

SEX AND THE SINGLE ARMREST: USE OF PERSONAL SPACE DURING AIR TRAVEL

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*Summary.*—Studies using a questionnaire and direct observation were designed to explore the correlation between sex and territorial space on airplanes. Subjects were observed in the coach section of airplanes to determine whether men or women used the common armrest more, when seated in mixed-sex arrangement. Other subjects responded to an interview questionnaire at a major airport. Results indicate that men, with or without control for size, had a much greater tendency to use the common armrest. Also those subjects accustomed to using the armrest felt angrier when denied this space.

The issue of sex and body/personal space has been discussed by Henley (1977) who analyzed the situation from a status/political viewpoint noting that men use their greater personal space to maintain greater power. Earlier research on personal space examined other variables. For example, territoriality and dominance behavior have been studied in animals by Shoemaker (1939), Davis (1959), and more recently in humans by Lott and Sommer (1967) who examined status, territoriality, and aggressiveness. An obvious natural experiment for limited space and territorial behavior by males and females exists with the common armrest on the coach section of an airplane. Since earlier research has shown males tend to use more personal space than females (Willis, 1966; Baxter, 1970; Harnett, *et al.*, 1970), the hypothesis was that men would use the common armrest more than women in a mixed-sex seating arrangement.

Other research investigations have determined that females' personal space is violated more frequently than that of males. Buchanan, Juhnke, and Goldman (1977) studied males' and females' violations of personal space on elevators. In their first experiment, the subjects were given a choice to violate or not by placing an experimenter near only one of the two floor selection panels, and in nearly all cases, the subjects chose to not violate personal space. The second study placed experimenters at both floor selection panels, which required a violation of personal space. When the situation demanded violation, men showed a significant (72%) preference to violate the female experimenter's personal space. In conjunction, Skolnick, Frasier, and Hadar (1977) examined invasions of male and female sunbathers by both males and females. Fifty-four percent of the female subjects reacted positively when their space was invaded by males; while only 19% of the males invaded by females reacted positively.

Schwarzwald, Kavish, Shoham, and Waysman (1977) considered males' and females' personal space violations under conditions of fear and no fear.

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In a situation of fear males tended to group with other males, and females tended to group with other females. Under conditions of no fear, however, males significantly chose to go closer to females than to males.

In a study conducted by Tipton, Bailey, and Obenchain (1975), it was proposed that a difference would be apparent in feminist and non-feminist attitudes toward personal space in their behavior in violating male personal space. Feminists and non-feminists were identified through the Attitude Towards Women Scale: with feminists describing themselves as more assertive, aggressive, and dominant. They conducted experiments in which feminists and non-feminists approached males and were approached by males. Feminists were more likely to go closer to males than were non-feminists.

It was concluded that feminists were more forceful (assertive) than non-feminists in their use of personal space and that feminists showed more control of their space than non-feminists.

Research by Coutts and Ledden (1977), Pedersen (1977), Lott and Sommer (1967), and Schiavo, Schiffenbauer, and Roberts (1977) found that violations and assertions about personal space occur more frequently under conditions of crowding and competition. Coutts and Ledden (1977) found that the invadee became increasingly more uncomfortable as the invaders came closer. In a similar study using groups as the invadees, Pedersen (1977) determined that invaders were more willing to approach larger-sized groups and non-male groups and concluded that group size and content affect use of personal space.

Schiavo, Schiffenbauer, and Roberts (1977) studied reactions of subjects as both target (invadee) and invader. Subjects used a smaller interpersonal distance when they approached than when they were approached, signifying that they perceived themselves as having greater control when invading than when being invaded.

Seating arrangement and status was the area explored by Lott and Sommer (1967). Conclusions confirmed that subjects were most prone to sit near those they considered of equal or lower competitive status rather than near persons of higher competitive status.

#### METHOD

A two-part study was designed to compare males' and females' use of arm-rests. Part one involved direct observation on 20 flights (occurring on a variety of weekdays, nights, and weekends) with a total of 852 people in mixed-sex seating arrangements. Since it might be argued that men are larger in size than women and therefore take up more space, the size of subjects was used as a control. Two conditions were considered, (1) when the male was judged to be of greater size than the female and (2) when the female was judged to be of equal or greater size than the male. Because collecting additional data

was difficult through in-flight observation, other variables were considered only in the second part of the study.

