

日本人大学生における パーソナルスペース（私有空間）と対人距離 Personal Space and Interpersonal Distance Among Japanese University Students

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パーソナルスペース（私有空間）、対人距離、男女の組み合わせ、
アプローチ（接近）の方向

Personal Space, Interpersonal Distance, Dyadic Combinations, Directions of Approach

ABSTRACT

本研究では、日本人大学生のパーソナルスペース（私有空間）および対人距離における性別とアプローチ（接近）の方向の影響が検討された。参加者は4種類の男一女の組み合わせに編成され、それぞれの組み合わせのうち、一人がもう一人に8つの異なる角度（0, 45, 90, 135, 180, 225, 270 および 315 度）から接近した。その結果、男性が女性に接近した場合には大きな対人距離が必要とされたが、反対に女性が男性に接近した場合には、より近くまでの接近が可能であった。また、男性同士の組み合わせの場合、女性同士の組み合わせの場合よりも、より大きな対人距離を維持する傾向があった。接近が正面からの場合、女性と比較して男性の方がより大きな対人距離を必要とした。これらの結果は、他の国々で得られた結果と合理的に一致している。本研究の方法論的な問題点、および今後の研究への示唆を合わせて議論する。

“Personal space” may be defined as an invisible domain around a person which that person considers important to his / her physical and psychological well-being and effective social functioning (See Altman, 1975; Evans & Howard, 1973; Gifford, 1983; Hayduk, 1978; Somner, 1969). Personal space has been said to have the characteristics of an invisible “bubble” surrounding the individual wherever he / she may be (See Figure 1). However, this “bubble” will rarely, if ever, be perfectly spherical in form. It is likely to shrink or expand in size and be distorted in shape as a function of the physical and social context in which the individual finds him / herself at any particular moment (Patterson, 1975).

The concept of “personal space” is really only meaningful when understood in terms

of interactions with others (See Sundstrom & Altman, 1976). As such, the concepts of “personal space” and “interpersonal distance” are variations on the same basic theme. Gifford (1997) defined “personal space” as “the geographic component of interpersonal relations. That is, it is the distance and angle of orientation (such as side by side or face to face) between individuals as they interact.” (p. 96).

The violation of an individual’s personal space can induce stress both in the victim of the violation and the perpetrator of the violation. Coping responses on the part of both parties may be observed. In cross-cultural encounters, violations of personal space may occur unwittingly with possibly unfortunate consequences for the relationship between the individuals involved. For those involved in

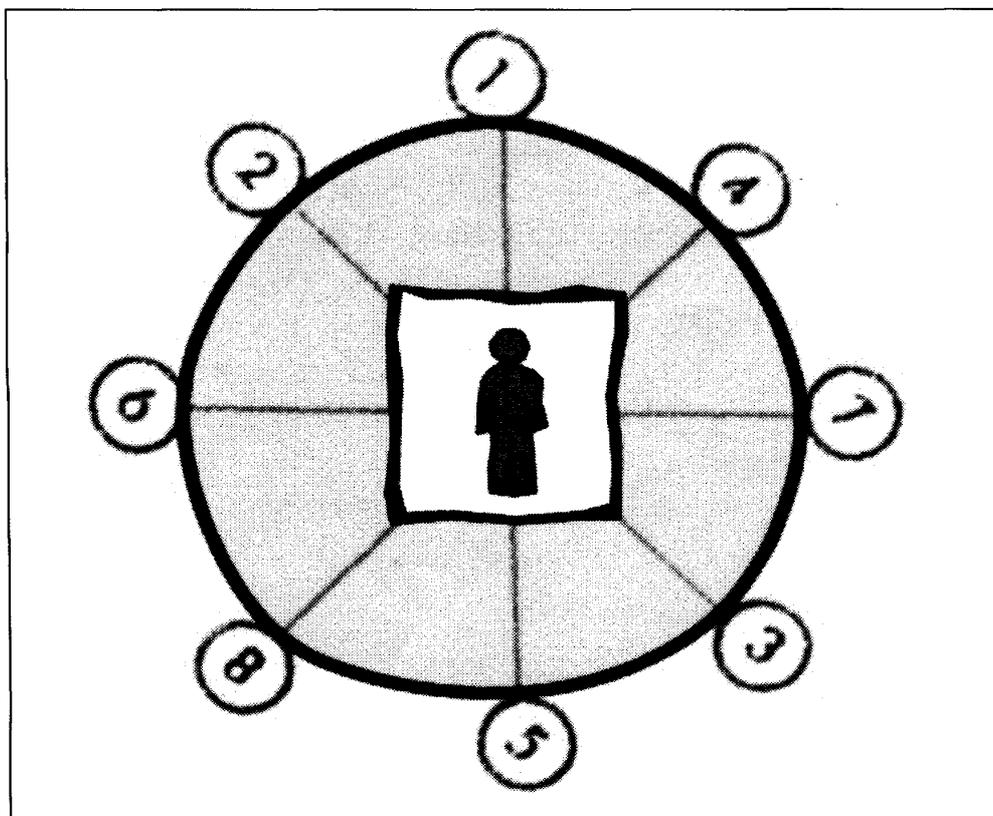


Figure 1. A two-dimensional representation of personal space maintained by an individual. The numbers (1 to 8) indicate various directions from which an individual may be approached.

training individuals for cross-cultural experiences, some instruction in the personal space characteristics of the other culture is appropriate. Indeed, there is some evidence that prior training in this area can contribute to successful cross-cultural encounters as negative feelings due to violation of personal space codes are minimized or eliminated.

