Clinical Aphasiology, Vol. 23, 1995, pp. 179–193

Processing of Proverbs in Aphasics and Old-Elderly

Hanna K. Ulatowska, Sandra Bond Chapman, and Julene K. Johnson

This study was directed at addressing how well adult aphasic patients and other adult populations process discourse when the information has to be generalized beyond the explicit textual information or when a nonliteral interpretation has to be invoked. To examine this issue, we have used various text types, such as fables and proverbs, that can be interpreted at different levels. Although fables and proverbs differ in the amount and type of information they contain, their societal function is similar. Fables are explicit narratives and are longer than proverbs. Proverbs, on the other hand, convey a lesson in a single sentence. The lesson is based on a generalized real-life experience. Both fables and proverbs have a similar function in the didactic component of giving a lesson. These two genres are comparable in that they have two levels of interpretation: concrete and abstract. Preliminary findings using fables have revealed that aphasic patients tend to give a concrete response even when the task requires a more generalized response (Chapman & Ulatowska, 1992; Ulatowska, Sadowska, Kordys, & Kadzielawa, 1993). In the present study, we investigated whether the concrete/abstract response patterns reported for fables are manifested in proverb interpretation.

Proverbs comprise an integral part of routine mental status examinations in adult neuropsychological assessments. Their widespread use is likely because proverbs lend themselves well to screening quality of thinking along a concrete–abstract continuum. Gorham (1956) developed the *Proverbs Test* to assess abstract thinking in schizophrenics and in patients with organic brain syndrome. Later, Gorham's *Proverbs Test* was used in investigations of patients with frontal lobe damage (Benton, 1968; Cummings, 1985; Stuss & Benson, 1986) and right hemi-

sphere damage (Benton, 1968; Van Lancker, & Kempler, 1987; Winner & Gardner, 1977). Delis, Kramer, and Kaplan (1984) constructed another proverb assessment tool named *The California Proverb Test*. They improved Gorham's scoring system by increasing the number of categories along a concrete–abstract continuum.

Proverb interpretation is affected both by the ability to appreciate an abstract meaning and by the familiarity of the proverb (Kempler, Van Lancker, & Read, 1988). Moreover, familiarity of proverbs changes over time since proverbs reflect the societal values and concerns of the time. In normal aging, changes in inferential processing that may interfere with abstract interpretation have been reported (Bromley, 1957; Cohen, 1979). Therefore, proverb interpretation may be vulnerable to aging effects as well as to neurological pathology. The renewed interest in investigations of proverbs is reflected in a recent review of the neurology of proverbs (Van Lancker, 1990).

In this study, we examined response strategies for proverbs as a function of neurological impairment (i.e., in aphasic patients) and as a function of age (young, middle aged, and old-elderly adult populations). The primary questions addressed were:

1. How do different populations process the meaning of proverbs? That is, do the different groups interpret the meaning at a concrete level or at a more abstract level?

2. How does proverb familiarity affect subjects' performances?

METHOD

Subjects

The present study included four groups: aphasic patients (n = 15), older elderly (n = 15), middle aged adults (n = 15), and young adults (n = 40). The aphasic, old-elderly, and middle aged subjects were selected from a larger, ongoing study investigating discourse in normal aging and neurologically impaired populations. The aphasic patients were judged as mild to moderately impaired using the severity rating scale of the *Boston Diagnostic Aphasia Examination–Revised* (BDAE)(Goodglass & Kaplan, 1983). There were 10 fluent and 5 nonfluent aphasic patients. The three non–brain-damaged adult groups were defined primarily by age. The old-elderly group consisted of adults 80 years or older (M = 84 years; range = 80 to 92; SD = 3.37). The middle aged subjects

were matched in age and education to the aphasic group (<80 years, M = 60 years; range = 47 to 76; SD = 10.6). The young adults were students in a master's-level sociolinguistics class (M = 26 years; range = 22 to 37; SD = 3.61). All were native speakers of English with adequate hearing and vision for the tasks. Standardized language and cognitive tests were used for all groups except the young adult group. Results of the standardized language and cognitive tests are found in Table 1.

