

## **Applications of Lucid Dreaming in Sports**

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The following article has above all a practical orientation. The various possibilities for the application of lucid dreaming in sports training are presented and briefly illustrated. These theses are based on findings from experiments with experienced lucid dreamers who were instructed to carry out various routine and sport-related actions while lucid-dreaming, with the object of observing the effects on both dreaming and waking states (Tholey, 1981a). Additionally, I report here on numerous spontaneous accounts of athletes who have mastered lucid dreaming, as well as my own years of experience as a lucid dreamer and as an active competitor in different types of sports.

With regard to theoretical principles I have relied on the gestalt theory of sports as it was first systematically presented by Kohl after numerous phenomenological and objective experiments (Kohl, 1956), and as it was further developed in my own work (Tholey, 1981b). The latter explored the significance of lucid dreaming to sports. Due to space limitations, only the most important theoretical conceptions concerning the application of lucid dreaming to sports training will be discussed here.

### **Basic Theoretical Principles**

Gestalt theory conceives of the complex sensory-motor feedback system of the human physical organism as a servo-mechanism which serves the finely-tuned, energy-saving control of the organism. The main control center of this circuit system lies in the brain. There the physical world is represented more or less exactly as the phenomenal world (phenomenal body ego and phenomenal environment) by means of sensory processes. The control of the organism can be compared to the control of a large airplane in whose cockpit all the relevant data about the airplane and its surroundings are represented by the transfer of computer information.

In a dream, the sensory-motor feedback system is interrupted to such an extent that both intended and immediately experienced body movements do not lead to corresponding movements of the physical organism itself. The situation in a dream is therefore comparable to the one of a pilot in a flight simulator. Just as a flight simulator can be used to learn how to fly a real airplane, dreaming (especially lucid dreaming) can lead to the learning of movements by the physical organism in the real (waking) world. Because of the close connection between sensory and motor processes, we speak of sensory-motor learning. Given that the world is experienced as

real in lucid dreaming, I am of the opinion that lucid dream training is more effective than various forms of so-called mental training during which the athlete performs movements in a world that is perceived as existing only in the imagination (for the physiological argument on this point see Tholey, 1981a).

Having pointed out that various characteristics are common to both the sensory-motor system of the physical organism and the technological simulation systems made for an airplane, I want to indicate some important differences. While the data in the control center of a technological simulation system are usually stored in records and files that are dynamically independent of each other, the phenomenal facts represented in the brain find themselves in a state of dynamic interaction. For this reason I also speak of the phenomenal field (body ego and surrounding field). A person's movements can be controlled by the phenomenal ego (as with voluntary actions, or by field actions (cf. Lewin, 1936)). The playing field in soccer, for example, can be experienced as an action field formed by force lines having an immediate effect on motor performance—i.e., without intellectual or deliberate effort. This was noted in 1927 by Hartgenbusch. Leaving aside the aforementioned differences, the control of the organism through the surrounding phenomenal field is most comparable to the automatic control of an airplane with the aid of an auto-pilot.

There is an important difference between experiences simulated in lucid dreams and those simulated in waking-life computer-based technological simulators. Through the use of certain manipulation techniques, the experienced lucid dreamer can intentionally call forth experiences which contradict not only the routine, daily experiences of the waking state, but also the physical laws of nature. In this way lucid dreaming offers a broader range of learning possibilities than a technology-based simulator. Furthermore, we have found that improvements in motor-related performance occur from one dream to the next. This is especially pronounced in actions which were not heretofore known in a waking state, for example, various exercises performed in flying or soaring states.

### **Theses on the Application Possibilities of Lucid Dreaming in Sports**

**Thesis 1:** *Sensory-motor skills which have already been mastered in their rough outlines can be refined by using lucid dreaming.*

Experiments showed that repeated movements in particular can be substantially improved with the appropriate exercises during lucid dreaming. These include rapid slalom movements on snow skis, skateboards and snowboards. This improvement was imputed to various tendencies towards a good gestalt (pregnancy) that can be observed in all living systems in which the individual parts are locked into dynamic interaction

with each other. In a lucid dream the individual areas of the phenomenal field interact in a more intensely dynamic way than in a waking state in which the areas of the phenomenal field are more dependent on sensory processes. In addition, body movements which are harmonious with each other and the situation as a whole are more likely to be retained than non-harmonious body movements. Good gestalts are also further distinguished by a particular kind of multisensory sensitivity which is ultimately responsible for the perfection of movements (for details see Tholey, 1986).