The human need to maintain personal space and interpersonal distance has been a matter of considerable speculation over the years. Moreover, personal space is not the sole prerogative of human beings. This need seems to be widespread throughout the Animal Kingdom. From a biological / ethological perspective, a personal spacing mechanism enables the most efficient use of limited resources by a population of animals. These resources include food, water and the space required for efficient reproduction. A by-product of meeting these basic needs is often the reduction of interpersonal aggression. Support for the biological / ethological model comes largely from studies with infra-human species so extrapolating to the human condition must be undertaken with caution.

Maintaining an appropriate interpersonal distance may prevent over-stimulation (stimulus overload) from occurring. To the extent that stimulus overload impairs the individual's ability to function effectively, this is a useful perspective.

The general adaptation model of stress based on the work of Selye and Lazarus (Lazarus, 1966; Lazarus & Cohen, 1977; Lazarus, de Longis, Folkman, & Gruen, 1985; Selye, 1956) suggests that departures from the optimal interpersonal distance, as perceived by a given individual, can engender an aversive reaction in that individual. From this

point of view, interpersonal spacing helps individuals reduce the stress which, if it becomes chronic, can have serious health implications, physical and psychological.

Another approach suggests that a lack of personal space constrains the behavioural options of the individual whose space is being violated. Hall (1959, 1966) examined the phenomenon of interpersonal distance from a communication perspective. He argued that the quality of communication between individuals changes as a function of the distance between them. The emphasis in this approach is on non-verbal patterns of communication, including olfactory and tactile communication. Table 1 summarizes the sensory qualities of various interpersonal spatial zones and the types of interpersonal reactions able and likely to occur in these zones. As individuals come closer to one another, a variety of shorter distance sensory cues, not readily detectable from a distance, begin to exert an effect. Prominent among these would be olfactory cues. Since visual and auditory cues propagate over much greater distances than olfactory and tactile (touch) cues, the distance between two individuals may suggest something about the nature of the relationship between them.

Optimal Interpersonal Space

Gifford (1997) argues that interpersonal distance is better viewed as a continuum, a range of interpersonal distances associated with greater or lesser degrees of comfort. The most comfortable range, the optimal interpersonal distance for a given situation, is bounded by critical regions of discomfort where interpersonal distance is either too

Table 1

Types of Interpersonal Relationships and Activities and Sensory Qualities Characteristic of Hall's Spatial Zones (Adapted from Hall, 1963, via Fisher et al., 1984, p. 153)

Distance	Appropriate Relationships	Sensory Qualities
Intimate Distance (0.0 – .46 metres)	Intimate contacts (e.g., making love, comforting) and physical sports (e.g., wrestling)	Intense awareness of sensory inputs (e.g., smell, radiant heat) from other person; touch overtakes vocalization as primary mode of communication
Personal Distance (0.46 – 1.22 metres)	Contacts between close friends, as well as everyday interactions with acquaintances	Less awareness of sensory inputs than intimate distance; vision is normal and provides detailed feedback; verbal channels account for more communication than touch
Social Distance (1.22 – 3.66 metres)	Impersonal and business-like contacts	Sensory inputs minimal; information provided by visual channels less detailed than in personal distance; normal voice level (audible at 6.1 metres) maintained; touch not possible
Public Distance (> 3.66 metres)	Formal contacts between an individual (e.g., actor, politician) and the public	No sensory inputs; no detailed visual input; exaggerated non-verbal communication, since subtle shades of meaning are lost at this distance

close or too far to sustain effectively the relationship in question or the behaviour to be transacted. As such, optimal interpersonal space should be viewed as relative rather than absolute as it seems to change as a function of a number of variables.

Among the variables known to directly or indirectly affect the optimal interpersonal distance maintained between individuals is the culture in which they are embedded (Aiello & Pagan, 1982). Cultural differences in interpersonal space are widely acknowledged but the reasons for such variability across cultures are still subject to speculation. In summarizing the literature on this issue, Fisher, et al (1984) note the possibility that "... in high sensory 'contact' cultures (e.g., the Mediterranean, Arabic and Latin American

peoples) where individuals use smell and touch as well as other sensory modalities more, people should interact at closer distances. In contrast, more reserved 'non-contact' cultures (e.g., northern European and Caucasian American peoples) should exhibit larger interaction distances.... Various cultural groups may need different distances to fulfill the protective and communicative functions of personal space." (p. 158)

Language has been found by Sussman & Rosenfeld (1982) to be a factor in interpersonal distance. In particular, they found that Japanese keep a greater interpersonal distance in conversation (in Japanese) than do Venezuelans conversing in Spanish. However, when both converse in English, the interpersonal distance they maintain becomes closer

to that of Americans.