Task

The California Proverb Test (Delis et al., 1984), which includes 10 proverbs, was used to elicit proverb interpretations in two conditions: spontaneous interpretation and multiple-choice responses. The 10 proverbs included 5 familiar proverbs and 5 unfamiliar proverbs. Familiarity was determined by Delis and colleagues on a normative population and verified by our three non–brain-damaged groups, who rated each proverb as familiar or unfamiliar. First, the subjects were asked to verbalize their interpretation of each proverb. The responses were audio-recorded and later transcribed. Following the spontaneous interpretations, the subjects were asked to select a best response from a multiple-choice list of four possible interpretations for the same 10 proverbs (see Appendix A). All proverb and multiple-choice responses were read to the subjects. Included in the four multiple-choice responses were one correct abstract response, one correct concrete response, and two incorrect responses.

Analysis

The spontaneous responses were coded according to the 7-point scoring criteria outlined by Delis and colleagues (1984). Each response was rated on a scale from 0 to 6 based on the completeness and accuracy of the response along a concrete–abstract continuum:

6 points: Correct abstract response

5 points: Correct nuance response

4 points: Partial abstract response

3 points: Correct concrete response

A. Specific instance response

B. Correct paraphrase

(*continued on p. 184*)

Table 1. Results of the Standardized Language and Cognitive Tests for Aphasic, Old-Elderly, and Middle Aged Groups

Standardized Language Tests		*Aphasic*	*Old-Elderly*	*Middle Aged*
BNT	*M*	25	26	29
	Range	17–30	22–28	27–30
	SD	3.37	1.79	0.86
BDAE subtests				
1. Word Discrimination	*M*	70	*	*
	Range	64–72		
	SD	2.88		
2. Body-Part Identification	*M*	18	*	*
	Range	16–20		
	SD	1.41		
3. Commands	*M*	14	*	*
	Range	10–17		
	SD	2.07		
4. Complex Ideational	*M*	11	11	11
	Range	4–12	9–12	10–12
	SD	2.25	0.99	0.80
5. Responsive Naming	*M*	26	*	*
	Range	10–30		
	SD	5.02		
6. Visual Confrontation Naming	*M*	108	*	*
	Range	81–114		
	SD	8.30		
7. Animal Naming	*M*	12	*	*
	Range	6–16		
	SD	3.22		
8. Word Reading	*M*	26	*	*
	Range	8–30		
	SD	7.40		
9. Repetition of Words	*M*	9	*	*
	Range	8–10		
	SD	1.37		
10. Repeating Phrases High-Frequency	*M*	6	*	*
	Range	0–8		
	SD	2.75		
Low-Frequency	*M*	5		
	Range	0–8		
	SD	3.18		

(Continued)

Table 1. (continued)

Standardized Language Tests		*Aphasic*	*Old-Elderly*	*Middle Aged*
11. Automatized Sequences	*M*	7	*	*
	Range	5–8		
	SD	1.28		
12. Reciting	*M*	1.5	*	*
	Range	0–2		
	SD	0.62		
13. Reading Sentences and Paragraphs	*M*	9	9	10
	Range	5–10	8–10	10–10
	SD	1.39	0.80	0.00
BDAE Aphasia Severity Rating	*M*	3.5	*	*
	Range	2.5–5		
	SD	0.91		
WAIS-R Subtests				
1. Picture Arrangement	*M*	9	10	12
	Range	3–16	7–19	7–18
	SD	3.25	3.16	3.25
2. Block Design	*M*	9	10	11
	Range	4–12	7–17	6–16
	SD	2.31	2.97	4.09
3. Similarities	*M*	9	12	14
	Range	5–15	9–16	11–17
	SD	2.59	1.85	4.63
Raven's (A & B)	*M*	19	17	21
	Range	11–24	11–22	17–24
	SD	3.77	3.52	5.87
Wechsler Memory Scale	*M*	18	23	28
	Range	8–30	15–34	18–45
	SD	6.33	5.86	10.51

Note: BNT = *Boston Naming Test* (Kaplan, Goodglass, & Weintraub, 1983); BDAE = *Boston Diagnostic Aphasia Exam* (Goodglass & Kaplan, 1983); WAIS-R = *Wechsler Adult Intelligence Scale–Revised* (Wechsler, 1981); Raven's = Raven's *Colour Progressive Matrices* (Raven, 1978); *Wechsler Memory Scale* (Wechsler & Stone, 1974).

