

Who Gains from Achievement Motivation Training?

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This paper evaluates the impact of achievement motivation training programmes in Indonesia, India, Pakistan, and Poland. A careful study of reports on these programmes in several cultures indicates that not all who undergo training are equally benefited. The author has attempted to find an intervening variable which may explain who benefit and why.

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Since the first experiment in India by McClelland and Winter (1969), work on achievement motivation development has been attempted in various cultures, and several reports are available on the results. A careful study of these reports indicate that all those who undergo specially prepared achievement motivation training programmes do not benefit equally from the programmes. McClelland and Winter attempted to provide an answer to this baffling question. An attempt has been made in this paper to find an intervening variable which may explain who benefit from achievement motivation training programmes and why.

Projects Studied

The scope for the survey was provided by UNIDO which commissioned the author to "evaluate the impact of completed transfer of training technology projects in Indonesia, Pakistan, Iran, and Poland." These projects had been organized on the basis of McClelland's (1965) motive acquisition theory which considers the joint presence of twelve factors to be essential for changes in adult motivation structure, more precisely for growth in need for achievement. They were selected by him in an eclectic way from a wide range of schools of psychology. Loosely interpreted, they are based on seeing motives as "clusters of expectancies" and "affectively toned association networks" (McClelland, 1965, p. 322). The ingredients can be classified in four groups: (1) the study and practice of the achievement syndrome (the study and practice of fantasies, a try-out of typical

need achievement (nAch) modes of acting in simulated actions, and the analysis of cases); (2) self study (examining the relevance of the training course for one's own career; experiencing the newly conceptualized motive as consistent with the ideal self image; cultural values and norms); (3) goalsetting (trust in possibilities of change based on prestige suggestions; a competently and realistically formulated work plan; and the elaboration of control mechanisms); and (4) interpersonal supports (supporting interpersonal atmosphere, retreat setting which dramatizes the experience of "going through something together," and the taking shape of a new and continuing reference group).

In the projects studied, these factors were present to varying degrees in the estimation of the trainer in charge of the participants. The objective of the projects is the growth of achievement motivation in the target population as a result of the application of the techniques outlined. In a majority of cases, the target population consisted of staff from local institutions, universities, management institutes, development banks, ministries, etc., who would continue working as motivational trainers or, at the very least, spend some time on such activities in addition to their normal duties in a related field. They therefore acquired special entrepreneur and managerial motivational techniques so that these could be passed on to the participants. There were projects in which a fair number of the target population later became entrepreneurs or managers themselves. A second type of target population, called participants in Table 1, consisted of entrepreneurs and managers. They were given access to motivational training in three forms. They were the experimental subjects in four cases on whom UNIDO experts demonstrated to prospective trainers how to apply techniques in a more acute form, or those on whom newly graduated trainers applied what they had learnt under the supervision of experts. In two cases, a local sponsor, a major steel mill

corporation, invited international experts who had attended UNIDO project demonstrations to conduct managerial training; in another three cases certificated local trainers used the techniques without the supervision of experts. Some of the courses were of the one-week demonstration type, others were six-week fast-feeders, and others offered a thorough grounding in six to eight months.

Table 1 gives the most important data regarding achievement motivation training projects and connected examinations.

Efficiency of AMT projects

The five projects examined, fourteen with the second generation courses carried out within them or that had branched off from them, altogether trained 266 subjects. Two Bandung and one Warsaw entrepreneur managerial courses are not included since the participants could not be contacted. Ninety-two subjects (34.6 per cent) were interviewed, or asked to fill in a questionnaire, or tested. Peer and/or trainer ratings were obtained about other subjects, bringing the total to 171 (64.3 per cent).

We wanted to check whether motivational changes, as measured by the Heckhausen projective methods, between the time of the course and that of the survey (March-April 1976) correlated with changes in success or activity over the same period. The interval varied from project to project, 12 months being the median, and two and five months the shortest (their data were not included in the tighter examination of the hypothesis that they correlated); the longest, 19 and 36 months. The latter could not be included since the pre-course TAT records were lost.

