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LEVEL OF ASPIRATION SETTING AS AN ALTERNATIVE FOR ACHIEVEMENT-INSTRUCTIONS IN AROUSING ACHIEVEMENT MOTIVATION¹

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The present research focuses on the particular problem of arousing need achievement. Starting from formulations of the studied authors themselves objections were made against the arousal procedure of the McClelland-Atkinson tradition. Instead of giving achievement-oriented instructions an alternative procedure was designed which involves a personal setting of the level of aspiration. Two experiments on both male and female subjects were carried out to compare the effect of this alternative with that of a neutral task condition, and that of the usual achievement-oriented condition. In both experiments the alternative showed more arousal power on the performance level than both other conditions. Also some evidence could be gathered that the alternative states a somewhat purer arousal condition for the achievement motive than the usual achievement-oriented condition. The results for male and female subjects were situated in the same direction.

The present research started from the conviction that the historical (McClelland e.a., 1949; McClelland e.a., 1953) but still current way of arousing need achievement by so-called 'ego-involvement' or 'achievement-instructions' was stripped out by the theoretical evolution in the field. At the time of the first arousal experiments only a broad concept of achievement motivation was available. McClelland e.a. (1949) described the achievement motive as the striving for success. However, it seems clear that not all kinds of success can be conceived as goals of the achievement motive. So a further elaborated definition was needed. In 1953 (McClelland e.a.) striving for success was defined as the striving for success in competition with some standard of excellence. That elaboration remained the core of the definition until now. In 1966 Atkinson and Feather defined achievement-oriented activity as 'activity undertaken by an individual with the expectation that his performance will be evaluated in terms of some standard of excellence (o.c., p. 328)'.

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Evaluated in reference to the more articulated definitions the original arousal technique of achievement-instructions suffers from two weaknesses. First of all, subjects were motivated by stressing that the experimental tasks were predictive for success in intelligence tasks and leadership behavior. At least that last kind of success could be an excellent stimulus for an achievement-excentric motive like e.g. the power motive. Therefore the kind of success was not clearly delimited to the achievement area. Secondly, if competition with some standard of excellence is that important, why not experimentally confront subjects with such standards and look for the arousing effect? It must be said that the original experiments had in fact conditions in which norms were presented. However, these norms were not presented for their own sake but only as means to induce feelings of success or failure by confrontation of subjects' performance with those standards. Once the experimenters realized that such feelings could interact with the effect of a 'pure' heightened need the induction of success or failure was abandoned and automatically also the experimental presentation of standards of excellence. Stimulation of subjects by achievement-instructions was kept only as a convenient technique.

Except these considerations based on the definition matter an objection against the achievement-instructions can also be made on more general grounds. Atkinson realized rather early (1954) that each creation of an achievement situation did not only stimulate the striving for success but also the motive to avoid failure. Atkinson himself concluded that the original procedures must have aroused not only the achievement motive, as was intended, but also the fear of failure motive.

The comments may laid to the plan to set up an arousal experiment in which three points must be realized. First of all, the performance situation created in the arousal condition must be a clearcut autonomous or intrinsic achievement situation with minimal chances to arouse socially meaningful but achievement-extrinsic motives. Secondly, intrinsic standards of excellence must be presented. Thirdly, the arousal condition must not provoke anxiety. We thought that such a condition would be one in which subjects are working on their own task without control by any other person, are free to (and do in fact) set their own standards of excellence and in fact do so, and don't have the possibility to experience success or failure but still are in a state of mild expectation of success. Ultimately that seemed to mean a level of aspiration setting in carefully controlled conditions. The effect of such a Level of Aspiration Condition (LAC) should then be compared with the effect of the traditional Achievement Instruction Condition (AIC) and with a neutral or control Task Condition (TKC).

We planned to explore the efficiency of our LA-condition on both the performance and the fantasy level. However, the most theoretical weight was given to the performance level. Indeed, after all achievement meant a real performance so that achievement motivation must be understood first of all as the motivation to reach certain levels of performance

and not as a motivation to describe oneself as achievement oriented or to produce fantasies about achievements. It is certainly not stated here that there may not be a relationship between the various behavior levels of performance, self-report, and fantasy. But based on the notion of achievement itself one can presume that both measurement and arousal of the achievement motivation based exclusively on either self-report or fantasy may not be justified. In view of the theoretical preponderance of the performance level we decided to try out a first experiment in a very carefully controlled laboratory³ situation on the performance level only. A second experiment will then be carried out in a classroom setting on both the performance and fantasy level. The classroom experiment could also give information about the changes of survival of the presumed experimental laboratory effects in a less well controlled field situation.

