The reproducibility of craniosacral examination findings: A statistical analysis

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A statistical analysis of the data derived from 50 craniosacral examinations on 25 preschool children is presented. These data would seem to support the reliability and reproducibility of the examination findings when the examinations are performed by skilled examiners. During all 50 examinations, the rate of the cranial rhythmical impulse (CRI) was counted and compared with the pulse and respiratory rates of both the subject and the examiner. The results of this comparison would tend to help establish the CRI as an independent physiologic rhythm. A single-blind protocol was employed. All reasonable precautions were taken to control variables.

This study is the first part of a clinical research project currently in progress, the broad objectives of which are:

(1) To determine whether, in fact, there is a cranial rhythmical impulse (CRI)* (perceptible by a craniosacral examiner) which is different from the cardiovascular and respiratory rhythms of the subject and the examiner. (No inference is made from these data as to whether the perceived CRI may or may not be the resultant modulation of other physiologic rhythms, as has been hypothesized by some investigators and observers.)

(2) To determine whether statistically significant relationships exist between craniosacral interdependent motion system dysfunctions, on the one hand, and the "minimal brain damage/dysfunction" (MBD) syndromes of school children (for example, dyslexia, dysgraphia, hyperkinesis, hypokinesis, and motor discoordination)[1-3] on the other.

(3) To determine whether craniosacral osteopathic manipulative therapy[4-8] may modify the progress of MBD-afflicted children when added to their existing therapeutic regimen (remedial education, psychotropic drug therapy, motor coordination training, et cetera).

(4) To gather photographic evidence, which may or may not support the craniosacral examination findings.

The aim of the first part of the research project was completed to test the reproducibility of the author's craniosacral examination findings.

The recorded results of 50 craniosacral examinations performed on 25 preschool children were subjected to statistical analysis by an unbiased statistician. Each child was examined by the author and either Dr. Irvin Gastman (second year student at MSU-COM, trained in craniosacral techniques by the author), Dr. Fred L. Mitchell, Jr. (Department of Biomechanics, MSU-COM), or Dr. Robert C. Ward (Office of Medical Education, Research and Development, MSU-COM).

Nineteen parameters of craniosacral motion[4,6,9,10] were rated on a three-point scale: 1 = easy or "normal" response to induced passive motion; 2 = moderate or transient restriction to induced passive motion; and 3 = severe or complete restriction to induced passive motion. Increments of 0.5 were allowed (table 1).

The experimental design was single blind (neither examiner had knowledge of the other's findings). As the examination progressed, the results were verbally reported by each examiner to a technician who recorded them.

The CRI[4,5,6,11] was reported by the examiner at the beginning of each examination, as were the child's pulse and respiratory rates. These findings were recorded on the child's examination sheet by

*The cranial rhythmical impulse (CRI) is an involuntary, physiologic, rhythmic motion which has been reported by those skilled in cranial osteopathy. It is perceived by the examiner as his hands are gently and passively placed upon the subject's head. The perceived rhythm is reportedly not in synchrony with the cardiovascular and respiratory rhythms of either the subject or the examiner.

the technician, as were the examiner's own pulse and respiratory rates. These physiologic measures were recorded so that the CRI might be compared with other body rhythms of both the examiner and the subject.

Method

The methodology employed in this study is a straightforward, single-blind protocol. The examinations were done on the premises of a local day-care center in East Lansing, Michigan. The children were between the ages of 3 and 5 years.

Each child was brought into the examination area by a teacher who remained with the child throughout the two examinations (performed consecutively by the author and one of the three examiners named previously). Since each child was examined in a familiar setting with a familiar teacher present, problems of cooperation and apprehension were minimized.

After the height, weight, and age were recorded by the technician, the child was placed in a supine position on a portable treatment table. The first examiner was seated comfortably at the head of the table. (The other examiner was away from the examination area while the first examiner reported his findings.)

Prior to the commencement of the cranial portion of the examination, the technician recorded the pulse and respiratory rates of both the examiner and the child; these data were taken as the child was allowed to lie quietly on the table. Next, the examiner verbally reported to the technician (for recording) the CRI rate of the child as counted for one minute.

Following these initial steps, the examiner was asked by the technician to rate and report verbally the ease/restriction to examiner-induced passive motion for each of 19 parameters of craniosacral motion. These ratings were recorded on the examination sheet by the technician as they were reported. The technician attempted to elicit from the examiner the rating of each of the parameters in the sequence given below. Where examiners were hesitant or doubtful, the technician forced a rating decision.

