Lecture 1

Our **objective** today is to find answers to these questions:

1. What is the relationship between Language and Thought? How do we learn how to think?
2. What is thinking? What is intelligence? How do we think?
3. What is the Scientific Method?
4. What is critical thinking?
5. How do our senses and past experiences influence our thinking?

This course looks at the relationship between Language, Power, and Development. Both power and development are the products of good thinking, whether we talk about an individual or a society.

Knowledge Is Power: If you are sick, and you know what medicine to take, you will get better. If you want to build a house, and know how to do it, then your structure will stand; if you don't, it will collapse. If you know how to get the cooperation of others, then you will gain their power. Look at Barack Obama, a virtual unknown until recently – how did he manage to persuade and mobilize millions of supporters whose combined strength has lifted him up and is about to make him the next President of the United States, often referred to as the 'most powerful man on Earth'!

Knowledge is also *Freedom*: Imagine being locked in a dungeon – if we know how to open that lock, we will be free! The same applies to any bad situation we may encounter: we can solve a problem (set ourselves free from it), if we only know *how*. This explains why thinking, and particularly *good* thinking, will be the focus of our studies in the next weeks.

First, we need to understand the relationship between Language and Thinking. We take it for granted, because in order to communicate our thoughts, we usually use language. However, there is more to it: without language, we would not have been able to think in the first place! Together with our mother tongue, we also learn how to *think*. So,

What Is Thinking? We (some of us, at any rate ☺) seem to do it all the time – but what is it that we actually *do*, when we think? A brilliant Scottish philosopher, **David Hume (1711 – 1776)**, also asked this question. He wondered about the nature of human understanding, about what it means, to *understand* something. He came to the conclusion that we all, no matter where or when we are born, learn things by making *connections* between ideas, which lets us see the bigger pattern of how things relate to each other. In his *Enquiry Concerning Human Understanding*, he wrote almost 250 years ago:

"IT IS evident that there is a principle of connexion between the different thoughts or ideas of the mind, and that in their appearance to the memory or imagination, they introduce each other with a certain degree of method and regularity. In our more serious thinking or discourse, this is so observable that any particular thought, which breaks in upon the regular tract or chain of ideas, is immediately remarked and rejected. And even in our …dreams, we shall find … that …there was still a connexion upheld among the different ideas, which succeeded each other. Were the loosest and freest conversation to be transcribed, there would immediately be observed something which connected it in all its transitions. … Among different languages, even where

we cannot suspect the least connexion or communication, it is found, that the words, expressive of ideas, the most compounded, do yet nearly correspond to each other: a certain proof that the simple **ideas**, comprehended in the compound ones, **were bound together by some universal principle, which had an equal influence on all mankind**.

Though it be too obvious to escape observation, that different ideas are connected together; I do not find that any philosopher has attempted to enumerate or class all the principles of association; a subject, however, that seems worthy of curiosity. To me, there appear to be only three principles of connexion among ideas, namely, **Resemblance**, **Contiguity** in time or place, and **Cause or Effect**.

That these principles serve to connect ideas will not, I believe, be much doubted. A picture naturally leads our thoughts to the original:[1] the mention of one apartment in a building naturally introduces an enquiry or discourse concerning the others:[2] and if we think of a wound, we can scarcely forbear reflecting on the pain which follows it.[3] … The more instances we examine, and the more care we employ, the more assurance shall we acquire, that the enumeration, which we form from the whole, is complete and entire:

[1] Resemblance.
[2] Contiguity.
[3] Cause and effect" (David Hume: An Enquiry Concerning Human Understanding, Section III – Of the Association of Ideas. Retrieved on February 24, 2008 from http://18th.eserver.org/hume-enquiry.html)

So: basically, thinking is making connections between ideas, and we first learn to make them by learning to connect the words of language with the ideas that they represent (that is where the senses come in: we cannot learn language and, therefore, develop this uniquely human symbolic way of thinking without our senses of hearing and sight.

Aquinas, an Italian monk who lived almost 800 years ago (c. 1226–1274 AD), wrote that **'*There is nothing in the mind, unless it is first in the senses.*'**

Think about this:

1. Does it mean that the better we sense, the better we think?
2. Why are seeing and hearing considered to be our two most important senses for thinking?
3. Is seeing always believing?
4. Can words affect our senses?

Our thinking, indeed, *begins* in our senses – considering that we learn to *think* like human beings (*symbolically*) in the process of internalizing the symbols and structures of Language (primarily through our senses of hearing and sight). This connection between Language and human thought is described in Terence Deacon's brilliant book, The Symbolic Species: The Co-Evolution of Language and the Brain. In Chapter One he writes:

" … language is not merely a mode of communication, it is also the outward expression of an unusual mode of thought - ***symbolic representation***. … symbolic thought does not come innately built in, but develops by internalizing the symbolic process that underlies language."

That is why all human understanding is based on our physical senses (*perceptions*) and *logic*: our perceptions give us concepts, on which we then operate with logic. In other words, we perceive (experience) the world around us through our senses, and then explain and categorize it using three types of association: ***Resemblance, Contiguity*** (= *closeness* in *time* or *space*), and ***Cause and Effect***.

