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World Safety Organization

Purpose: . . . to internationalize all safety fields including occupational and environmental safety & health, accident prevention movement, etc.; and to disseminate throughout the world the practices, skills, arts and technologies of safety and accident prevention.

Objective: . . . to protect people, property, resources and the environment

Membership: . . . open to all individuals and entities involved in the safety and accident prevention field, regardless of race, color, creed, ideology, religion, social status, sex or political beliefs.

NGO Status: . . . has a Consultative Status Category II (Non-Governmental Organization - NGO) to Economic and Social Council of the United Nations.

The World Safety Organization is a not-for-profit corporation, non-sectarian, non-religious and non-political movement to "Make Safety a Way of Life".

Amy ate two peanuts.

It is clear that phonological structure has to be supplemented with another layer or category such that we can understand past the patterns of speech sounds, a layer in which the basic units of analysis are parts of speech. Just as the auditory signal is factored into voice recognition, affect recognition, and speech perception, the speech analysis is factored into phonological structure and a further analysis which is known as syntactic structure.

In order to determine the part of speech of a word, the word first has to be identified. What word is being spoken obviously does not depend on who is saying it or their tone of voice; this is filtered out by phonological structure. In other words, identifying the word depends not on its auditory characteristics but rather on its phonological characteristics. Therefore, auditory patterns are formed into phonological structure, then into syntactical structure, where it then flows out of these two structures through vocal tract instructions.

In short, syntactical structure concerns itself with the parts of speech and patterns that form the basis of the sentence structure.

The variety of expressions, found in language, is framed by what we have been calling in this section "mental grammar". It has been argued that mental grammar consists of two separate but integrally related structures: phonological and syntactical structures. The process and production of language from this point of view stems from a complex neuro-linguistic operation that begins with the production of a thought, continues through the basic structures of language production, and results in a motor activity that we call speech; on the other side of the coin, the hearer initiates and meets this speech event through auditory patterns that are sent to the brain, where the sounds are decoded by means of being sent to the two structures of "mental grammar", and hence language is turned into thought whereby meaning is derived from the transmission. It is the postulate of this Fundamental Argument that language ability is "natural" in the sense that all human beings with proper neuro-motor functions are able to pick up on this process and communicate in no matter what language or culture one is steeped in. The neuro-linguistic argument is thus fundamental because it is prior to the psychological or social milieu within which an individual matures, develops, and learns a language.

Fundamental Argument Two: Learning and Innate Knowledge

To say that Fundamental Argument One - the notion, that all "normal" human beings are equipped with a type of mental grammar - which consists of phonological and syntactical structures - is prior to or more fundamental than the psycho-social factors which affect an individual, is not to give an undue importance to the former or meant to shrink the significance of the latter. We are saying that the two arguments in the end are "fundamentally" different because they address different aspects of human existence. This difference has been pointed out earlier as a difference between what can be called "nature" on the one hand and "nurture" on the other. Perhaps an analogy will help to explicate this difference as we explain the argument from learning and innate knowledge.

It will be useful to think of the human body or a building that is under construction. The human body is made of flesh and bones, the building of wood, bricks, concrete. In both instances, there is a structure that gives the body and building a form: for the body, the skeleton of each individual is where form is found just as the internal wood and metal of the building gives it its form. Yet, the human body then has flesh around these skeletal bones; furthermore, the human being has thoughts and desires and personalities which add to the skeletal form. In the case of a building, windows, external design, the specific companies which are housed there all give "flesh" to the structure of the building. In short, they constitute the building just as much as the form does, just as an individual's personality constitutes that individual just as much as his/her skeletal structure. This is what we might call the content of the person or the building as opposed to the structure or the form of the building or person.

In our analogy, it is entirely possible that the form in fact conditions the content: an individual may think certain thoughts due to his/her physical stature (think of the psychological implications of being excessively tall or short); the structure of a building may condition what is housed there (think of a federal agency building like the CIA, which is forbidden and fortress-like so that individuals will not feel comfortable near it). We are arguing that the relationship between the structures of mental grammar and learning and innate knowledge is precisely the same. One gives form to the ideas of thought, language, meaning and speech, while the other gives content to them. Further, the content is affected by the external surroundings, while the form is an innate structure not affected by surroundings.