The images used in the standard six-picture Thematic Apperception Test were as follows:

1. A well-furnished "lawyer's" office with two men talking.
2. A man seated at a drafting board (with family photo).

Table 1

Motivation Training Courses and Tests

Project	Trainees		Measuring Instrument				
	N	ni	TAT		Ques- tion- naire	Inter- view	Peer and/or trainer rating/ ranking
			Pre	Post			
	Trainers		by UNIDO	trainers			
Bandung A	18	13	12	13	13	10	18
Jakarta B	21	9	88	82	9	4	21
Karachi A	53	5	3	5	5	5	5
Lahore B	2	2	2	2	2	2	2
Tehran A	22	6	1	6	6	6	—
Warsaw	11	8	5	8	8	8	11
Participants trained by UNIDO trainers (or local but supervised)							
Jakarta 62	22	6	5*	5*	6	2	6
Karachi A 2	19	4	4	4	4	4	5
Karachi C— D (Local sponsored)	39	9	9	9	9	2	9
Lahore 62	17	4	3	4	4	4	4
Participants trained by local unsupervised							
Bandung A2 (Local sponsored)	43	9	95	95	9	3	43
Bandung Ag (Local sponsored)	21	3	1	—	3	3	21
Tehran B (Local sponsored)	26	14	10	14	14	9	26
	266	92	56	71	92	62	171

¹ Actually interviewed and/or tested.² Only 4 are available in English.³ Includes one trainer trained in the Karachi C Course.⁴ Only 2 are available in English.⁵ Not available in English.

3. A conference group. Seven people group ed variously around a conference table.
4. Man working on papers at office desk. (Alternative: girls in laboratory with a senior giving instructions).
5. A man and a youth chatting outdoors. (Alternative: loving couple sitting on a bench).
6. A man relaxing in an aircraft.

The pictures were redrawn, lending the figures an Indian or southern appearance (Atkinson, 1958; Kolb *et al.*, 1974). The test was administered to the subjects during the course by the trainers, and by the author in the course

of this survey. Scoring was not, however, according to the usual McClelland *et al.*, (1953) system. Instead, the Heckhausen mode (1963) was used for two reasons: (1) the subjects were unfamiliar with the second method; and (2) the shift from "Fear of Failure" to "Hope of Success" can only be displayed by the second method. The scoring was done by someone who was well conversant with the Heckhausen code but with no awareness of the success data of the subjects. The test was repeated following an interval of three to four months. Doubts about differences between the two scores were resolved following discussion be-

tween the scorer and the present author. Heckhausen was also asked to score the pre and post TAT records of six subjects. This allowed us to conclude that our own system was tighter than that employed by the originator of the method.¹

Heckhausen (1971) related a rise or decline in "Net Hope" (NH), interpreted as the difference between "Hope of Success" (HS) and "Fear of Failure" (FF), with a rise or fall of success. We used an adjusted variant of this index, one which showed whether the difference in question was formed in the zone of high or low motivation.

$$\text{Net Hope (NH)} = (\text{NH}) + \frac{\text{Global Motivation} - \text{GM}}{2}$$

"Global Motivation" is the sum of HS and FF. The adjusted index made it impossible for someone to move into the "considerable increase in Net Hope" category merely on the basis of pre and post course NH difference without a major genuine change in motivation.

It was first thought advisable to use post-course income changes as a variable index. This, however, proved feasible only for the first project (Bandung A₁). Later subjects categorically refused to provide information on their incomes; this was true of entrepreneur participants even at Bandung. This "natural" index could thus be used only for twelve subjects in the first project. For the rest, peer rating and ranking values were used in the cross-sections of activity and global success both before and after the course. The present paper only makes use of the "success" dimension. In certain cases (e.g., Karachi C-D), everyone provided a rating and ranking for everyone; in the case of trainer

courses, as many peers as could be reached were asked to provide rating and ranking averages. In the case of all second generation courses where it was possible to talk to trainers as well and Jakarta B₁ trainer course, trainer ratings and rankings were included transformed into percentiles, with the success index. For the Warsaw trainer group, rating and ranking data by a non-participant office head were amalgamated with peer ratings and rankings. Rating and ranking data were naturally requested from only those who knew the subject well; the lists therefore of ten leave gaps. In general, it was possible to use an average of around five opinion statements for the pre and post success data.

Questionnaires were also used in addition to the TAT records and peer and trainer ratings. Their purpose was, in part, to provide further details relating to the hypothesized motive shift-success shift relationship, and also to discern changes in causal attribution.

Control of the Central Hypothesis

Motivational and success change data were available unambiguously for forty subjects, allowing the central hypothesis to be controlled. These are as follows.

