Residential Integration but Social Segregation: Community Boundaries in a Multi-Cultural Society

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Residential spatial integration is often held to be an indicator – and sometimes cause – of social assimilation. That contention forms the basis of much housing policy but has rarely been tested. Singapore, a multi-cultural city-state in tropical Southeast Asia provides an excellent laboratory for informing theory and policy concerning residential distribution and social interaction. Combining evidence from Census summary data and a unique survey of the social networks of adult (25-55) residents that places inter-ethnic social ties in the context of a range of functional and intimate relationships, this paper finds no support for a general linkage between spatial proximity at the neighborhood scale and the formation of relationships. Singaporeans live in geographically interpenetrating but largely socially separate worlds. Beginning with the impact of ethnic category size, social homophily, and the crowding out effect of family dependence, the paper attempts to understand the dynamics of ethnic social integration in Singaporean adult social networks.

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Residential spatial integration is often held to be an indicator – and sometimes cause – of social assimilation. Accordingly, a significant literature has developed in the U.S. (and, less extensively, in Europe) measuring the extent of black-white (and more recently Hispanic and Asian) residential segregation and its causes (Charles, 2003; Logan, Stults, and Farley, 2004; Massey and Denton, 1993). This literature has explained continuing high levels of residential segregation in terms of economic restructuring, income inequality, and psychological prejudice. Less attention has been directed towards the consequences of residential segregation. Moreover, much of the research on the consequences of residential segregation may be measuring the effects of various dimensions of neighborhood quality such as stress, health risks, and exposure to crime which may be, in fact, empirically correlated with the representation of minorities but are conceptually distinct from segregation.

The basic consequence of residential segregation is held to be social segregation which, in turn, has economic and cultural consequences. Myrdal (1944) observed that "residential segregation is basic in a mechanical sense. It exerts its influence an indirect and impersonal way: because Negro people do not live near white people, they cannot – even if they otherwise would – associate with each other in the many activities founded on common neighborhood. Residential segregation also often becomes reflected in uni-racial schools, hospitals, and other institutions (618)." "Residential segregation is [therefore] the main cause of institutional separation (630)." Moreover, "the isolation …

means a decrease of certain types of contacts between the two groups and a distortion of the ones that are left (650)." Myrdal's summary has been the motivating rationale for studies of residential segregation ever since (e.g., Taeuber and Taeuber, 1965). More recently, according to Massey and Denton (1993: 8), "residential segregation is the institutional apparatus that supports other racially discriminatory processes and binds them together into a coherent and uniquely effective system of racial subordination." Segregation limits the opportunities open to (especially disadvantaged) residents, cutting them off from jobs, culture, and mainstream values. Massey and Denton (1993: 8) maintained, "segregation created the conditions for the emergence of an oppositional culture that devalues work, schooling, and marriage and that stresses attitudes and behaviors that are antithetical and often hostile to success in the larger economy."

The basis for concern about residential segregation has its roots in the theory of identity development (Hewitt, 2000; Stryker, 1994) and friendship formation (Homans, 1961). Although individuals may tend to associate more readily with those who are in some way like themselves than those who are not (Newcomb, 1961; Byrne, 1971), Festinger, Schacter, and Back (1963) found residential proximity to be the overwhelmingly most important factor in determining the opportunity of contact. That opportunity led frequently to interaction and friendship and the interaction was sufficiently strong to influence attitudes and behaviors. Homans (1953) arrived at similar findings for workplace friendships. The belief that contact leads to strong relationships has been institutionalized with the passage of equal opportunity housing laws and with the policy reversal from building concentrated public housing to supporting dispersed rent support programs.

The causal connection between the empirically observed residential segregation and a range of empirically observed phenomena has been taken largely on faith, however, as have the supposed consequences of residential integration. Residential integration, if it occurred voluntarily, certainly would be an indicator of social assimilation because it would imply that people did not think the categories we use to measure it were socially salient but that would not necessarily imply that residential integration would lead to social integration, as many since Myrdal have assumed. In this paper we ask what the effect on social integration would be if housing, that is neighborhoods, were not segregated.

