

**SELF- IMAGE AS A PERFORMER IN PERCEPTION OF THE STEROID
“BENEFICIARIES”**

H. Mroczkowska

Dept. of Psychology, Institute of Sport, Warsaw, Poland

Abstract. The aim of the present study was to assess differences between the current and former users of anabolic steroids (AS) and the control subjects in the following cognitive processes describing one’s self-image as a performer: 1) conviction about exerting control over one’s own achievements, and 2) self-protective interpretation of the achievement. Two inquiry techniques were used: 1) the “Delta” questionnaire for estimation of the feeling of internal-external control; 2) the I-E Scale for estimation of the attributive patterns of success and failure. Three groups of male subjects were examined: bodybuilders currently on steroids (+ +), bodybuilders – former AS users (+ –), and control athletes (– –). The obtained results allow to draw two conclusions. Firstly, compared to the current and/or former AS users, the subjects with no AS experience (controls) demonstrated a significantly stronger sense of being a performer, exerting the internal control. Secondly, the differences in the individual feeling of being a performer were expressed in the ways in which the subjects interpreted causes of the achieved results by means of the so-called attributive patterns: the subjects with no AS experience exhibited a more beneficial and self-protective pattern of the attribution of failure than did the former and/or current AS users.

(Biol.Sport 25:167-176, 2008)

Key words: Anabolic steroids – Bodybuilders – Self- image

Introduction

The present study is a follow-on from earlier investigations aimed at elucidation of the psychological causes and consequences of non-medical usage of anabolic steroids (AS) [10]. The series of studies began with exploration of the underlying motives for the AS use with the assumption that the decision stemmed from an individual’s philosophy and hierarchy of values and ethical norms. According to psychological knowledge, external vs. internal motivations were distinguished referring them to instrumental reinforcements or internal self-rewarding motives, such as joy from what one was doing, self-improvement, and personal

Reprint request to: Dr Helena Mroczkowska, Dept. of Psychology, Institute of Sport, Trylogii 2/16, 01-982 Warsaw, Poland; E-mail: psycho@insp.waw.pl



development [3]. The investigations demonstrated that, with such a categorization of the activity motives, the current AS users were more concentrated on their personal development than ex-users or subjects from the control group. The obtained data implied that both the bodybuilding and steroid support constituted two complementary strategies answering the intrinsic call for a “proper” – according to the AS users – shape of the body [2,10]. In fact, the published data suggest that, in the process of increasing concern for self-physicality, intake of AS for non-medical purposes is the final step indicating an exceptionally strong motivation [4].

Psychological state-of-the-art in achievement motivation assumes that an achievement, irrespective of its goal, cannot exist without the sense of being a performer in control of the situation or without a conviction that one can affect one’s aims and accomplishments [6]. It is highly plausible that the decision to use AS for non-medical purposes is a conscious and intentional choice. However, two questions pop out: 1) do the AS users exert the actual internal sense of control over their own lives, and 2) is the AS intake not a sign of the illusion of the user’s capacity to control his or her own behaviour [1,5,11].

In the present study, two interrelated psychological constructs were used to assess the self-image of a performer. The first construct consists in the generalised conviction that one possesses (or does not possess) the ability to control what and how much one attains (the sense of internal-external control). The second one refers to processes of the cognitive interpretation of achievements, i.e. searching for the causes of the attained result – the so-called attributive patterns. According to the Weiner’s attributional theory of motivations [14], the possible causes of the end results of activities (whether expected or not) of the AS users may be divided according to the:

- stability (constant-variable) of the cause, responsible for the subjective probability of the future result, and
- locus of the cause (internal-external) in relation to the performer, responsible for the performer’s self-assessment (self-evaluation?).

The first category (constant-variable causes) is closely associated with the strength of expectations of a future result. Attribution to the constant cause (own abilities) increases the expectations, whereas attribution to the variable cause (chance) reduces them. The ‘locus’ category of causes (internal-external attribution) is strongly related to emotions (taking pride in the success or feeling shame at the failure) which are the main sources of the induction and sustainment of the motivation to achieve. Attributing the effect of the activity to internal causes (abilities, efforts) triggers much stronger emotions than interpreting it as due to



external factors (chance, circumstances). In a way, a person with a high motivation for achieving exhibits a sort of wishful thinking which manifests itself in two ways: 1) the causes of success are internalized and the causes of failure externalized, and 2) the success is interpreted as a result of constant factors, what strengthens expectations for future achievements, whereas the failure is explained by unstable causes, what minimizes subjective probability of a subsequent defeat [14]. Indeed, such an interpretation of the attained result is beneficial for a performer and indicates the self-protective pattern of attribution. What, therefore, are the differences between the current and former AS users and the control subjects with respect to the following two cognitive processes describing the image of oneself as a performer:

- generalized conviction about exercising control over what and how much one attains;
- self-protective interpretation of what and how much one gains.