Data were collected by noting whether the man, the woman, both or neither was using the joint armrest. To reduce the effect of the invader-invadee relationship, observation took place after beverages or a meal was served, i.e., the instances of who sat down and claimed the armrest first were decreased by waiting until subjects had settled in. Passengers who were asleep or lovers cuddled together were not counted, since these were considered confounding circumstances. Results were tabulated by a straight ratio of male to female use (ignoring size of subjects), then the data were controlled by size to reduce the effect of the average male being larger than the average female and therefore having a greater volume of personal space.

In Part II of the study, interviews of 56 male and 45 female air travelers were conducted at a major airport.

The questionnaire used for the survey is reproduced in Appendix A. Eight variables were considered in the preliminary analysis: sex, age, occupation, frequency of travel, class of travel, use of the common armrest when respondent's neighbor is a male, use of the common armrest when respondent's neighbor is a female, degree of annoyance (bothered or not bothered) when seat-mate used the common armrest. The data were not sufficient on the variables of occupation, frequency of travel and class of travel, to have significant conclusions and hence those variables were not considered further.

The characteristics of groups formed on the basis of using variable (i) (sex), and on the basis of using variable (viii) (measuring annoyance felt when neighbor uses the common armrest), were examined using discriminant analysis. Use of the common armrest when a neighbor is male (or female) was collapsed into one variable because all respondents used (or did not use) the common armrest, irrespective of the sex of their neighbor. Therefore only five variables were used in the analyses.

#### RESULTS AND DISCUSSION

Frequency of use of a common armrest by the two sexes is shown in Table 1. Of the 426 mixed-sex pairs observed 67% (284) of the men used the arm-

TABLE 1  
USE OF COMMON ARMREST BY SEX

	Men	Women	Both	Neither
Totals (%)	284	57	37	48
	$\chi^2 = 302.4, 1 \text{ df}, p < .001$			
Ratio Without Size Control—5 men, 1 woman				
Ratio With Size Control—3 men, 1 woman				

rest, compared to 13% (57) of the women who used it, indicating a straight uncontrolled use ratio of five men to one woman. When controlling for body size, the ratio is reduced to three men to one woman. Therefore, although size did make a difference, men still used the armrest 75% more often than women did.

These initial observations support the hypothesis that men assert their use of personal space more often than women in a situation of competition. The results of the interview give further substantiation. Males are more bothered by a seat-mate using the common armrest than females are. Table 2 contains the information obtained from the females who were interviewed. Forty-two percent (19) of the 45 females surveyed felt uncomfortable when the joint armrest was taken by a seat-mate. (Five additional subjects indicated lack of awareness of the situation; since we were mainly interested in bothered and not bothered responses, those five were not included in the analysis.) The age-group breakdown showed that 58% of the younger female travelers were bothered in that situation, whereas five of the older-than-forty females were concerned. Of the 14 females under 40 yr. of age who were bothered, only three expressed feelings of annoyance when that seat-mate was a man; while the other 11 mentioned being only uncomfortable. Their replies ranged from the three saying, "I get angry," to the other 11 stating, "I prefer to use the armrest, so I feel uncomfortable."

TABLE 2  
DISCONTENTMENT FELT WHEN SEAT-MATE USED  
COMMON ARMREST: MALES AND FEMALES

Group	Bothered		Totals
	Yes	No	
Females <i>f</i>	19	26	45
%	42	58	100
Males <i>f</i>	38	18	56
%	68	32	100
Totals <i>f</i>	57	44	101
%	56	44	100

$\chi^2 = 7.6$  with 1 *df*,  $p = .005$

Of the 56 males interviewed (four others had no awareness of situation), 68% (38) said it bothered them to have a seat-mate use the joint armrest (see Table 2). When broken down into age groups, it was discovered that 92% (23) of the men under age 40 got annoyed when unable to use the armrest, while 48% (15) of the older-than-40 males were bothered. The strongest replies to the interview came from the under 40-yr. males. Of those 23 who answered "yes" to being bothered, 21 said they felt *very* annoyed. In