Data and Method

It is difficult to answer that question because, at least in the U.S., such integrated housing is not widespread. The Gautreaux program (Rubinowitz and Rosenbaum, 2000) may be the best-monitored recent example of de-segregation but, due to the relatively low numbers of re-located individuals, the observed effects may be due to self-selection on the part of program participants (Keels, Duncan, DeLuca, Mendenhall, and Rosenbaum, 2005). The same might be said about the sizeable minority of people who live in America's integrated neighborhoods (e.g., Nyden, Lukehart, Maly, and Peterman, 1998). Their experience may not be generalizable.[1]

We study a comparative case, Singapore, matched to the U.S. in many respects but differing in the degree of residential segregation, to investigate the probable consequences on residential integration in segregated societies, such as the U.S. Such a

[1] There is an earlier literature on WWII-era public housing that found generally positive experiences with housing integration. It is a puzzle why those experiences have not diffused throughout American society in a process of social learning.

case study allows us to address questions about residential integration and the formation of social relationships that is not seriously threatened by the possible selection biases that are inherent in U.S.-based studies. Singapore is similar to the U.S. in that it has a modern service economy with continuing strengths in high technology manufacturing. As such, it faces several of the same social problems as the U.S.: the costs of declining fertility and an aging population, questions about the employability of those with low levels of education, and the challenges to continued competitiveness of a high-wage, relatively inefficient economy. On the other hand, Singapore's ambitious public housing program, begun over forty years ago and now responsible for housing 88 percent of that country's resident population, presents an important contrast. From the start, Singapore's public housing has been racially integrated for a mixture of pragmatic and idealistic reasons. We combine demographic and social network data in order to measure the effects of housing integration on social integration. Our results suggest the likely effects of residential integration in the U.S. and other countries and thus provide a baseline for measuring the effects of residential segregation.

The Singaporean context

Singapore is a multi-ethnic community with a relatively high degree of social peace and inter-group amicability. Approximately 77 percent of the Singaporean resident population (citizens and permanent residents) are Chinese, 14 percent are Malay, 8 percent are Indian, and 1 percent are "other" (Department of Statistics, 2001). Objective measurement is difficult but it is probably fair to say that Singapore is heavily racialized (behaviors and characteristics are routinely imputed to ethnic background) but not

excessively racist (expressions of out-group disdain are modest). Residential segregation in Singapore is relatively low with an index of dissimilarity of 23.4 in 2000 for the two major ethnic groups, Chinese and Malays. (Using districts averaging 95,977 each; using sub-districts averaging 23,819 each, the measure is 26.9.) Although the spatial units used are not comparable, the index of dissimilarity for blacks and whites in Atlanta – a city of roughly equivalent size – was 68.8. (Atlanta's index of dissimilarity is itself moderate by American standards which range from a high of 87.9 for Gary IN down to 31.7 for Jacksonville NC.) Singapore's low level of residential segregation has been achieved, in large part, because the public housing authority mandated ethnic integration, sometimes down to the level of the housing block.

Singapore also differs from many U.S. cities in that residential proximity implies far greater opportunity for social contact than it does in the United States. Walking in neighborhoods to do shopping or run other errands is common as is the use of public transportation. Even those who drive or travel by taxi need to walk through often busy common areas in order to do so. Almost every housing block includes public areas for collective study and socializing on an open void deck. Almost every neighborhood has a community center and local residence committees frequently organize neighborhood events promoting ethnic integration.

Residential mobility among those occupying public and private housing had been quite high during the 1990s (HDB, 2000a). Approximately 60 percent of household heads changed residence between 1990 and 2000 (either by moving or creating a new household). Due to the nature of the Singaporean housing market, many of these movements imply a change in neighborhood and Singapore suburbanized to a great

extent (still largely in apartment blocks) during the 1990s. Such large-scale movement and residential churning, possibly breaking many tradition-bound patterns of socializing, slowed considerably by the late 1990s allowing new neighborhood-based relationships to develop and take hold.

The survey sample

A stratified random sample of 1,143 working age adult Singaporeans between the ages of 25 and 55 was asked about their social relationships in face-to-face interviews. The sample is approximately evenly split between males and females and approximates the age and class structure of the resident population as measured by education, occupation, income, and housing. Minority groups (Malays, Indians, and immigrants) were over-sampled to yield sufficient number of cases in those population categories, allowing a focus on the inter-ethnic integration between the two major ethnic groups and between the native-born and immigrants. The lower age bound was chosen because by age 25 almost everyone has completed schooling and assumed an adult role. Approximately 35 percent of young Singaporeans (25-34) have a post-secondary education and since males need to perform 2½ years of National Service, it's not unusual for undergraduates to be in their mid-20s. The upper bound was chosen because after that age, some people enter retirement (until very recently, 55 was the official retirement age in Singapore) and their personal concerns and socializing patterns may change accordingly. Among the resident population, 40 percent of the males and 26 percent of the females in the 30-34 age-group are unmarried. Since many adults live with their parents (single adults below the age of 35 are barred from purchasing public housing

units), a Kish grid system was used to select the adult in each sampled household to interview. Approximately four-fifths of the sample of prime-aged adults were "attached" and approximately 70 percent had at least one child.

