

GENDER-RELATED BOOK-CARRYING BEHAVIOR:
A REEXAMINATION^{1,2}

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Summary.—Observational studies of carrying behavior evidencing differences in the positions adopted by men and women for carrying books and described by Jenni and Jenni in 1976 have led authors to define the various carrying positions as either typically “male” or typically “female.” The present authors conducted five observational studies on carrying behavior in Geneva, Switzerland, over a 6-yr. period. In each sample, almost 50% of women adopted the same positions as men. These results show that it is necessary to question the gender-stereotypical nature of book-carrying positions and to consider gender differences in behavior from a more dynamic standpoint.

In 1976 a number of observational studies of carrying behavior were published, evidencing differences in the positions adopted by women and by men for carrying objects such as books, notebooks, folders, and documents (Hanaway & Burghardt, 1976; Jenni, 1976; Jenni & Jenni, 1978; Spottswood & Burghardt, 1976). The authors distinguish two main types of carrying positions (Fig. 1). In the first type (Type I), books are held in front of the body; one or both arms are folded around the books and the hips or pelvic bone serve as a support. The authors refer to it as the typically “feminine” or “female” book-carrying style. In the second type of position (Type II), the books are held in one hand, with the arm more or less straight alongside the body. These positions are referred to as the typically “masculine” or “male” carrying style.

To explain these gender differences in carrying style, a number of variables have been examined. Cross-cultural studies were carried out by D. A. Jenni and M. A. Jenni (Jenni, 1976; Jenni & Jenni, 1976; Jenni & Jenni, 1978), who made observations on carrying behavior in various countries and social environments in North and Central America. Although they found similar differences in carrying styles between men and women, the proportion of women adopting the two types of positions varied from one sample to another. Whereas, for example, 95% of a sample of New York high school women carried books in front of the body (Type I), only 68% of women from a college in El Salvador adopted this position and only 33% in the Costa Rican sample.

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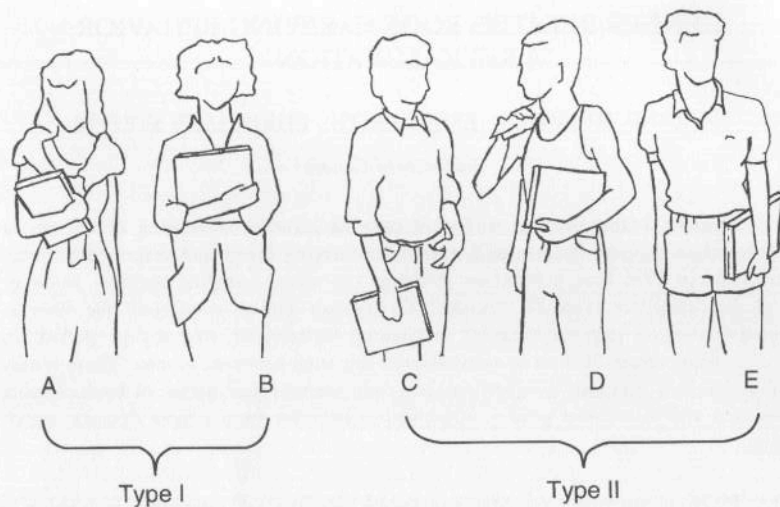


FIG. 1. The five categories of book-carrying positions used for data collection and analysis. Legend: In Type I positions (A and B) books are cradled in one or two arms against the front of the torso. The short sides of the book(s) rest on the hips and are approximately parallel to the ground. In Type II positions (C, D, E) the books are held at the side of the body, below or at the height of the hips. The long sides of the book(s) are more or less parallel to the ground.