Project Success

Trainers

Bandung A ₁	12	4
Karachi A ₁ — Lahore B ₁	4	2
Warsaw	5	2

Participants

Karachi C-D	9	5
Tehran B	10	5
	40	18

In the case of Bandung A₁ (trainer course), changes in income derived from business in

1. The scoring reliability problem of which the author became aware at the closing stage of the present project demands a repetition of some of the data processing. Nevertheless, the present data are published since the error is of the "second type," and loosening will not foreseeably threaten the genuineness of discerned relationships.

addition to the salary earned at the university were taken as the measure of success. This procedure clearly picked out four from the rest (see Figure 1). For other projects, getting into the above median group on the basis of a combined index of peer (trainer) rating and ranking was taken as the criterion of success.² Figure 2 shows major data referring to forty subjects, taking motive shift and success shift as coordinates. Figure 3 shows the average of corrected NH values in pre-course and follow-up cross-sections, separately for the successful and unsuccessful subgroups. This figure clearly displays the interaction predicted by Heckhausen's hypothesis. The NH values of the failures, that is those whose incomes did not rise following the course or those who remained below the median in rating and ranking data, did not go up at all: on the contrary, the values declined slightly. At the same time, the NH values of the successful increased significantly ($t=2.96$; $df=32$; $p<0.01$). The same pattern is brought out if the six Jakarta subjects of the footnote on this page, are included ($f=4.01$; $df=44$; $p < 0.001$).

If the two follow-up motivational values of the successful and unsuccessful subjects are compared, the difference between them is significant ($r=2.59$; $df=33$; $p<0.02$). The difference becomes even more significant if the interaction apparent in Figure 3 is also included, since the pre-course value of the successfuls was smaller than that of the unsuccessfuls ($f=2.71$; $df=38$; $p < 0.01$).

2A further six subjects could be included in the present tighter sample with certain reservations. These are four subjects from the Jakarta B_t trainer course from whom TAT records in English are available and similar two subjects from the Jakarta B_a participant course. The problem is, however, that their index of success is not a position related to an intra-sample median, the subjects being the most successful members of their groups on the basis of ratings and rankings. The motive shift-success shift relationship which includes their data is therefore treated separately.

The interaction can, however, be better displayed if the corrected post minus pre NH values of the successfuls and unsuccessfuls are compared. This difference of differences is highly significant ($f=3.73$; $df=38$; $p=0.001$). Equally highly significant values are obtained if the data of the six persons judged successful by using another system are also included in calculations ($f=4.84$; $df=44$; $p=0.001$). The t-test thus showed a significant difference as regards the motive shift between those who turned more successful after the course and those who did not. This evidence strengthens our hypothesis. The necessity remains, however, to confirm the results and to discover whether more daring predictions can be based on the hypothesis. Firstly, global results will be broken down separately in terms of the sample and of the instrument. Within the possibilities offered by the small numbers, the relationship discovered in the forty subject sample will be examined on the level of the individual projects as well. Secondly, the stimulus system consisting of the six TAT images will also be picked apart and the relevant imagery examined separately, picture by picture.

In order to discover the limits of the predictive power of the hypothesis, we shall try to find out whether the relationship between motivation shift and increasing success found on the group level is present on the individual level as well.

Correlations of the Main Variables

The correlation analysis, carried out for both the total sample and individual projects, allows us to carry out both the reliability check and predictive power control. The correlation of the two variables for the forty subject sample shows $r=0.32$, which is significant at 5 per cent level ($f=2.08$; $df=38$). Taking the part samples, however, though every relationship is in the direction of the hypothesis, only one (that of the Bandung trainers) shows a significant cor-

Figure 1 Fitting of Linear, Quadratic, and Exponential Curves to the Bandung Data