Age is another variable thought to influence interpersonal distance. Hayduk (1983) and Castell (1970) found that children 12 years of age or older begin to use personal space in a manner similar to adults in their society.

Personality has also been suggested as a factor influencing interpersonal distance. Cook (1970), Mehrabian & Diamond (1971) and Patterson & Holmes (1966) all produced evidence suggesting that extraverted individuals tend to maintain a smaller personal space than introverted individuals. Kline, Bell, & Babcock (1984) found that field-dependent individuals maintained smaller interpersonal distances than field-independent persons.

Numerous other variables have been found to affect interpersonal distance by themselves or in interaction. In the present study, the focus is on the variables of gender and direction of approach by another person as they may affect the size and shape of the personal space maintained by individuals. Aiello (1972) and Aiello & Thompson (1980) reported that males show more discomfort as the interpersonal distance decreases below the optimal level while females show more discomfort as the distance begins to exceed the optimal level. Hewitt and Henley (1987) suggest that men are more capable of tolerating spatial invasions by women while women suffer more distress if their personal space is violated by men. When the interpersonal distances maintained between same sex and mixed sex dyads are compared, evidence suggests that the largest interpersonal distance is maintained by Male-Male pairs (Bell, Kline, & Barnard, 1988; Gifford, 1982; Lott and Somner, 1967; Pellegrini & Empey, 1970) while Female-Female pairs tend to be

comfortable with smaller interpersonal distances (Kuethe, 1962; Kuethe & Weingartner, 1964).

The angle of approach by which personal space may be violated also seems to be a factor influencing the perceived severity of that invasion. Fisher and Byrne (1975) found an interaction between the gender of a person intruding upon personal space and the geographic position of that person relative to the target individual. While both male and female students responded better to a female confederate who sat close to them, males expressed preference for confederates who sat across from them while females were more receptive to confederates who sat next to them.

Purpose of the Present Study

The purpose of the present study was to explore with Japanese university students the influence of gender and angle of approach on the size of personal space and interpersonal distance. On the basis of previous studies in overseas contexts, the following expectations arose: (1) males should allow less interpersonal distance when approached by females while females should show a preference for greater interpersonal distance when approached by males (Hewitt & Henley, 1978); (2) larger interpersonal distances should be maintained by Male-Male dyads compared to Female-Female dyads (Bell, Kline, & Barnard, 1988; Gifford, 1982; Kuethe, 1962; Kuethe & Weingartner, 1964; Lott & Somner, 1967; Pellegrini & Empey, 1970;); and (3) male targets should maintain a greater interpersonal distance with a frontal (0°) approach than female targets, especially in Male-Male dyads

(Fisher & Byrne, 1975).

Methodology

Participants

Participants in this study were members of a General Education Course at the International Christian University in Mitaka, Tokyo, Japan. Participants ranged in age from 18 to 22 years.

At the time of this study, students were engaged in a classroom exploration of the phenomena of personal space, interpersonal distance and territorial behaviour. As a class project, students formed into groups and then into dyads in which one individual was approached by another from eight (8) different directions (See Table 2). In sixteen (16) of these dyads a female student was the target of an approach by another female student (Female Centre-Female Approach, or FC-FA). In four (4) dyads, a male student was the target of an approach by another male student (Male Centre-Male Approach, or MC-MA). In seven (7) dyads, a female student was the target of an approach by a male student (Female Centre-Male Approach, or FC-MA). In the remaining five (5) dyads, a male student was the target of an approach by a female students (Male Centre-Female Approach, or MC-FA). The discrepancy in the number of different dyadic combinations tended to reflect the demographics of this particular class which, in turn, was fairly representative of the university at large where female students outnumber male students by a ratio of two to one (2:1).

*Table 2
Dyadic Arrangements for the Study of
Maintenance of Personal Space*

DYAD				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Female				
Centre-Female Approach	16	50.0	50.0	50.0
Centre-Male Approach	4	12.5	12.5	62.5
Centre-Male Approach	7	21.9	21.9	84.4
Centre-Female Approach	5	15.6	15.6	100.0
Total	32	100.0	100.0	
Total	32	100.0		

Apparatus and Materials

The apparatus and materials used in this study were very simple. Each group of students was provided with a standard tape measure scaled in centimetres. Each group was also supplied with a figure similar to that shown in Figure 1. This figure illustrated the position of the target individual and the directions from which he or she should be approached by another individual as outlined in Table 3. Directions of approach were specified in several ways from the perspective of the target individual in order to facilitate understanding of the procedure.

