

Russian Systema's Flow Training: A Progressive Alternative to Stimulus- Response Training

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*"Therefore, when warriors go out successfully and come back unhurt, they
understand the art of war."*

Sun Tzu II, The Lost Art of War

INTRODUCTION:

In the past 25 years, more has been learned about the structure and function of the human brain than in the rest of human history combined. New insights into the process of learning, research into surviving violence and studies regarding the psychophysical effects of harming our own species have reshaped the way that many now view combat training.

THE BIRTH OF THE RUSSIAN WARRIOR ARTS:

The martial arts of ancient Russia were forged in the fires of adversity, across a vast and unforgiving landscape of diverse geography and climates. Finding their earliest roots several millennia before the birth of Christ, the earliest incarnations existed as scattered tribal practices among the Slavic warrior communities. Then, beginning in the 6th century, a host of foreign enemies laid siege to Russia's borders, spurring an evolution in the development of these arts. Among the most notable invaders, Bata Khan in 1237 led the Mongol occupation of Russia, which remained until the late 15th century, exposing early warriors to new military strategies and weapons. (Shillingford, 2000: 21). From these arduous firsthand encounters, the earliest Russian masters learned one simple truth: combat is a chaos state that carries an infinite number of challenges and opportunities. The most effective way to prepare an individual to survive this adversity is through the development of adaptability, creativity and autonomy. Since there was no way to predict how an enemy would attack, there could be no one technique or single form that could guarantee survival. (Vasiliev, 1997: p 14)

Reinforcing this emphasis on adaptability was the absence of a formal army to protect the people. As civilian warriors, fighters of this era required an art that was quick and easy to learn, without detracting from their daily duties as farmers, hunters and merchants. As a result, emphasis was placed on natural bodily movements over complex form or memorization.

Geography also played a key biophysical role in reinforcing natural movement. While fighters in contemporary Oriental martial systems tended to employ stances that were more fixed and stable, necessitated by the mountainous terrain in which they were born, Russian warriors were more buoyant and irregular in the movement. Moreover, the social prevalence of squatting and kneeling positions in the Orient, cultivated a differing perception of the body's center as residing just below the navel. By comparison, European conditions were less demanding on stability. The potential for a higher center of gravity, alternately residing between the base of the navel and the solar plexus (what the Russian's term a "floating center of gravity") encouraged a pendulum-like use of the torso with footwork that resembled the movements found in ice-skating. (Vasiliev, 1997: 7, 15-17)

The goal of the Russian Martial Arts was always to maximize one's own biomechanics while impeding the function of the aggressor. Guided by this simple objective, the arts continued to evolve through the generations, passing from father to son, borrowing from neighbors and enemies alike. (Vasiliev, 1997: 17) The next greatest turning point occurred in 1917, when the newly instated Communist government publicly forbade the practice of all traditional martial arts, in the hopes of further destroying the roots of nationalism in its people. Despite their outward efforts however, the government could not deny the sheer effectiveness of their indigenous combat styles. Secretly, they worked to assimilate the various cultural traditions into a single concentrated hybrid. In 1918, Lenin founded an organization led by Comrade Vorosilov to research and experiment with the various Russian and foreign martial arts alike. To this end, teams of investigators traveled throughout the world as the government tirelessly devoted their resources to testing and refining their traditional knowledge, enhancing it to include modern tactics and weapon use. In the end, over 25 Russian unarmed combat styles were integrated into a distilled hybrid and reserved exclusively for the most elite tiers of the Voiska Spetsialnogo Naznachenia (Russian Special Forces)-or "Spetsnaz" troops. It was in this arena of real-world application that the full power of the ancient Russian combat traditions became known once again to the world. Its practitioners referred to this new hybrid simply as "Systema" or the System. (Shillingford, 2000: 21)

THE SCIENCE OF SURVIVAL:

We are designed to survive. Evolution has hard-wired a complex personal protection system into our bodies that we carry with us everywhere we go. The entire function of this reflex system depends upon our perception of any given threat. While much is known about the effects of fear on the human body, little is known about the actual causes. One of the world's leading researchers on the causes of fear, Dr. Joseph LeDoux of New York University, has said that essentially what we do know is that fear is a "neural circuit". Fear stimuli are absorbed through our eyes, ears and other sense organs, feeding information to the portion of the brain known as the thalamus. There, time permitting, the brain quickly creates an image of the threat in our minds, interprets this image and then processes an appropriate

response to the cortex-the portion of our brain responsible for delegating actions. This allows the most evolved “human” portion of the brain to remain engaged and rational thought to prevail. Neuroscientists commonly refer to this neurological pathway as the “highroad”. (Ledoux, 2004: 212-214)