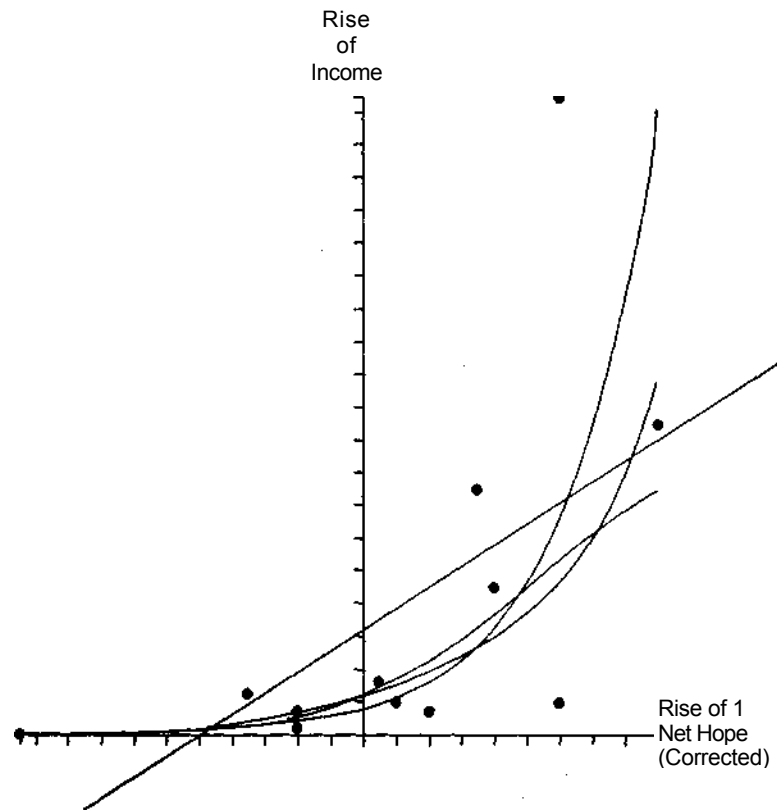


Figure 2 Fitting of Linear, Quadratic, and Exponential Curves to the Five Projects Data ($N=40$)

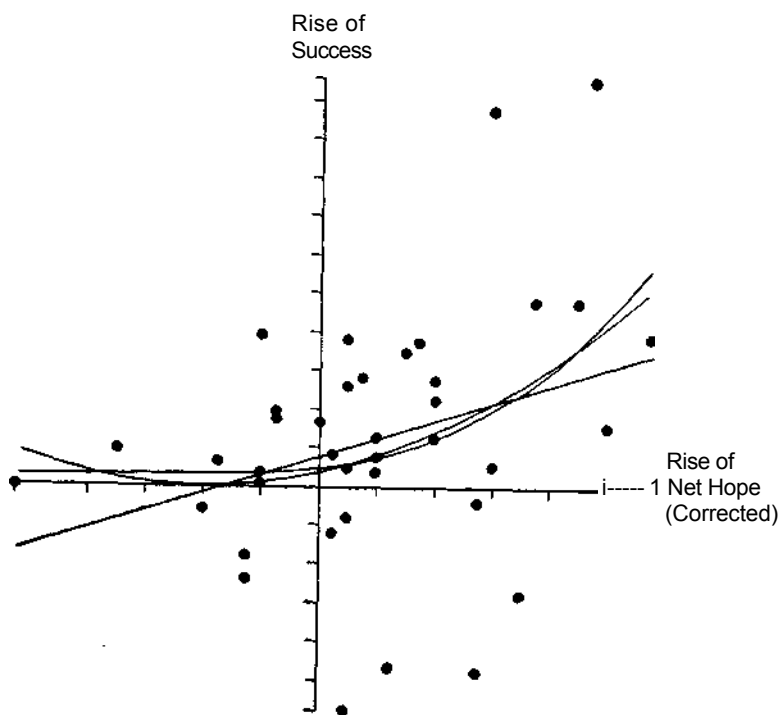


Figure 3 Change in Net Hope (Corrected)

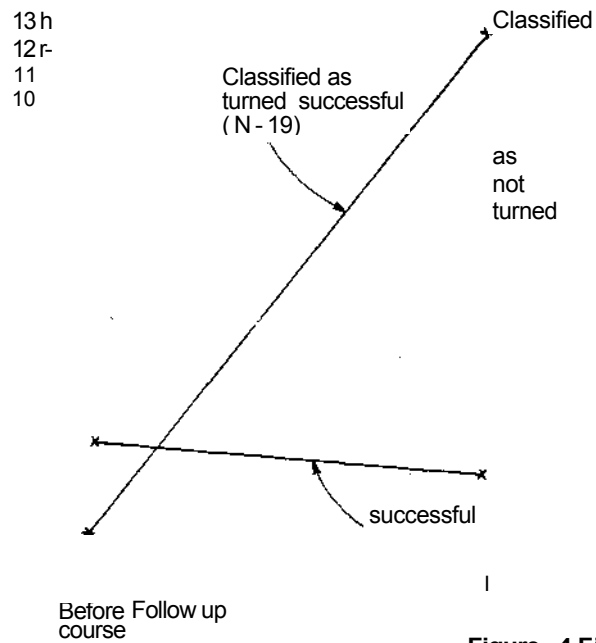
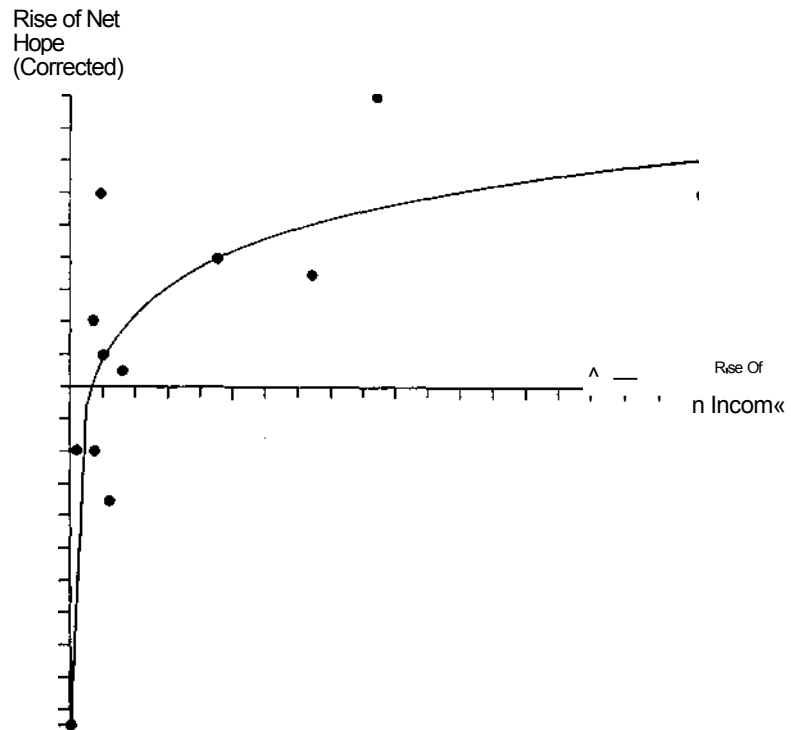