**Thesis 2:** *New sensory-motor skills can be learned using lucid dreaming.*

To illustrate this point I will first present the case of a competitor in the martial arts (Tholey & Utecht, 1987, p. 208). For years this man had studied the so-called "hard systems" (karate, tae kwon do, and jujitsu). Then he decided to learn the "soft" system of aikido. Over a period of two years, however, he failed to succeed in this because the previously learned movements stubbornly refused to be superseded. He considers the following to be the key experience that put him on the right path:

On this particular evening, after still not succeeding in wearing down my attacker and taking him to the mat, I went to bed somewhat disheartened. While falling asleep the situation ran through my mind time and again. While defending myself, the correct balancing movement collided with my inner impulse to execute a hard defensive block, so that I repeatedly ended up unprotected and standing there like a question mark . . . a ridiculous and unworthy situation for the wearer of a black belt. During a dream that night, I fell down hard one time instead of rolling away. That day I had made up my mind to ask myself the critical question in this situation: "Am I awake or am I dream-ing?" I was immediately lucid. Without thinking very long about it, I immediately went to my Dojo, where I began an unsupervised training session on defense techniques with my dream partner. Time and time again I went through the exercise in a loose and effort-less way. It went better every time.

The next evening I went to bed full of expectations. I again achieved a lucid state and practiced aikido further. That's the way it went the whole week until the formal training period started again. . . . I amazed my instructor with an almost perfect defense. Even though we speeded up the tempo [of our interchanges], I didn't make any serious mis-takes. From then on I learned quickly and received my own training license in one year.

The following example comes from a snow skier.

Jetting, with its strong shift of the center of gravity backwards, had always

made me so afraid that I constantly fell and came home to the cabin covered with bruises. The summer after I learned lucid dreaming, I began to dream about skiing over moguls. I often used the hump to initiate a flying experience, but at some point I also began to lean back shortly before the hump, thereby taking my weight off the skis in order to change direction with my heels. That was a lot of fun and after a few weeks it became clear to me during lucid dreaming that my movements corresponded to jetting. When I went on a skiing vacation again the following winter and took a course, I mastered jetting in one week. I am absolutely convinced that was connected to my night exercises.

This example demonstrates that a lucid dreamer can simulate a world in which the usual physical laws apply, as well as a world in which they are not applicable. Both such simulations are significant for sensory-motor learning.

**Thesis 3:** *Sensory-motor actions can be perfected by test runs carried out in a lucid dream state.*

Jean-Claude Killy, winner of several Olympic medals in Alpine skiing, reports that on the evening before a race, in a half-sleeping state, he mentally skis over the slalom course (which he has imprinted in his memory during the day) as many times as are necessary to master the course well enough to ski it without falling. Although this is hypnagogic rehearsal, the technique can be used in lucid dreams.

Sladko Solinski, an internationally successful equestrian, has written me several letters about his lucid dreaming experiences. Here is an excerpt from one of his letters (Personal Communication, 1983):

Thus, in a lucid dream I can form my figures to an extremely exact degree—whether in the sand of dressage competition or across the landscape of a cross-country course during military-style competition. I manage to do this in slow motion, giving the horse "assistance" at exactly the right moment in a particular movement phase. During lucid dreaming "I ride" the course through several times (three to nine times), exactly and completely. Based on this experience, my "body knowledge" is sufficient to get through the course autonomously, i.e.—without conscious or deliberate effort.

We will come back to these important executions in another context. Here it should only be pointed out that when an athlete performs a flowing movement without conscious or deliberate effort, it is often described as instinctive, automatic or unconscious. None of these expressions are quite correct since the movements do not result from inborn instincts, but rather from learning processes. Furthermore, the

movements are not to be understood as the movements of an isolated person, but as an event taking place in a field. This event is grasped and controlled as a multi-sensory sensitivity to the present or anticipated total situation.

