

Knowing: The Art of War 2000

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ABSTRACT

In today's non-linear, dynamic, complex world, warfare can no longer rely on the logic of the past to win future engagements. As we move away from predictable warfare patterns susceptible to logic, our leaders are increasingly reliant on their "gut" instinct, an internal sense of "knowing." To prepare ourselves to understand current situational assessments and potential enemy threats, it is essential that we learn to identify, interpret, make decisions, and take appropriate action to counter these new threats utilizing this sense of "knowing."

The Concept of Knowing presented in this paper will focus on the cognitive capabilities of observing and perceiving a situation, the cognitive processing that must occur to understand the external world and make maximum use of our internal thinking capabilities, and the mechanism for creating deep knowledge and acting on that knowledge, the Self as an Agent of Change. Taken together, the five observables, four processes and ten elements discussed represent the factors that can create deep knowledge, understanding and effective actions, all necessary to obtain the real benefits of "knowing." It is this integrated capability built-up over time through learning, awareness and constant self-change that creates the power of knowing so important in the new warfighting environment.

INTRODUCTION

It is commonly known that the world is changing at a rapid pace and in uncertain directions. This is often referred to as a non-linear, dynamic, complex world in which predictability is rare if existent at all. If we accept this hypothesis, then clearly the art of warfare in the current world environment and in the face of a new asymmetric threat can no longer rely on the logic of the past to win future engagements. As we move away from predictable warfare patterns susceptible to logic, our leaders are increasingly reliant on their "gut" instinct, an internal sense of "knowing." To

prepare ourselves to understand current situational assessments and potential enemy threats, it is essential that we learn to identify, interpret, make decisions, and take appropriate action to counter these new threats utilizing this sense of "knowing."

To do this, we must overcome three critical problem areas. The first is a thorough and deep understanding of ourselves, i.e., our goals, objectives, values, limitations, internal defenses, and weaknesses of thought and action. By knowing ourselves we learn to work within our limitations and to support our strengths, thus ensuring that the data, information, and knowledge coming to us is properly identified and interpreted. The second critical element is that of knowing the enemy. This includes areas such as culture, goals and objectives, thinking patterns, internal inconsistencies, warfare capabilities, strategies, tactics, and political motivations. Knowing ourselves and knowing the enemy is a primary theme throughout Sun Tzu's famous master text on *The Art of War*:

So it is said that if you know others and know yourself, you will not be imperiled in a hundred battles; if you do not know others but know yourself, you win one and lose one; if you do not know others and do not know yourself, you will be imperiled in every single battle.

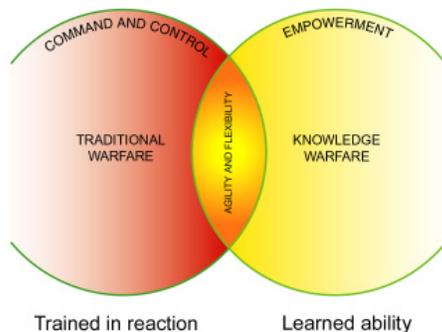
After understanding ourselves and working to understand the enemy, the third critical area is that of "knowing" the situation in as objective and realistic manner as possible, understanding the situation in context. The current dynamics of our environment, the multiple forces involved, the complexity of relationships, the many aspects of events that are governed by human emotion, and the unprecedented amount of available data and information make situational awareness a challenging but essential phenomenon.

The U.S. Army Research Institute for the Behavioral and Social Sciences held a Situational Awareness Workshop in 1998 that addressed the possibility of making Situational Awareness (SA) a "basic" or habitual way of

processing and thinking about sensory inputs. SA applied to the Army is defined as knowledge of a specific situation that enables a commander to place current battlefield events into context; to readily share a portrayal of the situation with staff and subordinates; and to predict, expect and prepare for future states and actions. SA focuses on the mental or intellectual processes, and results from the ability to drive expected outcomes from conscious and automatic processes, for example, intuition. During the 1998 Workshop, the Army Research Institute explored the following questions: Do high SA individuals have better spatial ability or different spatial abilities? Are they better at attention sharing or pattern matching? Do they have mental models or schemas that allow them to be more aware? Do they have the ability to discern patterns that others find difficult? While conclusions were not reached, the rich thinking coming out of this workshop included a proposal to design SA exercises to train leaders to adapt to various unpredicted actions on the part of the enemy, i.e., unknown unknowns, and to train them to examine their own plans from the adversary's perspective. Sun Tzu agrees that if we know the enemy and understand the situation, we are in the position of maximizing our probability of success even within a dynamic, fast-moving warfare scenario.

In review, knowing ourselves, knowing the enemy, and knowing the situation, lay the framework and foundation for making effective decisions and taking the right actions, providing of course that we have built an effective warfighting capability to respond with agility and flexibility to surprise situations.

Area of Optimization



Traditional warfare based on command and control utilizes trained-in reactions to pre-determined warfare scenarios. This approach offers quick response without much flexibility.

The new knowledge warfare based on empowerment is a learned ability, developed by leaders over a period of time. The warfighting space where empowerment overlaps traditional warfare translates into agility and flexibility at the point of action without losing quick response. The knowledge and judgment capabilities of individuals at the front lines translates directly into warfighting success.

