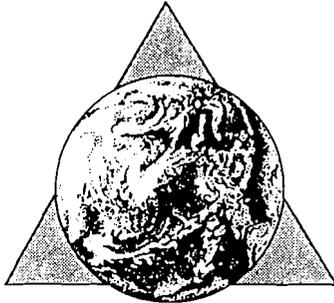


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## Aikido & the Concept of Ki

When we think of “energy” in contemporary culture, we usually think of some known kind of *physical* energy, like moving wind, or flowing water, gravity, electricity, chemical reactions, or radioactivity. Carl Jung once pointed out that the idea of energy is actually a psychological one, a basic archetypal idea, arising from the human experience of feeling energetic. As a purely psychological idea, it is obviously a real aspect of our experience, but also one that is not generally easy to get very specific about once we finish saying things such as, “I’m more energetic today than yesterday.”

When the physical sciences began to evolve several hundred years ago, they were exceptionally successful at being specific about energy. They could describe a mechanical device as producing energy of 35 horsepower, or an electrical current as being 10 amperes of current at 50 volts of pressure, thus manifesting exactly 500 watts of power. With this increasing precision in describing physical energy came enormous progress in applying it to useful ends. This kind of success in science has led us to thinking about energy almost exclusively in physical terms, so that we may feel even apologetic about using a vague and subjective term such as “psychological energy.”

Nevertheless, psychological and/or psychic energies are useful concepts in understanding the mind, and on occasion they have some aspects of reality in the ordinary physical world. Elsewhere I have written about the experimental application of one kind of psychic energy, *psychokinesis* (PK), to living biological organisms (Tart, 1984a) and its application to healing (1984 b & c). In this article we will look at the practical application of psychological (and perhaps psychic) energies in one of the newest of the Oriental martial arts: Aikido.

## THE ART OF AIKIDO



Aikido (pronounced *eye-key-dough*) is a Japanese art of self-defense that evolved, in just the last few decades, through the efforts and mystical understanding of a remarkable Japanese man, Morihei Ueshiba (sometimes spelled in translation as Ueshiba).

From an early age, Ueshiba was interested in the spiritual life particularly as it was expressed through traditional Shinto beliefs, and in phenomena we would describe as spiritualistic or psychic in Western terms. Throughout his life, he was dedicated to searching for enlightenment and spiritual understanding. At the same time, an experience in his youth of seeing the thugs of the village landlord beat up his father for having some progressive social ideas, impressed on him the reality of physical power and the need for social justice.

Thus Ueshiba spent his youth and early life focusing on areas which, by Western standards, seem incompatible. He spent enormous amounts of time meditating and studying spiritual matters, and during the same time period he mastered many traditional martial arts. In essence, he became a master at injuring and killing while becoming more and more spiritual. Consequently he sought the true meaning of *budo*, the inner essence of the martial arts.

In mid-life, Ueshiba was sitting under a persimmon tree one day when he had a profound mystical experience (Ueshiba, 1969):

I felt that the universe suddenly quaked, and that a golden spirit sprang up from the ground, veiled my body, and changed my body into one of gold. At the same time my mind and body became light. I was able to understand the whispering of the birds and was clearly aware of the mind of God, the Creator of this universe. At that moment I was enlightened: the source of *budo* is God's love — the spirit of loving protection for all beings. Tears of joy streamed down my cheeks.

Since that time I have grown to feel that the whole earth is my house, and the sun, the moon and the stars are all my own things. I had become free from all desire, not only for position, fame and property, but also to be strong. I understood: *Budo* is not felling the opponent by our force; nor is it a tool to lead the world into destruction with arms. True *budo* is to accept the spirit of the universe, keep the peace of the world, correctly produce, protect, and cultivate all beings in Nature. I understood: The training of *budo* is to take God's love, which correctly produces, protects and culti-

vates all things in Nature, and assimilate and use it in our own mind and body.