Owing to the lack of published data, it is not easy to formulate the appropriate study hypotheses. In addition, the investigator must be aware that, in comparison to physiological processes and alterations induced by the use of anabolic steroids, post-steroid psychological consequences may be more difficult to discern [12].

Materials and Methods

Three groups of male subjects were examined:

- bodybuilders, currently on steroids (+ +), n=8; mean age, 29±4years;
- bodybuilders, former AS users (+ -), n=9; mean age, 30±9years;
- weight lifters with no AS experience (- -) n=13; mean age, 25±6years.

Two inquiry techniques were used:

- the “Delta” questionnaire (after R. Drwal), for estimation of the feeling of external vs. internal control; the raw results range from 0 to 14 points: the higher the result, the less pronounced a sense of internal control;
- the I-E scale (experimental version by H. Mroczkowska), for estimation of the attributive patterns. According to the Weiner’s four-field categorization, four kinds of causes used by a subject to interpret the achieved result (success or failure) were studied; these were divided into two groups according to:
 - locus relative to the performer, i.e. internal (effort, abilities) or external (difficulty of the task, chance);
 - stability-instability, i.e. constant (abilities, task difficulty) or variable (effort, chance) causes.



For statistical analysis of the results Student t test for non-parametric trials [13] was used.

Results

Table 1 shows the results (means \pm SD) of estimations of the feeling of external vs. internal control obtained in the three examined groups of the subjects.

Table 1

Mean values \pm SD of the sense of external vs. internal control in three examined groups of the subjects

		Sense of control	Range of results (0-14)
n=8	(+ +)	5.6 \pm 3	2-11
n=9	(+ -)	6.7 \pm 5	0-14
n=13	(- -)	2.6 \pm 2**	0-6

*p<0.05; **p<0.01; ***p<0.001

Both the current and former AS users exhibited the comparably pronounced mixed sense of external-internal control. Consequently, no differences in this regard were detected between the two AS-‘familiar’ groups. However, when subjects from each of these groups were independently compared to the control athletes significant differences were demonstrated. The athletes who never used AS demonstrated the significantly stronger feeling of internal control than both the current and former AS ‘beneficiaries’. Notably, the great dispersion of the results within the groups provided additional information about the inter-group differences. The very high and maximal dispersions (which are blurred by the mean values) obtained in the current and former AS users, respectively, suggest that the subjects from these groups might experience a disturbed objective evaluation of reality and of their own role in its shaping.



Table 2 presents distribution of causes categorized according to their locus and stability, as perceived by athletes from all the tested groups.

Table 2

Distribution (in absolute numbers and percentages) of the subgroup causes according to their locus and stability as perceived by subjects from the three examined groups

		Success					
		Internal	External	Constant	Variable		
n=8		31	1	11	21		
(+ +)		96.9	3.1	37.5	62.5		
n=9		35	1	12	24		
(+ -)		97.1	2.8	33.3	66.7		
n=13		50	2	8	44		
(- -)		96.2	3.8	15.4*	84.6		
		Failure					
n=8		29	3	11	21		
(+ +)		90.7	9.3**	34.4	65.6		
n=9		29	7	16	20		
(+ -)		80.6	19.4	44.4	55.6		
n=13		36	16	8	44		
(- -)		69.2	30.8	15.4**	84.6*		

*p<0.05; **p<0.01; ***p<0.001

With respect to the locus of the causes in relation to the subject, no differences between the groups were noted in the ratio of internal to external causes. This ratio was similar in all the tested groups indicating that, in the perception of the examined subjects, a success depends on internal predispositions of a performer (about 97%) and is only very weakly determined by external factors (about 3%).

As regards failure, despite the less pronounced role of internal causes, a similar regularity was detected as during the analysis of the causes of success. The subjects from all the three examined groups significantly more often indicated internal rather than external factors as the source of fiasco; however, the role of the external



factors was markedly more important for the athletes who never used AS than for those from the two experimental groups.

Considering the stability of causes, the subjects from all the three groups significantly more often perceived the variable rather than constant factors as sources of both success and failure. Notably, athletes who never used AS differed from the subjects from the two experimental groups by their markedly weaker perception of unmodifiable as compared to controllable factors as the causes of success and failure.