Several studies investigated the relation between age and carrying behavior (Hanaway & Burghardt, 1976; Jenni & Jenni, 1978; Scheman, Lockard, & Mehler, 1978). Analyses indicated an absence of differences in carrying behavior of kindergarten children, as most young children (between 60 and 80%) carry books at the side in one hand (Type II). By primary school, however, girls' carrying behavior begins to differ from that of boys. A growing proportion of girls rest their books on the hips and cradle books with the arms against the torso (Type I). The greatest increase in this carrying style by girls is around adolescence (age 11-12/Grades 6 and 7). The carrying behavior of boys is stable. Regardless of age, the majority of boys (over 80%) carry books in one hand at the side. The differences in carrying behavior are greatest between ages 14 and 16 (Grades 10 to 12), after which they decrease slightly (Jenni & Jenni, 1978).

These age-related differences led a number of authors to hypothesize that morpho-anatomical factors such as hip and shoulder width, or grip strength, may play a role in determining differences related to gender in carrying positions. Scheman, *et al.* (1978), for instance, computed an index value of relative protrusion of the hips from the rest of the body for each subject they observed. In young children, they did not obtain correlations between carrying style and this anatomical index. Among high school students,

however, they found that the hip-protrusion index was generally smaller for individuals who carried books on the side than for those who carried books in front of the body. Spottswood and Burghardt (1976) measured subjects' grip and arm strength, as well as the weight of the books they carried. Their data showed that the relation between grip strength and book weight cannot account for differences related to gender in carrying styles.

More recently, Alley and Kolker (1988) reported that 8.5% of women not using bookbags used "masculine" (Type II) carrying styles. These authors also investigated whether there might be a relation between book-carrying styles and personality traits such as sex-role identity. For female subjects they obtained significant correlations between carrying style and subjects' self-ratings on masculinity and femininity scales. For males correlations were not significant.

Taken as a whole the results of the above mentioned studies point to the necessity for caution when attempting to explain the observed differences in carrying behavior on the basis of variables such as those that have been examined up until now (culture, age, morphology, strength, personality traits). Although it may be safe to conclude that both sociopsychological and morpho-anatomical factors play some role in book-carrying behavior, it does not seem possible to isolate one factor as responsible for differences in carrying styles between sexes. Given this difficulty we think it is important to reexamine the sexual status of differences in book-carrying behavior and to question the stereotypical nature of the different positions that have been described. Is it justified to define them as typically "male" or typically "female"? It should be noted that, although most authors conclude that carrying behavior of men and women is the consequence of the interaction among several factors, none actually question the sex-typical nature of the observed carrying behavior. Indeed, they treat the different carrying positions almost as if they were static gender attributes of the individuals. We believe it is necessary to study gender differences in behavior from a more dynamic standpoint and to reinvestigate the reputed stability of differences in carrying styles between men and women.

In accordance with authors such as Deaux (1984, 1987) and Crawford and Marecek (1989), we are opposed to considering gender as a stable set of attributes rather than as a dynamic process. It is preferable, as West and Zimmerman (1987) argue, to speak of "doing a gender" rather than "having a gender" (Crawford & Marecek, 1989, p. 156). This conception of gender allows for variability and change: individuals adapt or modify their behavior, such as the way they carry books.

Since all the previous investigations were carried out in North and Central America, and most were done more than 15 years ago, we did a rep-

lication study in 1985 at the University of Geneva, Switzerland. We found that the proportions of women adopting the various carrying styles were considerably different from those reported in previous studies. Indeed, almost 50% of the women in our sample adopted the so called typically "male" carrying styles. To assess whether this discrepancy was an artifact or a stable effect that might support our doubts concerning the stereotypical character of differences between genders in carrying styles, we conducted several additional investigations over a period of six years.

METHOD

Basic Samples

From 1985 to 1990, five systematic observational samples were selected at and around the University of Geneva, Switzerland. In each sample the categories used in recording and classifying data on book-carrying positions were the same as those used in previous investigations (cf. Jenni, 1976). This system of classification comprises five categories of carrying positions (Fig. 1) divided into two types, in front of body (Type I) and at the side of body (Type II).

