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PD-AAC-3819

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EH

Columbia University
College of Physicians and Surgeons
INSTITUTE OF HUMAN NUTRITION
OFFICE OF THE DIRECTOR

WEST 166th STREET
NEW YORK, N. Y. 10032
2-568-6162

May 13, 1974

Dr. Harold Rice, Research Officer
Off. of Nutrition, AID,
Dept. of State
Washington, D. C. 20533

Re: AID/csd-3679 Amendment #2

Dear Dr. Rice:

Pursuant to our telephone conversation we would like to request an extension of our present AID Contract csd-3679 in the amount of \$4,836 (Amendment #2). The need for these additional funds is for the purpose of having our data reviewed by two independent psychologists.

As you know we have found from our preliminary analysis that a marked improvement in children who have been malnourished can be obtained with environmental stimulation. However, while the scores of the children in our malnourished group have reached about 103 the scores from the well nourished group were 118 and the difference was significant. Thus as these data indicate - although considerable recovery can be made by the malnourished children they may not reach their full potential.

One of the problems with our preliminary study was that there were a number of different tests administered in each school without standardization. These tests have to be measured one against the other and then a composite picture of the child's development can be obtained. However in order to do this effectively expertise in the area of child psychology is required.

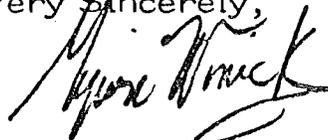
We are therefore proposing to send the records of all of our children to two independent psychologists who have no idea of the children's backgrounds and then have these individuals place the children into five groups. We will then compare those data with the data we currently have on hand in order to obtain a clearer and more standardized composite picture of each child.

Dr. Harold Rice

Page -2-

We appreciate your giving this request your kind consideration.

Very Sincerely;

A handwritten signature in cursive script, appearing to read "Myron Winick". The signature is written in dark ink and is positioned below the typed name.

Myron Winick, M. D.,
Director,
Institute of Human Nutrition.
mw:sss

IA HLR
what is
correct
~~story~~ ?

Columbia University
College of Physicians and Surgeons
INSTITUTE OF HUMAN NUTRITION
OFFICE OF THE DIRECTOR

WEST 166th STREET
YORK, N. Y. 10032
368-6162

579-3984
387

March 8, 1974

Dr. Harold Rice
Research Officer
Office of Nutrition
Agency for International Development
Department of State
Washington, D.C. 20533

Dear Dr. Rice:

This is a preliminary report of our first look at the data of our study with the Korean children. As you can see, the malnourished children reach normal I.Q. levels for middle class American children. However, to our surprise the well nourished Korean children reach significantly higher I.Q. levels, suggesting that although a good deal of recovery is possible, these children do not quite reach their potential.

We will, of course, be analyzing the total number of cases as soon as all of our data are in and we will keep you apprised of the final results as these come in.

Thank you very much.

Sincerely,


Myron Winick, M.D.
R. R. Williams Professor of
Nutrition

MW:mb
Enc.

PRELIMINARY REPORT OF STUDY
ON
EFFECTS OF EARLY MALNUTRITION ON THE SUBSEQUENT
DEVELOPMENT OF ADOPTED KOREAN CHILDREN

Myron Winick, M.D.
R. R. Williams Professor of
Nutrition
Institute of Human Nutrition
Columbia University College of
Physicians and Surgeons
New York, New York

EFFECTS OF EARLY MALNUTRITION ON THE SUBSEQUENT DEVELOPMENT OF ADOPTED KOREAN CHILDREN

Available evidence suggests that early malnutrition stunts growth and affects both cellular and functional development of the nervous system. In both the retrospective and the prospective studies, however, the malnourished children after rehabilitation were returned to a culturally deprived environment.

Recently, animal experiments have suggested that environmental stimulation may reverse some of the effects produced by malnutrition. Because of these animal experiments, a study is being conducted in Colombia in which previously malnourished children were placed in a special nursery school from age two. Development of these children is ^{being} compared to that of children from a higher social class. In this study preliminary data suggest that the stimulated malnourished children perform as well as the normally nourished but unstimulated children. The purpose of the present study is to assess the effect of a permanently enriched environment including improved living conditions and good nutrition on the overall growth and development of previously malnourished Korean girls.

SOURCES OF DATA AND STUDY DESIGN

The Holt Adoption Agency located in Eugene, Oregon, was our primary source of data. A 20 percent sample (n=600) of a total universe of 3,000 between the years of 1958 and 1967 was obtained from Holt by random selection. Those who did not match the criteria were eliminated and we were left with a 32 percent sample of the extracted cases (where n=190). The subjects were all females between the ages of 7 - 15 years of age admitted to Holt at less

than two years of age. Other data were gathered by School and Parent Questionnaires.

We planned a retrospective cohort follow-up study by constructing nutrition cohorts -- those exposed -- into two groups, I and II, and those not exposed as controls "C". We then carried on as follows:

1. Date of birth was recorded and age used was the admission age (less than two years of age) to Holt Agency since that is when we had reliable height and weight data recorded.
2. Height for age, and weight for age were plotted on Korean reference standards.
3. The cohort which fell below the third percentile by both height and weight on the Korean reference standards was classified as severely malnourished, or Group I.
4. The cohort which fell between the third and twenty-fifth percentiles was classified as moderately malnourished, Group II.
5. The cohort that fell above the twenty-fifth percentile were the well nourished control group, C.

