Lecture 6: Sensing, Thinking and Language

The Sensing – Thinking Connection
- Better sensing = better thinking?
- The Power of Our Senses: to Inform, and to Deceive

Language & Thought
- Linguistic Determinism
- The Sapir-Whorf Hypothesis

There is nothing in the mind unless it is first in the senses.
~ Aquinas

The Sensing – Thinking Connection
We already know how important our physical senses are in the sensorimotor stage of our cognitive development (particularly hearing and sight).

Now imagine you were blindfolded, taken to an unfamiliar place, and the blindfold was removed for just a second – you would get a flash of visual stimulation. If you were in a place you had never been to before (i.e., spacecraft/UFO), you would be confused by the unfamiliar objects around you; if you found yourself in the UPNG library (or students' mess), you would recognize and understand what you saw. In both cases, images would flood your brain, but you would only be able to make sense of the familiar surroundings, because your previous experience would have pre-structured your perceptions and would have allowed you to process the visual information into recognition.

This analogy becomes even clearer, if we use another of our senses – hearing – as an example. Imagine landing in Brazil, Russia, or China, all by your lonely self, and hearing people talking all around you. You hear them speak (there is nothing wrong with your hearing!), but you can't make sense of what they are saying, because you do not have the language structures in your brain.

However, with language already in our mind, we can 'disconnect' from the world around us, and do 'pure thinking' (like you do when you daydream). That doesn't usually last too long – reality invades our minds through our senses, making us 'reconnect' again. Most of our thinking is sensory-interactive, and this sensing-thinking connection is so strong that our senses often trigger off our thinking, just as our thinking can shape the way we sense (i.e., practicing 'mind-over-matter,' you can 'block' your senses, and stop feeling pain, or hearing/seeing things).

Better sensing = Better Thinking?
Does this mean that the better we sense, the better we think? It depends. Sensory perception is crucially important during the psychomotor stage of our cognitive development, when language/thinking structures are being formed. Without language, our brain is like a powerful CPU (central processing unit of a computer) without software installed. It is the software (Word, Excel, etc.) that enable computers to process data (just like language in our minds). Once our brain has matured, and acquired the ability to think symbolically (based on the 3 types of association: resemblance, contiguity, and cause/

effect), our physical senses only send data into our brain for processing – the mental structures (our 'software') are already in place to do the job! So:

Whereas sensing precedes thinking in babies, adults sense and think at the same time: sensing becomes simply the source of raw data for processing by the mental structures already in place.

Sharp senses deliver good data, and the better the quality of the data collected, the more accurate the information we get! We need to see objective reality – we need to see beyond appearances to make the right conclusions. That is why, as critical thinkers, we should train ourselves to observe and listen well. Kirby & Goodpaster give some useful advice on how we can improve our listening and observation skills (see excerpt at the end of these notes):

- Listen to the *tone* of the speaker's words
- Read the speaker's body language
- Use your memory
- Understand the speaker's needs, values, beliefs, and motives
- Organize what you hear
- Ask questions
- Summarize the other's ideas.

The Power of Our Senses: to Inform, and to Deceive

Our senses are our lenses, amplifiers, particle detectors, and pressure/ heat gauges. Though not as powerful as those of some predators, our 'sensors' serve our human needs well enough (in most cases ☺). Powerful as our senses are, they can also deceive: our senses malfunction when we are sick, stressed out, or intoxicated. Our senses are also 'conditioned':

- Limited by our biology, we can only see a small part of what is (our eyes do not have the power of microscopes or x-rays, our noses are not as good as those of a dog, our ears can only detect vibrations of a limited range – elephant or dolphin 'talk' is beyond our range of perception, etc.)
- Limited by custom/previous experience, we see (register) the familiar (the habitual), and
- Limited by our language, our brain cannot go beyond its capabilities (by analogy, you cannot use Word software for statistical analysis – you'll need to install Excel / SPSS in your computer), etc.

