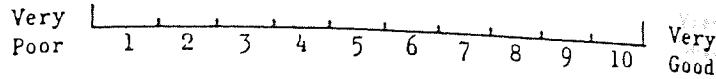


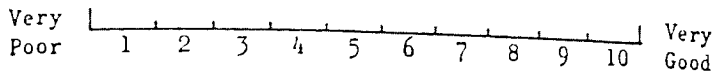
Question  
Rating

14. Communicating with supervisors and management



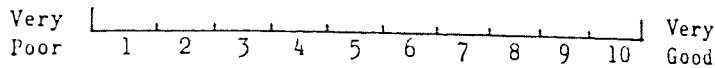
.....

15. Communicating job related information with his fellow workers and supervisors



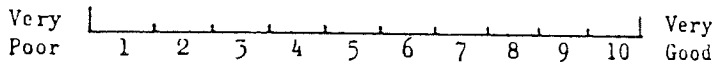
.....

16. Coping with potentially stressful / unpleasant environment (e.g. Noise, smell, heat)



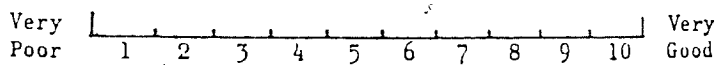
.....

17. Attending to details of the job (e.g. Checking tool type and number)



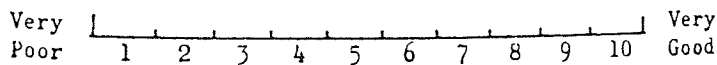
.....

18. Vigilant/Discriminating work activities (e.g. Red Lighting)



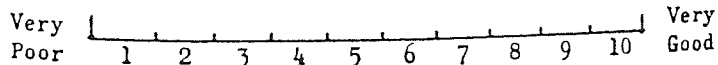
.....

19. Coping with repetitive activities



.....

20. Coping with variable shift work (if applicable)



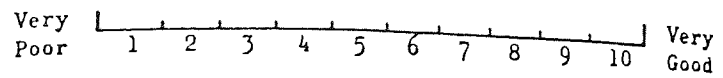
.....

4/.....

Question  
Rating

21. Coping with an irregular work load

.....



5/....

APPENDIX 9

Aptitude and Composite Job Performance Data  
for 14 Incumbents of the Job of Setter

Subject	Raven's Progressive Matrices	Perceptual Speed	Visual Acuity	Wechsler Memory	Birkbeck Mechanical Comprehension	Performance
1	47	50	27	6	16	385
2	23	53	25	8	15	600
3	46	51	24	7	28	628
4	40	54	23	1	9	395
5	88	96	20	6	30	606
6	5	31	27	1	7	393
7	90	73	32	10	25	462
8	17	17	22	5	2	391
9	90	75	27	5	39	773
10	53	80	19	4	29	655
11	85	43	17	9	31	645
12	40	52	27	3	3	385
13	84	113	21	14	31	632
14	40	78	34	14	9	458

APPENDIX 10

The Oral Questionnaire for Assessing  
Trainee Setters Job Knowledge

The table is very faint and mostly illegible. It appears to have several rows and columns, possibly representing a questionnaire or a data collection table. The content within the cells is not discernible.



### MACHINE APPRECIATION

- What are the chief differences between the injection units of A.17 and other machines?
- What are the advantages of electric motor screw drive?
- What are the advantages of hydraulic motor screw drive?
- What are the advantages of a screw machine over a plunger machine?
- What types of nozzle does the Company use?
- What is the purpose of a thermocouple?
- How are the heater bands controlled?
- What is an RSP ring?
- Why is hopper throat cooling important?
- How does the sprue break operate on an A.17?

R W

### MACHINE APPRECIATION 11

- What are the advantages of a single toggle lock system?
- What are the disadvantages of a single toggle lock system?
- What are the advantages of a double toggle lock system?
- What are the disadvantages of double toggle lock system?
- What is the mechanical stroke limit?
- How does the final lock up on a Krauss machine operate?
- When setting the daylight on a Krauss machine what feature is potentially dangerous?
- What is the purpose of the jacking screw on an A.17?
- How is the difference in mould thickness adjusted on a Krauss Machine?
- How is mould thickness adjusted on A.17 & A.26 machines?

### MACHINE TOOL COMBINATIONS

- With the tool out of the machine what should you do before starting to mount the next one?
- What is tool protection procedure?
- What is tool ancillary equipment?
- Which machines are amber tube tools used in?
- Which machines are Jaycap tools used in?
- Which tools are used in Krauss machines?
- What size of securitainer cap tools are used in A.17 machines?
- What size of securitainer cap tools are used in A26 machines?
- What method is used to attach tools to machines apart from clamping?
- Which machines are used for Jaypour components?





## APPENDIX 11

The scores of 6 trainee setters on the oral questionnaire of job performance alongside "predicted" performance scores

Subject	Predicted Performance	Actual Performance
1	532	86
2	618	91
3	587	86
4	641	92
5	593	85
6	495	79

## APPENDIX 12

The scores of 6 trainee setters on the performance assessment rating alongside "predicted" performance scores

Subject	Predicted Performance	Actual Performance
1	532	70.34
2	618	81.49
3	587	63.22
4	641	80.00
5	593	81.22
6	495	65.52

APPENDIX 13

Instructions and Scoring Procedures  
for Microswitch Assembly Tasks

Equipment

- 1 Assembled Microswitch
- 1 Box of Components (see page 6 for requisite terms)
- 1 Stopwatch
- 1 Blank sheet of blue card
- 1 Sheet headed X and Y
- 1 Sheet headed 'List of Components'
- 1 Sheet headed 'Plan of Movements A'
- 1 Sheet headed 'Plan of Movements B'
- 1 Sheet headed 'Time Sheet'
- 1 Pencil

Procedure

(CHECK THAT BOX HAS CORRECT COMPONENTS, AND THAT MICROSWITCH IS CORRECTLY ASSEMBLED).

(HAVE MICROSWITCH IN YOUR HAND. PLACE BOX AND BLUE CARD IN FRONT OF S)

"I am going to hand you an object called a "microswitch unit" which has already been assembled. The box in front of you contains a lot of small items, including all the parts needed to assemble microswitches like the one I shall give you. There are also some items which would not be needed. They may be wrong parts or ones which are too large or too small.

When I give you the microswitch, I would like you to take from the box all the items you would need in order to assemble 2 more microswitches like it. Place the required items on the sheet in front of you.

Work as quickly as you can, but make sure you have all the items needed to assemble 2 microswitch units. When you are satisfied that you have all the right components say "Ready".

Here is the microswitch: Start now. (GIVE S THE MICROSWITCH) (TIMED)

(WRITE DOWN TIME AND ERRORS ON THE TIME SHEET UNDER THE COLUMN "IDENTIFICATION". REMOVE BOX. PLACE SHEET HEADED X AND Y IN FRONT OF S. SLIDE BLANK SHEET WITH COMPONENTS ON IT TO CONVENIENT DISTANCE FOR S TO REACH IT. GIVE S THE SHEET HEADED "LIST OF COMPONENTS")

2.

"Right, there is a list of the components you need to assemble micro-switches. Disregard the table at the bottom of the page.

You should have:-

2 of Type A

2 of Type B

4 of Type C

2 of Type D

2 of Type E

4 of Type F

4 of Type G

4 of Type H

4 of Type I

(CHECK THAT S HAS CORRECT NUMBER AND TYPE OF COMPONENTS. IF NOT, GIVE HIM CORRECT COMPONENTS).

(GIVE S SHEET HEADED 'PLAN OF MOVEMENTS A')

"Right, on this sheet are a set of steps which you must follow to assemble two microswitches. What you have to do, is place Component A on Workpiece X and then Component A on Workpiece Y, then Component D on Workpiece X and so on until you have completely assembled the two micro-switches.

Work as quickly and as accurately as you can. Start now. (TIMED)

(WRITE DOWN THE TIME TAKEN UNDER THE COLUMN HEADED "ASSEMBLY I")  
(INFORM S OF TIME TAKEN)

"Right, you have to do this a total of 5 times. So would you please quickly disassemble the two workpieces".

"O.K. Following the plan again, assemble both microswitches. Start now"  
(TIMED)

(ENTER TIME UNDER COLUMN HEADED "ASSEMBLY II. INFORM S OF TIME TAKEN)

"Right, disassemble".

"Are you ready? Reassemble" (TIMED)

(ENTER TIME UNDER COLUMN HEADED "ASSEMBLY III". INFORM S OF TIME TAKEN)

"Right, disassemble".

"Are you ready? Reassemble" (TIMED)

(ENTER TIME UNDER COLUMN HEADED "ASSEMBLY IV". INFORM S OF TIME TAKEN)

"Right, disassemble".

"Are you ready? Reassemble" (TIMED)

(ENTER TIME UNDER COLUMN HEADED "ASSEMBLY V". INFORM S OF TIME TAKEN)

"At the bottom of the list of components is a table of figures. This shows the number of points each type of component is worth. Look at the assembled microswitch again. In a moment, I would like you to assemble 2 more microswitches like this one.

This time, however, there are some rules as to how you should assemble your microswitches.

Take the two components lettered "A". Lay one down on the sheet under the letter X and the other under the letter Y. So, we shall call this one Workpiece X and the other one Workpiece Y.

What you have to do is add one component to Workpiece X, then one to Workpiece Y, then one to X and so on, until you have assembled both microswitches."

(GIVE S THE SHEET HEADED "PLAN OF MOVEMENTS B")

4.

"Now look at this plan of movements. When you add a component to a workpiece, you must enter the letter of the component you are adding under the column headed "Component". You must also enter the running score under the column headed "Running Score"."

"So, for example, let us suppose you added Component I to Workpiece X. Component I is worth 2 points."

(POINT OUT THIS NUMBER FROM THE BOTTOM OF THE COMPONENT SHEET).

"So, Workpiece X is now worth 10." (POINT TO MOVEMENT SHEET ENTRY SHOWING RUNNING SCORE OF COMPONENT A AS 10 POINTS) + 2, ie. 12 points."

"So, you would enter "12" next to the letter "I". (POINT TO APPROPRIATE PLACE ON MOVEMENT SHEET).

"Workpiece Y is still only worth 10 points, a difference of 2 points. Now, let us suppose you added Component B to Workpiece Y. You would enter the letter B under the column headed "Component" for Workpiece Y, and  $10 + 9$ , ie. 19 as the running score. The difference between Workpiece X and Workpiece Y is now 19 less 12, that is, 7 points.

"But ....., the rule you must follow is that the difference between the scores for Workpiece X and Workpiece Y must always be 5 points or less. At the moment the difference would be 7. So, Component B cannot go on Workpiece Y yet. You would have to put a component on which has a lower score. Let's try Component D. This is worth 7 points, so Workpiece Y would be worth 17 points. Workpiece X is worth 12 points, so the difference of 5 means that you could place Component D on now."

"So that is what you have to do. You have to assemble the two micro-switches and write down on the plan of movements the sequence of moves. Remember, the difference is that their running scores must always be 5 points or less."

"Try to work out the sequence as quickly as you can. If you find that you cannot place any of the components at a particular time, then you will have to go back to a few moves before, and try a different plan."

"The final score for each workpiece will be 76. When you have finished your plan, and assembled both microswitches, say "Ready". O.K., start now."  
(TIMED)

(WHEN S SAYS "READY", NOTE DOWN TIME, BUT DO NOT STOP THE WATCH. CHECK THAT HIS SOLUTION MEETS THE RULES. IF IT DOES, ENTER THE TIME AT WHICH HE SAID "READY". IF NOT, POINT OUT ERROR, AND CONTINUE TIMING. TAKE OFF THE TIME IT HAS TAKEN YOU TO FIND THE ERROR FROM THE TIME THAT THE SUBJECT THEN SAYS "READY").

"Right, you have now created an assembly plan which satisfies the rules you had to follow."