The level of aspiration variable is most exclusively studied as a dependent or subject variable. The rare studies in which it was treated as an independent variable are these of Bochow (1957) and Kausler (1959) but none of them were situated in a context of achievement motivation. Such a hint was given by Birney (1968) in his comment on Kausler: '...and one wonders whether ss with high n Ach may not give themselves such instructions⁴ when low n Ach ss do not. Furthermore, asking for LA could be achievement-arousing..., (o.c., p. 865)'. Birney's suggestion parallels the leading idea of the present research.

METHODOLOGICAL AND EXPERIMENTAL PROBLEMS

THE PERFORMANCE TASK

Before running the experiments several decisions about some methodological and experimental problems had to be made. The first questions concerned the choice of the performance and fantasy tasks. The performance task must be sensitive to motivational fluctuations and complex enough to guarantee the phenomenological acceptability of the achievement instructions in the A1-condition. We chose therefore a type of arithmic task developed by Düker and Lienert (1959). It consisted of two-step calculations which required the subjects to subtract or add in their minds the outcomes of both steps along some rules and to write down their final answer. This task was designed to measure achievement orientation and seemed to be independent of cognitive ability (Düker and Lienert: o.c.). Furthermore this type of task reflected successfully the achievement motivational arousal in the experiments of Atkinson and Reitman (1956) and Smith (1966) while the acceptability and usefulness of this kind of task concerning our

³ We are indebted to Prof. Dr. J.R. Nuttin for his kind readiness to place his laboratory at our disposal.

⁴ Instructions to set level of aspiration.

own subjects could be established in an additional exploration (Bruyn De, 1973 : 118-119).

THE FANTASY TASK

On the fantasy level we chose to follow the standardized TAT-procedure of the McClelland-Atkinson tradition (Atkinson, 1958). But problems arose in connection with both scoring and pictures. It was our intention to stimulate the positive need for achievement only, because some findings in the literature revealed that the *n ach* score also contained categories which were rather indications for a fear of failure motive (Atkinson, 1954; Heckhausen, 1963). Therefore we decided to score only for such categories which were conceived in the literature rather unanimously as clearcut indices of the positive striving for success. An important criterion in this matter was Heckhausen's scoring key which discriminates between a projective hope for success and a projective fear of failure motive (Heckhausen, 1963). Ultimately stories written by our subjects could receive points on the following categories: Achievement Imagery, Successful Instrumental Activity, Positive Anticipatory Goal State and Positive Affective State associated with goal attainment (Atkinson, 1966 : 179-204).

The fantasy material also raised another problem in connection with the experimental design. To be sure that the experimental effects would be as valid as possible indices for achievement motivational arousal, the decision was made to use difference scores between pre- and postexperimental trial as the dependent variables. The performance task could simply be given twice, but the literature indicated that the TAT had only low or modest reliabilities. The best results appeared to be

form	series 1 pictures			form	series 2 pictures			X ₁	SD ₁	X ₂	SD ₂	r ₁₂ ^o
C	8	6	19	D	11	21	27	2.80	3.98	1.17	3.69	.55
I	21	6	11	J	8	19	27	1.01	3.85	3.49	3.93	.52
S ^{oo}	21	8	11	T	6	19	27	2.01	3.90	2.49	3.92	.50
G ^{oo}	8	6	27	H	11	19	21	2.36	3.98	2.14	3.93	.47
Q	21	8	19	R	6	11	27	3.43	4.05	1.07	3.84	.47
E ^{oo}	8	6	21	F	11	19	27	2.39	4.13	2.10	3.79	.46
K ^{oo}	21	6	19	L	8	11	27	2.42	4.04	2.08	3.92	.45
O	21	8	27	P	6	11	19	3.00	4.00	1.50	4.00	.43
A	8	6	11	B	19	21	27	1.36	4.04	3.12	4.04	.40
M ^{oo}	21	6	27	N	8	11	19	2.03	4.15	2.57	4.16	.30

TAB. 1. DIFFERENT COMBINATIONS OF TAT PARALLEL FORMS (N = 57). ^o: Critical values are .27 (p = 0.05) and .35 (p = 0.01). ^{oo}: Series with statistical equivalence.