Thinking people have always, it seems, been aware of the ***relativity*** of our perceptions – ***Protagoras* (490-420 B.C.)**, as we remember, said that "***Man is the measure of all things***." Our life's experiences, all the influences of our enculturation, 'colour' our perceptions and make us see the world in different ways. Language, the most important aspect of our enculturation, is more than just a means of communication: it is our thinking medium, our means of rationalization (understanding) of the world.

Language & Thought

Language involves the systematic organization of ideas – categorisation of patterns in the world (associating them based on Resemblance & Contiguity!), whether these be patterns of concrete objects, human relationships/feelings, or of abstract ideas. These mental categories form the framework for our understanding.

From the point of view of sociolinguistics, you *are* what you say (sociolinguists often joke, "**Language most shows a man - Speak, that I may see thee!**). Indeed, the way we speak reveals a lot about us, and about our past experiences. ***Sociolinguistics*** provides many categories for 'pidgeon-holing' human speech:

Idiolect = the unique characteristics of the language of an individual speaker

Dialect (or Language?) Definitions of a dialect: political; literary; linguistic = mutually intelligible forms of a language that differ from each other in systematic ways (vs. accents/phonological differences/'foreign' accent; processes of dialect levelling (because of education, mass media, trade, closer economic/cultural contact, national consciousness, etc.); language planning, policies, etc.

Styles/Social Dialects: language choice (code-switching = alternate use of language varieties, i.e. in a multilingual/dialectal society; style-shifting according to role-relations); registers (variation occasioned by situation of use; types: religious, legal, intimate, etc.; markers of register: lexicon, address terms, etc.)

Language and Group Membership: age, sex, social class, occupation, education, ethnic background; Slang (a variety for which we have a name) = colloquial language: entirely new word (to *barf*) vs. new meaning ascribed to old words, i.e., *rap, stoned, cool, awesome*, etc.; Jargons: technical terms/slang within a profession, science, trade, occupation, etc.: computerese, airlinese, fashionese, legalese, etc. :)

Taboo Words & Euphemisms: Taboo (from Tongan *tapu* = 'holy, untouchable): proper names, i.e., God, the dead, secret names; obscenities (words for sex and bodily functions) and curses; Euphemisms: (*eu* = good + *pheme* = speech) – word/phrase serving to avoid a taboo word or frightening/ unpleasant subjects.

Language, however, is not just a list of names – concepts do not exist in the world for us to attach labels to: we give names to our *perceptions* of things (think of *bull feathers* or *sleazeballs*, for example). That is why the concepts expressed in language may be subjective (i.e., grammatical gender in different languages, etc. – Russian, for example, has three grammatical genders, Latvian and French - two). This leads us to another dilemma: if languages are all so different, then, do we all 'see' the world (physical reality) the same way?

Linguistic Relativism

If linguistic concepts do not exist to be discovered in the 'real world', do we construct/ create them? (***relativism***: 'Man is the measure of all things')

Are we all different in our construction of categories? (Example: ***Guugu Timithirr*** people of Cape York Peninsula in NE Australia do not have words for 'left' or 'right,' 'front' or 'back' – they use absolute, rather than relative directions, i.e., South, North, East, West, etc.)

This has serious implications for ***translation***: Can we understand one another? Is it possible to *translate* an idea *exactly* from one language into another?
Ethnolinguistics is concerned with these sorts of questions. Anthropologists have found that learning about how people categorize things in their environment provides important insights into the interests and values of their culture. Field workers involved in this type of research call it ***ethnoscience**** (that is how you get these weird white guys in some remote villages of PNG, eager to undergo initiation! ☺)

Ethnoscientists have made a useful distinction in regard to ways of describing categories of reality. 'Outsiders' bring their own culture's categories and interpret everything through those terms/cultural filters/perceptions. An ethno-scientist tries to get the 'insider's look' at things:

Etic categories involve a classification according to some external system of analysis (it assumes that ultimately, there is an objective reality, and that it is more important than cultural perceptions of it) ['outside']
Emic categories involve a classification according to the way in which members of a society classify their own world. It may tell us little about objective reality, but it is very insightful in understanding how *other people* perceive that reality through the filter/prism of their language and culture ['inside' view].

