication is related to the recognition and decoding of universal or private nonverbal behaviours. Certain nonverbal behaviours are considered universal because they are similarly done by most people. Universal nonverbal elements constitute a group of signals – the same for everyone. There are other types of body signs called private non-verbal elements, which may be unique signs, specific to a particular person.

The recommendation of those who learn the secrets of the non-verbal behaviour is the attempt to establish the non-verbal basic elements of the interlocutors. In order to determine what the basic non-verbal elements of the people are, attention must be directed to the way they usually look and stand, how they hold their hands, what the usual position of their feet is, the body posture and the facial expressions, the way they tilt their head and even the places where they put their things, or the way they keep them, such as in a bag for example. Then the exercises would be to identify the differences between their normal mood and their stressed mood. Knowing what is normal, we can recognize and identify what is abnormal.

Accuracy in reading nonverbal language can be enhanced by multiple indexes or groups of signs. These signals work together like the parts of a puzzle. The more pieces

in the puzzle, the greater the chances of putting them together and discovering the whole picture.

In non-verbal communication, it is recommended to identify the changes in a person's behaviour, changes that may indicate modifications in thoughts, emotions, interests or intentions. Sudden changes in someone's behaviour can help us understand how this person understands the information or how he/she adapts to emotional events. Changes in people's behaviour may reveal their interest or intentions under certain circumstances.

2. Choosing the suitable method for the research

The central topic of this article is the non-verbal communication and the identification of basic elements in decoding the non-verbal language. This research is part of a more complex study of the authors, and the first part was published in 2019, "The importance of the concept of communication among future engineers - a pre-test for a European study." Thus, we have tried to identify whether this language can be learned instinctively, or we need a prior study in order to know our interlocutors based on the body language or facial mimics. In this research project we have chosen the experiment as a tool. Ernest Greenwood says: "An experiment is testing a hypothesis by trying to put two factors into causal relationship by examining the contrasting situations in which all the factors are controlled except for the one under investigation, the latter being the hypothetical cause or the hypothetical effect."

The experiments for this paper are made on a sample of 100 engineering students and identify a number of theoretical rules specific to this type of language. The observations have been analysed in a series of experiments with them in different situations, without them knowing that they were evaluated.

The present research was inspired by Helweg-Larsen, Cunningham, Carrico and Pergram (2004), who also conducted a study on Nonverbal Communication and the Status in Female and Male College Students.

Accordingly, the results of the study reveal elements related to how they are attentive to the surrounding environment, whether they are active observers or not, whether they can recognize and decode universal and private nonverbal behaviours.

Thus, we identified 4 study hypotheses, illustrated below:

- Hypothesis 1. Careful observation is an element which is mastered by young students.
- Hypothesis 2. A sample of students who studied in a new seminar room with colleagues from other specializations. Over 50% will remember obvious characteristics.
- Hypothesis 3. Universal non-verbal behaviours are easily recognized.
- Hypothesis 4. Private non-verbal behaviour is based on past behaviour and can be easily recognized.
- Hypothesis 5. Recognition of non-verbal language is not innate.

The interpretation of nonverbal behaviour was relatively demanding because we observed the students in the target sample carefully, decoding the messages correctly and counting the results without them knowing it. In our attempt to detect non-verbal

signs, we can observe exaggeratedly, staring at the interlocutors. However, this behaviour has been avoided, and observation was not so clearly realized.

3. The results of the research

The exercise by which the students were assessed if they could be competent observers of the surrounding environment was made during tutorial classes, on students in the first year of the University of Medicine, Pharmacy, Science and Technology of Tîrgu Mureş, Faculty of Engineering. Students were asked to listen to a lecture wearing headphones while listening to their favourite music. The conclusion was clear: They could hardly hear anything and the message was lost.

However, just as careful listening is essential to understanding verbal communication, careful observation is also crucial to understanding body language. Unfortunately, most students looked around with a minimal effort to perceive anything and without noticing the changes that were taking place around them, without distinguishing the details surrounding them, for example what their colleagues were doing during the lecture, gestures that could betray their thoughts and intentions.

Another non-verbal language assessment exercise was conducted on a sample of students who were put in a new seminar room full of colleagues from other specializations. Then they had to say what they had seen. We were surprised to find a percentage of over 80% of those who were unable to recall even the most obvious features of the hall, such as the number of windows, the colour of the furniture, what was written on the board, whether they could notice any panelling or not.

Fortunately, observation is a skill that can be learned. Conscious observation must become a way of life. Being aware of what is happening around is not a passive action. It is conscious, deliberate behaviour that requires effort, energy and concentration, just as a permanent practice is required in order to keep these abilities. Focused observation refers to the use of all senses and not just the sight.