The objective of this paper is to investigate how we can improve our own personal capability of knowing ourselves and correctly interpreting the situation, agreeing that it is also essential to gain an understanding of the enemy. We shall deal with ways of knowing ourselves and our own limitations and strengths and what characteristics we must have – or develop – to ensure that we properly interpret the context and situation in order to make the most effective decisions and take the right actions. What are the skills and capabilities that will enable our competency of “knowing” as applied to the art of warfare?

In exploring answers to this question, the objective of this paper is pragmatic, not theoretical. It's intent is to identify and relate major cognitive capabilities and processes which when understood and applied will enhance our ability to respond to dynamic, complex information-saturated environments. It attempts to define and integrate a set of learnable skills that, when applied together, will improve practical performance.

An Expert Forum held in October 1999, hosted by the Under Secretary of the Navy, surfaced some potential candidates for this skill set. This forum, held at the Naval War College in Newport, brought together senior DON leadership and world-class thinkers with diverse areas of expertise. The 24-hour event was a futuristic brainstorming. Consensus on ideas did not occur, nor was it asked for. However, out of the plethora of thoughts focused on unknown-unknowns emerged a series of patterns. The first pattern was an extension of what we see today in the Information Technology world, indicating that as the Department of the Navy moves from an information-centric enterprise to a knowledge-centric enterprise, specific information technologies will rise and wane, rise and wane as the world continues to discover and bring into reality better and better products.

The second pattern indicated that both the efficiency and effectiveness of information management (IM) and knowledge management (KM) will steadily increase as new products emerge and their full potential is realized. The third pattern – of specific interest to this paper – reflects a rapid increase in the need for new skills and capabilities to handle the unknown-unknowns of tomorrow’s knowledge world. These skills and capabilities, utilizing data, information and imagination to bring about “value transformation,” were described with terms such as intuiting, integrating, innovating, designing, sensing, scanning, patterning, synthesizing, judging, storytelling, persuading, and knowing.

Through a series of small focus groups, these terms were further explored for their potential to add to the warfighting capability. A heuristic for understanding the concept of “knowing” quickly emerged. Knowing is: seeing beyond images; hearing beyond words; and sensing beyond appearances. But significant work remained to flush out the capabilities and skills that could improve our individual sense of “knowing” and to build a program that would make these new capabilities available to the warfighter.

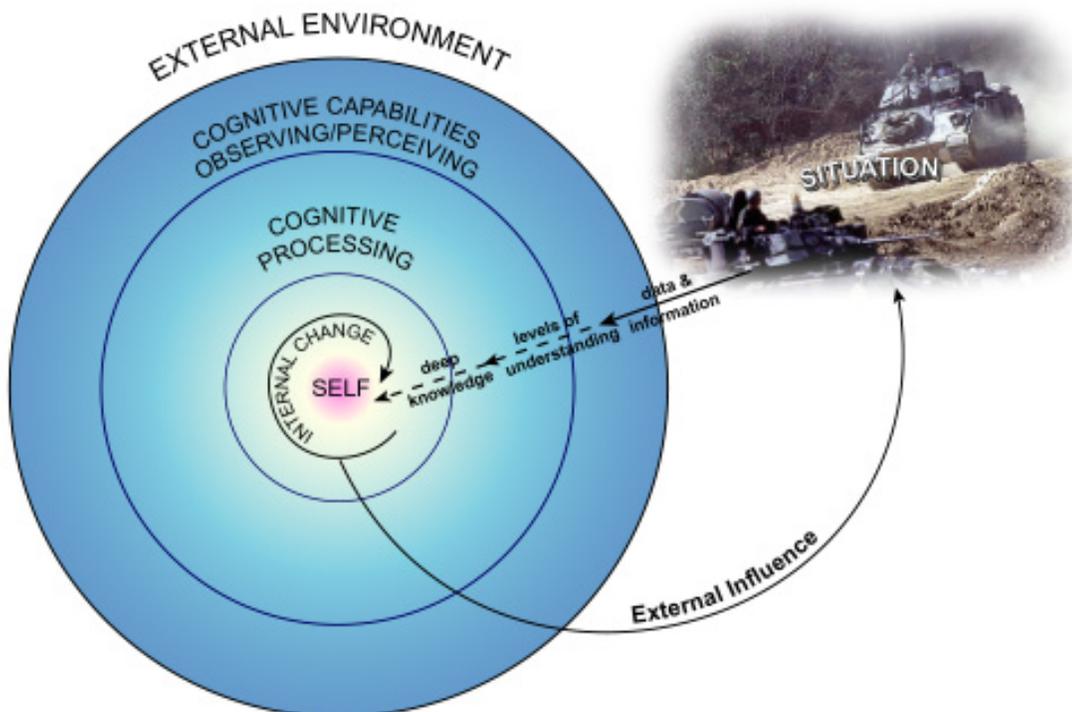
THE DON KNOWLEDGE MANAGEMENT ENVIRONMENT

In June 1999 the Department of the Navy (DON) published a document that recognized the role of knowledge in the changing landscape of the Department. The DON IM/IT Strategic Plan, endorsed by all three elements of the Department leadership (the Secretariat, the Chief of Navy Operations and the Commandant of the Marine Corps) envisions:

- An integrated, results-oriented Navy and Marine Corps team characterized by strategic leadership, ubiquitous communication and invisible technology.
- An effective, flexible and sustainable DON enterprise-wide information and technology environment that enables our people to make and implement efficient and agile decisions.
- A knowledge-centric culture where trust and respect facilitate information sharing and organizational learning.