In other words, *ethnoscientists* try to cast off the 'lens' of their own cultural perspective and experience another culture from 'inside'. Taken to extreme, this relativist approach denies our common humanity (those three principles of human understanding that David Hume described in his Enquiry) and looks for different type of logic in every culture. Ultimately, it provides a basis for racial discrimination, building ethnic walls to divide people.

The Sapir–Whorf 'Hypothesis'

Edward Sapir* (1884-1939) & Benjamin Whorf** (1897-1941) claimed that language influences our worldview, and likened language to a polarizing lens on a camera, filtering reality.

* One of the foremost American linguists and anthropologists of his time, most widely known for his contributions to the study of North American Indian languages. A founder of ethnolinguistics, which considers the relationship of culture to language, he was also a principal developer of the American (descriptive) school of structural linguistics.
Sapir suggested that man perceives the world principally through language. He wrote many articles on the relationship of language to culture. A thorough description of a linguistic structure and its function in speech might, he wrote in 1931, provide insight into man's perceptive and cognitive faculties and help explain the diverse behaviour among peoples of different cultural backgrounds"(1).

** U.S. linguist noted for his hypotheses regarding the relation of language to thinking and cognition … . Under the influence of Edward Sapir, … Whorf developed the concept of the equation of culture and language, which became known as the Whorf hypothesis, or the Sapir–Whorf hypothesis. Whorf maintained that the structure of a language tends to condition the ways in which a speaker of that language thinks. Hence, the structures of different languages lead the speakers of those languages to view the world in different ways. This hypothesis was originally put forward in the 18th century by the German scholars J.G.Herder and W. von Humboldt. It was espoused in the United States in the period preceding World War II by Sapir and then in the 1940s by Whorf. Whorf's formulation and illustration of the hypothesis excited considerable interest. On the basis of his research and fieldwork on American Indian languages, he suggested, for example, that the way a people view time and punctuality may be influenced by the types of verbal tenses in their language. Whorf concluded that the formulation of ideas is part of (or influenced by) a

particular grammar and differs as grammars differ. This position and its opposite, that culture shapes language, have been much debated (1).

'The fact of the matter is that the 'real world' is to a large extent unconsciously built up on the language habits of the group. No two languages are ever sufficiently similar to be considered as representing the same social reality. The worlds in which different societies live are distinct worlds, not merely the same world with different labels attached.' (Sapir, 1929).

'The linguistic relativity principle,' … means, in informal terms, that users of markedly different grammars are pointed by their grammars toward different types of observations and different evaluations of extremely similar acts of observation, and hence are not equivalent as observers, but must arrive at somewhat different views of the world' (Whorf, quoted in 1952).

What did Sapir mean by 'language habit'? …Or Whorf, for that matter, by being 'pointed by their grammars'?

Remember: Language involves the systematic organization of ideas – *categorisation of patterns* in the world, whether these be patterns of concrete objects, or of abstract ideas. These patterns are the 'habits' Sapir described.

In short, the **'Whorf Hypothesis'** states that:

1. Linguistic structure and language habits shape perception
2. The structure of anyone's language determines/strongly influences the worldview they will acquire as they learn the language
3. Structural differences between language systems will, in general, be parallelled by non-linguistic cognitive differences in the native speakers of the languages (i.e., linguistic structures predetermine not only *how*, but also *what* we think).

Since neither Sapir, nor Whorf ever formulated the hypothesis themselves, there is some controversy as to their actual views. Below is an example of the strong *deterministic* reading of their ideas:

'The argument that language defines the way a person behaves and thinks has existed since the early 1900s when Edward Sapir first identified the concept. He believed that language and the thoughts that we have are somehow interwoven, and that all people are equally affected by the confines of their language. In short, he made all people out to be mental prisoners; unable to think freely because of the restrictions of their vocabularies.' Example: George Orwell's ***1984***: ***'newspeak'***