TABLE 1. PARAMETERS RATED BY EACH EXAMINER.[4,6,8]

Occiput
1 — Right (restriction of motion)
2 — Left (restriction of motion)

Temporal bones
3 — Right (restriction of motion)
4 — Left (restriction of motion)

Sphenobasilar joint
5 — Restriction toward flexion
6 — Restriction toward extension
7 — Sidebending rotation, restriction toward right
8 — Sidebending rotation, restriction toward left
9 — Torsion, restriction toward right
10 — Torsion, restriction toward left
11 — Compression-decompression restriction
12 — Lateral strain, restriction toward right
13 — Lateral strain, restriction toward left
14 — Vertical strain, restriction toward superior motion
15 — Vertical strain, restriction toward inferior motion

Sacrum
16 — Restriction toward flexion
17 — Restriction toward extension
18 — Restriction toward right torsion
19 — Restriction toward left torsion

The rating system employed is as follows:
1 = easy or "normal" response to induced passive motion
2 = moderate or transient restriction to induced passive motion
3 = severe or complete restriction to induced passive motion
Increments of 0.5 between 1 and 3 on the rating scale were allowed.

Following the completion of the first examination, the second examiner was summoned and the examination procedure was repeated on the same child. Between examinations, the child remained quiet in the supine position on the table. The examiner sequence was such that the examiners alternated between performing first and second in order to rule out unknown variables which might be introduced by a given examiner being first or second consistently.

The author examined all 25 children. Dr. Gastman examined 11 children, Dr. Ward 8 children, and Dr. Mitchell 6 children. The data obtained by the author are compared to the other three examiners' results both as an aggregate and individually. At no time did any examiner have knowledge of the previous examiner's findings prior to the completed recording of those examination data by the technician. The examination records were then statistically analyzed for the percentage of agreement and the reliability coefficients.

Results

The results of the statistical analysis of examination data follows, in tabular form (Tables 2-7).

Parameters 1 through 19 are delineated in Table 1. This system of parameter identification is carried through all data tables.

TABLE 2. AUTHOR'S EXAMINATION RESULTS COMPARED WITH DR. GASTMAN'S RESULTS (N = 11).

Parameter	Reliability coefficient	Percentage of agreement between examiners: Rating variance allowed (%)* ± 0	± 0.5	± 1.0	± > 1.0	Total percentage of agreement achieved allowing up to 0.5 rating variance
1	.41	82	0	18	0	82
2	.39	73	9	18	0	82
3	.57	64	18	18	0	82
4	.47	73	18	9	0	91
5	0	91	9	0	0	100
6	.67	91	9	0	0	100
7	.95	91	9	0	0	100
8	.73	73	18	9	0	91
9	.29	55	27	18	0	82
10	.75	73	27	0	0	100
11	.92	73	27	0	0	100
12	.88	82	18	0	0	100
13	.66	36	55	9	0	91
14	.44	55	27	18	0	82
15	.87	55	27	18	0	82
16	0	82	18	0	0	100
17	0	82	18	0	0	100
18	.77	64	36	0	0	100
19	.36	64	18	18	0	82

*Rating scale of restriction to induced passive motion:
1 = no restriction; 1.5 = mild restriction; 2.0 = moderate restriction;
2.5 = moderately severe restriction; 3 = severe to absolute restriction.

TABLE 3. AUTHOR'S EXAMINATION RESULTS COMPARED WITH DR. WARD'S RESULTS (N = 8).

Parameter	Reliability coefficient	Percentage of agreement between examiners: Rating variance allowed (%)* ± 0	± 0.5	± 1.0	± > 1.0	Total percentage of agreement achieved allowing up to 0.5 rating variance
1	.71	75	2	25	0	75
2	.76	63	25	13	0	88
3	.49	75	0	25	0	75
4	.50	75	0	25	0	75
5	1.00	100	0	0	0	100
6	.96	88	12	0	0	100
7	.87	75	13	12	0	88
8	.98	88	12	0	0	100
9	1.00	100	0	0	0	100
10	.61	50	25	25	0	75
11	.95	75	25	0	0	100
12	.98	75	25	0	0	100
13	.71	88	12	0	0	100
14	.54	75	13	12	0	88
15	0	88	12	0	0	100
16	.24	13	25	62	0	38
17	0	88	12	0	0	100
18	.44	88	0	12	0	88
19	.60	75	0	25	0	75

*Rating scale of restriction to induced passive motion;
1 = no restriction; 1.5 = mild restriction; 2.0 = moderate restriction;
2.5 = moderately severe restriction; 3 = severe to absolute restriction.