Figure 4 Fitting of a Logarithmic Curve to the Bandung Aj data (N=12)



relation ($r=0.59$; $t=2.28$; $df=10$; $p<0.05$). The results of the others are: Karachi-Lahore trainer, $r=0.56$; $df=3$; n.s.; Warsaw trainer, $r=-0.72$; $df=3$; n.s.; Karachi participant, $r=0.29$; $df=7$; n.s.; and Tehran participant, $r=-0.13$; $df=8$; n.s. The total sample significant correlation however has a formal fault. Only one of the variables, the motivation shift, homogeneously traverses all the part populations. The success shift is heterogeneous since it is based on income changes and varying numbers of peer (trainer) ratings and rankings, and opinion statements in the case of particular projects. The overall relationship must, therefore, be constructed out of the correlational coefficients of individual projects. The Fisher Omnibus test offers chi square $\chi^2_0 = 20.42$, which is significant at $p=0.025$ level. Thus, given even such a heterogeneous population, changes in success and motivation following AMT courses proved to be significantly related.

Partition of the TAT Test Measuring Instrument

The breakup of the thematic imagery test in terms of pictures was carried out for two purposes. On the one hand, the question was whether the instrument measured consistently across the pictures. For this purpose, the Spearman-Brown split-half reliability formula was computed for the "post" series, that is for HS and FF in the forty subject sample. This was done in the simplest possible way by taking the first three and the last three pictures separately, followed by the measuring of the Kuder-Richardson-20 formula, a more generalized variant of the Spearman-Brown formula, to control homogeneity amongst the six pictures. Additionally, validity tests were carried. The question was which of the six pictures produced imagery whose growth between pre and post phases significantly discriminated between the successfulls and the failures.

The Spearman-Brown formula offered a signi-

ficant correlation between the two test halves both for HS ($r_{xx}=0.60$; $p < 0.001$) and FF ($r_{xx}=0.47$; $p < 0.01$), but KR-20 did so only for HS ($r_{xx}=0.59$; $p < 0.01$). The scatter of the sparse FF-produced data did not offer a consistent picture.

Table 2 shows that as regards HS the imagery of only three pictures discriminates significantly between the criterium groups ("Lawyers in office," "Family photo on desk," and "Chatting outdoors" or "Loving couple"), not one picture for FF, and the same three pictures for corrected NH which was actually for predictions. Heckhausen (1971) found that pictures showing a "soziale Leistungs situation" (first, third, and fifth) produced imagery of greater discriminatory power for the prediction of "becoming more active" based on an increase in NH than pictures with lone persons. This trend was very faint in the tests we administered. The low value for "Conference group" picture and the high value for "Man looking at family photo" oppose such an hypothesis. We were not able to discover any plausible regularity as regards picture cues. It struck the eye, however, that the unsuccessfuls react in a frustrated way to the relaxing picture ("Chatting outdoors" or "Loving couple"); the successfulls, on the other hand, to "Working at the office desk" (or "In the laboratory"). A conjecture might be that anxiety, resulting from the absence of expected success, manifests itself in a verbal reaction to the more relaxed situation while, in the case of successfulls, the relationship to the boss may survive as an unresolved problem.