These kinds of mystical insights are wonderful, of course. Yet there is real and violent disharmony in the world we live in: person against person, nation against nation. How could one deal with such disharmony in a spirit of love and harmony? Out of his mystical experience and his mastery of the martial arts, Ueshiba created a new martial art — Aikido. It is simultaneously an effective method of self-defense and an expression of love and harmony.

The word *Aikido* is often translated as the way (*Do*) of harmony (*Ai*) with the spirit of the universe (*Ki*). *Ki* is "spirit" or "energy," the flow of love and life energy, the manifestation of Harmony.

Aikido is different in many ways from other martial arts. For one thing, there is no competition; there are no tournaments, no contests, no pitting of one person against another to make one the winner and the other the loser. Yet you do practice attacking your partner and defending against your partner's attacks. The more skilled you become in the practice of Aikido, the more intense these attacks become. Your partner may grab, punch, and strike with his or her hands in many different ways, and eventually attack with a wooden staff or sword. Sometimes several partners attack you simultaneously. But the spirit is of working *with* your partner, not of grappling or fighting *against* an opponent.

The goal of Aikido practice is to manifest love and harmony in all actions, not just in self-defense, and so help make this world a better place in which to live. It is also intended to be effective as a method of self-defense in the event of a physical attack. A philosophy of non-aggression may be a completely empty one if not supported by the actual skill to defend oneself. Psychologically, such a surface philosophy may be a defense against deep fears of being attacked or desires to attack others. Such an attitude may crumble completely under stress, so that in defending oneself, the person becomes just as aggressive and out of harmony with the *ki* of the universe as the attacker. Long training in Aikido produces an attitude of peacefulness that is built on a foundation of skill, making it at once effective and harmonious.



*Handling An Attack: Level One.* If you were a practitioner of Aikido, how would you react to a personal attack in this imperfect world? In an idealized scheme, we can distinguish three levels of self-defense.

At the highest level of Aikido skill, you would have developed a great sensitivity to subtle cues from others. Among other things, Aikido is a kind of mindfulness meditation (Buddhist vipassana) in action. Thus you would probably sense that the other person was getting upset and might get physically aggressive, so you would leave before the potential attacker's feelings reached an overt level! Not being there when someone gets angry is a marvelously effective kind of self-defense, and you certainly don't need to get angry or aggressive yourself in practicing this approach.

If you were not skilled enough to sense the imminence of the attack before your attacker felt angry, you would still be skilled enough to know how to stay centered and peaceful under the developing tension that precedes an attack. Remaining calm, present, and centered is an excellent form of self-defense. Note the importance of being *present* as well as *calm* and *centered*. You may be calm because you are so lost in your own fantasy world that you don't know what's happening around you, but that is quite different from being calm *and* present.

Sometimes in workshops I have the participants carry out an exercise I adapted from Aikido practice. Partners face one another about three to four feet apart. The one designated the attacker is to repeatedly punch at his or her partner, and to try to *feel* angry and aggressive about it without actually hitting. The receiving partner, taking the role of victim, adopts three different attitudes in the three phases of the exercise. In the first, the victim is to cringe backward; in the second, he or she is to get angry and pantomime punching back (without actually hitting); in the third, he or she is to stand perfectly still, keeping a neutral expression on his face, and calmly looking the attacker in the eye.

The reactions of both people are quite different in the three phases of the exercise. When the victim cringes backward, he usually feels genuine fear, almost instantly. What is even more interesting, the attacker almost always gets much angrier, and really wants to hit the victim! "I got really angry at that wimp and wanted to hit him. He deserved it!" is a typical kind of report by both men and women. This illustrates that putting out what I call "victim signals" actually provokes attacks that might otherwise not become manifest. Indeed, there even may be a basic biological reflex involved here.

The attackers report a similar reaction of real anger in the phase where the victim actively strikes back. The attack by the former victim in this kind of defense generates more anger and attack feelings in the attacker. The vic-

tims, rather than feeling fear, feel angry and want to be attackers themselves.