Observers

A total of 70 observers (15 men and 55 women) distributed in the five samples participated in collecting data. They were not aware of the aims of the study and were not previously informed about the reported gender differences in carrying behavior. The observers were instructed to position themselves in different locations in or around the various university premises situated in downtown Geneva and to observe subjects from a distance. To avoid bias in the selection of subjects, observers recorded the carrying position and the sex of all subjects carrying documents or books and crossing a predetermined real or imaginary threshold during the entire observation period.

In the five samples, a total of 2602 adult subjects were observed, 1257 men and 1345 women. They were students of the University of Geneva, approximately 18 to 25 years old.

RESULTS

Gender Differences

Fig. 2 summarizes the results of our observations made from 1985 to 1990 ($N=2602$) and compares these to those reported by Jenni in 1976 ($N=2401$, p. 326).³ Our results, like those of Jenni, indicate gender differ-

³We used Jenni's data for comparison because details on number of observations for Type I and Type II carrying styles are provided.

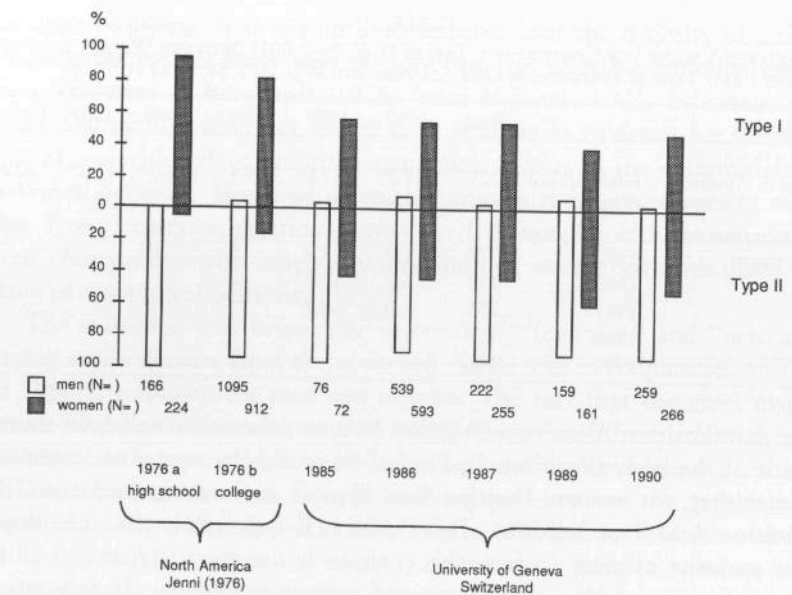


FIG. 2. Proportions of Type I and Type II positions according to sex and year of investigation (no observations were made in 1988).

ences in carrying behavior. However, the relative frequencies of Type I and Type II positions for the women in our samples are very different from those obtained by Jenni. We found that a large proportion of women (from 43 to 60%) adopt the same type of positions as men (Type II). This was the case in each of the five samples. Jenni reported less than 20% of women using these positions. On the other hand, the men in our samples, like those observed by Jenni in 1976, adopt mainly Type II positions (more than 90%).

Carrying Positions

Chi-squared analyses (see Table 1) show that for each of our samples the proportions of Type I and Type II positions in women are significantly different from those reported by Jenni. These results indicate that with respect to previous observations, women, but not men, show a difference in book-carrying behavior. To detail this finding we present in Table 2 the relative frequency of each of the five carrying positions illustrated in Fig. 1. We notice that almost two-thirds of the men in our samples held documents and books with one hand and arm outstretched alongside of the body (Position E). This was also reported to be the most frequent position in other studies (Hanaway & Burghardt, 1976; Jenni, 1976; Scheman, *et al.*, 1978). The carrying behavior of women in our samples was much more varied than in previous investigations: about half of women held books against the chest with