All normal human children end up learning to be able to speak wherever they grow up and whatever language is spoken in that community. The language they speak has nothing to do with where their parents came from: a child of American parents growing up in Israel or Japan will learn to speak Hebrew or Japanese simply because he or she is steeped in that community.

This is not to say that it is impossible for the adult to do the same thing. The point is that it is in fact possible yet much more difficult for adults to learn a language spoken in another "community" other than the one they were brought up in. This point will become extremely important as we assess the implementation and development of a quality risk program: if it were impossible for an adult to learn a "new language" or the meanings of words which in the beginning were unfamiliar, then any type of change or adaptation would become impossible.

However, it is my contention that the learning of a new language is very similar to the "learning" of the mental structures of grammar on the one hand and the "learning" of a socio-cultural setting on the other: they more or less all happen "unconsciously". Think of the awareness of what is being learned, the child manages to acquire a command of the grammatical patterns of the language - that is, manages to construct a mental grammar. The child learns by speaking and being spoken to. The formal arrangement of language - what we have called here mental grammar - is almost invisible because these structures are put in place unconsciously "behind the back" of the child.

It is here that the question of "nature vs. nurture" becomes pointed because, while parents or a community do not necessarily teach the young person how to form sentence patterns, it is usually the case that this is where the child learns what exactly to say; in other words, the child's social context is ultimately determined by the way other people behave. (7) The way other people behave is conditioned by their having assimilated their culture. So it might be useful to reflect on this phenomenon in this section by positioning two questions to be answered:

1. What is the organization in people's heads that enables them to behave socially and to understand other's behavior as part of a social context? How is this knowledge passed on?
2. How is this organization acquired so that we can speak of a "capacity for culture"? Cultural knowledge is constructed from environmental input. (8)

Just as the child obviously starts life unable to speak and ends up speaking a language, the child starts life with little or no social or cultural capability, and ends up being socialized. On the other hand, just as individuals raised in different linguistic environments end up speaking different languages, children raised in different cultural environments end up with different cultural behavior.

In the case the language, however, this "learning", as it turns out and as argued by Jackendoff, (9) is based on a very rich innate ability which reaches fruition by virtue of exposure to a linguistic environment. Jackendoff argues that it is precisely this innate capacity that enables the individual to make sense of the linguistic environment; children can learn different languages in the environment because they have a menu of possibilities already instilled at the outset. But the question which persists is whether the socialization of an individual is predicated on an innate ability or capacity for a certain type of acculturation.

one another through language without a problem. We might borrow the properties of mental grammar we saw in neuro-linguistics and apply them to safety in the workplace.

Thoughts (as we have seen) are run through both phonological and syntactical structures before they are turned into the motor activity of speaking to another. However, what about thoughts that do not make their way into the world, but remain inside of one's mind. Do these get run through the mental grammatical structures as well?

The answer is what they do if we force them to. In neuro-linguistic theory, thoughts only have meaning if they are run through the entire process. This means that word sounds and word patterns have meaning only when they are formed into sentences. Sentences which are spoken to oneself have more meaning than if they were not placed into the proper mental grammatical phonology and syntax.

Hence, workplace safety can be enhanced if employees are encouraged to speak to themselves because the meaning of what is said has more emphasis when it is "spoken" in mental grammatical form. This is not to say that the unconscious element of neuro-linguistics rises to the surface; rather what occurs when workers talk to themselves when doing a job is a strengthening of meaning through the neuro-motor learning patterns because the safety message is run through our neuro-linguistic model twice: once as the worker plays the role of hearer, once as speaker. Meaning is folded onto itself. The worker, quite literally, has conversation with him/herself.

Engaging in conversation with oneself has another important effect which is extremely useful in changing the "fundamental cause of accidents - the error-making human being" as Petersen puts it. Talking with oneself can enhance a person's sensitivity to - or consciousness of psychophysiological processes ordinarily too subtle to sensed: this in turn allows voluntary control over these processes. This is known as "Biofeedback Training": with the aid of biofeedback training, consciousness and control can be extended over normally unconscious and involuntary body processes. Hence, biofeedback presents itself as a tool for learning psychosomatic self-regulation. (14)

Biofeedback is a way that neuro-linguistic mental grammatical patterns in turn affect the psychosomatic and psychophysiological processes in the body. It is, in short, a way that the mind-body dualism can be overcome. In studies conducted in biofeedback training, persons were taught to visualize and feel desired changes that influenced temperature meters attached to blood vessels; (15) the result was that individuals were able to either lower or raise their blood temperature through connecting motor-neurological commands (through the mind and language) with psychosomatic movements (in the body).