In the third phase, though, where the victim remains physically and psychologically present, calmly looking at the attacker, the most unexpected reaction of all almost always occurs: the attacker's feelings of anger fade away. Attackers report that they feel silly even pantomiming attack, it's just so obviously ridiculous. Without victim signals or attack signals to support the initial attack, the attacker just can't stay in the role of attacker with any conviction. The effect is partly artificial here since the anger is feigned in the first place, but it is often effective in real-life situations where the anger is real.

The highest level of defense in Aikido, then, is to either leave before an attacker becomes really angry, and/or to remain both peacefully and alertly present as the potential attacker's aggressive feelings are triggered. You neither give out victim signals nor attack signals. The typical result is that the potential attacker never actually attacks; he calms down, and you have a chance to peacefully work through whatever source of dispute exists.

This kind of self-defense is applicable in many areas of life. Its main limitation is that sometimes the potential attacker may be so out of touch with reality that he does not notice your reactions or lack of them; he's running on purely internal drives and distorted perceptions. Then he may continue his attack in spite of lack of reinforcement from victim signals or counterattack signals.

**米** *Handling an Attack: Level Two.* If you were neither sufficiently skilled in Aikido to leave before the attacker became angry enough to think about attacking, nor sufficiently skilled to stay so calmly and solidly present that his anger quickly died away without manifesting in actual physical attack, you would have to defend yourself against actual attack. It is still important to stay as calm and present as possible, allowing neither anger nor fear to develop, and remembering your commitment to love and harmony. Then you can use physical Aikido self-defense techniques in such a way that the attacker doesn't feel that you are attacking or running. Instead he seems to keep getting in his own way, or striking wildly and missing, or tripping himself, and this gives him a little time to calm down. He's expressed his anger, and he hasn't found any victim or attack signals to further enrage him.



*Handling an Attack: Level Three.* If either of the above levels of self-defense is not adequate, or if you don't have enough skill to successfully use them, the Aikido practitioner must drop to the lowest level of self-defense and actually restrain, throw, or hurt the attacker. Again, it must be done without becoming an attacker yourself: you must try to stay as calm, centered, and harmonious as possible.

The Aikido skills learned in handling physical attacks can also generalize to situations in everyday life. I was not too aware of this aspect until someone who had attended several lectures I had given on parapsychology told me he admired the calm and effective way I handled hostile questions. He admired my "technique." I was puzzled: what technique? On reflection, I realized I used basic Aikido techniques to handle these kinds of verbal attacks. To explain this work, we must first examine the basic principles underlying Aikido — namely, *getting off the line, blending, and leading.*

#### BASIC PRINCIPLES OF AIKIDO

Any effective attack means the attacker must flow a burst of concentrated energy along a line directed at you. If the attack is a punch to the belly, the attacker's energy, embodied in his fist, moves along a line from his body to your belly. If it hits, you can be badly hurt. So you follow the first basic principle: you *get off the line* — you move or turn so that the energy of that punch does not connect with you.

The second principle is to *blend* or harmonize with the attack. You practice *Ai*. In the above example of being punched, if you had spent months of training, strengthening and hardening your abdominal muscles, you would be able to defend yourself — not by getting off the line but instead by blending and absorbing your attacker's punch. You are saying, in effect, "Your punch is nothing, wimp!" This approach easily becomes a way of meeting attack signals with attack signals, though. The attacker is likely to get angrier. The same reaction would result from actively blocking the attacker's punch with your arms.

To truly harmonize with the attack, you would not only get off the line, you also would not slow the punch down or oppose it in any way. In fact, you *might put your hand on the punching arm and add energy to it in the direction it was already going.* You have harmonized and blended with the energy of the attack. By projecting your energy in the same direction the attacker projects his, you see, as it were, your attacker's point of view. (Note that I say *his* energy

for grammatical convenience, but as many women as men train in Aikido.)

The third basic principle after you have gotten off the line and harmonized with your attacker's energy is to *lead* that energy further than it originally intended to go, thus taking control of it. Then you can throw or otherwise control your attacker. The attacker thus provides most of the energy for handling his attack.