A second neurological pathway also exists. In more spontaneous scenarios, if the brain regards a stimulus as being too urgent, the threat message received by the thalamus is instantly rerouted to the section of the brain known as the amygdala. In these instances, the rational forebrain (cortex) is completely bypassed. Instead, the amygdala instantly responds with what is commonly referred to as the “startle/flinch” response. These are any automatic reflexes designed to protect the body from sudden harm. Startle/Flinch responses include instinctively pulling your hand away from a hot stove, sneezing to clear your airway of foreign particles or blinking to protect the eyes. Neuroscientists refer to this second protective subroutine as the “low road”. (Ledoux, 2002: 212-214; Ledoux, 2004)

Initially, it may seem redundant, even ineffective to have evolved 2 separate response systems in our body, but as researcher Doug Holt explains, both serve a valuable purpose. The “low road” startle-flinch response acts as a safety net that only overrides cognitive control during surprise situations. This reflex sacrifices detail and accuracy for the sake of the fastest possible reaction time. In the words of Dr. Ledoux: “You’re better off mistaking a stick for a snake than a snake for a stick.” If instead, the brain determines that there is sufficient response time, research has shown that the signal will continue to the cortex, rational thought will remain engaged, and actions can still be made deliberately by the forebrain. The only difficulty with this “double-wiring” according to Holt is that the connection from the cortex down to the amygdala is less well developed than the connection from the amygdala back up to the cortex. This means that “low-road” reflexes will exert more influence on the cortex than vice versa. Once the flinch-response has been triggered, it is very difficult to turn it off. (Holt, 2004)

UNDERSTANDING COMBAT STRESS:

Many of us were raised believing the myth that during extreme situations, humans will generally behave in extraordinary ways. While this may be true from a spiritual or moral perspective, where diversity has been known to inspire humans to sacrifice and achieve great feats, from a purely physical perspective, the reality is that stress weakens and deteriorates human performance. Studies have determined in particular that combat stress triggers our basic survival mechanism, or what is termed our “fight or flight” response. Originally discovered by the Harvard physiologist Walter Cannon in 1911, this response occurs when our brain perceives a threat, whether real or imagined, signaling various glands to dump massive amounts of chemicals and hormones into our bloodstream. (Cannon, 1911; Ledoux: 212-214)

As we fill with adrenaline and cortisol, our body jumps into high alert. This in turn reprioritizes body function: vision narrows to reduce distraction and intensifies to scan our environment for potential enemies. Secondary functions like sex drive and digestion are temporarily shut off. Blood flow is diverted from our extremities to reduce the risk of loss from potential injuries and channeled towards our largest muscle groups to allow us to flee or fight with more survival strength. Millions of nerve cells fire in a fraction of a second, arming reflexive weapons throughout our body, allowing you to run faster, hit harder and endure more pain. (Shillingford, 2000: 18)

The startle-flinch response can be triggered any time that we perceive a threat, running a full gamut, from the pre-fight jitters that a professional fighter might feel before stepping into the ring, to the complete system override that occurs if you are drowning, when your airway automatically closes to prevent the incoming flow of water (a reflex known as laryngospasm). From a combat perspective, no matter what system you train in, if your brain deems any stimulus urgent enough, your flinch response will take over. The question then remains:

1. What can be done to direct or improve the automatic “low-road” responses contained in our flinch response? and;
2. What can be done to maintain rational “high-road” brain function, preventing the low road from being triggered in the first place?

INTEGRATING THE FLINCH RESPONSE IN COMBAT TRAINING:

Military researchers in the 20th century quickly began to understand that although the effects of the “startle-flinch” response seem debilitating in that they reduced rational thought and fine motor skills, they ultimately served a survival function that has succeeded in keeping our species alive for thousands of years. Western military researchers launched a dominant move towards the simplification of combat mechanics. Gross motor movements, like large sweeping deflections and club-like hits, replaced intricate techniques. Military training in the West reinforced using “universal” or “transferable” movements that could be used against a wide variety of threats with little modification. For example, a simple, windmill swing of the arm could be used to deflect a kick or punch, strike a limb, disarm weapons, or attack the body. As the soldier became more accustomed to responding under extreme conditions, the likelihood of experiencing paralysis in a life-threatening situation diminished drastically. (Shillingford, 2000: 18; 41-43) The American military pioneer, Col. Rex Applegate, in his landmark book *Kill or Get Killed* wrote: “Military experience, in combat and training centers throughout the world, has shown that the average man can be quickly turned into a dangerous, offensive fighter by concentrating on a few basic principles of combat and by advocating principally the use of blows executed by the hands, feet and other parts of the body”. (Applegate, 1976: 4)