Our sample was widely spread out throughout the U.S.

DEPENDENT VARIABLE

Our two dependent variables concerned with intellectual performance were the following:

1. School achievement percentile ranks based on standardized tests such as Iowa Test of Basic Skills (ITBS) which are given yearly in schools nation-wide.

2. I.Q. scores based on standardized I.Q. tests given by different schools at different times during school years nation-wide, such as Lorge-Thorndike Mental Ability Test.
3. Our dependent variable concerned with physical growth or catch-up growth was assessed by current height and weight data for age, obtained from the initial parent questionnaire.

THE INDEPENDENT VARIABLE

This was the level of exposure to malnutrition assessed by anthropometric data (height, weight) from reliable records of the Holt Adoption Agency "Child Report" data at time of admission to Holt.

Social history of subjects prior to admission to Holt is not known. We expect the experiences of all three groups to be similar. Children were assigned to adoptive parents on first come, first served basis but parent request for boy or girl, mixed blood or pure Korean, were usually respected. Thus no nutritional bias was present in the adoptive procedure.

ANALYSIS AND INTERPRETATIONS OF RESULTS

A sub-sample of about 60 children ($n = 20$ in each group) of those whose school questionnaires came in first were randomly selected. Our preliminary data show the following:

Catch-up growth: It appears that there is complete catch up of physical growth for our Korean cohorts I and II when compared to the controls at 6 - 13 years follow-up. (Tables 1 and 2). Most of the children were above the 50th percentile for Korean standards though still somewhat small by American standards.

Percent Subjects by Nutrition Level,
 Category of Height & Weight Compared to American Norms

Table 1 - By Height

Groups	I n=18	II n=20	C n=20	American Norms %
S.D.				
> 2.5	0	0	5*	1
> 1 < 2.5	0	5	0	15
± 1	50	50	55	68
< -1 > - 2.5	39	30	40	15
< - 2.5	11	15	0	1

*5% = 1 case

Table 2 - By Weight

Groups	I n=19	II n=20	C n=20	American Norms %
S.D.				
> 2.5	0	0	0	1
> 1 < 2.5	0	0	5	15
± 1	37	30	20	68
< -1 > -2.5	63	70	75	15
< -2.5	0	0	0	1

By American standards the three groups as a whole show 2 percent are very tall, 2 percent are tall, 52 percent are medium size, 36 percent are short, and 8.6 percent are very short (fell < -2.5 S.D.). For weight, 1.7 percent are heavy, 28.8 percent are average, and 69.5 percent are light. For all three groups for height, 50-55 percent fell at \pm S.D. (S.D. = Standard Deviation). The controls were at a slight advantage with height, but generally they were somewhat lighter than the rest.

Catch up intelligence and achievement: As Tables 3 and 4 show, mean differences of Groups I and II were not statistically significant, either with I.Q. scores (by analysis of variance - multiple comparisons) nor with achievement percentile ranks (by Wilcoxon Rank Sum test). However, Groups I and II differed significantly ($P < .01$ and $P < .05$) from their control comparison group.

Table 3
Nutritional Status & I.Q. Scores

	M(\bar{x})	S.D.	N*	t	P	
Group I Malnourished	103.46	8.23	14	0.34	N.S.	Gr.I vs. Gr.II
Group II Mod. nourished	104.81	9.28	16	2.3	$P < .05$	Gr.II vs. Controls
Controls Well nourished	113.4	12.76	15	2.53	$P < .01$	Gr. I vs. Controls

*N's vary in each group due to missing data

Table 4

Nutritional Status
and Percentile Achievement Ranks

	M (\bar{x})	t	N	P
Group I Malnourished	47.6	< 1	31	N.S.
Group II Mod. nourished	51.06	2.8	33	P<.01
Controls Well nourished	71.86	2.76	34	P<.01

These results demonstrate that significant improvement in development can occur in the malnourished children so that their mean I.Q. reaches normal for middle class American standards (103). In the previously well-nourished children, I.Q. scores were still significantly higher (mean - 113) and were higher than mean scores for middle class American children. We would conclude therefore:

- (a) Catch-up in physical growth is complete.
- (b) I.Q. scores of the previously malnourished Korean children reach American mean values.
- (c) Well nourished Korean children in the same environment reach I.Q. levels significantly higher than their malnourished counterparts and significantly higher than American norms.

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PD-AAC-819

COST REIMBURSEMENT TYPE CONTRACT

AGENCY FOR INTERNATIONAL DEVELOPMENT
NEGOTIATED CONTRACT NO. AID/csd-3679

CONTRACT TYPE
Cost Reimbursable

NEGOTIATED PURSUANT TO THE FOREIGN ASSISTANCE
ACT OF 1961, AS AMENDED, AND EXECUTIVE ORDER 11223

AMOUNT
\$11,164

CONTRACT FOR: Effects of Environmental Project No. 931-17-560-550
Enrichment on Subsequent Development of Malnourished Children

ISSUING OFFICE (Name and Address)
Agency for International Development
Contract Services Division
Office of Procurement
Washington, D. C. 20523

CONTRACTOR (Name and Address) *Bp*
The Trustees of
Columbia University in the City of New York