This regularity was especially important with respect to failure. As perceived by the subjects from the control group, the role of stable sources of failure was trivial (the lowest value of 15.4%), in contrast to the current and ex-users of AS who regarded it as high (34.4%) and very high (44.4%), respectively. These results indicate that the perceived probability of a future failure was the strongest in the former AS beneficiaries and the weakest in athletes who never used AS.

In order to elaborate the above described regularities, Table 3 shows the distribution (in absolute numbers and percentages) of causes responsible for success, as perceived by the examined subjects.

Table 3

Distribution (in absolute numbers and percentages) of the causes of success in the three examined groups of the subjects

	Effort	Abilities	Coincidence	Difficulty of the task
n-8	20	11	1	0
(+ +)	62.5	34.4*	3.1	0
n-9	23	12	1	0
(+ -)	63.8	33.3**	2.8	0
n-13	43	7	1	1
(- -)	82.7	13.5***	1.9	1.9

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Both the current and former AS users so closely interpreted the causes of success that the two groups can be discussed jointly. Indeed, as has been frequently demonstrated in studies of various athletic teams [8,9], the rating of causes by their importance in achieving a successful result was identical in the two experimental



groups as compared to the control subjects. First on the list is effort as the main determinant of success, next come abilities followed by chance and the difficulty (or ease) of the task which is perceived as the cause of a low or negligible importance. The only distinction between the current- and ex-users of AS and athletes from the control group is different weight assigned to one of the internal causes which in each experimental group took two leading positions on the list. Compared to the control subjects (– –), the current- and ex-users of AS (+ +; + –) regarded abilities and effort as significantly more and less important causes of success, respectively. In the two groups of AS users the ratio of weights assigned to effort and abilities was approx. 2:1, whereas in the control group this ratio equalled to 6:1.

Table 4 shows the distribution of causes of failure as perceived by subjects from the three tested groups.

Table 4

Distribution (in absolute numbers and percentages) of the causes of failure in the three examined groups of the subjects

	Effort	Abilities	Coincidence	Difficulty of the task
n=8	19	10	2	1
(+ +)	59.4	31.3	6.2**	3.1
n=9	16	13	4	3
(+ –)	44.5	36.1	11.1	8.3
n=13	32	4	12	4
(– –)	61.5	7.7**	23.1	7.7

*p<0.05; **p<0.01; ***p<0.001

In the groups of current and former AS users, the rating of causes responsible for failure, such as effort, abilities, chance, and difficulty of the task, was similar to the rating of the causes of success. What differentiates these two groups is change in weights assigned to causes depending on whether the outcome of the activity is success or failure. For the present AS users interpretation of that outcome was not affected by its type (i.e., success or failure). On the other hand, more pronounced differences between the interpretation of success and failure were demonstrated in



the group of former AS users who, in the face of failure, tended to diminish the role of effort in favour of chance and task difficulty.

In contrast to the two experimental groups (+ +; + -), changes in the interpretation of the expected vs. undesirable result by subjects from the control group showed a completely different direction. Firstly, ratings of the causes responsible for failure and success were totally different. These subjects perceived insufficient effort (61.5%) and chance, bad luck (23.1%) as two main sources of failure, whereas the remaining two causes were comparably regarded as insignificant (about 7.7%). Furthermore, perception of the causes of failure in the control group appeared to differ from that detected in the two experimental groups and consisted in the markedly diminished attributed role of abilities and the enhanced role of chance.

Discussion

In view of the attributive theory of motivations, how can we interpret the above data and can we decide which pattern of the attribution demonstrated in the studied groups of the subjects is more and which less favourable?

First of all, the main difference between athletes with and without a history of the AS usage consists in the markedly stronger feeling exhibited by the latter subjects of being a performer and of internal control over the tasks performed. Moreover, the very large dispersion of the respective results among the subjects from the two experimental groups suggests that their objective evaluation of reality may be disturbed ranging from a sense of a full control over to a total lack of impact on their own lives.

Secondly, significant differences in the individual feeling of being a performer manifested in the manner in which the subjects viewed the causes of the achieved results – both expected and undesirable. As indicated previously by Mroczkowska [7], when the expected outcome occurred, the results supported the obvious, never empirically challenged, regularity of assuming full responsibility for the success. All the examined subjects considered themselves to be the authors of the success, explaining it by their internal dispositions. The protective against oneself and against one's self-assessment pattern of interpreting success, as demonstrated in the present study in all the three groups of the subjects, consists in fact in distribution of the function between two internal dispositions, one of which belongs to the fixed personal attributes (abilities) and second to the variable parameters (effort) controllable by the performer. However, what characteristically distinguishes the present and the former AS users from subjects in the control group is the



significantly higher weight assigned to the intrinsic abilities, i.e. the invariable attributes. Based on this observation and according to the assumptions of the motivation theory, one can believe that, compared to members of the control group, the former and present AS users demonstrate higher subjective probability to expect future successes and reveal a stronger sense of pride and satisfaction thereof – these emotions, in turn, are the basis for inspiring and sustaining the motivation for achieving. However, both the published data and the results of my own studies suggest that the real feeling of being a performer and in control of own activities unfolds when the athletes face a failure or arrive at some other undesired result [8,9].