Beyond simplification, military trainers over the last century have also experimented heavily with conditioning the automatic reflexes in our body through stimulus-response training. Simply put, this training involves linking

a particular stimulus or trigger with a desired response. We are all likely familiar with the classic example of Pavlov's dog, where a dog was fed every time a bell was rung. In time, the dog became conditioned to associate the ringing of a bell with food, until the bell alone was capable of causing the dog to salivate. Fire drills are another common example of stimulus-response training. Most of us have been conditioned from our early school years to line up in an orderly fashion and evacuate the premises the moment we hear a fire alarm. Through repetition and by keeping the link between the trigger and the response clearly evident, it is possible to literally retrain our reflexes. In fact, research has shown that the repeated exposure of a subject to any stimulus, no matter how intimidating that stimulus may initially be, is ultimately capable of deconditioning a subject's anxiety response (Ornstein, 1991: p92). Simply put, familiarity eliminates fear. The military has been perfecting this form of conditioning since the beginning of the 20th century. Flight simulators, target shooting, war games using paintball guns and first person shooter video games are all excellent examples of modern stimulus-response training.

One of the world's leading experts on operant conditioning in military training is Lt. Col. David Grossman (U.S. Army (Ret.)). A former army ranger and West Point Psychology professor, Grossman is the author of *On Killing, The Psychological Cost of Learning to Kill In War and Society* and an active spokesperson for the effects of the media in cultivating violent behavior. Grossman notes that humans, like most species on this planet, naturally carry a built-in aversion to killing their own kind. This is a byproduct of successful evolution, since species that combine to combat their common predators are more likely to survive than those with the tendency to kill their own. Citing the research of Konrad Lorenz, Grossman notes that when animals with antlers and horns fight one another, they head butt in a harmless fashion. But when they fight any other species, they go to the side to gut and gore. Piranhas will turn their fangs on anything, but they wrestle one another. Almost every species has a hardwired resistance to killing its own kind. (Grossman, 1996: 6).

Initially, I suspect that many readers might question whether such an aversion to harming our own species exists. The sheer quantity of violence on the evening news would certainly seem to suggest otherwise. Nevertheless, the inhibition to harm has been widely recorded and researched. Author Rick Fields in his book *The Code of The Warrior* cites numerous records of tribal warfare to illustrate how generally, traditional cultures are reluctant to inflict harm even during conflict. He suggests that it is perhaps because of their closer connection with the cycle of life and their heightened awareness of their own mortality that they reserve the use of their own lethal capacities. While war and violent conflict historically has served a role as what Field's terms a "cultural antidote" for social ills and in some cases even as an ecological balance through population control, it is quickly becoming antiquated and unnecessary. (Field, 1991: 24-27). William Ury, the director of The Global Negotiation Project at Harvard Law School and acclaimed negotiations expert echoes these findings, noting that much of the historical "evidence" of our own species' barbarism has been misinterpreted according to our own assumptions and prejudices. (Ury, 2002:

11-18). We assume that our ancestors must have been more violent because they were more primitive, but the reality is that the great majority of humans do not crave to harm their own kind. Later on in this article, I will discuss the dangers inherent in using modern conditioning methods to undo this natural safety mechanism and show how much of the modern influx toward harming our own is in fact due to operant conditioning methods inherent in our mass media.

THE POWER OF FLOW:

“Those skilled at the unorthodox are as infinite as heaven and earth, as inexhaustible as the great rivers.”

SunTzu, The Art of War--

During its evolution, the Russian martial arts chose to adopt a different approach to combat readiness. While they deeply understood from firsthand combat experience, that flashy or overly complex technique simply did not work under the stress of a real fight, practitioners also believed that trying to reduce combat to 2 or 3 sure-fire pre-determined moves through stimulus response training was equally flawed in that no one response could work in every situation. Instead, the Russian Martial Arts sought to encourage the practitioner to discover their own natural way of moving. To achieve this, relied on providing a slow training approach, where the practitioner was allowed to explore their body's capacities. As with stimulus-response training and most forms of learning, repeated exposure allowed the practitioner to gently erode their fears and uncertainties and replacing them with familiarity. The two main distinctions between conventional stimulus response training and the approach used in Systema are that no one response is reinforced in the Russian method relative to each stimulus and that training occurs at a slower pace. Training that moves too quickly, runs the risk of only triggering the practitioner's innate “flinch” responses, reinforcing existing knee-jerk reactions and stopping the cognitive brain from functioning. This prevents new learning from occurring and permits the student to instead continually repeat their existing responses over and over again. The old adage “practice makes perfect” is simply not true. If you are practicing something badly, or performing biomechanically inefficient movement, then you will only further ingrain these negative responses. Mindful, deliberate, slow practice is the only way to perfect a movement. This allows the practitioner to safely experiment with their own bodies and the bodies of their partner and to familiarize themselves with the various stimuli involved in a combat dynamic.