To return to our example of a punch to the belly: one Aikido way of handling it is to step a little toward your attacker and turn your body 180 degrees as the punch comes in, so that you end up standing right beside the attacker, seeing his point of view. Blending with and catching his hand, you would extend the energy of the punch in its original direction a little, enough to take the attacker off balance so that you are not only safe but in harmonious control. If the attacker continues to project energy forward, you can slide forward, maintaining your lead of his energy, and throw him forward. If he pulls back (giving a new direction to his energy), you can blend with that back-going energy and take it far enough to throw the attacker backward. You got off the line (entered and turned), you blended (extended your energy along the same line as the attack), and you led that attack energy into a throw. And, if you did it correctly, you stayed calm and peaceful and certainly didn't get angry.

#### AIKIDO IN ORDINARY LIFE

As I have discussed elsewhere (Tart, 1983a & b, 1984d & e), there is a great deal of fear of psychic abilities in many people, sometimes conscious, often unconscious. One way this fear can manifest without the person having to realize he is afraid, is through hostility toward psychic and spiritual subjects. Since I frequently lecture on these topics, I sometimes become the target of this kind of anger.

I certainly don't like to be attacked for any reason, even if it's only verbal. I can become afraid, angry, self-righteous, and lose contact with reality as I get absorbed in this pattern. It's not only unpleasant, there is a further frustration: my goal was to communicate useful knowledge. I might seem to "win" an argument, but if I'm angry and self-righteous, I probably have not communicated effectively to my audience, and certainly not to my "opponent."

Before I had studied Aikido, my reaction to an attack in a lecture question was to counterattack. I would expose logical flaws in my attacker's thinking, and/or show he was ignorant of the facts, and/or shower him with high-status scientific facts to demonstrate to him the error of his ways. I would usu-

ally “win” the argument, for I was an expert in the subject matter compared to almost all questioners, and a skilled debater. This also made me popular with most of the audience, who were typically “believers” in psychic and spiritual matters, for I had won a victory over the kind of person who attacked them, too. I fought force with greater force.

In retrospect, I doubt that I actually communicated much of anything useful to my “opponents.”

After years of studying Aikido (plus extensive growth work of other sorts which was important), I unwittingly began to use the Aikido principles of *getting off the line*, *blending*, and *leading* to deal with hostile questions, in the context of wanting to stay present and genuinely harmonize with my questioner for our mutual benefit. I stress the latter point: I had developed more genuine empathy and respect for the positions from which these hostile questioners were coming, rather than merely touting a clever technique for “winning.” This is a kind of overall attitude, but if I had to break it down into components, it would involve reminding myself of things such as the following:

- I am being attacked, but I can stay present.
- I do not have to take this attack personally.
- My questioner is a real person, like me, with genuine concerns of his own that prompt his attitude and question.
- I am a competent person; I can understand and handle this attack without having to feel threatened or angry.
- I accept myself as who I am, imperfections and all. I may have made an actual mistake, but that does not mean I am a bad person, or that I need to get involved in neurotic worries about myself. I can stay present and be as truthful and effective as possible.
- At the least I can be gentle and not hurt this person who is probably already hurting.
- At best I can say or do something that might be genuinely helpful to this person or to others in the audience, and perhaps to myself.

For example, suppose the questioner says: “I’ve read about that parapsychology experiment you talked about. Couldn’t the subjects have cheated in such-and-such a way?” Suppose, further, that I hear a voice tone or see body movements that tell me that this is a hostile question: that there is an underlying judgment that I must be naive to be taken in by such crap, that I must be

either a fool or a charlatan to encourage the public in their superstitions by passing along such garbage!

Within the context of my general attitude, I would get off the line and blend. Instead of a counterattack such as, “If you had read all the report instead of depending on summaries by biased people, you would remember that this point was taken care of!” I would sympathize: there is a genuine concern here; he doesn’t want to be fooled; nobody likes to be fooled or misled; I don’t want to be fooled either. Is there a legitimate doubt about that experiment? I would say something to express my sympathy with and sharing of his concern for not being fooled. If I saw no factual basis for his remark about the possible flaw in the experiment, I would say why, but in a way that implicitly or explicitly complimented my questioner for having taken the trouble to read and think about this area. I have gotten off the line: “I’m like you in your concerns, not your enemy.” I have blended: “My feelings are like your feelings. We’re in this together.”