Appendix A presents the mean and standard deviation values. The raw data are presented in Appendix B.

Discussion

The primary objective of this study is the determination of inter-rater reliability and percentage of agreement as they relate to data derived from the craniosacral examination of preschool children.

The examination data reported by the author were compared with those data reported by three other examiners skilled in craniosacral examination techniques. Each of 25 subjects was examined consecutively by the author and one of the other three examiners. The author was first examiner for 13 subjects and second examiner for 12 subjects.

An examination protocol was devised to include the recording of the CRI rate per minute,[4,5,6,11] the

pulse and respiratory rate per minute of both the subject and the examiner, and 19 parameters of passively induced craniosacral motion. The rating system relates to the degree of restriction toward each passively induced motion evaluated during the examination procedure.

It should be noted that the rating of all parameters refers to restriction toward the named motion rather than the naming of the "lesion" of the craniosacral mechanism.[4,6] This modification in nomenclature was made to minimize "lesion" conceptualization as a source of error.

A second objective of the study was the comparison of CRI rate per minute with other body rhythms of both the subject and the examiner.

Tables 2, 3, and 4 give the reliability coefficients and the percentage of agreement of the author's data as compared with each of the other three examiners individually. Table 5 compares the author's data with all other examiners' data as an aggregate.

The appearance of a low reliability coefficient where percentage of agreement is high is due to the lack of variance from normal of a given parameter, for example, Table 2, parameter 5. (This is a test of restriction toward induced passive flexion of the sphenobasilar joint.[4,6]) The author rated all 11 subjects as 1 (no restriction to flexion). Dr. Gastman gave 1 ratings to 10 of these children and 1.5 to 1 child. These data suggest that none of the 11 children displayed even moderate restriction toward flexion. Both examiners are in 100 percent agreement regarding this finding. Since the agreement is so high, the probability that these particular children did not manifest restriction toward flexion is also very high. However, since the variance of findings from normal is practically zero, the reliability coefficient is zero. This appearance of unreliability is quite misleading, since both examiners working blind arrived at similar conclusions. (Low reliability coefficients coupled with high percentage of agreement may also occur when neither physician actually examines the parameter but simply rates it as normal, and when the test is insensitive. parameters offer testimony against this possibility.) Similar situations to the one described prevail wherever the reader observes a low reliability coefficient coupled with a high percentage of agreement on the same parameter. The frequency of this happening is related to the fact that most of these somewhat randomly selected preschool children may be thought of as reasonably "normal," and, therefore, the examiners agreed that there was little or no restriction of motion.

When the reliability coefficient and the percentage of agreement are both high, this indicates that an abnormal rating was reported similarly by both examiners. For example, in Table 2, parameter 7, the reliability coefficient is .95 and the percentage of agreement is 100 percent if one allows $\mp$ 0.5 motion restriction rating variance (91 percent if one allows 0 rating variance). This parameter is a measure of restriction toward induced passive right sidebending-rotation motion.[4-6] The data reflect that there were indeed restrictions noted and that the rating of the abnormal restrictions was both highly reliable and reproducible.

Another example of a highly reproducible and reliable rating is seen in Table 3, parameter 9 (restriction toward induced passive right torsion of the sphenobasilar joint[4,6]). The author and Dr. Ward achieved a reliability coefficient of 1.00 and 100 percent agreement. The range of ratings was 1-3 and the mean rating for both examiners was 1.750. This indicates that both the author and Dr. Ward found the same restriction under blind conditions on the same patients every time. The variances from a 1 rating are such that a perfect coefficient of reliability was achieved as well as a perfect percentage of agreement.

Parameters that show a low reliability coefficient and a low percentage of agreement indicate that abnormal restrictions were found but that agreement between examiners as to the degree of restriction was poor. Such is the case for parameter 17 of Table 4, with the author and Dr. Mitchell in rather marked disagreement. (Parameter 17 rates induced passive motion of the sacrum toward extension.[4,6]) In this instance, the author rated all subjects between 1 and 2, with a mean rating of 1.5. Dr. Mitchell's range of rating was 1-3, with a mean of 1.92. This disagreement indicates that the two examiners are either measuring different things, or that they are interpreting their findings differently.

It is interesting to note the data derived from the

TABLE 4. AUTHOR'S EXAMINATION RESULTS COMPARED WITH DR. MITCHELL'S RESULTS (N = 6).