'… Whorf fully believed in linguistic determinism; that what one thinks is fully determined by their language. He also supported linguistic relativity, which states that the differences in language reflect the different views of different people. An example of this is the studies Whorf did on the Hopi language. He studied a Hopi speaker who lived in

New York city near Whorf. He concluded that Hopi speakers do not include tense in their sentences, and therefore must have a different sense of time than other groups of people. However, in recent years, the Hopi have been studied in order to further understand this issue, and it has been discovered that although the Hopi do not include references to the past, present, or future in their grammars, they do include two other tenses, 'manifested' and 'being manifested.' 'Manifested' includes all that is and has ever been, physically. This includes the senses and concrete items. 'Becoming manifested' includes anything which is not physical, has no definite origin and cannot be perceived with the senses. Verbs are always expressed within the terms of these two tenses. In this way, the Hopi do include some aspect of time, but in a different way than a native English speaker would recognize."

'If the world view and behaviour of people are affected so severely by the structure of their language, and languages have different structures, then is cross-cultural communication and understanding a realistic goal for the modern world? Whorf would have us believe that such barrier-free communication is almost impossible. However, does that explain current world trade agreements, joint business ventures with foreign companies or the emphasis on raising bilingual societies? Sure, not every word of communication between people of different language communities is expressed. But despite that fact, … the substance of messages are getting across.'

'… I believe that language users sort out and distinguish their experiences differently according to the categories provided by their languages. One culture could consider a tree to be an inanimate object. Another culture could consider it to be a living thing, just like a human. The grammar of each language would reflect this difference, and the idea of what a tree is to the two groups would be physically similar, but carry different connotations and emotional responses. … These grammatical distinctions may have an effect on the way the noun … is thought of. This is an aspect of language which has a direct effect on the **connotation** of the term.'

'… I believe that discussion about this topic is an important part of the globalisation and cultural education in the world today. Through theories like this one, we can identify ways in which all languages are universal, and how that universality in language is beneficial to us all. I think that when all people realize that no matter which language you speak or which cultural norms you are used to, everyone is capable of intellectual thoughts, poetic visions, technical jargon, and personal feelings – according to their own experiences, the world will be a much smaller place'(2).
As we can see from the above excerpts, the author strongly rejects the idea that language ***determines*** thought. Did Sapir & Whorf really claim that thought is *determined* by our language? Or did they simply point out the close interrelationship between our perceptions and thought (and therefore, language) that we have just finished talking about?

References

1. Encyclopedia Britannica Deluxe 2004 edition CD-ROM
2. Amy Stafford: http://www.mnsu.edu/emuseum/cultural/language/whorf.html

Appendix 1 ~ A Joke from **Lingua Pranca** Part 6 June 1978 http://www.specgram.com/

A Laboratory Test of the Sapir-Whorf Hypothesis
http://specgram.com/Babel.I.3/05.jenkins.sapir.html

Past efforts to test the Sapir-Whorf Hypothesis have suffered from a failure to separate language from a specific cultural context, so that it has been impossible to decide whether certain aspects of personality exhibited by members of a language/culture group should be attributed to the influence of language, of culture, or of both. To rectify this problem, this experiment took a number of children and raised them in rigidly controlled identical cultural environments, but exposed each group to a different language. The culture chosen was standard US Midwestern farm life, except that the children were not allowed contact with anyone but the experimenters. This culture was considered fairly bland and middle-of-the-road, so that any deviations resulting from language would be obvious. A control group was raised in an English-speaking environment, while four test groups were raised speaking standard varieties of French, German, Latin, and Khoisan, respectively.

Baek (1983) is a well-known ethnographic survey comparing typical characteristics of members of a number of language/culture groups around the globe. Its data, reproduced in part below, served as a basis for comparing characteristics of the subjects with characteristics of native speakers who were also exposed to native cultures.

Language/Culture	**Typical Characteristics**
Midwest US	friendly, boring
French	romantic, obnoxious
German	efficient, aggressive
Classical Latin	pragmatic, imperialistic
Khoisan	peaceful, xenophobic

The subjects were raised from birth in their experimental environments. At the age of eighteen, the members of each group were evaluated by a team of expert psychologists, who determined that the members of the groups displayed the following traits, respectively.

