SOCIAL ASPECTS OF TELEPHONE USE IN AUSTRALIA

Grant Noble

A review of the social aspects of domestic telephone use in Australia indicates that the area remains in its infancy, but has revealed a general positive attitude toward the telephone and some behavioural trends in Australian domestic telephone users. For example, the home telephone is used more for intrinsic reasons than instrumental ones; females generally make and receive more calls from family and friends rather than males; social extroverts use the domestic telephone most often; verbalisers are called more than visualisers; a majority feel compelled to answer a ringing telephone at home and that compulsion accompanied by possession of a telephone at work best discriminates between high and low instrumental users; many variables distinguish between heavy and light intrinsic use including the use of the telephone to contact family as well as a perception that the telephone makes life more hectic.

Keywords: Telephone, psychology, developing countries, intrinsic use, instrumental use, telephone obedience.

INTRODUCTION

The focus of the Australian studies discussed in this paper is exclusively the domestic or home telephone. Indian telephones are briefly examined to provide points of contrast.

Research on social aspects of telephones is difficult. First, in spite of many applications and suggestions for funding for such research, in the author's experience such funding is nearly impossible to obtain with very little interest being shown by the potential funding bodies.[1] Second, a majority of users regard the domestic telephone as a two-edged sword. They love the way the telephone enables them to connect to a choice of locations in the external world, but often hate the fact that at the same time, the telephone enables the world to connect with them when other people choose to do so. Research reflects this distinct love/hate relationship with the telephone, and is therefore complex, with results being contingent on whether questions are asked about incoming or outgoing telephone modes.

The way people regard telephones is very complex. Young and Wilmott found in 1957 that both telephones and cars were seen as essential for those workers in London who moved from the inner city to the outer metropolitan areas.[2] The relatively coherent family life generated by living together in the inner city had to be maintained outside by the use of both telephones and cars. The telephone therefore has a major part to play in the role of sustaining geographically widespread families. At present in Australia, but only within local areas, the cost of a telephone call is standard regardless of the length of the call. Families spread widely outside these local boundaries therefore have to pay more for integration, than do integrated local-call families.

The introduction of new telecommunications technologies, as described by White, is promoted as making the telephone the instrument by which any desired information can be located.[3] However, he rightly points out that the promotion does not mention the fact that users are increasingly charged for access to aspects of such information which formerly was free. White also usefully reviews studies of migrant use of the telephone which focus upon equity issues, and changes in charges between local and trunk calls.[4] It seems usual worldwide for local calls to be both timed and become more expensive, as trunk (long distance calls) become cheaper. Most domestic customers have had to pay larger telephone bills as a result. Such trends would seem to most affect the poorer society members such as migrants, the unemployed and divorced families. The latter most probably have the greatest need of the telephone and yet it is least easy for them to gain both access and use of basic telephone technology. The love/hate relationship seems apparent once again.

CROSS CULTURAL CONCEPTS OF THE TELEPHONE

Communication capabilities do vary greatly between cultures. For example, when the Russian army reached Zossen, the German High Command Communications Centre in World War II, they could not believe the extent of the then existing German telephone system. Zossen was connected to all the territories once controlled by the Germans. Moreover it should be noted that while people (e.g., Pool[5]), often talk about the telephone as a technology of freedom it is not always used in this mode. Often people refer to the telephone as an egalitarian communcations technology because the user is in charge of the whole system. But Hitler ran much of his war directly by telephone. He often talked and gave orders to generals in the field by telephone which restricted their capacity for independent decision making. Nixon also used the telephone extensively during the Vietnam war for the same purpose which, far from promoting egalitarianism, centralised power from headquarters. The old Russian joke is illustrative in this context. Question: "Who is Stalin?". Answer: "Gengis Khan with a telephone".

A second and telling way in which communication capabilities vary between cultures is afforded by analysis of the way telephones are used in India. Yadava reported that there were three million telephones in India in 1984.[6] There were only 0.4 telephones per 100 people compared to the 84 telephones per 100 people in the USA. But as might be imagined the telephones in India are used a great deal even though they are neither efficient nor reliable. The switching system used up to 1987 was imported from the West and was designed for low traffic and high telephone density. The Indian situation is the complete reverse with high traffic and low telephone density which tends to break down as a consequence.

Those familiar with developing countries will appreciate just how difficult it is to successfully use a telephone there. In 1987 Yadava reported that telephone services were heavily concentrated in urban areas.[7] For an urban population of 180 million (one quarter of the then Indian population) there were 2.7 million telephones or 1.5 telephones per 100 people. Yet this figure was generous in comparision to rural India where the 550 million population was served by only 300,000 telephones or 0.05 telephones per 100 people. Thus three quarters of the population living in rural areas have access to only ten per cent of India's telephones.