Goal 4 of this Plan calls for **implementation of strategies that facilitate the creation and sharing of knowledge** to enable effective and agile decision-making. The Plan reads:

Developing the Concept of Knowing



“Knowledge management offers the potential to significantly leverage the value of our IT investment and the intellectual capital of our people. Information technology and information management are essential, but alone are insufficient to achieve information superiority.”

Goal 8 of the Plan provides the commitment to building IM/IT competencies to **shape the workforce of the future**. Specifically called out is the need to:

- Provide Sailors, Marines and Civilians with IM/IT skills and competencies essential for success in the information age; and
- Facilitate critical thinking skills that take maximum advantage of the richness of data and information enabled by information technology.

The final goal in the Plan, Goal 9, punctuates the need to **foster and incentivize a technology-enabled, information-rich culture**, specifically calling for incentivizing innovative approaches and recognizing IM/IT best practices that foster new patterns of work. The groundwork was laid, with the commitment from the senior leadership explicitly reinforced, for building new skill sets and capabilities in support of achieving Knowledge Superiority over our adversaries.

The DON adopted a Knowledge Management definition, in support of distributed implementation, that left wide berth for creativity. Knowledge Management is viewed as a process for optimizing the effective application of intellectual capital to achieve organizational objectives. This definition takes on considerable breadth when coupled with the DON definition of Intellectual Capital, which includes Human Capital, Social Capital and Corporate Capital. Human Capital covers all elements an individual brings from the past (experience, education, etc.), the capabilities of the present (creativity, flexibility, specific skill sets, thinking patterns, etc.) and the potential, or capacity, for future learning. Social Capital builds on strong networks built on strong relationships and deals with the interactions across and among those networks. It also takes into account the full sphere of language, including culture, context, formal and informal, verbal and nonverbal. Another important element comes into play here, and that is “patterning”. Patterning occurs in both space and time. Patterning in time is built

on the concept of rhythm: how much, how often, in what intensity, in what sequence, etc. Patterning in space is built upon the concepts of symmetry, repeatability and replication, and scale. Corporate Capital is easier to define because it’s all the “stuff” that is explicit, including everything that resides in DON databases, intellectual property, and processes.

An aggressive KM implementation effort, firmly rooted in the DON IT communities, is being built on the demonstrated success of champions coming out of the Fleet, the Systems Commands, the Labs and the Secretariat. These champions continue to emerge at all levels of the Enterprise. What they have in common is a passion for improvement coupled with the conviction that KM offers the opportunity to do what we do better.

This passion appears throughout the Department of Defense (DOD) community. The bottom line in Defense, while often dealt with externally in terms of dollars, in reality has more to do with the commitment and passion of DOD team members – whether in uniform, civilian attire, or residing in industry – to defend our country well. The opportunities flowing with Knowledge Management implementation excites that passion.

In the Fall of 1999, the Navy sponsored a six-day intensive strategic planning effort to focus KM on warfighting and start the thinking necessary to truly ensure Knowledge Superiority. The vision coming out of this eclectic group of senior DON leaders vividly demonstrates the commitment and passion discussed above.

*More than any other nation, more than any other Navy, and more than ever before, we rely on the creativity, ingenuity, and intellect of our people. As we cross the threshold of the Information Age, we intend to realize this awesome potential in every corner of our Navy, by every person, as a highly interactive total team. Transcending even our current advantage in physical firepower, **our Navy will be alive with the fire of shared understanding**. We will do this because we must for our Navy’s relevance and readiness in this new era. No foe, present or future, will match our knowledge or our ability to apply it. Indeed, just as forward presence has become a way of life for us, so too will knowledge superiority become a Navy way of life.*

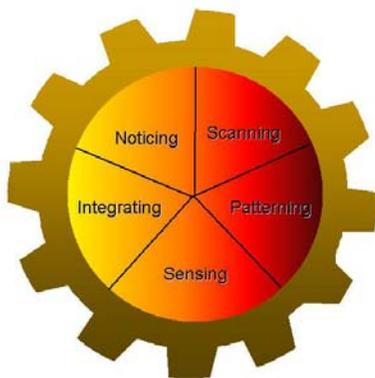
An immediate result of this movement was recreating the Maritime concept to add Knowledge Superiority as an equal plank with Forward Presence. The groundwork laid was beginning to emerge into reality.

DEVELOPING THE CONCEPT OF KNOWING

There are three general categories of “Knowing 2000.” The Concept of Knowing will focus on the cognitive capabilities of observing and perceiving a situation, the cognitive processing that must occur to understand the external world and make maximum use of our internal thinking capabilities, and the mechanism for creating deep knowledge and acting on that knowledge, the Self as an Agent of Change.

The Cognitive Capabilities

These three categories are visualized by cogs, a comfortable 20th century concept which can aid in understanding 21st century thinking. The first cog represents cognitive capabilities for observing, collecting and interpreting data and information, and building knowledge relative to the situation or to an enemy. This cog is divided into five areas: Noticing, Scanning, Patterning, Sensing and Integrating. These areas represent means by which we perceive the external world and begin to make sense of it.