NAME
Box 20, Low Memorial Library

STREET ADDRESS
New York, New York 10027

CITY, STATE AND ZIP CODE

ADMINISTRATION BY
Issuing Office

COGNIZANT SCIENTIFIC/TECHNICAL OFFICE
TA/N

MAIL VOUCHERS (Original & 3 copies)
TO: Agency for International
Development, Office of the Controller
Washington, D. C. 20523

ACCOUNTING AND APPROPRIATION DATA
PIO/T NO. 931-17-560-550-73-3127633
APPROPRIATION NO. 72-1121004
ALLOTMENT NO. 254-31-099-00-22-21

EFFECTIVE DATE July 1, 1972

ESTIMATED COMPLETION DATE June 30, 1973

TYPES OF BUSINESS (CHECK APPROPRIATE BOX(ES))

<input type="checkbox"/>	SOLE PROPRIETORSHIP	<input type="checkbox"/>	SMALL BUSINESS
<input type="checkbox"/>	PARTNERSHIP	<input type="checkbox"/>	LABOR SURPLUS AREA
<input type="checkbox"/>	JOINT VENTURE		
<input checked="" type="checkbox"/>	CORPORATION, INCORPORATED IN THE STATE OF NEW YORK		

The United States of America, hereinafter called the Government, represented by the Contracting Officer executing this contract, and the Contractor agree that the Contractor shall perform all the services set forth in the attached Schedule, for the consideration stated therein. The rights and obligations of the parties to this contract shall be subject to and governed by the Schedule and the General Provisions. To the extent of any inconsistency between the Schedule or the General Provisions and any specifications or other provisions which are made a part of this contract, by reference or otherwise, the Schedule and the General Provisions shall control. To the extent of any inconsistency between the Schedule and the General Provisions, the Schedule shall control.

This Contract consists of this Cover Page, the Schedule of 11 Pages, including the Table of Contents and the General Provisions (form AID 1420-41C, dated July, 1972).

NAME OF CONTRACTOR
The Trustees of Columbia University
of the City of New York

UNITED STATES OF AMERICA
AGENCY FOR INTERNATIONAL
DEVELOPMENT

BY (Signature of authorized individual)

BY (Signature of Contracting Officer)

James P. Lewis

[Signature]

TYPED OR PRINTED NAME

TYPED OR PRINTED NAME
/s/N. A. Caticchio

James P. Lewis

TITLE Assistant Director,
Office of Projects and Grants

CONTRACTING OFFICER

DATE June 29, 1972

DATE JUN 30 1972

CERTIFIED A TRUE COPY THIS
5th DAY OF July 1972

BY *E. L. Ames*

TABLE OF CONTENTS
SCHEDULE

The Schedule, on pages 1 through 11, consists of this Table of Contents and the following Articles:

ARTICLE I	- STATEMENT OF WORK	ARTICLE VIII	- COSTS REIMBURSABLE AND LOGISTIC SUPPORT TO CONTRACTOR
ARTICLE II	- TECHNICAL DIRECTIONS	ARTICLE IX	- ESTABLISHMENT OF OVERHEAD RATES
ARTICLE III	- KEY PERSONNEL	ARTICLE X	- PERSONNEL COMPENSATION
ARTICLE IV	- LEVEL OF EFFORT	ARTICLE XI	- REPORTS
ARTICLE V	- PERIOD OF CONTRACT	ARTICLE XII	- ALTERATIONS IN CONTRACT
ARTICLE VI	- ESTIMATED COST		
ARTICLE VII	- BUDGET		

GENERAL PROVISIONS

The General Provisions applicable to this contract consists of form AID 1420-410 entitled "General Provisions - Cost Reimbursement Type Contract", dated July, 1972, which includes provisions 1 through 41.

SCHEDULE

ARTICLE I - STATEMENT OF WORK

A. General Statement

The project addresses itself to one of the most crucial questions to be answered in nutrition today "Does malnutrition during the first 2 years of life produce permanent physical and mental damage".

The purpose of this contract is to compare the mental and physical development of 3 groups of children (a) severely malnourished Korean children who were adopted, (b) normal Korean children who were adopted and (c) the Western siblings of these adopted children from the adopting families.

The base line data will be obtained from records of children admitted to the adoption program in South Korea during the years 1960 - 1967. Those records are presently housed at the Korean adopting agency central offices in Oregon.

B. Detailed Statement

The Contractor shall:

- (1) Select 4 groups of children (100 in each group) who were adopted before they were two years old. All of the adopting families will have had either prior or subsequent children of their own.
- (2) These groups will consist of
 - (a) children severely malnourished during the first year of life,
 - (b) well nourished children subsequently adopted, and
 - (c) the closest aged siblings born into the families into which group (a) and (b) children have been adopted.

(3) Assess subsequent development

- (a) through school health records which will yield height, weight, and other anthropomorphic measurements;
- (b) through school performance as measured by standard evaluation tests and by student grades and by comparison with similar evaluations of the siblings; and
- (c) through the results of I.Q. tests and a comparison of results between groups.

ARTICLE II - TECHNICAL DIRECTIONS

Performance of the work hereunder shall be subject to the technical directions of the cognizant A.I.D. Scientific/Technical Office indicated on the Cover Page. As used herein, "Technical Directions" are directions to the Contractor which fill in details, suggest possible lines of inquiry, or, otherwise complete the general scope of the work. "Technical Directions" must be within the terms of this contract and shall not change or modify them in any way.