Each group was also provided with a set of data sheets for recording the gender characteristics of each dyadic pair they were able to form (gender of target and gender of person approaching the target) and the interpersonal

Table 3
Directions of Approach to an Individual Maintaining Personal Space

Approach Direction	Compass Designation	Compass Degrees	Verbal Description
1	North	0°	directly in front
2	Northwest	315°	45° left
3	Southeast	135°	135° right
4	Northeast	45°	45° right
5	South	180°	directly behind
6	west	270°	90° left
7	east	90°	90° right
8	southwest	225°	135°

distance in centimetres between the the target member and the approaching individual when the target indicated that the approach should stop. Data sheets also provided an opportunity for participants to record their reactions to the experience of intrusions upon their personal space.

Procedure

Students were instructed to form into groups and then to form as many dyads of group members as possible utilizing all possible combinations of male and female group members as outlined in Table 2. With one member of a dyad serving as a target and the other approaching the target from each of the eight possible directions outlined in Table 3, a third member of the group was asked to use the tape measure to record the distance in centimetres between the members of the dyad when the target asked the person approaching to stop. Target individuals were asked to say STOP as soon as they began to feel uncomfortable with the approach of the other individual. Once the eight distance measures were taken with one dyad, another dyad was formed and measurements were taken in the

same way. Once all possible dyads had been formed and tested in a group, each group engaged in a discussion of their experiences and their comments were recorded by a secretary appointed by each group.

Upon completion of the exercise, data were collected and collated for purposes of descriptive and inferential statistical analyses.

Results

Basic descriptive statistics for the various combinations of dyads and directions of approach were calculated and are shown in Table 4.

Figure 2 represents these data for all four dyads and the eight directions of approach in the form of a radar chart. Figure 3 shows individual filled radar charts for each of the dyadic combinations. Figure 4 is a filled radar chart showing the average interpersonal approach distances, all four dyads combined, for all eight directions of approach,

An examination of Table 4 and Figures 2, 3 and 4 suggests that, overall, the Female Centre-Female Approach dyad (FC-FA) maintained the smallest personal space. That

is, interpersonal distances were the least for this dyad. The largest interpersonal distances appear to have been maintained by the Female Centre-Male Approach (FC-MA) dyad. With the exception of the FC-FA dyad, the graphic data suggest that the greatest interpersonal distance was maintained for approaches directly from the front (0°). This

tendency seems to have been particularly pronounced for the MC-MA dyad and is also apparent in Figure 4 for all dyads combined. Females seem to have tolerated shorter interpersonal distances if the approaching person was of the same sex. Males maintained the greatest interpersonal distance when approached directly from the front (0°) by

Table 4
Basic Descriptive Statistics Broken Down by Dyad and Direction of Approach

			Minimum	Maximum	Mean	Std Deviation
DAYD	Female Centre-Female Approach	NORTH	.00	62.00	26.19	21.30
		NTHEAST	.00	57.00	24.31	17.94
		EAST	.00	52.00	16.88	16.00
		STHEAST	.00	67.00	17.94	19.73
		SOUTH	.00	103.00	19.38	25.64
		STHWEST	.00	50.00	15.50	13.82
		WEST	.00	37.00	14.63	14.29
		NTHWEST	.00	62.00	22.25	19.41
	Male Centre-Male Approach	NORTH	55.00	127.00	83.25	33.23
		NTHEAST	.00	74.00	41.75	30.71
		East	.00	49.00	20.50	21.21
		STHEAST	8.00	30.00	17.00	9.27
		SOUTH	.00	18.00	8.00	9.38
		STHWEST	.00	28.00	17.75	13.02
		WEST	2.00	26.00	16.75	11.59
		NTHWEST	10.00	54.00	37.00	18.87
	Female Centre-Male Approach	NORTH	20.00	84.00	55.43	24.52
		NTHEAST	9.00	77.00	43.71	25.24
		EAST	8.00	70.00	39.29	24.27
		STHEAST	4.00	67.00	32.14	22.34
		SOUTH	10.00	109.00	32.71	35.53
		STHWEST	.00	71.00	30.57	23.65
		WEST	9.00	64.00	32.14	18.93
		NTHWEST	10.00	77.00	43.14	24.24
	Male Centre-Female Approach	NORTH	22.00	77.00	44.00	21.94
		NTHEAST	7.00	65.00	30.40	22.26
		EAST	4.00	44.00	24.00	18.71
		STHEAST	2.00	55.00	24.40	26.67
SOUTH		2.00	56.00	18.60	21.79	
STHWEST		3.00	68.00	24.80	26.91	
WEST		10.00	51.00	25.00	15.38	
NTHWEST		12.00	72.00	32.00	23.96	

