Goaltending, do you use your common sense(s) to play?

Often you hear the phrase "that player has good hockey sense." Many players move equally or have the same type of skill sets. What makes one better than the other? Could it be a simple matter of using their SENSES?

Aristotle (384 BC - 322 BC) is credited with the traditional classification of the five sense organs: **sight, smell, taste, touch**, and **hearing**. As far back as the 1760's, the famous philosopher Immanuel Kant proposed that our knowledge of the outside world depends on our modes of perception. Each of the five senses consists of organs with specialized cellular structures that have receptors for stimuli. These have links to the nervous system and thus to the brain. Sensing is done at primitive levels in the cells and integrated into sensations in the nervous system.

How can this information help us be better goaltenders?

First, we must understand that each goaltender's perception is unique; what is "truth" for one may not be so for another. A goaltender's perception cannot be shared with anybody else except through communication. Communication is fallible, subject to exaggeration, falsification, and misinterpretation.

In order to achieve peak performance and help to alleviate communication errors through strong play a goalie must make full use of the Five Senses**:**

1) Sight: The brain combines the input of our two eyes into a single three-dimensional image.

2) Hearing: The brain combines the input of our two ears to determine the direction and distance of sounds. The inner ear is responsible for the sense of balance and spatial orientation and sends signals to the brain that are interpreted as motion and acceleration. The human ear can perceive frequencies and can detect pitch changes.

*3) **Taste:** The receptors for taste, called taste buds, are able to detect four basic tastes: salty, sweet, bitter, and sour. The sense of taste functions in coordination with the sense of smell.*

*4) **Smell:** not applicable to goaltending*

*5) **Touch:** The sense of touch is distributed throughout the body. Nerve endings in the skin and other parts of the body transmit sensations to the brain. Some parts of the body have a larger number of nerve endings and, therefore, are more sensitive. Four kinds of touch sensations can be identified: cold, heat, contact, and pain.*

The Five Senses seem simple however lets break it down further and see what is BEYOND the Five Senses:

In addition to sight, smell, taste, touch, and hearing, humans also have awareness of balance, pressure, temperature, pain, and motion all of which may involve the coordinated use of multiple sensory organs. The sense of balance is maintained by a complex interaction of visual inputs, and sensors which are effected by gravity and stretch sensors found in muscles, skin, and joints, the inner ear vestibular system, and the central nervous system. Disturbances occurring in any part of the balance system, or even within the brain's integration of inputs, can cause the feeling of dizziness or unsteadiness.

Kinesthesia is the precise awareness of muscle and joint movement that allows us to coordinate our muscles when we walk, talk, and use our hands. It is the sense of kinesthesia that enables us to touch the tip of our nose with our eyes closed or to know which part of the body we should scratch when we itch.

Synesthesia is a phenomenon called synesthesia in which one type of stimulation evokes the sensation of another. For example, the hearing of a sound may result in the sensation of the visualization of a color, or a shape may be sensed as a smell.

Breathing, the very act of breathing, which we have to do several times per minute, can effect the nervous system in how we see and how we react to certain game situations.

Eating and drinking sustains our life, but what we ingest can carry not only nutrients, but also substances that can adversely affect our health and mental processes. e.g. caffeine excess can cause restlessness, sinus pressure, or headaches. Also, grapefruit has been found to elevate levels of some medicines to toxic levels.

Medicines and drugs are developed to help our mind and body to return to a healthy state. Recreational or illegal drugs are mind-altering drugs that effect the brain adversely, sometimes permanently. Certain non-prescription medicines act on the brain and can dull thinking and creative abilities. Alcohol is the most frequently abused mind-dulling drug. It acts as a brain intoxicant that reduces reaction times and impairs the motor functions of the body.

Skin absorption: *the skin acts as a protective barrier for the body, but it is not impervious. Many substances pass through the skin and can effect various organs of the body. Organic solvents such as gasoline can be absorbed through the skin and reach toxic levels in the body. The liver is the organ most frequently damaged as it tries to detoxify these substances.*

Radiation/Light can be good and it can be bad for the body. It depends on the type of the radiation and the duration of the exposure. The amount of light to which the body and eyes are exposed may effect the central nervous system.