(ENTER TOTAL TIME IN COLUMN HEADED "PLAN TIME")

(THANK S FOR CO-OPERATION).

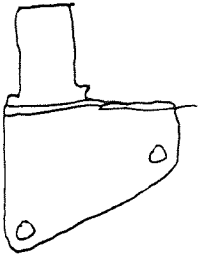


6

COMPLETE LIST OF PARTS TO BE IN BOX

denotes redundant parts.

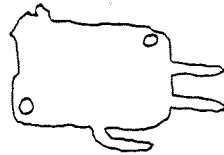
2 ७



2 ७



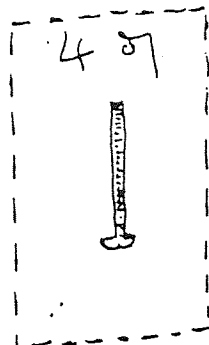
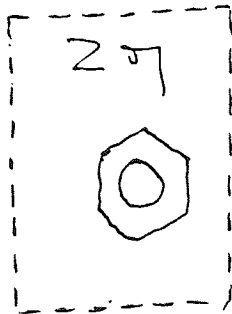
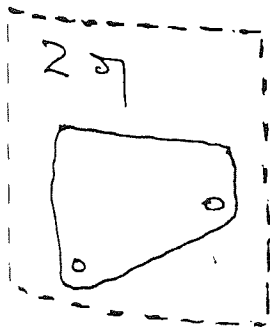
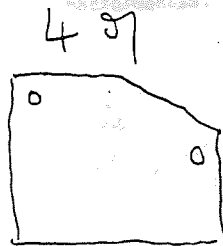
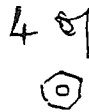
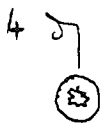
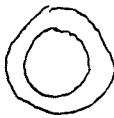
4 ७



2 ७



2 ७



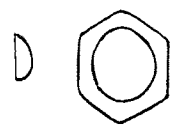
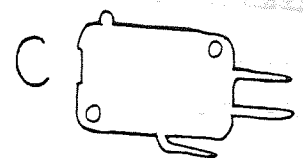
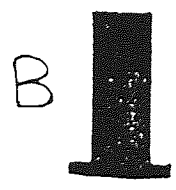
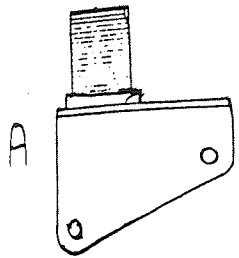
TIME SHEET

Subject Name \_\_\_\_\_

Job Title \_\_\_\_\_

Task Element	Time		Errors (Number of)
	Minutes	Seconds	
Identification			
Assembly I			<u>Error Procedure</u> A pilot examination of the task found errors to be extremely rare. In the event of an incorrect component having been selected 6.48 seconds should be added to the completion time. This represents the average selection time for each of the 28 components as identified on a sample of 14 error-free performances.
Assembly II			
Assembly III			
Assembly IV			
Assembly V			
Plan Time			
TOTAL			

# LIST OF COMPONENTS



## POINTS PER COMPONENT

A	B	C	D	E	F	G	H	I
10	9	8	7	6	5	4	3	2

9

PLAN OF MOVEMENTS A

the Number

<u>Workpiece X</u>		<u>Workpiece Y</u>	
<u>Component</u>	<u>Running Score</u>	<u>Component</u>	<u>Running Score</u>
A	-----		
		A	-----
D	-----		
		B	-----
F	-----		
		F	-----
I	-----		
		F	-----
B	-----		
		I	-----
C	-----		
		C	-----
F	-----		
		I	-----
E	-----		
		C	-----
I	-----		
		G	-----
C	-----		
		H	-----
G	-----		
		G	-----
G	-----		
		H	-----
H	-----		
		D	-----
H	-----		
		E	-----

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25
- 26
- 27
- 28



APPENDIX 14

Criterion Task Performance Data  
for the 7 Job Groups (secs)

Faint, illegible table with columns and rows, possibly containing performance data.

JOB GROUP	Ident.	Assembly					RL (Ratio)	Plan Time	Plan Pass/Fail
		1	2	3	4	5			
LIBRARY ASSISTANT	3.99	5.33	3.30	3.75	3.26	2.83	1.88	29.20	1
	2.68	11.35	4.58	3.66	3.45	3.23	3.51	60.00	0
	4.55	13.86	8.65	5.08	4.21	4.25	3.26	60.00	0
	2.30	7.88	3.06	3.23	2.81	2.43	3.24	60.00	0
	6.04	10.31	3.32	3.53	2.66	2.45	4.21	60.00	0
$\bar{X}$	3.91	9.74	4.58	3.85	3.27	3.03	3.22	53.84	1
TEACHER	1.72	7.30	4.38	3.63	2.93	2.48	2.94	19.80	1
	3.00	8.56	4.11	3.38	3.28	3.53	2.42	48.70	1
	2.57	6.63	6.78	5.16	3.75	3.96	1.67	32.01	1
	3.49	6.33	4.50	3.75	3.50	2.66	2.38	46.16	1
	1.75	4.55	3.18	3.26	2.03	1.98	2.30	10.96	1
$\bar{X}$	2.50	6.67	4.59	3.83	3.09	2.92	2.34	31.52	5
LABOURER	1.40	4.18	3.53	3.06	3.58	3.51	1.19	60.00	0
	2.92	10.81	6.26	5.60	5.71	4.73	2.29	60.00	0
	1.66	5.01	3.33	2.81	3.11	2.53	1.98	60.00	0
	2.80	15.18	8.99	8.01	7.70	7.11	2.14	60.00	0
	1.97	7.54	6.70	5.01	3.95	3.62	2.08	60.00	0
$\bar{X}$	2.15	8.54	5.76	4.89	4.81	4.30	1.94	60.00	0
SECRETARY	2.26	8.90	5.06	3.38	4.11	2.83	3.14	60.00	0
	3.62	24.81	7.90	4.71	3.85	4.58	5.42	47.65	1
	5.75	8.50	5.33	4.36	4.23	3.83	2.22	60.00	0
	2.38	5.28	3.53	2.72	2.63	2.40	2.20	19.45	1
	3.95	6.56	4.00	3.88	3.93	2.73	2.40	60.00	0
$\bar{X}$	3.59	10.81	5.16	3.81	3.75	3.27	3.08	49.42	2
FITTER	2.21	4.86	3.61	3.80	2.91	2.93	1.66	10.91	1
	2.33	4.95	4.51	3.85	4.16	3.83	1.29	12.85	1
	2.44	4.96	3.33	2.78	2.21	2.01	2.47	30.58	1
	2.63	7.98	6.73	5.50	4.58	3.26	2.45	33.01	1
	1.94	6.85	5.70	4.53	3.99	4.28	1.60	24.43	1
$\bar{X}$	2.31	5.92	4.77	4.09	3.57	3.26	1.89	22.35	5
WORKSHOP TECHNICIAN	2.39	6.60	4.21	4.08	3.80	4.08	1.62	23.56	1
	2.73	8.46	4.70	4.35	3.63	3.71	2.28	50.80	1
	2.08	4.83	3.23	3.56	2.80	2.48	1.95	60.00	0
	2.60	5.73	3.85	3.80	3.48	3.41	1.68	60.00	0
	1.48	8.33	5.65	5.16	4.66	4.10	2.03	29.90	1
$\bar{X}$	2.25	6.79	4.32	4.19	3.67	3.55	1.91	44.85	3
CAREERS OFFICER	4.98	7.00	4.45	3.30	3.23	3.36	1.66	18.18	1
	1.96	7.36	4.35	3.83	2.93	2.56	2.87	16.78	1
	3.15	8.51	4.96	3.85	4.01	3.58	2.38	46.10	1
	4.66	9.50	6.91	6.28	4.33	3.83	2.48	60.00	0
	2.61	5.38	4.70	4.05	4.10	3.56	1.51	28.50	1
$\bar{X}$	3.47	7.55	5.07	4.26	3.72	3.37	2.18	33.91	4

APPENDIX 15

The ANOVA Summary Tables of Contrasts between the  
Criterion Task Performances of the 7 job groups



Identification Performance

Source	SS	DF	Mean Square	F
Between Groups	16.546	6	2.758	2.624 (p < 0.05)
Within Groups	29.422	28	1.051	
Total	45.968	34		

Assembly Trial Performances (1-5)

Source	SS	DF	Mean Square	F
Between Subjects	371.039	34		
A	42.726	6	7.121	0.607
Subject within Groups	328.313	28	11.725	
Within Subjects	819.676	140		
B	487.163	4	121.791	53.732
AB	78.651	24	3.277	1.446
B x SWG	253.861	112	2.267	
A at BI	94.958	6	15.826	3.806 (p < 0.05)
SSWCELL	582.175	140	4.158	

Rate of Learning Across Assembly Trials

Source	SS	DF	Mean Square	F
Between Groups	9.412	6	1.569	2.999 (p < 0.05)
Within Groups	14.644	28	0.523	
Total	24.056	34		

APPENDIX 16

The ANOVA Summary Table of Contrasts between  
the PAQ Scores of the 7 Job Groups

Divisional Job Dimensions

Source	SS	DF	Mean Square	F
Between Subjects	51351.206	34	3687.734	3.533
A	22126.406	6	1043.743	
Subject within Groups	29224.800	28		
Within Subjects	1107305.100	1015	27068.501	226.345
B	784986.534	29	1294.320	10.823 (p < 0.001)
AB	225211.766	174	119.590	
B x SWG	97106.800	812		

General Job Dimensions

Source	SS	DF	Mean Square	F
Between Subjects	25726.482	34	2391.790	5.887
A	14350.739	6	406.277	
Subject within Groups	11375.743	28		
Within Subjects	786631.071	455	46308.810	247.550
B	602014.524	13	1493.891	7.986 (p < 0.001)
AB	116523.490	78	187.069	
B x SWG	68093.057	364		

Additive Attribute Scores

Source	SS	DF	Mean Square	F
Between Subjects	936.716	34		
A	204.930	6	34.155	1.307
Subject within Groups	731.786	28	26.135	
Within Subjects	498794.880	2625		
B	463388.507	75	6178.513	1474.007
AB	26603.919	450	59.120	14.104 (p < 0.001)
B x SWG	8802.454	2100	4.192	

Cross Product Attribute Scores

Source	SS	DF	Mean Square	F
Between Subjects	312933.994	34		
A	170185.448	6	28364.241	5.564
Subject within Groups	142748.546	28	5098.162	
Within Subjects	166666.087	2625		
B	51078.384	75	681.045	74.704
AB	96442.985	450	214.318	23.509 (p < 0.001)
B x SWG	19144.718	2100	9.117	

Critical Behaviour Attribute Scores

Source	SS	DF	Mean Square	F
Between Subjects	205137.322	34		
A	91083.867	6	15180.644	3.727
Subject within Groups	114053.455	28	4073.338	
Within Subjects	59313.576	2625		
B	4876.414	75	65.019	5.403
AB	29163.854	450	64.809	5.385 (p < 0.001)
B x SWG	25273.309	2100	12.035	

The Calculations and Interpretation of Distance Measures between Jobs and Criterion Tasks

Correlation (r)

The product-moment correlation was computed between the profiles of scores for criterion tasks and each job in the study. Correlations were calculated for each job/task comparison (ie. 7 x 3 comparisons) across the 5 sets of profiles (Divisional Job Dimensions; General Job Dimensions; Additive, Cross Product, and Critical Behaviour Attribute Profiles). Each correlation coefficient (7 x 3 x 5 = 105) was transformed to z for the purposes of further analysis. Greatest similarity was expressed as the highest transformed correlation coefficient.

Euclidean Distance ( $\Sigma d$ )

The Euclidean distance between each constituent score of the recruitment job was subtracted from the corresponding score of the criterion task. Negative scores could be regarded therefore as "surpluses". Greatest similarity was expressed as the job with the greatest cumulative surplus (negative score) down to the greatest deficit (positive score).