In Systema, fear is regarded as being more than just an abstract principle. In a very real sense, it is rather seen as a tangible energy that can be stored or released from the tissues of the body. Every training exercise, in effect, every movement in life, carries the capacity to either increase the amount of fear that we store in our bodies, or else to reduce it. By learning to replace and functionalize their flinch response, the practitioner is ultimately learning to functionalize their fears. (Vasiliev, 1997: 28-29). This is a view shared by many modern health practitioners who have adopted a

more integrated approach to mind-body health. Dave Meier, in *The Accelerated Learning Handbook* notes that the foundation for the truly effective reeducation of our minds and bodies lies in moving away from the antiquated Newtonian worldview that regards nature as some obedient machine. He notes that the rise of quantum physics has given a new appreciation to the interconnectedness of all things. (Meier, 2000: 4-5).

A host of modern physical educators have developed methods based on the holistic relationship between body form and function and the idea that the way we use our body ultimately affects its structure and health. Pioneers like Moshe Feldenkrais, Milton Trager, and F.M. Alexander have researched how physical exercise can counter the physical effects of fear. In his groundbreaking book *Somatics: Reawakening The Mind's Control of Movement, Flexibility and Health*, Feldenkrais protégé Thomas Hanna notes that in life, our nervous system is constantly responding to various stresses and traumas in our environment with miniature muscular responses. These repeated reflexes, over time, accumulate to create habitual muscular contractions that eventually can no longer be voluntarily relaxed. These include the malformation of posture, chronic stiffness and body soreness. Eventually, the lack of use of our full potential, leads to what Hanna terms "Sensory Motor Amnesia". Simply put, we forget what our bodies are actually capable of. This in turn leads to our "gradual surrender" to the idea that we are incapable of performing certain actions and accepting that we are fundamentally limited. (Hanna, 1980: xiii, 38-39).

Take the very common example of learning to fall. As children exploring our ability to move, we often fall, with little to no awareness of the harm that we may suffer. Young and supple, we are capable of surviving repeated falls throughout the learning process, but over time, the pain of falling becomes ingrained into our nervous system. We forget how to fall effectively and safely. Eventually, the stimulus of losing our balance instinctively triggers the instinct to reach desperately for the ground. In itself, this flinch response is well-intended in that it is trying to protect the body and vulnerable head from impact, however as most martial arts that deal with ground work teach, the reflex to reach for the ground will generally injure the arms, wrists and hands during a fall. Instead, grapplers are taught how to improve the flinch response, integrating that same instinct to reach with a more fluid rolling action, through which the impact can be minimized. (Tedeschi, 2002: 34). Most combat arts accept that the most constructive way to absorb the impact of a fall is to yield to your own inertia and to go with the fall, rather than trying to avoid it. Through repetition, practitioners successfully ingrain the reflex to flow rather than flinch, until they are able to fall reflexively, no matter how powerfully they are thrown. (Hoare, 1980: 17-19).

Systema extends this same concept of "functionalizing the flinch" to all aspects of combat. Training partners work towards their mutual improvement, offering attacks that challenge one another, without endangering themselves. A very similar concept is used in Aikido, where practitioners take turns adopting roles as the defender (Uke) and the

attacker who will be thrown (Nage). (Ueshiba, 1988) The absolute key to this approach in both Aikido and Systema is to move at a pace that does not simply trigger the practitioner's startle-flinch response, but that instead keeps you just below your "reflex-trigger threshold". This allows your rational mind (your "high-road" response) to remain engaged throughout your training and helps your body to explore, experiment and discover new responses. What we term familiarity here is in effect a form of alternate conditioning for the fear circuit. Over time, slow training conditions the practitioner to perceive a stimulus like a punch, kick or knife attack as something less threatening, helping the practitioner to remain relaxed and in an optimal performance state.