The CDOT organisation

Of even greater interest was the establishment of the Centre for Development of Telematics (CDOT) in 1984. Their goal is to indigenously produce digital switching equipment for rural Indian conditions. The aim is to provide each village in India with a telephone over the next 20 or so years. The changes afforded by such developments could be remarkable.

CDOT are also planning what they term a paanwallah telephone system which would be firmly embedded in traditional Indian values. The paanwallah is a small one-man stall usually located at market corners or roadsides. He sells chewable betel leafs/nuts and cigarettes and can be found throughout India. The CDOT organisation plans to provide paanwallahs with a telephone for both local and long distance calls. Such telephones will have a liquid crystal display (LCD) of the cost of calls which are then paid to the paanwallah to secure his cash-flow. The paanwallah telephone is one planned way to make the telephone more accessible in India. It is also worth noting that early attempts to introduce a government-run cellular mobile telephone service in Bombay and Delhi was stalled because of opposition from the public. Public opinion regarded such moves as misappropriation of funds given the widely perceived and urgent need for more adequate basic telephone services.[8]

The telephone as an an instrument of socal policy in India

Development plans for the telephone in India reflect existing practice and tradition. In 1984 the 36,000 public telephones were, and still are currently manned by the disabled. Those who wish to make a local call (another set of telephones are required for long distance calls) give the number to the disabled person who attends the public telephone, protects it from vandalism, and collects the fee. This Indian practice could probably be copied with benefit in many developing countries. Nobody, however, should imitate India's waiting times for a telephone installment. It has been announced with some pride by Indian telephone companies that waiting times in Bombay and Delhi have been reduced from 20 years to between ten and 15 years. The Sydney Morning Herald reports that there were 224,448 people waiting for a telephone in New Delhi.[9] Queue jumping in the Delhi telephones rule book allows various categories some priority such as gas distributors, foreign-exchange earners, registered midwifes and retired vice-chancellors.

Yadava extensively reports on the plans in India to expand their telephone services.[10] The goal is to have 30 million telephone lines by the year 2000 compared with the three million available in 1984. It is also planned to have three million public telephones available by the turn of the century and at least one reliable public telephone for every village in India. Moreover, there are hopes and plans to develop and extend electronic mail services, given the existence of an already very reliable mail service. Cross-cultural perspectives reveal that what is taken for granted in the developed world cannot be taken for granted in countries like India.

ATTITUDES TO THE DOMESTIC TELEPHONE IN AUSTRALIA

Demand for telephone services usually exceeds the supply capacity in the developing world. In countries where demand and supply are matched it is worthwhile attempting to explore attitudes to the domestic telephone to see how the service is evaluated. Noble has conducted a number of surveys designed to ascertain attitudes to the domestic telephone and individual differences which relate to the use of the domestic telephone; and to investigate the concept that the telephone creates the psychological neighbourhood. Data were initially collected by both internal and external students (taught via the post) from two samples of 300[11] and 1,000[12] randomly chosen people. Due to lack of funding only 100 people were then randomly selected from each sample for analysis. Typical attitudes, generally very favourable to the telephone, are reported from both studies in Table 1.

TABLE 1: ATTITUDES TO THE TELEPHONE IN TWO STUDIES*

	Study II					Study I and II	
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Strongly Agree and Agree Study II	Study I
1. Havng a telephone makes me feel less lonely	15	49	17	14	4	64	62
2. Having a telephone makes me feel more secure	18	49	17	11	4	67	55
3. Having a telephone makes life more hectic	10	33	18	33	5	43	35
4. Having a telephone makes it easy for me to keep in contact with my family	36	53	9	2	0	89	93
5. Having a telephone more easily enables me to express my feelings	3	21	20	47	9	24	20
6. People find it easy to tell 'white lies' via the telephone	16	65	10	7	2	81	70
7. I always feel that I have to answer the telephone whenever it rings	35	37	6	16	6	72	73
8. People find it easy to manipulate others via the telephone	12	35	22	28	3	47	32
9. Having a telephone lets me have calls from people I don't want to talk to	13	64	9	13	1	77	59
10. I have thought about having an ex-directory telephone number	12	20	8	42	16	32	15

* Sample is 100, hence N = %

Table 1 shows most attitudes to the telephone are reasonably consistent across the two samples. Any apparent differences such as the subjects who have thought about an ex-directory number could be explained by the age differences between the two samples. Those in Study I tended to be younger. Overall the telephone is seen positively, permitting contact with family, increasing feelings of security and reducing loneliness. However, the other side of the two-edged sword is also apparent, with nearly three quarters feeling compelled to answer a ringing telephone, and majority agreement that people find it easy to tell white lies on the telephone and that the telephone allows contact with unwanted people.