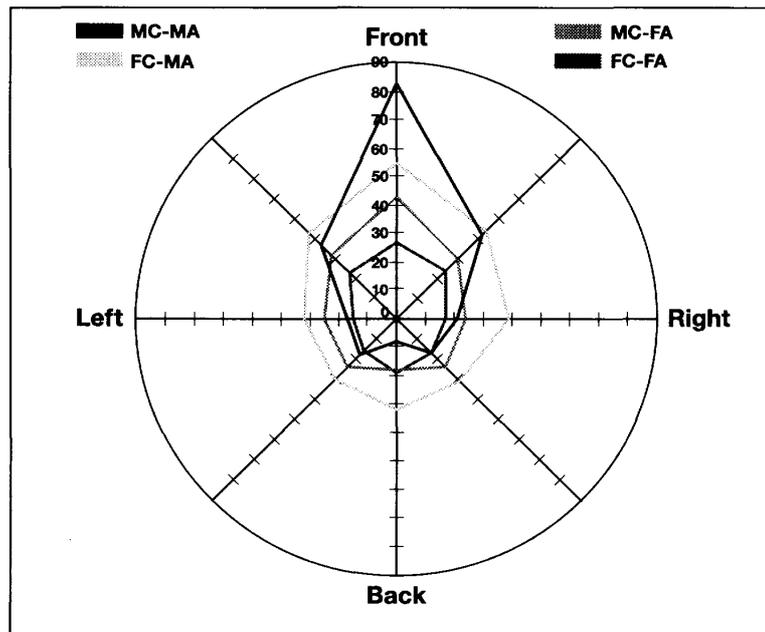


Figure 2. Average interpersonal distance by direction of approach for four dyadic conditions.

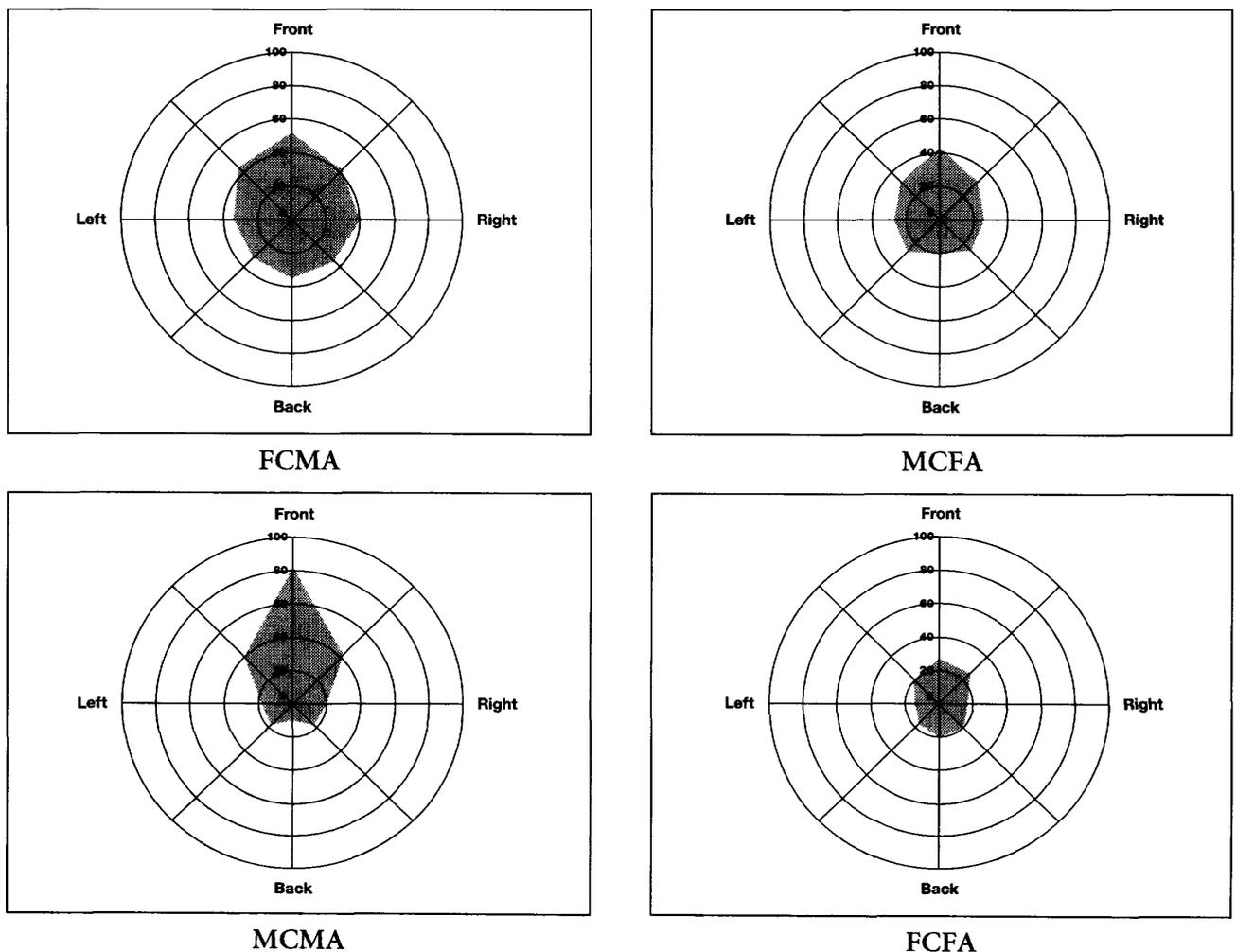


Figure 3. Filled radar charts for each of the four dyadic combinations (FC-MA; MC-FA; MC-MA; FC-FA).

