

Great Expectations

How is it possible for someone suffering from severe pain to relieve symptoms from taking a sugar pill? Why are there so many diets on the market today, which appear to be successful for some individuals yet ineffective for others? Surely in this day and age of scientific and technological advances we must be closer to optimal means of losing bodyfat? If we were to assemble a group of the top athletes' coaches in one sport for a roundtable discussion on how they helped their athletes to achieve top-level performance, chances are we may receive varying opinions.

Many guidelines / recommendations of exercise seem to be based more belief, emotion and commercialism than on scientific or medical proof (Siff, 2003a). In addition, it is very rare to find any therapeutic systems which do not enjoy a level of success at some time or another which is more than sufficient to ensure a regular clientele, whether the method is virtually witchcraft or not (Siff, 2003a).

How and why is that possible?

Confused??

So how important and powerful are beliefs?

An individual's beliefs or expectations can have a profound influence over the success or failure of any a pill or a therapy; this is known as the "placebo effect". Placebos are treatments that use substances, which have no active ingredient such as sugar, distilled water, or saline solution. The word placebo comes from the Latin verb "placere", that means "to please".

Subjects who have been given a sugar pill (placebo) for extreme pain and telling them it is morphine itself, can provide as much relief as the morphine. Clearly, this suggests that an individual is influenced by their beliefs. Numerous clinical trials have been conducted to examine the effects of the placebo on conditions such as depression, lower back pain, and nausea; the majority of individuals benefiting from the "placebo effect." The placebo effect is considered a psychophysiological phenomenon (mind-body). Scientists are beginning to confirm the power of beliefs, Tor Wager, an assistant professor of psychology stated "your expectations can have profound impacts on your brain and on your body. We are just beginning to learn how that process works in the brain. We also have much to learn about what kinds of placebo treatments produce neurobiologically meaningful outcomes" (Leitner, 2006).

"Expectation is a powerful thing; the more you believe you're going to benefit from a treatment, the more likely it is that you will experience a benefit."

(DeLap, 2002)

"An efficacy/belief of expectation is the conviction that one can successfully execute the behaviour required to produce the outcomes" (Bandura, 1977 p.173). Hence, beliefs and expectations set up the process, which is most likely to occur, hence if you believe (as perceived by an individual) an exercise is dangerous you may be increasing the likelihood of sustaining an injury performing that particular exercise. Bandura (1986) noted that drivers who are not confident in their ability to negotiate a winding mountain road (low beliefs) will imagine wreckages and injuries (one type of outcome expectation), on the other hand, those confident in their ability will

anticipate the grand views from the mountains. Indeed, problems often occur in the perception or the virtual reality created by an individual's belief (Siff, 2000). Despite the latter, how many physical therapists, strength coaches and doctors warn people of the dangers of particular exercises?

At a recent bodybuilding seminar in Santa Cruz, California conducted by two former bodybuilding champions, Bill Pearl and Dave Draper, Bill Pearl commented that one's mental attitude dictates the body's actions. As a consequence, after every meal Bill use to write down what he wanted the food to do, for example, increase lean body tissue, lose body fat, increase extra bulk. It is clearly evident from their achievements (*or is that our belief?*) that this method has some merit and has been used successfully in a "real world" applied setting

O'Connor (2004) suggests beliefs are the rules of your life, and what you live by. They can liberate or obstruct your aims or goals. Our beliefs are formed from our experiences but equally experiences are the result of our beliefs, this is the concept of the self-fulfilling prophecy. We say people have or hold beliefs but it would probably be better to talk about leaving or outgrowing them. Some examples of limiting beliefs:

- No pain no gain
- Success takes a long time
- Other people are better than me
- Most people are luckier than me.

Organisational psychologist / self help superstar Dr. Stephen Covey and his colleague Hyrum Smith offer an interesting analogy proposing that we see the world through what they describe as a belief window (Smith 2001). The window, on which our beliefs and experiences sit, acts like a filter for the information coming in and how we process it (Smith, 2001). It is comparable to walking around with sunglasses on and our interpretation and experience of the world is unique because our glasses or filters are unique. This comes back to the age-old question of what is reality and the answer that our perception is our reality.

Beliefs & Expectations in Sport

In sport one may encounter different types of expectations. As Biddle (1986) states, there are seven main types of expectations in sport:

- Expectancy of overcoming an externally imposed barrier.
- Expectancy of overcoming a personal performance barrier.
- Expectancy of overcoming a 'pain' barrier.
- Expectancy of success / failure against an opponent.
- Expectancy before an event.
- Expectancy during an event.