A number of additional behaviours were surveyed in Study I. A majority doodle when on the telephone (57 per cent). Only a minority can mentally picture the face of the telephone caller (38 per cent) and claim to know what the other person is thinking (24 per cent), but as many as 42 per cent claim to be able to assess that person's feelings. This would suggest that vocal tone reveals emotions. This result is curious and requires further study.

Questions were also asked in Study I which were designed to compare telephone with face-to-face contact. The telephone is either much preferred or preferred to face-to-face contact to say 'no' (57 per cent), or 'brush someone off' (63 per cent). The telephone is also preferred for making arrangements (53 per cent) and invitations (44 per cent).

Conversely face-to-face contact is preferred or much preferred to give either bad (81 per cent) or good news (78 per cent), for gossiping (67 per cent), to get their own way (54 per cent), for persuasion (83 per cent) or to abuse somebody (55 per cent).

Attitudes to the telephone often surprise researchers. It was thought that the telephone may be preferred to give 'bad' news — but that is clearly not the case. Moreover while it was anticipated that a majority would report that they could not ignore a ringing telephone, nearly three-quarters of this sample were obedient to a ringing telephone. Such telephone obedience is an interesting example of technological determinism. The telephone seems to demand a response which is not rational. People will surely ring again if circumstances demand. In some instances therefore it is not people who decide how to use technology, but rather that technology determines how people respond to it. Such a clear example is rare and worth underscoring.

Who is called, and who calls, on the domestic telephone

Keller has suggested two broad categories of telephone use.[13] Calls made for social reasons to family and friends she terms intrinsic. Calls made for business purposes such as emergencies, timetables and shopping she labels instrumental. Claisse and Rowe similarly differentiate between relational (or intrinsic) and functional (or instrumental) calls in France. They also find need for a mixed category where calls are made or received for both purposes.[14] Results from Australia in Table 2 below reveal that the domestic telephone is used far more for intrinsic purposes (both outward and inward) than for instrumental purposes.

TABLE 2: FREQUENCY OF USE OF THE DOMESTIC TELEPHONE FOR INTRINSIC AND INSTRUMENTAL REASONS

	Every Day	2-3 Times a Week	Once a Week	Rarely	Never
Use (type) Outward Calls					
1. To call relatives and family (intrinsic)	9	21	30	38	2
2. For shopping and services (instrumental)	1	11	22	47	19
3. To call friends (intrinsic)	12	47	20	19	2
4. For information, e.g., time and timetables (instrumental)	1	4	6	54	35
5. To contact radio, TV and the press (dummy)	0	0	0	24	76
Inward Calls					
1. Friends (intrinsic)	12	34	29	20	5
2. Sales personnel (instrumental)	0	3	9	55	33
3. Reatives and in-laws (intrinsic)	9	26	27	31	7
4. Business contacts and business acquaintances (instrumental)	7	11	14	43	25

Study II N=100, hence number = %

Friends head the list of those who are both called, and call in, on the domestic telephone, with family members not far behind in calling frequency. Instrumental calls from business contacts are much less frequent. In Australia the telephone is not used frequently for either information or services as yet.

Sex Differences in Domestic Telephone Use

Right or wrong the telephone seems to have acquired the female gender (Ma Bell, for example). Maddox noted that women quickly replaced more clumsy men in the early telephone exchanges and that females have remained in such employment ever since.[15] Mark Twain is responsible for the popular stereotype of the female constantly gossiping on the telephone.

The hypothesis that females use the telephone more than males to call or be called for intrinsic purposes was broadly supported by our findings in both studies. Results summarised in Table 3 indicate that females more often than males reported both making and receiving intrinsic telephone calls from friends and family. Conversely males reported receiving more instrumental calls from business contacts and acquaintances than females. There are no significant differences between the sexes as regards the number of instrumental calls made. However the large standard deviation associated with the number of instrumental calls made by females suggests very considerable individual variation amongst the females sampled.