Through slow training, Systema practitioners are better able to break combat skills down into essential sets, slowly and progressively—a process modern neuro-researchers refer to as "chunking". Since the 1950's educational researchers have known that the brain primarily learns through the use of images. Our earliest sensorimotor experiences as children occur through the recognition of symbols that we then learn to relate to words and eventually grow into language (Piaget, 1952). More recently, it has been determined that by dividing new knowledge into skill sets, our brain is able to form clearer images for every step of a process, digesting the information more easily. In fact, research has shown that the internalization of mental images is essential to learning advanced motor skills, learning adaptability and even to understanding the very idea of goal seeking—a concept pivotal to self-defense training and overall survival. (Ewatts, 1973: 105-107)

While the Russian combat masters of the 10th century may not have understood the science behind slow learning, it is now obvious that their intuitive understanding of the education process was entirely well founded. It is precisely the mindful physical exploration involved in slow training that appears to be so essential to Systema's hyper-accelerated learning curves. Modern research has shown that learning is fundamentally a "frontal lobe" brain activity. The frontal lobe, which is responsible for thinking and problem solving, also contains the primary motor area that control muscles throughout the body. Movement actually stimulates chemical secretions that are required to build the neural pathways necessary for learning. By more actively stimulating the frontal lobe through creative movement use rather than limiting action to a narrow set of forced repetitions, the practitioner is literally optimizing their brain at a chemical level and increasing stimulating the learning connections in the body. (Meier, 2000: 23-33)

Beyond building confidence and accelerating learning curves, slow training also helps to cultivate the reflex to yield rather than oppose force. A very simple exercise, which Systema practitioners use to teach yielding involves simply standing in front of your training partner and slowly, pushing against their body. The objective of this drill is to teach the body to yield in a manner that corresponds directly to the nature and degree of the force being received. Emphasis is placed on only moving what is being targeted and only to the degree required to neutralize the force. In Systema, the idea of blocking, whether in its traditional or more modernized "flinch" variation is

discouraged and regarded as an attempt to oppose force with force. Since there is always someone bigger or faster than you, the idea of blocking is ultimately flawed. Instead, Systema students learn to act like a matador fighting a bull, placing priority on escaping incoming violence.

Another basic Systema exercise used to reinforce this principle involves having a training partner slowly and deliberately attack you with a 4'-5' stick. Attacks should be kept fluid and versatile. Although it is important to exercise control and to attack without ego or malice, swings should still seek to follow through the partner's body so that they can gain a realistic understanding of the weapon's ultimate trajectory. The empty-handed training partner's goal is to evade the stick as if it were a sharply-bladed weapon. Emphasis should be placed on body movement and permitting the weapon to continue along its path, never opposing its force. Given the length of the stick and the versatility with which it can be used, evasion skills are put to the test and quickly improved. Initially, this drill can be performed very, very slowly. It is enough to simply practice walking out of the way of the stick, maintaining proper body alignment, balance and breathing in a slow, deep and comfortable manner.

As practitioners gain familiarity and comfort with the drill, your partner can begin to swing more quickly and with more force. Again, it is important for the bulk of your training to maintain a pace that permits you to continue to explore and experiment with your movement rather than simply flinch and freeze. As the stick comes more quickly or at more awkward angles, you will invariably be caught off balance. In these instances, your hands or legs may naturally rise up to protect your more vulnerable head and body. What is essential here is that you do not allow this flinch response to become oppositional, since blocking a stick or blade will result in serious injury. Instead, the arms should be used to guide and gently redirect the weapons with minimal force. In this way, the limbs along with any other surface of the body that receives an impact, can be taught to act as a sensor that detects the incoming force, dictating to your body how much movement is needed to avoid harm.

The various types of Systema evasion drills are designed to aid practitioners in overcoming a concern for aesthetics or specificity in their responses. A very similar ideal is expressed by the 16th century swordsman Takuan Soho in his classic work *The Unfettered Mind*, where he wrote: "Although you see the sword that moves to strike you, if your mind is not detained by it and you meet the rhythm of the advancing sword; if you do not think of striking your opponent and no thought of judgment remains; if the instant you see the swinging sword your mind is not the least bit detained and you move straight in and wrench the sword away from him; the sword that was going to cut you down will become your own and contrarily, will be the sword that cuts down your opponent." (Soho, 1986: 238) Similarly, the Systema practitioner's goal is to eliminate the various "stopping places" that can preoccupy and distract the mind and help cultivate a more fluid, instinctive and immediate response.

