

* . ** . ***
 * , ** , ***)
 .

(* , .

『
 』, 2001, 6 , 2 , 374-391. 30

(/ /) (1)

가 가, (2) 가 가, (3) 가 가

가

CIU (Correct Information Unit) DCIU
 (Different Correct Information Unit) 가

. CIU DCIU

가 , 가

. CIU ,

CIU , DCIU

. CIU

가

.

가 , , , , ,

가

가 . 가 가

가 가

가

(Goodglass & Kaplan, 1972) (Kertesz, 1982) 가

가 가 , (Brookshire & Nicholas, 1994; Chapey, 1994; Haynes & Pindzola, 1998; LaPointe, 1997; Nicholas & Brookshire, 1993; Shewan & Donner, 1988; Yorkston & Beukelman, 1980).

가

가 가 , 가 (Nicholas & Brookshire, 1993; Yorkston & Beukelman, 1980).

Shewan (1988) The Shewan Spontaneous Language Analysis (SSLA)

, SSLA

SSLA가

. Saffran, Berndt & Schwartz (1989) Quantitative Production Analysis (QPA)

(Saffran, Berndt & Schwartz, 1989; Rochon et al., 2000; Shewan, 1988; Wagenaar, Snow & Prins, 1975), T-unit (Hunt, 1965), Token-Type Ratio (TTR), Mean Length of Utterance (MLU) (Halliday & Hasan, 1976; Hartley & Jensen, 1991)

(LaPointe, 1997; Meuse & Marquardt, 1985; Yorkston & Beukelman, 1980). 가 가 ,

가 가가

(Brookshire & Nicholas, 1994; Nicholas & Brookshire, 1993; Yorkston & Beukelman, 1980).

가

Yorkston & Beukelman (1980) Analysis of Speech Samples (ASS)

(content units)

가 ,

가 . ASS
 가 (, 1998;
 Nicholas & Brookshire, 1993). Nicholas & Brookshire (1993) ,
 가
 CIU (correct information unit)
 . CIU “ ,
 ” (, 1998; Nicholas & Brookshire, 1993).
 가 , CIU CIU
 , CIU CIU 가
 가 . CIU
 가 CIU
 (, 1998; LaPointe, 1997; Nicholas &
 Brookshire, 1993; Brookshire & Nicholas, 1994).
 CIU
 가
 (Busch, Brookshire & Nicholas, 1988; Brookshire & Nicholas, 1994; Nicholas &
 Brookshire, 1993).
 (Crary & Rothi, 1989; Dorze & Bedard, 1998; Haynes & Pindazola,
 1998; LaPointe, 1997; Shewan & Donner, 1988; Shewan & Henderson, 1988; Yorkston &
 Beukelman, 1980)
 가 . CIU CIU
 . Dorze & Bedard (1998)
 (lexico- semantic)
 , 가 가 가
 , 가 가
 . , DCIU
 가 , 가
 .
 가
 , CIU , 가

가 DCIU ,

1.

30 (< - 1>). (1)
 (PARADISE · K-WAB)(, 2001)
 , (2) 436 Aphasia Quotient (AQ)
 (2001) (severe) , (mild: AQ 80.4
), (mild to moderate: AQ 62.8- 80.3), (moderate to severe: AQ 36.3- 62.7)
 10 , (3) , (4) 1
 (Yorkston & Beukelman, 1980). (5)
 , (6) 가 가 .
 , (AQ) < - 1> .

< - 1> , , AQ

()			()	AQ	
61.2	5	5	10.4	86.3	10
53.1	6	4	11.5	67.3	10
57.1	6	4	10.1	44.9	10
	17	13			30

2.

, , 가

. Shewan (1988)

, Bracy & Drummond (1993)

가

가

(2001)

가

가

Brookshire & Nicholas (1994) CIU

300

100

가.

(Goodglass & Kaplan, 1972)

가

(PARADIS

E · K-WAB)(, 2001)

(Goodglass & Kaplan, 1972)

(Kertesz, 1982)

CIU

Correia, Brookshire & Nicholas (1990)

Nicholas & Brookshire (1993)

3.

Sharp MD-MT66

SONY ECM-MS907

30 15 cm

가.

가

(“

. 1

”)

가

가

가

가

“

1

.” 3

(

,

,

)

1

, 15

“

?”

가

30

, 30

가

2001 3 12

2001 6 5

30

가

1-2

Nicholas & Brookshire (1993)가 CIU (different correct information unit) 가 . , CIU , DCIU 가 (1997) CIU < - 2> . DCIU CIU 가 DCIU (1) , (2) CIU , (3) DCIU , (4) CIU , (5) CIU , (6) DCIU < - 2>

< - 2>

CIU	\div	()	CIU
DCIU		가	DCIU
CIU		가	
CIU	$(CIU \div$) $\times 100$	
DCIU	$CIU \div$	()	
DCIU	$DCIU \div$	()	

4.