Language	**Typical Characteristics**
US English	friendly, boring
French	friendly, boring
German	friendly, boring
Classical Latin	friendly, boring
Khoisan	friendly, boring

The experimental results clearly show that culture rather than language is the key factor in determining national characteristics. Thus, the attractive notions that French are romantic because their language sounds romantic, that German are aggressive because

their language is full of shouting and spitting, and similar theories for other languages are not born out by the factual data.

Appendix 2: Definitions

Culture, essentially, is

1. **What people do**
2. **What people think/ believe, and**
3. **What people produce**

Enculturation: process of learning or acquiring culture

***Acculturation*:** borrowing of cultural components through contact w/ another culture

***Sub-culture*:** cultures within a larger culture that are not confined to any specific locale, but that share traits, symbols and beliefs.

Counter-culture: the result of dynamic, constantly changing nature of culture. May stem from rebellion, contact with other cultures, advances in technology, war, etc.

Worldview: comprehensive conception/realization of the world. Involves and reflects values, traditions, beliefs, etc.

Assimilation: being acculturated into another culture.

Appendix 4

SHARPENING OUR SENSES

(Excerpt from: Ch. 3 of *Thinking* by Kirby and Goodpaster:, 1999)

Perhaps my originality boils down to being a hypersensitive receptor…

—CLAUDE MONET, IMPRESSIONIST PAINTER

When we realize that our senses are fallible, then we can begin to adjust to surface appearance and personal distortions. Seeing should not always be believing. The spear-fishing Chippewa Indians of Wisconsin (who don't know Descartes's bent oar) have learned to adjust: they plunge their spear above the point where they see the fish. If they didn't, they would go hungry.

We can adjust not just to water but to the entire surface of the earth by turning up the power of our senses. Our eyes now pierce the surface through the electronic microscope, ultrasound, magnetic resonance, and positron emission; our ears amplify apparent silence through the microphone, listen to the shifting earth through seismographs, and hear the echo of the big bang through radar telescopes.

Our nostrils smell hidden particles through smoke detectors and Geiger counters; and our sense of touch feels more precisely through the barometer and thermometer. These instruments allow us to perceive beyond the range of our senses to see the molecules and microbes moving. We can then struggle to synthesize the clash between appearance and reality. Our mind can reason, accept the validity of these observations,

and know, for example, that invisible species crawl over our skin and that vast spaces exist in the floor upon which we step.

If we try, we can sometimes return to the sensual newness of a child. A five-year-old boy in a mechanic's shop identified his friend Brad's car. His dad glanced at the car and said, "No, that's too rusty." The boy replied, "But it smells like Brad's car." The father asked the mechanic: it was Brad's car. We too can extend our senses. By willing and by trying we can see more and sense more. If we start a program that tries, a few times a day, to absorb more intensely the sensual information around us, we can hone our perceptions to a piercing power of accuracy and newness; by the end of this course we will be perceiving at a higher level. This sharper perception can lead to sharper thinking as we place more specific, concrete, accurate data in our mind; and when our thinking is interacting with our environment, the results will more closely reflect the external reality. In chapter 1 we made three lists of observations in progressively greater detail.
By such methods we can learn to push our senses to see fine details, to notice the rainbow colors of the snowflakes (often we just see white), to hear the wind through the grass (it's different from the wind through the trees), to smell the fragrance unique to each rose, even those coming from the same rosebush (a rose is not just a rose just a rose). As we struggle to sense more closely, we might discover the startling fact that no two things are alike: even mass-produced items, like beer cans, pencils, bolts, and coins, have differences easily distinguishable by our sight. We need to break the habit of seeing things in the same general way, largely because we think we know what they look like. One way to break through this habitual pattern is to look at things in extremely small detail and then try to express what we see in new words. Avoid clichés: they are a sign that we are using other people's words and therefore are not describing what we are seeing.
…

POWERFUL LISTENING

After seeing, hearing may be our most vital sense. Hearing sends rivers of sound into our ears, from the music of falling waters to the cry of a newborn baby.
When we use our hearing to listen to words, listening becomes interactive with our thinking and crucial in communicating.