reached by the parallel form method, in which the pictures used were selected previously on a sample of the population concerned (Atkinson, 1950; McClelland, 1958; Habert & Alpert, 1958). Therefore a cluster

analysis was carried out on thirty usual pictures given to a sample of first year students (Van Wijnsberghe, 1971). The most suitable cluster was selected and different parallel forms were constructed. As can be seen the reliabilities ran from .30 to .55. Ultimately the E-F combination was selected on the basis of both the statistical equivalence and the greatest congruence of the scoring categories in each form. It also

selection form	research picture	experiment form	experiment picture	description	source
F	27	I	1	Boy watching great airliner	A-List ^o nr 25
	11		2	Instructor in classroom	A-List nr 92
	19		3	Two men in a shop working at a machine	A-List nr 2
E	8	II	4	Hardest story: man working with typewriter and books	A-List nr 48
	6		5	Man relaxing on plane	A-List nr 53
	21		26	Older man in white coat checking some object and younger man besides him	Heckhausen 1963a, picture F

TAB. 2. DESCRIPTION OF THE TAT PARALLEL FORMS. °: List of pictures in Atkinson 1958a, pp. 832-834.

appeared that the intercorrelation of these forms was exactly equal to the mean intercorrelation, after transformation into Fischer's *z*, of the ten possible combinations out of Table 1. Table 2 offers a description of the E-F forms.

THE LA-CONDITION

As it was said before, the LA-condition was intended to arouse the positive striving for success. Therefore, to inhibit as much as possible the influence of fear of failure we decided to place the subjects in a individual task situation in which they could work without any control neither by the other subjects nor by the experimenter. But how to prevent negative anticipations based on the first trial? Such anticipations would arouse the fear of failure motive which was considered as having inhibiting power on the performance level (Atkinson and Feather, 1966). So we had to avoid that the subjects out of the LA-condition could make any comparison between their own LA's and their subsequent performance. In the laboratory experiment we supposed this was done by using time scores while discarding all clockworks in each condition. In the classroom experiment no time scores were used but the total number of solved items was taken. In this case the second trial would be stopped after a short time at a moment when the subjects basing themselves on their experience in the first trial, could still anticipate that more experimental time was available.

After a group training on the n ach manual (Atkinson, 1958) the practice materials given by Smith and Feld (1958) were scored individually by the experimenter. The results were judged to be not sufficient enough and a new training program was carried out one month after the first. The results now showed a good correspondence with the expert scores (Smith and Feld, 1958). To control further the reliability of scoring an a-select sample of the experimental stories was then scored twice with a two month interval. The relevant figures are found in Table 3. A more detailed look into the agreement between two

reliability index	Smith and Feld pictures : first scoring				
	B	C	D	E	F
% AI	93	89	86	76	92
rho	.89	.82	.82	.81	.88
Smith and Feld pictures : second scoring					
% AI	100	100	90	93	91
rho	.98	.93	.80	.92	.90
experimental pictures : rescoring					
	1	2	3	4	
% AI	100	100	90	92	
rho	.90	.99	.95	.84	

TAB. 3. PERCENTAGE AGREEMENT IN SCORING ACHIEVEMENT IMAGERY (AI) AND RANK-ORDER CORRELATION BETWEEN THE n ACH SCORING OF EXPERIMENTER AND BOTH EXPERT AND EXPERIMENTER SCORING ON SERIES OF 30 PICTURES EACH

sets of scores can be given by the frequencies of absolute differences between both sets. For both the second scoring on the expert pictures and the experimenter rescoring this is done in Table 4. In the case of the Smith and Feld pictures only 4.6% of the differences exceeded one point while this was only the case for 1.6% of the experimental scores. At the end of the scoring program the experimenter had scored approximately 570 stories.

THEORETICAL ANALYSIS AND HYPOTHESES

Before starting the experiments a theoretical analysis was made of what could be expected in the various experimental conditions TKC (Task Condition), AIC (Achievement Instruction Condition), and LAC (Level of Aspiration Condition). The achievement motivation theory of

Atkinson as formulated in 1966 (Atkinson and Feather) served as the theoretical framework.