The first area of Noticing represents the ability to observe around us and recognize, i.e., identify, those things that are relevant to our immediate needs. We are all familiar with the phenomenon of buying a new car and for the next six months recognizing the large number of similar cars that

are on the streets. This is an example of a cognitive process of which we are frequently unaware. We notice those things that are recently in our memory or of emotional or intellectual importance to us. We miss many aspects of our environment if we are not focusing directly on them. Thus the art of noticing can be considered the art of “knowing” which areas of the environment are important and relevant to us at the moment, and focusing in on those elements and the relationships among those elements. It is also embedding a recall capability of those things not necessarily of immediate importance but representing closely related context factors. This noticing is a first step in building deep knowledge, developing a thorough understanding and a systems context awareness of those areas of anticipated interest. This is the start of becoming an expert in a given field of endeavor related to war fighting.

A classic example of mental exercises aimed at developing latent noticing skills is repetitive observation and recall. For example,² think about a street you regularly go down. Try to write down everything you can remember about this street. You will discover that despite the fact you’ve passed down this street often, you can’t remember exactly where that bakery is located, or what’s on the corner. Then go to the street and write down everything you see. What do traffic signs say? What are the main features of the street? Write a detailed map and remember it. A few days later repeat this exercise. If you make any mistakes, go back to the street again, and as many times as it takes to get it right. Don’t let yourself off the hook. You’re telling yourself that when details are important you know how to bring them into your memory.

The second element, scanning, represents the ability to review and survey a large amount of data and information and selectively identify those areas that may be relevant. Because of the exponential increase in data and information, this ability becomes more and more important as time progresses. In a very real sense, scanning represents the ability to reduce the complexity of a situation or environment by objectively filtering out the irrelevant aspects, or environmental noise. Through a system of environmental “speed reading,” scanning can provide early indicators of change.

Scanning exercises push the mind to pick up details and, more importantly, patterns of data and information, in a short time frame. For example, when you visit an office or room that you have never been in before, take a quick look around and record your first overriding impressions. What's the feeling you are getting? Count stuff. Look at colors. Try to pick up everything in one or two looks around the room. Make a mental snapshot of the room and spend a few minutes remembering it. As you leave, remember the mental picture you've made of the room. This picture can last for days, or years, despite the shortness of your visit. Your memory may contain the integrated gestalt of the room.

The third element, patterning, represents the ability to review, study and interpret large amounts of data/events/information and identify causal or correlative connections that over time or space may represent patterns driven by underlying phenomena which may become crucial to understanding the situation or the enemy behavior. This would include an understanding of rhythm and randomness, flow and trends.

A well-known example of the use of patterning is that of professional card players. You can improve your patterning skill by quickly flipping through a deck of cards, three or four at a time. Make a mental picture of the cards. Pause, then turn over three or four more. After doing this two more times, go back to the mental picture of the first set of cards. What were they? Then try to recall the second set, then the third. Don't try to remember the actual cards, close your eyes and recall the mental picture. Patterns will emerge. After practice you will discover your ability to recall the patterns, as well as your ability to recall larger numbers of patterns, will steadily increase. As you increase the number of cards you can recall, you are increasing your ability to recall complex patterns.

The fourth area, sensing, represents the ability to take inputs from the external world through our five senses and ensure the translation of those inputs into our mind to represent as accurate a transduction process as possible. It is of course well known that our ability to collect information through sensors is limited because of our physiological limitations. For example, we only see a very small part of the electromagnetic spectrum in terms of light, yet with technology

we can tremendously expand the sensing capability.

As humans we often take our senses for granted, yet they are highly sensitized, complex detection systems that can cause immediate response without conscious thought! An often-recognized example is a mother's sensitivity to any discomfort in her young child. The relevance to "knowing" is, recognizing the importance of our sensory input, to learn how to fine tune these sensory inputs to the highest possible levels, then use discernment and discretion to interpret their inputs.

Exercise examples cited above to increase noticing, scanning and patterning skills will enhance the sense of sight, which is far more than just looking at things. It includes locating yourself in position to things. For example, go outside on a starry night and explore your way around the heavens. Try to identify the main constellations. By knowing their relative position you will know where you are, what month it is, and even an approximation of the time of day. In short, the stars provide you the context to position yourself on the earth.

Here are a few exercise examples for other senses. Hearing relates to comprehension. Sit on a park bench, close your eyes and relax. Stop your mind. Start by listening to what is going on around you – conversations, the birds, rustling leaves. Now stretch beyond these sounds. Imagine you have the hearing of a panther, only multi-directional, because you can move your ears every direction and search for sounds. Focus on a faint sound in the distance, then ask your auditory systems to bring it closer. Drag that sound toward you mentally. It gets louder.

Cup one hand behind one ear and cup the other hand in front of the opposite ear. Now you can actually hear noises from the back with one ear and noises from the front with the other. How does that change your hearing?

Next time you are in a conversation with someone, focus your eyes and concentrate on the tip of their nose. Listen carefully to every word they say, to the silence between their words, to their sighs and the inflection of their voice as it rises and falls. Search for the subtle feeling behind what is being said. When people are talking, most of the information they impart is in their feelings. The words they say are only a

code that describes a thought, which is an electrical outcropping of an emotion or subtle feeling. By listening to conversations in this way, you become aware of the subtlety behind what is being said.