(/ /) () , (CIU ,

DCIU), (CIU , CIU , DCIU)
 (One-Way ANOVA) , Scheffé

1. (severity)

53.9, 49.5, 35.5

< - 3>

< - 3>

	N	CIU M (SD)	CIU M (SD)	DCIU M (SD)	CIU (%) M (SD)	CIU M (SD)	DCIU M (SD)
	10	53.9 (14.8)	38.9 (15.5)	31.0 (10.9)	86.1 (17.7)	49.1 (10.9)	41.0 (9.0)
	10	49.5 (18.0)	35.2 (12.0)	25.2 (7.7)	65.1 (10.7)	32.8 (13.8)	24.4 (10.8)
	10	35.5 (15.7)	12.2 (6.6)	9.3 (5.0)	35.7 (7.9)	16.5 (9.7)	11.5 (9.0)

2.

CIU DCIU < - 3>

($F_{(2, 27)} = 14.97, p < .001$), DCIU ($F_{(2, 27)} = 18.36, p < .001$)

가

Scheffé

< - 4>

. < - 4>

CIU

DCIU

가

,

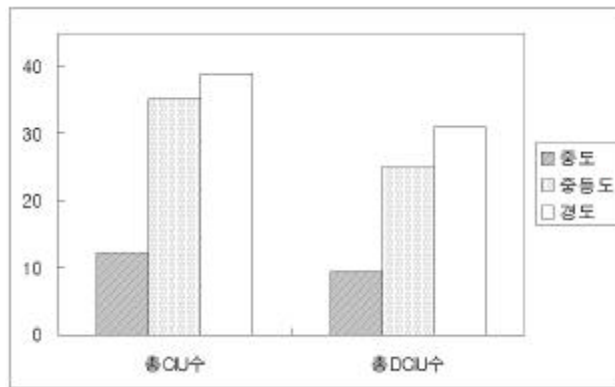
가

(< - 1>).

< - 4> CIU DCIU

	CIU DCIU	
	CIU * DCIU *	CIU * DCIU *

* $p < .05$



< - 1>

3.

CIU , CIU , DCIU

< - 3>

가

, CIU ($F_{(2, 27)} = 38.75, p < .001$),

CIU ($F_{(2, 27)} = 19.67, p < .001$), DCIU ($F_{(2, 27)} = 23.29, p < .001$)

가

Scheffé

< - 5>

가

< - 2>

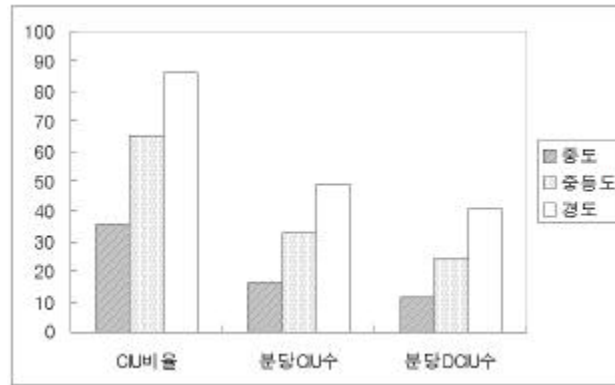
< - 1 >

.

< - 5 > CIU , CIU , DCIU

	<p>CIU *</p> <p>CIU *</p> <p>DCIU *</p>	
	<p>CIU *</p> <p>CIU *</p> <p>DCIU *</p>	<p>CIU *</p> <p>CIU *</p> <p>DCIU *</p>

*p < .05



< - 2 >

.

CIU

가 DCIU ,

. . . , 가
 , , CIU DCIU
 가 ,
 가 ,
 가 ,
 CIU , CIU , DCIU
 , 가 .
 , Yorkston &
 Beukelman (1980) .
 . Yorkston & Beukelman (1980)
 . 가
 (LaPointe, 1997). 가
 (1998)
 (CIU , DCIU) 가
 , 가 .
 ,
 가가 가
 가 . 가
 (Yorkston & Beukelman, 1980).
 (CIU , CIU , DCIU)
 , ,
 CIU , CIU ,
 DCIU 가 . CIU

가

Brookshire (1993) CIU Nicholas & (1998) CIU

35.7 %, 65.1 %, 86.7 %

CIU가 가

가 가

84.3 % 86.7 % CIU (, 1998; CIU

Nicholas & Brookshire , 1993) , CIU

86.7%

CIU

가

CIU

CIU

CIU

가

CIU

가 Yorkston & Beukelman (1980)

가 (1998)

가 (, 1998; Brookshire & Nicholas, 1994; LaPointe, 1997; Nicholas & Brookshire, 1993; Yorkston & Beukelman, 1980).