Measuring Singaporean social networks

The measurement of social networks is critically influenced by the character of the questions used to generate the names of those with whom the survey respondents have a relationship (Ferligoj and Hlebec, 1999; Straits, 2000). Networks of intimates, e.g., core discussion networks (Marsden, 1987) or "best friends" (Laumann, 1973), tend to be fairly homogenous. Homogenous networks of intimates do not imply an absence of real social integration because intimates typically differ markedly from the nearly 1,000 names many can name as being in their social network (Boissevain, 1974).

A technique has been developed for capturing relationships that are of moderate strength and closeness across several domains of social life (Hannerz, 1980). Name-generating questions designed to tap relationships centered on work/career, family, and hobby (Fischer, 1982) and those intended to measure the extent of social support (Wellman, 1979) were supplemented by position-generating questions (Lin and Dumin, 1986) in order to gather information on relationships that are not so intimate as to be immediately volunteered.[2] The characteristics of the persons and relationships resulting from the probing, position-generating questions (e.g., "Do you know any Malays?") can then be compared to those resulting from the name-generating questions (e.g., "Who would you ask to look after the house while you were away?"). While time consuming,

[2] A similar strategy is often used on market research questionnaires: "Tell me your three favorite brands" ... followed by "Have you ever used ..." and a list of the brands not named.

this methodology produces richer information than other techniques of measuring inter-group friendship (e.g., Smith, 2002). A list of the name- and position-generating questions used in the survey is contained in an appendix. For most of the analyses in this paper, the network alters have been aggregated. Respondents could have named as many as 20 alters. In fact, they named an average of 9.5 role-person combinations and 6.5 unique persons, implying that among the 16 questions where it is possible, alters were named an average of 1.6 times each.

Inter-ethnic ties are unlikely to be as close as those with immediate family but moderately-strong ties are nonetheless significant. By comparing the degree of homophily between respondent and named alters along several dimensions and the characteristics of the relationships among ethnic in-group members and out-group members, this research more completely assesses the degree of social integration among ethnic groups.

The basic finding

It is a theoretical surprise and perhaps a practical disappointment to see, as Table One shows, that ethnic groups remain remarkably separated despite the physical proximity of persons in the various ethnic groups. In the first panel showing the results from the basic name-generating questions, 98 percent of the persons named by ethnic Chinese respondents were also ethnic Chinese. For Malays, the second largest ethnic group in Singapore, 90 percent of those named in response to those questions were ethnic in-group members while for Indians, the corresponding figure is 76 percent. These figures do not include the results of the sometimes extensive probing for the position

generating question. The lower panel of the paper shows the results with such probing. The figures are 98, 90, and 76 percent for each of the major ethnic groups, respectively.

(Table One about here)

Table Two shows that, upon probing, approximately 50 percent of the respondents could name at least one person in the rotating ethnic group specified by an interviewer. Ethnic Chinese, the largest ethnic group had the most difficulty naming minority group members. Malays and Indians were more readily able to reach across ethnic boundaries. Our results are corroborated by a series of surveys commissioned by the public housing authority (HDB, 2000a, 2005) and by subsequent follow-up with public housing residents. Co-residents may be acknowledged while waiting for the elevator, they may be greeted and possibly asked about the weather but the relationships rarely progress further. Only xx percent were ever inside a neighbor's house and that figure included family members who live nearby (HDB, 2000b).

(Table Two about here)

Understanding the finding

We have made the most ambitious and complete attempt to capture the extent of inter-ethnic ties in Singapore ever. Nevertheless, our data indicate that more than a generation of residential integration appears to have resulted in continued, and some say increased, social segregation. The findings in Table One undermine the efficacy of much of U.S. housing policy and, much more importantly, present a puzzle for social scientists. The theory is solid. Why are the hypothesized results of housing integration not seen? We looked for answers in a) the application of theory and b) the measurement of social

categories. Even as a reanalysis of the data suggest that social networks are more integrated than they first appear, the net effect of our explorations will be to cast doubt on the positive consequences of residential integration because neighborhoods have lost much of their social function.

Theory misapplied?

The theory behind the concern about segregation is not so much wrong as possibly misapplied in some contemporary urban situations. Translating contact opportunity into relationship formation requires mutual benefit to the interaction (Blau, 1964). While Festinger, Schacter, and Back (1963) and Homans (1953) could assume common purpose and a need to interact, those pre-conditions may not exist today. Accordingly, in our data, of all the alters named, 17 percent live in the same house as the respondent, 16 percent live within a ten-minute walk of home (an approximation of the neighborhood), and 67 percent live outside the neighborhood (83 percent of those not living in the same household). Similarly, analysis of Singaporean time use diaries also show that little out-of-house discretionary time is spent in the neighborhood despite the array of retail services and recreational facilities near most residences. Systematic observation of Singapore public housing estates finds sometimes extensive use of common areas but little unplanned, spontaneous socializing. Neighborhoods are not loci of social support and interaction.