TABLE 3
MALE AND FEMALE USE OF THE DOMESTIC TELEPHONE FOR INTRINSIC AND INSTRUMENTAL CALLS MADE AND RECEIVED: STUDY II.*

Call type	Male X (N=50)	Male s.d.	Female X (N=50)	Female s.d.	t	p
Intrinsic calls made	5.84	1.57	5.26	1.48	1.90	0.030°
Intrinsic calls received	6.14	1.80	5.32	1.58	2.42	0.009°
Instrumental calls made	7.80	1.05	7.98	1.53	0.68	0.249+
Instrumental calls received	7.58	1.63	8.14	1.53	1.77	0.040°

* High score denotes less frequent use. Frequencies are derived from Table 2 where Everyday = 1 and Never = 5
° $p > 0.05$ + ($F = 2.14$, $p = 0.009$)

In Study I females also used the domestic telephone more to call or be called for intrinsic purposes than males. (All correlations, but not means, reported hereon rely on reversal of initial telephone call scoring whereby low scores indicated more frequent use. This procedure enables interpretation to be easier, sex, male = 1/female = 2 and intrinsic calls made, $r = 0.29$, $p = 0.002$ (one tailed test); sex and intrinsic calls received $r = 0.21$, $p = 0.02$). However in Study I the expectation that males would use the telephone more than females for instrumental calls

made and received was not supported (sex and calls made r = 0.03, received r = 0.04).

It seems clear from both studies that females, more often than males, reported calls to and from friends. Conversely in Study II more males than females reported that they received calls from business contacts. In reality few differences between the sexes are apparent for instrumental calls. As Moyal makes clear, the female role in Australia is one which includes regular telephone contact with family and friends.[16] However results from a study in progress by Noble indicate that it is not so much gender, as the role of homemaker, which is responsible for the differences noted in intrinsic calls. Homemakers of either sex maintain family ties and psychological neighbourhoods by means of intrinsic telephone calls. In addition, in one out of six couples studied for ongoing research it was the male, rather than the female, who made most intrinsic telephone calls.

Sociability differences and telephone use

When these studies were started it was not possible to predict how use of the domestic telephone relates to sociability. On the one hand it was possible that the lonely and more isolated individual relies on the telephone for social contact. On the other hand it was thought that the more outgoing and social person frequently uses the telephone to sustain friendship networks. In ongoing case studies of heterosexual couples, examples of both the above types of user have been found. However results which relate telephone use to psychological scales of sociability (such as Eysenck's) have not yielded significant results.[17]

In Study I respondents were asked how often in a week they went out and were visited by friends. Results indicated that the telephone is more often used by people who frequently go out and are visited by friends than by those who are less social (sociability, high score = more social, and intrinsic calls made, r = 0.26, p = 0.005; intrinsic calls received r = 0.23, p = 0.013; and instrumental calls received r = 0.18, p = 0.04 but not instrumental calls made r = -0.14, p = 0.08). These results have been confirmed by Skelton with a teenage sample.[18] There seems little doubt that gregarious people use the telephone far more than their non-gregarious counterparts. However, further research is necessary to examine the relationship between gregariousness and sociability in terms of telephone use.

Individual and social differences which relate to telephone use

Though less pronounced than sociability, extroverts also received more telephone calls yesterday than introverts (Study I: extrovert = high score and calls received r = 0.25, p = 0.008, but not calls made r = 0.16, p = 0.06). Sociability correlated significantly both with the number of calls made and received yesterday (more social, high score and calls

made r = 0.34, p = 0.00; received r = 0.27, p = 0.004). Similarly Dordick's notion that the telephone is primarily used for local, rather than long distance calls, received some support.[19] Significant correlations were found both for the number of intrinsic calls made and received and the number of relatives living nearby (relatives nearby, high score = many, and intrinsic made, high score = many, r = 0.32, p = 0.00 and intrinsic received, same scoring, r = 0.37, p = 0.00). However, no other telephone use measures were significantly correlated with proximity of relative scores.

McLuhan's suggestion that the telephone may best suit verbalisers, rather than visualisers, received extensive support.[20] Significant correlations were found between verbaliser-visualiser scores and four of six possible telephone use measures (verbaliser = high score and intrinsic received r = 0.23, p = 0.01; intrinsic made r = 0.20, p = 0.02; instrumental received r = 0.21, p = 0.02 and calls received yesterday r = 0.20, p = 0.02). These results generally indicate that verbalisers receive more calls than visualisers.

Telephone use does seem related to selected individual differences. With the benefit of hindsight it is easy to see why the more social person is an avid telephone user. Yet both extroverts (Eysenck type items) and verbalisers (Paivio's 1971 scale)[21] report receiving more telephone calls than their introverted and visualiser counterparts. It is almost as though telephone callers find the former more rewarding to talk to — and thus telephone them more often. The possibility exists that future research will indicate selected personality traits in terms of the number and type of telephone calls made and received. Similarly, although less evident, it may be possible to ascertain something of the psychological neighbourhood of individuals by means of analysis of their telephone patterns.