* *All BDAE subtests were administered to the aphasic subjects. Only the Complex Ideational and Reading Sentences and Paragraphs subtests were administered to the old-elderly and middle aged subjects.*

2 points: Correct reiteration response

1 point: Partial concrete response

0 points: Incorrect response

A. Abstract

B. Concrete

The responses were independently rated by five judges, and a consensus was reached through discussion when disagreement occurred. The multiple-choice responses were scored according to Delis et al. (1984) using a 3-point scale identifying abstract, concrete, and incorrect responses.

RESULTS

Group patterns for spontaneous and multiple-choice responses among young controls, middle aged adults, old-elderly individuals, and aphasic patients were analyzed using a three-factor analysis of variance with a group factor, *group*, at four levels and two within-subjects or repeated factors each at two levels, *familiarity* (familiar and unfamiliar) and *question type* (spontaneous and multiple choice). Student-Newman-Keuls multiple comparisons were performed to test pairwise differences among the four groups.

Results are reported in Table 2 and illustrated in Figures 1 and 2. There is a significant difference between the groups for the spontaneous responses as illustrated in Figure 1. Moreover, there is a difference across groups according to proverb familiarity on the spontaneous task. Aphasic patients scored significantly lower than the other three groups for both familiar and unfamiliar proverbs (Student-Neuman-Keuls multiple comparison at $p \leq .05$). For familiar proverbs, aphasic patients tended to produce responses in the abstract category; however, the responses were primarily only partially correct (see score of 4 in Appendix B). For unfamiliar proverbs, the responses of aphasic patients tended to be in the concrete categories (see Appendix B, scores 1–3). Old-elderly individuals did not differ significantly from the middle aged and young adults on the familiar proverbs. However, differences on the spontaneous, unfamiliar proverb task were found for the old-elderly group, as manifested by a significantly lower performance than the two younger groups of normal individuals. It is of interest to note that the old-elderly individuals tended to produce responses in the abstract category. These responses were correct but incomplete.

Table 2. Results of Analyses of Variance

Source	df	MS	F	p
Between Subjects				
Group	3	25.7	32.81	.0001
Subjects/Diagnosis	81	0.78		
Within Subjects				
Question Type	1	552.6	988.83	.0001
Question Type x Group	3	18.99	33.97	.0001
Question Type x Subject/Group	81	0.559		
Familiarity	1	23.00	78.35	.0001
Familiarity x Group	3	1.52	5.18	.0025
Familiarity x Subject/Group	81	0.293		
Question Type x Familiarity	1	12.81	61.09	.0001
Question Type x Familiar x Group	3	1.04	4.96	.0033
Question Type x Familiar x Subject/Group	81	0.210		

Note: Group = aphasic (n = 15), old-elderly (n = 15), middle aged (n = 15), and young adults (n = 40); Question Type = multiple-choice or spontaneous response; Familiarity = familiar or unfamiliar.

For the multiple-choice responses, there was a significant group difference and a significant difference according to proverb familiarity. Whereas the aphasic patients did *not* differ significantly from the other three groups on familiar proverbs, the old-elderly group did score significantly lower than the two normal groups. However, the old-elderly group performed at a similar level as the aphasic group for the familiar, multiple-choice tasks of proverb interpretation. For the unfamiliar proverbs, the aphasic patients and old-elderly group again did not differ from each other, but both scored significantly lower than the middle aged and young adult groups. As evident from Figures 1 and 2, there is a significant interaction among group, familiarity, and question type, particularly apparent in the aphasic and old-elderly groups.

DISCUSSION

The most important finding of this study is the contrast in performance for the aphasic patients on the spontaneous versus the multiple-choice proverb task. The aphasic patients produced concrete interpretations for the spontaneous condition on the unfamiliar task. However, it is important to note that for the familiar proverbs, many aphasic patients