Squared Euclidean Distance ( $\Sigma d^2$ )

The Euclidean distance between each constituent score of the recruitment job was subtracted from the corresponding score on the criterion task. Each distance was squared and greatest similarity expressed as the job with the lowest cumulative score.

Weighted Euclidean Distance ( $\Sigma(w \times d)$ )

The Euclidean distance between each constituent score of the recruitment job was subtracted from the corresponding score on the criterion task. Each distance was multiplied by the degree of involvement (score) for the criterion task. Negative scores could be regarded as "surpluses". Greatest similarity was expressed as the job with the greatest cumulative surplus (negative score) down to the greatest deficit (positive score).

Weighted Squared Euclidean Distance ( $\Sigma(w \times d^2)$ )

The Euclidean distance between each constituent score of the recruitment job was subtracted from the corresponding score on the criterion task. Each distance was squared and then multiplied by the degree of involvement (score) for the criterion task. Greatest similarity was expressed as the job with the lowest cumulative score.

APPENDIX 18

The Distance Measures Calculated for the Three Task Aspects  
in terms of Divisional Job Dimensions, General Job Dimensions,  
Additive Attribute Profiles, Cross Product Attribute Profiles,  
and Critical Behaviour Attribute Profiles

SUMMARY OF DISTANCE MEASURES FOR DIVISIONAL JOB DIMENSIONS (30)

Task	Job Group	r (z)	$\Sigma$ D	$\Sigma$ WD	$\frac{\Sigma^2}{D^2}$	$\frac{\Sigma^2}{WD^2}$
<u>Ident</u>	CO	0.465 (0.5037)	-529	871	35607	17718507
	F	0.343 (0.3575)	-749	1826	51241	64356536
	S	0.694 (0.8556)	-414	-1070	17894	6462438
	PST	0.469 (0.5088)	-562	684	36108	33405054
	LA	0.511 (0.5641)	-466	3369	22350	30520509
	WT	0.477 (0.5191)	-826	-2989	55910	47050549
	L	0.195 (0.1975)	-588	6744	42996	76701164
<u>Assembly</u>	CO	0.552 (0.6213)	-439	3165	31005	28935489
	F	0.406 (0.4308)	-659	4656	47711	848322262
	S	0.740 (0.9505)	-324	2212	15268	15638522
	PST	0.564 (0.6387)	-472	2725	31000	44417577
	LA	0.624 (0.7315)	-376	6511	19444	38748637
	WT	0.531 (0.5915)	-736	-1352	49994	59883112
	L	0.247 (0.2522)	-498	11485	43288	88069857

Cont'd.



Task	Job Group	$r$ ( $z$ )	$\Sigma$ D	$\Sigma$ WD	$\Sigma$ D <sup>2</sup>	$\Sigma$ WD <sup>2</sup>
<u>Plan</u>	CO	0.639 (0.7565)	-330	4673	25336	19340829
	F	0.387 (0.4083)	-550	9032	47778	72662612
	S	0.743 (0.9571)	-215	6377	14913	15277671
	PST	0.632 (0.7447)	-363	4687	26239	35680719
	LA	0.661 (0.7946)	-267	10425	18587	37980655
	WT	0.526 (0.5846)	-627	1658	47329	52721820
	L	0.164 (0.1655)	-389	18710	49053	109860300



SUMMARY OF DISTANCE MEASURES FOR CROSS-PRODUCT ATTRIBUTE PROFILES (76)

Task	Job Group	r (z)	$\Sigma$ D	$\Sigma$ WD	$\Sigma$ D <sup>2</sup>	$\Sigma$ WD <sup>2</sup>
<u>Ident</u>	CO	-0.193 (-0.1955)	-1885	-17376	60013	5167086
	F	0.733 (0.9352)	-2883	-29511	110327	13170537
	S	0.463 (0.5011)	-1592	-15730	34882	3720334
	PST	-0.015 (0.0150)	-2106	-20304	67554	6668196
	LA	0.271 (0.2779)	-1462	-14186	30624	3068474
	WT	0.827 (0.1786)	-3242	-33681	139448	17482157
	L	0.442 (0.4747)	-1934	-19376	51430	5665416
<u>Assembly</u>	CO	-0.064 (-0.0641)	-1556	-20416	45024	7611228
	F	0.720 (0.9076)	-2554	-36736	86968	19571504
	S	0.607 (0.7042)	-1263	-17512	22409	4461946
	PST	0.113 (0.1135)	-1777	-24383	50487	9742595
	LA	0.400 (0.4236)	-1133	-15362	19363	3559416
	WT	0.853 (1.2671)	-2913	-42677	112547	26992101
	L	0.313 (0.3239)	-1605	-22129	37015	7185189

Cont'd.

435.

Task	Job Group	r (z)	$\Sigma$ D	$\Sigma$ WD	$\Sigma$ D <sup>2</sup>	$\Sigma$ WD <sup>2</sup>
<u>Plan</u>	CO	0.181 (0.1830)	-1196	-21314	30222	9377280
	F	0.512 (0.5654)	-2194	-40850	65734	23437442
	S	0.671 (0.8126)	- 903	-16073	12281	3690155
	PST	0.338 (0.3518)	-1417	-26180	33887	11692070
	LA	0.468 (0.5075)	- 773	-13293	10495	2824093
	WT	0.733 (0.9352)	-2553	-48758	87379	34234384
	L	0.013 (0.0130)	-1245	-21311	25645	6989581

SUMMARY OF DISTANCE MEASURES FOR CRITICAL BEHAVIOUR ATTRIBUTE PROFILES

Task	Job Group	r (z)	$\Sigma$ D	$\Sigma$ WD	$\Sigma$ D <sup>2</sup>	$\Sigma$ WD <sup>2</sup>
<u>Ident</u>	CO	-0.274 (-0.2812)	- 150	- 39	2586	90779
	F	0.582 (0.6655)	-1037	-7976	15227	992794
	S	0.403 (0.4272)	352	3601	2416	285739
	PST	-0.124 (-0.1246)	- 195	- 473	3761	144739
	LA	0.353 (0.3689)	114	1650	970	105348
	WT	0.742 (0.9549)	- 740	-5820	7906	568312
	L	0.119 (0.1196)	- 100	21	1470	69079
<u>Assembly</u>	CO	-0.200 (-0.2027)	197	4354	3553	749158
	F	0.607 (0.7042)	-690	-7917	7526	983969
	S	0.488 (0.5334)	699	10238	7871	1975320
	PST	-0.081 (-0.0812)	152	3697	4282	800873
	LA	0.446 (0.4797)	461	7144	4139	1087374
	WT	0.763 (1.0034)	-393	-4466	2795	378150
	L	0.044 (0.0440)	247	4688	2985	780456

Cont'd.

Task	Job Group	$r$ ( $z$ )	$\Sigma$ D	$\Sigma$ WD	$\Sigma$ D <sup>2</sup>	$\Sigma$ WD <sup>2</sup>
<u>Plan</u>	CO	0.032 (0.0320)	516	10943	6702	2808013
	F	0.253 (0.2586)	- 371	-4274	4783	668866
	S	0.147 (0.1481)	1018	19307	15980	6727503
	PST	0.180 (0.1820)	471	9845	6549	2477085
	LA	0.164 (0.1655)	780	15275	10372	4513545
	WT	0.488 (0.5334)	- 74	220	2138	427144
	L	-0.283 (-0.2909)	566	12168	7916	3589958

## SUMMARY OF DISTANCE MEASURES FOR GENERAL JOB DIMENSIONS (14)

Task	Job Group	r (z)	$\Sigma$ D	$\Sigma$ WD	$\Sigma^2$ D	$\Sigma^2$ WD
<u>Ident</u>	CO	0.558 (0.6299)	18	6357	12142	43899119
	F	0.187 (0.1892)	-89	8734	35815	133599760
	S	0.477 (0.5191)	-29	7223	13551	61202997
	PST	0.299 (0.3084)	-15	9133	20803	92717695
	LA	0.281 (0.2888)	65	10772	20445	122213560
	WT	0.254 (0.2597)	-169	5694	40049	118931650
	L	0.128 (0.1287)	32	11844	34290	163610100
<u>Assembly</u>	CO	0.628 (0.7381)	28	7475	11358	4391775
	F	0.311 (0.3217)	-79	8475	32277	134006320
	S	0.554 (0.6241)	-19	8411	12907	63379957
	PST	0.408 (0.4332)	-5	9818	19153	92877770
	LA	0.348 (0.3632)	75	12291	20463	123752570
	WT	0.381 (0.4012)	-159	4851	35343	119177110
	L	0.208 (0.2111)	42	12884	33350	163965150

Cont'd.

Task	Job Group	r (z)	$\Sigma$ D	$\Sigma$ WD	$\Sigma_2$ D	$\Sigma_2$ WD
<u>Plan</u>	CO	0.674 (0.8180)	57	7018	9977	44615982
	F	0.340 (0.3541)	-50	7831	30522	134599820
	S	0.612 (0.7121)	10	7715	11048	62369981
	PST	0.441 (0.4735)	24	9395	17840	93435945
	LA	0.393 (0.4153)	104	11863	19140	122882100
	WT	0.409 (0.4344)	-130	4008	33190	120805170
	L	0.205 (0.2079)	71	13111	33337	164013490

SUMMARY OF DISTANCE MEASURES FOR ADDITIVE ATTRIBUTE PROFILES (76)

Task	Job Group	r (z)	$\Sigma$ D	$\Sigma$ WD	$\Sigma^2$ D	$\Sigma^2$ WD
<u>Ident</u>	CO	0.770 (1.023)	-56	4073	8608	7327553
	F	0.932 (1.673)	-68	3562	3164	2959378
	S	0.905 (1.505)	-107	1929	3935	3017861
	PST	0.862 (1.305)	-75	2923	5249	4414897
	LA	0.894 (1.441)	-89	2675	4209	3592933
	WT	0.943 (1.764)	-85	2553	2775	2306727
	L	0.917 (1.569)	-41	4988	3807	3949060
<u>Assembly</u>	CO	0.797 (1.09)	45	6636	7671	7594872
	F	0.937 (1.713)	34	6523	2940	3672159
	S	0.923 (1.609)	-5	4619	3169	3157295
	PST	0.881 (1.380)	17	5409	4577	4626523
	LA	0.912 (1.539)	13	5395	3503	3775493
	WT	0.948 (1.812)	37	6123	3049	3426897
	L	0.915 (1.557)	61	8099	3859	5103049

Cont'd.

441.

Task	Job Group	r (z)	$\Sigma$ D	$\Sigma$ WD	$\Sigma^2$ D	$\Sigma^2$ WD
<u>Plan</u>	CO	0.834 (1.198)	113	8499	6643	6955431
	F	0.934 (1.689)	103	9174	3425	4890570
	S	0.938 (1.721)	64	6915	2944	3379637
	PST	0.905 (1.499)	86	7570	4082	4461100
	LA	0.928 (1.644)	82	7685	3266	4017077
	WT	0.944 (1.773)	106	8763	3512	4532981
	L	0.900 (1.467)	130	10968	4780	7052996



## APPENDIX 19

Overall Summary of Validity of Divisional Job Dimensions (Note 1)

<u>Task Measure</u>	<u>Similarity Measure</u>				
	(r)	( $\Sigma D$ )	$\Sigma$ (WD)	( $\Sigma D^2$ )	$\Sigma$ (WD <sup>2</sup> )
Identification	-0.677	0.781*	-0.082	-0.858*	-0.802*
Assembly 1	-0.564	0.798*	0.247	-0.795*	-0.557
Assembly 2	0.364	0.390	0.730	-0.073	0.194
Assembly 3	0.825*	0.289	0.598	0.581	0.656
Assembly 4	0.586	-0.062	0.603	0.338	0.481
Assembly 5	0.673	-0.236	0.531	0.491	0.574
Rate of Learning	0.795*	-0.805*	0.000	0.937**	0.728
Plan (Note 2)	-0.09	0.33	0.51	-0.09	0.16

\* p &lt; 0.05

\*\* p &lt; 0.01

Note 1 Signs corrected for direction (ie. positive signs indicate a positive correlation between greater 'similarity' and better performance)

Note 2 Spearman's Rank Correlation. All other correlations are product-moment coefficients.