TABLE 1

CHI-SQUARED VALUES FOR CONTINGENCY TABLES (1 *df*, **p* < .001) BETWEEN WOMEN ADOPTING TYPE I AND TYPE II POSITIONS IN OUR SAMPLES AND IN JENNI'S SAMPLES (1976, p. 326)

Sample		Total	1990	1989	1987	1986	1985	College
Jenni (1976)								
North America	High School	224	134.2*	143.6*	103.4*	113.7*	71.1*	22.8*
	College	912	143.8*	141.3*	91.9*	131.5*	31.9*	
Our Samples (Geneva)								
	1985	72	1.9	5.2	.1	.01		
	1986	593	6.1	12.8*	.2			
	1987	255	3.0	8.2				
	1989	159	1.9					
	1990	266						

either one (Position A) or two (Position B) arms; the other half held them at the side of the body (Positions C, D, and E) as did the men. It is interesting to notice that, for women, Position E of Type II is almost as frequent (28%) as Position A of Type I (32%). This Position E is precisely the one adopted by the majority of men. In fact, this position is the most frequent of all five positions for the entire sample (men and women combined). It accounts for 45% of all observations.

TABLE 2

RELATIVE FREQUENCIES (IN PERCENT) OF FIVE CARRYING POSITIONS BY SEX*

Group	Position					Total
	Type I		Type II			
	A	B	C	D	E	
Men	6	2	16	14	62	1257
Women	32	21	8	11	28	1345
Men and Women	20	11	12	12	45	2602

*Since the proportions of subjects for each position were similar in all samples, frequencies were summed across samples.

DISCUSSION

Our observations indicate that an important proportion of women carry books in positions that have been called until now "typically male." This finding brings us to question the notion of sex-typical carrying behavior. First, we shall recall some results from other studies that correspond to our own findings. We shall then analyze the reasoning that we believe had led to the definition of carrying positions as either "masculine" or "feminine" and point out the misinterpretations to which this reasoning may lead.

Observations made in Costa Rica and in El Salvador by Jenni and Jenni (1978) showed that a large proportion of women, respectively, 61% and 32%, carried books in the same positions as men. The developmental studies indicate that young children, regardless of their gender, adopt the so-called

masculine positions. It is not until adolescence that the majority of girls differentiate themselves from boys by adopting the so-called feminine carrying styles (Hanaway & Burghardt, 1976; Jenni & Jenni, 1978; Scheman, *et al.*, 1978). The authors interpret results such as these as evidence for the importance of sociocultural and morpho-anatomical factors in the determination of sex-typical behavior. However, given the uniformity of percentages of women using Type II carrying positions across our five samples and the concordance of our observations with other previous findings, we are led to reconsider the notion of sex-typical behavior.

The reasoning that brings one to speak of "feminine" and "masculine" carrying styles departs from the observed differences in frequencies of Type I and Type II positions for men and women. The fact that the great majority of men adopt specific positions that are different from those adopted by the majority of women can be interpreted as an equivalence relation (in the logical sense) between a given type of carrying position and the gender of the person who adopts that position. Referring to positions as masculine or feminine is misleading because one thereby assimilates a form of behavior to the gender of the person adopting that form of behavior. One reifies a given sexual attribute of a person as if it was independent of maturity, morphology, or sociocultural context. This assimilation of behavior with a person's gender is not consistent with the above mentioned results which show that women frequently adopt the same positions as men. Rather than a relation of equivalence we obtain an implication: if a person is a man then he carries on the side, but if a person carries on the side then that person is not necessarily a man, since, as we have seen, nearly half of the women in our sample also used this carrying position. It is therefore clearly not valid in this case to speak of sex-specific carrying styles.

As carrying behavior does not appear to be a fixed gender attribute, the relevant question for investigation of carrying behavior is not why men and women tend to adopt different positions, but why, as our results and those of previous studies indicate, men's carrying behavior is uniform and stable, whereas women's behavior is more varied and changing.

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