The “lead” and the “throw” come naturally from the blend. If the questioner has sufficiently expressed his feelings, I can try to make some remark which will literally lead us on from there to think about the implications of psychic and spiritual phenomena for our view of ourselves. Leading the energy along to a higher level is sufficient for the attack to dissipate peacefully.

If there is still hostility, I might continue to lead the questioner in order to clarify the problem. Or, I can say something that makes the feeling quality of the question overt rather than hidden in an apparently intellectual concern, and see if the questioner wants to deal directly with the feeling level. Often he does not and is silent: the “throw” has taken place, the attack is over. I will not force anyone to continue the feeling level if they do not want to do so.

Occasionally the questioner still does not want to communicate but continues to use the occasion to be hostile. Then I must use the lower style of Aikido self-defense, as it were, and make a final “throw” with a barrage of facts and logic that completely undercuts the attack. I go away dissatisfied from this kind of outcome, wishing I were more skilled at creating genuine understanding and harmony.

#### KI AS AN ATTITUDE TOWARD REALITY

In writing about Aikido and its applications, I have repeatedly used the word *energy*: the *energy* of the attack, the direction of *energy*, blending with *energy*. In Aikido, we continually speak of ki energy. The attacker projects ki

in order to attack, you blend your ki with the attacker's ki in order to defend. What is ki?

This is not a simple question, for the word *ki* is actually used in several ways in Aikido, and in Eastern thought in general. In its broadest sense, ki is really a subtle philosophical or metaphysical concept, an overall attitude toward and understanding of the universe as the harmonious flow of a "something" that is beyond verbal definition. From this perspective, translating it as "spirit" or "energy" is crude, for ki can't be reduced to precise verbal definition.

Words, by their nature, can only suggest partial representations of a reality that is much larger, especially when we go beyond the world of simple physical objects. The word *ki* only points at something beyond itself. Zen teachings, for example, emphasize that the finger pointing at the moon is not the moon. In this broadest sense, then, ki only points at something subtle yet fundamental about the universe, a something which can only be grasped through meditative and life experiences.

In a more limited but specific usage, ki is a mental image, a functionally useful way of imaging or imagining. A common way to teach a newcomer in Aikido about ki is to show him how to have an "unbendable arm." Two partners stand facing each other. The learner puts his wrist on the other's shoulder, palm up, arm turned so that the natural bend of the elbow is straight down. The partner who will test the learner's strength puts his hands on top of the learner's elbow (the *inside* of the elbow) and gradually tries harder and harder to bend the learner's arm, keeping it up until it either bends or he can't bend it.

This is done under two conditions. In the first, the learner is told to actively resist having his arm bent by clenching his fist and using ordinary muscular strength. In the second, he is told to flow ki along his arm and out through his fingertips, keeping his hand open and fingers relaxed and outspread.

How should he "flow ki?" A common way of describing or suggesting what this phrase means is to tell the person to imagine something like water is flowing through his arm and out his fingertips, as if his arm were a fire hose and great volumes of water were flowing through it and squirting out the end, off into the far distance.

New Aikido students often discover that their arm usually can be bent when they use ordinary muscle power to resist, especially if a strong partner is gradually increasing his pull. And it is tiring work to resist the pull! When

they do the visualization well, however, their arm cannot be bent, even by strong partners, and it feels effortless. If the arm is bent, they usually find they had stopped visualizing ki flow and switched to ordinary muscular resistance. The exercise of the unbendable arm is particularly impressive when a 100-pound housewife can sustain an unbent arm against the pulling power of a 200-pound athletic man! I do not recommend trying this exercise, though, without the supervision of someone who knows aikido.