Teenagers' and migrants' views of the domestic telephone in Australia

A number of the above results have been independently confirmed.[22] Skelton finds that teenagers make and receive an average of one or two telephone calls each day. However no significant differences were apparent in frequency of telephone use between teenage males and females, although girls reported spending more time on the telephone than did boys. The goal of this study was to relate telephone use to masculinity and femininity. Contrary to expectations masculinity, rather than femininity, was related to more extensive use of the domestic telephone. However Antill and Russel's version of the Bem Sex-Role Inventory did not divide the teenage sample into satisfactory masculine and feminine groupings. But Skelton found that verbalisers, rather than visualisers and fewer, rather than more, telephone apprehensives used the telephone more often for intrinsic or friendship purposes. Moreover more social teenagers used the domestic telephone for intrinsic purposes more often than less social teenagers.[23]

Harbilas sampled 100 Greek migrants.[24] These were subdivided into three English language proficiency groups — low, medium and high as assessed on the Australian Second Language Proficiency Rating Scale (ASLPR). Multiple regression was employed to predict various types of telephone use. ASLPR scores were the second most important variable in predicting both outgoing intrinsic (or social) use and incoming intrinsic use. ASLPR scores were second only to agreement with the statement "I do not like to handle the telephone at all if someone else is at home". For outgoing intrinsic telephone use ASLPR scores accounted for 14 per cent of the variance and agreement with the above statement accounted for 24 per cent of the variance. When incoming intrinsic calls were examined the above statement and ASLPR scores respectively accounted for 21 per cent and 16 per cent of the variance.

In the case of outgoing instrumental (or business) use, ASLPR scores were the single best predictor, accounting for 19 per cent of the variance. However Harbilas was unable to use his selected variables to predict incoming instrumental calls. Moreover there was a significant positive correlation between agreement with "I do not like to handle the telephone at all if someone else is at home" and ASLPR scores, such that only those not proficient in English agreed. Harbilas' results make it clear that English language proficiency is a major determinant of domestic use amongst migrant communities in Australia.

Moreover Harbilas also found a significant correlation between sociability scores, as derived from Eysenck's personality inventory, and use of the domestic telephone. More social individuals used the telephone more often. Eysenck's sociability scores also correlated significantly with Noble's frequency of going out and receiving visitors ($r = 0.485$, $p = 0.000$). The results from these two studies further establish the importance of sociability in relation to use of the domestic telephone.

DISCRIMINATING BETWEEN THE HIGH AND LOW INSTRUMENTAL TELEPHONE USER

One objective of Noble's second study was to determine which variables best differentiated between the high and low instrumental and intrinsic users of the domestic telephone. Rather than construct two models for instrumental use — the two-edged sword of outgoing and incoming calls — instrumental calls made were cross tabulated with instrumental calls received. Two groups were then selected for discriminant analysis which aims to discover those variables which best differentiate between the two groups. Group 1 were those 39 people who rarely or never made and rarely or never received instrumental calls. Group 2 were those 42 people who both made and received instrumental calls at least once a week. Clearly larger sample sizes would enable more meaningful comparisons to be made (but no funding was available for this research).

Four variables best differentiated between these two groups and are described in descending order of significance. Heavy instrumental users more often agree that "I always feel that I have to answer the telephone whenever it rings" than light instrumental users (heavy mean = 1.88, s.d. = 1.08, light mean = 2.61, s.d. = 1.37; F = 7.2, df = 1/79, p = 0.009). Heavy instrumental users were more likely to have a telephone at work than light users (heavy mean = 1.19, s.d. = 0.40, light mean = 1.36 (i.e., fewer work phones), s.d. = 0.49; F = 2.94, p = 0.09). Heavy instrumental users were less likely than light users to agree that "having a telephone makes life more hectic" (heavy mean = 3.07, s.d. = 1.24, light mean = 2.64 (i.e., more agreement), s.d. = 1.01; F = 2.91, p = 0.09). Finally heavy instrumental users were more likely to be male rather than female (heavy mean = 1.40, s.d. = 0.5, light mean = 1.59 (i.e., more females), s.d. = 0.5, F = 2.8, p = 0.10). When these and all other variables were entered directly into discriminant analysis, 75 per cent of grouped cases were correctly classified.

Stepwise discriminant analysis (SPSSX, Wilks' method) entered four variables to produce a significant result (F = 4.14, df = 4/76, p = 0.004) when the telephone obedience measure was entered on step one. Results of this analysis indicate that heavy instrumental users are more telephone obedient, are more likely to have a telephone at work, are less anxious and have moved house more often in the past five years than light users. These four variables alone enable 62 per cent of grouped cases to be correctly classified.