One of the hypothesized benefits of residential integration is access to instrumental and expressive social support. Table Three, Panel A shows that respondents may have received such help but of those who helped the respondents successfully locate

jobs, 88 percent lived outside the neighborhood. In the relatively few cases of inter-ethnic ties leading to employment that we uncovered, all were via contacts that lived outside the respondent's neighborhood despite the high level of residential integration. The results for inquiring about alters that could be relied upon to discuss important issues, give support when feeling down, and socialize with were similar. In most cases, if the alters lived in the same neighborhood, they lived in the respondent's house.

(Table Three about here)

Festinger, Schachter, and Back (1963) and Homans (1953) claimed proximity produced interaction which produced liking but in both cases a commonality of demographics, interests, and aspirations were noted. Co-students and co-workers almost always have something to talk about. Average neighbors possibly less so. Neighborhoods may have lost their social significance in contemporary society. When the local government pro-actively provides services, as it does in Singapore, there is little motivation to form networks and groups devoted to improving collective consumption (Castells, 1968; Hawley, 1986). Public participation in the U.S. has also declined with the expansion of local government. In apartments, there is little need to borrow garden tools and, when the 24-hour provision shop is just an elevator ride away, there is little reason to borrow a cup of sugar from a neighbor. As incomes rise, market and self-provisioning tends to replace the expense of maintaining relationships of collective risk-pooling (Fischer, 1982; Stack, 1974). Moreover, a careful reading of neighborhood studies suggests that what appears to be a rich public community life to outside observers may be a set of inter-penetrating but not intersecting networks of extended family relationships (Young and Willmott, 1957).

Measurement error?

The theory outlined above assumes a certain division of labor between neighbors, friends, and family (Litvak and Szelenyi, 1969) in providing social support. To the extent that there is a heavy reliance on neighbors in supplying daily social support – particularly with respect to child-raising, an integrated neighborhood would produce different social networks than segregated networks but to the extent that there is (or always was) a heavy reliance on family, the effect of neighborhood integration will be attenuated. Not all ethnic in-group members are alike. Some enjoy a special status; they are family. The analysis in Table One and others like it suffer from an unobserved heterogeneity problem, or, expressed in other terms, an omitted variable bias.

Table Four compares three versions of the data in Table One to a baseline model of "no in-group salience." The first vertical panel shows a simplified version of the data in Table One, Panel B with the ties to "others" removed. The second panel shows the same data with household members removed and in the third panel, extended family members are removed also. Across the panels, there are four horizontal bands with related information. The top band shows three versions of the survey data. The second band shows the population-adjusted total and average social ties. Measures of over- and under-representation (1 equals no in-group preference) and salience to ethnic group members (0 equals no in-group preference) are shown in the third horizontal band. Proportional changes in group over- and under-representation compared to the data in the first panel are shown in the lowest horizontal band.

(Table Four about here)

Once the family members are separated out from others, the strength of apparent social segregation begins to diminish – although it does not disappear. Of course family members account for a large proportion of the elicited social networks, so the number of ties is substantially reduced. We see that in-group salience among the relationships remaining decreases after the family members have been removed from the tie account table. Small individual preferences can sometimes lead to extreme aggregate effects (Schelling, 1978). Moreover, preferences can interact with group size to produce relatively strong impacts on minority group members (Blau, 1977). The decreases of over-protection across panels and the pattern within confirm that a relatively mild in-group preference on the part of the largest ethnic group has major implications for minority group members. The irony of the increased measured integration is is that the remaining social relationships are of less personal importance than those that have been removed.

We compared the degree of intimacy in five types of relationships – household members, extended family members, unrelated members of the respondent's ethnic group, members of other ethnic groups that were named without probing, and finally, those named in response to our probe. The information in Table Five corroborates our strategy of removing family ties. There is a large decrease in intimacy between family members and non-family in-group members but only small difference in intimacy between unrelated ethnic in- and out-group members. Ethnic out-group members that were named in response to the probing are, by the nature of the data collection process alone, less intimate. These results suggest that ethnic boundaries are not as solid as either U.S. residential segregation or our results in Table One seem to indicate.