Regression Analysis

Motive shift and success growth are correlated. The genuineness of this correlation is a necessary but not sufficient validation of the hypothesis. It ought to be possible to prove reciprocal or mutual causation for the two variables. The necessary structural equation analysis (Duncan, 1975) was outside the scope of the present

**Table 2 Changes in HS,
FF, and NH (corrected)**

Type of motive	"Lawyer's office"	"Family photo"	"Conference group"	"Working at office desk" or "in laboratory"	"Chatting outdoors" or "Loving couple"	"Relaxing on plane"	Total
<i>Classified as "turned successful" (N=18)</i>							
Hope of Success	0.67	0.94	0.56	0.11	0.56	0.39	3.23
Fear of Failure	—0.17	—0.39	0.11	—0.22	0.28	0.06	—0.33
Net Hope (corrected)	1.08	1.61	0.78	0.28	0.69	0.56	5.00
<i>Classified as "not turned successful" (N=22)</i>							
Hope of Success	-0.14	0.09	0.32	0.18	—0.45	—0.09	—0.09
Fear of Failure	0.00	—0.32	0.27	—0.14	0.09	0.00	—0.10
Net Hope (corrected)	—0.20	0.30	0.34	0.34	—0.73	—0.14	—0.09
<i>Difference between "successfu/s" and "not successfu/s"</i>							
Hope of Success	0.81	0.85	0.24	—0.07	1.01	0.48	3.32
<i>t</i>	2.16	3.49	0.57	—0.19	2.83	1.30	
<i>P</i>	0.05	0.01	n.s.	n.s.	0.01	n.s.	
Fear of Failure	—0.17	—0.07	—0.17	—0.08	0.19	0.06	—0.23
<i>t</i>	—0.37	—0.26	—0.41	—0.30	0.78	0.63	
<i>P</i>	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	
Net Hope (corrected)	1.28	1.31	0.44	—0.06	1.42	0.70	5.09
<i>t</i>	2.01	3.38	0.61	—0.11	2.45	1.24	
<i>P</i>	0.05	0.01	n.s.	n.s.	0.02	n.s.	

paper. We, however, examined what type of the sample as a whole ($p < 0.05$), there is

the two variables, whether this fitting is significant, what percentage of the variance is explained by it, and what regression functions are obtained if the regression of the variable income increase ("success growth") on the variable motive shift is examined and vice versa. Table 3 provides the answer, and the relationships are indicated by Figures 3 and 4 as well as by Figures 1 and 2.

The first thing that strikes one is the way the functional curve of the Bandung Aj project stands out from the background of the relationship discerned in the sample as a whole. Though it is true that the fitting of the linear or quadratic curves is significant not only for Bandung but for regression best describes the relationship between

difference in the percentag (40 per cent for Bandung and around 15 per cent for the sample as a whole). The truly interesting information is that in the case of Bandung data the fitting of the exponential curve is significant at a very high level ($f=29.96; p < 0.001$) explaining 75 per cent

of the variance (see Figures 1 and 4), while the curve does not in the least fit the empirical data of the sample as a whole (see Figure 2). Owing to the "hard" income facts available, if Bandung is treated as the "most in focus" part of the "vaguer" total sample, which is only imperfectly approached by others, one can then suppose that the linear and quadratic relationships apparent in the sample as a whole conceals an embryonic exponential relationship.

Table 3

Regression Analyses

<i>Project</i>	<i>X</i>	<i>Y</i>	<i>Type of regres- sion</i>	<i>r² (%)</i>	<i>R</i>	<i>F</i>	<i>P</i>	<i>a</i>	<i>b</i>	<i>Constant</i>
Bandung Aj (/V=12)	Motive shift	Income increase	Linear	34.4	0.09	5.2	0.05	12.9	—	64.3
			Quadratic	42.8	0.65	3.4	0.10	13.9	1.0	37.8
			Exponential	75.0	0.87	30.0	0.001	0.4	—	2.8
	Income increase	Motive shift	Linear	34.4	0.59	5.2	0.05	0.3	—	—0.9
			Quadratic	51.4	0.72	4.8	0.05	0.9	—0	—2.6
			Logarithmic	75.0	0.87	30.0	0.001	2.1	—	—5.6
Five Projects (;V=40)	Motive shift	Success growth	Linear	11.3	0.34	4.8	0.05	0.1	—	0.4
			Quadratic	15.2	0.39	3.3	0.05	0.1	.0	0.2
			Exponential	2.1	0.15	0.8	n.s.	0.0	—	1.1
	Success growth	Motive shift	Linear	11.3	0.34	4.8	0.05	1.0	—	1.4
			Quadratic	17.8	0.42	4.0	0.05	0.4	0.3	1.0
			Logarithmic	2.9	0.17	1.1	n.s.	1.4	—	0.4

A theoretical meaning cannot, however, be as yet lent to the presupposition in the present form. It would be difficult to defend the formula that a unit growth in Net Hope would lead to an exponential ($y = \exp(ax+b)$) growth in success, e.g., income, and that this process has no ceiling. Currently, it is stressed in the relationship of strength of motivation and efficiency of performance that the high values of the latter are predicted by middle values of the former, and as regards cumulative achievement, high motivation was only able to maintain its first place thanks to "time spent in work" (Atkinson, 1974).