It is interesting to note that telephone obedience, having to answer a ringing telephone, best discriminates between the light and heavy instrumental phone user. Similarly the fact that such heavy users also have a telephone at work suggests that work telephone practices are transferred to the domestic telephone by mobile non-anxious male users. Further research is envisaged to explore this idea.

DISCRIMINATING BETWEEN THE HIGH AND LOW INTRINSIC TELEPHONE USER

After cross tabulation of incoming and outgoing intrinsic calls two groups were isolated. High intrinsic users were those 32 people who made and received such calls at least two to three times a week. Low intrinsic users were those 38 persons who made and received such calls once a week or less.

Results indicated that possession of a home telephone was a constant (i.e., everyone in this sample possesed one). Univariate F-ratios (df = 1/68) showed that three variables best discriminated between low and high intrinsic telephone users. In descending order these variables were firstly agreement with the statement "Having a telephone makes it easy for me to keep in touch with my family" (high mean = 1.56, s.d. = 0.56; low mean = 2.00 (i.e., less agreement), s.d. = 0.77, F = 7.09, p = 0.010). Secondly, groups differed in agreement with the statement

"Having a telephone makes life more hectic" (high mean = 2.53, s.d. = 1.13; low mean = 3.13 (i.e., less agreement), s.d. = 1.13, F = 5.3, p = 0.02). Thirdly, high intrinsic users were more likely to be female (sex scores as male = 1, female = 2; high mean = 1.34, s.d. = 0.48 low mean = 1.56 (i.e., more men), s.d. = 0.50; F = 3.49, p = 0.06). When these, and all other variables were entered directly into discriminant analysis, 79 per cent of grouped cases were correctly classified.

Stepwise discriminant analysis first entered that the telephone makes it easy to contact family. In stepwise order the following seven variables were also entered. Results indicate that heavy intrinsic telephone users differ from light ones in terms that heavy users see the telephone as making life more hectic; are more likely to live in a metropolitan, rather than a country, area; are more likely to be female; agree less that the telephone more easily permits expression of feelings; are more telephone obedient; disagree more that people can manipulate others via the telephone; and are less likely to have a telephone at work. When these eight variables were used to clasify respondents as either heavy or light users of the telephone for intrinsic purposes, 72 per cent of grouped cases were correctly classified. After step eight all other F values were less than 1.0, Wilks' Lambda = 0.70, Chi-squared = 22.99, df = 9, p = 0.003.

Differences between intrinsic and instrumental users

The discriminant analyses summarised above paint relatively distinct pictures of the instrumental and intrinsic telephone user. The former have a telephone at work whilst the latter does not. Both are telephone obedient, but such obedience is dominant for the instrumental user. In contrast it is males who orientate to instrumental use and females to intrinsic use. Moreover only intrinsic users perceive a role for the telephone in maintaining contact with family. Intrinsic and instrumental users differ markedly in terms of whether the telephone is seen to make life more hectic. While intrinsic users agree, instrumental users disagree.

The pictures beginning to emerge from these preliminary studies suggest many ideas for follow through research. It seems likely that many, particularly males, acquire their attitude to both the work and domestic telephone from the use of the telephone at work. Ongoing research suggests that many heavy work users of the telephone welcome the opportunity to get away from the telephone at home. Such relationships need further exploration.

Similarly, perceptions of whether the telephone makes life more hectic differ greatly between intrinsic and instrumental users. It is curious that the instrumental user sees the telephone as making life less hectic while the intrinsic user sees it as making life more hectic. Differences between males and females further compound such analyses with males reporting instrumental use and females intrinsic use. Larger samples are required to tease out these interesting relationships.

Moreover it is worth noting that intrinsic calls are related to far more variables than are instrumental calls. In this context the home telephone demands far more research than the office telephone. The results reported here correspond with many of Claisse and Rowe's findings.[25] They factorially analyse the correspondences between the respective typologies of individuals and telephone traffic. Relational, or intrinsic, calls are the preserve of non-working singles and non-working blue collar women. Functional, or instrumental, calls are most frequently made by working singles followed in turn by blue and white collar working men. However mixed motive calls, which are both functional and relational, are mainly made by female and male scholars. Various other groups, such as retired men and women and student men and women, fall in between the three telephone motive poles outlined above. However the sex differences noted in the Australian studies do also seem evident in France. Claisse and Rowe in fact conclude that "the myth of social neutrality attached to the telephone no longer resists analysis. We thus find one of the most structured inequalities of our society — the inequality of sexes."[26]