The theory states that both intrinsic and extrinsic motives are aroused in each achievement situation. The actualized intrinsic achievement

pictures	n stories	size of differences							
		0	1	2	3	4	5	6	7
Smith and Feld experiment	150	113	30	4	1	0	1	1	0
	120	93	25	1	0	0	0	0	1

TAB. 4. DISTRIBUTION OF DIFFERENCES BETWEEN SECOND SCORING ON THE SMITH AND FELD PICTURES AND THE EXPERT SCORES IN COMPARISON WITH SUCH DISTRIBUTION FOR THE TWO SETS OF EXPERIMENTAL SCORES

motives or the intrinsic tendencies are the stimulating tendency to achieve success (T_S) and the inhibiting tendency to avoid failure ($T-f$). The tendency to undertake a particular achievement-oriented activity (T_A) is function of the combined effect of both intrinsic and extrinsic tendencies: $T_A = T_S + T-f + T-ext$. The sign of $T-f$ is negative. We developed the logic of this formulation a little further by differentiating also between stimulating or positive extrinsic tendencies ($T+ext$) and inhibiting or negative extrinsic tendencies ($T-ext$). So the netto-effect of T_A is function of $T_S + T-f + T-ext$. The signs of $T-f$ and $T-ext$ are negative.

The question now was what would be the effects of the conditions between first and second trial? Table 5 gives a survey of the analysis.

condition	tendency				netto-effect
	T_S	$T-f$	$T+ext$	$T-ext$	
TKC	—	—	—	—	—
AIC	x	x	x	x	? or +
LAC	x	—	—	—	+

TAB. 5. MOTIVATIONAL ANALYSIS OF THE TASK CONDITION (TKC), ACHIEVEMENT INSTRUCTION CONDITION (AIC), AND LEVEL OF ASPIRATION CONDITION (LAC) FOR THE TENDENCY TO ACHIEVE SUCCESS (T_S), THE TENDENCY TO AVOID FAILURE ($T-f$), THE EXTRINSIC POSITIVE TENDENCIES ($T+ext$) AND THE EXTRINSIC NEGATIVE TENDENCIES ($T-ext$). TKC FUNCTIONS AS THE BASE LINE

In the control or task situation no systematic attempt is made to stimulate or inhibit the subjects. The netto-effect represents the 'normal' motivational state of slightly aroused tendencies. In LAC systematic efforts were made to minimize the effects of $T-f$, $T+ext$ and $T-ext$. Therefore it is expected that LAC would be marked by a pronounced T_S -profile which would result in a positive netto-effect. The effect of AIC is more difficult to predict. Our objections against achievement instructions were that they could stimulate both positive and negative and intrinsic

as well as extrinsic tendencies. So the netto-effect depends on the difference $(TS + T + ext) - (T-f + T-ext)$. A negative difference would result in a less pronounced effect than TKC. Entirely in line with this conclusion is a statement by Sader and Keil (1966) who hypothesized that a lot of achievement-arousal conditions failed because of a too strong effect of aroused inhibiting tendencies. When one looks at their achievement-arousal conditions, one must conclude that they were mostly, as was the case in the McClelland-Atkinson experiments, very complex conditions in which the instructions were rather one single element. So it is mostly impossible to judge independently the effect of the instructions as such and the effect of the 'secondary' measures (Klinger, 1966). Furthermore, such secondary measures are mostly taken to stress the importance and seriousness of the all experimental scene so that they can provoke defensive reactions rather than stimulate achievement. In the present experiments only the achievement instructions as such will be given so that the inhibiting character would probably much less than that of the more complex arousal situations. So a positive netto-effect was also expected in AIC.

For the present research however, it is in fact not important whether AIC would or would not have a positive effect. What matters is that LAC would stimulate performance and imagery and that results collected in LAC would show more relationship with indices of TS or TS-T-f than results collected in AIC. A direct comparison of LAC and AIC has therefore little importance. The comparison should be made on the level of the intervenient tendencies which are supposed to be aroused in realizing such conditions. Finally the hypotheses can be formulated as follows: Hypothesis 1: LAC has a stimulating effect on achievement behavior (comparison LAC-TKC). Hypothesis 2: LAC shows more relationship with indices of TS or TS+T-f than AIC (comparison LAC-AIC).

THE LABORATORY EXPERIMENT

In this experiment the arousal effect of the conditions was controlled on the performance level. We expected greater performance increments in LAC than in TKC and less performance decrements, if any at all, in LAC than in AIC. This last expectation was based on our theoretical assumption of both the stimulating and inhibiting effects of AIC in comparison with the relatively pure positive arousal in LAC.