If, however, we look at the relationship from the angle of the equally hypothesized causality of reciprocal direction, that is if we exchange X and Y axes as in the last two figures, we then obtain a logarithmic curve which shows a relationship that reminds of Fechner's psychophysic law. The intensity of growth of Net Hope as an inner subjective variable is proportional to the logarithm of a unit growth in income (the outer objective variable):

$$X = 2.118 \times \log x - 5.567$$

The application of the psychophysical law in this area may seem grotesque at first sight. Yet, all it does is to record the commonplace fact that given a change in success (financial or otherwise) we only react to discernible differences.

Motivation, Success, and Causal Attribution

The hypothesized interactive interconnection that a motivation shift leads to increased success and that improved motivation occurs only in the case of those who were genuinely successful is shown to be valid and reliably present.

The inner workings of the mechanism, however, remains an open question. The connection observed in the part-sample (Bandung A_x) whose data are more clearly outlined, that, given rising financial success, Net Hope as an inner disposition moved upwards along a logarithmic curve that reminded of Fechner's law is an interesting but obviously oversimplified formula. Heckhausen's (1975) more differentiated and complex model predicates that, following an unexpected performance shift (which comes close to the actual rise in income after the course, or to

Table 4
Shift in Causal Attribution of Success
(N=39)

<i>Causa/ Attribution</i>	<i>Success shift</i>	<i>Net Hope</i>		<i>(Corrected)</i>		<i>Shift</i>	
		<i>High</i>		<i>Low</i>		<i>Total</i>	
		<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
Ability	High	5.78	4.04	3.75	2.07	5.33	3.13
Effort		2.36	2.00	5.00	3.06	2.94	1.61
Opportunity		-0.29	1.35	0.50	1.44	-0.11	1.10
Luck		-7.86	3.49	-9.25	6.16	-8.17	3.04
		(N=13)		(N=4)		(N=18)	
Ability	Low	6.00	3.58	4.69	1.50	5.00	1.43
Effort		6.00	2.19	3.75	1.74	4.29	1.44
Opportunity		-7.00	3.03	-1.25	2.05	-2.62	1.80
Luck		-5.00	2.45	-7.19	2.42	-6.67	1.94
		(N=5)		(N=16)		(N=21)	
Ability	Total	5.84	3.12	4.50	1.27	5.15	1.66
Effort		3.32	1.62	4.00	1.52	3.67	1.11
Opportunity		2.05	1.44	0.90	1.67	-1.46	1.11
Luck		7.11	2.67	-7.60	2.30	-7.36	1.76
		(N=19)		(N=20)		(N=39)	

growing success as reflected in peer-ratings), the incentive elements of the motivation lose control over the aspiration level, one of the parameters of action, and the task situation, the cognitive elements of attribution, takes over, maintaining at the same time control over effort calculation, the other parameter. If the level of performance ("success") is consolidated, the two controls once again change places. The refinements of a model elaborated in laboratory conditions naturally cannot be maintained in field research. Table 4 shows the shift for the four attribution categories (ability, effort, opportunity, and luck) between the pre and post course phases. This could naturally be recorded retrospectively for the pre course phase alone. The table shows that the course strengthened the internal locus of control throughout the sample, weakening the external one. In particular, the course strengthened the attribution to

ability and weakened that to luck.

A breakdown into successfuls and unsuccessfuls shows that in the case of the former faith placed in the importance of ability grew considerably, and less in the case of effort. The recognition of the importance of luck declined more, and less in the case of opportunity. In the case of the unsuccessful, the role assigned to effort considerably grew while the role assigned to opportunity declined more forcefully. The picture the data present of both the successfuls and the unsuccessfuls appears to be largely plausible : an easy-flowing self-confidence on the part of the successfuls combined with realism, and strained effort on the part of the unsuccessfuls combined with underestimating the importance of opportunity. Thus, the analysis does not offer an explanation on the weight of internal and external factors but shows that within the internal factors the successfuls strengthened the stable

element (ability) and the unsuccessful the variable element (effort). As a mirror image of this, the successful weakened the variable (luck), and the unsuccessful the stable (opportunity) more within the external factors.