Biofeedback training can be taught as an integral part of a safety risk management program in the work place. Human error in the workplace can be due to many factors: I would argue that many of these will be eliminated when the worker is taught that a conversation with oneself while working leads to a more complete construction of meaning. Neuro-linguistics teaches that mental grammar is complete only when thoughts pass through the phonological and syntactical structures; furthermore, biofeedback training teaches that the individual can get in touch with his/her psychophysiological self only through the mental capacities provided for in language. Neuro-linguistics thus combined with biofeedback training, I would argue, will significantly reduce the risk of accidents in the workplace.

Psycho-Social Factors Applied to the Workplace

While biofeedback training, which draws upon the essential properties of neuro-linguistic, is an important part of the development and implementation of a risk management program, it is vital that we take into account the "nurturing" side of the equation and look at the psycho-social factors as well. Earlier we mentioned three social concepts that I argued formed the backdrop of the socialization process. The workplace and a risk management strategy must draw upon these "prejudices" and incorporate parts of their message into its strategy.

KINSHIP - Kinship is perhaps the strongest social bond that any individual will ever have. A sense of family stands at the top of the socially cohesive forces, even in a society as individualistic as the United

States. In today's climate, "family values" is a term that politicians use for cheap gain, but the fact is that kinship should be reinforced and not undermined by public policy.

Neither should it be undermined in risk management. It was mentioned earlier that the worker spends more time at home and in the community than any other place; kinship perhaps takes up most of the worker's leisure time. A safety management program has to draw upon the lessons of kinship by doing the following:

1. Apply the lessons of protection one feels for his/her family members to co-workers and fellow employees;
2. Apply safety rules one uses at home to workplace;
3. Draw upon importance for self-safety not only for the workplace setting, but also the importance of doing it for the loved ones one has;
4. Turn the perception of kinship at work into a conception of kinship at work - fellow workers are like family and their safety should be treated as such.

It must be noted, however, that the ties of kinship are a two-edged sword. Maintaining the language of the workplace at home, as it relates to safety, will reinforce the neuro-linguistic patterns that enhance safety performance. However, those same patterns will be dismantled if the home, or community, prevents conflicting language about safety or lack of safety. A solid risk management program, which will be cognizant of the power of neuro-linguistic, must involve the home and the community in the overall patterning program that will strengthen the neurological learning block in the worker's brain.

Of course, this cannot and should not be approached through some sort of dictatorial model of behavior modification. Rather, the emphasis should be on the responsibility we all have to give a better life to those around us.

Since the majority of worker's time is spent in his/her family and community, an effective risk management program must involve families and communities so that behavior and language used on the job can be reinforced and communicated at all times. The neuro-linguistic patterning of the workplace must become the language of everyday life.

GROUP MEMBERSHIP - Belonging to one's perceived and conceived group is perhaps the next strongest social bond. One's psychological peace of mind depends upon this bond as much as it depends upon kinship. Thus, a risk management program must do two things at once here: it must reinforce the idea of group membership while transcending it as well. In other words, workers are all the same because they all work for the same company, but they are all the same because they are all different. Ethnicity, race, gender, etc., should not be a factor in how safety standards are approached with regard to subordinates and fellow workers.

It was mentioned that those who are perceived as being "out of the group" are treated differently from those who are perceived as "in the group". This is a natural occurrence of the psycho-social milieu. A risk management program has to understand that these are "prejudices" a worker brings into the workplace. But they have to be dealt with the same way they are dealt with in the worker's community. It must be perceived, in other words, that safety is something each worker is entitled to and no one group gets privilege over the other. The only way to overcome group exclusion in safety management in the workplace is perhaps to employ a religious rule that has worked in the real social setting. We all know the Golden Rule: "Do unto others as you would have them do unto you." Group membership can enhance safety if this value is emphasized over and over again.