ARTICLE III - KEY PERSONNEL

A. The key personnel which the Contractor shall furnish for the performance of this contract are as follows:

M. Winick	Principal Investigator
R. Harris	Assistant Principal Investigator
B. Miller	Staff Associate

B. The personnel specified above are considered to be essential to the work being performed hereunder. Prior to diverting any of the specified individuals to other programs, the Contractor shall notify the Contracting

Officer reasonably in advance and shall submit justification (including proposed substitutions) in sufficient detail to permit evaluation of the impact on the program. No diversion shall be made by the Contractor without the written consent of the Contracting Officer; provided, that the Contracting Officer may ratify in writing such diversion and such ratification shall constitute the consent of the Contracting Officer required by this clause. The listing of key personnel may, with the consent of the contracting parties, be amended from time to time during the course of the contract to either add or delete personnel, as appropriate.

ARTICLE IV - LEVEL OF EFFORT

A. The level of effort for the performance of this contract shall be 10.8 total man-months of direct labor.

B. The estimated composition of the total man-months of direct labor is as follows:

	<u>No. Man-Months</u>
Key Personnel	7.8
Clerical	3.0

C. It is understood and agreed that the rate of man-months per month may fluctuate in pursuit of the technical objective provided such fluctuation does not result in the utilization of the total man-months of effort prior to the expiration of the term hereof, and it is further understood and agreed that the number of months of effort for any classification except for the months of the Key Personnel may be utilized by the Contractor in any other direct labor classification if necessary in the performance of the work.

D. The Contracting Officer may, by written order, direct the Contractor to increase the average monthly rate of utilization of direct labor to such an extent that the total man-months of effort, specified above, would be utilized prior to the expiration of the term hereof. Any such order shall specify the degree of acceleration required and the revised term hereof resulting therefrom.

ARTICLE V - PERIOD OF CONTRACT

A. The effective date of this contract is July 1, 1972, and the estimated completion date is June 30, 1973.

B. In the event that the Contractor fails to furnish the level of effort set forth herein for the specified term, then the Contracting Officer may require the Contractor to continue performance of the work beyond the estimated completion date until the Contractor has furnished the specified level of effort or until the estimated cost of the work for such period shall have been expended.

ARTICLE VI - ESTIMATED COST

The total estimated cost of this contract to the Government is \$11,164.

ARTICLE VII - BUDGET

The following budget sets limitations for reimbursement of dollar costs for individual line items. Within the total estimated cost of this contract, the contractor may adjust line item amounts as reasonably necessary in the performance of the work hereunder.

BUDGET

<u>Category</u>	<u>Budget Amount</u>
Salaries and Wages	\$ 5,800
Fringe Benefits	754
Travel and Transportation	500
Other Direct Costs	1,500
Overhead	2,610
Grand Total	<u>\$11,164</u>

ARTICLE VIII - COSTS REIMBURSABLE AND LOGISTIC SUPPORT TO CONTRACTOR

United States Dollar Cost

The United States dollar costs allowable under the contract shall be limited to reasonable, allocable, and necessary costs determined in accordance with the Clause of the General Provisions of this contract entitled "Allowable Cost, Fixed Fee, and Payment".

ARTICLE IX - ESTABLISHMENT OF OVERHEAD RATE

Pursuant to the provisions of Clause No. 10 of the General Provisions of this contract entitled "Indirect Costs (Overhead)-Predetermined", a rate or rates shall be established for each of the Contractor's accounting periods during the term of this contract. For the initial period the rates are:

<u>Type</u>	<u>Period</u>	<u>On-Campus</u>
Predetermined	Fr: 7-1-72 To: 6-30-73	45.0%

Distribution Base: Direct salaries and wages including vacation, holiday and excused absences, but excluding other fringe benefits and overtime premium.

ARTICLE X - PERSONNEL COMPENSATION

A. Limitations

Compensation of personnel which is charged as a direct cost under this contract, like other costs, will be reimbursable in accordance with the Schedule Article entitled "Costs Reimbursable and Logistic Support to Contractor", and the General Provision entitled "Allowable Cost, Fixed Fee, and Payment", and other applicable provisions of this contract but subject to the following additional specified understandings which set limits on items which otherwise would be reasonable, allocable, and allowable.

1. Approvals

Salaries and wages may not exceed the Contractor's established policy and practice, including the Contractor's established pay scale for equivalent classifications of employees, which will be certified to by the Contractor, nor may any individual salary or wage, without approval of the Contracting Officer, exceed the employee's current salary or wage or the highest rate of annual salary or wage received during any full year of the immediately preceding three years, provided that if the work is to be performed by employees serving overseas for a period in excess of one year, the normal base salary may be increased in accordance with Contractor's established policy and practice, but not to exceed 10 percent of base U.S. salary excluding benefits. There is a ceiling on reimbursable salaries and wages paid to a person employed directly under the contract of the maximum salary rate of FSR-1 (or the equivalent daily rate of the maximum FSR-1 salary, if compensation is not on an annual basis), unless advance written approval is given by the Contracting Officer.

2. Salaries During Travel

Salaries and wages paid while in travel status will not be reimbursed for a travel period greater than the time required for travel by the most direct and expeditious air route.