#### KI AS AN ARCHETYPAL IMAGE

The effectiveness of the imagery of water flowing through one's arm as a method of actualizing ki cannot but remind us of Jung's recognition of ch'i (ki) as an archetypal idea in Chinese alchemy. He writes: "The oldest Chinese treatise known to us (A.D. 142) likewise contains this idea of the divine water: it is the flowing pearl (quicksilver), and the divine ch'i, meaning air, spirit, ethereal essence" (Jung, 1967, p.433).

The careful cultivation of ch'i was necessary for the making of the whole man in the process of individuation. In a discussion of the dangers of this art, Jung quotes Wei Po-yang, the Chinese alchemist from the second century, as saying: "The divine ch'i...fills the quarters and it cannot be held back. Whoever retains it will prosper and he who loses it, will perish" (p.433).

Jung's vast expansion of the concept of ki helps us appreciate how every encounter and potential battle in daily life can become an occasion for self-development. When we permit the threats and attacks of others to overwhelm our mind-body harmony, we lose access to our own ki. We are left in a vulnerable position which, in the extreme, can result in the loss of our physical life. On more subtle levels, the loss of ki can be recognized in the infinite variety of manifestations we describe as "being out of balance" or "without spirit." When the loss of ki becomes chronic, we fall into the psychopathologies and psychosomatic disharmonies so characteristic of our time.

The continual cultivation of ki, on the other hand, leads to those integrations of the whole personality that Jung described as *individuation*. With this integration comes an ever more sensitive recognition of the subtle energies of ki that can become manifest in the phenomena of *synchronicity*. I believe that the harmonious integration of ki is manifest in parapsychological phenomena in general and psychokinesis in particular. But these are interesting issues to be explored at another time, in another paper, in another issue of PSYCHOLOGICAL PERSPECTIVES.

 *Isn't Ki Just Imagination?* Insofar as ki is just an image, it is imaginary, subjective. *Imaginary* and *subjective* are negative words for us Westerners, though. If ki is imaginary and subjective, doesn't that mean it isn't real? That it's useless? Yes and no.

If ki is nothing more than an imagined picture, a deliberate but arbitrary visualization, the forms in which we image it should be almost unlimited, since we can imagine almost anything. While doing the unbendable arm, you could picture ki as flowing molasses rather than water, or perhaps as boxes of dynamite moving on a conveyor belt, or as your arm turning into concrete, and so forth. You could even try to visualize the various muscles of your arm in an anatomically correct way, with certain ones relaxed and others tense. The fact is, though, that visualizing ki as something fluid that is flowing freely, while subjective, has *objective* effects: your arm gets strong and unbendable with little or no effort on your part. Images, the subjective, can be a very effective way of guiding your body.

As an example of its usefulness, allow me to tell a short story. Several years ago a friend took me bowling. I'd never bowled before, and was quite awkward. He started giving me tips. Hold the feet like so, grip like this, turn your body like so, twist like this, and so forth, and so forth. "Stop!" I finally cried, "I can't keep up with all these rules and techniques. I'm getting confused!"

I told him I'd have to try bowling by using what I'd learned from Aikido. I would visualize a ki path flowing down the middle of the alley to guide the ball to the center pin. The ki energy would hold the ball in the correct "channel." I then made a series of strikes and near-strikes, winning the game and disgusting my friend, who was a good bowler! This went to my head, of course, and I started thinking about how good I was instead of focusing on visualizing the ki path, so my game rapidly went downhill!

So in some ways, ki is subjective and imaginary, but it can be an effective use of imagination, especially if the visualization is strong and appropriate. By analogy, the electrical flow comprising the program in a computer is subtle and subjective compared to the solid reality of the hardware. Without a correctly written program to guide it, though, the hardware doesn't do anything useful.

 *Shared Subjectivity Equals Reality?* Let's think about the meaning of *subjective* some more. The word usually implies that the contents of one's mind

are unique, individual, imaginary, and unreal. But what happens when several people share similar subjective ideas and experiences: when does shared subjectivity become "reality?"