The Paradox of Powerful Listening

When we were small children our listening was natural and effortless, like the earth receiving rain. That's partly why we were able to learn our language so quickly. Our adult brains can absorb thoughts several times faster than they are spoken: speech runs about 125 words per minute, yet if this rate were doubled (or even tripled through a sped-up audiotape) we could still understand the words. Listening is so simple that, paradoxically, it is hard. Because the rate of speaking is so slow, we can easily allow our mind to roam elsewhere. And now that we've grown older, our listening is drowned by the buzz of our thinking, and is smothered by our poor habits. Because listening is apparently simple, we allow our mind to roam elsewhere while someone is talking. The challenge then becomes, how do we rein in our brain to follow the speaker? How do we not get bored and allow our attention to wander?

How to Listen

In order to listen well, we must want to listen. Here are a few reasons to help motivate us to listen well: (1) we will know more, (2) our decisions will be based on firmer data, (3) we will understand the speaker's values and positions better, (4) our interpersonal skills will be higher, (5) our responses will carry greater effectiveness, (6) we can recall how good we felt when anyone really listened to us, and give that same courtesy to the speaker, (7) the speaker will talk better because we actually partially control the speaker by how well we listen and ask questions, and (8) we will learn more. Can you think of other reasons to listen well?

Even if we think the speaker is boring, if our attitude is receptive we can learn from anyone. Ultimately we are the ones who profit. We are the ones who grow wiser. Consider one final example of the power of listening. A married graduate student reported that he was on a path toward a divorce, so in his busy schedule he set aside twenty minutes a week on Friday nights to listen, really listen, to his wife. The first night, without even knowing why, his wife said, "Gee, Hon, we had fun tonight." By continuing to listen, the student said he began to find out things about his kids and his wife that he never knew. He said listening, simply listening, rescued and enriched their relationship.

Once we have set our will to listen, we may need to adjust our environment. MTV, screaming children, trucks winding through their gears, and blasting bands do not provide a good listening environment. If we want to listen, we can move to a place of acceptable noise level and privacy, adjust our chairs so we are close enough, turn our back on windows, televisions, or other distractions, and face the speaker. The environment is ours to control. Then we need to place our body into a listening posture. First, we square up, sitting or standing directly across from the other person (effective, forthright communication is not assisted by angles—acute, oblique, or otherwise).

Second, we relax and open our body to the ideas of the other (folded arms and locked knees are often reflective of our mental locks). Third, we lean slightly toward the speaker (pulling back is a reaction associated with horror, fright, fear, bad breath, or rejection of the other's ideas). Finally and most importantly, we look the other in the eyes without staring, and we appropriately maintain that vital connection while we are listening (eye contact connects us in some ways more strongly than the telephone wire connects our phones). Squared, relaxed, leaning, and looking, our body prepares us for listening.

With our will set, the environment adjusted, and our body posed, we have a better chance of keeping our mind focused. Here are some ways to keep your mind on the speaker. As we present these ideas, think about which ones will work effectively for you:

1. Listen to the tone of the speaker's words, to the feelings behind the thoughts.

Tone can easily color or contradict the content of the words, but it is rare that content can outweigh tone. For example, if you greet your boyfriend and ask him how he is, and in a small voice he sighs, "Fine," you can believe the tone of his voice and ignore his words. He isn't fine. Something is wrong, and his tone shows it. Because of the connection between tone and truth, voice stress indicators have been developed in an attempt to measure the truthfulness of people's statements.

2. Read the speaker's body. Watch the face, the tightness or relaxation around the lips and the eyes; watch the hands. Is any nervous energy playing through the speaker's fingers? A top executive in an advertising firm was a man of forced smiles and memorized names. As he smiled and talked to clients he did not like, his left fist clenched and unclenched. An alert client reading the nonverbal message would know how to deal with him. Since the work of Edward Sapir in the 1930s, the literature on nonverbal communication has been growing. Body signals, however, can be ambiguous; there is always the possibility that we are "reading" wrongly. With this caution in mind, reading the body can help us stay focused and listen more fully to the speaker.

