

## A CROSS-CULTURAL STUDY OF SYMBOLIC MEANING—DEVELOPMENTAL ASPECTS<sup>1</sup>

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Twenty three Israeli kindergarteners and sixteen Israeli college students were tested on a variant of the Semantic Differential Test developed by Guiora (1976) to test the hypothesis that young Israeli children, like adults, are not influenced by the prevalence of grammatical gender in the language but ascribe sexual meanings to the test words based on their assumed connotative values.

The results bore out the original hypothesis, suggesting that whatever the cognitive processes are that underlie the development of the capacity to resolve seemingly conflicting information in favor of the more salient feature, e.g. meaning, they seem to be in place by the time the child reaches five years of age.

The Sapir-Whorf hypothesis is much in vogue again, after having been dormant for more than a generation. Perhaps, the current tilt in contemporary psychology toward cognitive interests offers an explanation. Language and thought—are they two interdependent phenomena, or two sides of the same phenomenon? This seems to be a question intriguing many psychologists. The attractiveness of Whorf's position lies in its boldness and imaginativeness. According to John Carroll (Whorf 1956:26) "Whorf appeared to believe, indeed, that the content of thought influences the process of thought, or that different contents produce differing species of process, so that generalization about process becomes impossible without content's being taken into account". This line of reasoning leads of course to what has

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become known as the principle of linguistic relativity, which states—again in the words of Carroll—“at least as a hypothesis, that the structure of a human being’s language influences the manner in which he understands reality and behaves with respect to it”. (Whorf 1956:23)

Writing in 1956, Carroll commented that the hypothesis has not been sufficiently tested to confirm it or reject it. The situation twenty years later is not much different. Not enough experimentation has been done to illuminate the issue (Brown & Lenneberg, 1970). The University of Michigan Personality and Language Behavior Research Project has been engaged in such an effort for some time now. We had raised the question of the relationship between grammatical gender and the development of gender identity—the issue of the influence of language on self-perception (Paluszny et al. 1973, Beit-Hallahmi et al. 1974). In operational terms, we asked the question: does gender loading in one’s native language influence the timing of the attainment of gender identity? Related to this inquiry we raised the question: does the gender assignment (grammatical gender) in one’s native language influence the way in which male or female characteristics are ascribed to essentially asexual objects?

A Semantic Differential Test composed of a masculine-feminine scale and thirty stimulus-words was administered in English to 95 American college students and, its Hebrew translation to 95 college students in Israel (Guiora 1976, Guiora, Beit-Hallahmi and Sagi, in press). The thirty words are arranged in three pairs of sets, termed Neutral, Consonant, and Dissonant. Each set had the English equivalent of five masculine (in Hebrew), and five feminine (in Hebrew) nouns. The Neutral set was composed of names of objects with presumably minimal sexual connotation. The Consonant set was composed of words whose grammatical gender (in Hebrew) seemed to be positively related to their sexual connotation, and the Dissonant set was composed of words whose grammatical gender (again in Hebrew) seemed to be at variance with their sexual connotation. It was found that the Israeli students were not influenced by the grammatical gender, but assigned sexual connotation to the test-words in a manner identical to American students. The so-called Whorfian hypothesis as commonly stated in its simplistic form was not supported in this study. The findings suggested the existence of the universality of symbols at least across these two languages and cultures, thus adducing support to the view that in the assignment of meaning the influence of the universal shared human experience is stronger

than that of the particular constraints imposed by the structure of native language.

As an extension of this study we raised the question, this time from a developmental perspective, of whether our findings were age related. It seems to be clear that adults are not influenced by the constant exposure to gender markings and their assumed residual associative influence, but assign meaning to words as if they represented cultural universals. It would be of interest to know how soon one acquires this capacity to "resolve" seemingly conflicting information in favor of meaning as opposed to structure. Nadelman (1970) has shown that both boys and girls have "high knowledge" of sex-typing by five years of age. For this reason, it was this age group that we decided to compare with adults.

### Subjects

Twenty-three Israeli kindergarteners and sixteen Israeli college students were tested. The kindergarten group was composed of 12 boys and 11 girls, while the adult group consisted of 6 males and 10 females. Hebrew was the native language of all subjects. They were all tested individually.

### Materials and Procedure

For the adult group there were twenty-four stimulus-words, arranged in three sets in a manner similar to the technique reported previously (Guiora 1976, Guiora et al. in press). Here too, the three sets were termed Neutral, Consonant and Dissonant, respectively. The stimulus-words in this experiment were as follows:

Neutral:	(M)	Clock, Book, Table, Chair
	(F)	Teaspoon, Lamp, Bed, Toothbrush
Consonant:	(M)	Aircraft, Tank, Gun, Hammer
	(F)	Doll, Skirt, Dress, Braid
Dissonant:	(M)	Earring, Apron, Broom, Iron
	(F)	Truck, Submarine, Bow, Necktie

All stimulus-words were selected to insure that the kindergarten group was familiar with the nouns and knew how to label

them correctly. The college students' perception of the nouns was tested by means of a three-category scale: Male, Female & Neutral. They were simply asked to place each of the stimulus-words in one of these categories.