Overall Summary of Validity of General Job Dimensions (Note 1)

Task Measure	(r)	Similarity Measure			
		$\Sigma$ (D)	$\Sigma$ (WD)	$\Sigma$ (D <sup>2</sup> )	$\Sigma$ (WD <sup>2</sup> )
Identification	-0.686	0.554	-0.087	-0.820*	-0.603
Assembly 1	-0.222	0.530	0.400	-0.478	-0.194
Assembly 2	0.064	0.501	0.511	-0.730	0.127
Assembly 3	0.407	0.087	0.243	0.516	0.506
Assembly 4	0.310	0.121	0.276	0.382	0.416
Assembly 5	0.398	-0.002	0.195	0.527	0.504
Rate of Learning	-0.299	-0.513	-0.335	0.639	0.337
Plan (Note 2)	0.26	0.58	0.44	0.33	0.30

\*  $p < 0.05$

\*\*  $p < 0.01$

Note 1 Signs corrected for direction (ie. positive signs indicate a positive correlation between greater 'similarity' and better performance).

Note 2 Spearman's rank correlation. All other correlations are product moment coefficients

## Overall Summary of Validity of Additive Attribute Profiles (Note 1)

Task Measure	(r)	Similarity Measure			
		$\Sigma$ (D)	$\Sigma$ (WD)	$\Sigma^2$ (D <sup>2</sup> )	$\Sigma^2$ (WD <sup>2</sup> )
Identification	0.526	-0.496	-0.417	0.434	0.325
Assembly 1	0.029	-0.425	-0.377	-0.132	-0.198
Assembly 2	0.256	0.485	0.552	0.200	0.365
Assembly 3	0.182	0.941**	0.951**	0.154	0.406
Assembly 4	-0.103	0.738	0.760*	-0.017	0.205
Assembly 5	-0.174	0.815*	0.819*	-0.045	0.188
Rate of Learning	-0.096	0.800*	0.739	0.128	0.296
Plan (Note 2)	0.05	0.09	0.09	-0.09	-0.02

\* p &lt; 0.05

\*\* p &lt; 0.01

Note 1 Signs corrected for direction (ie. positive signs indicate a positive correlation between greater 'similarity' and better performance)

Note 2 Spearman's Rank Correlation. All other correlations are product-moment coefficients

Overall Summary of Validity of Cross-Product Attribute Profiles (Note 1)

Task Measure	(r)	Similarity Measure			
		$\Sigma$ (D)	$\Sigma$ (WD)	$\Sigma^2$ (D <sup>2</sup> )	$\Sigma^2$ (WD <sup>2</sup> )
Identification	0.515	0.743	0.744	-0.691	-0.686
Assembly 1	0.134	0.785*	0.755*	-0.788*	-0.726
Assembly 2	0.408	0.455	0.464	-0.509	-0.524
Assembly 3	0.100	-0.147	-0.132	0.114	0.092
Assembly 4	0.005	0.036	0.035	-0.085	-0.078
Assembly 5	-0.084	-0.124	-0.124	0.082	0.089
Rate of Learning	-0.175	-0.758*	-0.730	0.739	0.686
Plan (Note 2)	0.21	0.54	0.54	-0.68	-0.54

\*  $p < 0.05$

\*\*  $p < 0.01$

Note 1 Signs corrected for direction (ie. positive signs indicate a positive correlation between greater 'similarity' and better performance)

Note 2 Spearman's Rank Correlation. All other correlations are product-moment coefficients

Overall Summary of Validity of Critical Behaviour Attribute Profiles  
(Note 1)

Task Measure	(r)	Similarity Measure			
		( $\Sigma d$ )	( $\Sigma WD$ )	( $\Sigma D^2$ )	( $\Sigma WD^2$ )
Identification	0.263	0.694	0.688	-0.529	-0.438
Assembly 1	0.027	0.880**	0.855*	0.201	0.741
Assembly 2	0.500	0.400	0.418	0.034	0.290
Assembly 3	0.241	-0.165	-0.152	-0.503	-0.450
Assembly 4	0.136	0.079	0.080	-0.229	-0.059
Assembly 5	0.062	-0.054	-0.055	-0.384	-0.257
Rate of Learning	0.013	-0.774*	-0.753	-0.320	-0.720
Plan (Note 2)	0.57	0.75	0.75	0.64	0.64

\*  $p < 0.05$

\*\*  $p < 0.01$

Note 1 Signs corrected for direction (ie. positive signs indicate a positive correlation between greater 'similarity' and better performance)

Note 2 Spearman's Rank Correlation. All other correlations are product-moment coefficients.



REFERENCES

- AKRIDGE R. L. (1979) The psychosocial development matrix: A taxonomy of intermediate objectives in the psychosocial domain. Psychosocial Rehabilitation Journal, 3, 27-37.
- ALTMAN J. W. (1976) Transferability of vocational skills. Review of literature and research. Ohio State University.
- ANASTASI A. (1958) Differential Psychology. New York: Macmillan.
- ANASTASI A. (1976) Psychological Testing. Macmillan.
- ANDERSON J. R. (1976) Language, Memory and Thought. Hillsdale, N.J.: Erlbaum.
- ANDERSON J. R. & BOWER G. H. (1973) Human Associative Memory. New York: Wiley.
- ANDERSON R. C. (1978) Schema directed processes in language comprehension. In: A. Lesgold, J. Pellegrino, S. Fokkema & R. Glaser (Eds.) Cognitive Psychology and Instruction. New York: Plenum.
- ANDERSON R. C. & PICHERT J. W. (1978) Recall of previously unrecallable information following a shift in perspective. J. of Verb. Learning & Verb. Behav., 17, 1-12.
- ANNETT J. & DUNCAN K. D. (1967) Task Analysis and Training Design. Occupational Psychology, 41, 211-221.
- ARROBA T. (1977) Styles of decision-making and their use: An empirical study. Br.J.Guidance & Counselling, 5, 149-158.
- ARVEY R. D. & MOSSHOLDER K. M. (1977) A proposed methodology for determining similarities and differences among jobs. Personnel Psychology, 30, 363-374.
- ARVEY R. D., PASSINO E. M. & LOUNSBURG J. W. (1977) Job analysis results as influenced by sex of incumbent and sex of analyst. J.App.Psy, 62, 411-416.
- ASH R. A. & EDGELL S. S. (1975) A note on the readability of PAQ. J.App.Psy., 60, 765-766.
- ASHLEY W. L. (1977) Occupational information resources. A catalogue of data bases and classification schemes. Ohio State University.
- AUBLE P.M. & FRANKS J. J. (1978) The effects of effort toward comprehension on recall. Memory and Cognition, 6, 20-25.
- AUSUBEL D. P. (1963) The Psychology of Meaningful Verbal Learning. Grune and Stratton: N.Y.
- BAEHR M. E. & WILLIAMS G. B. (1967) Underlying dimensions of personal relationship to occupational

- BAKAMIS W. A. & KUHL R. E. (1967) Identification of task and knowledge clusters associated with major types of building trades work. US Dept. of Health Education and Welfare Tech. Report. Final Report No. 7.
- BALMA J. J. (1959) The development of processes for indirect or synthetic validity: The concept of synthetic validity. Personnel Psych., 12, 395-396.
- BANKS M. H., JACKSON P. R., STAFFORD E. M. & WARR P. B. (1983) The job components inventory and the analysis of jobs requiring limited skill. Personnel Psychology, 36, 57-66.
- BARNETTE W. L. (1950) Occupational aptitude pattern research. Occupation, 29, 5-12.
- BARTLETT F. C. (1932) Remembering. Cambridge: Cambridge University Press.
- BAUKUS E. J. (1973) The relationship between synthetically derived job profiles and a personality inventory profile of first line supervisors. Diss.Ab.Int., 34(5-B), 2350.
- BELL D. (1974) Notes on the post-industrial society. In N. Cross, D. Elliot & R. Roy (eds.) Man-made futures. Hutchinson.
- BERNSTEIN B. E. (1976) How father absence in the home affects the mathematics skills of fifth graders. Family Therapy, 3, 47-59.
- BILODEAU E. & BILODEAU I. (1961) Motor-skills learning. Annual Rev. of Psychology, 12, 243-280.
- BINGHAM W. V. (1935) Classifying and testing for clerical jobs. Personnel Journal, 14, 163-172.
- BIRKBECK (1960) Test 2 Mechanical Comprehension. From Birkbeck Tests 1-5. London: Peter Cavanagh.
- BIRT J. A. (1968) The effect of consistency of job information upon simulated airmen reassignment. PhD. Thesis, Purdue University.
- BLASHFIELD R. K. (1976) Mixture model tests of cluster analysis: Accuracy of four agglomerative hierarchical methods. Psychological Bulletin, 83, 377-388.
- BRAMER L. M. & ARBRAGO P. J. (1981) Intervention strategies for coping with transitions. Counselling Psychologist, 9, 19-36.
- BRANSFORD J. D. (1982) Differences in approaches to learning. Journal of Experimental Psychology, General, III, 390-398.
- BRANSFORD J. D. & MCCARRELL N. S. (1974) A sketch of cognitive approaches to comprehension: some thoughts about understanding what it means to comprehend. In W. B. Weiner & D. S. Palermo (eds.) Cognition and the Symbolic Processes. Hillsdale, N. J.:



- BROOKE J. B., DUNCAN K. D. & COOPER C. (1980) Interactive instruction of solving fault-finding problems. An experimental study. Int.J. Man-Machine Studies, 12, 217-227.
- BROTHERTON C. (1980) Paradigms of selection validation: some comments in the light of British Equal Opportunities Legislation. J. Occ. Psych., 53, 73-79.
- BRUMBACH G. B. & VINCENT J. W. (1970) Factor analysis of work performed data for a sample of administrative, professional and scientific positions. Personnel Psychology, 23, 101-107.
- BRUSH D. H. & OWENS W. A. (1979) Implementation and evaluation of an assessment classification model for manpower utilisation. Personnel Psychology, 32, 369-383.
- BUCKLEY G. J. (1968) Reading achievement in grade five and its relationship to parental occupation, verbal intelligence and certain environmental factors. Diss. Abst. Int., 29, 757-758.
- BUNCH M. E. (1941) A comparison of retention and transfer of training from similar material after relatively long intervals of time. Journal of Comparative Psychology, 32, 217-231.
- BUROS O.K. (1978) The Eighth Mental Measurements Yearbook.
- CALITZ C. J., HILAAEL T. M., McCORMICK E. J. & PETERS L. H. (1974) Job characteristics, personal interests and response disposition of incumbents as related to job satisfaction. Dept. of Psychological Science, Purdue Report No.8.
- CANNELL C. F. & KAHN R. L. (1953) The collection of data by interviewing. In L. Festinger & D. Kartz (eds.) Research Methods in the Behavioural Sciences. Holt Rinehart & Winston: New York.
- CARDALL A. J. (1942) A test for primary business interests based on a functional occupational classification. Educational and Psychological Measurement, 2, 113-138.
- CARLSON R. K., THAYER B., MAYFIELD J. & PETERSON N. (1971) Improvements in the selection interview. Personnel Journal, 50, 68-75.
- CARROLL J. B. (1972) Defining Language Comprehension: some specifications. In R. O. Freedle & J. B. Carroll (eds.) Language Comprehension and the Acquisition of Knowledge. London: John Wiley & Sons.
- CATTELL R. B. (1946) Description and measurement of personality. Yonkers, N.Y.: World Book Co.
- CATTELL R. B. (1949)  $r$  and other coefficients of pattern similarity. Psychometrika, 14, 279-298.
- CATTELL R. B. (1957) Personality and motivation structure and measurement. Yonkers, N.Y.: World Book Co.
- CATTELL R. B. (1958) Factor analysis equations and solutions for