3. Return of Overseas Employees

Salaries and wages paid to an employee serving overseas who is discharged by the Contractor for misconduct or security reasons will in no event be reimbursed for a period which extends beyond the time required to return him promptly to his point of origin by the most expeditious air route plus accrued vacation leave.

4. Merit or Promotion Increase

Merit or promotion increases may not exceed those provided by the Contractor's established policy and practice. With respect to employees performing work overseas under this contract, one merit or promotion increase of not more than 5% of the employee's base salary may, subject to the Contractor's established policy and practice, be granted after employee's completion of each twelve month period of satisfactory services under the contract. Merit or promotion increases exceeding these limitations or exceeding the maximum salary of FSR-1 may be granted only with the advance written approval of the Contracting Officer.

5. Consultants

No compensation for consultants will be reimbursed unless their use is authorized in the Schedule or has the advance written approval of the Contracting Officer; and if such provision has been made or approval given, compensation shall not exceed, without specific written approval of the rate by the Contracting Officer, the current annual compensation or, with respect to retirees, individuals

employed on other than a full time basis, etc., the highest rate of annual compensation received by the consultant during any full year of the immediately preceding three years.

There is a ceiling on reimbursable compensation for any consultant. That ceiling is the current maximum daily salary rate of a Foreign Service Officer Class 1. No consultant may be employed at a rate in excess of the ceiling without the advance written approval of the Contracting Officer.

The daily rate of a Foreign Service Officer Class 1 is determined by dividing the annual salary by 260 days.

6. Third Country and Cooperating Country Nationals

No compensation for third country or Cooperating Country nationals will be reimbursed unless their use under the contract is authorized in the Schedule or has the prior written approval of the Contracting Officer. Salaries and wages paid to such persons may not, without specific written approval of the Contracting Officer, exceed either the Contractor's established policy and practice; or the level of salaries paid to equivalent personnel by the A.I.D. Mission in the Cooperating Country; or the prevailing rates in the Cooperating Country, as determined by A.I.D., paid to personnel of equivalent technical competence.

7. Work Week

a. Nonoverseas Employee. The work week for the Contractor's nonoverseas employees shall not be less than the established practice of the Contractor.

b. Overseas Employee. The work week for the Contractor's overseas employees shall not be less than 40 hours and shall be scheduled to coincide with the work week for those employees of the A.I.D. Mission and the Cooperating Country associated with the work of this contract.

B. Definitions

As used herein, the terms "Salaries", "Wages", and "Compensation" mean the periodic remuneration received for professional or technical services rendered exclusive of overseas differential or other allowances associated with overseas service, unless otherwise stated. The term "compensation" includes payments for personal services (including fees and honoraria). It excludes earnings from sources other than the individual's professional or technical work, overhead or other charges.

ARTICLE XI - REPORTS

The Contractor shall submit thirty-five (35) copies of semi-annual reports on scientific progress submitted to AID/Washington, TA/N, beginning six (6) months after the effective date of this contract and thirty-five (35) copies of an annual report beginning twelve (12) months after the effective date of the contract describing the status of the work in progress; changes in research personnel; management information deemed necessary; and detailed information on expenditures of project funds as well as scientific progress.

ARTICLE XII - ALTERATIONS IN CONTRACT

The following alterations have been made in the provisions of this contract.

A. Delete General Provision No. 10, entitled "Negotiated Overhead Rates (Dec. 1970", in its entirety and in lieu thereof insert the following:

"10. INDIRECT COSTS (OVERHEAD) - PREDETERMINED

(a) Notwithstanding the provisions of any other clause of this contract, the allowable indirect costs under this contract shall be:

obtained by applying predetermined indirect cost rates to bases agreed upon by the parties, as specified in Schedule Article IX of this contract.

(b) The Contractor, as soon as possible but not later than three (3) months after the expiration of his fiscal year, shall submit to the Contracting Officer, with a copy to the cognizant audit activity, a proposed predetermined indirect cost rate or rates based on the Contractor's actual cost experience during that fiscal year, together with supporting cost data. Negotiations of predetermined indirect cost rates shall be undertaken as promptly as practicable after receipt of the Contractor's proposal.

(c) Allowability of costs and acceptability of cost allocation methods shall be determined in accordance with the provisions of Subpart 1-15.3 (Principles for Determining Costs Applicable to Research and Development under Grants and Contracts with Educational Institutions) of the Federal Procurement Regulations as in effect on the date of this contract.

(d) The results of each negotiation shall be set forth in a modification to this contract, which shall specify (i) the agreed predetermined indirect cost rates, (ii) the bases to which the rates apply, (iii) the fiscal year unless the parties agree to a different period for which the rates apply, and (iv) the specific items treated as direct costs.

(e) Pending establishment of predetermined indirect cost rates for any fiscal year or different period agreed to by the parties, the Contractor shall be reimbursed either at the rates fixed for the previous fiscal year or other period or at billing rates acceptable to the Contracting Officer subject to appropriate adjustment when the final rates for that

fiscal year or other period are established.

