

IN MEMORY OF MASTER TAIJI KASE: 'PORTRAIT OF A MOTOR GENIUS'

By Bill Laich M.D., Ph.D.

My first contact with Kase Sensei came in 1976 when I assisted him on one of his courses in Madrid. I was 31 years old at that time and fresh out of the University of Madrid School of Medicine. I had started karate eleven years before, and had seen the techniques of many top international instructors. However, Kase Sensei's relaxed expression of speed, force, power, and *kime* was outstanding. Every time he executed *gyaku zuki* the gym's tough wooden floor exploded as if a gunshot had been fired. Relaxed force went through his body and into the ground only to be connected, and expressed with maximum power and *kime* through his torso, arm, and fist, and into the target. Sheer biomechanical beauty to say the least. By far one of best expressions of *kime* that I had seen. As the course developed I began to closely observe the essence of his complex and

repetitive movements. I also tried to imagine the network of neural systems responsible for generating, controlling, and expressing such explosive, yet 'relaxed' power. I paid close attention to the precision and complexity of his movements, including the most simple ones. He was able to deal efficiently with uncertainty.

But what is uncertainty? Without going into details beyond the scope of this article, we can say that we increase difficulty by increasing uncertainty. Uncertainty is the extent to which an individual is required to process information in order to determine a course of action or in-action. In karate, the difficulty of any movement increases in accordance to the degree of uncertainty present. Many factors increase the difficulty of processing in the response selection stage, for example

when confronted with multiple options and one is not sure which is the most appropriate one to choose. Factors that increase difficulty result in increases in reaction time and/or increases in response selection errors. In Karate we purposely attempt to increase the difficulty of the response selection process for our opponents while maintaining our own to a minimum. As uncertainty increases there is also an increase in the time lag until a response is produced, as well as an increase in the probability of a response selection error. Because of such, the uncertainty factor has serious tactical and strategic connotations in *kumite*.

But what does uncertainty have to do with Mr. Kase? The answer is very simple – he was able to deal with it effectively. His responses were always fast and correct. Every one of his movements was

characterised by quickness, proper response, ease of effort, and sheer simplicity. At one given moment, while explaining the transference of force from the ground, through the body, and into the target area, there was a well chosen and finely coordinated adjustment of all of his body segments. Besides the movements of his feet, legs, hips, torso and arms, there were other adjustments of his head and eyes as he calculated and followed the trajectory of the target.

Interestingly enough, and while performing the movements just described, Mr. Kase had time to look peripherally at me, as well as a few other students, time to express a quick smile at three bystanders, and still time to say a few well chosen words about the technique, as if his nervous system was prepared to deal with degrees of complexity and uncertainty far beyond those required. Everything was exquisitely integrated, timed, and under control. He was capable of seeing and reacting to more than one thing at a time and apparently could "see" one second ahead of real time. However, what struck me the most was the fact that practically none of his movements were under conscious control. He made decisions concerning his body position, the dynamic actions of his body movement, the uncertain actions of his opponent, the actions



The last photograph taken of Kase sensei at an official WKSA grading examination. The grading panel in Alicante, Spain, March 2nd 2003 consisted of Kase sensei (left) Dirk Heene (centre) and Dr Bill Laich.

of his students, and still had sufficient time to smile at a specific person and explain what he was doing. Not for one moment did he give any evidence of consciously thinking about the manner in which he proceeded to execute his decisions. Every one of his responses could have been executed through an infinite number of possible combinations, however, and in some way, he was able to choose one of those responses consciously. He simply chose the best possible response for each moment or situation. It seemed the uppermost part of his sensorimotor system, perhaps his cerebral cortex, was perceiving and sending conscious commands to other parts of the nervous system. Such orders, at a lower level, produced unconscious and specific responses that executed the commands.

Surely the high speed automatic character of his movements were far beyond the slow and deliberate actions which most probably characterised his basic training during his youth. However, and in some way, Mr. Kase's experience and natural ability had been integrated into his movements, and with time the control of such movements had changed from a conscious effort to an unconscious one – like an automatic pilot. Suddenly a penetrating but kind

voice pulled me out of my contemplation. *"Do you understand? – it's really simple,"* said Mr. Kase with a smile on his face, as he caught me in a complete state of enchantment. "It sure looks simple," I thought to myself as I collected my thoughts and slowly walked out of the dojo.

As I write this article I smile at the fact that Mr. Kase had served as my model for understanding the three principles of sensorimotor control. These principles constitute the basis for learning and execution in karate. Those principles are as follows: 1) that the sensorimotor system is organized in hierarchies; 2) that the motor output is guided by the input of sensory stimuli or information; and 3) that the learning process changes the nature and the center of control. Where does all of this take us? The practice of karate is filled to the brim with uncertainty. Many times the less one moves, the greater the uncertainty level that is created. How does one deal with high levels of uncertainty when extremely high decision and execution speeds are required? One thing is the time available for movement execution or movement time, while a totally different thing is the time available for information processing before movement execution begins. Only then does a motor action

begin. And along the line you must choose a response – and it had better be fast and precise: *"Go no sen or sen no sen?"* You make the call!

One weekend, March 1st 2003 Mr. Kase imparted a course in Alicante, Spain (I assisted on the grading/test panel). Although I have always had a very warm and friendly dialogue with Mr. Kase throughout the years, I could not help asking myself in silence, "Exactly what goes through this man's seventy plus year old mind and nervous system as he executes sharp, relaxed and powerful techniques after all these years, especially after suffering a heart attack?" Had he answered, I believe his reply would have been quick and very much to the point: *"It simply flows."* However, I strongly believe the real answer to *"the flow"* in Kase sensei's karate lies deeper – much deeper. More likely it lies imbedded deep within the natural capacity, experience, and fast information flow within his privileged nervous system. A system where the boundary lines between levels of conscious and unconscious commands are integrated and coordinated in accordance to the three principles stated before. A system whose functions the honourable Master Kase developed to the the level of *'pure genius'*.