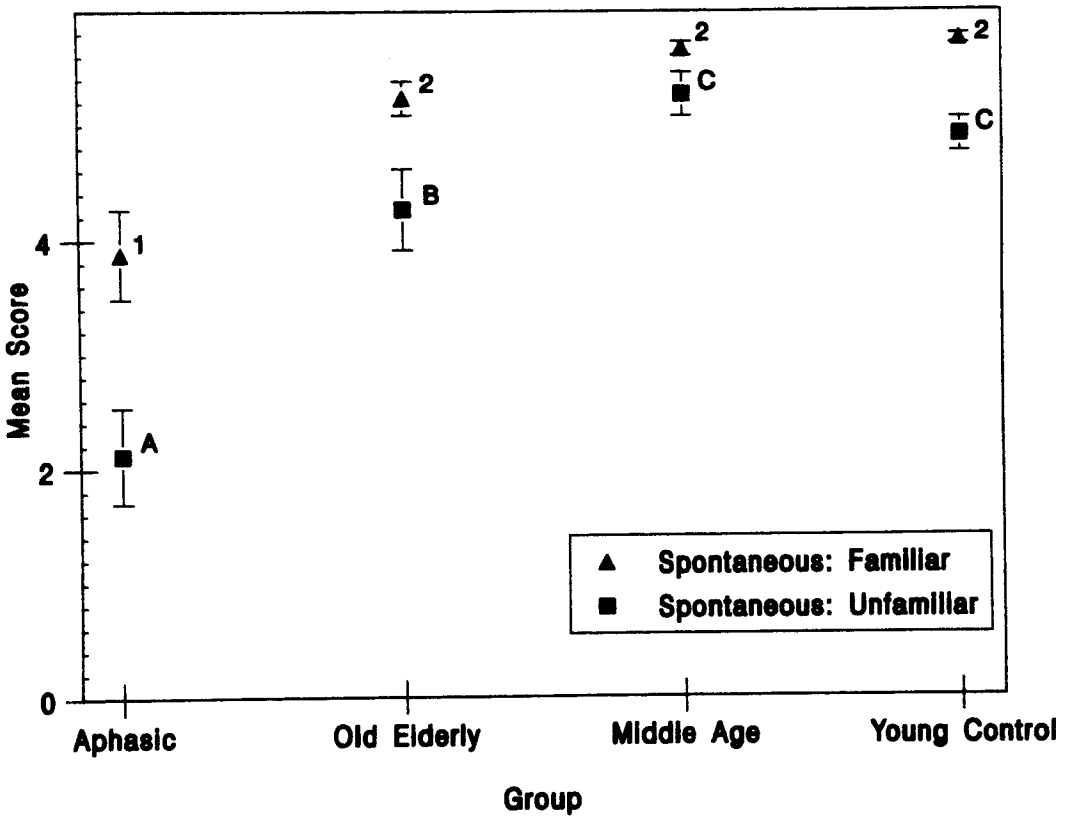

Figure 1. Group mean and one standard deviation are indicated for proverb responses in the spontaneous condition. Significant differences using the Student–Newman–Keuls test are indicated by nonmatching superscript numbers for the familiar proverbs or letters for the unfamiliar proverbs.

produced abstract, yet only partially correct, responses. Moreover, aphasic individuals were able to recognize correct abstract choices, as evidenced by a similar performance to the three normal groups on the familiar proverbs and one similar to the old-elderly on the unfamiliar proverbs, multiple-choice condition.

In interpreting the results, it is important to emphasize that proverbs can be used to investigate processing at both linguistic and cognitive levels. At a linguistic level, it is necessary to access both semantic and syntactic information. For example, to interpret a proverb, one has to access lexical semantics to find the right term, which is often quite abstract. It is also necessary to have access to the syntactic component to be able to express complex relationships between events contained in the proverb. At a cognitive level, one has to go through