**Thesis 4:** *The flexibility of an athlete's reactions can be substantially improved by varying body movements in lucid dreams.*

This is especially important for complex types of sports in which the athlete must quickly react to unforeseen situations. For this reason it isn't wise to execute only the most optimal actions during lucid dreaming, but rather (as in the Killy ex-ample) to vary the actions such that they could either lead to a fall or at least come close to it. This is important because athletes who take part in risk-taking sports frequently fall into dangerous, unforeseen situations from which they can save them-selves only if they have previously acquired a large measure of reaction flexibility. Additionally, flexibility of action also promotes a finely tuned and disturbance-compensating control of sensory-motor performance.

**Thesis 5:** *Lucid dreaming can also be used for practicing mental movements which make sensory-motor learning easier.*

"Mental movements" are understood to be those movements which are ex-perienced as occurring merely in the imagination rather than in physical reality. The effectiveness of mental movements derived from observing or imitating the movements of a practiced athlete has been known for a long time. This is not an appropriate place to describe all of the various types of mental movements which are significant in sports; for more details, see Kohl (1956).

There is one type of mental movement that does seem both important and par-ticularly appropriate to lucid dreaming, and that is "anticipation." "Anticipation" in this context can have two aspects. It can be an overall plan of action that is deter-mined before the execution of any particular movement or action. It can also be an interactive process: during the execution of a particular movement, the immediately following movement is imagined. The anticipation of the next movement doesn't occur in a willful or deliberate manner, but is an event which takes place in a total phenomenal field. This aspect of anticipation makes it possible to react "lightning quick" as it is expressed in Zen Buddhism because the athlete is reacting to the anticipated situation, not the present one. Top skiers, for example, are always four or five gates ahead in slalom skiing. For a physiological explanation, see Kohl (1956).

With the help of the test runs described in Thesis 3 (experienced as real during lucid dreaming), an athlete can sketch out a plan of movement for himself before its

execution in a waking state. More importantly, due to the repeated execution of the movement in lucid dreaming, during actual execution, a person is prepared to carry out an action while taking into account the coming event.

Two other kinds of mental movements are bound up with various ego experiences. In the first, the athlete feels himself to be playing the roles of both the actor and spectator simultaneously. This means being able to better control the movement from "within" as well as "without." In the second type of movement, the athlete puts himself in the position of another athlete. This is helpful when another athlete is taken as a model in order to learn from him, purely through observation or by imitating his movements. An example is a skier following behind a better skier.

[To my knowledge, examples of the first type (whereby the athlete is both actor and spectator) are only to be found in the realm of lucid dreaming. This is most likely because the ego core can leave the dream body and can be duplicated into an actor as well as a spectator of the lucid dreaming. Sladko Solinski reports that riding becomes especially easy for him (and more fun) when he feels himself to be rider and spectator at the same time. Another experienced lucid dreamer reported to me that he can control his car better while racing when he steers it from inside as well as with an imagined ego observing from a bird's eye view.

Mentally/imaginally slipping into the body of another person is particularly significant for the martial arts as well as being potentially useful in other sports. It is a way of anticipating the opponent's intentions and avoiding his ruses. Here again, putting oneself into the "body" of another person can be made significantly easier and intensified during lucid dreaming by the fact that the body of the "other" dream character can be entered by the ego core of the lucid dreamer.

**Thesis 6:** *Lucid dreaming can be used for improving the organization of the phenomenal field with respect to the execution of sports movements.*

According to gestalt theory, the learning process involved in complex sports is much less a matter of acquiring a particular form of movement or a repertoire of such forms than it is a matter of improving the organization or structure of the total phenomenal field. A better understanding of this requires an examination of each individual aspect of the organization of the total field, even though the parts are closely connected to each other. 6