Aikido is not just an art of controlling your own movements through your visualization of ki. If it were, you might be very strong and powerful in your physical movements, but probably not very harmonious: clashes would be common, as your strength ran into your attacker's strength. Instead we try to *lead* the attacker's ki. What is it we lead?

At the least, in Aikido we lead the attacker's *attention*. If your attacker grabs for your shoulder, for example, you draw your shoulder back at just the right speed — too slowly, and the attacker gets a good grip while maintaining his balance; too quickly, and the attacker, seeing that he can't get his grip, breaks off his attack and retreats; just right, and the movement catches the attacker's attention at a basic, almost non-conscious level. It looks to the attacker as if he is just about to get his grip with just a little more of a reach: he reaches farther than he intended, and you take his balance in a smooth, harmonious movement. You lead his body by leading his attention.

Instead of thinking about this as leading attention, which is a rather abstract thing to think about (what does attention look like?), you can just as usefully think about it, visualize it, as leading the attacker's ki. Ki is much more tangible than attention for me, as I feel/image it as a definite tactile sensation, a wave of something flowing. The attacker puts out a flow of ki in the act of grabbing; you create a flow of (receptive) ki by stepping back. Proper timing is a matter of harmoniously blending the ki flows together so they join.

Now we have an interesting situation. The attacker may not be visualizing any kind of ki flow, but it is useful for you as the defender to react to the attacker's actions as if these actions *involved* ki flow, and so join your ki flow to the attacker's to lead it. If we take the idea of ki as "real," it is easy to come to the conclusion that no one can launch an effective attack unless he flows ki outwardly, whether or not he consciously realizes that's what he is doing. Visualizing both your own and the attacker's actions as ki flow makes your technique smooth, harmonious, and effective. The "subjective" is becoming rather "objective."

#### PSYCHOKINESIS

We have looked at ki as a philosophical idea and as a psychological reality — a useful kind of imaging that mobilizes the body effectively. But we also

have valid scientific evidence for the objective reality of something like ki, so let us look at a few of the more interesting bits of scientific knowledge about it. I stress bits. Our Western scientific knowledge is still in an early, fragmented stage — far from a comprehensive understanding of things that resemble ki, and far from regular, practical application of it. But what we do know is fascinating.

Something like ki has been intermittently studied in the West in that tiny branch of science known as parapsychology. Parapsychology researches possible aspects of human nature that seem to go beyond what our current picture of the physical universe deems possible — phenomena such as telepathy and clairvoyance. *Psychokinesis* (PK) is the parapsychological term for the saying “mind over matter” — the apparent ability to directly influence physical matter just by will, without using any known physical forces to achieve the result. If I ask you to give me a cup of coffee and you reach out and hand it to me, that’s ordinary. We understand the forces involved. If you just think it, and the cup floats through the air by itself to me, that’s PK.

That’s also remarkable, rare, frightening, and controversial. “Macro-PK” is the technical term for ordinary-sized objects being affected by PK. It seemed to be more common in Victorian times in the context of spiritualist seances, but most (not all) of it was probably fraudulent, done with thin wires, confederates dressed in black, and other tricks in darkened rooms.

Modern parapsychological research on PK under controlled laboratory conditions flowered in the late 1930s in J. B. Rhine’s laboratory at Duke University. Rhine and his co-workers used machines to throw dice, while a subject standing off to one side tried to will them to come up in pre-specified ways by using PK. We know that each face will come up one-sixth of the time by chance alone, so in the long run we’ll get an equal number of ones, twos, threes, fours, fives, and sixes. (As dice wear they can become biased, but that problem is cancelled out when you use all faces as targets an equal number of times.) If the target faces come up with a substantially different ratio from the one-sixth proportion expected, something is affecting them.

In dozens of experiments over the years, enough of the dice outcomes have shown statistically significant deviations from chance to establish the reality of PK. Sometimes, by willing or wishing, a person could affect the outcome of a mechanical process without using any known forces. Comprehensive reviews of this research can be found in Edge’s collaborative work (1986) and in Wolman’s edited volume (1986).