Another key ingredient in Systema's flow training approach is the emphasis on keeping learning enjoyable. Research has also show that learning occurs best through play and ritualized games and not through simple rote memorization. This can be clearly seen during childhood. (Meier, 2000) We enjoy the greatest intensity of learning during this period of our lives and we do it by exploring our world kinesthetically, physically interacting with our environment. As adults, we stray away from this approach, making learning more formalized and rigid. We impose the idea of memorizing on our brains, forcing it to ingrain specific actions or memorize movement or ideas, but this is not how our learning system is naturally designed to work. (Bruner, 1973)

Even a casual study of animals, from tigers in the wild to your house cat, will show that they also naturally learn through play. Through mock fights with their parents and siblings and other games, animals develop and maintain their coordination and unlock their basic bodily capacities in relation to their environment-what Seitz calls their "kinesthetic intelligence". This is done safely, without injury or malice. In a very literal sense, they discover their environment through manipulation and exploration. (Seitz, 1989) Similarly, Systema emphasizes that slow training should also be kept light and playful. In the Russian System Guidebook, Systema master Vladimir Vasiliev writes: "If you're serious when there is no threat, when a threat really does arrive you'll be left with nothing in reserve. You've used yourself up and left no more room to make the transition from civilian to warrior." (Vasiliev, 1997: 23) In this way, Systema' slow training can not only be seen as a safer and more effective way to learn, it is also ultimately a form of psychological reinforcement that bolsters the practitioner's self image and subconsciously cultivates a sense of restraint and self-control in the student.

GRAPPLING WITH FLOW:

Another area of training where Systema's distinctions can be clearly seen is in the domain of grappling and ground fighting. Systema teaches groundwork as a set of principles and movements rather than a fixed set of techniques. Despite its Russian ancestry, we must be careful not to confuse Systema with Sambo. Given Systema's application in the Special Forces, no emphasis was placed on locks or holds, except for individuals who were training for bodyguard or security related work. Students were instead taught to reacquaint themselves with their body's capacities through unique training exercises to gradually counter the effects of what Hanna termed muscle amnesia.

The Systemic perception of fear as a tangible energy is also extremely evident in their ground fighting training. Defense from the ground carries a number of heightened stresses inducers. Your attackers will generally enjoy a superior position, standing above you or pinning you. This can involve limitations to mobility, suffocation, reduced sensory capacities due to poor position and the pain and fear associated with holds and locks. Rather than trying to teach specific counters to every possible threat, students are

familiarized with the nuances of the ground. An example of a Systema exercise used to recondition a student's awareness involves having one student simply lay on the ground, then having 4 or 5 partners take hold of a limb, beginning to gently manipulate the appendages. Eventually, the movements become more aggressive pulls and twists. The intent is to improve the student and not harm them. Care is taken to avoid sudden or jerky movements, however, the goal is to aggressively stretch the recipient, taking them through their perceived pain thresholds. When performed correctly, this exercise helps students distinguish between real pain and the emotional exaggeration often associated with it (an emotional equivalent of the flinch response). The end result is a massive relaxation and correction of the body alignment and a calmer and more focused mind. (Vasiliev, 1997: 29).

Similarly, Systema practitioners experiment with being pinned and compressed in different manners, to acclimatize themselves to the panic that often accompanies prone positions. By setting no limit on the attacks that their partner uses, the recipient at once becomes conditioned to expect the unexpected, learning to respond genuinely to the situation at hand rather than trying to remember or replicate a specific technique. Rather than being driven by panic, the Systema practitioner remains calm in their awareness of their intrinsic capacities, systematically fixed on countering the body of their aggressor according to biomechanical principles rather than becoming preoccupied with the specifics of each attack. Humans are fundamentally goal-oriented machines. The nature of the goals that you feed them will determine their effect. If they feed themselves failure objectives, like panic and desperation, they will become a failure mechanism. However, if they offer themselves success goals like countering one specific aspect of their attacker's leverage, improving their own position or maintaining their own breathing, they become success mechanisms. It is precisely the absence of a clear goal that leads to frustration and the rise of aggression. (Maltz, 1960: 132).

A SELF-DEFENSE SHORT CUT WITH A COST:

"That the yielding conquers the resistant and the soft conquers the hard is a fact known by all yet utilized by none."

Arthur Waley

Stimulus-Response training works-irrefutably and unarguably. It has been proven to be a simple, direct and effective approach to rapid learning, however, this neuro-physical shortcut comes with a tremendous risk. Grossman notes that through the use of operant condition methods, the American military was able to improve their soldiers' "firing rates" or their willingness to fire on the enemy from 15% in WW1 to 55% in the Korean War and finally to over 90% by the Vietnam war. He cautions however that the cost involved in overcoming our natural inhibitions to harm include extreme rates of combat fatigue and post traumatic stress disorders. Research has even shown that just facing the stress associated with realistic combat training or with heightened states of alert, as a soldier might experience

while on standby, when endured for prolonged periods of time, will likely cause psychiatric harm. (Grossman, 1995) Jonathon Shay in his book *Achilles in Vietnam: Combat Trauma and the Undoing of Character*, similarly notes : "...the specific nature of catastrophic war experiences not only cause lifelong disabling psychiatric symptoms but can ruin good character". (Shay, 1994:xiii)