Since it was obvious that we could not use a paper and pencil test with our five year olds, a variant of the technique was developed in the form of a simple sorting task. Line drawings of girl and a boy (subsequently identified as Ruthi and Coby) on  $17 \times 25$  cm. white cards, were placed in front of the subject. The child was then asked to place each of twenty-four pictures in the deck either in front of Ruthi or Coby. He was instructed to make his decision "according to whether the object in the drawing belonged to, or went best with, Ruthi or her mother (female), or Coby and his father (male)." If the child thought a picture belonged to both Ruthi and Coby, he was asked to hand the card to the experimenter.

## Results

As can be seen in Table 1, the pattern of responses to the

TABLE 1  
*Responses of adults to stimulus-words.*

	Masculine	Feminine	Neutral	X <sup>2</sup>	Significance
	5	0	11	11.38	.01
M	2	0	14	21.51	.01
	1	0	15	26.39	.01
	2	0	14	21.51	.01
	0	7	9	8.38	.05
F	0	4	12	14.01	.01
	0	0	16	32.02	.01
	0	2	14	21.51	.01
	16	0	0	32.02	.01
M	15	0	1	26.39	.01
	14	0	2	21.51	.01
	13	0	3	17.39	.01
	0	16	0	32.02	.01
F	0	15	1	26.39	.01
	0	15	1	26.39	.01
	0	16	0	32.02	.01
	16	0	0	32.02	.01
F	16	0	0	32.02	.01
	16	0	0	32.02	.01
	12	1	3	12.88	.01
	0	15	1	26.39	.01
M	3	7	6	1.63	NS
	0	16	0	32.02	.01
	2	10	4	6.50	.05

stimulus-words is quite similar to the one reported in the previous study (Guiora 1976, Guiora, et al, in press). Adult subjects classified the stimulus-words based on their assumed sexual connotation rather than on their grammatical gender. This pattern applies to all items except for the stimulus-word *Broom*. This item was perceived by adult subjects equally as Female and Neutral, although it had been assumed to have feminine connotation. It would seem however, that it is not the impact of the grammatical gender of the word that accounts for this single exception, but rather its shifting, sex-related connotative value. (*Broom* in Hebrew carries masculine gender marking—yet our subjects did not assign male values to it).

Table 2 shows the findings for the kindergarteners. The similarity between their behavior and that of the adults on their respective tests is evident.

## Discussion

It has been shown again that Israeli college students are not influenced by the prevalence of grammatical gender in the

TABLE 2  
*Responses of kindergarteners to stimulus-words.*

	Masculine	Feminine	Neutral	X <sup>2</sup>	Significance
Clock	0	1	22	40.30	.01
Table	0	0	23	46.04	.01
Book	3	0	20	30.38	.01
Chair	1	0	22	40.30	.01
Teaspoon	0	4	19	26.20	.01
Lamp	0	5	18	22.54	.01
Toothbrush	1	1	21	34.81	.01
Bed	0	1	22	40.30	.01
Tank	21	0	2	35.08	.01
Aircraft	19	0	4	26.20	.01
Gun	21	0	2	35.08	.01
Hammer	21	0	2	35.08	.01
Skirt	0	23	0	46.04	.01
Doll	0	22	1	40.30	.01
Dress	0	23	0	46.04	.01
Braid	0	23	0	46.04	.01
Necktie	16	4	3	13.67	.01
Submarine	15	1	6	15.60	.01
Truck	20	0	3	30.38	.01
Bow	14	1	8	11.05	.01
Apron	0	21	2	35.08	.01
Broom	1	14	8	11.05	.01
Earring	0	23	0	46.04	.01
Iron	1	17	5	18.10	.01

language; rather, they ascribe sexual meaning to the test words based on their assumed connotative values. Thus this replication seems to confirm our previous study. Further, the findings offer clear evidence that five-year old Israeli children will be guided by the assumed sexual connotation of the words denoting them, and not by their grammatical gender. In this regard they behave like adults.

Whatever the cognitive process are that underlie the development of the capacity to resolve seemingly conflicting information in favor of the more salient feature (that is, meaning), they seem to be in place by the time the child reaches five years of age. It would be interesting to extend this investigation downward in age, and further probe if a developmental milestone can be identified.

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