CONCLUSIONS

These preliminary studies indicate that research on the domestic telephone is both possible and rewarding. However more extensive research with larger samples is required before the present research results can be treated with confidence. It remains astonishing that so little research on social aspects of telephones has been conducted. In a sense these survey type studies are premature. A number of case studies are required to guide researchers with respect to individuals' attitudes to the phone, such as reported by Moyal.[27]

I have one such study in progress but lack of funding ensures that progress is slow. But we have found many examples of role-reversal between men and women of the pattern reported by Moyal; migrants who avoid the telephone because of their accents when speaking English; females who conduct their romantic affairs mainly by telephone; rural people whose telephone use is inhibited by cost; people specialising in prank calls or in playing games on the telephone; individuals who use the telephone for fights; and many, many examples of people who reserve their calls for the office telephone for cost reasons.[28] Overall, however, couples do exhibit complementary roles when using the telephone which tends to cement their relationships. Much more such research is required before we understand the role which the telephone plays in peoples' and couples' lives.

Claisse and Rowe reason that there are five relatively distinct uses of the telephone.[29] The single's telephone is a compensator or substitute for face-to-face relations. Working men tend to use the telephone as a tool which saves time or assists to manage constrained time. Young people, however, use the telephone for mixed (both functional and

relational) motives. School pupils use the telephone to discuss both school work and social life. The telephone style of non-working women is described as 'umbilical-cord'. Such calls are mainly relational and link members of families or psychological neighbourhoods together. The final style is the working woman's 'polyvalent' telephone.

Working women use the telephone in diverse ways and for diverse motives related to both family and work. Such typologies are extremely valuable in the neglected field of social aspects of the telephone. As Claisse and Rowe point out telephone use is "an excellent tool for understanding certain social structures".[30] The orientation of the research in the present paper is to analyse telephone use in an attempt to understand selected personality structures. Peoples' attitudes to the telephone are also revealing — not the least the finding that a majority feel they must answer a ringing telephone. Moreover such telephone obedience best differentiates between heavy and light instrumental users of the telephone. Such results suggest a degree of technological determinism which is not so readily apparent for other communications media.

Telephone companies have successfully introduced the 008 sub-system whereby the receiver alone pays for the cost of a call. Such a system is to be much admired if it is paid for by a majority who are not salespeople and advertisers, but rather people who can offer services to life. This however is not the case. Users, rather than suppliers, therefore have the capacity to abuse such systems. Research is necessary in this area especially amongst country people for whom telephone bills are often intimidating. The 008 sub-system offers instrumental, rather than intrinsic, access. Users may however perceive intrinsic values in such systems. Research in this area is necessary.

Research is also necessary to explore, and at least describe use of, mobile telephone calls and Telegay networks. Mobile telephones currently seem to be a status symbol. The perceptions of both owners and non-owners should be investigated as should the use for both instrumental and intrinsic purposes. Moreover, it is very hard to know how many telephone calls reach the people at their immobile targets. My guess is around half. The most exciting development, if it is proposed at all, is a mobile telephone which can be kept in a pocket. However, it is still the best bet that many users will not want these — with possible exceptions including the Telegay network amongst others.

Telecom is now charged with defining Community Service Obligations (CSOs). In order to adequately understand that such obligations may be much more social, rather than economic, research is required. While economists seem to have agreed that long distance calls subsidise local ones, Reinecke has forcibly argued that the converse is in fact true.[31] It seems fair to conclude that economics is as inexact a science as psychology and sociology. It is easy to see that in India CSOs meant building an adequate line system for telephones before introducing mobile cellular telephones. It is worth noting that such a decision was

in fact made. Moreover the telephone provides useful employment for the disabled in India. Australian's have been, and are likely to be, lobbied for timed local calls which tends to ignore the fact that many use their home telephones for voluntary work. In Germany local calls are timed but users are permitted eight minutes of use for the local fee. No doubt Australian Telecom would wish to introduce a mere three minute limit. Noble has reported that the incoming telephone call has a major role to play in enhancing the recipient's self-esteem.[32] Such calls do let people know that someone else cares about them — the value of which cannot be adequately costed in economic terms. The danger as Pike and Mosco point out is that the worldwide trend to deregulation will restrict the telephone to instrumental use.[33] Yet intrinsic use of telephone most probably reduces welfare expenditure. It is to be hoped that the international 'user-pays' deregulatory zeitgeist marks the beginning of a very necessary transition from the current economising mode back to what Bell refers to as the 'socialising' mode.[34] Bell reasons that like nemesis and hubris these two modes alternate as time progresses. Mrs Thatcher's 1990 problems with the introduction of the poll tax to replace rates in the UK could indeed have marked the cutting edge of such a transition.