The danger with stimulus-response training, is that the brain's "low road" reflex is triggered repeatedly. In order to react quickly, this reflex bypasses a detailed analysis of the threat-in essence, it doesn't distinguish between a real threat and a false alarm. This is why a horror movie can still frighten us-we know that the stimulus is imitated, but our brain will still reflexively respond to any sudden stimulus, like a monster jumping out on screen. Going back to LeDoux, it's better to mistake a stick for a snake, then vice-versa. The stimulus will also still trigger a very real chemical reaction in our bodies. Through the same process, stimulus-response training induces all of the same chemical effects of the combat it is seeking to emulate. The more intense and realistic the simulation, the more potent the chemical dump in the body. With every full speed flinch response that you trigger, the body is flooded with adrenalin and a host of other natural chemicals. By repeatedly subjecting your nervous system to these effects, you run the risk of inflicting actual combat fatigue and stress disorders on your bodies just by training. (Ledoux, 2002: 295-296)

If you are a professional working in an environment where you are likely to be immediately exposed to a life or death situation, this type of training may be deemed a necessary occupational risk. Immediate survival skills versus the potential for long-term psychological or neurological damage may seem like a worthwhile tradeoff. If however, your goal is the continuous improvement of your combat effectiveness combined with improved physical, emotional and spiritual health, stimulus-response training may be counter-productive. Slow, progressive, practice provides a safer alternative for long-term training, since it minimizes the practitioner's exposure to the natural hormonal enhancers in our bodies. Russian Systema seeks a method of combat training that permits the continual improvement of the practitioner without deteriorating normal daily functions or quality of life. As the opening page of the Russian System Guidebook reads: "Fighting skill should evolve into an unconquerable weapon that can't be seen until used nor taken away while its practitioner is alive." (Vasiliev, 1997)

There is significant evidence that the accumulation of stress hormones in the body is ultimately harmful. Neil F. Neimark notes that over time, improperly metabolized stress hormones can lead to a plethora of nervous system disorders, ranging from headaches and high blood pressure to deficiencies in the immune system, allergies and arthritis. He notes that a calm awareness is ultimately far more productive than hyper-vigilance over the long run of our existence. (Neimark, 2004) Dr. Jon Kabat-Zinn, in his critically acclaimed book *Full Catastrophe Living*, similarly notes that if we don't control fight or flight, it controls us. (Kabat-Zinn, 1990:254-256).

Not only is a calm awareness healthier for the practitioner over the long term, it is also more natural. While the “fight-or-flight” response is a necessary reflex when confronted by a sufficient threat, it is nonetheless an exception that was originally intended to interrupt our otherwise optimal state of regular and relaxed being. Through his research, the Harvard cardiologist Herbert Benson, MD, has proven that our body’s contain a more necessary instinct that counter’s the “fight-or-flight” response-the instinct to relax. Ingrained into our bodies from our earliest moments in the womb, we are intuitively conditioned to rest when afforded the opportunity, to conserve energy and to recuperate. When the “fight-or-flight” reflex is not being triggered and when our body is not otherwise engaged in intense activity, it is precisely what Benson terms our “Relaxation Response” that is actually at work, decreasing blood flow and respiration and providing an overall sense of well-being. (Benson, 2000: p 90-98).

Benson notes that the Relaxation Response is an “inducible” physiological state of quietude, that can be consciously cultivated through meditation, yoga, qigong, or a host of mindful practices. Benson notes that the danger in our modern society is that our “fight-or-flight” response is constantly being triggered by the stresses in our environment, but that both responses are socially unacceptable in a conventional setting; we can neither hit our boss nor run away from him when he yells at us. The end result is a constant accumulation of the stress chemicals associated with this heightened state, without the necessary release. (Benson, 2000: p 97-98). While combat training does admittedly provide a greater degree of release for this stimuli than our daily workplace might, there nevertheless remains a danger in triggering this intense survival reaction without consciously training our body’s natural relaxation response as a counter measure.