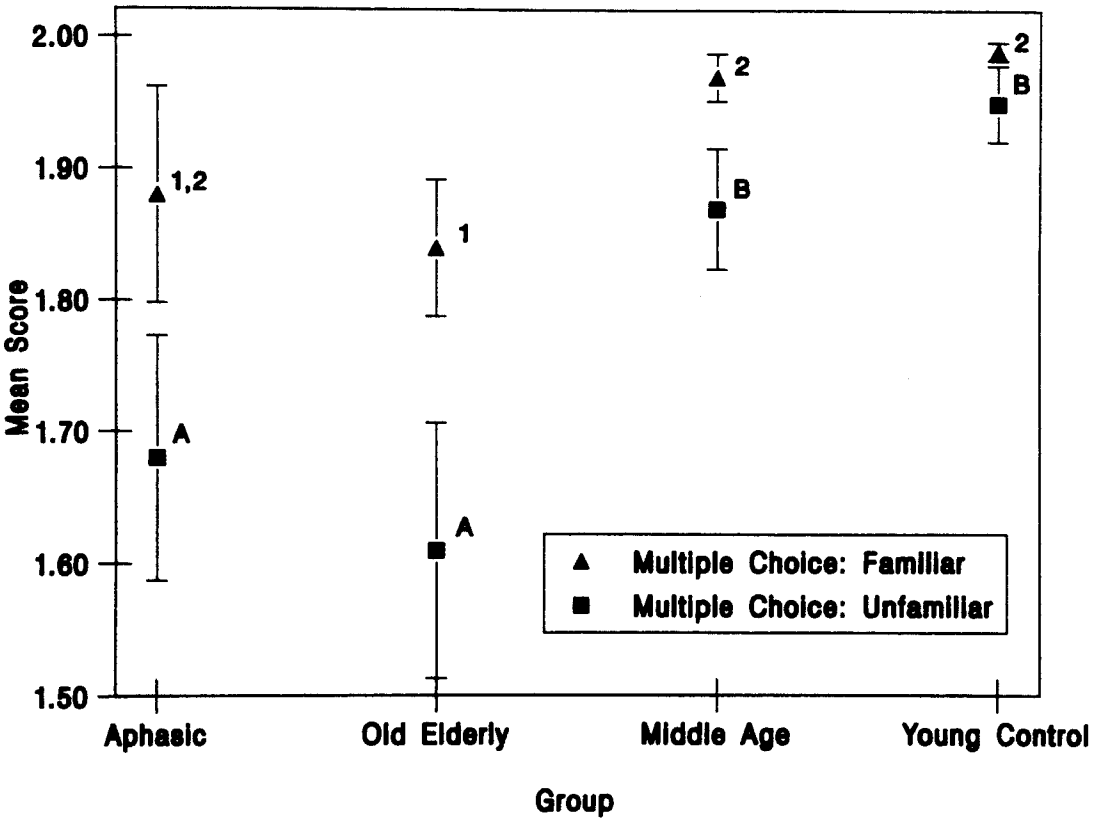

Figure 2. Group mean and one standard deviation are indicated for proverb responses in the multiple-choice condition. Significant differences using the Student–Newman–Keuls test are indicated by nonmatching superscript numbers for familiar proverbs or letters for unfamiliar proverbs.

cognitive processes to assess the true or deep meaning of a proverb at an abstract level.

The aphasic patients' poor performance on the spontaneous task and good performance on the multiple-choice task exemplifies this dual cognitive and linguistic nature of the proverb task. That is, language and cognition are needed for expression of the interpretation on the spontaneous task. In contrast to the spontaneous demands, linguistic demands are reduced while cognitive requirements persist when making a correct selection on the multiple-choice task.

The principle of characterizing abilities at cognitive and linguistic levels is critical when examining the performance of individual patients, because the different patterns of behavior are more revealing. For example, one of our anterior aphasic patients with a moderately severe

aphasia (2.5 on the BDAE severity rating) did not succeed on any of the proverbs in the spontaneous task, but was 100% correct on the multiple-choice task. This case provides a clear illustration of marked language impairment with relatively preserved cognitive abilities as manifested on proverb interpretation. In contrast, another aphasic patient with a mild language impairment (4.0 on the BDAE severity rating) failed on most of the proverbs for both the spontaneous and multiple-choice tasks. Consequently, his language impairment alone could not account for his poor performance on the proverb tasks. This patient expressed his difficulty in interpreting the proverbs by saying, "It is very hard to put it into words. I can see it in my brain, but I can't get it in my mouth." Even though this patient had a lot of language, he was incapable of using his language on a task that was cognitively complex. Thus, this subject illustrates the difficulty in describing linguistic and cognitive factors as being distinguishable. Only through careful examination of these types of patients can we come closer to understanding the necessary prerequisites for the processing of proverbs.

Another finding that deserves comment is the poor performance of the old-elderly subjects on the multiple-choice task. This finding should be interpreted cautiously. It is rather unlikely that the primary deficit is linguistic in nature since the old-elderly did well on the spontaneous task. The multiple-choice task involves various cognitive factors, such as attention, holding the choices in memory, and comparing them before the choice is made. The population of old-elderly may have had less exposure to multiple-choice tasks, which may lead to anxiety resulting in failure.