가 DCIU 가

가

가

(lexico-semantic)

가

DCIU

가

Dorze & Bedard (1998)

가

가

(Aphasia Quotient; AQ)

Crary & Rothi (1989)

가

가

가

(Brookshire & Nicholas, 1994; Chapey, 1994; Haynes & Pindazola, 1998; Laminare, 1997; Nicholas & Brookshire, 1993; Shewan & Donner, 1988; Yorkston & Beukelman, 1980).

CIU

가가 가

(LaPointe, 1997; Yorkston & Beukelman,

1980).

CIU

가

가

. CIU

가

가

가

- · · · · (1998). : CIU
· 『 』, 3, 35-49.
- (1997). 2-4 『 』, 2, 5-26.
- (2001). 『 』 :
· · · · · (2001).
- 『 』, 19, 10-18.
- (2001). 『 』,
6(1), 40-52.
- Bracy, C. B. & Drummond, S. S. (1993). Word retrieval in fluent and non-fluent dysphasia: Utilization of pictogram. *Journal of Communication Disorders*, 26, 113-128.
- Brookshire, R. H. & Nicholas, L. E. (1994). Speech sample size and test-retest stability of connected speech measures for adults with aphasia. *Journal of Speech and Hearing Research*, 37, 399-407.
- Busch, C. R., Brookshire, R. H. & Nicholas, L. E. (1988). Referential communication by aphasic and nonaphasic adults. *Journal of Speech and Hearing Disorders*, 53, 475-482.
- Chapey, R. (1994). *Language Intervention Strategies in Adult Aphasia*. Baltimore: Williams & Wilkins.
- Correia, L., Brookshire, R. H. & Nicholas, L. E. (1990). Aphasic and non-brain damaged adults' picture descriptions of aphasia test pictures and gender-biased pictures. *Journal of Speech and Hearing Disorders*, 55, 713-720.
- Crary, M. A. & Rothi, L. J. (1989). Predicting the Western Aphasia Battery aphasia quotient. *Journal of Speech and Hearing Disorders*, 54, 163-166.
- Dorze, G. L. & Bedard, C. (1998). Effects of age and education on the lexico-semantic content of connected speech in adults. *Journal of Communication Disorders*, 3, 53-70.
- Goodglass, H. & Kaplan, E. (1972). *Boston Diagnostic Aphasia Examination*. Philadelphia: Lea and Febiger.
- Halliday, M. & Hasan, R. (1976). *Cohesion in English*. London: Longman Group.
- Hartley, L. L. & Jensen, P. J. (1991). Narrative and procedural discourse after closed head injury. *Brain Injury*, 5, 267-285.
- Haynes, W. O. & Pindzola, R. H. (1998). *Diagnosis and Evaluation in Speech Pathology*. Boston: Allyn & Bacon.

- Hunt, K. W. (1965). *Grammatical Structures Written at Three Grade Levels: Research Report*. Champaign, IL: National Council of Teachers of English.
- Kertesz, A. (1982). *The Western Aphasia Battery*. New York: Grune & Stratton.
- LaPointe, L. L. (1997). *Aphasia and Related Neurogenic Language Disorders*. New York: Thieme.
- Meuse, S. & Marquardt, T. D. (1985). Communicative effectiveness in Broca's aphasia. *Journal of Communication Disorders, 18*, 21-34.
- Nicholas, L. E. & Brookshire, R. H. (1993). A system for quantifying the informativeness and efficiency of the connected speech of adults with aphasia. *Journal of Speech and Hearing Research, 36*, 338-350.
- Rochon, E., Saffran, E. M., Berndt, R. S. & Schwartz, M. F. (2000). Quantitative analysis of aphasic sentence production: Further development and new data. *Brain and Language, 72*, 193-218.
- Saffran, E. M., Berndt, R. S. & Schwartz, M. F. (1989). The quantitative analysis of agrammatic production: Procedure and data. *Brain and Language, 37*, 440-479.
- Shewan, C. M. (1988). The Shewan spontaneous language analysis (SSLA) system for aphasic adults: Description, reliability, and validity. *Journal of Communication Disorders, 21*, 103-138.
- Shewan, C. M. & Donner, A. P. (1988). A comparison of three methods to evaluate changes in the spontaneous language of aphasic individuals. *Journal of Communication Disorders, 21*, 171-176.
- Shewan, C. M. & Henderson, V. L. (1988). Analysis of spontaneous language in the older normal population. *Journal of Communication Disorders, 21*, 139-154.
- Wagenaar, E., Snow, C. & Prins, R. (1975). Spontaneous speech of aphasic patients: A psycholinguistic analysis. *Brain and Language, 2*, 281-303.
- Yorkston, K. M. & Beukelman, D. R. (1980). An analysis of connected speech samples of aphasic and normal speakers. *Journal of Speech and Hearing Disorders, 45*, 27-36.