- CATTELL R. B. (1965) The Scientific Analysis of Personality Harmondsworth: Penguin.
- CATTELL R. B. (1971) Handbook of modern personality theory. Chicago: Aldino.
- CATTELL R. B. (1973) Personality and mood by questionnaire. San Francisco: Jossey-Bass.
- CATTELL R. B., DAY M. & MEELAND T. (1956) Occupational Profile of the 16PF Questionnaire. Occupational Psych., 30, 10-19.
- CHAMPAGNE J. E. & McCORMICK E. J. (1964) An investigation of the use of worker-oriented job variables in job evaluation. Occupational Research Centre, Purdue University, Report No. 7.
- CHENG N. Y. (1929) Retroactive effect and degree of similarity. Journal of Experimental Psychology, 12, 444-449.
- CHILD D. (1970) The Essentials of Factor Analysis. London: Holt, Rinehart and Winston.
- CHITTENDEN E. A., FOAN M. W., ZWELL D. M. & SMITH J. R. (1968) Social achievement of first and second-born siblings. Child Development, 39, 1223-1228.
- CHRISTAL R. E. (1974) Systematic method for establishing officer grade requirements based upon job demands. US AFHRL Tech Report (July), No.75-36.
- COLBERT G. A. & TAYLOR L. R. (1978) Generalisation of Selection Test Validity. Personnel Psych., 31, 355-364.
- COLLINS A. M. & LOFTUS E. F. (1975) A spreading-activation theory of semantic processing. Psychological Review, 82, 407-428.
- COOPER H., FINDLEY M. & GOOD T. (1982) Relations between student achievement and various indexes of teacher expectations. J.Educational Psych., 74, 577-579.
- CORNELIUS E. T., CARRON T. J. & COLLINS M. N. (1979) Job Analysis and Job Classification. Personnel Psychology, 32, 693-708.
- CORNELIUS E. T., HAKEL M. D. & SACKETT P. (1979) A methodological approach to job classification for performance appraisal purposes. Personnel Psychology, 32, 283-298.
- COSPER R. (1972) Interviewer effect in a survey of drinking practices. Sociological Quarterly, 13, 228-236.
- CRABTREE P. D. & HALES L. W. (1974) Holland's hexagonal model applied to rural youth. Vocational Guidance Quarterly, 22, 218-223.
- CRAGUN J. R. & McCORMICK E. J. (1967) Job inventory information: Task and scale reliabilities and scale inter-relationships. Tech. Rep. Research Lab.

- CRANO W. D., KENNY D. A. & CAMPBELL D. T. (1972) Does intelligence cause achievement? A cross-lagged panel analysis. J.Ed.Psych., 63, 258-275.
- CREASER J. W. (1976) Occupational groupings of the Strong Vocational Interest Blank and the Strong Campbell Interest Inventory. J.App.Psych., 61, 238-241.
- CRONBACH L. J. (1970) Essentials of Psychological Testing. 3rd Edn. Harper & Row.
- CRONBACH L. J. & GLESER G. C. (1953) Assessing similarity between profiles. Psychological Bulletin, 50, 456-473.
- CRONBACH L. J., GLESER G. C., NANDA H. & RAJARATNAM N. (1970) The dependability of behavioural measurements. New York: Wiley.
- CUNNINGHAM J. W., PHILLIPS M. R. & SPETZ S. H. (1976) An exploratory study of a job-component approach to estimating the human ability requirements of job classifications in a state competitive service system. Raleigh, N.C. North Carolina Office of State Personnel.
- CURETON E. E. (1973) Length of test and standard error of measurement. Ed. & Psych. Meas., 33, 63-68.
- DALLETT K. M. (1965) A transfer surface for paradigms in which second-list S-R pairings do not correspond to first-list pairings. J.Verb.Learn. & Verb. Behav., 4, 528-534.
- DENISI A. S. (1976) The implications of job clustering for training programmes. J.Occ.Psy., 49, 105-113.
- DENISI A. S. & McCORMICK E. J. (1974) The cluster analysis of jobs based on data from PAQ. Dept. of Science Report No. 7, Purdue University.
- DODGE A. F. (1935) Occupational ability patterns. Teachers College Contribution to Ed. No. 658, N.Y. Columbia University, Teachers College.
- DOWELL B. E. & WEXLEY K. N. (1978) Development of a work behaviour taxonomy for first line supervisors. J.App.Psych., 63, 563.
- DOWNS S. & PERRY P. (1982) How do I learn? J.European Indust.Training, 6, 27-32.
- DREISS T. A. (1933) Two studies in retraction: I. Influence of partial identity. II. Susceptibility by retroaction at various grade levels. J.Gen.Psych., 8, 157-171.
- DULEWICZ S. U. & KEENAY G. A. (1979) A practically oriented and objective method of classifying and assigning senior jobs. J.Occ.Psy., 52(3), 155-166.
- DU MAS F. M. (1947) On the interpretation of personality profiles. J.Clin.Psych., 3, 57-65.

- DUNCAN C. P. (1960) Description of learning how to learn in human subjects. Amer.J.Psych., 73, 108-114.
- DUNCAN K. D. (1972) Strategies for analysis of the task. In J. Hartley (ed.) Strategies for programmed instruction: An educational technology. London: Butterworth.
- DUNCAN K. D. (1975) An analytical technique for industrial training. In W. T. Singleton & P. Spurgeon (eds.) Measurement of Human Resources. London: Taylor & Francis.
- DUNN J. (1977) Grouping of Skills Project: Background and Present Work. Training Services Agency.
- DUNNETTE M. D. (1976) Aptitudes, Abilities and Skills. In M. D. Dunnette (ed.) Handbook of Industrial and Organisational Psychology. Chicago: Rand-McNally.
- DUNNETTE M. D. & ENGLAND G. W. (1957) A checklist for differentiating engineering jobs. Personnel Psychology.
- DUNNETTE M. D. & KIRCHNER W. K. (1959) A checklist for differentiating different kinds of sales jobs. Personnel Psychology, 12, 421-429.
- EBERHARDT B. J. & MUCHINSKY P.M. (1982) Biodata determinants of vocational typology: An integration of two paradigms. J.App.Psych., 67, 714-727.
- EBERT E. & MEUMANN E. (1905) German reference cited in Postman (1971) in Kling J. W. & Riggs L. A. (eds.) Woodworth and Schlosberg's Experimental Psychology, 3rd ed. 1971.
- ELIO R. & ANDERSON J. R. (1981) The effects of category generalisations and instance similarity on schema abstraction. J.Exp.Psych., 7, 397-417.
- ELLIS H. E. (1965) The Transfer of Learning. New York: MacMillan.
- EMSLEY H. H. (1976) Visual Optics, Vol. 1. London: Butterworths.
- ERTEL K. A. (1967) Identification of major tasks performed by merchandising employees working in three standard industrial classifications of retail establishments. US Dept. of Health Education, Welfare Office of Education, Final Report No. 6.
- EYSENCK H. J. (1953) Uses and Abuses of Psychology. Penguin.
- EYSENCK H. J. (1981) What are Intelligence Tests? In H. J. Eysenck & L. Kamin (eds.) Intelligence: The Battle for the Mind. London: Pan.
- FERGUSON G. A. (1954) On learning and human ability. Canadian Journal of Psychology, 8, 95-112.
- FERGUSON G. A. (1956) On transfer and the ability of man. Canadian Journal of Psychology, 10, 121-131.
- FITTS P. M. (1964) Perceptual motor skill learning. In A. W. Melton (ed.) Categories of Human Learning. New York: Academic Press.

- FLANAGAN J. C. (1954) The critical incident technique. Psych. Bulletin, 51, 327-358.
- FLEISHMAN E. A. (1954) Dimensional analysis of psychomotor abilities. J.Exp.Psych., 48, 437-450.
- FLEISHMAN E. A. (1966) Human abilities and the acquisition of skill. In E. A. Bilodeau (ed.) Acquisition of Skill. New York: Academic Press.
- FLEISHMAN E. A. (1967a) Development of a behaviour taxonomy for describing human tasks: A correlational experiment. J.App.Psych., 51, 1-10.
- FLEISHMAN E. A. (1967b) Performance assessment based on an empirically derived task taxonomy. Human Factors, 9, 349-366.
- FLEISHMAN E. A. (1975) Toward a taxonomy of human performance. Am.Psychologist, 30, 1127-1149.
- FLEISHMAN E. A. & HEMPEL W. E. (1954) Changes in factor structure of a complex psychomotor test as a function of practice. Psychometrika, 19, 239-252.
- FLEISHMAN E. A. & HEMPEL W. E. (1955) The relation between abilities and improvement with practice in a visual discrimination reaction task. J.Exp.Psych., 49, 301-312.
- FLEISHMAN E. A. & HOGAN J. C. (1978) A taxonomic method for assessing the physical requirements of jobs: the physical abilities analysis approach. Washington D.C., Advanced Research Resources Organisation.
- FREEDLE R. O. & CARROLL J. B. (1972) Language Comprehension and the Acquisition of Knowledge. London: John Wiley & Sons.
- FREEDMAN R. D. & STUMPF S. A. (1978) What can one learn from the Learning Style Inventory? Academy of Management Journal, 21(2), 275-282.
- FRENCH J. W., EKSTROM R. B. & PRICE L. A. (1963) Kit of reference tests for cognitive factors. Princeton: Educational Testing Service.
- FRESHWATER M. R. (1980) Making the most of training workshop opportunities using a basic skills checklist. D.T.P. Reports 21 & 22. MSC, Sheffield.
- FRESHWATER M. R. (1981) The Basic Skills Analysis. MSC Training Studies Sheffield.
- FRESHWATER M. R. (1982) Basic Skills Analysis. Paper presented to Symposium, Warwick University.
- FRESHWATER M. R. & TOWNSEND C. (1977) Analytical techniques for skill comparison. Training Services Agency.
- FREYD M. (1923) Measurement in Vocational Selection: An outline of research procedure. J.Personnel Research, 2, 215-249.
- FRIELING E., KANNHEISER & LINDBERG. (1974) Some results with German PAQ. J.App.Psych., 59, 741-747.

- GHISELLI E. E. (1966) The validity of occupational aptitude tests. New York: Wiley.
- GHISELLI E. E. (1973) The Validity of Aptitude Tests in Selection. Personnel Psychology, 26, 461-477.
- GORDON G. G. (1963) An investigation of the dimensions of worker oriented job variables. Unpublished PhD. thesis Purdue University.
- GORDON G. G. & McCORMICK E. J. (1962) A study of the activity connotations of job related verbs. For Office of Naval Research, Report No.1, Occ. Res. Centre, Purdue.
- GOSE A., WOODEN S. & MILLER D. (1980) The relative potential of self-concept and intelligence as predictors of achievement. J.Psych., 104, 279-287.
- GOTTFREDSON G. D. (1977) Career stability and redirection in adulthood. J.Applied Psych., 62, 436-445.
- GOTTFREDSON L. S. (1978) The construct validity of Holland's occupational classification in terms of prestige, census, Department of Labour and other classification systems. Johns Hopkins University.
- GOTTFREDSON L. S. (1980) Construct validity of Holland's occupational typology in terms of prestige, census, Department of Labour and other classification systems. J.App.Psych., 65, 697-714.
- GOTTFREDSON G. D. & DAIGER D. C. (1977) Using a classification of occupations to describe age, sex and time differences in employment patterns. Center for Social Organisation of Schools Report. John Hopkins University.
- GROSS A. L. (1982) Predicting academic achievement over a one-year period. Educational and Psychological Measurement, 42, 371-375.
- GUILFORD J. P. (1954) Psychometric Methods. New York: McGraw-Hill.
- GUILFORD J. P. (1956) The structure of intellect. Psychol. Bull., 53, 267-293.
- GUILFORD J. P., CHRISTENSON P. R., BOND N. A. & SUTTON M. A. (1954) A factor analysis study of human interests. Psych. Monograph, 68(4), Whole No. 375.
- GUION R. M. (1976) Recruiting, selection and job placement. In M. D. Dunnette (ed.) Handbook of Industrial and Organisational Psychology. Rand McNally.
- GUSTAFSON R. A. (1970) Factor analysing the Iowa Tests of Basic Skills. Psychology in the Schools, 7, 226-227.
- HAGENAARS J. A. & HEINEN T. G. (1982) Role independent interviewer characteristics. In W. Dijkstra & J van der Zouwen (eds.) Response Behaviour in the Survey Interview. Academic Press.
- HAMON L. (1977) Job Descriptors, Volume II. Training Services Agency.