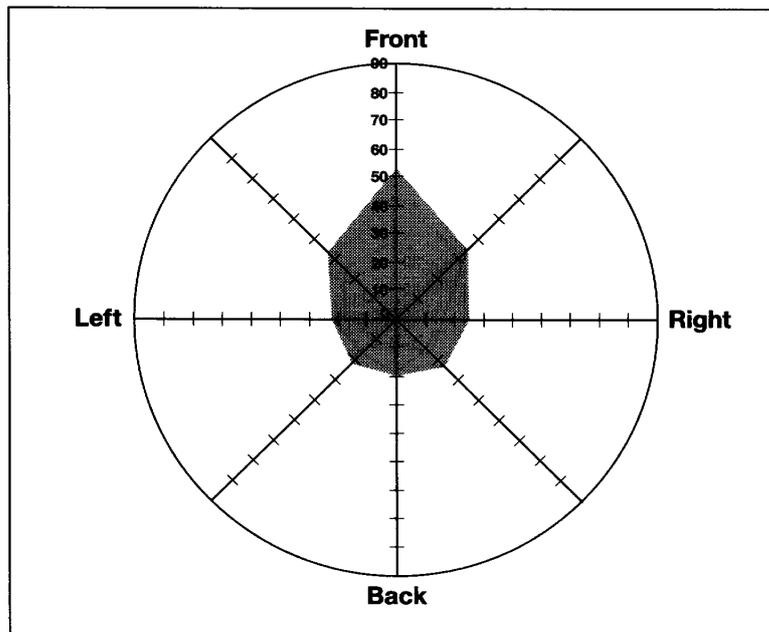


Figure 4. A filled radar chart showing the average interpersonal distance, all dyads combined, for the eight directions of approach.

other males. The figures also suggest that, overall, subjects permitted the closest approaches within the 135° to 225° sector (southeast to southwest), possibly because visual cues, in particular, were minimal from these directions.

In mixed dyad settings, the radar charts suggest that females required a greater interpersonal distance when the approaching person was a male. Males, in contrast, seem to have accepted a closer interpersonal distance when the approaching person was a female.

These results are confirmed in Figures 5 and 6 where approach distance is plotted against direction of approach and type of dyad, respectively.

In an attempt to substantiate the validity of these observations, a series of inferential statistical analyses was conducted. To determine whether the type of dyad and the direction of approach influenced the interpersonal distance maintained by target members of the

dyads, a repeated measures General Linear Model Analysis of Variance was conducted. Overall, it was found that the type of dyad, by itself, all directions of approach combined, did not influence interpersonal distance [$F(3, 28) = 1.888, p = 0.155$]. However, the direction of approach, by itself, all dyads combined, did influence interpersonal distance [$F(7, 196) = 21.613, p < .001$]. A significant interaction was also found between type of dyad and direction of approach [$F(21, 196) = 3.603, p < .001$].

When the four dyadic combinations were considered individually in a series of F-tests, overall differences in interpersonal distance were found as a function of the direction of approach as follows: FC-FA dyad [$F(7, 105) = 2.554, p = .018$]; MC-MA dyad [$F(7, 21) = 7.297, p > .001$]; FC-MA dyad [$F(7, 42) = 3.626, p = .004$]; MC-FA dyad [$F(7, 28) = 4.389, p = .002$].

The radar charts in Figures 2, 3 and 4, as well as Figures 5 and 6, all suggest that the