		/	/			AQ
(mild)	1	60	/ 16	Lt. MCA	anomia	92.2
	2	51	/ 12	Lt. basal ganglia	anomia	91.5
	3	41	/ 12	Not available	anomia	87.8
	4	74	/ 6	both basal ganglia	anomia	87.9
	5	68	/ 0	Lt. MCA, Lt. basal ganglia	anomia	86.2
	6	62	/ 12	Lt. MCA	anomia	86.2
	7	43	/ 12	Lt. MCA	anomia	83.5
	8	68	/ 12	Lt. MCA	anomia	83.3
	9	77	/ 6	Lt. basal ganglia	anomia	82.9
	10	68	/ 16	Lt. parietal lobe	anomia	81.6
(mild to moderate)	11	60	/ 16	Lt. MCA	conduction	78
	12	46	/ 12	Lt. basal ganglia	transcortical sensory [TS]	74
	13	47	/ 16	Lt. MCA	transcortical sensory [TS]	69.7
	14	41	/ 9	Lt. temporo-parietal lobe	transcortical sensory [TS]	67.2
	15	51	/ 6	Lt. MCA Lt. fronto-temporal lobe	transcortical sensory [TS]	65.3
	16	55	/ 12	Lt. meningioma	transcortical sensory [TS]	65
	17	73	/ 0	Lt. parietal lobe	transcortical sensory [TS]	64.7
	18	29	/ 16	both basal ganglia	transcortical sensory [TS]	63.4
	19	59	/ 12	Lt. MCA Lt. temporal lobe	transcortical sensory [TS]	63.1
	20	70	/ 16	Lt. MCA Lt. temporo-parietal lobe	Wernicke's	62.9
(mild to severe)	21	53	/ 12	Lt. MCA	transcortical sensory [TS]	58
	22	65	/ 16	Lt. temporo-parietal lobe, Lt. basal ganglia	Wernicke's	56
	23	57	/ 16	Lt. temporo-parietal lobe	Wernicke's	54.8
	24	67	/ 9	Lt. basal ganglia	Wernicke's	53.2
	25	43	/ 12	Lt. MCA Lt. parietal lobe	Wernicke's	51.2
	26	47	/ 12	Lt. basal ganglia	Wernicke's	50
	27	49	/ 9	Lt. temporo-parietal lobe	Wernicke's	47.6
	28	73	/ 0	Lt. temporal lobe	Wernicke's	42.6
	29	60	/ 6	Lt. parietal lobe	Wernicke's	41
	30	57	/ 9	Lt. basal ganglia	Wernicke's	37.2

< - 2> CIU (correct information unit)

CIU	
1. 가 , .	
2. .	가 _____ ().
3. 가 .	, , _____ .
4.
5.
6.
7. .	가, , .
8. , , .	가 .
9. .	, , .
10. 가 .	가 . _____ . _____ () . () _____
11. .	= 가 가 ..
12. , .	_____가 _____ _____가 .
13. , .	_____, 가 .
14. .*	, .

: Nicholas & Brookshire (1993)
* 가 가

ABSTRACT

The Informativeness and Efficiency of the Connected
Speech Samples in Korean Fluent Aphasics

Im, Eun-Ju (Dept. of Rehabilitation Medicine,
Pundang Jesaeng General Hospital)

Miseon Kwon (Interdisciplinary Program of Communication Disorders,
Ewha Womans University)

Hyun-Sub Sim * (Dept. of Special Education & Interdisciplinary Program
of Communication Disorders, Ewha Womans University)

The purpose of the study is to examine informativeness and efficiency of the connected speech samples in the discrimination of the severity of fluent aphasic individuals. Thirty fluent aphasic subjects participated in the study. The subjects were grouped into three subgroups according to their severity. The verbal picture descriptions and interviews elicited from 10 mild, 10 moderate, and 10 severe aphasic speakers were audio-recorded and transcribed. These samples were analyzed in terms of Correct Information Unit (CIU). The analyses includes a measure of speaking rate (words per minutes), two measures of amounts of information conveyed (CIUs, DCIUs) and three measures of information conveyance efficiency (CIU%, CIU/min, DCIU/min). The results were as follows: (1) Significant differences were not found in the measure of word per minute between the three groups. (2) An inverse relationship was found between the severities of aphasia and the amounts of information conveyed. However, moderate aphasic speakers tended to communicate as much information as mild aphasic speakers did. (3) Significant differences were found in the measure of communication efficiency between the three groups. All measures of efficiency seem to contribute to the classification of the subjects into mild, moderate, or severe category. The results of the study imply that this quantification system might be useful to detect the severity as well as the recovery level of the aphasia.

* e-mail: simhs@mm.ewha.ac.kr