**6.1** *The unit-formation in the phenomenal field.* In the course of sensory-motor learning, separate parts of the phenomenal field can grow together with an increasing degree of unity. In this way, the skier "grows together" with his skis, or the tennis

player with his racket. The sports equipment acts like an extension of the sensory-motor organs in the practiced athlete. The skier feels the snow and the terrain with his/her skis and willfully and deliberately moves the skis rather than his/her body. Something similar is also emphasized by Gallwey, who refers to "inner train-ing" (Gallwey, 1981) or the "inner game" (Gallwey, 1974), but my experience is that elements of his theories are ineffective for beginners. For example, Gallwey maintains that skiers should first watch for sensations in their feet in order to achieve a feeling for the snow. According to gestalt theory, this attention to bodily sensations (like the pressure on the soles of the feet or kinesthetic bodily sensations) prevents the perception of the characteristics of the phenomenal objects existing outside of the phenomenal body. When the skier concentrates on the body ego, feeling for the snow and the terrain is lost. For both the beginner and the advanced skier, this can lead to tension. It invites the beginner to experience the tension of fear. Therefore, in sports where the surrounding field plays a role, the athlete should concentrate on the perception of it from the beginning (for details see Tholey, 1987).

The particular significance of lucid dreaming lies in the greater fluidity (cf. Lewin, 1936) of the phenomenal field available in the dreaming state. It is much easier to unite the phenomenal body and sports equipment into a single whole, or to extend the boundaries of the phenomenal body while lucid in a dream. For example, while lucid dreaming, a sailplane pilot first learned flying techniques which involved flying with only his body. Later he flew with a waking-life sailplane, developing such perfect unity with it that "his wings could feel the winds which are so important to the control of the aircraft."

More interesting than achieving oneness with sports equipment is the "mutual empathy" achieved between two living beings. To explain this we will quote again from a letter from equestrian Sladko Solinski:

The essential thing for me (to be achieved during lucid dream training) is the loose-ness of the horse since it alone guarantees a good evaluation from reasonable judges in dressage competition and the safety of the horse in going over the most difficult hurdles in military-style competition. . . . It is as if the rider hands over responsibility for success to the horse through mental training (in lucid dreaming) . . . and peculiarly enough, the horses seem to be waiting exactly for this in order to prove what they can do if you just don't bother them.

In other words, the horse is more important to the movement than the rider, if he is a master in this sport. In the conclusion to his book, Solinski wrote that a rider who has achieved "perfect mutual empathy with his horse perceives the world through the eyes, ears and nostrils of the horse." (Solinski, 1983, p.123).

These and similar kinds of experiences sound so fantastic to the layman that they have been considered supernatural (for example, White and Murphy, 1983) but they find a natural explanation in the gestalt theory of sport.

**6.2 *The organization of reference systems in the phenomenal field.*** The structuring, differentiation and coordination of psychological reference systems (perceived space and perceived time above all) is also of great significance in sensory-motor learning. Just how useful lucid dreaming can be in this regard is shown in the above-mentioned example by Solinski, where he points out the phenomenon of slow-motion during riding practice (in a lucid dream state). This slow-motion makes it possible for the "assistance of the rider" to be given "at just the correct moment." Generally speaking, a differentiation occurs in the temporal reference system's standard of measurement. The "timing" of movements, which is so important in sports, is thus made easier. The expression "assistance" makes it clear that Solinski focuses on the horse's flow of movements during the "timing" he speaks of. During lucid dreaming he also occasionally links his exercises to a certain piece of music which acts "almost like a metronome for the horse's flow of movements." When he later rides the dressage course during the day, he sometimes lets himself be guided only by the rhythm of the "inner" music. Solinski also points to parallels in other sports where similar behavior can be observed. For instance, in investigations involving top athletes in motocross racing, this slowing of time often occurs spontaneously in service of the racer's safety (Nurbarkhsch, 1987).

It can be advantageous to manipulate phenomenal space as well as phenomenal time. In an earlier work (Tholey, 1982) we demonstrated the extent to which phenomenal space can change in many respects through the execution of sensory-motor actions. The further significance of lucid dreaming for sports is shown in the rapidity with which movements can be carried out relative to the waking state. A person is able to execute longitudinal and latitudinal turns of the body in quick succession. In our investigation, this was shown to be especially relevant in the waking state in those sports which demanded a finely developed multi-sensory sensitivity to the situation as well as body balance and movement. This would imply improved coordination of both space and time systems.