TABLE 3  
DISCONTENTMENT FELT WHEN SEAT-MATE USED COMMON ARMREST:  
FEMALES AND MALES BY AGE

Group	Bothered		Totals
	Yes	No	
<b>Females</b>			
<i>f</i> age under 40 yr.	14	10	24
%	58	42	100
<i>f</i> age over 40 yr.	5	16	21
%	24	76	100
Σ	19	26	45
%	42	58	100
<b>Males</b>			
<i>f</i> age under 40 yr.	23	2	25
%	92	8	100
<i>f</i> age over 40 yr.	15	16	31
%	48	52	100
Σ	38	18	56
%	68	32	100
Totals (All persons)	57	44	101
%	56	44	100

each case those younger males indicated that they were especially annoyed when a woman was the seat-mate using the armrest. One young man said, "I feel I deserve to have it; she doesn't." A number of others (15) said they usually ask the woman to move her arm or at least to share the armrest. Three others indicated that they get verbally abusive "especially if it is a woman, since they don't need the space."

There may be a variety of reasons why the younger-than-40 male felt nearly twice as strongly as the older-than-50 males did. It might be said that the older-than-40 generation is more passive, no longer feeling the need to press "onward and upward." It may also be that the older generations, due to their past socializations towards politeness, are more respectful of the personal space of others. Other social norms of the older generations (such as ladies before gentlemen, etc.) must also be considered.

Another reason may be that the younger-than-40 male is feeling more pressure to assert himself. An article in "The U.S. News and World Reports" (October 15, 1979) indicates that the post-World War II baby boom cohort is experiencing increasingly more competition in the schools and the job market. In addition, the younger male is being pressured from all sides by the women's movement and other minority claims. The results of the present investigation suggest that the younger male may be combatting this pressure by asserting his personal space more and more (i.e., "making room" for him-

self). An inquiry of United, American, Eastern, and US Air showed that over 64% of passengers are business travelers; 76% of those are male and 24% are women. Since women traveling for business in significant numbers is a fairly recent phenomenon, the use of the armrest for business work purposes constitutes pioneer territory for women, especially younger women.

The discriminant analysis with groupings based on sex indicated that more males are bothered by a neighbor using the common armrest than are females. Age also differentiated between the two groups to a small extent, with more males belonging to the older age group than women. The analysis with groupings based upon whether respondents are bothered or not by their neighbor using the common armrest indicated that those respondents who are bothered by a neighbor using the armrest generally use it themselves. Those respondents who are not bothered, let their neighbor use the armrest. More of the younger respondents are bothered by a neighbor using the armrest than are the older respondents.

The results of the discriminant analysis lead us to conclude that the group of persons who generally use the common armrest are characterized by feelings of annoyance when a neighbor uses it and by their age (they tend to belong to the younger age group).

#### CONCLUSIONS

The over-all results of the observational study indicate that, even when controlling for size, males use the common airplane armrest three times more frequently than females do in mixed-sex seating arrangements. Conclusions are supported by information from interviews in which twice as many males said they used the armrest. The younger males and females indicated much stronger feelings toward armrest use than the older people interviewed, especially the younger-than-40 males. A stewardess indicated that she felt these findings were accurate. During many flights, she has observed that men become much more aggressive about seating than women do; she has even seen some near fist fights by men.

From these results, we cannot determine the predisposing factors for self-assertion, which seem to lead to a greater volume of personal space and the use of the common armrest. This relates to the area of sex-role socialization and is commonly referred to as "nature vs nurture."

The social ramifications of this and other similar studies have yet to be fully measured. Although each study sheds new light on a relatively unknown area, there is much work yet to be completed before conclusive generalizations may be made. It is recommended that further studies be conducted on violations of personal space by younger men and women. Suggested areas of study might include feminist attitudes and common armrest use, the "who sits down first and claims the armrest" phenomenon, and perhaps movie theatres and other

places containing a joint armrest could be explored from the viewpoint of males' and females' use.

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APPENDIX A  
QUESTIONNAIRE

1. Sex ..... 2. Age .....
3. Occupation .....
4. How often travel by plane:  
     ..... more than once a month  
     ..... once every 1-6 months  
     ..... less than once in 16 months
5. Do you usually travel coach or first class .....
6. When sitting next to someone on a plane, which one of you usually uses the common armrest?  
     If it is a woman .....
- If it is a man .....
7. How do you feel when the other person uses the armrest and there is no more room on it?