(Table Five about here)

Where social integration occurs (the theory, if not policy, rescued)

Singaporeans appear to live in inter-penetrating but separate and possibly unequal worlds despite occupying the same physical space. Nevertheless, inter-ethnic social relationships did form. Table Six shows a cross tabulation of the type of relationship between the respondents and their alters with social situation in which they were originally formed. Consistent with Young and Willmott and Young's (1957) analysis of community formation, family members are a significant indirect source of new friends (including spouses) but that begs the question of how those relationships were formed. Half of all inter-ethnic friendships originated in the workplace, three times as many as originated in the neighborhood. Given that the workplace is not only the major locus of relationship formation in many contemporary societies but the origin of social relationships that span ethnic boundaries, the composition workplaces and the conditions of interaction take on a wider significance.

(Table Six about here)

Unfortunately, despite sharing a common language of business and a common education system, ethnic groups remain segregated in the workplace with all groups sorting themselves out into sometimes ethnically homogenous social worlds. The degree of over-representation compared to a random allocation baseline is highlighted in Table Six. Towards the right side of the table the proportion of respondents with exposure to at least one member of each is shown. Note that members of the majority group can be

especially segregated at work with the vast majority not being able to report even one minority group member within the immediate work sphere.

Considering the degree of segregation, the number of relationships across ethnic groups is substantial. The workplace may generate friendships at a faster rate than other loci of interaction because work takes up a large proportion of available adult time (approximately 14 percent in the Singapore time use sample) and because the relationships formed are more likely to be rooted in interdependence. Neighborhood composition policies rest on an assumption that opportunity leads to interaction which in turn leads to "liking" relationships (Festinger, Schachter, and Back, 1963; Homans, 1961). Relationships founded upon mutual dependency and exchange are stronger than those based on convenience (Blau, 1964; Coleman, 1990). Social (secondary) relationships at work often emerge in order to protect basic interests (Homans, 1951).

(Table Six about here)

While interaction across ethnic boundaries can hardly be avoided in contemporary Singapore, Allport (1954) held that the positive effects of inter-group contact occur in situations marked by four key conditions: equal group status within the situation; common goals; inter-group cooperation; and the support of authorities, law, or custom. These conditions may not often occur spontaneously in Singapore but, when they do, there is a substantial effect on the occurrence of relationships that cross ethnic categories. Exposure to those in other ethnic groups in the residential neighborhood does not increase inter-ethnic ties. Exposure at work is the largest single factor in reporting an inter-ethnic tie.

Conclusion

Residential integration, if ever achieved, may be an important indication of assimilation but it may be a pyrrhic victory in terms of social integration. Residential integration may come at the cost of social significance. In Singapore, the U.S., or Europe, adults often lament the changes in neighborhood life. The apartment block galleries, the parks, and the side streets that once teemed with unsupervised children playing are now quiet. In their place, soccer moms ferry boys and girls to sometimes distant activities. School and supervision crowd out local community. The porches and stoops that once were filled with adults idly chatting about the days events are empty, if they haven't been replaced by "snout house" garages. The neighborhood bars that were once a required stop for men on there way home from work are now by-passed in favor of the kitchen because it is dad's night to cook dinner (Oldenburg, 1989). "Madge" drops by unannounced for coffee much less often because she and whomever she might visit are out at work.

Whether the images of times past are accurate reflections of a now-gone reality or are creations of our collective romantic imagination is unimportant. Neighborhood-based public life has largely disappeared (Putnam, 2000) and building houses closer together and restricting automobile (Leccese and McCormick, 1999) use are unlikely to bring it back – no matter how strong the yearning. Arlie Hochschild (1997) claims that for some people, the work place has replaced the neighborhood and even the family as the locus of social support. Our data are not sufficiently complete to support that contention but it is clear that in Singapore, and in the U.S. and other countries, the residential neighborhood

is not that locus. Community, as several have claimed, has become more private and less constrained by locality (Wellman, 1999).

Workplaces have become the primary locus of meaningful social contact outside families. Unfortunately, available evidence suggests that key demographic categories segregate employees by occupation (Jacobsen, 1997; Reskin and Cassirer, 1996), establishment (Petersen and Morgan, 1995), and internal labor market and career path (Collins, 1997; Yamagata, Yeh, Stewman, and Dodge, 1997). They are sometimes further segregated by work settings and job titles within organizations (Bielby and Baron, 1986). Despite the reliance of some cultural control strategies on gender and ethnic homogeneity among certain classes of employees to build a sense of common purpose (Kanter, 1977), women and minorities have moved increasingly into the paid work force and into occupations where they were previously under-represented (Harrison and Bennett, 1995). Demographic categories are not fixed in their salience and social policy might more closely examine the role of cross-cutting identities in the workplace and their role in creating a larger social integration.