Relatedly, there seem to be amazing similarities between lucid dream experiences in a state of phenomenal weightlessness and the experiences reported by astronauts (cf. Furrer, 1987), in a state of physical weightlessness. In both cases, learning processes are necessary to adjust to the new and unusual situation. Furthermore, it is necessary to learn how to distinguish between up and down until it is possible to deliberately vary the spatial system in such a way that what was formerly up is now down and

vice-versa. It seems to me that lucid dreaming offers the best alternative for training astronauts in weightlessness (Tholey, 1987). The possibility of altering the time and space system so that it no longer corresponds to daily experiences is also demonstrated by the above-mentioned superiority of lucid dreaming in comparison to technology-based simulators which serve the danger-free exercising of sensory-motor skills (e.g., those required to pilot the airplane).

**6.3 *The focusing of attention in the phenomenal field.*** As Kohl was able to show in detail in his investigation of various sports (1956), a clear change of focus takes place as the degree of sophistication with a sport increases. While the beginner directs his attention to the body ego, the expert focuses his attention on all the relevant areas of the "surrounding" phenomenal field, such as the sports equipment and the terrain. Beyond that, the expert concentrates on what is coming, not on what is happening at the moment. With the very best athletes, the ego can recede completely into the background. Boris Becker reported that he was no longer conscious of what he was doing during the finals of the 1988 Master's Tennis Tournament against Ivan Lendl. The racket had swung itself.

Then, directing our attention to the ego—among other things, we find the fear of being injured or being judged harshly by trainers and spectators. These fears have a negative effect on an athlete. They lead him or her to tense up, increasing susceptibility to injuries or mistakes—thus increasing vulnerability to the feared criticisms. The practical significance of lucid dreaming for sports is that the athlete has no need to fear injury or the negative judgements of others in the lucid state. He/she can concentrate on the essential areas of the phenomenal field from the beginning. The changing of the focus of attention can also promote the "growing together" of the athlete, equipment and terrain as well as the mutual empathy between the athlete and his partner or other living creatures.

**6.4 *The tendency towards good gestalt (pregnancy).*** The last example shows that the previously-described organizational forms of the phenomenal total-field can be separated from each other analytically, but remain closely connected to each other in reality. Finally, the general tendency towards good gestalt underlies all of the stated changes in organization. This tendency towards good gestalt means that the structure of the phenomenal field tends towards an organization that, with respect to motor performance, will always be as "good" as the prevailing conditions allow. As stated above, given that the prevailing conditions are much less restricted by sensory processes during lucid dreaming than in the waking state, this tendency in lucid dreaming can be much more effective.

Physiologically, we assume that the improved organization of the phenomenal field

corresponds to an improved dynamic coordination between the sensory and motor-related processes in the brain.

**Thesis 7:** *By changing the personality structure, lucid dreaming can lead to improved performance and a higher level of creativity in sports.*

When a person acts, the flexibility and creativity appropriate to the situation can be significantly limited by the inner constraints of the personality. This occurs when the subsystems of the personality lose their dynamic connection to each other, or even come into conflict with each other. According to gestalt theory, the ego seeks to protect itself (usually unconsciously) with various defense mechanism against the external compulsions and restraints of our cultural system. Ultimately this ends up producing an ego-centered personal outlook which, in contrast to a situation-oriented personal outlook, leads to a distortion of perception, thinking and feeling as well as to behavior inappropriate to a situation. In this context, by "ego" we mean a subsystem of the personality which seems to gradually dominate the entire personality by taking over the most diverse roles. The whole world thus becomes merely illusory and seems to revolve around the ego. What matters most is to "wake up" (cf. Tart, 1986) from this illusory world so that a person is ready to fulfill the requirements of the situation creative freedom, that is, without internal or external constraints. This requires a radical change from an ego-centered to a situation-centered personal outlook. In general, this transformation of the personality structure also leads to ongoing changes in the organization of the phenomenal field. These changes partially correspond to the previously discussed structural changes in the organization, but go beyond them because they lead to the recognition and solution of unconscious problems.

The evolution of consciousness is a way to creative freedom. I have described elsewhere (Tholey, 1990) how a person can achieve a situation-centered outlook through lucid dreaming. This path ultimately leads—by way of reconciliation with hostile dream characters (cf. Tholey, 1988)—to the symbolic death of the ego and to the rebirth of a higher Self which, in turn, leads to creative freedom in the most varied areas of activity—including sports.

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