Sounds, the body responds to sounds in fairly mechanical ways. Sudden noises can cause a person to jump away from, or turn the head in the direction of the noise. Soothing, rhythmic noises are well known for their calming effects. Buzzing sounds close to the ears cause us to wave the hands by our ears as if to repel insects. Certain high-pitched noises such as scratching fingernails on a blackboard can "make the skin crawl". Loud repeated noises can reduce the sensitivity of the ears and eventually cause hardness of hearing or even deafness. In the era of high-fidelity sound equipment with powerful amplifiers, many people are losing their hearing by listening to music at very loud levels.

Bacteria and Viruses *come into the body principally through the eyes, the mouth, the skin, and the nose. Disease-causing bacteria release toxins that interfere with normal body processes.*

Gravity*: our sense of equilibrium in the gravitational field of the earth is provided by the semicircular canals in the ear.*

Air pressure: *we can sense changes in air pressure as pain or discomfort in our ears, sinuses or bones. The nerves surrounding the body cavities that contain enclosed pockets of air detect volume changes caused by external air pressure.*

Endogenic inputs are inputs from within the body to the brain. When we start exercising, carbon dioxide builds up in the body. This buildup acts as a signal for the heart and the lungs to work harder. When the level of glucose in the blood drops, we get hungry. Hunger, thirst, pain, fatigue are samples of inputs to the brain from the body itself. Exercise has been credited with stimulating the body to generate endorphins that create a feeling of well being. Emotions such as fear release adrenaline into the bloodstream, which triggers many systemic reactions. Several studies have found that what you think can affect your health. Constant worry can create stress that lowers the body's ability to fight diseases, whereas positive thoughts and laughter can actually improve health.

Verbal inputs *people believe should be included under sounds. However, the effect of verbal input on the mind is so different from that of other noises encountered daily that it must be considered separately. Imagine that your coach says something neutral like: "In two weeks we are having a team meeting to discuss the progress of our season" the reaction may be one of anticipation or apathy. Not much is required from a person except their participation. However, if the coach says something negative like: "You made several mistakes in your last game and I am very dissatisfied with your play" one may become angry or scared, the heart may start racing and a person may want to justify what they did. Because they are not just sounds, words have the power to make a person laugh or cry. Words have meanings that get to the root of our emotions. Much can be said about the state of mind of a speaker from their speech. The tone of the voice can convey authority, fear, doubt, and many other different emotions. Words have a huge effect on the mind. The power of words cannot be underestimated. Words have the power to move nations into revolution. Words can be used to heal. Words can be used to hypnotize.*

Non-verbal sound inputs *if analyzed carefully, could also be grouped under other senses. However, there are some inputs that connect to the fears or desires deep within our brain and establish a special kind of non-verbal communication. The horn after a goal is scored, a referee's whistle, the siren at the end of a period are all special kinds of non-verbal communication. These are more than just simple sounds or visual or tactile inputs. They are meaningful messages for the brain.*

Outputs from the Body

While verbal communication will provide the greatest insights into the mind non-verbal outputs can also act as signals of communication, such as:

Body language *is extremely important as the position of the body can indicate aggression, fear, or a whole spectrum of human attitudes. Happiness, sadness, fear, anger, surprise, and disgust are facial emotions that are widely recognized around the world regardless of culture. Even the attire and hair styles that we wear also send messages which can be part of body language; all are used to send conscious or subconscious messages to on-lookers.*

Sounds *such as coughing, sneezing, breathing, and heartbeats are sounds output by the body. There are also the mechanical noises such as clapping and whistling.*

Verbal outputs *are more than just sounds. Words convey mental images to our listeners. What we say or what we imply changes the listener. The way in which we say something also carries a message. The use of a rich vocabulary may imply wisdom or snobbishness; forcefulness indicates conviction, and hesitation represents insecurity.*

Memes *are ideas or behaviors that can be passed from one teammate to another by learning or imitation. Examples of memes include, practices and habits. Successful memes propagate themselves and can be adopted by team members because they provide a benefit or enable success. Simple traditions can provide tangible benefits.*

Know and Be Yourself

Nobody else has your specific impressions of your environment. Your point of view and your observations are unique. Part of using your senses may involve using certain tools (skill sets) or interaction with others. If you don't have perfect eyesight and you need to see something clearly, use contact lenses or glasses. Make observations from several points of view to get good depth perception and to confirm impressions. Take video if you need to remember something in great detail. Use a tape recorder or a notepad to log your observations for later review.