3. Use your memory. Recall earlier meetings and conversations with the speaker and how those ideas fit with the speaker's present words.

4. Understand the speaker's needs, values, beliefs, and goals: It's an old *adage**: "Step into the speaker's shoes, and empathize!" [**adage* - a traditional saying, expressing a general truth].

5. Organize what you hear. Often speakers do not convey their thoughts in perfect prose. Try to group their words into main points.

6. Paraphrase the speaker's words out loud. Give feedback by saying something like, "So what you are saying is that you would like to . . . ," and check their response.

7. Ask questions. If the speaking situation permits it, asking questions directs the speaker toward topics of interest to you. Also, questions can clarify ambiguities and may spark the speaker alive to new ideas.

8. Summarize the other's ideas. This helps both parties focus on the nucleus: on the thoughts to be remembered, on the actions to be taken. Clarity will result. SUMMARY
We have seen how our powerful senses both nourish and deceive our minds. We have seen that our acute senses can be expanded by the instruments of science, and we have been alerted to the appearance of reality of some of our sensations.
Furthermore, we have glanced at the deliberate deceptions that occur in nature and human beings. Shakespeare alerts us "that there is no art known to read the mind's construction in the face." We have seen how we can sharpen these vital sensing-thinking connections by looking more closely at the unique world around us. Finally, we have seen how we can focus our powerful mind for effective listening. By keeping our thinking refreshed and sharpened through interaction with our sensing, we will be grounded in a more solid reality as we absorb and seek new data.

SENSING AND THINKING CHALLENGES

1. Do you accept information when it is contrary to common sense? For instance, the earth is closer to the sun in the winter than it is in the summer. Seek the reason for this phenomenon and then think about how your mind struggles with the apparent conflict between your senses and the facts.

2. Galileo convinced the world that Copernicus was right about the orbiting spheres when he pointed a telescope at Jupiter and watched the moons go around it. Is seeing always believing? Can you think of any exceptions?

3. Try focusing one sense, such as smell or hearing, and then shifting to another and focusing sharply. What do you experience?

4. William Wordsworth did not think we were born empty: "We come, trailing clouds of glory." What do you think was already in your mind at birth?

5. As a quick test of the effect of your listening, the next time you are in a small group, listen intently and receptively to the speaker: Notice if the speaker begins to look at you longer and more often than others in the group.
6. Do words blind our senses? How might the word mountain or forest prevent us from seeing the uniqueness of that mountain or that forest, and the uniqueness of the rocks and trees within each of them?

7. Schedule a few times during the day to practice sensing. These times can overlap other things you are doing, such as shopping or eating or washing dishes. Focus your mind to become acutely aware of details.

8. Listening is so simple that it is hard. Do you agree with that statement? What do you find particularly easy or difficult about listening?

9. Buddhists engage in a practice of "bare attention" to sharpen their perceiving. This practice is described as "observing things as they are, without laying our projections and expectations onto what is happening; cultivating instead a choiceless and non-interfering awareness" (Goldstein, 1976, p. 20).
   Whatever you are doing now and throughout the day, give it your bare attention. Try simply to notice things without labeling or evaluating them; remain detached. Afterwards, reflect, write about, or discuss your experience.

10. Have you ever really seen the new 1 Kina coin? Which of the following features are on it? Circle the items you think are on the coin, and then inspect it. How perceptive were you?
    a. The Bird of Paradise + K 1
    b. 3 crocodiles + K 1
    c. The Bird of Paradise + Papua New Guinea 2004
    d. The Bird of Paradise + PAPUA NEW GUINEA 2005
    e. 2 crocodiles + PAPUA NEW GUINEA 2005
    f. 3 crocodiles + PAPUA NEW GUINEA 2004
    g. 2 crocodiles + K 1
    h. The Bird of Paradise + Papua New Guinea 2005