Using 'qi' as shorthand to develop an external focus of attention

By Stephen R Balzac

Editor's note: Because of the length and complexity of this article it will be printed in two parts. The second installment will be printed in the fall edition.

The concept of qi can cause a great deal of confusion for the average westerner practicing an Asian martial art. Qi (also written as chi and ki) is integral to many Asian martial arts and is discussed in a variety of texts, from ancient (e.g. Musashi 1645/1982) to modern (e.g. Westbrook & Ratti 1970, Deshimaru 1982). It is common to instruct students to do an art with more "qi" or to "extend their qi" when throwing, striking, or even grappling. The problem faced by many martial arts students is that qi has no detectable objective existence. Although some martial arts practitioners will claim that it is an undetectable form of energy, it is difficult to believe in a mysterious force that can affect the body but not be detected by any technological means.

It could be said that qi is nothing more than a quaint superstition, and thus not worth investigation. However, it is also worth remembering that the martial arts are rooted in warfare. Although the battlefield is not a laboratory, martial arts have faced hundreds of years of field-testing. Martial skills were put to the ultimate test, not in contests but in actual combat, where losing was often fatal. Thus, there was a strong evolutionary pressure on martial artists and martial art instructors to be as effective as possible. Because of this evolutionary pressure, teaching methods that failed to develop a student's skill would tend to be abandoned. On the flip side, teaching techniques cannot simply be taken at face value, because of the tendency to wrap layers of tradition and mysticism around them, especially as the arts moved away from the battlefield and into casual, non-competitive usage. What this suggests is that at the core of the concept of qi there is some useful, potentially powerful, tool for learning and practicing complex physical skills.

One possibility is that qi functions as an abstraction mechanism. Rather than attempt to instruct students to keep track of a variety of subtle angles and positions in their bodies, the visual imagery associated with a "strong qi" position helps provide the students with valuable feedback. Moreover, it is feedback that is less focused on a student's own body and more on the effects the student's actions are having on the world. For example, in teaching the unbendable arm in Aikido, students are taught to extend their arm and then imagine a high-pressure jet of qi energy or water shooting from the fingers (Westbrook & Ratti 1970). In other words, qi, as a concept, is a tool for generating an external focus for learning and practicing a physical skill, and further acts as an external focus for an instructor to provide feedback.

This raises a slightly different question: is there value in directing a learner's attention outward, away from his own body, versus inward? Do people learn physical skills more rapidly when they are focusing on how to move their bodies, or when they are focusing on the effects those motions have on their surroundings? Taking this one step further, to what extent does the type (internal versus external) and frequency of feedback influence the learning process?

Review of Relevant Research

Wrisberg & Wulf (1997) discuss issues involving frequency of feedback and how it affects motor learning. They divided participants into three groups, all learning the same generalized motor program. One group received feedback on all trials, one on two-thirds of the trials; the third group also received feedback on two-thirds of the trials, but was told at the beginning of each trial whether or not they would receive feedback. This is distinct from group two, which received or did not receive feedback randomly. The task being learned was a fairly simple movement pattern where the amplitude of the movements varied across the trials. The results of this study showed all three groups behaved similarly in practice and in no-feedback retention tests. However, the best performance in transfer tests came from the second group (two-thirds feedback with no advance warning). There was no difference in performance observed between the other two groups. An important aspect of Wrisberg & Wulf (1997) is that it involved a fairly simple physical skill.

In later research, Wulf & Shea (1998) observed somewhat different results. Their experiments involved participants learning a significantly more complex skill: producing slalom-type movements on a ski-simulator. In their first experiment, they identified expert behaviors in executing the skill. In their second experiment, participants were divided into three groups, one receiving 100 percent feedback, one receiving 50 percent feedback, and a control group receiving no feedback. Feedback was focused on enabling the participants to develop the previously determined expert behavior. Unlike Wrisberg & Wulf (1997), the 100% feedback group demonstrated the best performance in retention and transfer tests, followed by the 50% group and then the control group.

Wulf, Shea, & Whitacre (1998) investigated the use of physical guidance in learning a complex motor skill. Using the same ski-simulator as in Wulf & Shea (1998), they conducted experiments in which one group of participants was given ski poles and other group was not. The first experiment investigated whether or not poles were advantageous in learning to make slalom-type movements. The pole group demonstrated significantly better results than the non-pole group, even in non-pole retention tests. The second experiment described in the paper investigated how ski poles helped to develop a more efficient movement pattern. Participants using the poles were found to devel-

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