Certain nonverbal behaviours are considered universal because they are similarly illustrated by most people. For example, when someone gathers their lips in such a way that they are hardly visible, it is a clear sign that they are troubled and that something is wrong. 93% of the students managed to identify this aspect, receiving pictures of the same person, but with a different mimic of the face.

If universal non-verbal elements constitute a set of indicators - the same for everyone, and the results were good, there are other types of body indicators called particular non-verbal elements, which may be unique signs specific to a particular person. In trying to identify particular non-verbal signs, the students had to look for patterns (behavioural patterns) that were obvious in people they regularly communicated with (friends, family, colleagues, teachers).

Thus, the case of a colleague they knew was presented, a colleague that kept scratching his head and biting his lips when he was talking about a test. The results of the exercise were: 62% said that nonverbal language reveals emotion, 14% - lack of training, and 25% - the fact that he was stressed. The student is one of the most hard-working students and the colleagues who knew him recognized this behaviour as being repetitive, and he repeated this behaviour not just before tests, and thus we can say that his emotion was expressed in this way, and not the lack of training or the stress.

Therefore, the best way to anticipate future behaviour is noticing the behaviour in the past, especially in the case of particular nonverbal behaviours.

In order to determine what the non-verbal basic elements of people you meet on a regular basis are, students were told to notice what some people usually look like, how they stand, how they hold their hands, what the usual position of their feet is, the body posture and the facial expressions, the way they tilt their head and even the places where they put their things, or the way they keep them, such as in their schoolbags for example.

Then these people have been subjected to sudden changes in behaviour: hearing the possibility of entering a fun park, finding out that the place is closed, receiving bad news on the phone, or being informed about a good grade. The observers did not know the reason for the change in behaviour. They had to identify the difference between the normal mood and the stressed mood of the ones being investigated. Even after a single encounter with someone, they should notice the starting position of the first moments. Determining the basic behaviour of a person is essential because it allows the determination of possible deviations that are extremely important and can provide a lot of information. Students were asked to look for changes in behaviour, to understand these changes and to identify the person's actual condition and its cause.

Unfortunately, in this exercise, the results were unrealistic, with only 45% of students identifying the correct states, demonstrating that non-verbal language recognition is not innate, but it is a process which can be learned. An interesting conclusion was related to the gender of the observers, of which 50% are girls, and 45% of the most vigilant observers are mostly formed by them. In other words, women were more alert in observing changes in non-verbal behaviours and better in identifying the moods of the ones under investigation.

4. Conclusion

Even though students are accustomed to the distributive attention, being aware of several types of communication at the same time, communicating in real-time on different devices with more interlocutors at the same time, most of them regard with minimal effort the changes that take place around them, and do not distinguish the details surrounding them (a change in behaviour, or just in the attitude of their colleagues, something worth noticing). Thus, hypothesis 1 *Careful observation is an element which is mastered by young students* is denied.

The experiment with the sample of students who studied in a new seminar room together with colleagues from other specializations concluded that the students were unable to remember important aspects of the room. Without deliberate effort, more than 80% of the students did not manage to notice the essential elements such as the number of the windows, the colour of the furniture, what was written on the blackboard, whether there were wall panels or not. Thus, hypothesis 2, *Over 50% of the students will remember obvious characteristics* is denied.

Hypothesis 3, *Universal non-verbal behaviours are easily recognized* is confirmed by our study, which demonstrates that certain nonverbal behaviours are similarly performed by most people.

If universal non-verbal elements constitute a set of indicators – the same for everyone, and the results of the study have been confirmed, in terms of private non-

verbal body signs, our test was also decisive. In an attempt to identify private nonverbal signs, we chose a familiar behavioural pattern of a hard-working colleague, a colleague that kept scratching his head and biting his lips when he was talking about a test. The results of the test confirmed hypothesis 4, *Private non-verbal behaviour is based on past behaviour and can be easily recognized* because 62% of the colleagues said that nonverbal language reveals an emotional response and only 14% – his lack of training. So, the best way to anticipate future behaviour is the evaluation of the behaviour in the past.

Hypothesis 5, *Recognition of non-verbal language is not innate*, is confirmed after the experiments with our students in tutorial classes. They could not identify and understand the changes in behaviour and could hardly identify the person's mood and its cause. Only 45% of the students have been able to identify the correct moods, which demonstrates that the recognition of non-verbal behaviour is not innate, but it is a process that can be learned.

All human behaviours, conscious or unconscious, are controlled by the brain. This premise therefore lies at the foundation of understanding nonverbal communication. Except for some involuntary muscular reflexes, all aspects of nonverbal communication are controlled by the brain. Following this logic, we can use these behaviours to interpret what our brain chooses to communicate externally. Researchers have identified the limbic system as the responsible one because it is that part of the brain that reacts to what happens around us spontaneously and reflexively, in real time and without thinking.

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