But are our thoughts always the product of our strictly physical experiences? Aren't our thoughts a kind of experience, too? If so, then some of our thoughts can be rooted in other thoughts, as opposed to physical experiences (thoughts 'squared,' so-to-speak). Having learned how to think symbolically in the first place, we become less dependent on our physical senses. Our critical thinking, when perfected, allows us to go beyond our senses, to discover reality beyond our physical experiences (as in the sciences, for example). So the dynamic relationship between our sensory perception and our thinking becomes progressively less restrictive, as we learn to think critically (logically).
In the real world, most of our thinking is influenced by our senses and past experiences. I would like to make a distinction between

(a) the limitations of our physical senses in general and
(b) past experiences which, having generated thoughts, tend to 'fossilize' into false assumptions and culturally molded expectations, attitudes and beliefs.

We can think of many examples of the influence of our physical senses on our thinking:

- Why did people think for millennia that the sun circled our world? Because they relied in their thinking on what they saw: the sun rising in the East, and setting in the West!
- Why does cold water feel warm to frozen fingers? Because it *is* warm, relative to the temperature of the hands!
- Why do we feel cold, when we are feverish?
- Why were we unaware of radiation beyond the visual spectrum, until we devised (using our critical thinking) ways of measuring it?
- Why is it that a deaf man's thoughts will not be influenced by a spoken word?
- Why do they say that 'Love Is Blind,' 'A hungry man is an angry man,' etc.? Because our emotions and our physical condition clearly affect our thinking.

The list can go forever – the relativity of our physical senses and sensations will, of course, trigger different responses in different (and even in the same) individuals at different times. This connection between our senses and our thinking is obvious.
What is more interesting, though, is to examine how our past experiences affect our present thoughts through the stereotypes of attitudes and beliefs. We shall talk about enculturation (the process of 'soaking up' the attitudes, beliefs and ways of the social environment in which we live) and the role of expectations and schemata, particularly thought provoking.

This, of course, is an oversimplification: the division between our sensual experiences and their rationalization (resulting thoughts) is not clear-cut: ***our thoughts*** eventually ***become experiences*** in themselves. As such, they then influence our subsequent thinking, just like our physical experiences do. Whereas sensing precedes thinking in babies, for most adults this sensing-

thinking connection is interactive: our thinking often begins in our senses, but our thoughts can also shape the way we sense. For example, our thoughts can make us feel touch, or warmth, or pain, etc.

The *mechanism* of our thinking, however, whether triggered by our physical senses, past thoughts, or a combination of both, is always based on three types of association: **Resemblance, Contiguity, and Cause and Effect**.

As Hume pointed out, this universal principle of human logic, or *mechanism* of reasoning through connecting ideas, operates in the grammars of all human languages: they all have nouns and adjectives, words that name and describe things (metaphors), and verbs and adverbs, that we use to describe actions and relationships in space and time (contiguity and cause & effect). Sentences in all languages are made by connecting the Subject (what we speak about) with the Predicate (the verb with all the words that go with it that together make up what we say about the Subject). For example, this simple sentence,

The Earth is round

connects the Subject (Earth) with the quality of being round (the verb is the 'connector').

However, our thinking is not always clear and logical (even if our senses are sharp!). Our senses can both enlighten and deceive our mind: the Sun does not really go around the Earth, the 'bent' oar in the water is not really bent, and your own reflection in a crooked mirror is not really how you look, etc. To really understand the world around us (as well as language as part of it), we must be logical and *scientific* in our approach. What does *scientific* mean?

What is the Scientific Method?

Critical thinking is based on the Scientific Method, which involves:

- ✓ ***Observation*** (based on our physical or technologically extended senses)
- ✓ ***Hypothesis*** (based on logical apprehensions)
- ✓ ***Experimentation***, and
- ✓ ***Validation*** with evaluation (analysis).

N.B. Reproducibility of experimental results is central to the scientific method. For that we need some point of reference – ***standards***, and to measure the standards, we need a system of ***units***.

So, we perceive the world around us through our senses, and then explain and categorize it using three types of association: Resemblance, Contiguity, and Cause and Effect. This appears to limit our thinking to our experiences (i.e., those things that we can perceive through our senses). In a way, this is true… Aquinas, the Italian philosopher and Dominican monk wrote, "There is nothing in the mind unless it is first in the senses."

A Re-Cap of the main points of our discussion:

1. We learn to think like humans (symbolically) in the process of language acquisition.
2. Critical thinking is synonymous with logical thinking.
3. Our thinking is dynamically related to our senses.

4. The ability to think symbolically is preceded by sensual perception, but once acquired, it turns our past thoughts (elicited by our past experiences) into a kind of *experience*, and thus allows those past thoughts to evoke new thoughts.
5. Our senses, physical condition, and past experiences all go to form our particular perspectives on the issues we analyze – it is only through cultivating critical / logical thinking that we can come close to true knowledge of objective reality.

References

Hume, D.: An Enquiry Concerning Human Understanding. Section III: Of the Association of Ideas. Retrieved on March 4, 2006 from http://www.infidels.org/library/historical/david_hume/human_understanding.html

Deacon, Terrence W., (March 1998): The Symbolic Species: The Co-Evolution of Language and the Brain. New York, NY. Norton, W. W. & Company, Inc.