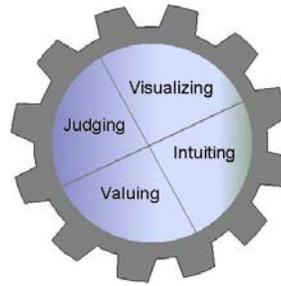
There are many games that accentuate the sense of touch. An old favorite is blind man's bluff; more current is the use of blindfolding and walking through the woods used in outdoor management programs. Try this at home by spending three or four hours blindfolded, going about your regular home activities. At first you'll be a bit spasmodic, maybe even frustrated. But your capability to manage yourself using your sense of touch will quickly improve. You will be able to feel your way alone and you'll know where things are, especially things that are alive, such as plants and pets. You just have to focus on their energy to be able to sense it.

The last element in the first cog is Integration. This represents the top-level capacity to take large amounts of data and information and pull it together to identify meaning or, as is frequently called, sensemaking (Weick, 1998). This capability, to pull together the major aspects of a complex situation and create patterns that represent reality and allow one to make decisions, is one of the most valuable cognitive capabilities in warfare. This capability also applies to the ability to integrate one's own forces and warfighting systems as well.

In summary, these five ways of observing represent the front line of cognitive capabilities needed to assist the warfighter in creative and accurate situational awareness and building a valid understanding of enemy behavior. To support these cognitive capabilities, we then need processes that transform these observations and first-level knowledge into a deeper level of comprehension and understanding.

Internal Cognitive Processes that Support the Cognitive Capabilities

The second cog suggests four internal cognitive processes that support the capabilities discussed above. These four internal cognitive processes greatly improve our power to understand the external world and to make maximum use of our internal thinking capabilities, transforming our observations into understanding. They are: Visualizing, Intuiting, Valuing and Judging.



The first of these processes, visualizing, represents the methodology of focusing attention on a given area and through imagination and logic creating an internal vision and scenario for success. In developing a successful vision, one must frequently take several different perspectives of the situation, play with a number of assumptions underlying the perspectives, and through a playful trial and error, come up with potential visions. This process is more creative than logical, more intuitive than rational, and wherever possible should be challenged, filtered and constructed in collaboration with other competent individuals. Often this is done between two trusting colleagues or perhaps with a small team. While there is never absolute assurance that visualizing accurately represents reality, there are probabilities or degrees of success that can be recognized and developed.

The second supporting area is that of intuiting. By this we mean the art of making maximum use of our own intuition developed carefully through experience, trial and error, and deliberate internal questioning and application. There are standard processes available for training oneself to surface intuition. Recognize that intuition is typically understood as being the ability to access our non-conscious mind and thereby make effective use of its very large store of observations, experiences and knowledge.

Empathy represents another aspect of intuition. Empathy is being interpreted as the ability to take oneself out of oneself and putting oneself into another person's world ... in other words, as the old Indian saying goes, "Until you walk a mile in his moccasins, you will never understand the person." The ability of empathy allows one to translate our personal perspective into that of an enemy and thereby understand their interpretation of the situation. Such intelligence is clearly advantageous in warfare. An aspect of

intuition is “mind mapping.” This is a tool to visually recognize relationships from discrete and diverse pieces of information and data. In addition to providing a systems interpretation as discussed earlier, mind mapping can also be used to trigger ideas and dig deeper into one’s intuitive capability to bring out additional insights.

Valuing represents the capacity to observe situations and recognize the value underlying their various aspects and concomitantly be fully aware of your own values and beliefs. A major part of valuing is the ability to align your vision, mission and goals to focus attention on the immediate situation at hand. A second aspect represents the ability to identify the relevant but unknown aspects of a situation or enemy behavior. Of course, the problem of unknown unknowns always exists in warfare and, while logically they are impossible to identify because by definition they are unknown, there are techniques available that help one expand the area of known-unknowns and hence reduce the probability of unknown unknowns occurring. Such areas were thoroughly explored in a recent brainstorming session held at the Naval War College. Experts within and outside the Defense Department were brought together to explore the future in terms of consequence management and unknown-unknowns.

The third aspect of valuing is that of meaning, that is, understanding the important aspects of the situation and being able to prioritize them and anticipate potential consequences. Meaning is contingent upon the goals and aspirations of the individual. It also relies on the history of both the individual’s experience and the context of the situation.

The fourth supporting area is that of “judging.” Judgments are conclusions and interpretations developed through the use of rules of thumb, facts, knowledge and experiences, and intuition. While not necessarily widely-recognized, judgments are used far more than logic or rational thinking in decision making. This is because all but the simplest decisions occur in a context in which there is insufficient, noisy or perhaps too much information to make rational conclusions. Judgment makes maximum use of heuristics, metaknowing and verication. Heuristics represent the rules of thumb developed over time and through experience in a given field. They are short cuts to thinking that

are applicable to specific situations. Their value is speed of conclusions and their usefulness rests on consistency of the environment. Thus, they are both powerful and dangerous. Dangerous because the situation or environment, when changing, may quickly invalidate past-proven heuristics and historically create the phenomenon of always fighting the last war. Powerful because they represent efficient and rapid ways of making decisions where the situation is known and the heuristics apply.

