

# Comparing the use of imagery in recreational and competitive sport

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The aim of this study was to find out if there was a significant difference in the use of imagery in recreational and competitive sport. To do this we had a sample of 56 sports students fill out a Sports Imagery Questionnaire (SIQ). In this sample we had 18 participants, 9 male and 9 female, who considered themselves involved in sport for recreation and 36, 18 male and 18 female, who considered themselves at a competitive level (above school level). The highest mean result recovered was: 29.0 for competitive participants in the MGA subscale. The lowest mean result recovered was: 22.0 for the recreational participants in the CG subscale. We found that for three of the five subscales of imagery theory there were significant differences when we used a t-test: CG - 0.005, MS - 0.04 and MGM - 0.04. The full initial can be found in the appendices.

Imagery can be "a process by which sensory experiences are stored in memory and internally recalled and performed in the absence of external stimuli" (Murphy, 1994). More simply, imagery is the notion of being able to recall an action previously made to your memory and re-perform the action. Being able to recall the action is beneficial in terms of improvement of performance as mistakes can be amended mentally prior to re-performance.

Previous research on imagery has focused on the cognitive function and past studies have been limited in terms of sport by a failure to examine any changes in athletes imagery use during a competitive season (Hall et al, 1990). Early imagery use concentrated on skill and strategy acquisition, skill maintenance, self-imagery manipulation and attention/pain control, over recent years this has altered to incorporate the field of sports participation.

Hall et al (1990) states that everyone has the capacity for mental imagery and that there is no doubt that it has a significant positive effect on the development of motor skills. In addition to this, Feltz and Landers (1983) found that mental practice; the use of imagery is better than no practice and that physical practice is better than mental practice. However, when you combine both mental practice and physical practice the best results are achieved, with higher skilled athletes benefiting from its use more. Gammage et al (2000) found that increasing the frequency of given exercises resulted in significantly more time spent on imagery.

Mental imagery involves many senses providing a very vivid experience for the athlete. This is different to 'visualisation' which only provides a picture of the action, without the depth and involvement of other senses provided with the use of mental imagery.

Mental imagery can be categorised into 2 terms of perspective. White and Hardy (1995) and Hardy and Callow (1996) describe them like this:

- 1) Internal - imagery is 'seen' through the eyes of the athlete - in a first-person view. This is particularly useful for visual-field change activities.
- 2) External - an outside view, like watching yourself from the side-lines. This is useful for technical skill development.

Another major difference between the two types of imagery - internal and external - is that internal imagery allows for kinaesthetic imaging while external imagery does not.

Mahoney and Avenier (1977) investigated the use of imagery in elite gymnasts trying out for the Olympic team. They found that the gymnasts who used internal imagery performed the best and got into the Olympic team significantly more than those individuals who did not perform to the required standard to make the Olympic squad. Rotella et al (1980) found the same was also true for high-level skiers. This could mean that internal imagery is the best form of mental imagery but some studies disagree, it could be said that different types of sport require different perspectives.

In 1985, Paivio developed an analytic framework that has received critical acclaim. It provides an accurate way of viewing the process of imagery. Paivio states that imagery involves rehearsal of specific skills (cognitive specific - CS) and strategies of play (cognitive general - CG). In addition, motivational function, at specific level, involves imagining a goal and then imagining a course of action that results in the achievement of that goal (motivational specific - MS).

Sackett (1934) also investigated the nature and benefits of mental imagery - developing his 'symbolic learning theory'. In his work, Sackett states that imagery operates as a cognitive coding system. In terms of sport, this means that athletes can obtain 'mental blue-prints' of a given motor pattern. Imaging strengthens these blue prints (Hall et al, 1990), providing further benefits for athletic performance.

Hall et al identified 2 sub-sections of MG, these being:

- 1) MGa - motivational general arousal (to do with arousal and stress)

2) MGm - motivational general mastery (control, toughness, confidence)

Hall et al developed SIQ (Sport Imagery Questionnaire) to measure the extent at which the 5 types - CS, CG, MS, MGa, MGm - of imaging are used.

The SIQ was used in this study, with the intention of identifying the use of imagery.

The hypotheses are:

Experimental - There will be a significant difference in imagery used across each subscale of the SIQ between the recreational and competitive groups.

Null - There will not be a significant difference in imagery use across each subscale of the SIQ between the recreational and competitive groups.

### Participants

There were 54 sports studies students, aged between 19 and 23, were asked to complete the SIQ (Sports Imagery Questionnaire). 18 (9 male, 9 female) of these played sport at recreational level and 36 (18 male, 18 female) at competitive level - this being defined as competing above school level. All participants were asked if they wanted to take part and all agreed. No controls were instated on age, gender, occupation or fitness levels.

### Design

The results taken from the sample were recorded on a questionnaire basis, as the 'Sport Imagery Questionnaire' (SIQ) was adopted. The questionnaire consisted of 30 questions to be completed via self report with the

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participants assessing their own level of imagery contribution to the given situations on a scale from 1 to 7 for each of the 30 questions, 1 meaning rarely occurring up to 7 which means occurring often. The 30 questions on the SIQ were used to total up scores for each of the 5 subscales of imagery theory as described in the introduction.

Independent T-tests were used to analyse the data gained from the questionnaires.

## Materials

Copy of the SIQ (Sports Imagery Questionnaire)

Answer sheets for the SIQ

## Procedure

The participants were each told that all scores would be anonymous and confidential and that there was no obligation to fill in the questionnaire. The participants were also told that they could withdraw at any time.

The participants received a copy of the Sports Imagery Questionnaire (SIQ) and filled in the cover sheet - declaring their age, sex, sport they competed in and their level of competition ('competitive' being above school level). They then had to answer the questions using the Likert Scales (1-7, 1 being 'rarely' and 7 being 'often').

After the SIQ was completed the SIQ score sheet was used to obtain mean scores for the 5 different categories of imagery. These 5 imagery headings are:

- 1) CS - Cognitive specific
- 2) CG - Cognitive general
- 3) MS - Motivational specific
- 4) MG-A - Motivational general-arousal
- 5) MG-M - Motivational general-mastery

The SIQ score sheet was then used in conjunction with the SIQ test to generate mean scores for the five different categories of imagery. Therefore each participant contributed a mean score under each of the five different imagery headings: CS, CG, MS, MGM, MGA. This data was then analysed and an internal consistency figure of 0.8841 (Cronbach's alpha) was used to test the reliability of the questionnaire.