Much research is needed to unravel the intricacies of processing proverbs. We believe that proverbs provide a rich area for investigating the nature of nonliteral language and its cognitive underpinnings. In regard to aphasia, proverb interpretation provides a valuable tool in furthering the understanding of how cognition and language may be differentially impaired in individual patients with aphasia. We close with the proverb, "One proverb is worth a thousand words," meaning that a proverb may be an efficient way to tap cognitive and linguistic deficits in aphasic and other brain injured populations.

ACKNOWLEDGMENTS

This work is supported by grant 009741-013 from the Texas Higher Education Coordinating Board, Division of Research, Planning and Finance, and by grant AG09486 from the National Institute on Aging.

The authors also acknowledge the contribution of Research Assistant Carmen Branch in data analysis and manuscript preparation.

REFERENCES

Benton, A. (1968). Differential behavioral effects in frontal lobe disease. *Neuropsychologia, 6,* 53–60.

Bromley, D. B. (1957). Some effects of age on the quality of intellectual output. *Journal of Gerontology, 12,* 318–323.

Chapman, S. B., & Ulatowska, H. K. (1992). Methodology for discourse management in the treatment of aphasia. In R. K. Peach (Ed.), *Clinics in Communication Disorders, 2,* 64–81.

Cohen, G. (1979). Language comprehension in old age. *Cognitive Psychology, 11,* 412–429.

Cummings, J. (1985). *Clinical neuropsychiatry.* Orlando, FL: Grune & Stratton.

Delis, D. C., Kramer, J., & Kaplan, E. (1984). *The California Proverb Test.* Unpublished protocol.

Goodglass, H., & Kaplan, E. (1983). *The assessment of aphasia and related disorders.* Philadelphia: Lea & Febiger.

Gorham, D. R. (1956). A proverbs test for clinical and experimental use. *Psychological Reports, 2,* 1–12.

Kaplan, E., Goodglass, H., & Weintraub, S. (1983). *Boston naming test.* Philadelphia: Lea & Febiger.

Kempler, D., Van Lancker, R., & Read, S. (1988). Proverb and idiom comprehension in Alzheimer disease. *Alzheimer Disease and Associated Disorders, 2,* 38–49.

Raven, J. C. (1978). *Coloured progressive matrices.* London: H. K. Lewis.

Stuss, D. T., & Benson, D. F. (1986). *The frontal lobes.* New York: Raven Press.

Ulatowska, H. K., Sadowska, M., Kordys, J., & Kadzielawa, D. (1993). Selected aspects of narratives in Polish speaking aphasics as illustrated by Aesop's fables. In Y. Joanette & H. Brownell (Eds.), *Narrative discourse in normal aging and neurologically impaired adults* (pp. 171–190). San Diego: Singular Publishing.

Van Lancker, D. (1990). The neurology of proverbs. *Behavioral Neurology, 3,* 169–187.

Van Lancker, D., & Kempler, D. (1987). Comprehension of familiar phrases by left- but not right-hemisphere damaged patients. *Brain and Language, 32,* 265–277.

Wechsler, D. (1981). *Wechsler adult intelligence scale–revised.* San Antonio: Psychological Corporation.

Wechsler, D., & Stone, C. P. (1974). *Wechsler memory scale.* San Antonio: Psychological Corporation.

Winner, E., & Gardner, H. (1977). The comprehension of metaphor in brain-damaged patients. *Brain, 100,* 719–727.

APPENDIX A: MULTIPLE-CHOICE RESPONSES FOR THE PROVERBS

Instructions for Multiple Choice: Immediately after completion of the Free Inquiry version of the 10 proverbs, place the Multiple Choice version of the same 10 proverbs in front of the patient and say, *"Here are the same proverbs. Each proverb has four different possible meanings written below it. For each proverb, circle the meaning that you think is best. Also, circle F for familiar proverb, or NF for nonfamiliar proverb."*

1. THEY SEE EYE TO EYE. F NF
   A. All that glitters is not gold.
   B. An eye for an eye, a tooth for a tooth.
   C. People are in agreement.
   D. Two people can look directly at each other.

2. ROME WASN'T BUILT IN A DAY. F NF
   A. Rome wasn't built to meet today's standards.
   B. Great projects take time.
   C. It took many years to construct the Italian capital.
   D. One cannot love and be wise.

3. TOO MANY COOKS SPOIL THE BROTH. F NF
   A. One person can make soup better than ten.
   B. To many cooks, the broth is the first course.
   C. A penny saved is a penny earned.
   D. A task is at risk when more people are involved than are needed.