(f) Any failure by the parties to agree on any predetermined indirect cost rate or rates under this clause shall not be considered a dispute concerning a question for decision by the Contracting Officer within the meaning of the "Disputes" clause of this contract. If for any fiscal year or other period specified in the Schedule of this contract the parties fail to agree to a predetermined indirect cost rate or rates, it is agreed that the allowable indirect costs under this contract shall be obtained by applying negotiated final indirect cost rates in accordance with the terms of the "Indirect Costs (Overhead)-Negotiated" clause set forth in Part 7-15.951 of the A.I.D. Procurement Regulations as in effect on the date of this contract.

(g) Allowable indirect costs for the period until the end of the Contractor's fiscal year during which performance begins, shall be obtained by applying the predetermined indirect cost rates set forth in the Schedule to the bases set forth therein".

B. Utilization of Minority Business Enterprises (August 1971)

The General Provision 39 of this contract entitled Utilization of Minority Business Enterprises (August 1971) is hereby amended by changing the second sentence of paragraph (b) to read as follows:

"As used in this contract, the term "minority business enterprise" means a business, at least 50 percent of which is owned by minority group members, or, in the case of publicly owned businesses, at least 51 percent of the stock of which is owned by minority group members."

COST REIMBURSEMENT CONTRACT WITH AN EDUCATIONAL INSTITUTION

9310550-6
JK PD-AAC-819

AGENCY FOR INTERNATIONAL DEVELOPMENT NEGOTIATED CONTRACT NO. AID/ta-C-1338

NEGOTIATED PURSUANT TO THE FOREIGN ASSISTANCE ACT OF 1961, AS AMENDED, AND EXECUTIVE ORDER 11223	TOTAL ESTIMATED CONTRACT COST \$33,075
CONTRACT FOR: Effects of Environmental Enrichment on Subsequent Development of Mal-nourished Children PROJECT NO: 931-17-998-001	CONTRACTOR (Name and Address) Health Sciences, Columbia University
ISSUING OFFICE (Name and Address) Central Operations Division Office of Contract Management Agency for International Development Washington, D.C. 20523	NAME 630 W. 168th Street STREET ADDRESS New York, New York 10032 CITY, STATE, AND ZIP CODE
ADMINISTRATION BY Same as Issuing Office	COGNIZANT SCIENTIFIC/TECHNICAL OFFICE Bureau for Technical Assistance Office of Nutrition (TA/N)
MAIL VOUCHERS (Original and 3 copies) TO: Office of Financial Management Agency for International Development Washington, D.C. 20523	ACCOUNTING AND APPROPRIATION DATA PIO/T NO. 931-17-998-001-73-3167713 APPROPRIATION NO. 72-11X1026 ALLOTMENT NO. 426-31-009-00-22-61
EFFECTIVE DATE June 30, 1976	ESTIMATED COMPLETION DATE June 30, 1977

10p
10. 1976

The United States of America, hereinafter called the Government, represented by the Contracting Officer executing this Contract, and the Contractor, an educational institution chartered by the State of New York with its principal office in New York, New York, agree that the Contractor shall perform all the services set forth in the attached Schedule, for the consideration stated therein. The rights and obligations of the parties to this contract shall be subject to and governed by the Schedule and the General Provisions. To the extent of any inconsistency between the Schedule and the General Provisions and any specifications or other provisions which are made a part of this contract, by reference or otherwise, the Schedule or the General Provisions shall control. To the extent of any inconsistency between the Schedule and the General Provisions, the Schedule shall control.

CERTIFIED A TRUE COPY THIS
9th DAY OF Aug, 1976
BY R.O. Mindeto

This Contract consists of this Cover Page, the Table of Contents, and the Schedule consisting of 5 pages, the General Provisions (Form AID 1420-23C), dated July 1, 1975, and an Appendix "A" (Operational Plan).

NAME OF CONTRACTOR <u>The Trustees of Columbia University In the City of New York</u>	UNITED STATES OF AMERICA AGENCY FOR INTERNATIONAL DEVELOPMENT
BY (Signature of authorized individual) <u>James P. Lewis</u>	BY (Signature of Contracting Officer) <u>Morton Darwin</u>
TYPED OR PRINTED NAME <u>James P. Lewis, Director</u>	TYPED OR PRINTED NAME <u>/s/ Morton Darwin</u>
TITLE <u>Office of Projects and Grants</u>	CONTRACTING OFFICER
DATE <u>JUN 29 1976</u>	DATE <u>JUN 30 1976</u>

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GENERAL PROVISIONS

The General Provisions applicable to this contract consist of form AID 1420-23C entitled "General Provisions - Cost Reimbursement Contract with an Educational Institution", dated 7-1-75, which includes provisions 1 through 38; and form AID 1420-23D entitled "Additional General Provisions - Cost Reimbursement Contract with an Educational Institution", dated 7-1-75, which includes provisions 1 through 18.

SCHEDULE

ARTICLE I - STATEMENT OF WORK

A. Summary

This research project will explore the age at which environmental enrichment will be effective in the improvement of both physical growth and mental achievement of malnourished children.

This project will look at Korean children adopted by American families while they were between the ages of 3-6. A retrospective study will be made of selected groups of children to determine their physical and mental progress.

B. Research Purpose and Expected Products

1. The significance of this study is both the acquisition of fundamental knowledge and the envolving of a practical approach to intervention programs for children who have been malnourished during the first year of life. Fundamentally the question to be answered is when the critical period for environmental enrichment occurs. This will help in indicating some of the mechanisms by which environmental enrichment works.