Parameter	Reliability coefficient	Percentage of agreement between examiners Rating variance allowed (%)* ± 0	± 0.5	± 1.0	± > 1.0	Total percentage of agreement achieved allowing up to 0.5 rating variance
1	.77	83	0	17	0	83
2	1.00	100	0	0	0	100
3	0	50	17	33	0	67
4	.82	50	33	17	0	83
5	.70	67	0	33	0	67
6	.88	83	0	17	0	83
7	.53	67	0	17	16	67
8	.63	83	0	17	0	83
9	.70	50	17	33	0	67
10	0	67	0	33	0	67
11	.61	50	33	17	0	83
12	1.00	100	0	0	0	100
13	0	83	0	17	0	83
14	.53	83	17	0	0	100
15	.65	50	17	33	0	67
16	0	50	17	17	16	67
17	0	0	17	50	33	17
18	0	50	0	50	0	50
19	.63	67	0	17	16	67

*Rating scale of restriction to induced passive motion:
1 = no restriction; 1.5 = mild restriction; 2.0 = moderate restriction;
2.5 = moderately severe restriction; 3 = severe to absolute restriction.

TABLE 5. AUTHOR'S EXAMINATION RESULTS COMPARED WITH RESULTS OF ALL OTHER EXAMINER'S RESULTS AS AN AGGREGATE (N=25).

Parameter	Reliability coefficient	Percentage of agreement between examiners (total) Rating variance allowed (%)* ± 0	± 0.5	± 1.0	± > 1.0	Total percentage of agreement achieved allowing up to 0.5 rating variance
1	.72	80	0	20	0	80
2	.77	76	12	12	0	88
3	.56	64	12	24	0	76
4	.75	68	16	16	0	84
5	.88	88	4	8	0	92
6	.91	88	8	4	0	96
7	.70	80	8	8	4	88
8	.87	80	12	8	0	92
9	.78	68	16	16	0	84
10	.54	64	20	16	0	84
11	.91	68	28	4	0	96
12	.97	84	16	0	0	100
13	.85	64	28	8	0	92
14	.85	68	20	12	0	88
15	.88	64	20	16	0	84
16	.38	52	20	24	4	74
17	.16	64	16	12	8	80
18	.67	68	20	12	0	88
19	.46	68	8	20	4	76

*Rating scale of restriction to induced passive motion:
1 = no restriction; 1.5 = mild restriction; 2.0 = moderate restriction;
2.5 = moderately severe restriction; 3 = severe to absolute restriction.

TABLE 6. PERCENTAGE OF AGREEMENT ACHIEVED BETWEEN THE AUTHOR AND OTHER EXAMINERS ON TOTAL EXAMINATION.

Rating variance allowed	Dr. Gastman (N=11)	Dr. Ward (N=8)	Dr. Mitchell (N=6)	Aggregate (N=25)
0	72%	77%	65%	71%
±0.5	92%	88%	74%	86%

TABLE 7. COMPARISON OF CRI RATE WITH PULSE AND RESPIRATORY RATES OF EXAMINER AND SUBJECT.

Patient No.	Patient			Examiner	
	Pulse/minute	Resp./minute	CRI/minute	Pulse/minute	Resp./minute
1	84	18	12	80	18
	84	24	15	68	18
2	84	22	12	74	18
	84	22	15	80	16
3	96	18	9	84	16
	88	22	8	76	18
4	96	24	8	76	18
	84	34	8	72	16
5	84	30	12	90	20
	120	28	14	84	28
6	92	22	14	72	16
	88	20	16	70	20
7	92	24	16	86	22
	88	24	14	76	18
8	80	24	12	94	16
	100	26	16	76	20
9	100	22	12	90	18
	96	24	14	98	22
10	96	24	12	74	18
	96	24	13	80	16
11	84	20	12	78	20
	100	28	12	72	18
12	90	24	16	84	16
	96	24	16	62	10
13	110	24	12	76	16
	120	36	12	66	16
14	96	20	10	74	16
	84	24	14	60	14
15	92	20	12	80	16
	82	36	13	60	12
16	92	20	10	80	14
	82	20	12	72	16
17	96	24	13	82	16
	96	24	12	72	14
18	90	24	10	78	16
	96	36	13	66	14
19	120	24	12	82	16
	92	40	12	64	14
20	88	28	11	84	18
	100	20	10	76	16
21	90	24	12	90	20
	88	22	10	80	14
22	82	22	10	74	18
	124	24	10	76	22
23	76	16	10	88	16
	80	16	9	76	16
24	88	18	12	80	16
	84	20	10	74	16
25	82	24	11	82	18
	80	28	8	80	15

examination of the sacrum (parameters 16-19). Considering only the percentage of agreement, the author and Dr. Gastman achieved 100 percent agreement (allowing ± 0.5) on parameters 16, 17, and 18, and 82 percent on parameter 19. Since Dr. Gastman was trained in craniosacral technique by the author, it would indicate that both examiners are using similar methods and techniques which then result in similar interpretations and ratings.