METHOD

SUBJECTS

Thirty male and thirty female randomly chosen regular sophomores in psychology were divided at random over the three conditions so that each condition contained ten male and ten female subjects. Sex homogeneous groups ranging from three to seven subjects were

simultaneously tested in the laboratory. For each condition four sessions were needed. The order of sessions was at random.

PROCEDURE

Each s was placed in an individual box without any possibility to control for time. Each box contained a panel with response button, a desk and answer box. During the sessions the ss were wearing headphones. The general instructions were tape-recorded, specific instructions were given by microphone. ss could not see each other but had a view of the E in front of them. The apparatus was explained and ss received an example of the performance task. As it was said before it was a two-step arithmetic task developed by Düker and Lienert (1959) as the KLT (Konzentrations-Leistungs-Test).

First trial: After the example 40 KLT-items were given with the instruction for all conditions to solve them as quickly and accurately as possible. Immediately after finishing his task the s pressed the button and his performance time was recorded.

Second trial:

TKC: The same task was presented with the instructions to repeat this task again as quickly and accurately as possible.

LAC: ss were first given objective information about their performance time in the first trial. Then they were asked to note on a little card the time level they thought they were able to reach in the second trial. After that the performance task was given again.

AIC: Before presenting the performance task, instructions used by McClelland e.a. (1949; 1953) were given in a slightly adapted form: 'I am going to tell you now a little bit more about this test. But please, first put your name on the front of your answer sheet... Well, this test is a very important one. Together with others it was used in a battery to select people for responsible leading positions. Indeed, the test does not only reflect general intelligence but also the capacity to organize materials and to evaluate situations quickly and accurately. Such attributes also appeared to be connected with good leadership. You have received a first trial in order to be fully acquainted with the test so that you can start at the crucial trial in the best conditions'.

RESULTS

The time scores were converted into log-scores and the difference between first and second trial was taken as the dependent variable. A higher score meant a greater performance increment from first to second trial. The increase in mean log-time is presented in Table 6. The data show that both males and females gained more increase in LAC than in both other conditions. The important point here is the comparison of LAC with TKC to control the arousal capacity of LAC.

The difference between LAC and TKC is significant for the total group ($t=1.79$, $df=38$, $p < 0.05$, one tailed⁵). The difference for the female group was slightly lower than the critical value of 1.73 ($p=0.05$) with $t=1.72$ ($df=18$). For the males the effect of LAC was minimal ($t=0.67$).

subjects	N	condition		
		TKC	LAC	AIC
male	10	0.0266	0.0400	0.0425
female	10	0.0459	0.0945	0.0553
total	20	0.0362	0.0672	0.0489

TAB. 6. INCREASE IN MEAN LOG. PERFORMANCE TIME FOR TASK CONDITION (TKC), LEVEL OF ASPIRATION CONDITION (LAC), AND ACHIEVEMENT INSTRUCTION CONDITION (AIC)

The second analysis of results concerns the frequency of positive and negative time differences between first and second trial. If negative time scores would appear we expected them least in LAC. The crucial point here is the comparison of LAC with AIC because we hypothesized that AIC would stimulate both positive and negative tendencies. As one

subjects	N	condition					
		TKC		LAC		AIC	
		+	-	+	-	+	-
male	10	6	4	10	0	8	2
female	10	7	3	10	0	7	3
total	20	13	7	20	0	15	5

TAB. 7. FREQUENCY OF POSITIVE (+) AND NEGATIVE (-) TIME DIFFERENCES IN TASK CONDITION (TKC), LEVEL OF ASPIRATION CONDITION (LAC), AND ACHIEVEMENT INSTRUCTION CONDITION (AIC)

can see in Table 7 no negative scores appeared in LAC, but they are found in AIC as well as in TKC. So this finding is in line with the initial theoretical analysis of LAC.

THE CLASSROOM EXPERIMENT

In this experiment the effect of LAC was explored on both performance and fantasy level. Again we used the KLT-task but now scored for the

⁵ Because of clear expectations about the direction of results the statistical test will always be one-tailed.

total numbers of items responded to. The fantasy or +n Ach scores contained the four positive content categories out of the McClelland-Atkinson scoring system (Atkinson, 1958). Again the difference score between first and second trial was taken as the dependent variable. In both first and second trial the fantasy task preceded the performance task.