2. Specific products of this project will come from a retrospective data analysis of height, weight and I.Q. test scores of the studied children. The overall product will be additional information which is needed to design environmental intervention programs which will give the greatest return for investment in resources.

C. Scope of Work

For a period hereinafter set forth in the Schedule, the Contractor shall make available and employ its research facilities and required personnel

to perform the research work presented in the Contractor's unsolicited proposal, which proposal is hereby incorporated into the provisions of this contract and attached hereto as Attachment A.

ARTICLE II - KEY PERSONNEL

A. The key person which the Contractor shall furnish for the performance of this contract is as follows:

Dr. Myron Winick, Principal Investigator

B. The person specified above is considered to be essential to the work being performed hereunder. Prior to making any change in the key person, the Contractor shall notify the Contracting Officer reasonably in advance and shall submit justification (including proposed substitution) in sufficient detail to permit evaluation of the impact on the program. The listing of key personnel may, with the consent of the contracting parties, be amended from time to time during the course of the contract to either add or delete personnel, as appropriate.

C. The Contractor shall obtain A.I.D.'s approval to change the principal investigator, or to continue the work during a continuous period in excess of three months without the participation of the approved principal investigator.

ARTICLE III - CHANGES IN RESEARCH METHODS, PROCEDURES, OBJECTIVES OR PHENOMENA UNDER STUDY

A. The principal investigator may change the methods and procedures employed in performing the research without making special reports on proposed actions or obtaining A.I.D. approval. However, significant changes in methods or procedures shall be reported to the Cognizant Technical Office in periodic or final technical reports. In the event the methodology or experiment is stated as a specific objective of the research work, any changes to either fall within the scope of paragraph B below.

B. The stated objectives of the research effort shall not be changed, except with the prior approval of the Contracting Officer.

ARTICLE IV - PERIOD OF CONTRACT SERVICES

The effective date of this contract is June 30, 1976, and the estimated completion date of work under this contract is June 30, 1977.

ARTICLE V - ESTIMATED CONTRACT COST AND OBLIGATED FUNDS

The Contractor will be reimbursed for the costs incurred by him in performing services hereunder in accordance with the applicable provisions of the Schedule and the General Provisions, subject to the limitations set forth below. It is estimated that the following listed amount will be sufficient to complete the work required hereunder as set forth in Article I entitled "Statement of Work";

- A. Total A.I.D. dollar funds available for payment and allotted to this contract. See the clause of the General Provisions entitled "Limitation of Funds" and the article of the Schedule entitled "Budget", if applicable. \$33,075

ARTICLE VI - BUDGET

The following budget sets limitations for reimbursement of dollar costs for individual line items. The "Funds Available" column represents the total funds authorized to be expended by the Contractor during the period indicated as provided in Article V immediately above and the clause of the General Provisions entitled "Limitation of Funds". The Contractor hereby agrees to furnish data which the Contracting Officer may request on costs expended or accrued under the contract in support of the budget information provided herein. Total contract expenditures shall not exceed the grand total of the funds available. Within the grand total of funds available, as set forth in Article V above, the Contractor may adjust line items as reasonably necessary for the performance of the work.

BUDGET

<u>Category</u>	<u>Funds Available</u> FR: 6-30-76 TO: 6-30-77
Salaries and Wages	\$17,392
Fringe Benefits	3,698
Travel and Transportation	600
Other Direct Costs	3,310
Indirect Costs	<u>8,075</u>
TOTAL	\$33,075

ARTICLE VII - NEGOTIATED OVERHEAD RATES

Pursuant to the provisions of the clause of the General Provisions of this contract entitled "Negotiated Overhead Rates", a rate or rates shall be established for each of the Contractor's accounting periods during the term of the contract. The rate for the initial period shall be as set forth below:

	<u>Rate</u>	<u>Base</u>	<u>Period</u>
On Campus	32.3%	Total direct costs	FR: 6-30-76 TO: 6-30-77

ARTICLE VIII - ALTERATIONS IN GENERAL PROVISIONS

A. All references to "the Operations Plan (Appendix A)" are deleted and in lieu thereof "Article I, Statement of Work" is substituted.

B. Reports. General Provision 12 is amended to provide changes in the reports requirements as follows:

1. The semi-annual report shall be submitted to the Cognizant Technical Office in thirty-five (35) copies. The report shall describe the status of the work in progress, changes in research personnel; management information deemed necessary, and detailed information on expenditures of project funds, as well as

scientific progress. See Attachment B entitled "Guidelines for Preparation of Research Annual Report".

C. In accordance with paragraph (a) of Additional General Provision No. 3, entitled "Personnel", and paragraph (a) of Additional General Provision No. 9, entitled "Travel Expenses", whereunder the Contractor may not send individuals outside the United States to perform work under the contract without the prior written approval of the Contracting Officer, the Contracting Officer does, hereby, provide said approval for those individuals required to travel outside the United States; provided, however, that concurrence with the assignment and/or travel of any and all said individuals outside the United States is obtained, in writing, from the Cognizant Technical Office of A.I.D. prior to their assignment and/or travel abroad.

After approval of the proposed international travel, the Contractor shall provide the cognizant US A.I.D. Mission advance notification, with a copy to the Contracting Officer, of the arrival date and flight identifications of A.I.D.-financed travellers.