A related aspect of judgment is that of metaknowing. Metaknowing is knowing about knowing, that is, knowing how we know things and how we go about knowing things. With this knowledge, one can then go about learning and knowing in new situations as they evolve in time. Such power and flexibility greatly improves the final judgment and decisions made. It is closely tied to our natural internal processes of learning and behaving – “Know thyself” – as well as knowing how to make most effective use of the external data, information and knowledge available. The third aspect of judgment is verication. This is the process by which we can improve the probability of making correct judgments by working with others and using their experience and “knowing” to validate and improve the level of judgmental effectiveness. Again, this could be done via a trusted colleague or through effective team creativity and decision-making.

In summary, these four internal cognitive processes -- Visualizing, Intuiting, Valuing and Judging -- work with the five cognitive capabilities – Noticing, Scanning, Patterning, Sensing and Integrating -- to process data and information and create knowledge within the context of the enemy and the situation. However, this knowledge must always be suspect because of our own self-limitations, internal inconsistencies, historical biases, and emotional distortions. The third area of “knowing,” which we call the “Self as an Agent of Change,” becomes then the mechanism for creating deep knowledge, which we define as meaning a level of understanding consistent with the external world and our internal framework. The other purpose of Self as an Agent of Change is to take this deep knowledge and use it for the dual purpose of our own individual learning and growth and for making changes in the external world. There are ten elements we will discuss here. Five of them are internal: Know Thyself,

Mental Models, Emotional Intelligence, Learning and Forgetting and Mental Defenses; and five of them are external: Modeling Behaviors, Knowledge Sharing, Dialogue, Storytelling and The Art of Persuasion.

Self as an Agent of Change

Alexander Pope, in his essay on man, noted that: “Know then thyself, presume not God to scan; the proper study of mankind is man.” An earlier Greek philosopher, Thales, said this perhaps even better. “Know thyself.” We often think we know ourselves, but we rarely do. To really understand our own biases, perceptions, capabilities, etc., each of us must look inside and, as objectively as possible, ask ourselves, who are we, what are our limitations, what are our strengths, and what jewels and baggage do we carry from our years of experience. Rarely do we “take ourselves out of ourselves and look at ourselves.” Without an objective understanding of our own values, beliefs, and biases, we are continually in danger of misunderstanding the interpretation we give to the external world. Our motives, expectations, decisions and beliefs are frequently driven by internal forces within us of which we are completely unaware. For example, as will be discussed shortly, our emotional state plays a strong role in determining how we make decisions and what we decide.



The first step in knowing ourselves is awareness of the fact that we cannot assume we are what our conscious mind thinks we are. Two examples that most of us have experienced come to mind. The first is that we frequently do not know what we think until we hear what we say. The second example is the recognition that every act of writing is an act of creativity. Our biases, prejudices, and even brilliant ideas frequently remain unknown to us until pointed out by others or through conversations.

After awareness comes the need to constantly monitor ourselves for undesirable traits or biases in our thinking and processing. Seeking observations from others and carefully analyzing our individual experiences are both useful in understanding ourselves. We all have limitations and strengths that we must be aware of and build upon.

Part of knowing ourselves is the understanding of what mental models we have formed in specific areas of the external world. Mental models are the models we use to represent our own picture of reality. They are built up over time and through experience and represent our beliefs, assumptions, and ways of interpreting the outside world. They are efficient in that they allow us to react quickly to changing conditions and make rapid decisions based upon our presupposed model. Concomitantly, they are dangerous if the model is inaccurate or misleading. Because of the current rapidly changing environment, many of our models quickly become outdated. We then must recognize the importance of continuously reviewing our perceptions and assumptions of the external world and questioning our own mental models to ensure they are consistent with reality.

The art of knowing in warfare must not only include the understanding of our own mental models, but also the ability to recognize and deal with the mental models of the enemy. Mental models frequently serve as drivers for our actions as well as our interpretations. The use of small groups, dialogue, etc. to normalize mental models with respected colleagues provides somewhat of a safeguard against the use of incomplete or erroneous mental models to create deep knowledge or take action. A subtle but powerful factor underlying mental models is the role of emotions in influencing our perception of reality. This has been brought to light by Daniel Goleman in his seminal book *Emotional Intelligence*. Emotional intelligence is the ability to sense, understand, and effectively apply the power and acumen of emotions as a source of human energy, information, connection, and influence. It includes self-control, zeal and persistence, and the ability to motivate oneself (Cooper and Sawaf, 1996) (Goleman, 1995).

To understand Emotional Intelligence, we study how emotions affect behavior, influence

decisions, motivate people to action and impact their ability to interrelate. Emotions play a much larger role in our lives than previously thought, including a strong role in decision making. For years it was widely held that rationality was the way of the executive. Now it is becoming clear that both the rational and the emotional parts of the mind must be used together to get the best performance in organizations.

Much of emotional life is unconscious. Awareness of emotions occurs when the emotions enter the frontal cortex. Subconscious emotions play a powerful role in how we perceive and act, and hence in our decision-making. Feelings come from the limbic part of the brain and come forth before any related experiences that created them. They represent a signal that a given potential action may be wrong, or right. Emotions assign values to options or alternatives, sometimes without our knowing it.

There is growing evidence that fundamental ethical stances in life stem from underlying emotional capacities (Goleman, 1995). These stances create the basic belief system, the values and often the underlying assumptions that are used to see the world—our mental model. From this short treatment of the concept, it is clear that Emotional Intelligence is interwoven across the ten elements of Self as an Agent of Change.