NOTES AND REFERENCES

1. G. Noble, 'On attempting to interest Telecom in funding for research on social aspects of telephones: research they should be doing anyway', *Australian Communication Review,* 11, 2, 1989, pp. 57-82.
2. M. Young and P. Wilmott, *Family and Kinship in East London,* Routledge and Kegan Paul, London, 1957.
3. P.B. White, 'Immigrants and the telephone in Australia', *Media Information Australia,* 54, November 1989, pp. 61-6.
4. *op. cit.,* p. 62.
5. I. de S. Pool, *Forecasting the Telephone: A Retrospective Technology Assessment,* Ablex, Norwood, New Jersey, 1983.
6. J.S. Yadava, 'Telecommunication in India', *Il Villagio Globale: Quell', Asia Non Tanto Misteriosa,* Siena, Italy, 1987.
7. *op. cit.*
8. T.H. Chowdary, 'An Indian perspective on sector reform', in B. Wellenius, *et al.* (eds), *Restructuring and Managing the Telecommunications Sector,* World Bank, New York, 1989.
9. T. Allen-Mills, 'New Delhi postcard', *Sydney Morning Herald,* 3 May 1989, p. 9.
10. *op. cit.*
11. G. Noble, 'Individual differences, psychological neighbourhoods and use of the domestic telephone', *Media Information Australia,* 44, 1987, pp. 37-41.

12. G. Noble, 'Discriminating between the intrinsic and instrumental telephone user', *Australian Journal of Communication,* 11, 1987, pp.63-85.
13. S. Keller, 'The telephone is new, and old, communities', in I. de S. Pool (ed.), *The Social Impact of the Telephone,* MIT Press, Cambridge, Mass., 1977.
14. G. Claisse and F. Rowe, 'The telephone in question: questions on communication', *Computer Networks and ISDN Systems,* 14, 1987, pp.207-19, perhaps the most comprehensive analysis of use of the telephone yet reported in the literature.
15. B. Maddox, 'Women and the switchboard', in I. de S. Pool (ed.), *The Social Impact of the Telephone,* MIT Press, Cambridge, Mass., 1977.
16. A. Moyal, 'The feminine culture of the telephone: people, patterns and policy', *Prometheus, 7,* 1, 1989, pp. 5-31.
17. F. Skelton, *Teenagers and the Telephone,* (Honours thesis, Psychology Department, The University of New England, Armidale), 1989.
18. *op. cit.*
19. H. Dordick, 'Social uses for the telephone', *Intermedia,* 11, 1983, pp. 31-5.
20. M. McLuhan, *Understanding Media,* Routledge, London, 1964.
21. A. Paivio, *Imagery and Verbal Processes,* Holt, New York, 1971.
22. Fiona Skelton has been looking at teenage use of the telephone ('Teenagers and the telephone', *Australian Journal of Communication,* 15, 1989, pp.21-4) and Digas Harbilas has been examining migrant use of the telephone ('Language proficiency in relation to migrant use and attitudes to the telephone: a pilot study', *Australian Journal of Communication,* 15, 1989, pp.25-32). Skelton has found for example, that teenagers have fun on the telephone and a majority have played jokes with the telephone. Harbilas examined the relationship between proficiency in the English language and use of the domestic telephone in Australia and found that migrants who are not proficient in English tend to avoid answering the telephone *The Effect of Language Prodiciency on Telephone Useage and Migrant use of the Telephone* (Honours thesis, Psychology Department, University of New England, Armidale), 1989.
23. F. Skelton, *op. cit.*
24. *op. cit.*
25. *op. cit.*
26. *ibid.,* p. 218
27. *op. cit.*
28. G. Noble, 'Individual differences in attitudes to telephones, answering machines and fax: yet another study *not* funded by Telecom', *Australian Communication Association Annual Conference,* University of Melbourne, July 1990.
29. *op. cit.*
30. *ibid.,*p. 217
31. I. Reinecke, *Regulating Deregulation in Australian Telecommunications,* Communication Research Institute of Australia, Canberra, Occasional Paper No. 6, July 1988.
32. G. Noble, 'Towards a "uses and gratifications" of the domestic telephone', *Australian Journal of Communication,* 15, 1989, pp. 33-41.
33. R. Pike and V. Mosco, 'Canadian consumers and telephone pricing: from luxury to necessity and back again?', *Telecommunications Policy,* 10, 1, March 1986, pp. 17-32.
34. D. Bell, 'The future world disorder: the structural context of crises', *Foreign Policy,* 27, 1977, pp. 109-35.