- HARDEN L. M. (1929) A quantitative study of the similarity factor in retroactive inhibition. J.Gen.Psychology, 2, 421-430.
- HARDING F. D. & DOWNEY R. L. (1964) Electronic engineer job types in the Air Force Systems Command. Larkland Air Force Base, Pers. Res. Lab.
- HARLOW H. F. (1949) The formulation of learning sets. Psychological Review, 56, 51-65.
- HARRIS A. F. & McCORMICK E. J. (1973) The analysis of rates of naval compensation by the use of a structured job analysis procedure. Dept. Psych. Sciences, Purdue, Report No. 3.
- HARRISON C. (1980) Readability in the Classroom. Cambridge: Cambridge University Press.
- HARVEY N. & GREER K. (1980) Action: the mechanisms of motor control. In G. Claxton (ed.) Cognitive Psychology: new directions. Routledge & Kegan Paul.
- HAYES C., FONDA N. & STUART R. (1983) YTS and training for skill ownership. Employment Gazette, 344-348.
- HEBB D. O. (1949) The organisation of behaviour. New York: Wiley.
- HEMPHILL J. K. (1960) Dimensions of executive positions. Research Monograph No. 89, Bureau of Business Research, Ohio State University.
- HENRICKSON K. F. (1980) Identification of combat unit leader skills and leader-group interaction processes. Alexandria: Kinton Inc.
- HERMANN G. D. (1978) Learning by discovery: incidental learning and presentation of rule. Psychological Reports, 43, 732-734.
- HILGARD E. R. (1956) Theories of Learning. New York: Appleton-Century-Crofts.
- HODGKISS J. (1979) Differential Aptitude Tests - British Manual. Windsor: NFER.
- HOLDING D. H. (1976) An approximate transfer surface. J.Motor Behaviour, 8(1), 1-9.
- HOLLAND J. L. (1973) Applying an occupational classification to a representative sample of work histories. J.App.Psych., 58, 34-41.
- HOLLAND J. L., VIERNSTEIN M. C., KUO H., KARWEIT N. L. & BLUM Z. D. (1972) A psychological classification of occupations. JSAS Catalog of Selection Development in Psychology, 84, MS No. 184.
- HOLLAND J. L. & WHITNEY D. R. (1969) Career Development. Review of Educational Research, 39, 227-237.
- HOLLAND J. L., WHITNEY D. R., COLE N. S. & RICHARDS J. M. (1969) An empirical occupational classification derived from a theory of personality and intended for practice and research. ACT Research Report, Iowa City.

- HOLZINGER K. J. (1937) Twins; A study of heredity and environment. Chicago: University of Chicago Press.
- HONEY P. & MUMFORD A. (1982) A manual of learning styles.
- HOONSELL D. (1979) Learning to learn. Research and development in student learning. Int.J.Higher Education, 8, 453-471.
- HOUSTON J. P. (1964) Verbal transfer and interlist similarities. Psychological Review, 71, 412-414.
- HUNT J. McV. (1961) Intelligence and Experience. New York: Renold Press.
- HUNT R. M. & ROUSE W. B. (1981) Problem-solving skills of maintenance trainees in diagnosing faults in simulated power plants. Human Factors, 23, 317-328.
- HUTCHINSON T. & ROE A. (1968) Studies of occupational history. J.Counselling Psych., 15, 107-110.
- JACKSON D. N. & WILLIAMS D. R. (1975) Occupational classification in terms of interest patterns. J.Voc.Behav., 6, 269-280.
- JAMES W. (1890) Principles of Psychology. New York: Holt.
- JEANNERET P. R. & McCORMICK E. J. (1969) The job dimensions of worker-oriented job variables and their attribute profiles as based on data from PAQ. Occ.Res. Centre, Purdue University.
- JOHNSON D. M. & MOORE J. C. (1973) An investigation of Holland's theory of vocational psychology. Measurement and Evaluation in Guidance, 5, 488-495.
- JOHNSON L. M. (1933) Similarity of meaning as a factor in retroactive inhibition. J.Gen.Psych., 9, 377-388.
- KAWULA H. J. & SMITH A. D. (1975) Generic Skills: Handbook of Occupational Information. Prince Albert, SK., Canada Manpower & Information Dept., Training Research & Development Station.
- KENNELLY T. W. (1941) The role of similarity in retroactive inhibition. Arch.Psychology, 37, 260.
- KESSELMAN G. A. & LOPEZ F. E. (1979) The impact of job analysis on employment test validation for minority and non-minority accounting personnel. Personnel Psychology, 32, 91-108.
- KIMBLE G. (1961) Conditioning and Learning. New York: Appleton, Century, Crofts.
- KLEIN A. E. (1980) Redundancy in the Comprehensive Tests of Basic Skills. Ed. & Psy. Meas., 40, 1105-1110.
- KLEIN A. E. (1981) Redundancy in the Iowa Tests of Basic Skills. Ed. & Psy. Meas., 41, 537-544.
- KLEINMAN M. (1977) Ability factors in motor learning. Perceptual & Motor Skills, 44, 827-836.



- KLINE P. (1980) The Psychometric Model of Man. In A. Chapman & D. Jones (eds.) Models of Man. Leicester: BPS.
- KLINE P. (1983) Personality: Measurement and Theory. London: Hutchinson.
- KUDER G. F. (1946) Manual for the Kuder Preference Record. Chicago: Science Research Association.
- LANDIS J. R., SULLIVAN D. & SHELEY J. (1973) Feminist attitudes as related to the sex of the interviewer. Pacific Sociological Review, 16, 305-314.
- LAWSHE C. H. (1952) What can industrial psychologists do for small businesses? Pers.Psych., 5, 31-34.
- LEHRER B. E. & HIERONYMUS A. N. (1977) Predicting achievement using intellectual academic-motivational and selected non-intellectual factors. J.Experimental Education., 45, 44-51.
- LEVINE E. L., ASH R. A. & BENNETT N. (1980) Exploratory comparative study of four job analysis methods. J.Applied Psych., 65, 524-535.
- LEVINE J. R., ROMASHKO T. & FLEISHMAN E. A. (1973) Evaluation of an abilities classification system for integrating and generalising human performance research findings. An application to vigilance tasks. J.App.Psych., 58, 149-157.
- LEVINE J. M., SCHULMAN D., BRAHMLEK R. E. & FLEISHMAN E. A. (1980) Trainability of abilities: training and transfer of spatial visualisation. Cat. of Sel.Docs. in Psy., 10(82), 2119.
- LINN R. L., ROCK D. A. & CLEARY T. A. (1969) The development and evaluation of several programmed testing methods. Ed. & Psych.Meas., 29, 129-146.
- LISSITZ R. W., MENDOZA J. L., HUBERTY C. J. & MARKOS H. V. (1979) Some further ideas on a methodology for determining job similarities/differences. Personnel Psych., 32, 517-528.
- LIVESEY J. P. & LASZLO J. I. (1979) Effect of task similarity on transfer performance. J.Motor Behaviour, 11, 11-21.
- LONG G. A. (1968) Clusters of tasks performed by Washington State farm operators engaged in 7 types of agricultural production. US.Dept. of Health Education & Welfare, Final Report No. 27.
- LORD F. M. & NOVICK M. (1968) Statistical theory of mental test scores. Reading, Mass.: Addison-Wesley.
- LUNNEBORG C. E. & LUNNEBORG P. W. (1968) Is there room for a third dimension in vocational interest differentiation? J.Vocational Behaviour, 11, 120-127.
- MACKAY D. G. (1982) The problems of flexibility influency and speed-accuracy trade off in skilled behaviour. Psychological Review, 89, 483-506.

- MAGILL R. A. & REEVE T. G. (1978) Variability of prior practice in learning and retention of a novel motor response. Perceptual Motor Skills, 46, 107-110.
- MALLAMAD S. M., LEVINE J. M. & FLEISHMAN E. A. (1980) Identifying Ability Requirements by Decision Flow Diagrams. Human Factors, 22(1), 57-68.
- MANDLER G. (1956) The warm up effect. Some further evidence on temporal and task factors. J.Genetic Psych., 55, 3-8.
- MARGOLIS J. F. & CHRISTINA R. W. (1981) A test of Schmidt's schema theory of discrete motor skill learning. Res.O.for Exercise & Sport, Dec., 474-483.
- MARQUARDT L. D. (1972) The rated attribute requirements of job elements in a structured job analysis questionnaire - PAQ. MSc. thesis, Purdue University.
- MARQUARDT L. D. & McCORMICK E. J. (1973) Component analysis of the attribute data of PAQ. Report No. 2 Purdue University.
- MARQUARDT L. D. & McCORMICK E. J. (1974) The job dimension underlying the job elements of PAQ Form B. Dept. of Psy. Science., Occ. Res. Centre, Purdue University, Report No. 4.
- MARQUARDT L. D. & McCORMICK E. J. (1974) The utility of job dimension based on Form B of PAQ in a job component validation model. Purdue University, Occ. Res. Centre, Report No. 5.
- MARTIN E. (1965) Transfer of verbal paired associates. Psychological Review, 72, 327-343.
- MARTON F. & SALJO R. (1976) On qualitative differences in learning: outcome and Process B. J. Ed.Psych., 46, 4-11.
- MAY R. J., ALEXANDER D. G. & HOLCOMBE B. (1978) The validity of 7 easily obtainable economic and demographic predictors of achievement test performance. Ed. & Psy. Meas., 38, 445-450.
- MAYER R. E. (1980) Elaboration techniques that increase the meaningfulness of technical text. J.Ed.Psych., 72, 770-784.
- MAYFIELD E. C. (1964) The selection interview - a revised evaluation of published research. Personnel Psychology, 17, 239-260.
- MECHAM R. C. (1969) Ratings of attribute requirement of job elements in a structured job analysis format. MSc. Thesis, Purdue University.
- MECHAM R. C. (1977) PAQ and GATB Scores. Unpublished research report, Logan, Utah, PAQ Service, Box 3337.
- MECHAM R. C. & McCORMICK E. J. (1969) The use of data based on PAQ in developing synthetically derived attribute requirements of jobs. Purdue Occ. Res. Centre.