Agreement achieved between the author and Dr. Ward indicate only 38 percent agreement in evaluation of sacral flexion,[4,6] but 100 percent agreement in the evaluation of sacral extension.[4,6] The reverse is true of the results of achieved percentage of agreement with Dr. Mitchell. The author and Dr. Mitchell reached 67 percent agreement on sacral flexion, but only 17 percent agreement on sacral extension. Further, it may be noted that the percentage of agreement achieved between the author and Dr. Mitchell on the cranial portion of the examination is much higher than that achieved on the sacral motion testing. The reader should be aware that the author and Drs. Ward and Mitchell did not discuss or practice craniosacral technique with each other prior to embarking upon this study. (The author merely asked these two examiners to familiarize themselves with the examination protocol and then to adhere to it as strictly as possible.)

Table 5 presents the data on all 25 subjects for

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APPENDIX A1. MEAN TABLE.

Parameter number	Minimum value	Maximum value	Mean	Standard deviation
Upledger				
1	1.00	2.00	1.23	.410100
2	1.00	2.00	1.32	.462208
3	1.00	2.00	1.73	.467099
4	1.00	2.00	1.18	.404520
5	1.00	1.00	1.00	.000000
6	1.00	1.50	1.05	.150756
7	1.00	2.00	1.41	.490825
8	1.00	2.50	1.27	.517863
9	1.00	2.00	1.27	.410100
10	1.00	2.00	1.18	.404520
11	1.00	3.00	1.41	.664010
12	1.00	2.00	1.27	.410100
13	1.00	3.00	1.95	.471940
14	1.00	2.00	1.23	.343776
15	1.00	3.00	1.32	.643146
16	1.00	1.00	1.00	.000000
17	1.00	1.50	1.05	.150756
18	1.00	2.00	1.36	.393123
19	1.00	2.00	1.27	.410100
Gastman				
1	1.00	2.00	1.23	.410100
2	1.00	2.00	1.18	.337100
3	1.00	3.00	1.59	.664010
4	1.00	2.00	1.18	.337100
5	1.00	1.50	1.05	.150756
6	1.00	1.50	1.09	.202260
7	1.00	2.00	1.36	.452267
8	1.00	2.00	1.36	.504525
9	1.00	2.00	1.32	.462202
10	1.00	2.00	1.23	.343776
11	1.00	2.50	1.36	.551856
12	1.00	2.00	1.18	.404920
13	1.00	3.00	1.77	.606780
14	1.00	2.00	1.32	.462208
15	1.00	3.00	1.59	.700649
16	1.00	1.50	1.09	.202260
17	1.00	1.50	1.05	.150756
18	1.00	2.00	1.32	.404520
19	1.00	2.00	1.27	.467099