Make sure that your senses are at their best by avoiding intoxicants that effect your perceptions. Your special sensory skills should be put to use. If you have extraordinary hearing, use it. If you have a photographic memory, make sure that it can be used for most of your game situational problem solving.

Interaction with Others

Whenever you trust someone else's perceptions more than your own you may find that the conclusions reached may be unsatisfactory. How many drivers have crashed while backing up because they misinterpreted their helper's signals? Reliance on your own senses is the only way to avoid such problems, but you don't always have this choice.

The application of logic may be necessary to determine which perceptions you can trust. For example, in a world where you are the only person with color vision, you would eventually be able to prove to someone else that colors or at least different frequencies of light exist.

We cannot fall into a trap of agreeing with the point of view of someone else because they have a higher authority. We should strive to consider conventional physical explanations before jumping to hypotheses for which we have no basis. Are there facts that can be beyond our comprehension? Undoubtedly there are, but we should not believe anything that we cannot sense directly or indirectly or which does not make sense.

In a philosophy of play or style, the teacher may have an agenda that includes your conversion to make you believe in their statements as an article of faith. People frequently accept indoctrination because they are afraid to speak up, contradict, or challenge opinions stated with great conviction by distinguished persons or a "higher authority". Lack of confidence in one's own perception or ideas and the desire to avoid a conflict or confrontation are other reasons. Awareness of these manipulation techniques may prevent their being used on us.

Using your own perceptions encourages independent thinking. What you learn and who teaches you becomes important. Where there are objective rules of evidence, goaltenders will eventually detect mistakes made by the teacher. As students, you can be accepting and unquestioning or you can be critical and questioning. When you are young, you are in the first category. You accept the opinions of others and adopt their philosophies without proof or questions. You can be easily manipulated or molded. When you grow up, you must apply your mind to what you learn. You must judge and question your teachers, their teachings, and their motives. Your life and game experiences will help to protect you from this manipulation.

We also have to take a practical approach toward solving problems. Do you want to bend a key? Take some pliers and bend it. Do you want to move a saltshaker without touching it? Ask a friend to move it for you. Don't waste mental energy! It is said that faith can move mountains, but shovels have been proved to really work regardless of what you believe. Make sure that you really want to move the mountain before you start shoveling, though.

Learn to Predict

Precognition is the ability to see into the future. Scientists have always been particularly critical of a fortune teller's claims to be able to foretell events. However, if you ask a scientist to tell you when the next lunar eclipse will occur, a prediction will be made.

Why shouldn't we as goaltenders be able to predict what opposition players will do? These players are subject to physical and chemical laws that will influence their behavior. Biologists assess health risks based on body weight, proportion of fat intake, and exercise habits. The groundwork is already there for making predictions about people. We need to extend the techniques of prediction into the mental area, the psychic domain. We need to develop psychical laws. These Psychical laws would enable us to predict how a player would react under specific circumstances. The "laws" don't need to be perfectly accurate. Ninety percent accuracy might be practical enough. How do we do it? The reaction of a player depends on their personality and their previous experience. The player may not react twice in the same manner. At the outset, we would need to have substantial information about the person whose reaction we want to predict. Deductions need to be made about the person's psychical constitution based on his or her past actions.

The requirements for this methodology are:

a) Independent thinking

b) Reliance on your own perceptions
c) A practical approach toward solving problems

To achieve these **Requirements of Methodology** will require you to follow five basic steps that could be applied to any type of problem solving:

1. **Target your goals**
2. **Make full use of your senses**
3. **Apply your mind**
4. **Evaluate solutions**
5. **Draw conclusions**

Target Your Goals

Solving the **right problem** is the most important aspect of problem solving. Often we make assumptions that lead us away from the correct solution. In our eagerness to show how smart we are, we typically start focusing on the details and do not wait to find out what the real problem is.

For example, a two on one occurs and the player with the puck looks at the open player and positions himself in such a way that a pass looks possible. The goaltender commits to the pass however the pass does not occur and the player with the puck shoots. The player with the puck has directed your attention to the open player then surprises you with the shot.

It is also important to determine if the problem has a solution. Has somebody else solved this problem before? If so, how? If not, do you have a workable plan for solving it? Do you have the qualifications, experience, and education required to solve it? Are you willing to work toward fulfillment of the solution? No one can solve problems that have no solution and no one can solve any problems without spending some effort. One thing is certain, however. If you do not have clearly defined goals, you cannot focus your efforts toward a solution.