Policy interventions such as the Gautreaux program the success is probably based on an interaction between household selectivity and some of the more basic features of neighborhood quality, such as safety and proximity to employment, rather than on the effects of neighborhood social relations. Our broad sample found little serious neighborhood-based social relationships. The socialization and demonstration effects of moving to suburban areas are likely to be minimal. On the other hand, the relative freedom from crime, the higher quality schooling, and the more favorable employment situation are available even in the absence of close neighborhood ties.

For many sociologists, from those connected with the early Chicago school and human ecology up until the present day, spatial integration has been an indicator of social assimilation. Urban sociologists often claim that spatially integrated neighborhoods create socially integrated communities that allow economic opportunities and cultural values to diffuse. Accordingly, one of the tenets of housing policy (if not always practice) in the U.S. and elsewhere has been to encourage residential integration as a means of nation-building, writing equal opportunity clauses into law and sometimes even mandating quotas of socially-recognized ethnic and racial groups. We find that, however desirable in its own right and however useful as an indicator of social assimilation, residential integration is not an effective policy tool for achieving social integration.

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Table One Ethnic group of network alters chosen in response to a set of name-generating questions by the ethnic group of the respond

(unit = alter, not respondent)

Panel A: Network alters named in response to the functional or situation-related name generators

Repondent's ethnic group		Alter's ethnic group				
		Chinese	Malay	Indian	Others	Total
Chinese	number chosen	4567	31	29	25	4652
	percent of alters	**98.17**	**0.67**	**0.62**	**0.53**	100
Malay	number chosen	82	1054	29	5	1170
	percent of alters	**7.01**	**90.09**	**2.48**	**0.43**	100
Indian	number chosen	99	88	614	6	807
	percent of alters	**12.27**	**10.9**	**76.08**	**0.75**	100
Combined	number chosen	4748	1173	672	36	6629
	percent of alters	**71.62**	**17.69**	**10.14**	**0.56**	100

Panel B: Network alters including the "ethnic probe"

Repondent's ethnic group		Alter's ethnic group				
		Chinese	Malay	Indian	Others	Total
Chinese	number chosen	4754	225	111	32	5122
	percent of alters	**92.82**	**4.39**	**2.17**	**0.62**	100
Malay	number chosen	206	1060	82	15	1363
	percent of alters	**15.11**	**77.77**	**6.02**	**1.1**	100
Indian	number chosen	174	109	632	14	929
	percent of alters	**18.73**	**11.73**	**68.03**	**1.51**	100
Combined	number chosen	5134	1394	825	61	7414
	percent of alters	**69.25**	**18.8**	**11.13**	**0.82**	100

tentative results

Table Two: Proportion able to name at least one member of the specified group

Repondent's ethnic group		Alter's ethnic group			
		All	Chinese	Malay	Indian
All	Proportion able to name at least one member of the specified group	0.49	0.79	0.42	0.41
	Number asked to name members of each group	1143	150	348	247
Chinese	Proportion able to name at least one member of the specified group	0.44	.	0.41	0.37
	Number asked to name members of each group	794	.	326	166
Malay	Proportion able to name at least one member of the specified group	0.59	0.8	.	0.48
	Number asked to name members of each group	213	87	.	81
Indian	Proportion able to name at least one member of the specified group	0.6	0.76	0.59	.
	Number asked to name members of each group	136	63	22	.

Table Three Location of those who offer particular types of social support

Repondent's ethnic group		Alter's ethnic group			
Those who have helped the respondent find a job					
		All	Chinese	Malay	Indian
All	Proportion living outside the neighborhood	0.88	0.87	0.94	0.88
	Number of alters	335	262	47	26
Chinese	Proportion living outside the neighborhood	0.86	0.86	1.00	1.00
	Number of alters	249	245	3	1
Malay	Proportion living outside the neighborhood	0.94	1.00	0.93	1.00
	Number of alters	54	8	43	3
Indian	Proportion living outside the neighborhood	0.91	1.00	1.00	0.86
	Number of alters	32	9	1	22
Those who could be consulted about important matters					
		All	Chinese	Malay	Indian
All	Proportion living outside the neighborhood	0.42	0.43	0.44	0.34
	Number of alters	1869	1315	343	211
Chinese	Proportion living outside the neighborhood	0.43	0.43	0.80	1.00
	Number of alters	1302	1295	5	2
Malay	Proportion living outside the neighborhood	0.45	0.82	0.44	0.67
	Number of alters	343	11	326	6
Indian	Proportion living outside the neighborhood	0.35	0.89	0.33	0.33
	Number of alters	224	9	12	203
Those who would talk with the respondent when he/she is feeling down					
		All	Chinese	Malay	Indian
All	Proportion living outside the neighborhood	0.51	0.52	0.48	0.46
	Number of alters	1766	1232	332	202
Chinese	Proportion living outside the neighborhood	0.52	0.51	0.60	1.00
	Number of alters	1221	1212	5	4
Malay	Proportion living outside the neighborhood	0.49	0.82	0.48	0.60
	Number of alters	327	11	311	5
Indian	Proportion living outside the neighborhood	0.47	1.00	0.50	0.44
	Number of alters	218	9	16	193
Those who socialize with the respondent					
		All	Chinese	Malay	Indian
All	Proportion living outside the neighborhood	0.73	0.73	0.76	0.71
	Number of alters	1783	1300	316	167
Chinese	Proportion living outside the neighborhood	0.72	0.72	0.70	1.00
	Number of alters	1269	1256	10	3
Malay	Proportion living outside the neighborhood	0.75	0.79	0.74	0.71
	Number of alters	307	19	281	7
Indian	Proportion living outside the neighborhood	0.75	0.92	0.92	0.70
	Number of alters	207	25	25	157