Creating the deep knowledge of knowing through the effective use of Emotional Intelligence opens the door to two other equally important factors: learning and forgetting. Learning and forgetting are critical elements of Self as an Agent of Change because they are the primary processes through which we change and grow. They are also the prerequisite for continuous learning, so essential for developing competencies representing all of the processes and capabilities discussed previously. Because the environment is highly dynamic and will continue to become more complex and information and knowledge saturated, learning will become more and more essential and critical in keeping up with the world. For learning to be effective, certain criteria must be met. A willingness to exert mental effort, curiosity, the ability to challenge others and ourselves, the self knowledge to permit us to maintain an objectivity and open mind toward things that appear paradoxical or contrary to our experience, and most of all a willingness to experiment, to

play with ideas, and to take risks are all parts of effective learning. The classic learning process is called single loop learning in which trial and error and changing our actions according to perceived results create a closed learning loop. This works well under steady-state conditions where the learner eventually finds the right approach to solve a given problem. When the environment is changing rapidly and the learner's belief system prevents generating effective solutions, a different approach is essential. In double-loop learning we challenge our internal beliefs and perceptions and identify new beliefs and perceptions that most effectively represent reality, thus yielding solutions to our problems. This can be quite difficult because we have usually built up defense mechanisms that make it hard to change our internal beliefs. The true test of learning is what we do differently today than what we did yesterday.

Since humans have limited processing capability and the mind is easily overloaded and clings to its past knowledge, “forgetting” becomes as important as learning. Forgetting is the art of being able to give up what was known and true in the past. Being able to let go of past knowledge is essential before creating new mental models and for understanding ourselves as we grow. It is one of the hardest acts of the human mind because it threatens our self-image and may shake even our core belief systems.

The biggest barrier to learning and forgetting arises from our own individual ability to develop invisible defenses against changing our beliefs. These self-imposed mental defenses have been described by Chris Argyrus. The essence of their conclusions is that the mind creates built-in defense mechanisms to support our belief systems and experience. These defense mechanisms are invisible to the individual and may be quite difficult to expose in a real-world situation. They thus represent invisible barriers to change

Several authors have estimated that information and knowledge double approximately every nine months. If this estimate is even close, the problems of saturation will continue to make our ability to acquire deep knowledge even more challenging. We must learn how to filter data and information through vision, values, goals, and purposes using intuition and judgment as our tools. This discernment and discretion within the deepest

level of our minds provides a proactive aspect of filtering, setting up purposeful mental defenses that reduce complexity and provide conditional safeguards to an otherwise open system. This is a fundamental way in which the self can simplify a situation by eliminating extraneous and undesirable information and knowledge coming from the external world.

The above discussion has identified a number of factors that can help us achieve an appropriate balance between change and our resistance to change. This is an important attribute: not all change is for the best, yet rigidity begets antiquity. This balance is a priori situational and comes only from experience, learning and a deep sense of knowing when to change and when not to change the self.

This section has addressed the Self as an Agent of Change through internal recognition of certain factors that can influence self-change. Another aspect of change is the ability of the self to influence or change the external world. This is the active part of knowing. Once the self has attained deep knowledge and understanding of the situation and of the enemy, this must be shared with others, accompanied by the right actions to achieve warfighting success.

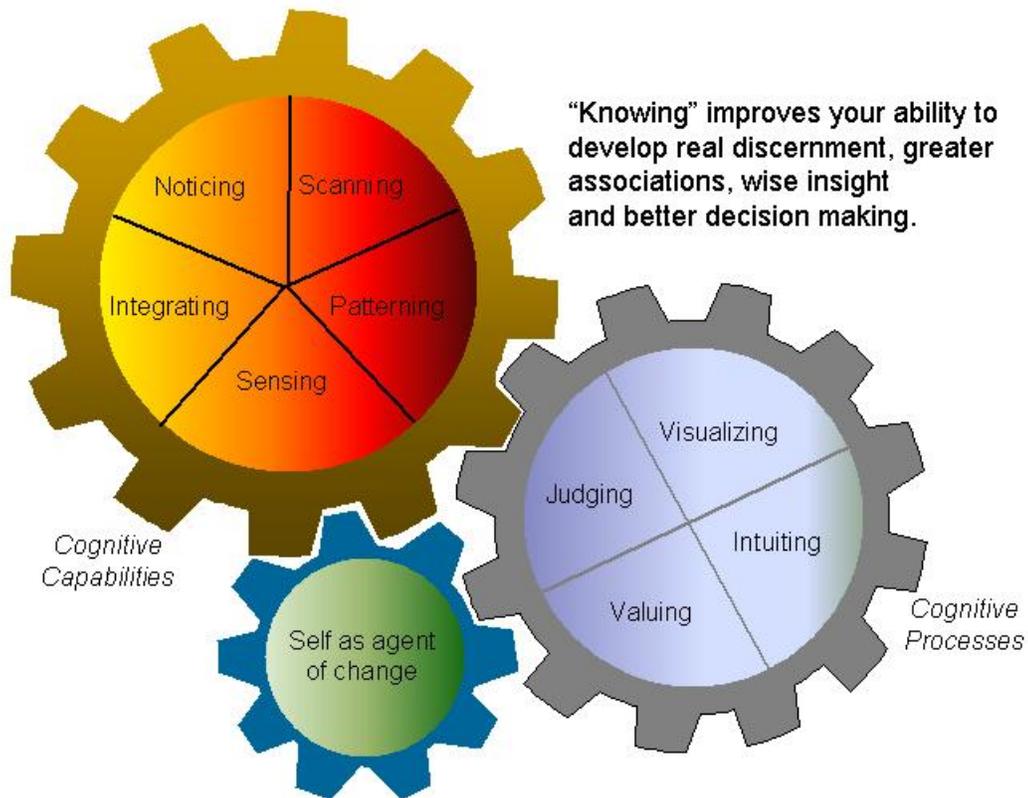
Once this is achieved, the challenge becomes that of translating knowledge into behavior, thus creating the ability to model that behavior to influence others into taking requisite actions. Role modeling has always been a prime responsibility of leadership in the military as well as in the civilian world. Having deep knowledge of the situation the individual must then translate that into personal actions that become a role model for others to follow and become motivated and knowledgeable about how to act. Effective role modeling does not require the learner to have the same deep knowledge as the role model, yet the actions and behaviors that result may reflect the equivalent deep knowledge – but only in specific situations. This is how you share the effectiveness from learning and thereby transfer implicit knowledge.