In general, these experiments netted rather small-scale effects. The dice did not obviously pause in the air and turn over, and the deviations from chance were generally only a few percent at most. Although these results were statistically significant, it is nonetheless apparent that the PK generally seen in the parapsychology lab is a small and unreliable force. If you want that cup of coffee, it’s a lot smarter at this stage of the game to reach for it instead of willing it to float over to you! If you have to effect some process that has delicate control elements in it, however, and you can’t get at it by normal means, PK is a definite possibility.

Dice tests are now considered old-fashioned and almost never used. They’ve been replaced by PK tests on electronic random number generators. Typically you sit in front of a box that is full of silicon chips and integrated circuits. A red light and a green light on the box blink intermittently. If you time them, you find that they blink an equal amount of time. The chance of either light being selected at any particular moment is 50-50. Now the subject will get instructions such as, “Make the red light come on more for the next minute.”

In a way, this experiment is preposterous. What exactly are you supposed to do? In the dice experiment you could at least imagine yourself mentally “pushing” on the dice at the right moment, but what do you “push on” in an integrated circuit chip? In spite of this conceptual impasse, the experiment works on many occasions. Instead of 50% hits on the target light, some subjects can get 51% or 52% or a little better, and keep up this deviation long enough so that we know statistically that it is not “just luck.” Their intention is somehow influencing the electronic circuitry. That’s PK.

As with PK effects on dice, it doesn’t seem to be a big enough force to be useful for willing your coffee cup to float over to you. We’re talking about the results of untrained people in an artificial situation, though, so it’s hard to limit the possibilities if it were developed properly. It would be like judging the ultimate possibilities of Aikido by watching some beginners during their first week on the mat.

Psychokinesis as we currently experience it in the laboratory can produce a big enough effect to be useful (or annoying) if you’re trying to influence delicate things such as computers and electronic controllers. A parapsychologist at Edinburgh University, Robert Morris, is studying certain people who have a reputation in their companies: the company computer frequently crashes when they’re around, even if they don’t touch it. (These people often get fired

or at least are ordered to come nowhere near the computer building!) Morris is also interested in people who can't wear watches because they keep breaking, an effect that seems to work on digital watches as well as old-fashioned mechanical "analog" watches.

Does ki involve PK *in addition to* the effects the visualization of ki has in producing smooth, strong bodily responses? Is ki, as a philosophical principle about the nature of the universe, an accurate reflection of a fact that PK is a fundamental force of nature? Conceptually they are similar: subtle energies of an unknown kind, directed by will, that can affect material bodies. Practically, though, it's almost impossible to tell in most situations.

In the laboratory study of PK, you can isolate the PK effect: barriers and other procedures make sure the experimental agent can't use ordinary muscular means to effect the PK target. If anything significant happens, you can infer that PK caused it. On the training mat, things are far more complicated. The Aikido practitioner is using his muscles as well as the muscles and movement of the attacker by directing his attention. Those muscular and psychological forces are almost always adequate (given a preference for a "conventional" explanation) to explain why a technique works.

Also, the magnitudes of laboratory-demonstrated PK are much too small, and their control too unreliable to date, to be useful on the mat. As a scientist, I couldn't convincingly argue that occasionally there's some PK being used on the mat in addition to the muscular action. And yet I have seen films of Morihei Ueshiba, the founder of Aikido, in which he does some things that make me wonder if PK is involved. There is one demonstration, for example, in which Ueshiba is holding a five-foot long wooden staff (called a "jo") out in front of him. Several young black belts are simultaneously pushing together sideways on the jo. Taken together, they have several times Ueshiba's strength, and a considerable advantage in leverage, but they can't move him! Several seconds later, he suddenly makes a movement and the attackers are falling all over the floor. We can't adequately test for PK from old films, though, so we'll never know for sure.

We know a lot about the world in Western science, but I think that someday a full understanding of "subtle energies" like ki is going to greatly enlarge our view of what energy is, and our view of our own spiritual nature. The harmony of a mind and body integrating through conscious use of ki is most impressive!

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