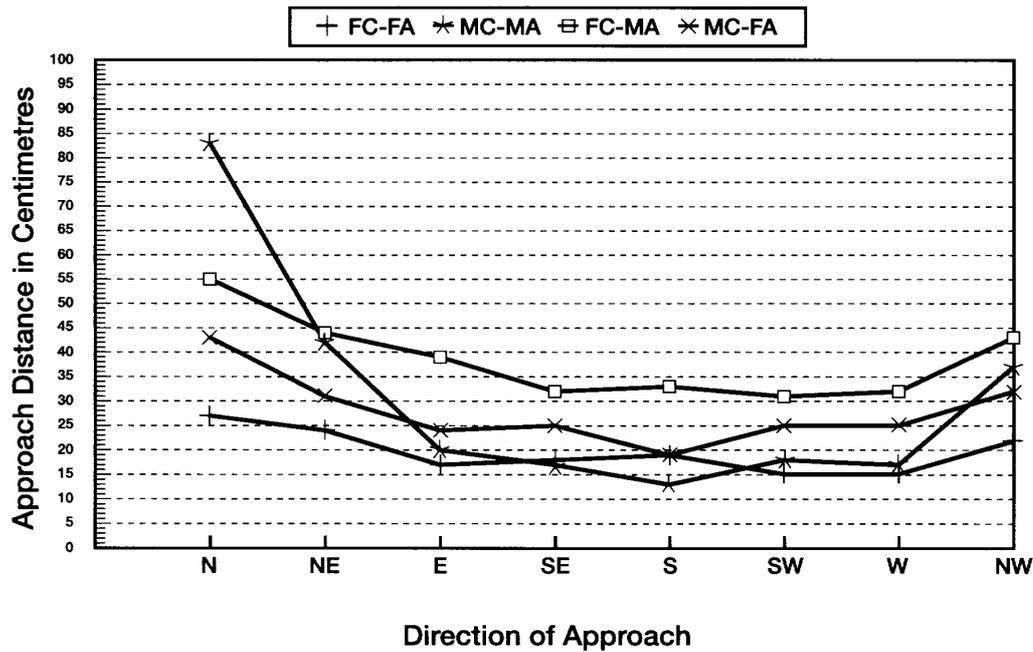


Figure 5. Interpersonal distance by direction of approach as a function of type of dyad.

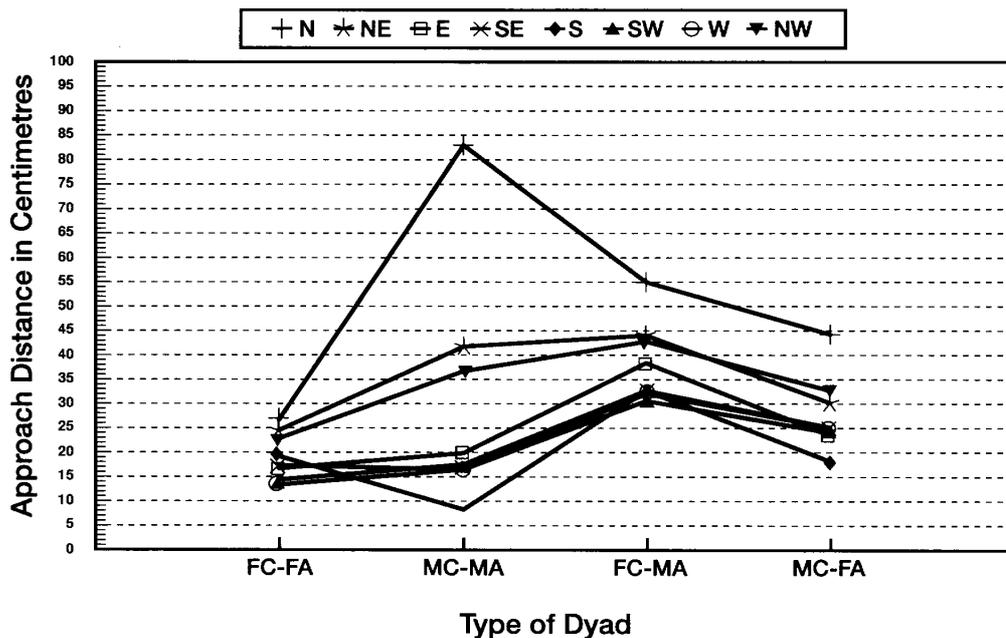


Figure 6. Interpersonal distance by type of dyad as a function of direction of approach.

greatest interpersonal distance was maintained for approaches directly from the front (North or 0°). The dyadic combinations arranged in order of increasing average (mean) interpersonal distance at 0° were FC-FA (26.19 cm), MC-FA (44 cm), FC-MA (55.43 cm), and MC-MA (83.25 cm).

Hypothesis #1 stated that males should allow less interpersonal distance when approached by females while females should require a greater interpersonal distance when approached by males. Given the irregular outlines of the personal spaces as seen in the radar plots, the average interpersonal distance

for all eight points of approach was calculated as a rough index of the size of the personal space for the two same sex dyadic combinations. The average interpersonal distance for MC-FA dyads was found to be 27.9 cm compared to 38.64 cm for the FC-MA dyads. The direction of the difference was in accordance with the prediction but the difference did not achieve statistical significance, perhaps due to the small number of such dyads formed in this study [$t(10) = -.832, p = .425, n.s.$].

Hypothesis #2 stated that larger interpersonal distances (or personal space) should be maintained by Male-Male dyads compared to Female-Female dyads, a difference suggested by the radar charts. Given the irregular outlines of the personal spaces, the average interpersonal distance for all eight points of approach was calculated as a rough index of the size of the personal space for the two same sex dyadic combinations. The average interpersonal distance for Male-Male dyads was found to be 30.25 cm compared to 19.63 cm for the Female-Female dyads. While the direction of the difference was in accordance with the prediction, this difference did not achieve statistical significance, perhaps due to the small number of Male-Male dyads formed in this study [$t(18) = 1.23, p = .235, n.s.$].