METHOD

SUBJECTS

An a-select sample of thirty male and thirty female freshmen in psychology were randomly divided over the three conditions so that each condition contained ten male and ten female subjects. The subjects were tested in sex heterogeneous groups. For each condition two sessions were planned. The order of sessions varied at random. Each session went on in the same classroom at the same time, with the females at the left and the males at the right side. The classroom was large enough to give any s a fairly well isolated and private position to work.

PROCEDURE

Each s was given a test booklet with the request to follow the instructions which were read by E as exactly as possible. ss were further told that two kinds of tasks were to be carried out and that the combination of both tasks on the same occasion was arranged by E to avoid two separate experiments in order to gain time. The pictures of the TAT-task were given along the standard procedure (Atkinson, 1958) using slides.

First trial: All ss wrote stories on the first three pictures. Then an example of the KLT was given and worked out. During the proper KLT-task subjects were told to mark the last item solved when the E asked them. This was done after two, three and six minutes. The task was interrupted after seven minutes.

Second trial: In this trial ss were also asked to mark the last KLT-item solved. This was done after two minutes while the KLT was interrupted after three minutes.

TRC: The TAT and KLT were given again with the simple request to repeat these tasks.

LAC: ss received objective information about their mean performance time per item. Then they were asked to put on their answer sheet the mean time they thought they could reach in the second trial. After that again TAT and KLT were applied.

AIC: ss received the same instructions as in the laboratory experiment, instructions which stressed the relevance of KLT for both intelligence and leadership capacity. Then followed TAT and KLT.

Post experimental period: After the second trial all ss received twelve bipolar seven points scales to explore possible changes in typical hope or failure feelings and actions during the different stages of the experiment. The content of these scales was inspired both by the content categories of the n Ach score and by items of the Test Anxiety Questionnaire (Mandler and Sarason, 1952). For each part of the experiment (TAT-KLT-TAT-KLT) we obtained overall experience score and the difference between second and first trial supplied the experiential change. A positive score meant a positive change, a negative score a negative one.

RESULTS

To judge the arousal capacity of LAC the difference scores on performance task of LAC were compared with TKC. As can be seen in Table 8 the results went in the expected direction. The difference between LAC and TKC was statistically significant for both total groups ($t=2.25$, $df=38$,

subjects	N	condition		
		TKC	LAC	AIC
male	10	1.70	5.60	2.10
female	10	2.20	4.30	3.00
total	20	2.25	4.95	2.55

TAB. 8. INCREASE IN MEAN NUMBER OF ITEMS SOLVED ON THE PERFORMANCE TASK IN THE TASK CONDITION (TKC), LEVEL OF ASPIRATION CONDITION (LAC), AND THE ACHIEVEMENT INSTRUCTION CONDITION (AIC)

$p < 0.025$) and male group ($t=2.57$, $df=18$, $p < 0.01$). The difference of the female group however is not significant ($t=.78$) although here also the increase over TKC is maintained. To judge the achievement motivational content of the conditions the change in mean positive achievement imagery can be inspected from Table 9. The crucial

subjects	N	condition		
		TKC	LAC	AIC
male	10	-1.00	1.00	0.00
female	10	0.10	0.20	0.40
total	20	-0.45	0.60	0.20

TAB. 9. CHANGE IN MEAN POSITIVE ACHIEVEMENT FANTASY IN THE TASK CONDITION (TKC), LEVEL OF ASPIRATION CONDITION (LAC), AND ACHIEVEMENT INSTRUCTION CONDITION (AIC)

comparison here concerns the conditions LAC and AIC. LAC yielded more increase in both total and male group but less in the female group in reference to AIC. A tendency towards statistical significance was only stated in the male group ($t=1.69$, $df=18$).

Some indirect information about the quality of the conditions can also be obtained from the responses on the post experimental questionnaire. We hypothesized that achievement inhibiting tendencies would be less aroused or strengthened in LAC than AIC. So we expected less negative experiential change about the experimental situation in LAC than AIC. The results can be seen in Table 10. On the fantasy level no

subjects	N	condition					
		TKC		LAC		AIC	
		TAT	KLT	TAT	KLT	TAT	KLT
male	10	-5.20	0.80	-0.60	1.30	-0.10	4.40°
female	10	-0.70	1.00	-2.70	1.40	-3.10	-1.20
total	20	-2.95	0.90	-1.65	0.05	-1.60	1.60°