Based on the data presented above a few conclusions can be drawn. Firstly, as in the case of success, all the examined subjects took on personal responsibility for the failure, the causes of which were attributed more often to internal than external and to variable than stable factors. What, however, significantly differentiated the control athletes from those belonging to the two experimental groups was the stronger function of external, variable causes (chance) and the weaker role of internal, invariable causes (abilities). This observation indicates that, when confronted with failure, both former and present AS users underestimate the role of chance and overrate their function of abilities regarded as responsible for a fiasco. Such a pattern of the failure attribution is definitely not conducive to holding high esteem of oneself as a performer and also increases the performer's subjective probability of future failings. Secondly, the obtained data imply that, compared to never-users of AS, individuals experimenting with these substances exhibit a rather disadvantageous and less self-protective pattern of the attribution of failure. Also, interesting is the specific way of perception of individual abilities by AS users: what is the source of pride when they succeed, also brings shame and humiliation when they loose. Attributing failure to own abilities, which means a lack thereof, directly translates into a lowered self-esteem, triggers the sinking of self-confidence and shakes the belief in one's abilities what, in effect, is all but putting stumbling blocks in one's own way. Furthermore, the profound inflexibility of attributive patterns consisting in the weak relationship between the type of a result (success/failure) and the way it is interpreted significantly differentiated the AS users from their AS-unfamiliar, control counterparts. In the perception of the present AS consumers, the type of the achieved result is less important, whereas in the case of ex-AS users some changes in interpretation even enhanced the unfavourable pattern of failure. This observation may perhaps justify the above expressed suggestion that individuals experimenting with AS exhibit a disturbed objective evaluation of reality.



Owing to the limited number of subjects in the examined groups, the results, conclusions, and suggestions described in the present paper should be taken with caution. Nevertheless, the post-steroid effects on the human mind, need to be thoroughly evaluated and analysed in future investigations.

References

1. Choi P.Y.L., A.C.Parrot, D.Cowan (1990) High-dose anabolic steroid in strength athletes: effects upon hostility and aggression. *Hum.Psychopharmacol.* 5:349-356
2. Choi P.Y.L., H.G.Pope (2001) Men, muscles and masculinity: male body image and physical exercise. 10th World Congress of Sport Psychology. Vol. 2:16-19
3. Deci E. L., R.M.Ryan (1985) Intrinsic Motivation and Self-determination in Human Behavior. Plenum Press, New York - London
4. Innselseth E., G.A.Espnes (2001) Men, body self-image and physical training: a study of 76 men in training studies in Norway. 10th World Congress of Sport Psychology. Vol. 2:179-181
5. Middleman A.B., R.H.Durant (1996) Anabolic steroid use and associated health risk behaviors. *Sports Med.* 21:251-255
6. Mroczkowska H. (1993) Emotional-cognitive mechanisms of functionary of men and women in sports. *Biol.Sport* 10:267-272
7. Mroczkowska H. (1995) Predictors of psychophysical functioning of Polish olympic athletes. In: IX European Congress of Sport Psychology. Proceedings. Part I:481-487
8. Mroczkowska H. (1996) The sense of responsibility for failure and sports team cohesion. *Biol.Sport* 13:305-310
9. Mroczkowska H. (1997) Attributive reduction of failure-borne losses in view of team cohesion - analogies and differences in individual versus team competition. *Biol.Sport* 14:325-332
10. Mroczkowska H. (2003) Motywacja aktywności ruchowej w percepcji steroidowych "beneficjentów". *Med.Sportowa* 19:217-224
11. Parrott A.C., P.Y.L.Choi, M.Davies (1994) Anabolic steroid use by amateur athletes: effects upon psychological mood states. *J.Sports Med.Phys.Fitness* 34:292-298
12. Pope H.G., D.L.Kotz (1988) Affective and psychotic symptoms associated with anabolic steroid use. *Am.J.Psychiatry* 145:487-490
13. Sokal R.R., F.J.Rohlf (1998) Biometry. 3 Ed. W.H. Freeman & Co., San Francisco, CA
14. Weiner B. (1985) An attributional theory of achievement motivation and emotion. *Psychol.Rev.* 92:548-573

Accepted for publication 1.09.2006