APPENDIX B. EXAMINATION RESULTS

Subject No.	Physician	Parameter number 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	U	1	1	1	1	1	1	1	1	1	1	1	1	2	1.5	1	1	1	1.5	1
	G	1	1.5	1	1	1	1	1	1	1	1	1	1	1.5	2	1	1	1	2	1
2	U	1	1	1	2	1	1	1	1.5	1	2	1	1	2	1	1.5	1	1	1	2
	G	1	1	1	2	1	1	1	2	1	1.5	1	1	2	1	2	1	1	1	1
3	U	2	2	2	2	1	1.5	2	1	2	1	1	2	1	1	2	1	1	1.5	1.5
	G	1	1	1	1	1	1.5	2	2	1.5	1	1.5	2	1	1	2.5	1	1	1.5	1
4	U	1	1	2	1	1	1	2	1	2	1	1.5	1	2	1	1	1	1	1.5	1
	G	1	1	2	1	1	1	2	1	2	1.5	1	1	2.5	1	1.5	1	1	1.5	1
5	U	1.5	1	2	1	1	1	1	2.5	1	1	3	2	2	1.5	3	1	1	2	1
	G	1	1	3	1	1.5	1	1	2	2	1	3	2	1	1	3	1	1	2	2
6	U	2	2	2	1	1	1	2	1	1	2	1	1	3	1.5	1	1	1	1	1.5
	G	2	1	1	1.5	1	1	1.5	1	1	2	1	1	3	2	1	1.5	1	1	2
7	U	1	1	2	1	1	1	1	1	1	1	2	1.5	1.5	1	1	1	1	2	1
	G	1	1.5	2	1	1	1	1	1	2	1	2	1	2	1	1.25	1	1.25	1.5	1
8	U	1	1	2	1	1	1	1.5	1	1.5	1	1	1	2	1	1	1	1	1	2
	G	1	1	2	1	1	1	1.5	1	1	1	1	1	2	1	2	1.5	1	1	2
9	U	1	2	2	1	1	1	2	1	1	1	1	1	2	1	1	1	1.5	1	1
	G	1	2	2	1	1	1	2	1	1	1.5	1	1	1.5	1	1	1	1	1	1
10	U	1	1	2	1	1	1	1	2	1	1	1	1	2	1	1	1	1	1	1
	G	2	1	1.5	1.5	1	1	1	2	1	1	1	1	1.5	2	1	1	1	1	1
11	U	1	1	1	1	1	1	1	1	1.5	1	2	1.5	2	2	1	1	1	1.5	1
	G	1	1	1	1	1	1.5	1	1	1	1	2	1	1.5	1.5	1	1	1	1	1
12	U	2	1	2	1	1	1	1.5	2	2	1	1	1	1	1	1	1.5	1	1	1
	W	2	1	1	1	1	1	1	2	2	1	1.5	1	1	1	1	2	1	1	2
13	U	2	2	2.5	2	2	2	2	2	2	1	2	2	1	1	1	1	1	3	1
	W	1	2	2	2	2	2	1	2	2	1.5	2	2	1	2	1	2	1	3	2
14	U	2	1	2	1	1	2	1	1	1	1.5	2	1	2	1	2	1	2.5	2	2
	W	2	1	2	1	1	2	1	1	1	2	2	1	2	1	2	2	2	1	2
15	U	1	2.5	2	2	3	1	3	1	1	3	2	2.5	2	1	1.5	2	1	1	1
	W	1	2	2	1	3	1	3	1	1	2	2.5	2	2	1	2	1	1	1	1
16	U	1	3	3	1	1	2	1	3	3	1	3	3	3	1	3	3	1	2	2
	W	2	2	3	2	1	2.5	1	2.5	3	2	3	2.5	2.5	1	3	2	1	2	2
17	U	1	1	2	1	1	1	1	2	2	1	1	1	1	1	1	1.5	1	2	1
	W	1	2	2	1	1	1	1	2	2	1	1	1	1	1	1	2	1	2	1
18	U	2	2	2	2	1	2	1	1	2	1	2	2	1	2	1	1	2	1	2
	W	2	2	2	2	1	2	1	1	2	1	2	2	1	2	1	1	2	1	2
19	U	3	3	2	2	2	1	2	3	1	2	3	1	2	3	1	1	1	2	1
	W	3	3	3	2	2	1	2	3	1	2	3	1	2	2.5	1	2	1	2	1
20	U	2	1	2	3	2	1	1	1	2	1	2	1	3	1	2	1	2	1	1
	M	2	1	1	2.5	1	1	2	1	2	1	2	1	3	1	2	1	1	1	1
21	U	2	1	2	1	1	1	1	2	2	1	2	1	1	2	1	2	2	1	1
	M	2	1	2	1	1	1	1	2	1	1	2	1	1	2	1	2	1	1	1
22	U	2	1	2	1	1	1	2	1	3	1	2	3	1	1	1	1	1	1	1
	M	3	1	2	1	1	1	2	2	3	1	2	3	1	2	2	1	2	2	1
23	U	2	1	2	2	3	1	1	1	1	2	3	3	3	2	3	2	2	1	1
	M	2	1	1.5	1.5	3	1	1	1	1	1	3	3	3	2	3	1.5	1.5	1	1
24	U	1	2	2	2	2	1	3	1	1	1	2	3	1	3	1	2	1	2	1
	M	1	2	2	3	2	2	3	1	2	2	3	3	2	3	2	3	3	1	3
25	U	2	1	2	3	1	3	1	1	2.5	1	2.5	3	1	3	2	1	1	1	2
	M	2	1	1	3	2	3	3	1	3	1	3	3	1	3	3	3	3	2	3