TAB. 10. MEAN EXPERIENTIAL CHANGE ON FANTASY (TAT) AND PERFORMANCE (KLT) TASKS IN TASK CONDITION (TKC), LEVEL OF ASPIRATION CONDITION (LAC), AND ACHIEVEMENT INSTRUCTION CONDITION (AIC). ° One male subject in AIC did not judge a second trial on the KLT. So far Male AIC and Total AIC the number of ss was respectively 9 and 19.

difference can be noticed between LAC and AIC. On the performance level however the results are in contradiction with the expectations. The experiential change on the KLT was less positive in LAC than in AIC. Inspection learns that this effect was mainly the result of the male group. The females indeed reacted in the expected direction. In fact, their only negative experience score on the KLT felt in AIC.

DISCUSSION

THE STATUS OF LAC

It seems to be justified to consider LAC as an arousal condition. In both the laboratory and the classroom experiment LAC results in more performance increment than TKC while in the classroom experiment also a higher increase of fantasy was obtained. Furthermore, LAC also appeared to show more signs of achievement motivational relevance than the competing condition AIC. Contrary to AIC, LAC contained no negative performance scores in the laboratory and such scores were theoretically linked to the arousal of both intrinsic and extrinsic negative tendencies. In the classroom more increase in positive achievement imagery was obtained in LAC than in AIC, but the post-experimental questionnaire revealed the positive experiential nature of LAC only for the female group. So one can conclude that, on the whole, the global profile of results went in favor of LAC and that one can commend LAC as a valuable alternative for AIC. First, LAC did not only

show more arousal capacity but also more achievement motivational validity than AIC. Secondly, LAC is based on a construct, the level of aspiration, which is the core of the definition of achievement motivation. Thirdly, the experimental technique of LAC is much more straightforward and therefore much more replicable than that of AIC. One did not have to persuade subjects of the importance of the experimental tasks or the seriousness of all the experimental enterprise. Such persuasion seems to need very often a whole range of completing measures, role taking of the experimenter included, to arrive at the desired experimental climate and effect (Klinger, 1966).

THE STATUS OF AIC

It is interesting to note that the effect of AIC was not very strong at all. That lends support to the presumption of Klinger (1966) that in the effective *n* Ach arousal experiments the effect was not so much dependable on the achievement instructions as on the whole complex of experimental arrangements. He could demonstrate that such arrangements could stimulate achievement fantasy even without any information given in the achievement instructions as such. Moreover, the present research showed that a relatively isolated handling of such instructions only results in a weak experimental effect. In our view, such low effect is dependable on the simultaneous stimulation of both extrinsic and intrinsic, positive as well as negative, achievement-related tendencies.

LABORATORY VERSUS CLASSROOM; MALES VERSUS FEMALES

One could wonder if the more complex social situation of the classroom would have any disturbing effect on the efficiency of LAC. If one looks at the results of the total group it does not seem to be the case. LAC had better scores in the classroom and in the laboratory as well. But inspecting the results of males and females separately, one can presume that the classroom situation did have a disturbing effect on the behavior of the females in LAC. In the laboratory, the effect of LAC was most pronounced for the female group, in the classroom it was the case for the males. Furthermore, the scores of males and females had the same validity in the laboratory since no negative scores were considered as indices of the influence of extrinsic and intrinsic negative tendencies. In the classroom the situation was different: only the male group in LAC showed a certain increase in positive achievement imagery. Finally, also the post-experimental rating scales gave a different experiential picture of males and females in the classroom concerning the performance task in the arousal conditions. Most typically, before the level of aspiration setting males experienced the classroom situation more positive than afterwards while the reverse was true for the females.

The slight differences noticed between the sexes are not that much important for the present research. We only want to mention that, if

needed, one can bring these findings in connection with the study of achievement motivation in women (Horner, 1968). Given the fact that the most striking difference between laboratory and classroom was the coactive sex-heterogeneous character of the latter, one can interpret the differences in terms of a conflict between intrinsic achievement tendencies and extrinsic role taking expectancies (Klinger, 1971). In our society the achievement type is a male stereotype. Given this, it must be rewarding for females to meet a situation that allows them to strive for excellence in competition with their own personal standards such as was the case in the laboratory-LAC. In the classroom however, the presence of the males could have created the usual social competing context so that such situation was experienced initially as less positive by the female subjects. For the males the situation can be reversed. Striving for excellence without the usual social surroundings can contain less achievement-stimulating cues. For them, the laboratory-LAC was less stimulating than the sex heterogeneous classroom-LAC.