The building of a sense of trust between members of a working group is therefore central to a risk management program.

(It should be emphasized once again, that the group must be encouraged to constantly reinforce the neuro-linguistic safety lessons that

are part of the risk management program. The group is as capable of sending competing and conflicting messages to workers, which dismantle neural memories, as the family is.)

DOMINANCE - Dominance is perhaps the most difficult psycho-social factor to deal with in a risk management program. The "natural" notions of dominance as it pertains to the workplace, of course, are employer-employee. However, many times others show up which might run along the lines of group membership. Dominance in terms of a risk management situation has to be closely linked to authority. Authority has to be obeyed in the workplace, but authority also has to be earned. In this sense, those employees who are given the position of being dominant over others have to be perceived as earning their dominant position; they, in short, must have won the respect of subordinates and superior alike.

Safety management must thus instill the sense that all employees are treated with equal respect, but those who are in a position of authority and decision making have gotten to where they are quite simply because they deserved it. Safety might be risked if perceptions of unfairness with respect to dominant positions are allowed to fester.

It should be clear that the three major social concepts, which we find in any community, must be taken into consideration when safety management training is developed. These three factors move beyond the behavioral approach because they draw upon the social formations found in the community as a whole: while drawing upon the strengths of these social formations, they simultaneously seek to overcome the weaknesses - here we may return to our analogy of the computer software: some of the psycho-social "software" should remain, while some of it be reprogrammed.

The brain, as a neuro-logical machine, is a product of learned experiences. To create a learning curve that will insure for predictable responses and enhance safety, a risk management program must see to it that language imprints on the neurological machine specific, significant patterns are at least not eroded, and preferably reinforced by experience which competes with the workplace for workers' attention. These patterns should be imprinted by messages communicated in context where the interrelationships of workers and of workers with supervisors create a milieu that strengthens the memory process.

In the end, this acknowledgment and use of the brain's own processes to reinforce memory, and therefore better control the neuro motor link, and encouragement of social behaviors that raise the quality of workplace decisions, will reduce accidents and improve the quality of worker output.

FOOTNOTES:

1. Noam Chomsky, Syntactic Structures (The Hague: Mouton Press, 1957).
2. Noam Chomsky, Language and Mind (New York, Harcourt, Brace and World, 1968), p. 154.
3. Freud stressed the sexual underpinnings of those motives, which led to his theory of civilization as essentially consisting of repression of the individual, while the individual sexually represses him/herself. See, for instance, Freud's Civilization and its Discontents, translated by James Strachey (New York: W.W. Norton and Company, 1961). Modern psychodynamic theory recognizes many other themes as well.
4. Ray Jackendoff, Languages of the Mind (Cambridge, MA: MIT Press, 1992), Chapter 1.
5. Ibid.
6. The neurologist believes that phonological structure and syntactic structure occur in two different areas of the brain, the former in what is known as Broca's area, the latter in Wernicke's area. In the cases of language aphasia, neurological activity which combines these two vital steps in the process of language production becomes malfunctioning. See for instance Edgar Zurif and David Swinney, "The Neuropsychology of Language," in M.A. Gernsbacher, ed. Handbook of Psycholinguistics (New York: Academic Press, 1993).

7. Lesley Milroy, Language and Social Networks (Baltimore, MD: University Press, 1980), p. 79.
8. J.A. Fisherman, "The Sociology of Language", in Language and Social Context, ed. by Pier Paolo Giglioli (New York: Penguin Books, 1972), p. 52.
9. Ray Jackendoff, Languages of the Mind, op. cit., p. 121.
10. B. Bernstein, "Social Class, Language and Socialization", in Language and Social Context op. cit., p. 159.
11. A.L. Thyngerson, Essentials of Safety, Third Edition (Englewood Cliffs, NJ: Prentice Hall, 1986), p. 71.
12. Ibid., p. 73.
13. Dan Petersen, Safety Management (Goshen, New York: Aloray Press, 1988), p. vii.
14. Elmer and Alyce Green, Beyond Biofeedback (New York: Delacorte Press, 1977), p. 42.
15. Ibid., p. 48.

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