4. DON'T COUNT YOUR CHICKENS BEFORE THEY ARE HATCHED. F NF
   A. One shouldn't always assume that things will turn out the way one expects.
   B. The good is the enemy of the best.
   C. Chickens don't continue to sit on eggs after they have hatched.
   D. There may be fewer chicks than there were eggs.

5. DON'T JUDGE A BOOK BY ITS COVER. F NF
   A. One should read a novel before judging it.
   B. You can't buy any one book that covers every topic.
   C. Initial appearances may be misleading.
   D. One can catch more flies with honey than with vinegar.

6. ANYONE CAN HOLD THE HELM WHEN THE SEA IS CALM. F NF
   A. Anyone should hold on to the rail when the seas are not calm.
   B. It requires less skill to be a leader during easy times.
   C. To the pure all things are pure.
   D. Boats are easier to steer when the weather is good.

7. THE LONG WAY HOME IS OFTEN THE FASTEST. F NF
   A. A friend in need is a friend indeed.
   B. A long stay away from home is the fastest way to grow up.
   C. Travel on familiar roads, even if there appears to be a shorter route.
   D. One often makes a task more complicated by trying to find a simple solution.

8. SHALLOW BROOKS ARE NOISY. F NF
   A. When the water is low, the rapids are louder.
   B. Shallow brooks are not necessarily safe.
   C. People with little wisdom often talk too much.
   D. There is an exception to every rule.

9. ONE SWALLOW DOESN'T MAKE A SUMMER. F NF
   A. It's not wise to draw a conclusion based on a single example.
   B. One shouldn't think that winter is over just because the first bird has arrived.
   C. People who live in glass houses shouldn't throw stones.
   D. One swallow of a cold drink will only make you want more.

10. THE USED KEY IS ALWAYS BRIGHT. F NF
    A. The key to success is to always use bright ideas.
    B. Do unto others as you would have others do unto you.
    C. Regular practice results in the best performance.
    D. Tools stay shiny when one frequently works with them.

APPENDIX B: DELIS, KRAMER, AND KAPLAN'S (1984) 7-POINT SCALE USED FOR RATING SPONTANEOUS RESPONSES

Free inquiry scoring categories:

6 points *Correct Abstract Response*
Must be a correct general principle and not a specific example.

5 points *Correct Nuance Response*
An interpretation that is abstract and communicates the general intent of the proverb, but is in some way partially inaccurate (e.g., for "Too many cooks spoil the broth," the interpretation "The more people you have, the harder it is to complete a job" fails to encompass the idea that the task itself is at risk and not merely more difficult).

4 points *Partial Abstract Response*
Only part of the proverb is interpreted abstractly and correctly, and the other part(s) is omitted or concrete (e.g., for "Shallow brooks are noisy," the interpretation "People often talk too much").

3 points *Correct Concrete Response*
A. Specific instance response (e.g., for "Too many carpenters ruin the building").
B. Correct paraphrase (e.g., for "They see eye to eye," the interpretation "They can look directly at each other").

2 points *Correct Reiteration Response*
A correct concrete interpretation that has identical words as the target proverb found in two-thirds or more of the response (e.g., for "They see eye to eye," the interpretation "Two people see eye to eye on things").

1 point *Partial Concrete Response*
Only part of the proverb is interpreted concretely and correctly, and the other part(s) is omitted or incorrect (e.g., for "Too many cooks spoil the broth," the interpretation "There are too many cooks in the kitchen").

0 points *Incorrect Phonemic Response*
An interpretation that contains many of the same or similar-sounding words as the target proverb but is semantically incorrect (e.g., for "Rome wasn't built in a day," the interpretation "Roman buildings were the best in their day").

0 points *Incorrect Abstract Response*
An interpretation that is incorrect and contains more abstract concepts than concrete concepts (e.g., for "Shallow brooks are noisy," the interpretation "People are often evil").

0 points *Incorrect Concrete Response*
An interpretation that is incorrect and contains more concrete than abstract concrete concepts (e.g., for "One swallow doesn't make a summer," the interpretation "If you have one drink, you'll only want more").

Other qualitative features to note:

Perseveration
Disagreement (e.g., "That's not true.")
Personalization
Refusal to respond because of unfamiliarity