Aside from serving as a vital form of self-preservation, our Relaxation Response also provides the martial artists interested in reflex-based training with an option: Rather than build your combat method on the startle-flinch response as many modern combative systems do for short-term gain, the choice exists to instead dedicate your practice to the cultivation of your body’s intuitive desire to return to its natural state of alignment and harmony. Like Tai Chi, Bagua and Hsing-I, Systema shows us that it is possible to approach the resolution of violence through submission and yielding rather than sheer opposition. Relaxation has been shown to actually improve the nervous system of the practitioner, including reflex speed, respiration and biomechanical efficiency. (Lie, 1988: 116-118)

Through a commitment to relaxation and yielding and a mindful dedication to breathing and body form, progressive muscle relaxation techniques and the free exploration of combat stimuli, Systema experts in the Russian Special Forces have shown that it is possible to safely expand a warrior’s combat ability and stress thresholds. The Russian military’s goal was to create no less than a super-soldier-a warrior capable of supreme combat effectiveness-without incurring the incremental chemical harm to the nervous system or psychological unbalancing that you would likely suffer with more conventional flinch-response training. Their success is well

documented in the combat records of their Special Operations Units, who, through a dedication to the training methods of Systema, were able to achieve unsurpassed performance standards in some of the most intense warfare scenarios in modern history. (Vasiliev, 1997)

CONCLUSION-TRAINING OR TRAUMA:

“In making preparations for struggle, it is not only necessary to consider how best to prevail, but also how best to handle the aftermath of struggle, how to safeguard the fruits of victory, and how to make the best of further opportunities that arise as a result of success.”

Thomas Cleary

The United States Marine Corps combat strategy manual Warfighting: FMFM1 states that war is: “a continuous, fluctuating fabric of activity replete with fleeting opportunities and unforeseen events. Success depends in large part on the ability to adapt to a constantly changing situation.” (Schmitt, 1989: 4) Since their earliest roots, the Russian Martial Arts have shared this concentration on adaptability. It is therefore in this light that they regard operant conditioning methods as a powerful short cut to combat effectiveness, with an unacceptable cost. The danger inherent in reconfiguring our neural circuitry is that we are in effect depriving ourselves of true responsiveness. Rather than learning to authentically adapt to our environments, stimulus response training instead risks loading us with a limited arsenal of fixed, hair-triggered responses. Moreover, as we have seen, operant conditioning overcomes our natural inhibitions against harming and killing our fellow species, undoing a safeguard that millions of years of evolution has seen fit to equip us with.

Lt. Col. David Grossman warns us that there is evidence of the dangers of combat operant conditioning techniques all around us. The same techniques used by the military and many martial arts systems to overcome the inhibition to harm are similarly employed by the mass media. Grossman believes that this is contributing to violence levels reaching all-time highs in American society today. While he admits that his critics are the first to point to declining murder rates, he believes that these numbers fail to take into account the advancements in medicine and technology that assist in prolonging life, distorting those figures. More telling, Grossman insists, is that aggravated assaults have increased seven fold since the 1950's. He notes that other countries are following suit: Canada's rate of aggravated assault has increased by five times since 1964 and similar statistics show at least a doubling in Australia, Greece, and Europe. (Tyrell, 2000)

With so much evidence of the dangers of operant conditioning methods, we must ourselves, what is the ultimate goal of our training? Systema's concerns transcend simple combat mechanics. The Russian Martial Arts have long understood that there is an obligation to do more than simply make a warrior into a killing machine. Training must instill responsibility along with that power. It must increase humanity, not bypass it. After all, what value is there in learning to protect the self if the method

you are ultimately using deteriorates or damages the being you are seeking to protect?

Vladimir Vasiliev, the leading Systema expert living outside of Russia is himself a 10-year veteran of one of the most elite units of the Russian Spetsnaz teams. There he served as an operative in some of his country's highest risk missions and as an instructor for the Special Forces, KGB and SWAT teams. Vasiliev notes that the Russian military learned the crippling cost of war from their experiences in Afghanistan and Chechnya. They sought to create a warrior that could survive the emotional stresses of combat and the key to achieving that was to promote a good moral character and a respect for human life. Systema offered one such alternative. "If you can accomplish your task without taking a life, then this is good." (Tyrrell, 2000). "With all of the aggression in the world" Vasiliev adds, "there's also a great fear of becoming a victim. The Russian system tries to free the student of this fear and protect him from the even greater terror of becoming an aggressor." (Vasiliev, 1997: 14)

Systema succeeds in achieving this result through its comprehensive "slow-training" approach, eroding the fears of its practitioners by respecting our natural inhibition against harming our fellow man. By "functionalizing the flinch" response and dissolving their fear, practitioners are able to achieve a state of intuitive flow and surpass the boundaries of ego and self-consciousness, where truly optimal performance is unleashed. (Csikszentmihalyi, 1990: 106). From the authentic responsiveness of the flow state, comes the capacity to care and assess, to sense and decide and ultimately to experience the world around. In the end, the goal of the Systema practitioner is to protect the self and not to harm the other.

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