Mahoney (1979) also outlines several useful possibilities in enhancing beliefs in sport:

- **Response induction aids:** aids designed to reduce danger and reduce discrepancies between an actual and desired performance.
- **Imaginal rehearsal:** mental practice of the desired performance.
- **Direct reassurance:** authority figure's sincere encouragement emphasizing confidence in the athlete's ability.
- **Modelling:** observational learning from a model
- **Self-statement modification:** asking the athlete to practice self-efficacious monologues prior to performance.
- **False performance feedback:** to enable an athlete to surpass previously unbeaten "barriers"

The influence of the mind over your performance

One often hears the story of Roger Bannister's four minute mile in 1954. Despite the 'psychological barrier' of the four minute mile once Bannister had been successful many other athletes soon followed in Bannister's 'footsteps' in matching his performance.

There have been few studies, which have looked at expectations specifically on muscular strength performance. In one study conducted by Manzer (1934), subjects were told that the grip dynamometer had a spring on it, which could be adjusted to easy, medium or hard. The deception was that there was no spring on the grip dynamometer that could be adjusted to make it easy or difficult. It was found that when the individuals were told that the spring was on hard that the performance increased. It was concluded that because the individuals believed that the spring was on hard extra effort was required.

Nelson and Furst (1972) investigated the relationship between expectations and competitive performance in an arm wrestling task. Subjects were each paired with someone they thought clearly stronger in arm strength and then instructed to arm wrestle. Ten out of twelve contests, the objectively weaker subject, whom both subjects believed was stronger, won the competition. The results of this study are interesting. It is evident that the most important factor was competitors who expected to win rather than the actual physical strength.

Ness and Patton (1979) examined the effects of beliefs on performance of a maximum weight lifting task. Three baseline strength tests were used to determine the baseline strength performance of each individual. The incline bench press was used to examine strength. The group was tested under three experimental conditions:

1. a 'light' condition, where the actual weight was less than the subjects were led to believe.
2. a 'heavy' condition, where the actual weight was more than the subjects were led to believe.
3. a 'blind' condition, where the subjects were not given any knowledge of the weight until after completion of the task.

For example, in the 'heavy' group someone who had gained a baseline score of 200 lbs was told in the experimental session that he was given 200 lbs again, but in fact, he was given 220 lbs.

The results indicated that subjects who lifted the most weight were the ones who thought they were lifting less. The 'heavy' group believed they could lift the weight and they could. Such a study as that of Ness and Patton's (1979) confirmed that expectations could certainly play a significant role in influencing performance of a strength task. Ness and Patton stated:

'It is clear that the absolute weight lifted is not the only detriment in maximum-strength performance as measured on the machine.'
(Ness and Patton, 1979, p 210)

In contrast, Biddle's research (1979) revealed no significant effects for the influence of beliefs on a maximum weight lifting performance. Such a study did not support the findings of those of Ness and Patton's study (1979). Nevertheless, Biddle (1979) did find that there was an improvement in the 'unaware' / 'blind' group, the group that received no informational feedback regarding the weight to be lifted. Biddle believed that the increase in performance in the 'unaware' group was due to the fact that a reduction of inhibition is evident when knowledge of the weight is withheld.

(For a summary of the research see concluding table.)

Playing with Beliefs

- **Deception techniques** could be used as a successful means of increasing the performance of individuals who have either reached a plateau or who are in the process of injury rehabilitation. However, it must be pointed out that the technique of deceiving a subject should be employed cautiously in order to avoid injury. For instance, the weight percentage increase from the plateau should be both within a safe range and realistic. It should not be used ritually since the deception may become evident to the lifter which could, in turn, lead to an actual decrease in performance. In addition it should be used as a technique to increase self-efficacy. The possibilities regarding other sports are numerous; for example, probably considered the other extreme of weight training would be that of the marathon runner; when the deception technique would be by the means of the alteration of a timer by either increasing the speed or by advancing the time by seconds from the actual time. Another sport where this technique might be beneficial would be for a sprinter who could be deceived in the same manner or to extend the length of the track by a certain amount without the knowledge of the runner. When loading up the bar ensure use a combination of different size plates 20 kgs, 10 kgs. **Don't become accustomed** to seeing similar weights.