Apply Your Mind

Using your mind is the creative aspect of any problem solving. You want to grasp the whole problem and look at it from different perspectives without selecting a solution. This is an unstructured process of contemplating and writing down all ideas regardless of how sensible they are. You can stretch your imagination to the limit and use brainstorming techniques. Assimilate facts, enumerate impressions, and explore your feelings. If some solution gives you a bad feeling, write down what that feeling is for further evaluation later. Use your dreams to get insights into the problem. You may even be able to experience "lucid dreaming" where you are in control of your dreams and can take them in any direction you wish. Make sure to write down any ideas that come in your sleep. Focus on the problem that you want to solve. Record any solutions that may occur to you while you are in a relaxed state. Try looking at the problem from someone else's perspective. How would they feel and why? How would you react in their place? How would they approach the problem? Putting yourself in someone else's shoes is not easy to

do. You need to take their motivations, needs, and personalities into consideration, but if you manage to do it, you can sometimes get insightful solutions.

Evaluate Solutions

Evaluation of solutions is the analytical aspect of the reasoning process. This is the stage where the relative merits of every solution are calculated. You will need to use your past experiences and logic. Some solutions may have some serious drawbacks or may not be legal. Other solutions may not take into account all the factors and may be incomplete. Incomplete solutions may be evaluated to see if they can be extended to fit the problem. Illegal solutions need to be examined to see if there are legal loopholes or whether the rules can be amended to make the solutions legal. Many successful solutions are sometimes found outside the framework of conventional thinking. The application of the mind without restrictions and the following evaluation and adaptation of the solutions is a powerful method of problem solving.

If you can determine some statistical basis for choosing a solution, use it. Many times, the problems that we are trying to solve have been solved by others before us. How is one solution better than another? If we know the results based on our experience, the solution with the better chance of success should be given greater consideration. However, sometimes statistics and our intuition are in conflict. We know that a particular solution worked well in a specific case, but our current problem has some new twists that may make that solution risky. The risk factors should be noted, and a guess should be made about the relative merit of the solution.

The evaluation phase is where psychical laws come into play for problems dealing with interpersonal relationships. Suppose that you are trying to get more playing time. You could work hard on your game in practice and thus have some solid results on which to base your request. The approach that you take will depend on how much time you want to invest to get your goal. The personality of your Coach and the rules for playing times, seniority, and fairness also play a major role. Many times the best way to get information is to ask the coach directly "What would it take for me to get to play more?" Make sure that you know all the facts before embarking on an approach, and evaluate your approach at regular intervals to make sure that you are still on target.

Draw Conclusions

The final stage of the Methodology is choosing a solution. This is the deductive portion of the reasoning process. You have listed possible solutions, you have evaluated them and ranked them, and now you make the final choice. For some problems you have the opportunity to go back and try other solutions. For other problems your choice of solutions is irrevocable. Once you have made a choice, the circumstances change and you can never go back to the initial state. If you made a wrong choice, you will regret it, and you will have a new and different problem to solve.

Time also becomes a factor in selecting a solution. Your hockey career is finite. If you want to accomplish something, the solution should not require more time than your expected term in your league or age bracket. Lack of action, sometimes unwittingly, becomes another choice. Good luck is said to consist of preparation and opportunity. If you know which options you have, you are more likely to know what to do when the opportunity comes.

Inputs into the Body:

The human body has many types of inputs and outputs. The traditional five senses process stimuli from outside the body. However, because the body is a very complex structure, there are also signals that can be perceived by the senses. Many of these stimuli cannot be detected immediately, but only after they have had an effect on the body. Sometimes the effect of these stimuli is on the brain, and if this causes decreased mental function it may prevent us from becoming aware that we are affected.

The Mind

The mind is not a physical entity. The mind is the awareness of consciousness and the manifestations of thought, perception, emotion, determination, memory, and imagination all takes place within the brain.

The human brain has three principal structures:

1: The cerebrum is the center for intelligence and reasoning. The cerebrum consists of two cerebral hemispheres which are connected; this makes it possible for our left side to know what the right side is doing. This is necessary because most of the sensory organs and motor control on the left side of the body are connected to the right hemisphere, and vice-versa. The only exception seems to be the sense of smell where the right and left nostril sensors are connected to the right and left hemispheres, respectively. The cerebrum has four distinct sections: The **frontal lobe** plays a part in planning, judgment, language, memory, motor function, problem solving, sexual behaviour, socialization and spontaneity. The **parietal lobe** integrates sensory information and helps in the manipulation of objects. The **temporal lobe** is involved in spatial perception and auditory processing. The **occipital lobe** is the visual processing center. The cells in this lobe are arranged as a spatial map of the retinal field.