- MEYER R. P., LAVESON J. I., WEISSMAN N. S. & EDDOWES E. E. (1975) Behavioural taxonomy of undergraduate pilot training tasks and skills: Taxonomy refinement validation and operations. Cat. of Sel. Docs. in Psych., Jan., 305-306.
- MILLER G. A., GALANTER E. & PRIBRAM K. H. (1960) Plans and the structure of behaviour. New York: Rinehart & Winston.
- MILLER R. B. (1967) Task Taxonomy: Science or Technology? Conference on Human Operators in Complex Systems. University of Aston in Birmingham.
- MILLS B. & RAHMLow H. F. (1967) Major task and knowledge clusters involved in the performance of electronic technicians work. Washington State University at Pullman. Technical Report.
- MODJESKI R. B. & MICHAEL W. B. (1978) The relationship of the General Educational Performance Index measure to other indicators of educational development in each of three samples from a United States Army Population. Ed. & Psych. Meas., 38, 377-391.
- MORRISON R. F. (1977) A multivariate model for the occupational placement decision. J. App. Psych., 62, 271-277.
- MORSH J. E. (1969) Survey of Air Force officer management activities and evaluation of professional military education requirements. Tech. Report, Dec., 69-38.
- MOSER C. A. & KALTON G. (1979) Ch.12 Interviewing in Survey Methods in Social Investigation, 2nd ed. Heinemann.
- MCCALL R. B., APPELBAUM M. I. & HOGARTY P. S. (1973) Developmental changes in mental performance. Monographs of the Society for Research in Child Development, 38, 3.
- MCCORMACK P. D. (1958) Negative transfer in motor performance following a critical amount of verbal pre-training. Perceptual & Motor Skills, 8, 27-31.
- MCCORMICK E. J. (1959) Applications of job analysis to indirect validity. Personnel Psy. 12, 402-413.
- MCCORMICK E. J. (1967) Job and task analysis. In M. D. Dunnette Handbook of industrial and organisational psychology. Chicago: Rand McNally.
- MCCORMICK E. J. (1974) The application of structured job analysis information based on PAQ. Report No. 9 Dept. of Sciences, Purdue University.
- MCCORMICK E. J. (1979) Job Analysis: Methods and Applications Amacom.
- MCCORMICK E. J. & AMMERMAN H. L. (1960) Development of Worker Activity Check Lists for use in Occupational Analysis. Lackland Air Force Base, Personnel Lab.
- MCCORMICK E. J., CUNNINGHAM J. W. & GORDON G. G. (1967) Job dimensions based on factorial analysis of worker oriented job variables. Personnel Psychology, 20, 417-430.

- McCORMICK E. J., DENISI A. S. & MARQUARDT L. D. (1974) The derivation of job index values from the Position Analysis Questionnaire. Dept. of Psy. Science, Purdue University, Report No. 6.
- McCORMICK E. J., DENISI A. S. & SHAW J. B. (1979) Use of PAQ for establishing the job component validity of tests. J.App.Psych., 64(1), 51-56.
- McCORMICK E. J., GORDON G. G., CUNNINGHAM J. W. & PETERS D. L. (1962) The worker activity profile. Occ.Res.Centre, Purdue University, Report No. 5.
- McCORMICK E. J., JEANNERET P. R. & MECHAM R. C. (1969) The development and background of PAQ. Occ. Res. Centre, Purdue, June, 1969, Report No. 5.
- McCORMICK E. J., JEANNERET, P. R. & MECHAM R. C. (1969) A study of job characteristics and job dimensions as based on the PAQ. Dept. of Psych. Sciences, Purdue University, Report No. 6, Final Report.
- McCORMICK E. J., JEANNERET P. R. & MECHAM R. C. (1972) A study of job characteristics and job dimensions as based on PAQ. J.App.Psych., 56, 347-368.
- McCRACKEN H. D. & STELMACH G. E. (1977) A test of the schema theory of discrete motor learning. J.Motor Behav., 9, 193-201.
- McGEOGH J. A. & IRION A. L. (1952) The Psychology of Human Learning, 2nd edn. New York: Longmans, Green.
- McGEOGH J. A. & McDONALD W. T. (1931) Meaningful relation and retroactive inhibition. Amer.J.Psych., 43, 579-588.
- McGEOGH J. A. & McGEOGH G. O. (1937) Studies in retroactive inhibition. X. The influence of similarity of meaning between lists of paired associates. J.Exp.Psy., 21, 320-329.
- McKINLAY B. (1976) Characteristics of jobs that we considered common. Review of literature and research. Ohio State University.
- NAFZIGER D. H. & HELMS S. T. (1974) Cluster analysis of interest inventory scales as tests of Holland's occupational classification. J.App.Psych., 59, 344-353.
- NUNNALLY J. (1978) Psychometric Theory. New York: McGraw-Hill.
- OFFICE OF POPULATION CENSUSES AND SURVEYS (1980) Classification of Occupations. Government Statistical Service.
- OSGOOD C. E. (1949) The similarity paradox in human learning: A resolution. Psychological Review, 56, 132-143.
- OSGOOD C. E. (1953) Method and Theory in Experimental Psychology. New York: Oxford University Press.
- OUTERBRIDGE A. N. (1981) The development of generalisable work behaviour categories for a synthetic validity model. Office of Personnel Management, Washington D.C., Personnel Res. & Dev. Centre.

- PAIVIO A. (1960) Imagery and Verbal Processes. New York: Holt, Rinehart & Winston.
- PALMER G. J. (1958) An analysis of job activities: Information-receiving, mental and work performance. PhD. Thesis, Purdue University.
- PALMER G. J. & McCORMICK E. J. (1961) A factor analysis of job activities. J.App.Psych., 45, 289-294.
- PASS J. J. & CUNNINGHAM J. W. (1975) A systematic procedure for estimating the human attribute requirements of occupations. Cat. of Sel. Doc. in Psych., 5, 353.
- PASS J. J. & CUNNINGHAM J. W. (1978) Occupational clusters based on systematically derived work dimensions. Final report. Cat. of Sel. Doc. in Psych., 8, 22-23.
- PATRICK J. & SPURGEON P. C. (1978) Redeployment by upgrading to technician. University of Aston in Birmingham, Applied Psychology Department. Report to Manpower Services Commission.
- PATRICK J., SPURGEON P. C., BARWELL F. & SPARROW J. (1980) Grouping of Skills: Redeployment by Upgrading to Technician. University of Aston in Birmingham, Applied Psychology Department. Report to Manpower Services Commission.
- PEARLMAN K. (1980) Job Families: A Review and Discussion of their implications for personnel selection. Psy.Bull., 87(1), 1-28.
- PEARLMAN K., SCHMIDT F. L. & HUNTER J. E. (1980) Validity generalisation results for tests used to predict job proficiency and training success in clerical occupations. J.App.Psy., 65(4), 373-406.
- PERKINS E. A. & BYRD F. R. (1967) A research model for identification of task and knowledge clusters associated with major types of office employees work. US Dept. of Health Education and Welfare. Final Report No. 5.
- PETITTO A. L. (1982) Practical arithmetic and transfer: A study among West African tribesmen. J.Cross-cultural Psych., 13, 15-28.
- PIAGET J. (1950) The Psychology of Intelligence. London: Routledge.
- PICHERT J. W. & ANDERSON R. C. (1977) Taking different perspectives on a story. J.Ed.Psych., 69, 309-315.
- PLAKE B. S., HOOVER H. D. & LOYD B. H. (1980) An investigation of the Iowa Tests of Basic Skills for sex bias: A developmental look. Psychology in the Schools, 17, 47-52.
- POSTMAN L. (1964) Studies of learning to learn II Changes in transfer as a function of practice. J.Verb.Learn. & Verb.Behav., 3, 437-447.
- POSTMAN L. (1971) Transfer, Interference and Forgetting. In J. W. Kling & L. A. Riggs (eds.) Woodworth and Schlosberg's Experimental Psychology (3rd edn.). New York: Holt Rinehart & Winston.

- PRIEN E. P. (1963) Development of a supervisor position description questionnaire. J.App.Psych., 47, 10-14.
- PRIEN E. P. (1965) Development of a clerical position description questionnaire. Personnel Psych., 18, 91-98.
- PRIEN E. P. (1977) The function of job analysis in content validation. Personnel Psych., 30, 167-174.
- RAHMLOW H. F. & CAVANAGH C. C. (1966) A survey instrument for identifying clusters of knowledge and competencies associated with child care work. US Dept. of Health, Education & Welfare. Report No. 10.
- RAMSEY-KLEE D. M. (1979) Taxonomic Approaches to enlisted occupational classification. Vol.1. Navy Personnel Research & Dev. Centre, San Diego. Final Report, December 76-February 78.
- RANDELL G. A. (1978) Interviewing at Work. In P. B. Warr (ed.) Psychology at Work, 2nd edn. Penguin.
- RANDHAWA B. S. (1978) Clustering of skills and Occupations: A Generic Skills Approach to Occupational Training. J.Voc.Beh., 12, 80-92.
- RAVEN J. C. (1958) Standard Progressive Matrices. Sets A, B, C, D and E. London: H. K. Lewis.
- REDDIN W. J. (1977) An integration of leader-behaviour typologies. Group & Organisation Studies, 2, 282-295.
- REED L. E. (1967) Advances in the use of computers for handling human factors task data. AMRL TR 67-16. Dayton, Ohio, Wright Patterson Air Force Base.
- ROBINSON E. S. (1927) The 'similarity' factor in retroaction. Amer.J. Psychol., 39, 297-312.
- ROE A. & KLOSS D. (1969) Occupational classification. Counselling Psychologist, 1, 84-88.
- RONAN W. W., TALBERT T. L. & MULLET G. M. (1977) Prediction of job performance dimensions: Police officers. Public Personnel Management, 6, 173-180.
- ROYER J. M. (1979) Theories of the transfer of learning. Educational Psychologist, 14, 53-69.
- RUCH J. & RUCH G. (1963) Employee Aptitude Survey Technical Report. Los Angeles Psychological Services.
- SABERS D. L. & FELDT L. S. (1968) The predictive validity of the Iowa Algebra Aptitude Test for achievement in modern mathematics and algebra. Ed.& Psy.Meas., 28, 901-907.
- SALJO R. (1979) Learning about learning. Int. J. Higher Education and Educational Planning, 8, 443-453.

- SALISBURY J. J. (1982) An investigation to determine the readability and comprehensibility level for division two of the job structure profile. University of Aston in Birmingham undergraduate dissertation.
- SALOMONE P. R. & SLANEY R. B. (1978) The applicability of Holland's theory to non-professional workers. J.Voc.Behav., 13, 63-74.
- SCHMIDT F. L., GAST-ROSENBERG I. & HUNTER J. E. (1980) Validity generalisation results for computer programmers. J.App.Psych., 65(6), 643-661.
- SCHMIDT F. L. & HUNTER J. E. (1977) Development of a general solution to the problem of validity generalisation. J.App.Psych., 62(5), 529-540.
- SCHMIDT F. L. & HUNTER J. E. (1978) Moderator research and the law of small numbers. Personnel Psych., 31(2), 215-232.
- SCHMIDT F. L. & HUNTER J. E. (1980) The future of criterion related validity. Personnel Psych., 33(1), 41-60.
- SCHMIDT F. L., HUNTER J. E. & CAPLAN J. R. (1981a). Validity generalisation results for two job groups in the petroleum industry. J.App.Psych., 66(3), 261-273.
- SCHMIDT F. L., HUNTER J. E. & PEARLMAN K. (1981b). Task differences as moderators of aptitude test validity in selection: a red herring. J.App.Psych., 66(2), 166-185.
- SCHMIDT F. L., HUNTER J. E., PEARLMAN K. & SHANE G. S. (1979) Further tests of the Schmidt-Hunter Bayesian Validity generalisation procedure. Personnel Psych., 32(2), 257-281.
- SCHMIDT F. L., HUNTER J. E. & URRY V. W. (1976) Statistical power in criterion related validity studies. J.App.Psych., 61, 473-485.
- SCHMIDT N. (1976) Social and situation determinants of interview decisions: implications for the employment interview. Personnel Psych., 29, 79-101.
- SCHMIDT R. A. (1975) A schema theory of discrete motor skill learning. Psychological Review, 82, 225-280.
- SCHMIDT R. A. (1976) The schema as a solution to some persistent problems in motor learning theory. In G. E. Stelmach (ed.) Motor Control: Issues and Trends. New York: Academic Press.
- SCHOENFELDT L. F. (1974) Utilisation of manpower: Development and evaluation of assessment-classification model for matching individuals with jobs. J.App.Psych., 59, 583-595.
- SCHUMAN H. & CONVERSE J. M. (1971) The effects of black and white interviewers on black responses in 1968. Public Opinion Quarterly, 35, 44-67.