Table Four Ethnic group of network alters chosen in response to a set of name-generating questions by the ethnic group of the respondent

(unit = alter, not respondent)

Repondent's ethnic group		Alter's ethnic group											
		All named alters				Alters with household members removed				Alters with family members removed			
		Chinese	Malay	Indian	Combined	Chinese	Malay	Indian	Combined	Chinese	Malay	Indian	Combined
		Basic data											
Chinese	number chosen	4754	225	111	5090	3910	225	111	4246	2607	225	111	2943
794		5.99	0.28	0.14	6.41	4.92	0.28	0.14	5.35	3.28	0.28	0.14	3.71
Malay	number chosen	206	1060	82	1348	206	849	82	1137	206	457	82	745
213		0.97	4.98	0.38	6.33	0.97	3.99	0.38	5.34	0.97	2.15	0.38	3.50
Indian	number chosen	174	109	632	915	174	109	471	754	174	109	256	539
136		1.28	0.80	4.65	6.73	1.28	0.80	3.46	5.54	1.28	0.80	1.88	3.96
Total	number chosen	5134	1394	825	7353	4290	1183	664	6137	2987	791	449	4227
1143		4.49	1.22	0.72	6.43	3.75	1.03	0.58	5.37	2.61	0.69	0.39	3.70
		Population-adjusted social ties											
Chinese	2,505,379	15,000,720	709,963	350,248	16,060,931	12,337,572	709,963	350,248	13,397,782	8,226,100	709,963	350,248	9,286,310
		5.99	0.28	0.14	6.41	4.92	0.28	0.14	5.35	3.28	0.28	0.14	3.71
Malays	453,633	438,725	2,257,516	174,638	2,870,879	438,725	1,808,143	174,638	2,421,506	438,725	973,288	174,638	1,586,651
		0.97	4.98	0.38	6.33	0.97	3.99	0.38	5.34	0.97	2.15	0.38	3.50
Indians	257,791	329,821	206,612	1,197,970	1,734,403	329,821	206,612	892,791	1,429,224	329,821	206,612	485,254	1,021,686
		1.28	0.80	4.65	6.73	1.28	0.80	3.46	5.54	1.28	0.80	1.88	3.96
Total	3,216,803	15,769,273	3,174,096	1,722,857	20,666,226	13,106,123	2,724,722	1,417,678	17,248,522	8,994,650	1,889,865	1,010,140	11,894,655
		4.90	0.99	0.54	6.42	4.07	0.85	0.44	5.36	2.80	0.59	0.31	3.70
		Degree of over-representation											
		Chinese	Malays	Indians	Salience	Chinese	Malays	Indians	Salience	Chinese	Malays	Indians	Salience
Chinese	2,505,379	1.1992	0.3135	0.2721	0.702	1.1824	0.3758	0.3262	0.642	1.1374	0.5421	0.4706	0.484
Malays	453,633	0.1962	5.5762	0.7591	0.751	0.2326	5.2950	0.8999	0.705	0.3550	4.3499	1.3735	0.550
Indians	257,791	0.2442	0.8447	8.6189	0.664	0.2963	1.0251	7.7948	0.592	0.4145	1.4340	5.9266	0.429
Total	3,216,803	0.9797	1.0891	1.0403		0.9756	1.1202	1.0256		0.9709	1.1267	1.0597	
		Proportional decrease in degree of over-representation compered to full data											
						0.9860	1.1988	1.1988		0.9484	1.7295	1.7295	
						1.1856	0.9496	1.1856		1.8094	0.7801	1.8094	
						1.2135	1.2135	0.9044		1.6976	1.6976	0.6876	