The confrontation of largely vs. slightly raised corrected NH along a motivation shift breakdown gave a less clear-cut result. Faint trends can be discerned from the table, suggesting that the more strongly motivated favoured the stable within internal attribution and the less motivated, the variable. That is, the first were closer to the successful, and the second to the unsuccessfuls. In external attribution, however, the highly motivated rejected the stable more, and the lowly motivated, the variable. The reverse situation is present here, the latter being closer to the successfuls, and the former to the unsuccessfuls.

Following the marginals, a close look at cell values shows that the result is not explained by the artifact deriving from differing cell frequencies. It is true that there are fourteen successfuls and only four unsuccessfuls amongst the highly motivated but they nevertheless approach the more strongly negative opportunity values of the unsuccessfuls since the group of those who underwent the major motive shift and nevertheless remained unsuccessful were characterized by a highly intensive depreciation of the importance of opportunity. It is no wonder that they did not become more successful after the course if what they learnt was that objective (economic) opportunity was so unimportant for success!

The decline of opportunity attribution between the pre and post course situation showed itself to be significantly more drastic amongst the highly motivated unsuccessfuls than amongst the highly motivated successfuls ($t = 3.01$; $df = 17$; $p < 0.01$). Compared with the latter, the former, being stoked up with motivation, degenerated into dream-chasing and developed the desire to get the better of reality by some sort of magic. It is consistent with this adventurous and irresponsible image that the highly moti-

vated unsuccessfuls preserved most of the luck-attribution after the course.

Taking a joint look at motivation and success shift allowed one to conclude as likely, in proportion to the smallness of the sample, that the effect of the two variables on internal attribution is one-directional and mutually reinforcing. The rise in ability attribution at the expense of effort attribution can be derived theoretically from the concept of NH (Meyer, 1973), from the fact of success in common sense.

Within external attribution the two variables act in the opposite direction. NH reduced the opportunity attribution to a great degree and luck less so. Success reduced the attribution of luck more, and opportunity less. Higher motivation increased enterprise and success strengthened realism to a great degree. Their "working against each other" thus resulted in a highly adaptive attitude and one without the other produced a mutilated effect, especially when both were absent. Though one cannot say that what was learnt and rehearsed in AMT courses was completely responsible for the motivation shift, the courses certainly initiated and nurtured it as an ongoing process. In other words, an abstract, simulated, artificial, and synthetically produced factor, an idea which demanded to be born, was largely responsible. As against this, the success shift is, as it were, a naturally grown phenomenon embedded in genuine experience, and could itself even be called that "reality" which instructs thinking. For that reason, the attitude it elicited understandably allowed the external opportunity attribution to survive to a greater degree than is the case in a new attitude produced by a motivational change of internal origin.

To sum up, the reciprocal or mutual causation theory is strengthened by the attributional data to the extent that an improvement in motivation and an increase in actual success both contribute to the self-sustaining character of the process

in such a way that both raise a person's internal attributions, especially ability. While one continues to feed the impetus, the other ensures control through reality.

Summing Up

The evaluation of AMI projects allowed us to formulate a general proposition to supplement or correct the Predicament Theory. The proposition is: "Consciousness is shaped by the results of action in the world, and not by the passive reception of sensations."

The objective circumstances which produced the psychological state, more particularly the growth in success or rise in income which, in a person, elicited the advance of HP as against FF, were the results of an action which had the interested person as its source, or else the participant group assembled, as organized by the UNIDO project, to improve life strategies. Efforts to improve objective circumstances, preceded by improving the standards of the subjective resource, were by self-examination, the discovery and liquidation of the subjective causes of predicament, the acquisition of certain skills such

as realist goal-setting, etc., and their rehearsal in a supporting interpersonal context, as well as the learning of the achievement motivation family of theories, both conceptually and on a case study level, all this being done in the light of the recognition that an improvement in available opportunities only implied a self-sustaining and even extended self-sustaining process for HS persons and groups. Given a Fear of Failure basic attitude, the process tapers off and throttles itself.

A large number of questions remain open, and much research is still required by sociologists and political scientists. Given that an improvement of the subjective resource is the right strategy for escaping from the predicament, the next question is: *how this strategy can reach the masses in the developing world who find themselves in a state of predicament?* As mentioned earlier, this appears to be the most neglected part of the problem. It is obviously a subject for interdisciplinary research. Dialectics are however effective in this case as well. For actions of this sort to be undertaken, action research must produce results that may be modest at first, but should still be novel and pointing to the future.

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