- SEYMOUR G. E., GUNDERSON E. K. & VALLACHER R. R. (1973) Clustering 34 occupational groups by personality dimensions. Ed. Psych.Meas., 33, 267-284.
- SHANE G. S. (1978) The Schmidt-Hunter approach to validity generalisation: An application to supervisory selection. Diss.Ab.Int., 39(5-B).
- SHAPIRO Z. & DUNBAR R. L. (1980) Testing Mintzberg's managerial roles classification using an in-basket simulation. J.App.Psych., 65, 87-95.
- SHARTLE C. L. (1959) Occupational Information, 3rd edn. Englewood Cliffs, N.J.: Prentice-Hall.
- SHAW J. B. & McCORMICK E. J. (1976) The prediction of job ability requirements using attribute data based on PAQ. Report No. 1, Purdue University.
- SHAW J. B. & RISKIND J. H. (1983) Predicting job stress using data from the PAQ. J.App.Psych., 68, 253-261.
- SIEGEL D. & DAVIS C. (1980) Transfer effects of learning at specific speeds on performance over a range of speeds. Perceptual & Motor Skills, 50, 83-89.
- SIEGEL S. (1956) Nonparametric statistics for the behavioural sciences. New York: McGraw-Hill.
- SISS T. F. & ROGERS T. B. (1974) Roe's classification and the multi-dimensional nature of occupational perception. J.Voc.Beh., 4, 403-415.
- SINGER R. N., GERSON R. F. & RIDSDALE S. (1979) The effect of various strategies on the acquisition, retention and transfer of a serial positioning task. Tallahassee: Florida State University.
- SINGER R. N. & PEACE D. (1976) A comparison of discovery learning and guided instructional strategies on motor skill learning, retention and transfer. Research Quarterly, 47, 788-796.
- SINGLETON W. T. (1974) Man-machine Systems. Penguin.
- SJOGREN D. (1977) Occupationally transferable skills and characteristics. Review of literature and research. Ohio State University.
- SMEAD V. S. & CHASE C. I. (1981) Student expectations as they relate to achievement in eighth grade mathematics. J.Ed.Res., 75, 115-120.
- SMITH A. D. (1974) Generic Skills in the reasoning and interpersonal domains. Saskatchewan Training R & D Station, Dept. of Manpower & Immigration.
- SMITH A. D. (1975) Generic Skills Research & Development. Canada Manpower & Immigration Dept.
- SMITH J. E. & HAKEL M. D. (1979) Convergence among data sources, response bias and reliability and validity of a structured job analysis questionnaire. Pers.Psych., 32, 677-692.



- SPARROW J. & PATRICK J. (1978) Developments and recommendations for the use of PAQ in selection and training. University of Aston in Birmingham, AP Report No. 86.
- SPARROW J., SPURGEON P. C. & PATRICK J. (1982) The systematic identification of selection criteria for future jobs. Paper presented to IEE Conference "Man-machine Systems", UMIST, Manchester.
- SPEEDIE S. M., TREFFINGER D. J. & HOUTZ J. C. (1976) Classification and evaluation of problem-solving tasks. Contemporary Educational Psychology, 1, 52-75.
- SPIRO R. J. (1977) Remembering information from text: The 'state of schema' approach. In R. C. Anderson, R. J. Spiro & W. E. Montague (eds.) Schooling and the acquisition of knowledge Hillsdale, N.J.: Erlbaum.
- SPURGEON P. C. & PATRICK J. (1979) Redeployment by Upgrading to Technician. Report to Manpower Services Commission.
- SPURGEON P. C., PATRICK J. & SPARROW J. (1982) The future selection and training requirements of systems maintenance personnel. Report to CGMPITB, University of Aston in Birmingham, Applied Psychology Department.
- STANLEY J. C. (1970) Reliability. In R. L. Thorndike (ed.) Educational Measurement. Washington, DC: American Council in Education.
- STEAD W. H. & SHARTLE C. L. (1940) Occupational counselling techniques. New York: American Books.
- STEFFEN R. J. (1974) Identifying and developing the basic skills of friendship building. Diss.Abstr.Int., 34, 3853.
- STEWART N. (1947) AGCT scores of Army personnel grouped by occupation. Occupations, 26, 5-41.
- STOLUROW L. M. (1966) Psychological and Educational Factors in Transferring Training. Section 1, Final Report. Urbana, Illinois: Training Research Laboratory, University of Illinois.
- STONIER T. (1983) The Wealth of Information. London: Methuen.
- STRONG E. K. (1943) Vocational Interests of Men and Women. Palo Alto, California: Stanford University Press.
- SUDMAN S. & BRADBURN N. M. (1974) Response effects in surveys. Chicago: Aldine.
- SZILAGYI J. & SIMS L. (1974) Supervisory Behaviour Description Questionnaire. J.App.Psych., 59, 767-770.
- TANNENBAUM P. H. (1956) Initial attitude toward source and concept as factors in attitude change through communication. Public Opinion Quarterly, 20, 413-425.
- TAYLOR K. F. (1979) Applying Holland's vocational categories to leisure activities. J.Occ.Psych., 52, 199-207.

- TAYLOR L. R. (1978) Empirically derived job families based on the Component and Overall Dimensions of PAQ. Personnel Psych., 31, 325-339.
- TAYLOR L. R. & COLBERT G. A. (1978) The construction of job families based on company-specific PAQ job dimensions. Personnel Psych., 31, 341-353.
- THEOLOGUS G. C. & FLEISHMAN E. A. (1971) Development of a taxonomy of human performance: Validation study of ability scales for classifying human tasks. Tech. Report No. 10, American Institute for Research, Washington D.C.
- THEOLOGUS G. C. & FLEISHMAN E. A. (1973) Development of a taxonomy of human performance: Validation study of ability-scales for classifying human tasks. JSAS Cat. of Sel. Doc. in Psychology, 3, 29. (Ms No. 326).
- THEOLOGUS G. C., ROMASHKO T. & FLEISHMAN E. A. (1973) Development of a taxonomy of human performance: A feasibility study of ability dimensions for classifying human tasks. JSAS Cat. of Sel. Docs. in Psychology, 3, 25-26.
- THIEL H. (1971) Principles of Econometrics. New York: Wiley.
- THOMAS L. L. (1952) A cluster analysis of office occupations. J.App.Psych. 36, 238-242.
- THORNDIKE E. L. & WOODWORTH R. S. (1901) The influence of improvement in one mental function upon the efficiency of other functions. Psychological Review, 8, 247-261.
- THORNDIKE R. L. & HAGEN E. P. (1959) Ten thousand careers. New York: Wiley.
- THUMIN F. (1965) Personality characteristics of diverse occupational groups. Personnel & Guidance Journal, 45, 468-470.
- THUNE L. E. (1951) Warm up effect as a function of level of practice in verbal learning. J.Exp.Psych., 42, 250-256.
- THURSTONE L. L. (1931) A multiple factor study of vocational interests. Pers.Journal, 10, 198-205.
- THURSTONE L. L. (1938) Primary Mental Abilities. Psychometric Monogr., No. 1.
- THURSTONE L. L. (1947) Multiple factor analysis. Chicago: University of Chicago Press.
- THURSTONE L. L. & JEFFREY T. E. (1966) Perceptual Speed (Identical Forms) Test Administration Manual. Chicago: Industrial Relations Centre, The University of Chicago.
- TOLMAN E. C. (1932) Purposive Behaviour in Animals and Men. Appleton-Century-Crofts.

- TOLMAN E. C. (1959) Principles of purposive behaviour. In S. Koch (ed.) Psychology: A study of a science. McGraw-Hill.
- TORNOW W. W. & PINTO P. R. (1976) The development of a managerial job taxonomy: A system for describing, classifying and evaluating executive positions. J.App.Psych., 61, 410-418.
- TRIST E. L. (1972) The structural presence of the post-industrial society. In F. E. Emery & E. L. Trist (eds.) Towards a Social Ecology. Plenum Press.
- TRYON R. C. & BAILEY D. E. (1970) Cluster analysis. New York: McGraw Hill.
- TURVEY M. T., SHAW R. & MACE W. (1978) Issues in the theory of action: degrees of freedom, co-ordinative structures and coalitions. In J. Requin (ed.) Attention and Performance, 7. Hillsdale, N.J.: Erlbaum.
- ULRICH L. & TRUMBO D. (1965) The selection interview since 1949. Psychological Bulletin, 63, 100-116.
- VAN RIJN P. (1978) Job Analysis of entry level firefighters and results of the PAO. Washington, DC: Office of Personnel Management.
- VERNON P. E. (1950) The structure of human abilities. London: Methuen.
- VERNON P. E. (1965) Ability factors and environmental influences. American Psychologist, 20, 723-733.
- VIERNSTEIN M. C. (1971) The extension of Holland's occupational classification to all occupations in the dictionary of occupational titles. Centre for Social Organisation of Schools Report. John Hopkins University.
- VITELES M. S. (1972) Job specifications and diagnostic tests of job competency designed for the auditing division of a street railway company. Psychological Clinic, 14, 83-105.
- VITELES M. S. (1932) Industrial Psychology. New York: Norton.
- VOLKMANN A. (1888) German reference cited in Postman L. 'Transfer, Interferences and Forgetting'. In J. W. Kling & L. A. Riggs (eds.) Woodworth and Schlosberg's Experimental Psychology, 3rd edn, 1971.
- WAKEFIELD J. A. (1975) The geometric relationship between Holland's personality typology and the Vocational Preference Inventory for blacks. J.Counselling Psych., 22, 58-60.
- WAKEFIELD J. A., VESELKA R. E. & MILLER L. (1975) A comparison of the ITBS and the Prescriptive Reading Inventory. J.Ed.Res., 68, 347-349.
- WANG A. Y. (1983) Individual differences in learning speed. J.Exp.Psych. 9(2), 300-311.
- WARD J. H. & HOOK M. E. (1963) Applications of an hierarchical grouping procedure to a problem of grouping profiles. Ed. & Psych. Meas., 23, 69-81.

- WARR P. (1973) Towards a more human psychology. Bulletin of BPS, 26, 1-8.
- WECHSLER D. & STONE C. P. (1945) Wechsler Memory Scale. New York: The Psychological Corporation.
- WEXLEY K. N. & SILVERMAN S. B. (1978) An examination of differences between managerial effectiveness and response patterns on a structured job analysis questionnaire. J.App.Psych., 63(5), 646-649.
- WHEATON G. R. (1968) Development of a taxonomy of human performance: A review of classificatory systems relating to tasks and performance. JSAS Cat. of Sel. Docs. in Psych.
- WHERRY R. J. (1955) A review of the J-coefficient. Civil Service Commission. Test Development Section.
- WIANT A. A. (1977) Transferable skills: the employer's viewpoint. Ohio: Ohio State University.
- WILEY L. N., JENKINS W. S., CAGWIN L. P. & KUDRICK H. M. (1966) Job types of communications officers. Lackland Air Force Base, Pers. Res. Lab.
- WINCH W. H. (1908) The transfer of improvement in memory in school children. Br.J.Psych., 2, 284-293.
- WINCH W. H. (1910) The transfer of improvement in memory in school children. Br.J.Psych., 3, 386-405.
- WINER B. J. (1971) Statistical Principles in Experimental Design 2nd Ed. McGraw-Hill.
- WRIGHT O. R. (1969) Summary of research on the selection interview since 1964. Personnel Psychology, 22, 391-413.
- YOUNGMAN R. L. (1979) Analysing Jobs. Methuen.
- ZIMMERMAN M. J. & SASSENATH J. M. (1978) Improvement in arithmetic and reading and discovering learning in mathematics. Ed.Res.Quarterly, 3, 27-33.