Wherever possible, of course, it is preferable to share as much knowledge as possible to allow others to act independently and develop their own internally and situation-driven behavior. Since much of deep knowledge is tacit, knowledge sharing can become a real challenge.

A third technique for orchestrating external change is through the use of dialogue. Dialogue is a process first originated by David Bohm to create a situation in which a group participates as coequals in inquiring and learning about some specific topic. In essence, the group creates a common understanding and shared perception of a given situation or topic. Dialogue is frequently viewed as the collaborative sharing and development of understanding. It can include both inquiry and discussions, but it must suspend judgment and not seek specific outcomes and answers. It stresses the examination of underlying assumptions and listening deeply to the self and others to develop a collective meaning. This collective meaning is perhaps the best way in which the deep knowledge of a situation that we have been addressing in this paper may be developed as a group and understood by others.

Another way of creating change and sharing understanding is through the effective use of the time-honored process of storytelling. Storytelling is a valuable tool in helping to build a common understanding of our current situation in anticipating possible futures and preparing to act on those possible futures. Stories tap into a common consciousness that is natural to all human communities. Repetition of universal story forms carries a subliminal message, a subtext that can help convey a high level of complex meaning. Since common values enable consistent action, “Story in this guise creates a heuristic framework to allow decision-making in conditions of uncertainty.” This form of communication is currently being utilized at the highest levels of the Department of the Navy. For example, the Undersecretary of the Navy used stories to envision applications of a Navy Marine Corps Intranet during Congressional hearings held in April 2000.

Modeling behavior, knowledge sharing, dialogue and storytelling are all forms of building understanding and knowledge. Persuasion, our fifth technique, serves to convince others of a specific conviction or belief and/or to act upon it. To change the external environment we need to be persuasive and to communicate the importance and need for others to take appropriate action. The question arises: When you have deep knowledge, what aspects of this can be used to effectively influence other’s behavior? Since deep knowledge is tacit knowledge, we must learn how to transfer this to



explicit knowledge. Nonako and Taguchi and Polyani have done seminal work in this area.

Persuasion, as seen from the perspective of the self, gets us back to the importance of using all of our fundamental values, such as personal example, integrity, honesty, and openness to help transfer our knowing to others.

SUMMARY

Taken together, the five observables, four processes and ten elements of Self as an Agent of Change, represent the factors that can create deep knowledge, understanding and effective actions, all necessary to obtain the real benefits of “knowing.” Each of these factors is related to many of the others, and hence it is the integrated capability built-up over time through learning, awareness and constant self-change that creates the power of knowing so important in the new warfighting environment.

Some of the benefits of this power of knowing are:

- Builds situational awareness through deep understanding, having a large insight into

the situation and its implications in warfighting.

- Reduces complexity by developing defenses against information and knowledge saturation and by being able to identify leverage points in the situation.
- Cultivates discernment and discretion to enable one to prioritize information and take appropriate action
- Empowers decision making through improved knowledge, a clear focus on the objectives and the recognition of alternatives at the point of action.
- Supports Knowledge Superiority through building the individual’s capabilities to create deep knowledge and share it with others.

In summary, this paper has addressed the concept of “knowing” by offering a framework for developing deep knowledge within the self and for sharing that knowledge with others to create a new level

of situational awareness. Since each situation is unique, this framework does not provide specific answers. Rather, it suggests questions and paths to follow. Although the goal is not new, the above considerations, together with their examples, outline major factors that contribute to the “positioning” as understood by Sun Tzu in the year 500 B.C. Recall his still famous dictum for victory: “Position yourself so there is no battle.”

While this paper has focused on the application of knowing to the Art of War 2000, a follow-on effort will investigate specific processes for developing deep knowledge applicable to a wider range of situations.

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ENDNOTES

¹ These thinkers included Edward DeBono (the father of lateral thinking), Catherine Allen (CEO of the Bank Industry Technology Secretariat), Bernard Boar (author of *The Art of Strategic Planning for IT*), Michael Bayer (Chair of the Army Science Board), John Petersen (President of The Arlington Institute) and Margaret Wheatley (author of *Leadership and the New Science*).

² These example exercises are adapted from exercises discussed by Stuart Wilde in his books and lectures. These examples are also used extensively in other literature and outreach programs. The intent in this paper is to present the concepts, not to focus on specific exercises.