2: The cerebellum is involved in keeping balance and posture.

3: The medulla handles involuntary functions such as respiration.

The functionality of the brain is hard to study. The operation of the brain depends not only on the electrical signals passed by the neurons, but also on the influence of various neurotransmitting substances whose presence or absence can cause sleepiness, depression or even schizophrenia.

What is important for us is not the structure of the brain, but rather what it is capable of doing. The totality of the conscious and unconscious functionality of the brain and central nervous system is called the mind and, sometimes, the psyche.

The mind is a storehouse of information. Some of this information is learned and some of it is carried as part of our genetic makeup. Our senses provide input that is analyzed, interpreted, and stored in our mind. Sometimes the input from the senses conflicts with what the mind knows to be true. These illusions are common with sight. On the stage a magician says, "The hand is quicker than the eye", and proceeds to apparently pull cards out of thin air. It is necessary to understand the limitations of our senses so that our mind will not be fooled, and it is necessary to understand the limitations of our mind so that we know when to trust our senses.

The two senses that we use the most are sight and sound. Touch is used in familiar situations. Smell is used in close quarters, and taste is used when we eat. Noisy environments can impair hearing

Memory is essential to our survival. Memory encodes our perceptions through the various senses:

1. **Recall** is the ability to remember an event without any aids.
2. **Recognition** is being able to remember something from the past when perceived again.
3. **Recollection** involves remembering with the aid of stimuli that serve as clues. Skills acquired through conscious effort, and repeated frequently, eventually become automatic so that it is not necessary to "remember" how to skate to a new position or recover on the proper leg, etc.

Memory is volatile and can be manipulated. It is not unusual for a person to think that they remember something when authoritative individuals, such as coaches, instructors, pressure someone into admitting knowledge about incidents that the person may not have experienced. The person's imagination creates images that persist and can be remembered as if they had actually happened.

Memory decays with time. The longer the time elapsed between an event and when we recall it, the less vivid and less detail that we will remember.

Drugs and Alcohol can play havoc with memory and other mental functions. Deprivation of sleep, food, or water can alter perceptions. So can illnesses accompanied by high fevers. Moods that we feel such as frustration, anger, fear, are generally mediated by the mind. However, there are reactions that are unexpected even to us. These are the instinctive reactions built into our organism. We may jump at the sight of a spider and stomp our feet. Fear is known to cause lack of control of the bowels and the erection of the hair at the nape of the neck. We vomit at the taste of something awful or at a gory sight. We do not have to think about them. We cannot even predict the situations that may trigger them.

There are ways that the mind uses as shortcuts for assessing information quickly. Several mechanisms of social cognition enable us to make inferences from social information. The pattern-matching ability of the mind is exceptional, but it tends to perceive what it is seeking. If you are hungry, many things will remind you of food

We spend approximately one third of our life sleeping. What does the mind do during this time? Why do we need so much sleep? Sleep refreshes the organism. Dreaming seems to take disconnected ideas and permute them regardless of whether it is logical to do so or not. Feasible solutions are sometimes obtained. Many scientists have reported that their great ideas have been conceived in dreams. Inspiration and creativity may result when these processes occur while we are awake. Some dreams may be caused by fears or other needs. You may dream that your arm has been infested by bees that are making holes in it, only to wake up and find your arm tingling because the circulation stopped as you were lying on it.

Logic is what makes us understand that things are not what they seem. Our ability to visualize hypothetical situations makes it possible to develop solutions to problems. Once we have visualized a solution, our analytical skills can lead us toward practical solutions. We may not be able to see atoms, but we can design experiments that enable us to know their properties. We no longer believe in demons as the cause of disease. We now believe in viruses, bacteria, genetic defects, and environmental pollution as the real causes of disease. Our irrational and unfounded "superstitions" have given way to "knowledge".

To have on ice success, the goaltender must develop a trust in their senses and abilities. They have to have a belief in their senses and judgment for things that cannot be objectively proved. The only reality that they are capable of perceiving is provided by their senses and logic.
GOOD LUCK!

Reference

http://www.scientificpsychic.com/workbook/chapter8.htm