This approval by the Contracting Officer shall not apply to any other clause or provision of this contract which specifically requires Contracting Officer approval.

~~D. Privacy Act Notification. This procurement action requires the Contractor to do one or more of the following: design, develop, or operate a system of records on individuals to accomplish an agency function in accordance with the Privacy Act of 1974, Public Law 93-579, December 31, 1974 (5 U.S.C. 552a) and applicable agency regulations. Violation of the Act may involve the imposition of criminal penalties.~~



Environmental Enrichment on Subsequent Development of Malnourished Children

II. Late Adoption

Introduction and specific aims

We have recently completed the first phase of a study examining the effects of early environmental enrichment in previously well nourished and malnourished children. The study was conducted by examining records of a cohort of Korean orphans and dividing them into three groups. Group one; severely malnourished in the first year of life. Group two; moderately malnourished in the first year of life. Group three; well nourished in the first year of life.

All children were adopted by 18 months into families in the United States. Examination of current health and school records was undertaken and the following results found:

1. All children exceeded both height and weight for comparable children in Korea. The previously malnourished children still showed a small but significant deficit in height when compared to the well nourished group.
2. Malnourished children had an average I. Q. of 102. The well nourished group had an average I. Q. of 116 and the difference was significant.
3. Malnourished children were achieving at stanine level 5; well nourished children significantly above this. Details of this study are enclosed in a paper recently submitted to Science.

The study demonstrates that recovery although not complete is much greater than previous data would have suggested. From a practical standpoint it suggests that early intervention with a program of environmental enrichment will result in an enormous amount of improvement in both physical growth and mental achievement. How soon must such stimulation begin? This is, of course, a practical as well as a fundamental question. If we

knew when the critical period for intervention occurs we could better plan an intervention strategy. The present proposal seeks to answer this question and in addition to examine the type of intervention which is necessary.

Plan of action

The study would be conducted in exactly the same manner as the previous one except that different groups of children would be included.

Group I. Children well nourished for their entire lives, but not adopted until age 3 - 6.

Group II. Children severely malnourished during the first year of life (same criteria as previously) but not adopted until age 3 - 6.

Group III. Children well nourished during their entire life but never adopted.

Group IV. Children malnourished during the first year of life and subsequently rehabilitated but not adopted.

Children in groups I and II would be followed in exactly the same way as in the previous study and their present height, weight, I. Q. and achievement stanines ascertained. When these data are compared with the data in the first study it should be possible to learn:

1. Whether delay in adoption adversely affects the outcome in the well nourished and/or the malnourished group.
2. If so, what is the magnitude of this adverse affect and is it greater in children who were previously malnourished.

Children in groups III and IV would be compared (from present records at the orphanage) for height, weight, and mental performance. The data derived should tell us whether an institutional

environment with adequate nutrition is sufficient for these children to develop properly (when compared to group I and II and the children in the previous study). If not, is the adverse affect greater in the previously malnourished child?

Since all the records are available to us and since we have worked out procedures for following up these children, I would feel that the study could be completed in 12 months.

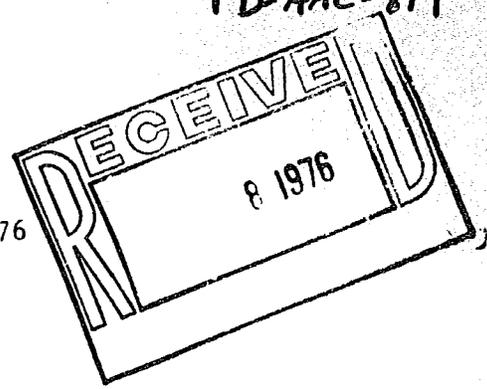
Facilities Available

The Institute of Human Nutrition maintains an administrative building with approximately 7,500 square feet of office and classroom space. Office space is available within this building for this study. In addition, the Institute has a small computer which could be programmed to handle some of these data. The University Computer Center is also available if necessary.

Significance

The significance of this study is both the acquisition of fundamental knowledge and the evolving of a practical approach to intervention programs for children who have been malnourished during the first year of life. Fundamentally we would like to learn when the critical period of environmental enrichment occurs. This may help in elucidating some of the mechanisms by which environmental enrichment works. Practically we need this information to design environmental intervention programs which will give the greatest return for our investment of human resources.

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June 25, 1976

Memorandum

TO: Dr. Erven J. Long, AA/TA

FROM: Martin J. Forman, TA/N *MJF 6/2/76*

SUBJECT: Additional Funding for Small Research Project Entitled
"Effects of Environmental Enrichment on Subsequent
Development of Malnourished Children II"

The purpose of this memorandum is to request your approval of Columbia University's request for additional funds for the subject small research contract. The original project was approved at \$25,000; your approval covered a project of the same scope as now planned. The original proposal was prepared more than a year ago and since that time costs of several elements in the estimated budget have changed. The estimate of costs is \$34,000. *

It is recommended that you approve the additional \$9,000 required to complete the project as planned.

Approved: *Erven J. Long*

Disapproved: _____

Date: *June 25, 1976*

Clearance:

TA/RES: M.Rehcigl *MR*

TA/PPU: J.Gunning *JG*

cc: TA/PPU, M. Mozynski
CM/COD/IT, B. Doucette

* See attached