CONCLUDING COMMENTS

THE AROUSAL PROCEDURE

In the introduction of this paper we stated that the usual definition of achievement motivation needed to be completed by some specification about the standards of excellence involved. Following Atkinson's differentiation between extrinsic and intrinsic achievement-related motives (Atkinson & Feather, 1966), we claimed that achievement motivation must be defined as the striving for success in competition with intrinsic norms or standards of excellence. Intrinsic means here that the satisfying or dissatisfying character of the achievement act has its roots in the relationship of the person to the task and not primarily in the relationship of the person to others.

The previous idea led to the level of aspiration technique as the suitable arousal procedure for achievement motivation. However, other interesting possibilities are offered if one broadens one's view over the boundaries of one simple definition. The achievement motivation theory of Atkinson (Atkinson & Feather, 1966) suggests the manipulation of task difficulty as a means to arouse that motivation, and Heckhausen (1968) pointed to the arousal capacity of the achievement goal distance and the value of that goal as measured independently from the difficulty of the task. The ideal arousal procedure then would be a level of aspiration setting with optimal values for such intrinsic characteristics as task difficulty, goal distance and goal value.

THE RESEARCH STRATEGY

Here we want to state that the study of the expression of achievement motivation should be done with full attention to the behavioral

process of its manifestation together with attention to the influence of connected motives. It was Klinger (1971) who demonstrated the importance of a study of the fantasy as such for the study of achievement motivation. In our research, following the McClelland-Atkinson tradition, achievement imagery was concerned as not fundamentally different from other behavior. The categories of the *n Ach* scoring system were essentially the same as those needed for an analysis of an open goal directed behavioral sequence. However, the achievement motivation research did not start with any explicit study of the fantasy process such as Klinger made. He came to the conclusion that fantasy is fundamentally a respondent behavior and that the limitations of the *TAT* must be recognized. Contrary to the deterministic view of the McClelland-Atkinson tradition, Klinger typified the relation between motivation and fantasy as probabilistic. So imagery could hardly be used as an index of a relatively stable disposition of personality. One can imagine that it would be wise to take into account also the characteristics of the other behavioral levels, performance, choice and self report, which are frequently studied in the achievement motivation research.

Another important question concerns the differentiation between extrinsic and intrinsic achievement-related motives. In Atkinson's research the empirical differentiation between such motives was mainly restricted to the difference between the achievement and the affiliation motive (Atkinson & Reitman, 1956; Atkinson & O'Connor, 1966). But if one relates the achievement motive to the concept of task-intrinsic standard of excellence, it becomes very important to differentiate also empirically between the achievement motive and other competitive tendencies of social extrinsic nature such as the need of power or dominance.

THE DIAGNOSTICS OF ACHIEVEMENT MOTIVATION

The measurement of achievement motivation has mainly followed two different routes, projective technique and questionnaire, the first of which has obtained a leading position in the field. In the present research the position was held that, based on the notion of achievement motivation itself, achievement or performance must be considered as the right level of observation. Therefore, we plead for a behavioral scale that would include both the energetic and directive aspect of motivation.

The construction of a behavioral scale could also have advantages on the test level. After all, the applicability of the *n Ach TAT* for individual diagnosis is rather low. The unreliability of that measure is linked to properties of the fantasy process itself (Klinger, 1971) and advocates of the *n Ach TAT* themselves exclude the individual utility of the instrument (Heckhausen, 1965). On the other hand, within the projective tradition the criticism is frequently made that the questionnaire method could not give a fair reflection of the underlying achievement

motivation. A person would not have a clear insight into his own motivational structure and his answers on the questionnaire would be highly determined by socially learned response tendencies (McClelland, 1958; Heckhausen, 1963). An objective behavioral scale could remove both the unreliability of the projective technique and the presumed disadvantages of the questionnaire. In searching for a starting point we noticed that some of the tasks given in the need achievement research are also listed in Cattell's classification of objective motivation tests (Cattell & Warburton, 1967).

It is our hope that in the future such a behavioral scale could find a place in a general framework that relates the different tests of achievement motivation in a theoretically intelligible manner. It remains a challenge for further research that the various instruments designed to capture the same motive yield essentially uncorrelated results!

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