- **Set achievable yet realistic goals / targets.** Siff (2003b) notes that "if a goal is highly attractive and you believe strongly that it is within your reach, the Motivational Force driving you will be very strong. However, if a goal is extremely attractive, but you believe it to be far outside your reach, you will experience a small Motivational Force and put in minimal effort to attain that goal." Keep tasks relatively challenging but reasonable level of difficulty.

Motivation Force	=	Perceived attractiveness	x	Perceived probability that result will materialise
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- Ensure you **use a training diary**. Write down your aims and objectives of your training and nutritional protocols.

- **Throw in an odd-ball, X-factor day and / or shock training method.** Progressive overload training methods used religiously can create perceptual psychological barriers. The great Russian superheavyweight lifter, Alexeyev, was known for his somewhat unconventional approach to training. He would alternate his training methods, using various “contrast methods” within a training session.
- **Use supramaximal techniques.** Occasional use of “supramaximal” techniques can be particularly helpful in conditioning the mind-body to be prepared for the unexpected situations, those new personal bests. Examples include walkout squats, heavy partial deadlifts. Tiger Woods interviewed on 60 minutes by Ed Bradley stated that he would “practice the impossible” – “creating impossible shots, doing something with every shot, there is no standard golf shot. Trying to make par from the most difficult situations from sides of bunkers, in the trees, bad lies on the green.”
- Surround yourself with **positive people and be positive** – don’t let negative thoughts come into your head. Our positive and negative beliefs affect all aspects of our lives.
- **Perceive a successful virtual reality** to achieve reality.
- Instructor’s should be particularly **diligent in cautioning** individuals or groups of particular dangers of any exercise, techniques and or methods.
- Our beliefs are formed from our experiences but equally experiences are the result of our beliefs, this is the concept of the self-fulfilling prophecy. We say people have or hold beliefs but it would probably be better to talk about **leaving or outgrowing them**. The area of health and exercise behaviour is an area where beliefs and expectations are key to the ability to change. Albert Einstein once said, “You can’t solve a problem with the same mind that created it.”

Some closing thoughts/questions:

Do we see it then believe it, or believe it then see it?

What about the power of an urban myth?

Asked for his “gut feeling” on the topic of extra-terrestrial intelligence, physicist Carl Sagan replied “I try not to think with my gut. If I’m serious about understanding the world, thinking with anything besides my brain, as tempting as that might be is likely to get me into trouble.”

For a wonderful and comprehensive exploration of the power of belief and erroneous thinking read “How We Know What Isn’t So” by Thomas Gilovich or “The Demon Haunted World” by Carl Sagan.

And finally to be absolutely current, in a world that has more astrologers than astronomers, what will they do now with 12 planets?! Bring back Mystic Meg we say.

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Table 5 Review of main studies (adapted from Biddle, 1986)

Authors	Activity	Sample	Design	Main analysis	Main title	Summary of findings
Nelson & Furst (1972)	Arm-wrestling (face to face competition)	N=24; male undergraduates	Competition in pairs where objectively weaker subject was believed to be stronger of pair	Simple comparison of expected and actual winners	An objective study of the effects of expectations on competitive performance	10 out of 12 contests a win for objectively weaker person.
Ness & Patton (1979)	Inclined machine bench press; 1RM	N=48; male undergraduates	within - subjects 2 deception, 1 'no information' conditions.	3 X 3 ANOVA on groups and treatments	The effects of beliefs on a maximum weight lifting performance	Significant main effect for treatment; performance greater when Ss thought the weight was less than it actually was
Biddle (1979)	Declined machine bench press; 1RM	N=44; experienced male weight trainers	4 group between - subjects 2 deception, 1 'no information' conditions, 1 correct information	1 x 4 ANOVA on % gain scores	The effects of beliefs on the performance of a maximum weight lifting task.	The only group to improve was the group who received 'no information.'
Fitzsimmons (1991)	Machine bench press; 1RM	N=36; experienced male weight trainers	3 group between - subjects 2 deception, 1 correct information.	3 x 5 ANOVAs with repeated measures on the second factor	Does self-efficacy predict performance in experienced weight lifters?	Significant main effect for treatment; performance greater when Ss thought the weight was less than it actually was
Wells (1993)	Bench press; 1RM	N=24; 18 males, 6 females undergraduates	3 group between - subjects 2 deception, 1 correct information.	3 x 4 ANOVA	The self-efficacy-performance link in maximum strength performance	Significant main effect for treatment; performance greater when Ss thought the weight was less than it actually was