Hypothesis #3 predicted that male targets would maintain a greater interpersonal distance with a direct frontal approach compared to female targets. When the data for the two female centered dyads and the two male centered dyads, respectively, were combined, the mean interpersonal distance for the female centered dyads for a direct approach (0°) was 35.09 cm while the mean for the male centered dyads for a direct approach (0°) was

61.44 cm. A t-test revealed a statistically significant difference between female centered and male centered dyads in terms of the interpersonal distance maintained for a direct frontal approach [$t(30) = -2.408, p = .022$].

Overall, the trends in this study were in accordance with expectations based on the relevant literature. Larger sample sizes might well have resulted in statistical confirmation of more of these trends. Implications of these findings are considered below.

Discussion

This study on personal space and interpersonal distance with Japanese university students produced results more or less consistent with reports in the literature generated largely with nationals of other countries. The irregular shape of the personal space maintained by individuals, the greater distance maintained in frontal approaches, and the differences between males and females in their maintenance and use of personal space were more or less in accord with what has been seen in earlier studies with non-Japanese nationals. These conclusions are implied by the graphical representation of the data and are supported to a degree by subsequent statistical analyses. However, the limited number of dyads of particular configurations probably contributed to the inability to demonstrate statistically significant differences in some comparisons. A shortage of male participants, in particular, was responsible for this outcome.

As noted in the rationale for this study, many variables can act alone, or in combination, to produce the patterns of personal

space observed. For example, in the present study, there was no specific control for the nature of the relationship between the participants (friends, acquaintances or strangers), their relative status (e.g., year at the university), personality characteristics, or their degree of psychological resilience under crowded conditions. All the participants were likely to have experienced frequently the crowded conditions typical of travel in metropolitan Tokyo. Under such conditions, personal space is often reduced to an absolute minimum and the only effective coping mechanism is to reinterpret cognitively a situation which is no longer under one's personal control. The fact that some of the participants in this study allowed interpersonal space to shrink to zero (0) centimetres in some instances may be indicative of this previous experience.

The fact that the maintenance of personal space is important to these participants was revealed in a number of comments they offered at the end of this study. These comments also revealed insight into the nature of the dynamics underlying the need for maintaining personal space whenever possible. Some participants noted that visual cues, the gender of the person approaching them, and the nature of the relationship between them (friend, acquaintance or stranger) influenced the size of their personal space. The presence or absence of eye contact, the facial expression of the person approaching, and his / her overall physical appearance (e.g., the presence of tattoos) were cited as factors influencing interpersonal distance. Height was also seen as a factor with taller individuals seen to pose a somewhat greater "threat" as they approached than individuals of the same

height or less. One participant noted that children generally do not pose a threat to personal space compared to adults. Some participants said that approaches from the back and the sides were acceptable. This observation seems to have been confirmed by the present results for interpersonal distances in the 135° (southeast) to 225° (southwest) sector were considerably less than approaches directly from the front or within the 315° (northwest) to 45° (northeast) sector.

When interpersonal distances began to shrink to a critical level, participants reported an emotional reaction. Their comments were not limited to experiences they had in this study but generalized to experiences in daily life. Some reported a feeling of uncertainty about what the approaching person might do. At least one participant reported that it was "nerve wracking" to have a stranger come too close. Others said that they felt stressed when their personal space was violated but, ironically, they also felt stressed when they were near, but not part of, a group to which they didn't belong. In this case, closer interpersonal distance was presumably seen as an indication of group membership and greater interpersonal distance as a sign of isolation.

The quantitative and qualitative data obtained in this study demonstrate that maintaining appropriate interpersonal distances is important in everyday life. The loss of adequate personal space, so common in urban commuting in Japan, requires a psychological resilience in those regularly subjected to this sort of situation. Despite this flexibility, many people still report feeling stressed as a result of overcrowded conditions on public transport. Territorial behaviour, a natural extension of the need for personal

space, is often seen in the way that seating is occupied on commuter train carriages. Given a choice, most people prefer the end of a bench where they will have at least one side free of another individual. Passengers spread out as much as possible until they are forced to surrender their “territory” and, ultimately, their personal space, as conditions become more and more crowded.

In Japan, the dynamics of interpersonal space seem to be changing, especially among younger people. Often considered to be a “non-contact” culture, it becomes more and more common in urban Japan to see public expressions of intimacy in which interpersonal distance is reduced to a minimum. In a world of increasing pluralism, the likelihood of interactions with people of other cultures and traditions means that those in “cross-cultural” encounters will have to be aware of the dynamics of public space and interpersonal distance characteristic of other cultures.

The results of the present study require confirmation in additional studies that will allow more definite conclusions to be drawn. Nevertheless, the present study can be taken to suggest that the dynamics of interpersonal space among Japanese university students seem to be qualitatively similar to those reported in studies conducted with individuals in Western contexts, primarily American. A future study should undertake a direct comparison of cultural differences in personal space, controlling for many of those variables identified above that seem to regulate the dynamics of the interpersonal spacing mechanism.

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