Table Five Degree of intimacy by type of relationship

		Type of relationship to the respondent					
		Combined	HH member	Other family	Same ethnic group	Different ethnic group	Probed ethnic
All	Mean level of intimacy	2.00	1.11	1.48	2.40	2.46	3.00
	Number of alters	7414	1216	1910	3320	394	574
Chinese	Mean level of intimacy	2.01	1.11	1.47	2.43	2.34	3.21
	Number of alters	5122	844	1303	2607	85	283
Malay	Mean level of intimacy	1.95	1.13	1.49	2.26	2.47	2.76
	Number of alters	1363	211	392	457	116	187
Indian	Mean level of intimacy	2.03	1.12	1.52	2.34	2.52	2.84
	Number of alters	929	161	215	256	193	104

Survey item: How close are you to this person?
Coding: 1 = very close, 3 = close, 5 = distant

Table Six Sources of social ties for each type of relationship

		Combined	HH member	Other family	Same ethnic group	Different ethnic group	Probed ethnic
Same family	Number of alters	2086	581	1477	0	27	1
	Percent with this origin		47.78	77.33	0	6.85	0.17
Grew up together	Number of alters	116	5	40	58	11	2
	Percent with this origin		0.41	2.09	1.75	2.79	0.35
In school	Number of alters	470	50	9	376	18	17
	Percent with this origin		4.11	0.47	11.33	4.57	2.96
At work	Number of alters	1735	119	18	1116	130	352
	Percent with this origin		9.79	0.94	33.61	32.99	61.32
Neighbour	Number of alters	524	7	4	353	68	92
	Percent with this origin		0.58	0.21	10.63	17.26	16.03
Same voluntary organisation	Number of alters	376	23	5	316	25	7
	Percent with this origin		1.89	0.26	9.52	6.35	1.22
Thru a friend or family member	Number of alters	1746	414	351	804	87	90
	Percent with this origin		34.05	18.38	24.22	22.08	15.68
SAF	Number of alters	255	2	3	225	19	6
	Percent with this origin		0.16	0.16	6.78	4.82	1.05
Others	Number of alters	106	15	3	72	9	7
	Percent with this origin		1.23	0.16	2.17	2.28	1.22
Total		7414	1216	1910	3320	394	574

Survey item: How did you first come to meet this person?

Table Seven Ethnic composition of immediate -work group by ethnic group of the respondent

Repondent's ethnic group				Alter's ethnic group Proportion of co-workers in ethnic group					Proportion of respondents exposed to at least one other group member		
				Combined	Chinese	Malay	Indian	Other	Chinese	Malay	Indian
All	Mean number of co-workers	10.42	Mean proportion in each ethnic group	1.00	0.67	0.12	0.09	0.12	0.90	0.38	0.30
	Nunber of respondents	703	Nunber of respondents	701	701	701	701	701	701	701	701
Chinese	Mean number of co-workers	10.67	Mean proportion in each ethnic group	1.00	0.74	0.06	0.04	0.16	0.94	0.27	0.21
	Nunber of respondents	510	Nunber of respondents	508	508	508	508	508	508	508	508
Malay	Mean number of co-workers	9.68	Mean proportion in each ethnic group	1.00	0.49	0.35	0.11	0.05	0.80	0.76	0.40
	Nunber of respondents	110	Nunber of respondents	110	110	110	110	110	110	110	110
Indian	Mean number of co-workers	9.87	Mean proportion in each ethnic group	1.00	0.45	0.18	0.34	0.04	0.73	0.54	0.76
	Nunber of respondents	83	Nunber of respondents	83	83	83	83	83	83	83	83

Table 2 Ethnic composition of immediate co-workers by ethnic group of the respondent

Respondent's ethnic group			Ethnic composition of immediate work group						
				Singaporen			Foreign-born		
				Chinese	Malay	Indian	Chinese	Indian	Other
	# of respondents	701							
All	mean # enumerated	10.421	proportion of work group	0.631	0.118	0.063	0.037	0.025	0.125
	# of respondents	510	degree of over-representation	**1.109**	0.486	0.355	1.164	0.829	1.249
Chinese	mean # enumerated	10.671	proportion of work group	0.700	0.058	0.022	0.044	0.021	0.156
	# of respondents	110	degree of over-representation	0.736	**2.998**	1.228	0.735	1.126	0.380
Malay	mean # enumerated	9.682	proportion of work group	0.465	0.355	0.077	0.027	0.028	0.047
	# of respondents	83	degree of over-representation	0.685	1.495	**4.648**	0.350	1.880	0.300
Indian	mean # enumerated	9.867	proportion of work group	0.433	0.177	0.293	0.013	0.047	0.038

Tentative results